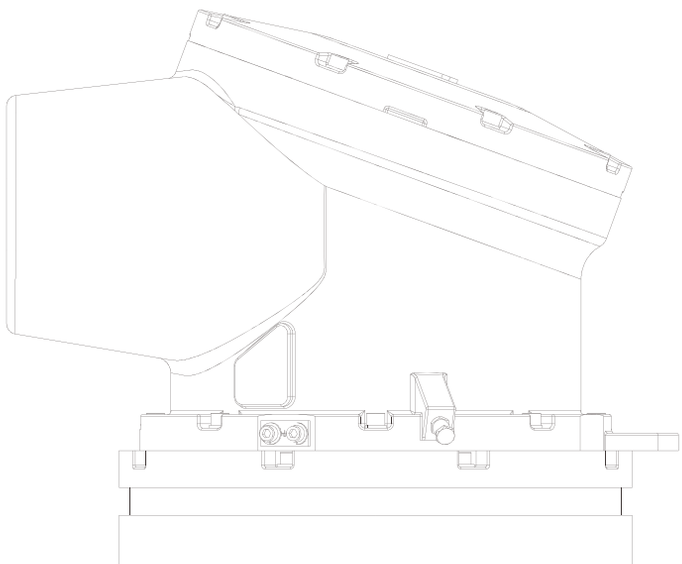
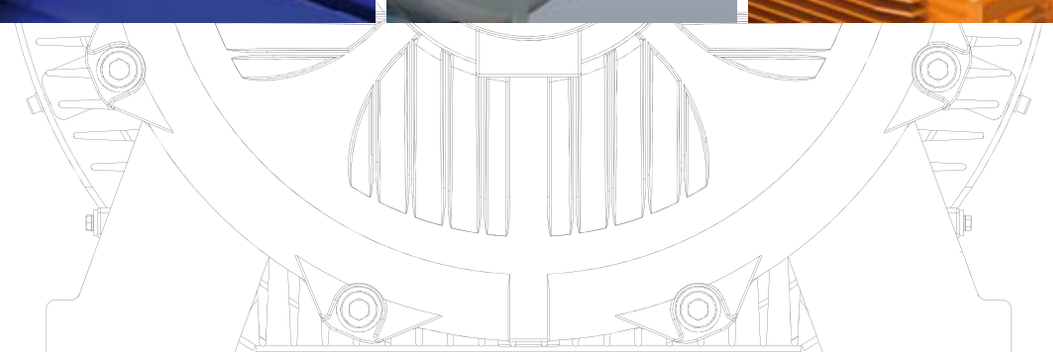
Flameproof Motors

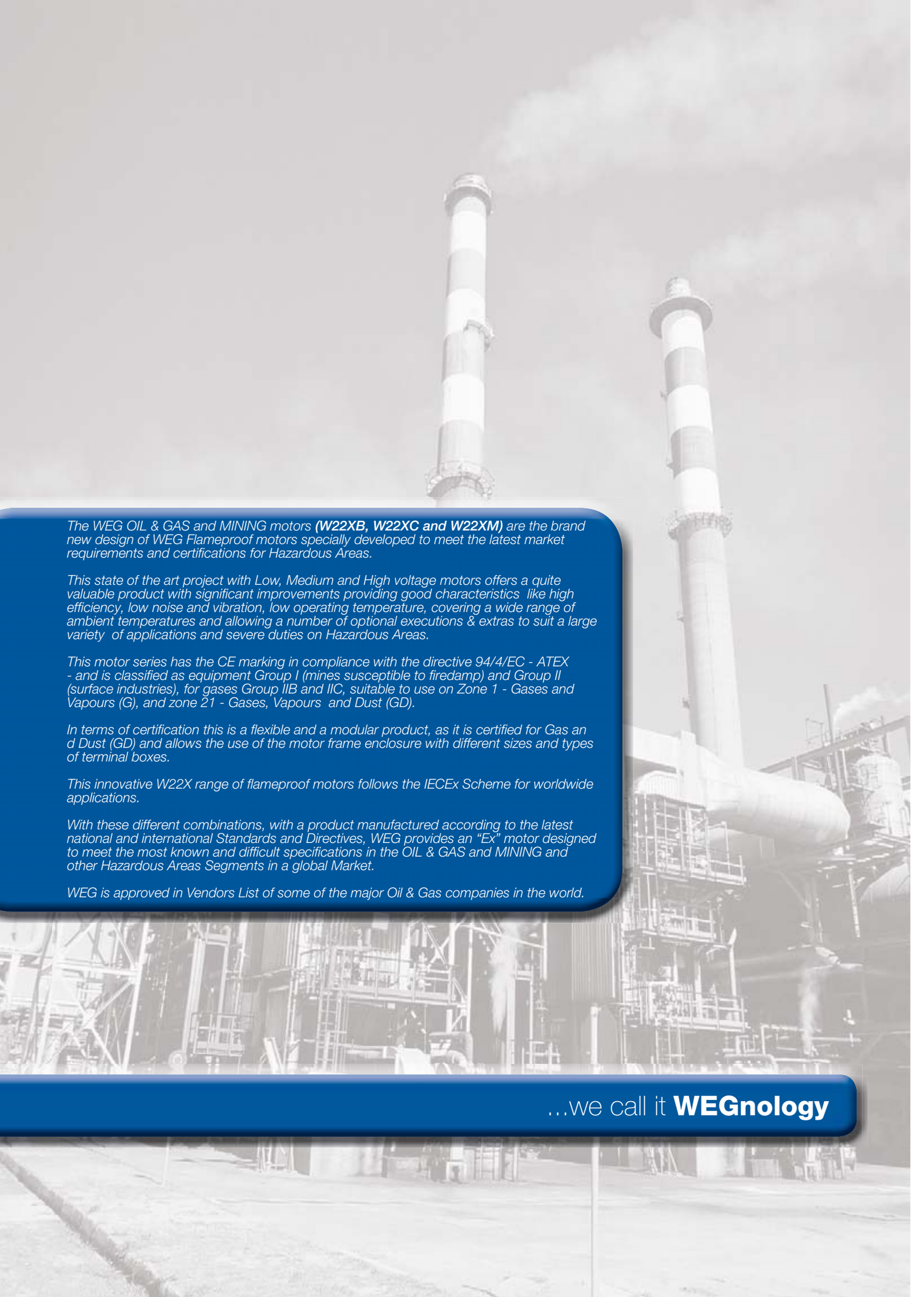
Ex d | Ex d e

Low, Medium and High Voltage

- W22XB
- W22XC | BFGC
- W22XM







The WEG OIL & GAS and MINING motors ***(W22XB, W22XC and W22XM)*** *are the brand new design of WEG Flameproof motors specially developed to meet the latest market requirements and certifications for Hazardous Areas.*

This state of the art project with Low, Medium and High voltage motors offers a quite valuable product with significant improvements providing good characteristics like high efficiency, low noise and vibration, low operating temperature, covering a wide range of ambient temperatures and allowing a number of optional executions & extras to suit a large variety of applications and severe duties on Hazardous Areas.

This motor series has the CE marking in compliance with the directive 94/4/EC - ATEX - and is classified as equipment Group I (mines susceptible to firedamp) and Group II (surface industries), for gases Group IIB and IIC, suitable to use on Zone 1 - Gases and Vapours (G), and zone 21 - Gases, Vapours and Dust (GD).

In terms of certification this is a flexible and a modular product, as it is certified for Gas an d Dust (GD) and allows the use of the motor frame enclosure with different sizes and types of terminal boxes.

This innovative W22X range of flameproof motors follows the IECEx Scheme for worldwide applications.

With these different combinations, with a product manufactured according to the latest national and international Standards and Directives, WEG provides an "Ex" motor designed to meet the most known and difficult specifications in the OIL & GAS and MINING and other Hazardous Areas Segments in a global Market.

WEG is approved in Vendors List of some of the major Oil & Gas companies in the world.

...we call it **WEGnology**

Index

1. Technical Information 7
1.1. Explosive Atmospheres 7
1.2. Standards and Classification of Explosive Atmospheres: 7
1.2.1. ATEX Directives 7
1.2.2. IECEx Scheme 7
1.2.3. Applicable IEC/EN Standards 8
1.2.4. Zone Classification 9
1.2.5. Equipment Grouping and Equipment Protection Level (EPL) 10
1.2.6. Surface Temperature 11
1.2.7. Typical additional certifications 11
1.3. Equipment type of protection and selection 11
1.3.1. TYPE Ex d – Flameproof Enclosure 11
1.3.2 TYPE Ex d e – Flameproof Motors with increased safety terminal box 12
1.3.3 TYPE Ex t - Dust ignition protection by enclosure “t” 12
1.3.4. Selection of equipment 12
1.3.4.1. Selection according to Zones 13
1.3.4.2. Selection according to Equipment Protection Level 13
1.3.4.3. Selection according to equipment grouping 13
1.3.4.4. Selection according to the ignition temperature of the gas, vapour or dust and ambient temperature 13
1.3.4.5. Summary 14
1.4. General Standards 15
2. Flameproof Product Information 16
2.1. WEG Flameproof Motor Ranges 16
2.2. Flameproof Motor Certifications 18
2.2.1. Certification Standards and Ex Notified Bodies 18
2.2.2. Certificates of Equipment 19
2.2.3. Marking of Equipment 19
2.2.4. Certification Nameplates 21
3. General Construction - Mechanical Features 23
3.1. Enclosure Main Parts 23
3.1.1. Frame 23
3.1.2. Eyebolts 23
3.1.3. Endshields 24
3.1.4. Points for Vibration Monitoring 24
3.1.5. Drain plugs 24

3.1.6. Fan Cover 25
3.2. Shaft and Bearings 25
3.2.1. Shaft 25
3.2.2. Bearings 25
3.2.2.1. Lubrication Intervals 25
3.2.2.2. Permissible Thrusts 29
3.2.2.3. Bearing Monitoring 31
3.2.3. Sleeve Bearings 31
3.3. Degree of Protection 33
3.4. Cooling System - IC and Noise Level 33
3.5. Vibration Level 34
3.6. Impact Resistance 34
3.7. Painting 34
3.8. Mounting Arrangements - IM 34
3.9. Terminal Boxes Arrangements 35
3.10. Nameplates and Additional Plates 36
4. General Construction - Electrical Features 38
4.1. Voltage and Frequency 38
4.1.1. Tolerances 38
4.1.2. Voltage levels 38
4.2. Ambient / Insulation 38
4.2.1. Humidity protection - Space Heaters and Tropical Treatment 39
4.3. Motor Protection 39
4.4. Variable Speed Drive 39
4.4.1. Considerations regarding rated voltage 39
4.4.2. Torque restrictions on variable speed drive applications 40
4.4.3. Forced ventilation kit 40
4.4.4. Encoders 42
4.4.5. Bearing insulation 42
4.4.6. Operating speed 42
4.5. Duty Cycles 42
4.6. Efficiency levels 45
4.7. Main Electrical Connections 45
4.8. Tolerances for Electrical Data 47
5. Standard Features (Scope) 48
6. Optional Features (Scope) 49
7. Electrical and Mechanical Data 55
7.1. W22XB Series - Ex d(e) IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X) 55
7.1.1. Low Voltage - Electrical Data - **W22XB Series** 56

7.1.2. Low Voltage - Mechanical Data - **W22XB Series** 60
7.1.3. Medium Voltage - Electrical Data - **W22XB Series** 69
7.1.4. Medium Voltage - Mechanical Data - **W22XB Series** 75
7.1.5. High Voltage - Electrical Data - **W22XB Series** 84
7.1.6. High Voltage - Mechanical Data - **W22XB Series** 85
7.2. BFGC4/BFGC8/W22XC Series - Ex d(e) IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X) 88
7.2.1. Low Voltage - Electrical Data - **BFGC8 Series** 89
7.2.2. Low Voltage - Mechanical Data - **BFGC8 Series** 91
7.2.3. Low Voltage - Electrical Data - **BFGC4 Series** 92
7.2.4. Low Voltage - Mechanical Data - **BFGC4 Series** 93
7.2.5. Low Voltage - Electrical Data - **W22XC Series** 97
7.2.6. Low Voltage - Mechanical Data - **W22XC Series** 101
7.2.7. Medium Voltage - Electrical Data - **W22XC Series** 107
7.2.8. Medium Voltage - Mechanical Data - **W22XC Series** 113
7.2.9. High Voltage - Electrical Data - **W22XC Series** 119
7.2.10. High Voltage - Mechanical Data - **W22XC Series** 120
7.3. W22XM Series - Ex d(e) I Mb 122
7.3.1. Low Voltage - Electrical Data - **W22XM Series** 123
7.3.2. Low Voltage - Mechanical Data - **W22XM Series** 127
7.3.3. Medium Voltage - Electrical Data - **W22XM Series** 136
7.3.4. Medium Voltage - Mechanical Data - **W22XM Series** 142
7.3.5. High Voltage - Electrical Data - **W22XM Series** 151
7.3.6. High Voltage - Mechanical Data - **W22XM Series** 152
8. Terminal Boxes 155
8.1. BFGC4 Line 155
8.1.1. Power Terminal Boxes 155
8.1.2. Auxiliaries Terminal Boxes - Protection devices connection 157
8.2. W22X Line 159
8.2.1. Power Terminal Boxes 159
8.2.1.1. Ex d(e) I / Ex d(e) IIB (Ex tb IIIC) 159
8.2.1.1.1. Low Voltage 159
8.2.1.1.2. Medium Voltage 163
8.2.1.1.3. High Voltage 167
8.2.1.2. Ex d IIC (Ex tb IIIC) 169
8.2.1.2.1 Low Voltage 169
8.2.1.2.2. Medium Voltage 173
8.2.1.2.3. High Voltage 177
8.2.2. Auxiliary Terminal Boxes 179
8.2.2.1. Neutral Point Terminal Boxes 179

8.2.2.1.1. Ex d(e) I / Ex d(e) IIB (Ex tb IIIC) 179
8.2.2.1.1. Ex d(e) IIC (Ex tb IIIC) 181
8.2.2.2. Current Transformers Auxiliary Terminal Boxes 183
8.2.2.3. Surge Protection Auxiliary Terminal Boxes 185
8.2.2.4. Protection Devices Connection 188
9. Spare Parts **191**
10. Packaging **191**
11. Environmental Issues **192**
12. Inquiry / Order Check List 193
12.1. Basic Motor Data And Features 193
12.2. Site & Working Conditions 193
13. International System of Units (SI) 195

1. Technical Information

1.1. Explosive Atmospheres

A potentially explosive atmosphere is composed by air with mixtures of gases, vapours, mists or dusts, which might be ignited under certain operating conditions.
Equipment and protective systems intended for use in potentially explosive atmospheres cover a quite large range of products, including equipment used on fixed offshore platforms, in petrochemical plants, mines, flour mills and other areas where a potentially explosive atmosphere may arise.
WEG has a long experience in the design and manufacturing of motors which fully comply the ATEX Directive 94/9/EC and the IECEx Scheme for Equipment Certification Program.
WEG motors are manufactured to meet special application requirements and severe duties in Hazardous Areas.

1.2. Standards and Classification of Explosive Atmospheres:

1.2.1. ATEX Directives

The ATEX Directives were adopted by the European Union (UE) to simplify the free trade between the member states by aligning the technical and legal requirements for products intended for use in potentially explosive atmospheres.
There are two main Directives, sharing the responsibilities between the Manufacturer and the End User:

- The ATEX Manufacturers Directive 94/9/EC, also known as ATEX 95, places the responsibilities on the manufacturers: It specifies the Essential Health and Safety Requirements that must be met by the equipment intended to be used in potentially explosive atmospheres.
  In order to meet the ATEX Directive, products must comply with the Essential Requirements of this Directive and follow a Conformity Assessment Procedure.
  This assessment procedure involves obtaining the EC Type Examination certificate for products (requires the involvement of a Notified Body except for category 3 products), the Production Quality Assurance (assessed by a Notified Body that issues the QAN – Quality Assessment Notification according with EN 13980 and periodically makes the audits) and an internal control of production (where the manufacturer carries out the necessary work to guarantee that the products are in compliance with the ATEX Directive).
  The ATEX product markings can be easily recognized by the symbol Ex that indicates the explosion protection and by the CE mark that certifies the conformity with this Directive.

- The need to reduce the incidence of explosions and flash fires at work is prompted by both humanitarian and economic considerations and has led to the adoption by the European Parliament and the Council of the ATEX Directive 1999/92/EC, also known as ATEX 137, that lays down the minimum requirements for improving the safety and health protection of workers potentially at risk from explosive atmospheres.
  The humanitarian considerations are obvious: explosions and fires can cause hideous injuries and deaths. The economic considerations are contained in every study into the true costs of accidents, which all show that improved risk (health and safety) management can substantially increase company profits. This latter being particularly true where potential explosions are concerned.
  The Directive 1999/92/EC classifies the environment into zones and outlines which category of equipment can be used in each zone.
  This Directive concentrates on the duties of the End User whose responsibilities are mainly:
  - The assessment of risks
  - Preparation of an Explosion Protection Document
  - The provision of suitable warning signs for areas where explosive atmospheres may occur.

The safety of an installation in a Hazardous Area is the result of co-operation between the equipment manufacturer, the installer and the end user.
The ATEX Directives define Equipment Category, Zone and Group as follows:

Equipment intended for use in mines Group I		
Level of safety	Remain functional, even in the event of rare incidents related to equipment with an explosive atmosphere present.	Intended to be de-energized in the event of an explosive atmosphere
Equipment category	M1	M2

Table 1.01 - Group I equipment

Equipment intended for use in surface industry Group II						
Zone	0	20	1	21	2	22
Type of explosive atmosphere	G Gas	D Dust	G Gas	D Dust	G Gas	D Dust
Likelihood of an explosive atmosphere	Always present		Occasionally present		Infrequently and only for a short period	
Equipment category	1		2		3	

Table 1.02 - Group II equipment

1.2.2. IECEx Scheme

The objective of the IECEx System is to facilitate international trade in equipment and services for use in explosive atmospheres, while maintaining the required level of safety. IECEx System is accepted in many countries and aims to be the world approval system for electrical equipment to be installed in potentially explosive atmospheres.
The IECEx System is based on the use of International Standards, such as IEC Standards. These Standards are dedicated to the highly specialised fields associated with the use of equipment, named Ex equipment and installations in areas where a potential risk of fire or explosion may exist.
The administration of the IECEx System is governed by the IECEx Rules which are available for free in the IECEx website (http://www.iecex.com). Operational Documents supplement the Rules of Procedure and are for use within the IECEx System and Schemes.
The IECEx International Certification System comprises four different Schemes:

- The IECEx Certified Equipment Scheme
- The IECEx Certified Service Facilities Scheme
- The IECEx Conformity Mark Licensing System
- The IECEx Certified Persons Scheme

WEG has achieved the certification of the W22X range within the IECEx Certified Equipment Scheme and IECEx Conformity Mark Licensing System.

The IECEx Certified Equipment Scheme

To achieve IECEx Product Certification is mandatory to involve an ExCB (IECEx Approved Certification Body) to test the products and samples according to the IEC Standards and issue the ExTR (IECEx Test Report).
It is also mandatory to comply with the Quality Management System (that must be previously assessed and in conformity with ISO 9001).
The IECEx Quality Assessment Report (QAR) is a document that presents the results of an on-site assessment of a manufacturer's quality management system by an ExCB, to the requirements of the IECEx Certified Equipment Scheme, more specific within the IECEx OD 005.
Upon satisfactory completion of the work, the issuing ExCB shall review and endorse the ExTR and QAR summary report at the IECEx website: http://www.iecex.com.
If the review is satisfactory and where the application includes a request to issue an IECEx CoC (Certificate of Conformity), the IECEx CoC shall be issued by the ExCB, in accordance with the relevant IECEx Operational Document. The manufacturer and the ExCB shall each retain a set of the documentation referred to in the certificate, including ExTR and manufacturer's documentation.
ExTRs and/or QARs may be issued on their own without the issuing of an IECEx CoC.
The preservation of IECEx Certificate of Conformity is assured by the ExCB. For that the ExCB shall:

- Conduct of surveillance assessments/audits is covered by the QAR process;
- Respond to public inquiries regarding the certificate;
- Take the necessary action when aware of possible breaches by the applicant, e.g. product not subject to IECEx Certificate of Conformity is being claimed as "IECEx Certified".

The IECEx Conformity Mark Licensing System

The IECEx Conformity Mark, when appearing on or in relation to an Ex Product, indicates that the Ex Product is covered by an IECEx Certificate of Conformity which in turn is listed under the scope of the IECEx Conformity Mark License.
The Mark demonstrates to users and consumers the compliance with the requirements of the relevant IEC Standard(s) without any national differences and/or Essential Differences in Requirements and with other IECEx recognized normative documents, approved by the IECEx Management Committee.
The IECEx Conformity Mark significantly improves WEG's capability to trade its products globally.

Benefits for the customer

A WEG motor with an IECEx certification is easy to identify because they have the IECEx certificate number on their nameplate and an IECEx Conformity Mark plate with the following design:

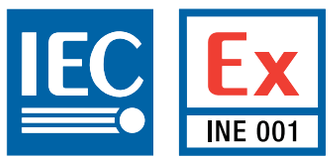


Figure 1.01 - IECEx conformity mark

The IECEx certificates are issued electronically and are all available on the IECEx website. The access is public and they are printable. Please check WEG's certificates on http://www.iecex.com .

1.2.3. Applicable IEC/EN Standards

The implementation of ATEX Directives and IECEx Scheme are supported by the EN (CENELEC) and IEC standards regarding the enclosure protections of electric motors to be used in potentially explosive atmospheres, as well as the hazardous areas classification criteria, depending on the presence of Gas and/or Combustible Dusts.
WEG refers below the main applicable IEC/EN Standards for the manufacturing of flameproof motors:

IEC/EN 60079-0	Explosive atmospheres Part 0: Equipment - General requirements
IEC/EN 60079-1	Explosive atmospheres Part 1: Equipment protection by flameproof enclosures "d"
IEC/EN 60079-7	Explosive atmospheres Part 7: Equipment protection by increased safety "e"
IEC/EN 60079-10-1	Explosive atmospheres Part 10-1: Classification of areas - Explosive gas atmospheres
IEC/EN 60079-10-2	Explosive atmospheres Part 10-2: Classification of areas - Combustible dust atmospheres
IEC/EN 60079-31	Explosive atmospheres Part 31: Equipment dust ignition protection by enclosure "t"
IEC/EN 60079-14	Explosive atmospheres Part 14: Electrical installations design, selection and erection
IEC/EN 60079-17	Explosive atmospheres Part 17: Electrical installations inspection and maintenance
IEC/EN 60079-19	Explosive atmospheres Part 19: Equipment repair, overhaul and reclamation

Table 1.03 - Applicable Standards

1.2.4. Zone Classification

The definition of areas according to the presence of an explosive atmosphere is set up in the following standards:

- IEC/EN 60079-10-1: Explosive atmospheres - Part 10-1: Classification of areas - Explosive gas atmospheres
- IEC/EN 60079-10-2: Explosive atmospheres - Part 10-2: Classification of areas - Combustible dust atmospheres

Hazardous areas are classified into zones based upon the frequency of the occurrence and duration of an explosive atmosphere:

Explosive gas atmospheres	
Zone 0	An area in which an explosive atmosphere is present continuously or for long periods or frequently.
Zone 1	An area in which an explosive atmosphere is likely to occur in normal operation occasionally.
Zone 2	An area in which an explosive atmosphere is likely to occur in normal operation but, if it does occur, will persist for a short period.

Table 1.04 - Zones classification for gas atmospheres

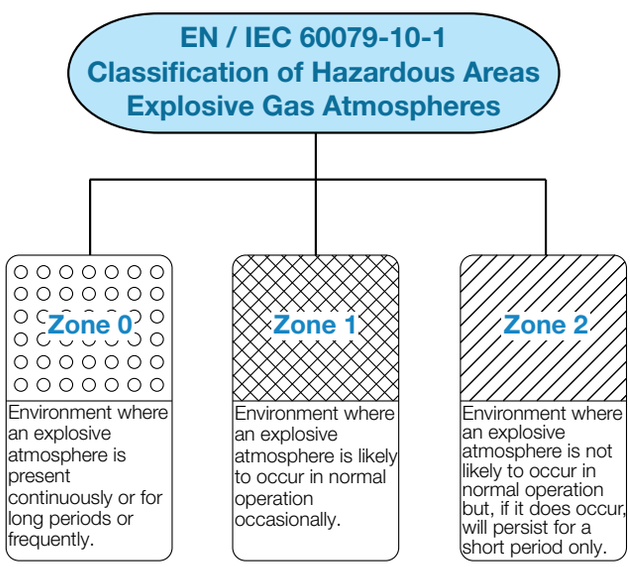


Figure 1.02 - Zones marking for gas atmospheres

Combustible dust atmospheres	
Zone 20	A place in which an explosive dust atmosphere, in the form of a cloud of dust in air, is present continuously, or for long periods or frequently.
Zone 21	A place in which an explosive dust atmosphere, in the form of a cloud of dust in air, is likely to occur in normal operation occasionally.
Zone 22	A place in which an explosive dust atmosphere, in the form of a cloud of dust in air, is not likely to occur in normal operation but, if it does occur, will persist for a short period only.

Table 1.05 - Zones classification for dust atmospheres

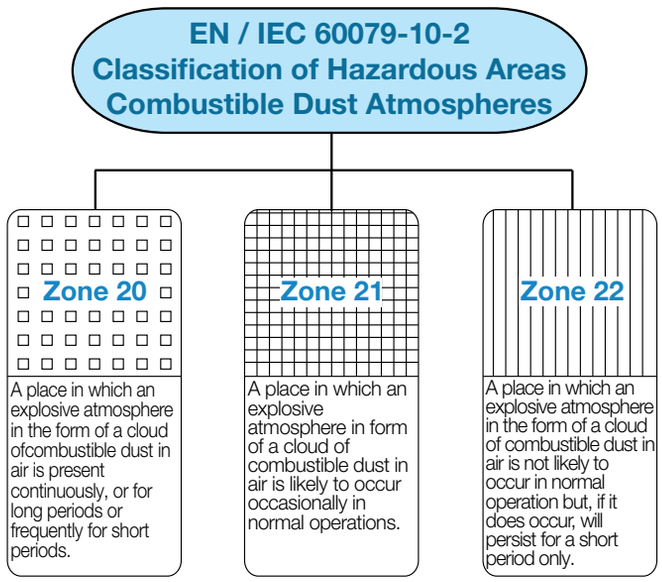


Figure 1.03 - Zones marking for dust atmospheres

The hazards presented by dusts are as follows:

- the formation of a dust cloud from any source of release, including a layer or accumulation, to form an explosive dust atmosphere;
- the formation of dust layers, which are not likely to form a dust cloud, but might ignite due to self-heating or exposure to hot surfaces or thermal flux and cause a fire hazard or over-heating of equipment. The ignited layer may also act as an ignition source for an explosive atmosphere.

For dust layers, the nature of housekeeping assures an essential control to their thickness. For a “good” level of housekeeping, dust layers are kept to negligible thickness and the consequent risks (occurrence of explosive dust clouds from layers and fire due to layers) have been removed.
It is rarely possible with a simple examination of a plant or its design to decide which parts of the plant can be identified according to the three zone definitions. A more detailed approach is therefore necessary and this involves the analysis of the basic possibility of an explosive atmosphere occurring.
Subsequent to the completion of the area classification, a risk assessment may be carried out to evaluate whether the consequences of ignition of an explosive atmosphere requires the use of a higher equipment protection level (EPL) or may justify the use of lower equipment protection level than normally required. The EPL requirements may be recorded, as appropriate, on the area classification documents and drawings to allow proper selection of equipment.

1.2.5. Equipment Grouping and Equipment Protection Level (EPL)

A risk assessment approach for the acceptance of Ex equipment has been introduced in EN/IEC 60079-0 as an alternative method to the current prescriptive and relatively inflexible approach linking equipment to zones. To facilitate this, a system of equipment protection levels has been introduced to clearly indicate the inherent ignition risk of equipment, no matter what type of protection is used. The designation system of these equipment protection levels is as follows:

Group	EPL	Designation
I Electrical equipment intended for use in mines susceptible to firedamp.	Ma	Equipment for installation in a coalmine susceptible to firedamp, having a 'very high' level of protection, which has sufficient security that it is unlikely to become an ignition source in normal operation, during expected malfunctions or during rare malfunctions, even when left energized in the presence of an outbreak of gas
	Mb	Equipment for installation in a coal mine susceptible to firedamp, having a 'high' level of protection, which has sufficient security that it is unlikely to become a source of ignition in normal operation or during expected malfunctions in the time span between there being an outbreak of gas and the equipment being de-energized.

Table 1.06 - Equipment Protection Levels (EPL's) for group I

Group	EPL	Designation
II Electrical equipment intended for use in places with an explosive gas atmosphere other than mines susceptible to firedamp. The Group II is subdivided according to the nature of the explosive gas for which it is intended: • IIA for propane as the typical gas • IIB for ethylene as the typical gas • IIC for hydrogen as the typical gas	Ga	Equipment for explosive gas atmospheres, having a 'very high' level of protection, which is not a source of ignition in normal operation, during expected malfunctions or during rare malfunctions.
	Gb	Equipment for explosive gas atmospheres, having a 'high' level of protection, which is not a source of ignition in normal operation or during expected malfunctions
	Gc	Equipment for explosive gas atmospheres, having an 'enhanced' level of protection, which is not a source of ignition in normal operation and which may have some additional protection to ensure that it remains inactive as an ignition source in the case of regular expected occurrences (for example failure of a lamp).

Table 1.07 - Equipment Protection Levels (EPL's) for group II

Group	EPL	Designation
III Electrical equipment intended for use in places with an explosive dust atmosphere other than mines susceptible to firedamp. The Group III is subdivided according to the nature of the explosive dust for which it is intended: • IIIA: combustible flyings • IIIB: non-conductive dust • IIIC: conductive dust	Da	Equipment for combustible dust atmospheres, having a 'very high' level of protection, which is not a source of ignition in normal operation, during expected malfunctions, or during rare malfunctions.
	Db	Equipment for combustible dust atmospheres, having a 'high' level of protection, which is not a source of ignition in normal operation or during expected malfunctions.
	Dc	Equipment for combustible dust atmospheres, having an 'enhanced' level of protection, which is not a source of ignition in normal operation and which may have some additional protection to ensure that it remains inactive as an ignition source in the case of regular expected occurrences (for example failure of a lamp).

Table 1.08 - Equipment Protection Levels (EPL's) for group III

The various levels of protection of equipment must be capable of functioning in conformity with the operational parameters established by the manufacturer to that level of protection.

Protection afforded	Equipment protection level Group	Performance of protection	Conditions of operation
Very high	Ma Group I	Two independent means of protection or safe even when two malfunctions occur independently of each other	Equipment remains functioning when explosive atmosphere present
Very high	Ga Group II	Two independent means of protection or safe even when two malfunctions occur independently of each other	Equipment remains functioning in zones 0, 1 and 2
Very high	Da Group III	Two independent means of protection or safe even when two malfunctions occur independently of each other	Equipment remains functioning in zones 20, 21 and 22
High	Mb Group I	Suitable for normal operation and severe operating conditions	Equipment de-energized when explosive atmosphere present
High	Gb Group II	Suitable for normal operation and frequently occurring disturbances or equipment where malfunctions are normally taken into account	Equipment remains functioning in zones 1 and 2
High	Db Group III	Suitable for normal operation and frequently occurring disturbances or equipment where malfunctions are normally taken into account	Equipment remains functioning in zones 21 and 22
Enhanced	Gc Group II	Suitable for normal operation	Equipment remains functioning in zone 2
Enhanced	Dc Group III	Suitable for normal operation	Equipment remains functioning in zone 22

Table 1.09 - EPL's vs Operation Conditions

1.2.6. Surface Temperature

IEC/EN 60079-0 defines the limits for electrical equipment surface temperature for Groups I, II and III.

Group I electrical equipment

For electrical equipment of Group I, the maximum surface temperature shall not exceed:

- 150 ºC on any surface where coal dust can form a layer,
- 450 ºC where coal dust is not likely to form a layer (i.e., inside of a dust protected enclosure).

Group II electrical equipment

The maximum surface temperature determined shall not exceed:

- the temperature class assigned (see table below), or
- the maximum surface temperature assigned, or
- if appropriate, the ignition temperature of the specific gas for which it is intended.

Temperature class for Group II electrical equipment	Maximum surface temperature ºC
T1	450
T2	300
T3	200
T4	135
T5	100
T6	85

Table 1.10 - Temperature classes for Group II

Group III electrical equipment

- Maximum surface temperature determined without a dust layer shall not exceed:
  - the maximum surface temperature class assigned;
  - the layer or cloud ignition temperature of the specific combustible dust for which it is intended.
- Maximum surface temperature with respect to dust layers:
  - The maximum surface temperature may also be determined for a given depth of layer, TL, of dust surrounding all sides of the apparatus, unless otherwise specified in the documentation, and marked with the symbol “X” to indicate this specific condition of use.

1.2.7. Typical additional certifications

The certifications for these ranges of flameproof motors are described on paragraph 2.2.
Additionally for some world regions or applications some certifications are mandatory to install flameproof motors:

Figure 1.04 - Typical additional certifications

WEG also has the CCOE approval for the Indian market and the RTN permission for Russia.

1.3. Equipment type of protection and selection

1.3.1. TYPE Ex d – Flameproof Enclosure

(According to EN/IEC 60079-1)

It is a type of protection where the parts that can ignite an explosive atmosphere are in enclosures which are capable to withstand a pressure during an internal explosion of an explosive mixture. These enclosures are built to avoid the spreading of the internal combustion to the outside explosive atmosphere. An induction electric motor (of any protection) is not totally sealed, that is, air flows in and out.
While the motor is in operation, it heats up and the internal air gets to a higher pressure compared to the external pressure (air is blown out); when motor is switched-off, the internal pressure decreases, allowing in this way the entrance of air (which in this case is contaminated).The motor surfaces do not need to be totally enclosed to avoid flame propagation. The minimum opening required to avoid passage of flames depends on the gas or vapour that is present.
Therefore, there will always be flame passages through the motor enclosure. The safety level on an explosion proof motor is on the fact that it must ensure that all flame passages never exceed the standardized dimensions and that the motor is physically suitable to withstand an internal explosion without transmitting it to the external environment.
Ex d protection will not allow that an internal explosion propagates to the external environment. To ensure safety to the system, WEG provides a control of the openings and the finishing of joints once these are responsible for the volume of gases exchanged between inside and outside of the motor.
Flame propagation between motor interior and external atmosphere is guaranteed by constructive joints and gaps. Internal pressure that can result of an explosion in the interior of the motor is guaranteed by the enclosure resistance (frame, endshields, internal bearing covers, terminal boxes and some adaptors).
The main characteristics of Ex d motors are as follows:

- Reinforced frame, terminal box and endshields;
- Wider contact surface (interference) between motor components;
- Reduced clearance between motor shaft and bearing cap to avoid transmission of sparks to the external environment;
- All components (frames, endshields, terminal box and terminal box lids) are submitted to overpressure test in factory;
- Guarantee of external surface temperature of the motor in accordance with the correspondent Class of Temperature (e.g. T4 - 135ºC). The tests on WEG prototypes includes a full evaluation of the external surface temperatures with motor supplied with electrical limit conditions.

Applications:

- Environments containing flammable gas or vapour continuously, intermittently or periodically in enough amounts to originate explosive or flammable mixtures arising out of repairs or maintenance services;
- The locations defined as Zones 1 and 2, Groups IIA, IIB and IIC are those where the following gases are found present: oil, naphtha, benzene, ammonia, propane, diethyl ether, acetone, alcohol, industrial methane, natural gas, as well as hydrogen and acetylene;

- The main applications including pumps, fans, blowers, crushers, conveyor systems, mills, cranes and other applications located in areas that require explosion proof motors.

1.3.2 TYPE Ex d e – Flameproof Motors with increased safety terminal box

(According to EN/IEC 60079-1 and EN/IEC 60079-7)

WEG Ex d e motors differ from Ex d motors mainly on the configuration of terminals and terminal box. The terminal box with increased safety terminals prevents against any ignition source that may occur such as sparks, excessive heating, etc.
Motors with flameproof enclosures “d” with Increased Safety terminal boxes “e” can be used also in zone 1. The protection principle of increased safety terminal boxes is acting in the causes that can start an ignition (e.g. sparks, materials overheating, cables movements, etc) and not in preventing that an internal explosion is sustained inside the enclosure (like flameproof enclosures “d”). Most of WEG increased safety terminal boxes have the constructive principles of flameproof enclosures “d” with additional Increased Safety requirements.
The main characteristics of Ex d e motors are:

- Terminal box components as well as connection cables must be firmly fastened (without allowing any movement);
- Special terminal block / bushings to avoid arcs and sparks and higher air and surface distances between conductive parts (clearances and creepages);
- Double grounding must be provided (one on the frame and the other inside the terminal box).

Applications:

- Same as described for Ex d motors.

1.3.3 TYPE Ex t - Dust ignition protection by enclosure “t”

(According to EN/IEC 60079-31)

The dust ignition protection by enclosure “t” is a type of protection for explosive dust atmospheres where electrical equipment is provided with an enclosure providing dust ingress protection and a means to limit surface temperatures.
This type of protection is divided into three levels of protection, “ta”, “tb and “tc”. For each type of protection, an equipment protection level (EPL) has been assigned based on the risk of the equipment becoming an ignition source in a hazardous atmosphere.

Dust ignition proof levels of protection	EPL
ta	Da
tb	Db
tc	Dc

Table 1.11 - EPL’s for Ex t enclosures

Besides the thermal endurance and mechanical tests specified in IEC 60079-0, the motors with this protection shall be subjected to the following tests:

- Thermal test for the determination of maximum surface temperature as described in IEC60079-0 with the test voltage of Un ±10%.
  Alternatively, determination of the maximum surface temperature may be conducted within Zone A (as per IEC 60034-1). In this case, the equipment shall be marked with “X” in accordance with IEC 60079-0 and the specific condition of use shall include the information that the surface temperature determination was based on operation within Zone A (IEC 60034-1), typically ± 5% of rated voltage.
- A positive internal pressure of at least:
  - 4 kPa for level of protection “ta” equipment, or
  - 2 kPa for level of protection “tb” and “tc” equipment.
  The tests shall be applied to the equipment for at least 60 s. During this test, any breathing or draining device shall be removed and the entry plugged. There shall be no evidence of damage to the enclosure due to the pressure applied.
- After the satisfactory completion of the pressure test, the motors shall satisfy the requirements of ingress protection as shown in the table:

Level of protection	IIIC	IIIB	IIIA
“ta”	IP6X	IP6X	IP6X
“tb”	IP6X	IP6X	IP5X
“tc”	IP6X	IP5X	IP5X

Table 1.12 - IP levels for Ex t enclosures

Ingress Protection is to be determined in accordance with degree of protection (IP) of enclosures as specified in IEC 60079-0 for level of protection “ta”, “tb” and “tc”. In the specific case of the level of protection “ta” the level of depression shall be increased to at least 4 KPa for a period of least 8 hours. Any grease in the joints should be removed before the IP test is performed.

Applications:

- Sugar refining plants
- Breweries
- Cement Plants
- Textiles
- Pharmaceutical
- Chemical
- Food process industries

1.3.4. Selection of equipment

(According to IEC/EN 60079-14)

To select the appropriate electrical equipment for hazardous areas, the following information is required:

- Classification of the hazardous area including the equipment protection level requirements, where applicable;
- Where applicable, gas, vapour or dust classification in relation to the electrical equipment group or subgroup;
- Temperature class or ignition temperature of the gas or vapour involved;
- Minimum ignition temperature of the combustible dust cloud, minimum ignition temperature of the combustible dust layer and minimum ignition energy of the combustible dust cloud;
- External influences and ambient temperature.

1.3.4.1. Selection according to Zones

Relationship between EPL's and zones is exhibited in table 1.13.

Zone	Equipment protection level (EPL's)
0	"Ga"
1	"Ga" or "Gb"
2	"Ga", "Gb" or "Gc"
20	"Da"
21	"Da" or "Db"
22	"Da", "Db" or "Dc"

Table 1.13 - EPL's vs Zones

1.3.4.2. Selection according to Equipment Protection Level

According with IEC/EN standards, EPL's have been allocated to each type of protection as follows:

EPL	Type of protection	Code	According to
'Ga'	Intrinsically safe	'ia'	IEC 60079-11
	Encapsulation	'ma'	IEC 60079-18
	Two independent types of protection each meeting EPL 'Gb'	-	IEC 60079-26
	Protection of equipment and transmission systems using optical radiation	-	IEC 60079-28
'Gb'	Flameproof enclosures	'db'	IEC 60079-1
	Increased safety	'eb'	IEC 60079-7
	Intrinsically safe	'ib'	IEC 60079-11
	Encapsulation	'mb'	IEC 60079-18
	Oil immersion	'ob'	IEC 60079-6
	Pressurized enclosures	'pxb' or 'pyb'	IEC 60079-2
	Powder filling	'qb'	IEC 60079-5
	Fieldbus intrinsically safe concept (FISCO)	-	IEC 60079-27
	Protection of equipment and transmission systems using optical radiation	-	IEC 60079-28
'Gc'	Intrinsically safe	'ic'	IEC 60079-11
	Encapsulation	'mc'	IEC 60079-18
	Non-sparking	'n' or 'nAc'	IEC 60079-15
	Restricted breathing	'nRc'	IEC 60079-15
	Energy limitation	'nLc'	IEC 60079-15
	Sparking equipment	'nCc'	IEC 60079-15
	Pressurized enclosures	'pzc'	IEC 60079-2
	Fieldbus non-incendive concept (FNICO)	-	IEC 60079-27
	Protection of equipment and transmission systems using optical radiation	-	IEC 60079-28
'Da'	Intrinsically safe	'ia'	IEC 60079-11
	Encapsulation	'ma'	IEC 60079-18
	Protection by enclosure	'ta'	IEC 60079-31
'Db'	Intrinsically safe	'ib'	IEC 60079-11
	Encapsulation	'mb'	IEC 60079-18
	Protection by enclosure	'tb'	IEC 60079-31
	Pressurized enclosures	'pb'	IEC 61241-4
'Dc'	Intrinsically safe	'ic'	IEC 60079-11
	Encapsulation	'mc'	IEC 60079-18
	Protection by enclosure	'tc'	IEC 60079-31
	Pressurized enclosures	'pc'	IEC 61241-4

Table 1.14 - EPL's vs Types of Protection

1.3.4.3. Selection according to equipment grouping

Relationship between gas/vapour or dust subdivision and equipment group:

Location gas/vapour or dust subdivision	Permitted equipment group(EPL's)
IIA	II, IIA, IIB or IIC
IIB	II, IIB or IIC
IIC	II or IIC
IIIA	IIIA, IIIB or IIIC
IIIB	IIIB or IIIC
IIIC	IIIC

Table 1.15 - EPL's vs Equipment Groups

1.3.4.4. Selection according to the ignition temperature of the gas, vapour or dust and ambient temperature

The electrical equipment shall be so selected that its maximum surface temperature will not reach the ignition temperature of any gas, vapour or dust which may be present.
If the marking of the electrical equipment does not include an ambient temperature range, the equipment is designed to be used within the temperature range -20 °C to +40 °C. If the marking of the electrical equipment includes an ambient temperature range, the

equipment is designed to be used within this range.
If the ambient temperature is outside the temperature range or if there is a temperature influence from other factors, e.g. the process temperature or exposure to solar radiation, the effect on the equipment shall be considered and measures taken duly documented.

Gas and Vapour

Temperature class required by the area classification	Ignition temperature of gas or vapour in °C	Allowable temperature classes of equipment
T1	>450	T1 - T6
T2	>300	T2 - T6
T3	>200	T3 - T6
T4	>135	T4 - T6
T5	>100	T5 - T6
T6	>85	T6

Table 1.16 - Allowed surface temperature for equipments

Dust

- Temperature limitation regarding the presence of dust clouds: The maximum surface temperature of the apparatus shall not exceed two-thirds of the minimum ignition temperature in degrees Celsius of the dust/air mixture concerned:

$$T_{max} = 2/3\ T_{CL}$$

where T_{CL} is the minimum ignition temperature of the cloud of dust.

- Temperature limitation due to the presence of dust layers: In the presence of dust layers two different practices for determining the maximum surface may be used: practice A and practice B. Both of these practices intend to provide an equivalent level of protection and the requirements of each should be followed without mixing either the apparatus requirements or selection/installation requirements of the two practices.

Practice A:

Maximum surface temperature is determined with 5mm layer of dust and installation rules require 75ºC margin between the surface temperature and the ignition temperature of the particular dust.

$$T_{max} = T_{5mm} - 75ºC$$

Practice B:

Maximum surface temperature is determined with 12,5mm layer of dust and installation rules require 25ºC margin between the surface temperature and ignition temperature of the particular dust.

$$T_{max} = T_{12,5mm} - 25ºC$$

WEG adopted practice A in Ex t motors.

1.3.4.5. Summary

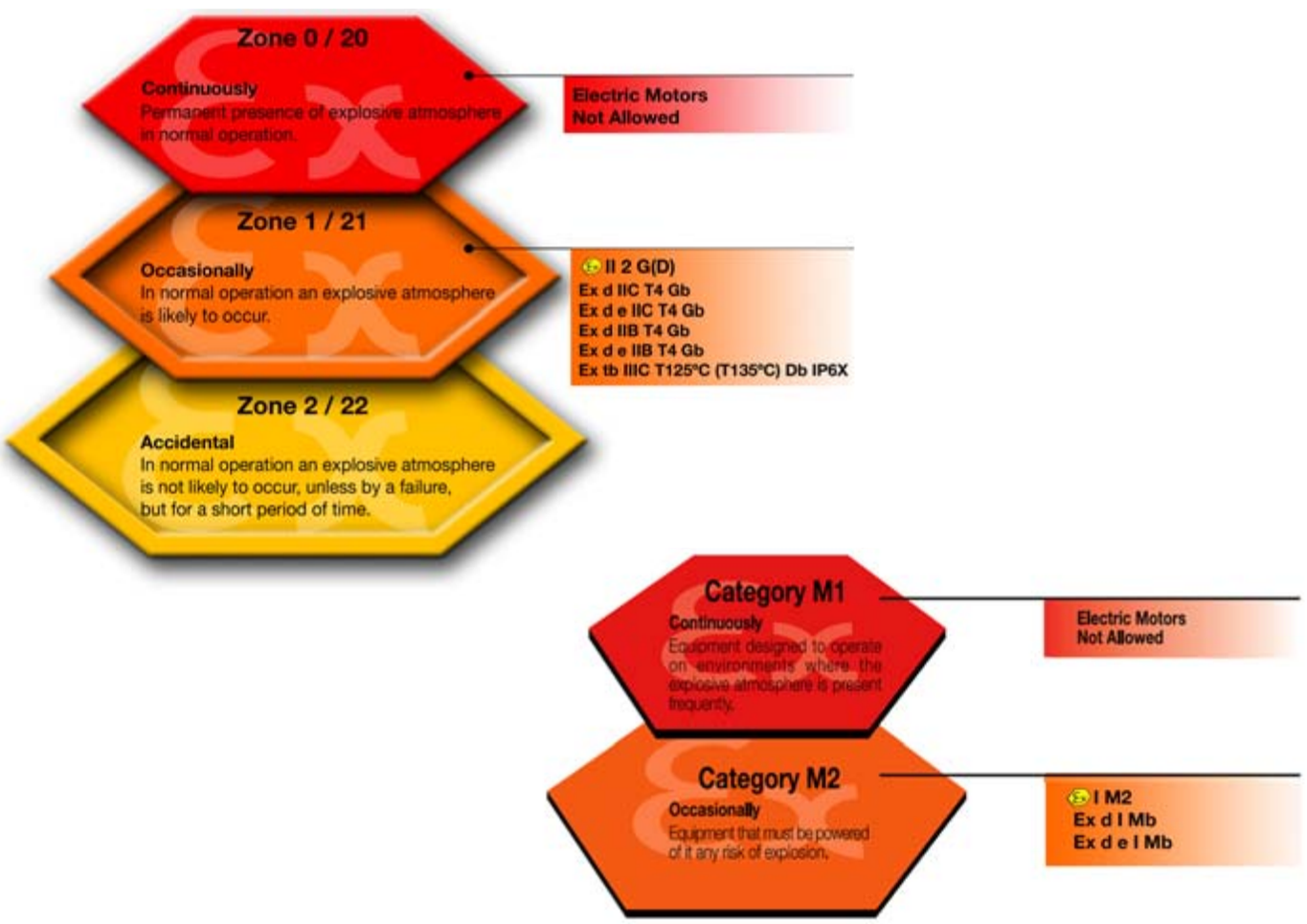


Figure 1.05 - Zones classification

1.4. General Standards

Beyond the particular requirements for Hazardous Areas, the WEG electric motors are manufactured in compliance with General EN/IEC and equivalent National Standards related with construction and performance. The main applicable Standards are described below:

EN / IEC 60034-1	Rating and performance
EN IEC 60034-2-1	Determination of losses and efficiency
EN 50347 and IEC 60072	Outputs and dimensions
EN / IEC 60034-5	Mechanical protection
EN / IEC 60034-6	Cooling method
EN / IEC 60034-7	Mounting arrangements
EN / IEC 60085	Insulation class
EN / IEC 60034-8	Terminals identification and rotation
EN / IEC 60034-9	Noise limits
EN / IEC 60034-11	Thermal protection
EN / IEC 60034-12	Starting performance
EN / IEC 60034-14	Mechanical vibration limits

Table 1.17 - General Standards

2. Flameproof Product Information

2.1. WEG Flameproof Motor Ranges

This catalogue includes the following WEG flameproof motors lines:

- BFGC8 and BFGC4 ranges available in low voltage for frames from 71M up to 315SM.
  BFGC8 line has Ex d(e) IIC T4 execution. While BFGC4 line has Ex d(e) IIC T4 execution that can be combined with Ex tb IIIC T125ºC Db execution.

- W22X, the new WEG range, designed to offer not only safety, but significantly lower energy consumption, lower noise and vibration, higher reliability, easier maintenance and lower cost of ownership.
  Competitive, complete and flexible, the W22X line is available in low, medium and high voltage for frames from 315L up to 500KH. W22X line is available in the following executions:
  - Ex d(e) I Mb
  - Ex d(e) IIB T4 Gb
  - Ex d(e) IIC T4 Gb
  - Ex d(e) IIB T4 Gb Ex tb IIIC T125ºC (T135ºC) Db IP6X
  - Ex d(e) IIC T4 Gb Ex tb IIIC T125ºC (T135ºC) Db IP6X

Available outputs in Low Voltage (Un ≤ 1100V)

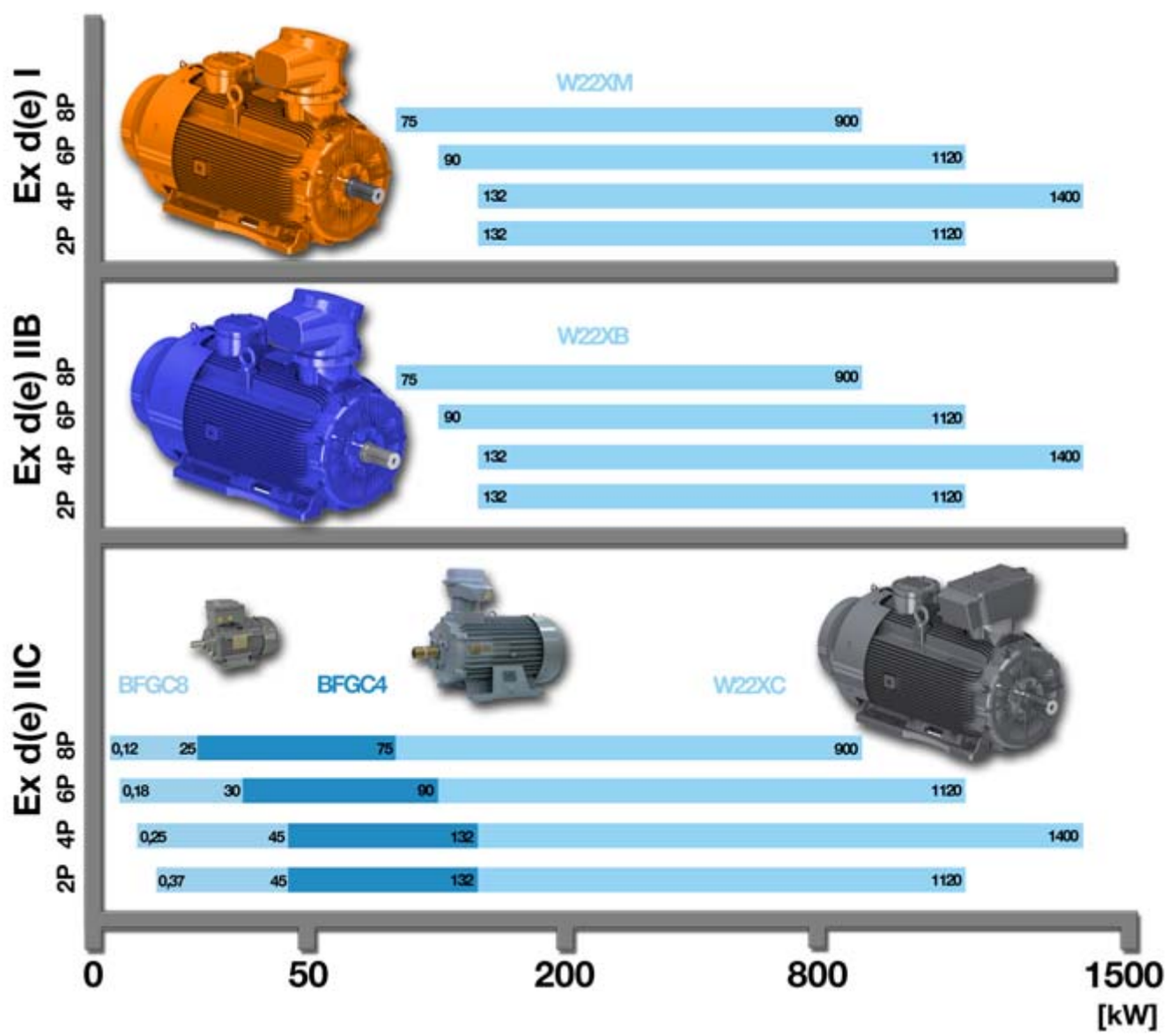


Figure 2.01 - Low Voltage flameproof range

Available outputs in Medium Voltage (1100V < Un ≤ 6600V)

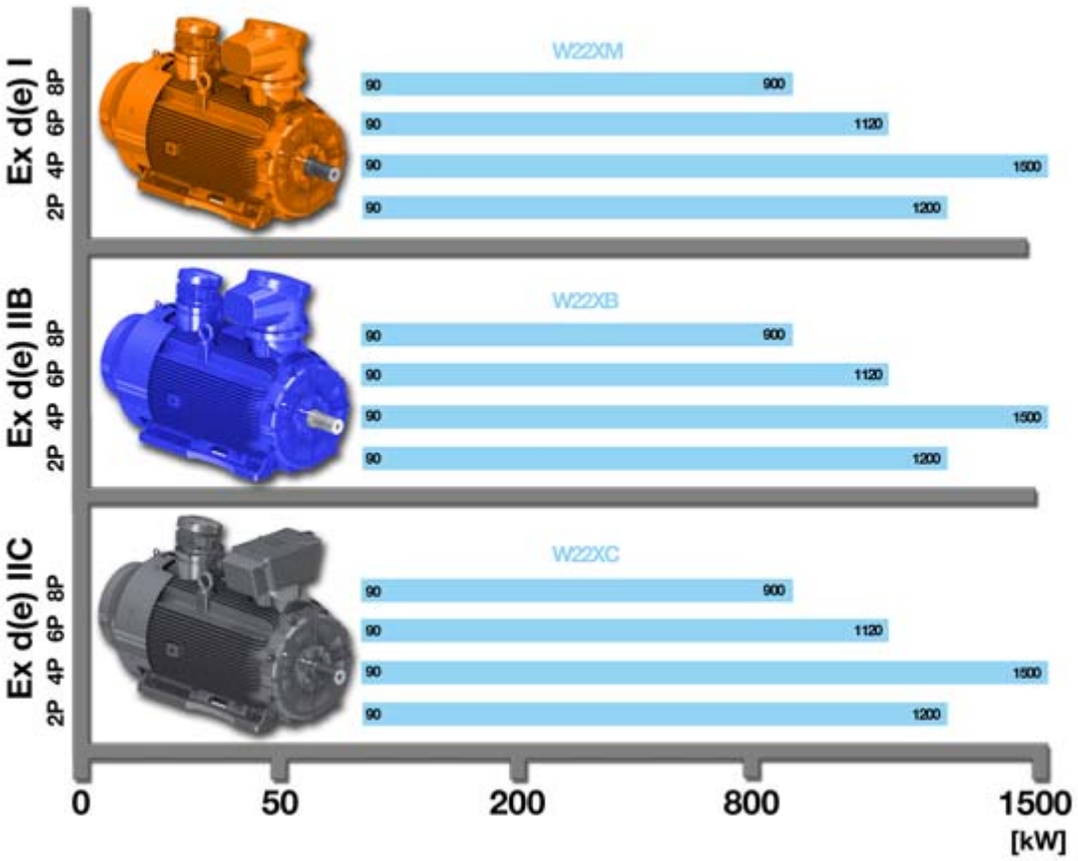


Figure 2.02 - Medium Voltage flameproof range

Available outputs in High Voltage (6600V < Un ≤ 11000V)

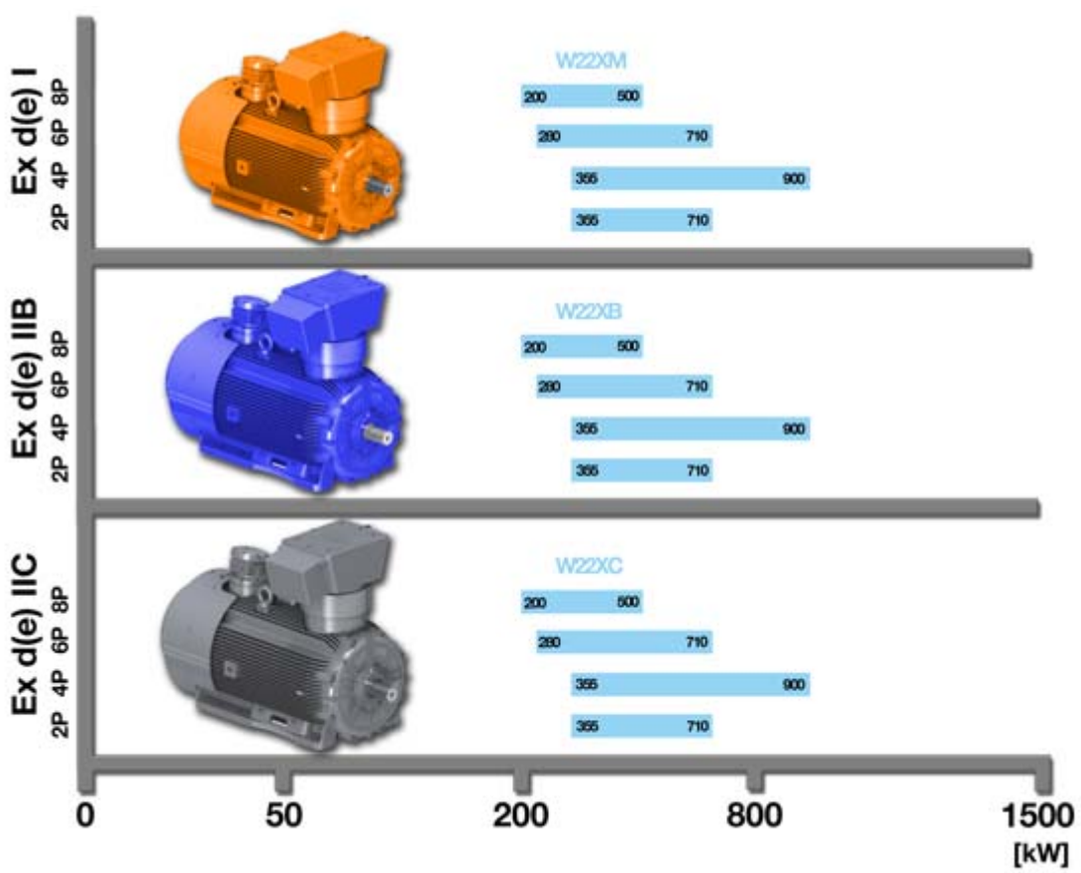


Figure 2.03 - High Voltage flameproof range

2.2. Flameproof Motor Certifications

2.2.1. Certification Standards and Ex Notified Bodies

Line: BFGC4			
Possible markings:	Ex d(e) IIC T4 Gb		
	Ex d(e) IIC T4 Gb Ex tb IIIC T125°C Db IP6X Ex d(e) IIC T4 Gb Ex tb IIIC T135°C Db IP6X		
Motor range	Voltage	Ex Notified Body	Certifications
BFGC4 250	LV	INERIS, TÜVRheinland, CCVE	ATEX INMETRO GOST-R
BFGC4 280			
BFGC4 315			

Table 2.01 - BFGC4 line certifications

Line: W22X			
Possible markings:	Ex d(e) I Mb		
	Ex d(e) IIB T4 Gb		
	Ex d(e) IIC T4 Gb		
	Ex d(e) IIB T4 Gb Ex tb IIIC T125°C Db IP6X		
	Ex d(e) IIB T4 Gb Ex tb IIIC T135°C Db IP6X		
	Ex d(e) IIC T4 Gb Ex tb IIIC T125°C Db IP6X		
	Ex d(e) IIC T4 Gb Ex tb IIIC T135°C Db IP6X		
Motor range	Voltage	Ex Notified Body	Certifications
W22X 315	LV, MV and HV	INERIS, TÜVRheinland, CCVE, UL	ATEX / IECEx INMETRO GOST-R UL (*)
W22X 355			
W22X 400			
W22X 450			
W22X 500			

(*) For Low Voltage insulation system.

Table 2.02 - W22X line certifications

WEG Flameproof motors are also according to Electrical Installations in Ships – IEC 60092-series (for Marine use) and meet the requirements of all Classification Societies members of IACS:

GL Group	Germanischer Lloyd
Bureau Veritas	Bureau Veritas
DNV	Det Norske Veritas
Lloyd's Register	Lloyd's Register
ABS	American Bureau of Shipping
RINA	Registro Italiano Navale
	China Classification Society
KR KOREAN REGISTER	Korean Register of Shipping
ClassNK	Nippon Kaiji Kyokai
	Russian Maritime Register of Shipping

Table 2.03 - Cerfitication societies for WEG flameproof motors for marine applications

2.2.2. Certificates of Equipment

Example of identification

- IECEx: IECEx INE 10.0005X
- ATEX: INERIS10ATEX0011X

Example of certificates

Figure 2.04 - Examples of certificates

2.2.3. Marking of Equipment

The marking of equipment must follow ATEX Directives and EN / IEC standards.

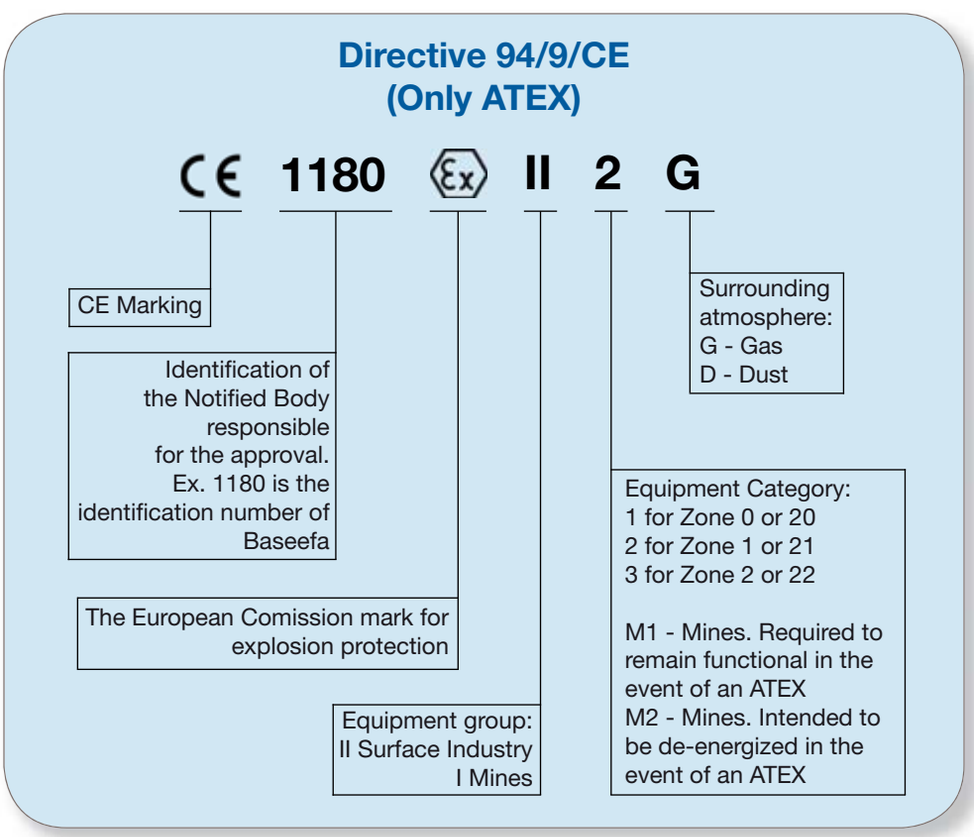


Figure 2.05 - ATEX marking

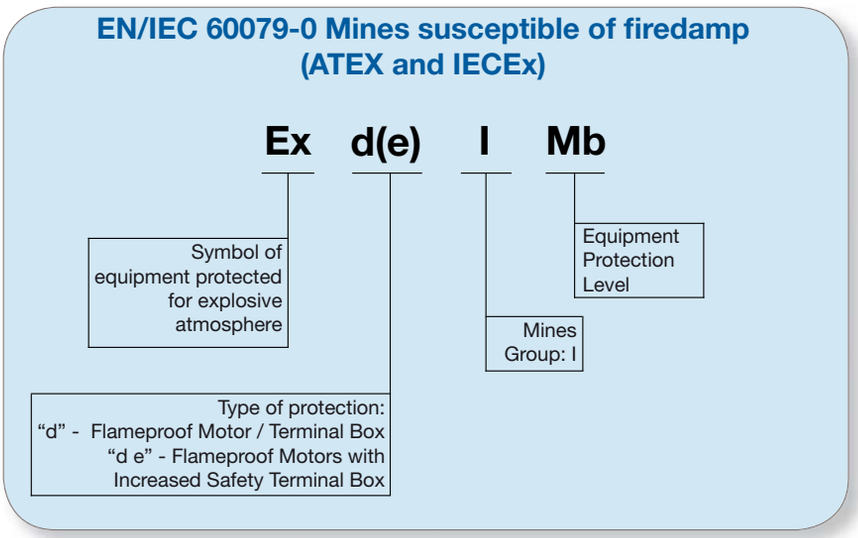


Figure 2.06 - ATEX / IECEx marking for mines susceptible of firedamp

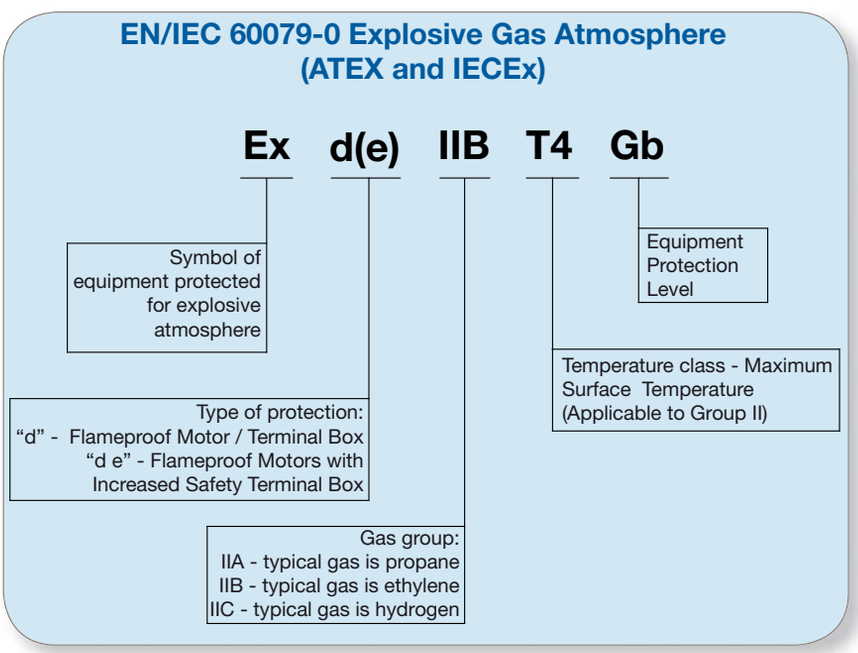


Figure 2.07 - ATEX / IECEx marking for explosive gas atmosphere

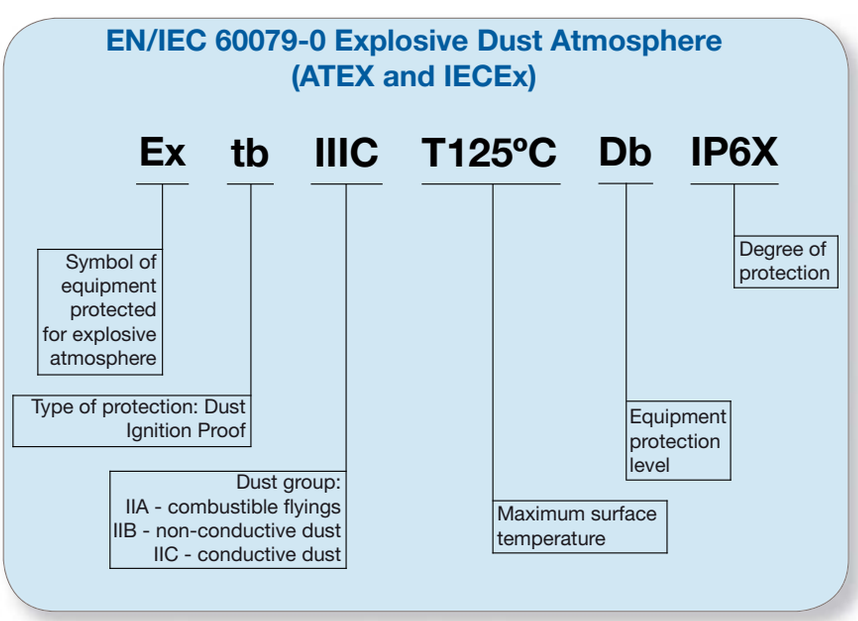


Figure 2.08 - ATEX / IECEx marking for explosive dust atmosphere

2.2.4. Certification Nameplates

Certification nameplates used in WEG motors are given below for better understanding of markings:

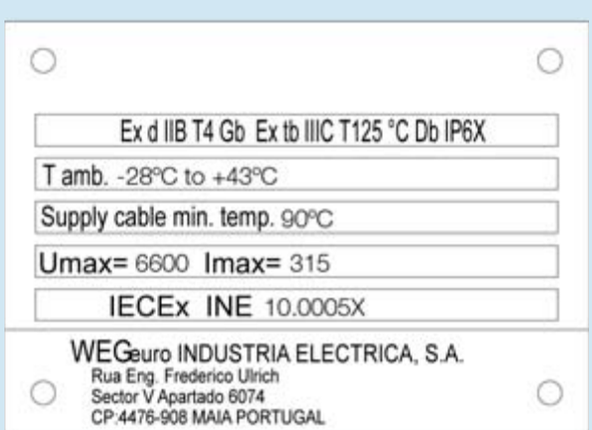
ATEX and IECEx Certifications Nameplates

Motor: Ex d I M2 ATEX

Motor: Ex d e IIB GD ATEX

Motor: Ex d e IIC G ATEX

Motor: Ex d e I IECEx



Motor: Ex d IIB/Ex tb IIIC IECEx

Motor: Ex d IIC IECEx

Figure 2.09 - Examples of certification nameplates

INMETRO Nameplate

UL Nameplate

Figure 2.10 - Examples of nameplates for additional certifications

Rating Nameplate

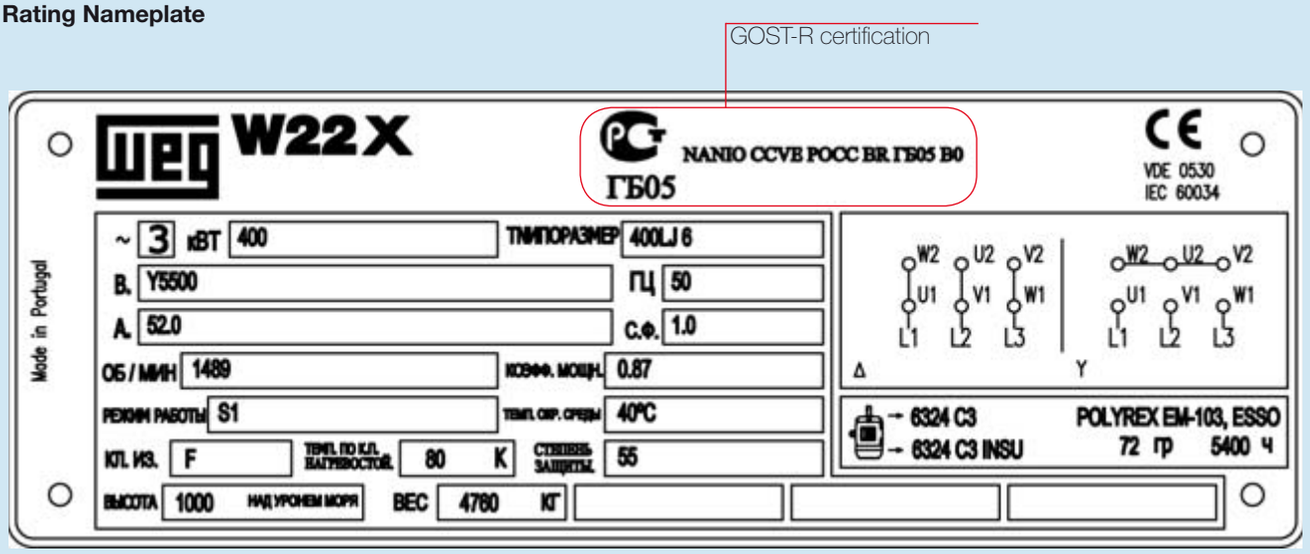


Figure 2.11 - Examples of additional marking on the rating plate

3. General Construction - Mechanical Features

The information included in this section refers to standard construction and the most common optional features for BFGC4 and W22X motors with frame sizes from IEC 250M to 500KH. Motors for special and/or customized applications are available on request. For more information, please contact your WEG branch or representative.

3.1. Enclosure Main Parts

As standard, W22X motors are totally enclosed fan cooled machines (IC411), according to IEC60034-7 in IM B3 mounting form and optionally in flange and vertical arrangements.

3.1.1. Frame

The W22X frames (figure 3.01) are manufactured in cast iron providing high levels of mechanical strength to meet the most demanding applications. The cooling fins are designed to minimize the accumulation of liquids and dust over the motor. The design of frame guarantees an aerodynamic concept to optimize airflow and cooling surface area.

Figure 3.01 - W22X frame

Solid integrated feet with high mechanical stiffness, designed to allow easier alignment and installation (figure 3.02).

Figure 3.02 - Motor feet

BFGC4 frames are provided with one ground terminal on the side of power cable entry.

W22X motors with feet are provided with two ground terminals on the same side of power cable entry.

In motors without feet, one ground terminal is provided on the frame.

3.1.2. Eyebolts

The frames of W22X motors are supplied with two eyebolts and have multiple threaded holes for fastening of the eyebolts, allowing easier handling of the motor, as described on table 3.01 and figures 3.03 and 3.04:

Description
Motors with feet have four threaded holes for fastening the eyebolts according to the figure 3.03.
Motors without feet and with flange have five threaded holes for fastening eyebolts according to the figure 3.04.

Table 3.01 - Eyebolts

Figure 3.03 - Threaded holes for fastening the eyebolts in motors with feet

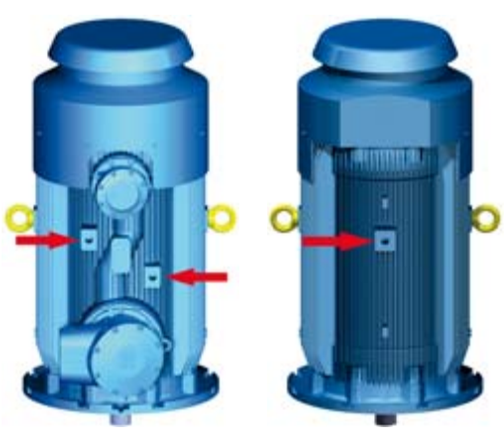


Figure 3.04 -Threaded holes for fastening the eyebolts in motors without feet

3.1.3. Endshields

To ensure low bearing operating temperatures, the drive endshield (figure 3.05) is designed with fins for better thermal heating dissipation, resulting in extended lubrication intervals.

Figure 3.05 - Drive end endshield

The non drive end endshield is designed to offer the minimum resistance to the airflow (figure 3.06).

Figure 3.06 - Non drive end endshield

3.1.4. Points for Vibration Monitoring

W22X endshields can be supplied with flat areas for easier placement of vibration probes available in both vertical and horizontal directions with M8 threaded holes as standard.
Other threaded hole sizes can be supplied.

Vibration probes can be supplied together with the motor, under request.

Figure 3.07 - Vibration monitoring directions

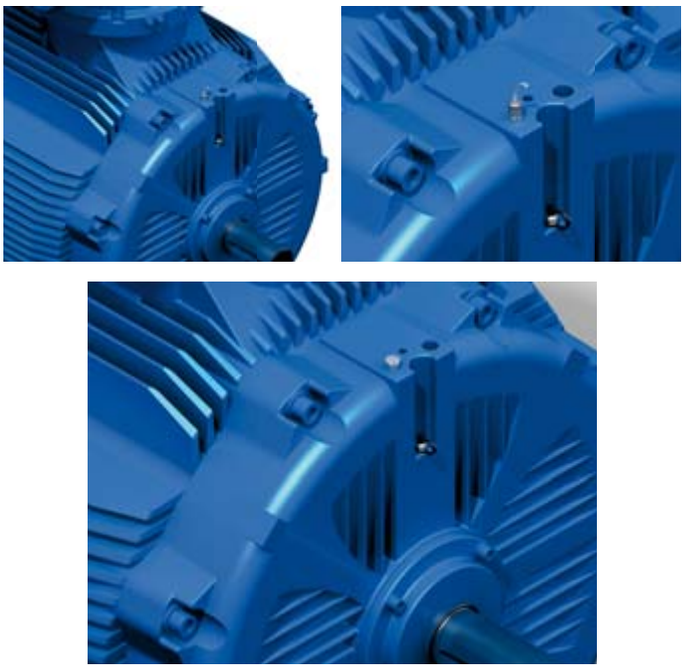


Figure 3.08 - Example of mounted vibration probes

3.1.5. Drain plugs

Motors can be fitted with certified drain plugs in the lowest part of the frame (figure 3.09) for drainage of water that may condense inside of the motor.
It is mandatory not to remove or move the drain plugs.

Figure 3.09 - Drain plugs location on frame

The terminal boxes can also be provided with the same certified plugs.

Figure 3.10 - Drain plug on terminal box

3.1.6. Fan Cover

The fan cover, made of fabricated steel, with an aerodynamic design, allowing a significant reduction in noise level, optimizing airflow throught frame fins for heat exchange improvement and also energy saving.

Figure 3.11 - Fan cover

3.2. Shaft and Bearings

3.2.1. Shaft

The standard shaft material is AISI 1045 for BFGC4 range and AISI 4140 for W22X range. All motors have shaft with tapped center hole according to DIN 332 to make easier the maintenance and load coupling services.
The shaft dimensions are in accordance with IEC 60072 (where applicable) and can be found in the Mechanical Data section of this catalogue.

Motors with standard shaft dimensions are supplied with type “C” key as per DIN 6885. WEG can also supply, under request, motors with special shaft dimensions meeting customer requirements.
A second shaft end extension or other shaft materials can also be supplied on request.
The second shaft extension dimensions are shown in the Mechanical Data section.

3.2.2. Bearings

Horizontal motors are supplied, as standard, with anti-friction ball/roller bearings, with C3 clearance.
Optionally, executions with roller bearings on both sides for higher radial external thrusts can be supplied.
All grease lubricated bearings of the W22X motor line are fitted with an efficient grease system that ensures lower bearing temperature and longer lubrication intervals during motor operation.

Motors for vertical mounting are supplied with anti-friction ball bearings on drive-end and non drive-end sides in frames up to 355ML. As optional, angular contact ball bearing can be provided for higher axial thrusts. For frames 355AB up to 500KH, an angular contact ball bearing is supplied on the drive-end side.

Motors with grease lubricated bearings have a standard lifetime L10h of 40.000 hours. Different bearing lifetimes can be evaluated on request.

3.2.2.1. Lubrication Intervals

The bearing lifetime depends on its type and size, the axial and radial thrusts applied to it, the environment/working conditions (temperature, cleanliness, vibrations ...), the speed and the grease type. So, its lifetime is highly linked to its correct application, maintenance and lubrication. By respecting grease quantity and lubrication intervals, the designed bearing lifetime can be achieved. W22X and BFGC4 motors are fitted with grease nipples in the endshields for bearing lubrication. The grease quantity and lubrication intervals are specified on the nameplate and are shown on the tables 3.03, 3.04 and 3.05.
It is important to emphasize that lubrication in excess might also result in an additional increase of the bearing temperature.

Table 3.02 shows the recommended greases and their main lubricating characteristics.

Application	Standard grease	Compatible grease	Compatible grease	Standard for ambient temperatures below -20ºC
Grease	Mobil Polyrex EM-103	Shell Albida RL2	Kluberplex BEM 41-132	Shell Aeroshell 7
Oil Based	Mineral	Mineral	Synthetic hydrocarbon	Synthetic
Thickener	Polyrea	Lithium complex	Lithium complex	Microgel
NLGI grade	3	2	2	3
Viscosity (40ºC)	115 mm2/s	100mm2/s	120mm2/s	--
Viscosity (100ºC)	12,2 mm2/s	11,5mm2/s	14mm2/s	3.1 mm2/s
Operation Temperature	-30ºC to 170ºC	-20ºC to 150ºC	-40ºC to 150ºC	-73ºC to 149ºC
Dropping point	270ºC	260ºC	250ºC	260ºC
Penetration Capacity (ASTM D217)	250	265-295	265-295	296

Table 3.02 - Recommended grease data

Important notes:

- Operation in abnormal conditions, such as: ambient temperature, altitude, axial or radial loads above those indicated in the table below will result in specific lubrication intervals, different from those listed here. In these cases, please contact WEG.
- The use of non approved greases invalidates the warranty.
- The following tables show reference values. For accurate values please refer to the motor nameplate.
- For 2 pole motors with roller bearings, please refer to us.

HORIZONTAL MOTORS - STANDARD						50Hz			60Hz		
Range	Frame	Poles	Bearings		Quant. (g)	Lubrication Interval [h]			Lubrication Interval [h]		
						-20ºC < +40ºC	-20ºC < +55ºC	-55ºC < +40ºC	-20ºC < +40ºC	-20ºC < +55ºC	-55ºC < +40ºC
						Polyrex EM 103	Polyrex EM 103	Shell Aeroshell 7	Polyrex EM 103	Polyrex EM 103	Shell Aeroshell 7
BFGC4	250M	2P	DE/NDE	6314 C3	26	4200	2100	N/A	2900	1450	N/A
		4P	DE/NDE	6314 C3	26	10500	5250	N/A	8700	4350	N/A
		6P	DE/NDE	6314 C3	26	14300	7150	N/A	12600	6300	N/A
		8P+	DE/NDE	6314 C3	26	16600	8300	N/A	13200	6600	N/A
	280S 280M	2P	DE/NDE	6314 C3	26	4200	2100	N/A	2900	1450	N/A
		4P	DE	6316 C3	33	9200	4600	N/A	7500	3750	N/A
			NDE	6314 C3	26	10500	5250	N/A	8700	4350	N/A
		6P	DE	6316 C3	33	13100	6550	N/A	11400	5700	N/A
			NDE	6314 C3	26	14300	7150	N/A	12600	6300	N/A
		8P+	DE	6316 C3	33	15600	7800	N/A	12000	6000	N/A
			NDE	6314 C3	26	16600	8300	N/A	13200	6600	N/A
	315S 315M	2P	DE/NDE	6314 C3	26	4200	2100	N/A	2900	1450	N/A
		4P	DE	6317 C3	37	8700	4350	N/A	7000	3500	N/A
			NDE	6314 C3	26	10500	5250	N/A	8700	4350	N/A
		6P	DE	6317 C3	37	12600	6300	N/A	10800	5400	N/A
			NDE	6314 C3	26	14300	7150	N/A	12600	6300	N/A
		8P+	DE	6317 C3	37	15100	7550	N/A	11500	5750	N/A
			NDE	6314 C3	26	16600	8300	N/A	13200	6600	N/A
W22X	315L	2P	DE/NDE	6314 C3	26	4200	2100	2100	2900	1450	1450
		4P	DE	6319 C3	45	7700	3850	3850	6000	3000	3000
			NDE	6316 C3	33	9200	4600	4600	7500	3750	3750
		6P	DE	6319 C3	45	11600	5800	5800	9800	4900	4900
			NDE	6316 C3	33	13100	6550	6550	11400	5700	5700
		8P+	DE	6319 C3	45	14200	7100	7100	10400	5200	5200
			NDE	6316 C3	33	15600	7800	7800	12000	6000	6000
	355ML	2P	DE/NDE	6316 C3	33	3300	1650	1650	2100	1050	1050
		4P	DE	6322 C3	60	6000	3000	3000	4500	2250	2250
			NDE	6319 C3	45	7700	3850	3850	6000	3000	3000
		6P	DE	6322 C3	60	9900	4950	4950	8200	4100	4100
			NDE	6319 C3	45	11600	5800	5800	9800	4900	4900
		8P+	DE	6322 C3	60	12700	6350	6350	8800	4400	4400
			NDE	6319 C3	45	14200	7100	7100	10400	5200	5200
	355AB	2P	DE/NDE	6316 C3	33	3300	1650	1650	2100	1050	1050
		4P	DE	6322 C3	60	6000	3000	3000	4500	2250	2250
			NDE	6319 C3	45	7700	3850	3850	6000	3000	3000
		6P	DE	6322 C3	60	9900	4950	4950	8200	4100	4100
			NDE	6319 C3	45	11600	5800	5800	9800	4900	4900
		8P+	DE	6322 C3	60	12700	6350	6350	8800	4400	4400
			NDE	6319 C3	45	14200	7100	7100	10400	5200	5200
	400LJ	2P	DE/NDE	6318 C3	41	2500	1250	1250	1600	1000	1000
		4P	DE/NDE	6324 C3	72	5400	2700	2700	3900	1950	1950
		6P	DE/NDE	6324 C3	72	9100	4550	4550	7400	3700	3700
		8P+	DE/NDE	6324 C3	72	11900	5950	5950	8000	4000	4000
	400G	2P	DE/NDE	6318 C3	41	2500	1250	1250	1600	1000	1000
		4P	DE/NDE	6324 C3	72	5400	2700	2700	3900	1950	1950
		6P	DE/NDE	6324 C3	72	9100	4550	4550	7400	3700	3700
		8P+	DE/NDE	6324 C3	72	11900	5950	5950	8000	4000	4000
	450KH	2P	DE	6318 C3	41	2500	1250	1250	1600	1000	1000
			NDE	NU218 C3	24	1200	1000	1000	1000	1000	1000
		4P	DE/NDE	6326 C3	81	4700	2350	2350	3400	1700	1700
		6P	DE/NDE	6326 C3	81	8400	4200	4200	6700	3350	3350
		8P+	DE/NDE	6326 C3	81	11200	5600	5600	7300	3650	3650
	500KH	2P	DE	NU220 C3 + 6020 C3	31+18	1000	1000	1000	-	-	-
			NDE	NU220 C3	31	1000	1000	1000	-	-	-
		4P	DE/NDE	6328 C3	93	4200	2100	2100	2900	1450	1450
		6P	DE/NDE	6328 C3	93	7700	3850	3850	6000	3000	3000
		8P+	DE/NDE	6328 C3	93	10500	5250	5250	6600	3300	3300

Table 3.03 - Lubrication intervals and grease quantity for standard horizontal motors.

As an option, horizontal motors can be equipped with roller bearings. Lubrication values are in the following table.

HORIZONTAL MOTORS - OPTIONAL						50Hz			60Hz		
Range	Frame	Poles	Bearings		Quant. (g)	Lubrication Interval [h]			Lubrication Interval [h]		
						-20ºC < +40ºC	-20ºC < +55ºC	-55ºC < +40ºC	-20ºC < +40ºC	-20ºC < +55ºC	-55ºC < +40ºC
						Polyrex EM 103	Polyrex EM 103	Shell Aeroshell 7	Polyrex EM 103	Polyrex EM 103	Shell Aeroshell 7
BFGC4	250M	4P	DE	NU314 C3	26	6600	3300	-	5000	2500	-
			NDE	6314 C3	26	10500	5250	-	8700	4350	-
		6P	DE	NU314 C3	26	10500	5250	-	8700	4350	-
			NDE	6314 C3	26	14300	7150	-	12600	6300	-
		8P+	DE	NU314 C3	26	13200	6600	-	11500	5750	-
			NDE	6314 C3	26	16600	8300	-	13200	6600	-
	280S 280M	4P	DE	NU316 C3	33	5500	2750	-	4000	2000	-
			NDE	6314 C3	26	10500	5250	-	8700	4350	-
		6P	DE	NU316 C3	33	9200	4600	-	7500	3750	-
			NDE	6314 C3	26	14300	7150	-	12600	6300	-
		8P+	DE	NU316 C3	33	12000	6000	-	10300	5150	-
			NDE	6314 C3	26	16600	8300	-	13200	6600	-
	315S 315M	4P	DE	NU317 C3	37	5000	2500	-	3600	1800	-
			NDE	6314 C3	26	10500	5250	-	8700	4350	-
		6P	DE	NU317 C3	37	8700	4350	-	7000	3500	-
			NDE	6314 C3	26	14300	7150	-	12600	6300	-
		8P+	DE	NU317 C3	37	11500	5750	-	9700	4850	-
			NDE	6314 C3	26	16600	8300	-	13200	6600	-
W22X	315L	4P	DE	NU319 C3	45	4100	2050	2050	2900	1450	1450
			NDE	6316 C3	33	9200	4600	4600	7500	3750	3750
		6P	DE	NU319 C3	45	7700	3850	3850	6000	3000	3000
			NDE	6316 C3	33	13100	6550	6550	11400	5700	5700
		8P+	DE	NU319 C3	45	10400	5200	5200	8700	4350	4350
			NDE	6316 C3	33	15600	7800	7800	12000	6000	6000
	355ML	4P	DE	NU322 C3	60	2900	1450	1450	1900	1000	1000
			NDE	6319 C3	45	7700	3850	3850	6000	3000	3000
		6P	DE	NU322 C3	60	6100	3050	3050	4500	2250	2250
			NDE	6319 C3	45	11600	5800	5800	9800	4900	4900
		8P+	DE	NU322 C3	60	8800	4400	4400	7000	3500	3500
			NDE	6319 C3	45	14200	7100	7100	10400	5200	5200
	355AB	4P	DE	NU322 C3	60	2900	1450	1450	1900	1000	1000
			NDE	6319 C3	45	7700	3850	3850	6000	3000	3000
		6P	DE	NU322 C3	60	6100	3050	3050	4500	2250	2250
			NDE	6319 C3	45	11600	5800	5800	9800	4900	4900
		8P+	DE	NU322 C3	60	8800	4400	4400	7000	3500	3500
			NDE	6319 C3	45	14200	7100	7100	10400	5200	5200
	400LJ	4P	DE	NU324 C3	72	2400	1200	1200	1500	1000	1000
			NDE	6324 C3	72	5400	2700	2700	3900	1950	1950
		6P	DE	NU324 C3	72	5400	2700	2700	3900	1950	1950
			NDE	6324 C3	72	9100	4550	4550	7400	3700	3700
		8P+	DE	NU324 C3	72	8000	4000	4000	6300	3150	3150
			NDE	6324 C3	72	11900	5950	5950	8000	4000	4000
	400G	4P	DE	NU324 C3	72	2400	1200	1200	1500	1000	1000
			NDE	6324 C3	72	5400	2700	2700	3900	1950	1950
		6P	DE	NU324 C3	72	5400	2700	2700	3900	1950	1950
			NDE	6324 C3	72	9100	4550	4550	7400	3700	3700
		8P+	DE	NU324 C3	72	8000	4000	4000	6300	3150	3150
			NDE	6324 C3	72	11900	5950	5950	8000	4000	4000
	450KH	4P	DE	NU326 C3	81	2000	1000	1000	1200	1000	1000
			NDE	6326 C3	81	4700	2350	2350	3400	1700	1700
		6P	DE	NU326 C3	81	4700	2350	2350	3400	1700	1700
			NDE	6326 C3	81	8400	4200	4200	6700	3350	3350
		8P+	DE	NU326 C3	81	7300	3650	3650	5600	2800	2800
			NDE	6326 C3	81	11200	5600	5600	7300	3650	3650
	500KH	4P	DE	NU328 C3	93	1700	1000	1000	1000	1000	1000
			NDE	6328 C3	93	4200	2100	2100	2900	1450	1450
		6P	DE	NU328 C3	93	4200	2100	2100	2900	1450	1450
			NDE	6328 C3	93	7700	3850	3850	6000	3000	3000
		8P+	DE	NU328 C3	93	6600	3300	3300	5000	2500	2500
			NDE	6328 C3	93	10500	5250	5250	6600	3300	3300

Table 3.04 - Lubrication intervals and grease quantity for optional horizontal motors (with roller bearings in DE side).

For vertical motors, the values for relubrification are shown in the following table.

VERTICAL MOTORS						50Hz			60Hz		
Range	Frame	Poles	Bearings		Quant. (g)	Lubrication Interval [h]			Lubrication Interval [h]		
						-20ºC < +40ºC	-20ºC < +55ºC	-55ºC < +40ºC	-20ºC < +40ºC	-20ºC < +55ºC	-55ºC < +40ºC
						Polyrex EM 103	Polyrex EM 103	Shell Aeroshell 7	Polyrex EM 103	Polyrex EM 103	Shell Aeroshell 7
BFGC4	250M	2P	DE	6314 C3	26	2100	1050	-	1450	1000	-
			NDE	6314 C3	26	4200	2100	-	2900	1450	-
		4P	DE	6314 C3	26	5250	2625	-	4350	2175	-
			NDE	6314 C3	26	10500	5250	-	8700	4350	-
		6P	DE	6314 C3	26	7150	3575	-	6300	3150	-
			NDE	6314 C3	26	14300	7150	-	12600	6300	-
		8P+	DE	6314 C3	26	8300	4150	-	6600	3300	-
			NDE	6314 C3	26	16600	8300	-	13200	6600	-
	280S	2P	DE	6314 C3	26	2100	1050	-	1450	1000	-
			NDE	6314 C3	26	4200	2100	-	2900	1450	-
		4P	DE	6316 C3	33	4600	2300	-	3750	1875	-
			NDE	6314 C3	26	10500	5250	-	8700	4350	-
	280M	6P	DE	6316 C3	33	6550	3275	-	5700	2850	-
			NDE	6314 C3	26	14300	7150	-	12600	6300	-
		8P+	DE	6316 C3	33	7800	3900	-	6000	3000	-
			NDE	6314 C3	26	16600	8300	-	13200	6600	-
	315S	2P	DE	6314 C3	26	2100	1050	-	1450	725	-
			NDE	6314 C3	26	4200	2100	-	2900	1450	-
		4P	DE	6317 C3	37	4350	2175	-	3500	1750	-
			NDE	6314 C3	26	10500	5250	-	8700	4350	-
	315M	6P	DE	6317 C3	37	6300	3150	-	5400	2700	-
			NDE	6314 C3	26	14300	7150	-	12600	6300	-
		8P+	DE	6317 C3	37	7550	3775	-	5750	2875	-
			NDE	6314 C3	26	16600	8300	-	13200	6600	-
W22X	315L	2P	DE	6314 C3	26	2100	1050	1050	1450	1000	1000
			NDE	6314 C3	26	4200	2100	2100	2900	1450	1450
		4P	DE	6319 C3	45	3850	1925	1925	3000	1500	1500
			NDE	6316 C3	33	9200	4600	4600	7500	3750	3750
		6P	DE	6319 C3	45	5800	2900	2900	4900	2450	2450
			NDE	6316 C3	33	13100	6550	6550	11400	5700	5700
		8P+	DE	6319 C3	45	7100	3550	3550	5200	2600	2600
			NDE	6316 C3	33	15600	7800	7800	12000	6000	6000
	355ML	2P	DE	6316 C3	33	1650	1000	1000	1050	1000	1000
			NDE	6316 C3	33	3300	1650	1650	2100	1050	1050
		4P	DE	6322 C3	60	3000	1500	1500	2250	1125	1125
			NDE	6319 C3	45	7700	3850	3850	6000	3000	3000
		6P	DE	6322 C3	60	4950	2475	2475	4100	2050	2050
			NDE	6319 C3	45	11600	5800	5800	9800	4900	4900
		8P+	DE	6322 C3	60	6350	3175	3175	4400	2200	2200
			NDE	6319 C3	45	14200	7100	7100	10400	5200	5200
	355AB	2P	DE	6316 C3	33	1650	1000	1000	1050	1000	1000
			NDE	6316 C3	33	3300	1650	1650	2100	1050	1050
		4P	DE	6322 C3	60	3000	1500	1500	2250	1125	1125
			NDE	6319 C3	45	7700	3850	3850	6000	3000	3000
		6P	DE	6322 C3	60	4950	2475	2475	4100	2050	2050
			NDE	6319 C3	45	11600	5800	5800	9800	4900	4900
		8P+	DE	6322 C3	60	6350	3175	3175	4400	2200	2200
			NDE	6319 C3	45	14200	7100	7100	10400	5200	5200
	400LJ	2P	DE	7318 C3	41	1250	1000	1000	1000	1000	1000
			NDE	6318 C3	41	2500	1250	1250	1600	1000	1000
		4P	DE	7324 C3	72	2700	1350	1350	1950	1000	1000
			NDE	6324 C3	72	5400	2700	2700	3900	1950	1950
		6P	DE	7324 C3	72	4550	2275	2275	3700	1850	1850
			NDE	6324 C3	72	9100	4550	4550	7400	3700	3700
		8P+	DE	7324 C3	72	5950	2975	2975	4000	2000	2000
			NDE	6324 C3	72	11900	5950	5950	8000	4000	4000
	400G	2P	DE	7318 C3	41	1250	1000	1000	1000	1000	1000
			NDE	6318 C3	41	2500	1250	1250	1600	1000	1000
		4P	DE	7324 C3	72	2700	1350	1350	1950	1000	1000
			NDE	6324 C3	72	5400	2700	2700	3900	1950	1950
		6P	DE	7324 C3	72	4550	2275	2275	3700	1850	1850
			NDE	6324 C3	72	9100	4550	4550	7400	3700	3700
		8P+	DE	7324 C3	72	5950	2975	2975	4000	2000	2000
			NDE	6324 C3	72	11900	5950	5950	8000	4000	4000
	450KH	4P	DE	7326 C3	81	2350	1175	1175	1700	1000	1000
			NDE	6326 C3	81	4700	2350	2350	3400	1700	1700
		6P	DE	7326 C3	81	4200	2100	2100	3350	1675	1675
			NDE	6326 C3	81	8400	4200	4200	6700	3350	3350
		8P+	DE	7326 C3	81	5600	2800	2800	3650	1825	1825
			NDE	6326 C3	81	11200	5600	5600	7300	3650	3650
	500KH	4P	DE	7328 C3	93	2100	1050	1050	1450	1000	1000
			NDE	6328 C3	93	4200	2100	2100	2900	1450	1450
		6P	DE	7328 C3	93	3850	1925	1925	3000	1500	1500
			NDE	6328 C3	93	7700	3850	3850	6000	3000	3000
		8P+	DE	7328 C3	93	5250	2625	2625	3300	1650	1650
			NDE	6328 C3	93	10500	5250	5250	6600	3300	3300

Table 3.05 - Lubrication intervals and grease quantity for standard vertical motors.

For motors working in ambient temperatures between -20°C and +60°C consider the values above indicated for -20°C up to +55°C multiplied by a factor of 0,8.

3.2.2.2. Permissible Thrusts

The maximum applicable radial and axial loads for the standard configurations are shown in the tables 3.06, 3.07 and 3.08.
The maximum indicated radial load values consider axial load as zero. In the same way, the maximum indicated axial load values consider radial load as zero.
For combined axial and radial loads or higher load values please refer to us, completing the “Pulley/Belt Power Transmission” form on page 194.

Radial Thrusts - Horizontal Mounting

The values of permissible radial thrusts applied in the extreme of the drive end shaft (x=E) and in the middle of drive end shaft (x=E/2), are shown on the tables 3.06 and 3.07 (figure 3.12).

The presented maximum radial thrust values consider:

- Normal operation conditions at 50 Hz;
- Standard shaft material;
- Pulley-belt drive for most common applications (except for heavy impact machines).

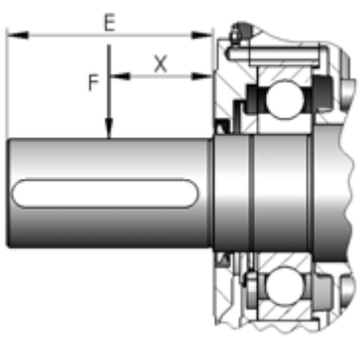


Figure 3.12 - Radial thrust application point in the middle of drive end shaft

Permissible Radial Thrust [kN]						
			Bearings		Application point	
Range	Frame	Poles	D.E.	N.D.E.	x=E	x=E/2
BFGC4	250M	2P	6314	6314	1.6	3.2
		4P	6314	6314	3.1	3.5
		6P	6314	6314	4	4.5
		8P	6314	6314	4.3	4.8
	280S	2P	6314	6314	1.6	3.2
		4P	6316	6314	3.7	4.1
		6P	6316	6314	4.9	5.4
		8P	6316	6314	5.2	5.8
	280M	2P	6314	6314	1.8	3.3
		4P	6316	6314	3.4	3.6
		6P	6316	6314	4.7	5
		8P	6316	6314	5	5.4
	315S	2P	6314	6314	2	3
		4P	6317	6314	3.5	3.8
		6P	6317	6314	4.6	5
		8P	6317	6314	5.2	5.7
BFGC4	315M	2P	6314	6314	1.7	2.9
		4P	6317	6314	3.3	3.6
		6P	6317	6314	4.2	4.6
		8P	6317	6314	4.5	5
W22X	315L	2P	6314	6314	1.4	1.5
		4P	6319	6316	2.9	3.1
		6P	6319	6316	2.6	2.8
		8P	6319	6316	3.4	3.7
	355ML	2P	6316	6316	2.2	2.3
		4P	6322	6319	4.3	4.7
		6P	6322	6319	3.8	4.1
		8P	6322	6319	3.7	4
	355AB	2P	6316	6316	1.8	1.9
		4P	6322	6319	1.9	2
		6P	6322	6319	1.9	2
		8P	6322	6319	2.6	2.8
	400LJ	2P	6318	6318	1	1.2
		4P	6324	6324	1.8	2
		6P	6324	6324	2.4	2.6
		8P	6324	6324	2.7	2.9
	400G	2P	6318	6318	*	*
		4P	6324	6324	*	*
		6P	6324	6324	*	*
		8P	6324	6324	*	*
	450KH	2P	6318	NU218	*	*
		4P	6326	6326	*	*
		6P	6326	6326	*	*
		8P	6326	6326	*	*
	500KH	2P	NU220 + 6020	NU220	*	*
		4P	6328	6328	*	*
		6P	6328	6328	*	*
		8P	6328	6328	*	*

(*) Under request

Table 3.06 - Permissible radial thrust for ball bearings

Permissible Radial Thrust [kN]						
			Bearings		Application point	
Range	Frame	Poles	D.E.	N.D.E.	x=E	x=E/2
BFGC4	250M	2P	NU314	6314	*	*
		4P	NU314	6314	8.6	12
		6P	NU314	6314	9.9	14.1
		8P	NU314	6314	10	15.2

Permissible Radial Thrust [kN]						
			Bearings		Application point	
Range	Frame	Poles	D.E.	N.D.E.	x=E	x=E/2
BFGC4	280S	2P	NU314	6314	*	*
		4P	NU316	6314	11.4	15.7
		6P	NU316	6314	10.9	16.9
		8P	NU316	6314	11.2	17.4
	280M	2P	NU314	6314	*	*
		4P	NU316	6314	11.4	15.7
		6P	NU316	6314	10.9	16.9
		8P	NU316	6314	11.2	17.4
	315S	2P	NU314	6314	*	*
		4P	NU317	6314	9.8	15.5
		6P	NU317	6314	13.5	20.3
		8P	NU317	6314	11.5	18.2
	315M	2P	NU314	6314	*	*
		4P	NU317	6314	9	14.3
		6P	NU317	6314	11.1	17.7
		8P	NU317	6314	11.7	18.6
W22X	315L	2P	NU314	6314	*	*
		4P	NU319	6316	10	16.4
		6P	NU319	6316	8.4	13.8
		8P	NU319	6316	11.3	19.6
	355ML	2P	NU316	6316	*	*
		4P	NU322	6319	12.4	20.3
		6P	NU322	6319	11.1	18.2
		8P	NU322	6319	9.5	15.6
	355AB	2P	NU316	6316	*	*
		4P	NU322	6319	4.6	7.6
		6P	NU322	6319	3.7	6
		8P	NU322	6319	6.9	11.3
	400LJ	2P	*	*	*	*
		4P	NU324	6324	10.5	16.4
		6P	NU324	6324	12.7	19.7
		8P	NU324	6324	14.1	21.9
	400G	2P	*	*	*	*
		4P	NU324	6324	*	*
			NU324+6324	NU324	16	25
		6P	NU324	6324	*	*
			NU324+6324	NU324	17.28	27
		8P	NU324	6324	*	*
			NU324+6324	NU324	18.56	29
	450KH	2P	*	*	*	*
		4P	NU326	6326	*	*
			NU326+6326	NU326	19.2	30
		6P	NU326	6326	*	*
			NU326+6326	NU326	22.4	35
		8P	NU326	6326	*	*
			NU326+6326	NU326	24.32	38

Permissible Radial Thrust [kN]						
			Bearings		Application point	
Range	Frame	Poles	D.E.	N.D.E.	x=E	x=E/2
W22X	500KH	2P	*	*	*	*
		4P	NU328	6328	*	*
			NU328+6328	NU328	12.8	20
		6P	NU328	6328	*	*
			NU328+6328	NU328	15.36	24
		8P	NU328	6328	*	*
			NU328+6328	NU328	16.64	26

(*) Under request

Table 3.07 - Permissible radial thrust for roller bearings

Axial Thrusts - Vertical Mounting

The values of permissible axial thrusts applied in the drive end shaft are shown on the table 3.08.

The presented maximum axial thrust values consider:

- Normal operation conditions at 50 Hz;
- Standard shaft material;
- Non impact applications.

Permissible Axial Thrust [kN]					
Range	Frame	Poles	Bearings	Thrust direction	
				Descendent	Ascendent
BFGC4	250M	2P	6314	2.1	3.5
		4P	6314	2.6	4.4
		6P	6314	3.4	5.1
		8P	6314	3.8	5.7
	280S	2P	6314	2.0	3.6
		4P	6316	2.9	5.0
		6P	6316	3.9	6.0
		8P	6316	4.4	6.7
	280M	2P	6314	1.8	3.7
		4P	6316	2.4	5.2
		6P	6316	3.5	6.0
		8P	6316	3.9	6.7
	315S	2P	6314	1.4	4.1
		4P	6317	2.4	5.7
		6P	6317	3.2	6.9
		8P	6317	3.9	7.6
	315M	2P	6314	1.2	4.2
		4P	6317	2.1	5.8
		6P	6317	2.5	7.3
		8P	6317	3.2	7.6

Permissible Axial Thrust [kN]					
Range	Frame	Poles	Bearings	Thrust direction	
				Descendent	Ascendent
W22X	315L	2P	6314	0.5	6.3
			7314	4.4	2.4
		4P	6319	0.5	9.4
			7319	9.3	1.9
		6P	6319	0.5	11.7
			7319	9.7	2.3
		8P	6319	0.7	12.5
			7319	11.2	2.5
W22X	355ML	2P	6316	1.2	8.1
			7316	4.9	4.1
		4P	6322	1.2	11.3
			7322	13.8	2.4
		6P	6322	0.5	13.7
			7322	14.4	2.6
		8P	6322	1.4	13.6
			7322	14.5	3.1
	355AB	2P	7316	4.1	3.3
		4P	7322	10.6	2.5
		6P	7322	11.8	2.6
		8P	7322	13.1	4.2
	400LJ	2P	7318	2.2	6.0
		4P	7324	9.1	5.3
		6P	7324	11.3	6.3
		8P	7324	12.1	7.4
	400G	2P	7318	1.5	10.0
		4P	7324	4.3	9.4
		6P	7324	5.4	11.8
		8P	7324	4.0	14.5
	450KH	4P	7326	7.0	10.6
		6P	7326	6.3	14.5
		8P	7326	3.0	24.8
	500KH	4P	7328	2.0	21.7
		6P	7328	2.0	25.6
		8P	7328	2.0	26.5

Table 3.08 - Permissible axial thrust

3.2.2.3. Bearing Monitoring

Temperature monitoring of the bearings is extremely important to detect unexpected events in order to take the necessary actions to avoid the reduction of motor bearings lifetime.
Medium voltage motors, as standard, are fitted with Pt100 temperature detectors (one per each bearing cap).
Other types of temperature detectors can be provided, on request.

3.2.3. Sleeve Bearings

Sleeve bearing configuration is available only for W22X motors, classified as equipment for gases of Group IIB and I M2 with horizontal mounting form on both drive and non drive-end.

The sleeve bearing at the drive end is the guide bearing, which determines the axial position of the shaft. This means that the thrust faces on the drive end bearing shell is not suitable to withstand continous external axial forces. All axial loads must be carried by the driven machine.
Shaft thermal expansion will be towards the non-drive end, where an axially free bearing is provided.

If there are external radial forces, please refer to us.

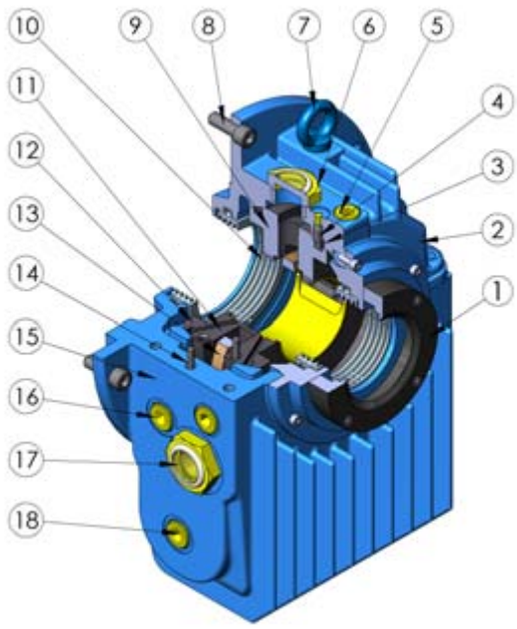


Figure 3.13 -Sleeve Bearings

1 - Shaft seal (IP protection degree)
2 - Upper half of the housing
3 - Hole for positioning pin
4 - Pin for positioning shell
5 - Oil filling hole
6 - Upper sight glass
7 - Eye bolt
8 - Screw
9 - Upper half of the shell
10 - Labyrinth seal
11 - Lower half of the shell
12 - Spherical seating
13 - Loose oil ring
14 - Positioning Pin
15 - Lower half of the housing
16 - Tapped hole for journal bearing temperature measurement
17 - Oil sight glass
18 - Tapped hole for oil temperature measurement

In the standard motor design the rotor is not self-aligned and it has a maximum axial play of ±3mm from the mechanical center. The mechanical center is the midpoint between the rotor end floats limits.
The rotor axial center position shall be assured by the driven machine. This must be taken into consideration during the assembly of the motor together with driven machine (figure 3.14).

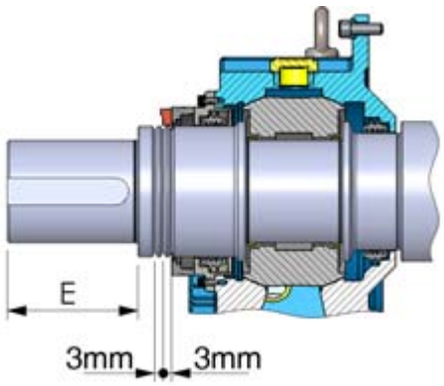


Figure 3.14 - Axial end float

Shaft seals protect the sleeve bearings against the ingress of dust and water spray. W22X motors with sleeve bearings can be supplied to suit different degree of protection requirements, according to the hazardous areas classification.

Hazardous Areas	IP Protection Degree	
Ex d(e) IIB T4 Gb	Standard	IP 55
	Optional	IP 56/65/66
Ex d(e) IIB T4 Gb Ex tb IIIC T125ºC Db	Standard	IP 65
	Optional	IP 66
Ex d(e) I M2	Standard	IP 66

Table 3.09 - Protection Degrees

Motors fitted with sleeve bearings can be supplied with the following optional features:

Optional features
- Vibration probes
- Transducers for the measurement of relative shaft displacement
- Keyphasor
- SPM
- Insulated Sleeve bearings without ground strap for non drive end
- Insulated Sleeve bearings with ground strap for both drive ends

Table 3.10 - Sleeve bearings optional features

Lubrication

Sleeve bearings require less maintenance, longer lubrication intervals and ensure longer bearing lifetime by respecting the recommended lubrication intervals. Mineral oils are used as standard for sleeve bearings of W22X motors. The oil viscosity value is defined in ISO 3448 or SSU.
Depending on the bearing load in service, bearings with loose ring oilers (self lubrication) or with force-feed lubrication are used. Subsequent conversion from self to forced lubrication is used.
Table 3.09 shows the available sleeve bearings as well as gives information about the type and amount of oil to be used and the recommended lubrication intervals.

Poles	Frame Size	Lubrication Method	Sleeve Bearing	Lubricant	Lubricant Specification	Lubrication interval (hours)	Oil Quantity (liters)	Viscosity Range	
								ISO 40ºC	SSU 100ºF
2	315L	Self-Lubrication (1)	9-80	MOBIL DTE 24	Mineral Oil ISO VG32	8000	2.8	28.8 - 35.2 [cSt]	137 - 164 [s]
	355ML								
	355AB								
	400LJ								
	400G								
	450KH								
4	315L		11-110	MOBIL DTE 25	Mineral Oil ISO VG46		4.7	41.4 - 50.6 [cSt]	193 - 235 [s]
	355ML								
	355AB								
	400LJ								
	400G								
	450KH		11-125						
	500KH								

(1) Possibility for forced lubrication, please refer to us

Table 3.11 - Sleeve bearings lubrication data

3.3. Degree of Protection

As per IEC 60034-5 Standard, the degree of protection of a rotating electrical machine consists of the letters IP (ingress protection), followed by two characteristic numerals, with the following meaning:

- First characteristic numeral: indicates the degree of protection provided by the enclosure to persons and to the parts of the machine inside the enclosure.

  5 – Dust protected machine.
  Protected against contacts with or approach to live or moving parts inside the enclosure. Ingress of dust is not totally prevented but dust does not enter in sufficient quantity to interfere with satisfactory operation of the machine.
  6 – Dust-tight machines.
  Ingress of dust totally prevented.

- Second characteristic numeral: indicates the degree of protection provided by the enclosure with respect to harmful effects due to ingress of water.

  5 – Machine protected against water jets.
  Water projected by a nozzle against the machine from any direction shall have no harmful effect.
  6 – Machine protected against heavy seas.
  Water from heavy seas or water projected in powerful jets shall not enter the machine in harmful quantities.

BFGC4 and W22X motors can be supplied with different degrees of protection:

- IP55W for a better outdoor protection;
- IP56 for a better protection against water;
- IP65 for a better protection against dust;
- IP66 for better dust and water protection.

3.4. Cooling System - IC and Noise Level

BFGC4 and W22X motors are available, as standard, with cooling method IC411 (cooled by an external fan) in accordance with standard IEC 60034-6. Non-ventilated versions TENV (IC418) or forced ventilation TEFV (IC416) are available on request.

IC411

IC 418

IC 416

Figure 3.15 - Cooling systems

The cooling system (fan, non drive endshield and fan cover) is designed to minimize the noise level and improve thermal efficiency.

Motors sound pressure levels comply with IEC60034-9. Tables 3.12 and 3.13 show sound pressure levels in dB(A) at 1 meter with no load at sinusoidal voltage supply. The indicated values are subject to ±3 dB(A) tolerance.

50 Hz					
Range	Frame	Sound pressure level - dB(A)			
		2 Poles	4 Poles	6 Poles	8 Poles
BFGC4	250	85	74	68	61
	280	83	76	71	61
	315	84	80	69	62
W22X	315L	80	76	70	68
	355	80	77	73	70
	400	80	80	76	74
	450	82	82	78	76
	500	85	85	80	80

Table 3.12 - Sound pressure levels for 50Hz motors

60 Hz					
Range	Frame	Sound pressure level - dB(A)			
		2 Poles	4 Poles	6 Poles	8 Poles
BFGC4	250	90	78	71	65
	280	87	80	75	65
	315	88	84	72	65
W22X	315L	84	81	73	71
	355	84	82	77	75
	400	84	84	80	78
	450	86	86	82	80
	500	NA	89	84	84

NA - Not available

Table 3.13 - Sound pressure levels for 60Hz motors

For load conditions the IEC 60034-9 Standard also indicates the incremental expected increase of power noise level over no load condition.
The incrementals in sound pressure are indicated in the table 3.14.

Incrementals of sound pressure [dB(A)]				
Frame (mm)	2 poles	4 poles	6 poles	8 poles
225 ≤ H ≤ 280	2	3	6	7
315 = H	2	3	5	6
355 ≤ H	2	2	4	5

Table 3.14 - Maximum expected increase of sound pressure level for load motors

Note:

The global noise level can be reduced up to 2 dB (A) with the installation of a drip cover.

3.5. Vibration Level

Vibration of an electrical machine is closely related to its assembly on the application and, thus, it is generally desirable to perform vibration measurements under installation and operational conditions. Nevertheless, to allow evaluation of the vibration generated by the electrical machine itself in a way to allow reproducibility of the tests and the obtaining of comparative measurements, it is necessary to perform such measurements with the machine uncoupled, under controlled test conditions. The test conditions and vibration limits described here are those found in IEC 60034-14.

The severity of vibration is the maximum value of vibration found among all the recommended measurement points and directions.

The table below indicates the recommended admissible values of vibration severity under IEC standard 60034-14 for the frames IEC 56 and higher, for degrees of vibration A and B.

All rotors are dynamically balanced with half key. The motor vibration levels, as standard, meets Grade A as per IEC 60034-14. As an option, motors can be supplied in conformance with vibration level of Grade B. The maximum RMS speed and vibration levels in mm/s for Grades A and B are shown in table 3.15.

Vibration	Frame	56 ≤ H ≤ 132	132 < H ≤ 280	H > 280
	Condition	Vibration speed RMS (mm/s)		
Grade A	*Free suspension*	*1.6*	*2.2*	*2.8*
	Rigid Mounting	*1.3*	*1.8*	*2.3*
Grade B	*Free suspension*	*0.7*	*1.1*	*1.8*
	Rigid Mounting	*-*	*0.9*	*1.5*

Table 3.15 - Vibration levels

3.6. Impact Resistance

The W22X motor line withstands mechanical impacts of 20 J (IK10) which is the maximum protection level as per IEC 62262 - "Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)", ensuring superior mechanical strength for the most demanding applications namely for group I (mining).

The line BFGC4, only for group II (surface industries), complies with a mechanical impact of 7 J (IK08).

3.7. Painting

BFGC4 and W22X motors, as standard, are painted according to 212P painting plan (WEG code). This painting plan withstands as a minimum 12000 (twelve thousand) hours salt spray test according to ISO 9227:2006 and can be exposed to indoor and outdoor harsh marine and industrial environments containing high humidity.

This painting plan is also suitable for pulp and paper, mining, and petrochemical industries.

As an option, the following painting plans can be supplied (WEG codes): 202E, 202P, 211E, 211P, 212E and 213E (table 3.16).

The surface preparation is always grade Sa 2 ½ according to the standard ISO 12944-4.

Painting plans description and recommended use:

Painting Plan Number	Recommended use	Minimum resistance to the salt spray test in accordance with ISO 9227
202E	*For aggressive environments on sheltered industrial facilities. Resistant to SO_2 presence, solvents, vapours and to high relative humidity.*	*300 hours*
202P	*For aggressive environments on sheltered or non sheltered industrial facilities. Resistant to SO_2 presence, solvents, vapours and to high relative humidity.*	*300 hours*
211E	*For aggressive environments on sheltered industrial facilities. Resistant to SO_2 presence, vapours and solids contamination, high relative humidity and alkalis and solvents splashes.*	*10000 hours*
211P	*For aggressive environments on sheltered or non-sheltered industrial facilities. Resistant to SO_2 presence, vapours and solids contamination, high relative humidity and alkalis and solvents splashes.*	*10000 hours*
212E	*Suitable to indoor harsh marine or industrial marine environments, containing high humidity and alkalis and solvents splashes.*	*3000 hours*
212P	*For marine aggressive environments or industrial marine facilities, sheltered or non-sheltered. Resistant to high humidity.*	*12000 hours*
213E	*Suitable to indoor or outdoor harsh marine or industrial marine environments, containing high humidity.*	*10000 hours*

Table 3.16 - Painting Plans

3.8. Mounting Arrangements - IM

Motors are supplied, as standard, in the B3T configuration, with the terminal box on top with cable entry to the left hand side when viewed from shaft end.

Figure 3.16 - B3T mounting

The mounting arrangements for the W22X line comply with IEC 60034-7. Standard mounting arrangements and their variations are shown in table 3.17.

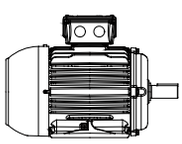
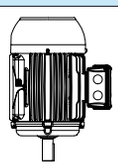
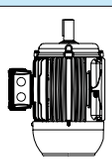
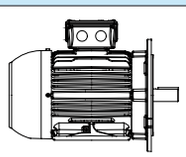
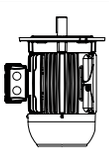
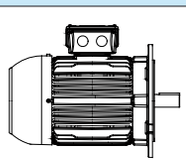
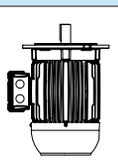
Mounting Arrangements		
IM B3	IM V5	IM V6
IM 1001	IM 1011	IM 1031
		
IM B35	IM V15	IM V36
IM 2001	IM 2011	IM 2031
		
IM B5	IM V1	IM V3
IM 3001	IM 3011	IM 3031
		

Table 3.17 - Mounting arrangements

After the mounting arrangement code, a characteristic letter is used to define the terminal box position. For example, the mounting code IM B3 can be seen in WEG documents as detailed below (without IM code):

- B3L – terminal box on left hand side viewed from drive end side
- B3T – terminal box on top of the motor frame
- B3R – terminal box on right hand side viewed from drive end side

Special mounting arrangement are available under request, for example, IM2202, motor with feet and flange in both ends (figure 3.17).

Figure 3.17 - Motor IM2202

For motors mounted vertically shaft down the drip cover is standard, and optional for other mounting arrangements.

Figure 3.18 - Motor with drip cover

3.9. Terminal Boxes Arrangements

Power Terminal Boxes

W22X range has multiple solutions of cast iron power terminal boxes for a wide voltage and current ranges equipped with internal and external earth connection terminals and certified fault level capacity (as optional).

CEFGH340 (figure 3.19) power terminal box, standard for gas group IIC, can be equipped with auxiliary terminals (in low voltage motors), bonding jumpers, and multiple cable entries. Also available for neutral point (star point) version.

Figure 3.19 - CEFGH340 - Standard power terminal box for gas group IIC

WTBX M (figure 3.20) power terminal box, standard for gas group IIB and group I (mines), is diagonally split for easier access to terminal leads and connections.
Optionally, WTBX M, can be equipped with certified drain plugs, gland plates, auxiliary terminals (for low voltage motors), bonding jumpers, and multiple cable entries.
Also available for neutral point (star point) version.

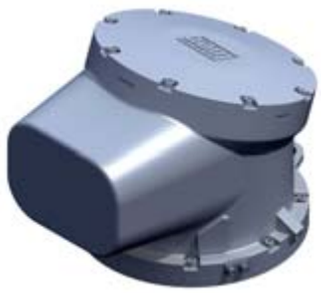


Figure 3.20 - WTBX M - Standard power terminal box for gas group IIB and group I

Available as optional for medium voltage, a Phase Segregated Power Terminal Box (Figure 3.21) with a degree of protection IP67 and high fault rate level (44 kA for 0.25 s) can be supplied.

Figure 3.21 - Motor with Phase Segregated Terminal Box

For additional protection, surge arrestors, surge capacitors and current transformers are also available for W22X motors.
Complete technical data of power, protection and auxiliaries terminal boxes are shown in paragraph 8.

Auxiliary Terminal Boxes

In medium and high voltage motors an auxiliary terminal box is standard for connection of thermal protections and heaters. A separate terminal box for heaters is available as optional for all W22X motors (figure 3.22).

Figure 3.22 - Motor with separate terminal box for heaters

Under request, a third auxiliary terminal box can be provided with the motor. Also as individual terminal boxes for bearings PT-100 (or other thermal probes). Complete technical data of auxiliaries terminal boxes available in paragraph 8.

Motors are supplied with threaded plugs in the cable entries to maintain the degree of protection during transport and storage.
In order to guarantee the degree of protection, cable entries must comply with at least the same degree of protection indicated on the motor nameplate. Lack of compliance with such detail can invalidate motor warranty. If required, please contact WEG Service Department for further advice.

Versatility

W22X range has a complete solution of adaptors for multiple position and combinations of power, neutral, protections and auxiliary terminal boxes, to meet all needs and demands.
The flexibility of terminal box positions on the W22X motor offered by two different adaptors can be seen in figure 3.23 and 3.24.
Side mounted terminal box can be positioned on the opposite side simply by rotating the adaptor.

Some examples of terminal boxes arrangements for W22X range are shown in figures 3.23 and 3.24.

Figure 3.23 - Optional terminal boxes arrangements

Figure 3.24 - Optional terminal boxes arrangements

3.10. Nameplates and Additional Plates

The main nameplate supplies information determining motor construction and performance characteristics (see figure 3.25).

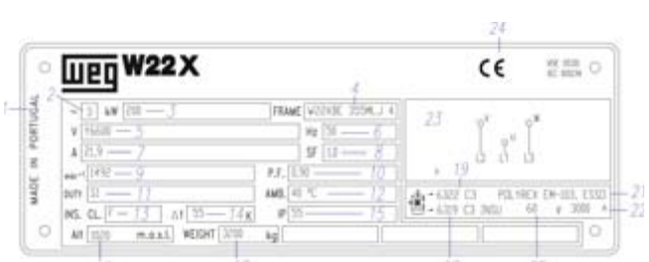


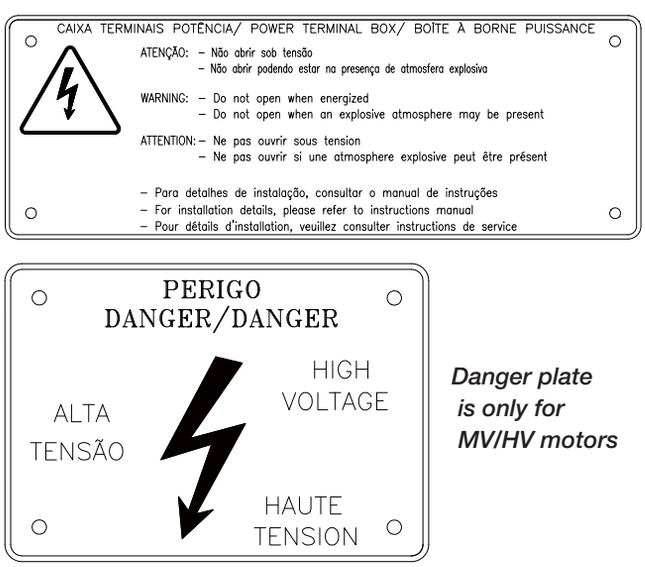
Figure 3.25 - Main nameplate

1 - Manufacturing country
2 - Three phase
3 - Motor rated power
4 - Frame size

5 - Rated operating voltage
6 - Frequency
7 - Rated operating current
8 - Service factor
9 - Full load speed (RPM)
10 - Power factor
11 - Service duty
12 - Ambient temperature
13 - Insulation class
14 - Temperature rise
15 - Degree of protection
16 - Altitude
17 - Motor weight
18 - Non-drive end bearing specification
19 - Drive end bearing specification
20 - Amount of grease
21 - Type of grease for bearings
22 - Lubrication intervals in hours
23 - Connection diagram
24 - Certification labels

Besides the main nameplate, motors are equipped, as standard, with other plates as follows:

- Main terminal box indicative plate.



Danger plate is only for MV/HV motors

Figure 3.26 - Main terminal box plates

- Direction of rotation nameplate - located on fan cover.

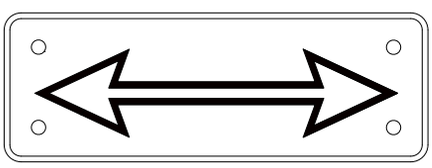


Figure 3.27 - Direction of rotation plate (Bidirectional)

- Indicative plate of cable entry holes.

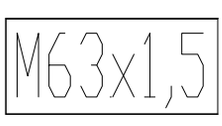


Figure 3.28 - Indicative plate of cable entry holes

- Thermal protections indicative plate.

The indicative plate for thermal protections is different for low and medium / high voltage.
Low voltage thermal protection plate is shown in figure 3.29 and medium / high voltage thermal protection plate is shown in figure 3.30.

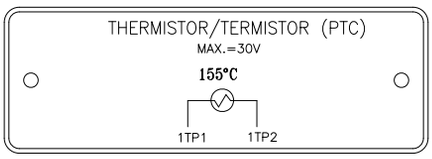


Figure 3.29 - LV thermal protection indicative plate

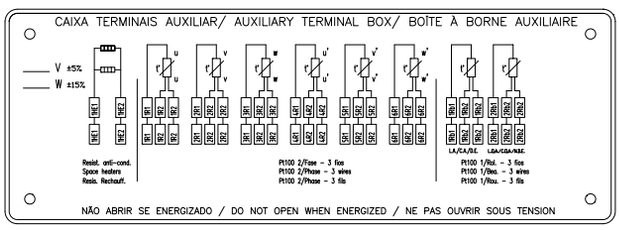


Figure 3.30 - MV / HV thermal protection indicative plate

Some optional features require special indicative plates such as:

- Neutral terminal box indicative plate (when this optional is requested)
- 2nd auxiliary terminal box indicative plate (when this optional is requested)
- VSD plate (when this optional is requested)
- AOM plate (when this optional is requested)

Other optional plates can be included when required.

4. General Construction - Electrical Features

4.1. Voltage and Frequency

4.1.1. Tolerances

In IEC 60034-1 the combination of voltage and frequency variations are classified as zone A or zone B, as per figure 4.01.

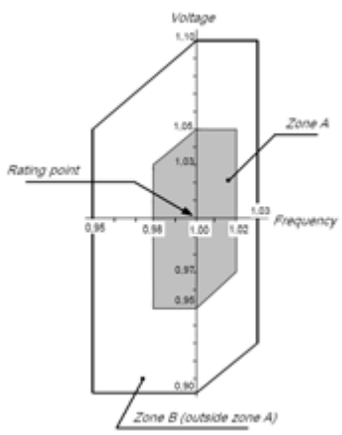


Figure 4.01 - Rated voltage and frequency limits for electrical motors

IEC 60034-1 states that the motor must be suitable to perform its main function (supply torque) continuously at Zone A. However, this motor may not fully meet its performance characteristics due to power supply voltage and frequency variation, which can result in temperature rise above the rated value.
The motor must also be suitable to perform its main function (supply torque) at Zone B. However, the performance characteristic changes will be greater than those operating at Zone A. The temperature rise will also be higher than that of rated voltage and frequency and that operating at Zone A. Prolonged operation near Zone B boundary is not recommended.
WEG flameproof motors are tested in accordance with EN/IEC 60079-0 that imposes a voltage supply of -10% for validation of enclosure surface temperature.

For motors with increased safety terminal box, voltage and tolerances are limited by standard IEC 60079-7. The maximum allowed voltage for Ex e equipment is 10 kV ± 10%.
WEG motors with increased safety terminal boxes for voltages between 6300V and 6600V and for voltage higher than 10000V must be consulted prior to order.

4.1.2. Voltage levels

W22X line standard voltages are indicated in table 4.01:

Voltage Range		
LV	50 Hz	Δ 400V / Y 690V
	60 Hz	Δ 460V
MV	50 Hz	Y 3.0 kV / Y 6.0 kV
	60 Hz	Y 4.16 kV
HV	50 Hz	Y 10.0 kV

Table 4.01 - W22X standard voltages

4.2. Ambient / Insulation

Ambient temperature and altitude

Unless otherwise specified, the rated power outputs shown in the electrical data tables within this catalogue refer to continuous duty operation S1, as per IEC 60034-1 and under the following conditions:

- With ambient temperature range -20°C to +40°C
- With altitudes up to 1000 meters above sea level

For operating temperatures and altitudes differing from those above, the factors indicated in table 4.02 (correction factors for altitude and ambient temperature) must be applied to the nominal motor power rating in order to determine the derated available output (Pmax).

Pmax = Pnom × correction factor

T	Altitude [m]								
[°C]	1000	1500	2000	2500	3000	3500	4000	4500	5000
10							0,97	0,92	0,88
15						0,98	0,94	0,90	0,86
20					1	0,95	0,91	0,87	0,83
25				1	0,95	0,93	0,89	0,85	0,81
30			1	0,96	0,92	0,90	0,86	0,82	0,78
35		1	0,95	0,93	0,90	0,88	0,84	0,80	0,75
40	1	0,97	0,94	0,90	0,86	0,82	0,80	0,76	0,71
45	0,95	0,92	0,90	0,88	0,85	0,81	0,78	0,74	0,69
50	0,92	0,90	0,87	0,85	0,82	0,80	0,77	0,72	0,67
55	0,88	0,85	0,83	0,81	0,78	0,76	0,73	0,70	0,65
60	0,83	0,82	0,80	0,77	0,75	0,73	0,70	0,67	0,62
65	0,79	0,76	0,74	0,72	0,70	0,68	0,66	0,62	0,58
70	0,74	0,71	0,69	0,67	0,66	0,64	0,62	0,58	0,53
75	0,70	0,68	0,66	0,64	0,62	0,60	0,58	0,53	0,49
80	0,65	0,64	0,62	0,60	0,58	0,56	0,55	0,48	0,44

Table 4.02 - Correction factors for altitude and ambiente temperature

Unless otherwise specified, all motors are supplied with Class F insulation and Class B (80 K) temperature rise at normal operating conditions.
The difference between the temperature rise of the class F insulation (105 K) and the temperature rise of the class B design (80 K) means that, in practice, motors are suitable to supply output ratings above the rated values up to a limit where the temperature rise reaches the temperature rise value of the insulation class.
The ratio between temperature rise and service factor is given by the equation below:

$$\Delta T_{FINAL} \approx (S.F.)^2 \times \Delta T_{INITIAL}$$

Upon service factor calculation, we can see that Service Factor is approximately 1.15. This reserve of temperature also allows that most of the motors with class B temperature rise (80 K) to operate continuously at:

- Up to 15% above its rated output power, considering 40°C ambient temperature and 1.000 m.a.s.l.
- Up to 55°C ambient temperature, keeping the rated output power
- Up to 3000 m.a.s.l., keeping the rated output power

Note: Please note that under these combined conditions between ambient and temperature rise motors will reach Class F limits.

Bearing lubrication intervals will change under operating conditions other than 40°C maximum ambient temperature and 1000 meters above sea level.

When operating conditions are different from the above, all flameproof motors must be validated by WEG technical support.

Insulation System

For standard low voltage motors, insulation system is class F type and consists mainly of enameled copper wire meeting temperatures up to 200ºC, NMN insulation materials and impregnation by continuous flow or immersion.

For medium and high voltage motors insulation system is also class F type and consists mainly in:

- Rectangular bare copper wire with mica tapes (used in respect of the applied voltage)
- Coil main insulation with mica tapes
- Straight part of coil with conductive tape
- Semi-conductive tape
- Coil heads mechanical protection with polyester shrinking tape
- VPI system with polyesterimide resin of class H type.

Low and Medium Voltage motors for use with variable speed drives have special insulation systems.

Class H insulation system is available on request.

4.2.1. Humidity protection - Space Heaters and Tropical Treatment

WEG recommends the use of space heaters on motors installed in environments with high relative air humidity, in which the motor may remain idle for periods longer than 24 hours.

In extreme cases, motors installed in environments with relative air humidity higher than 95%, regardless of the operating schedule is also strongly recommended the use of space heaters and an epoxy resin known as tropical treatment is applied in the internal components of the motor.

Medium and High Voltage standard motors are equipped with tubular space heaters of 230V. In Low Voltage Motors for group I Mb category M2 space heaters of 230V are also standard. Other space heaters voltages can be supplied as request. More information can be obtained in sections 5 and 6.

The integrity of the insulation system is the primary consideration when determining the lifetime of an electric motor. High humidity can result in premature deterioration of the insulation system, therefore for any ambient temperature with relative humidity above 95%, it is recommended to coat all internal components of the motor with an epoxy painting, also known as tropicalization. BFGC4 and W22X flameproof motors receive a tropicalized painting as standard.

4.3. Motor Protection

The temperature inside the enclosure of an electric machine increases during operation.
The temperature rise is defined at the design stage and, normally is kept within the limits of class B temperature rise, which means 80K. The ambient temperature considered in the design is 40ºC, according to IEC 60034-1, and the insulation system is normally rated class F (155ºC) – see table below.

Thermal Gap	25 K	155ºC material class limit
Hottest - Coldest point	10 K	
Temperature rise	80 K	
Ambient temperature	40ºC	

Table 4.03 - Class F insulation

Overheating must be avoided to ensure a longer motor lifetime and a safer operation.

As standard, motors are equipped with:

Windings protection

- Low voltage motors have one PTC per phase (triple set) connected in the main terminal box;
- Medium and High voltage motors have two Pt100 per phase (3 wires), connected in the auxiliary terminal box;

Bearings protection

- Medium and High voltage motors have one Pt100 per phase (3 wires), connected in the auxiliary terminal box;

Other protections can be implemented on request. For more information please refer to paragraph 6.

4.4. Variable Speed Drive

4.4.1. Considerations regarding rated voltage

For Low Voltage motors driven by VSD, the limits indicated in the table 4.04 must be respected.

Motor rated voltage	Peak voltage on motor terminals (phase to phase)	(*) dV/dt on motor terminals (phase to phase)	Rise time (*)	Minimum time between successive pulses (MTBP)
$V_{NOM} \leq 460V$	≤ 1600V	≤ 5200V/µs	≥ 0,1 µs	≥ 6 µs
$460V < V_{NOM} \leq 575V$ (**)	≤ 1800V	≤ 6500V/µs		
$575V < V_{NOM} \leq 690V$ (**)	≤ 2200V	≤ 7800V/µs		

Table 4.04 - Low Voltage Motors VSD criteria

(*) Definition according NEMA MG1-Part30
(**) Reinforced insulation for VSD operation

For Medium Voltage motor driven by VSD, the limits indicated in the table 4.05 must be respected.

Motor rated voltage	Source type	Coil insulation (phase to phase)		Main insulation (phase to ground)	
		Peak voltage on motor terminals	dV/dt (*) on motor terminals	Peak voltage on motor terminals	dV/dt (*) on motor terminals
690V < V_{NOM} ≤ 4160V	Power Grid	≤ 5900V	≤ 500V/µs	≤ 3400V	≤ 500V/µs
	PWM (**)	≤ 9300V	≤ 2700V/µs	≤ 5400V	≤ 2700V/µs
4160V < V_{NOM} ≤ 6600V	Power Grid	≤ 9300V	≤ 500V/µs	≤ 3400V	≤ 500V/µs
	PWM (**)	≤ 12700V	≤ 1500V/µs	≤ 7400V	≤ 1500V/µs

Table 4.05 - Medium Voltage Motors VSD criteria

(*) Definition according to NEMA MG1 - Part 30.
(**) Reinforced insulation for VSD operation.

Notes:
1 - The switching frequency must be limited to 5 kHz. Switching frequencies above that, accelerate the winding aging process and might damage the bearings.
2 - If one of the above conditions is not followed accordingly (including the switching frequency), an output filter (load reactor) must be installed on the output of the VSD.
3 - The listed criteria were extracted from IEC 60034-17 and IEC 60034-25 standards.
4 - Low Voltage motors with rated voltage up to 460V may be operated by a frequency inverter, respecting the indicated limits.

For VSD applications customer is obliged to connect the windings thermal protection to guarantee the limits of surface temperature.

4.4.2. Torque restrictions on variable speed drive applications

On VSD applications, the motor temperature rise will be higher, when compared to a motor fed directly on line, specially on low speeds, when the motor cooling capacity is lowered. This restriction can be overpassed by using a forced ventilation unit. This unit will ensure a constant air flow over the motor, even on lower motor speeds.

Based on exact absorbed power and torque application it is necessary to derate the motor according to the figure 4.02.

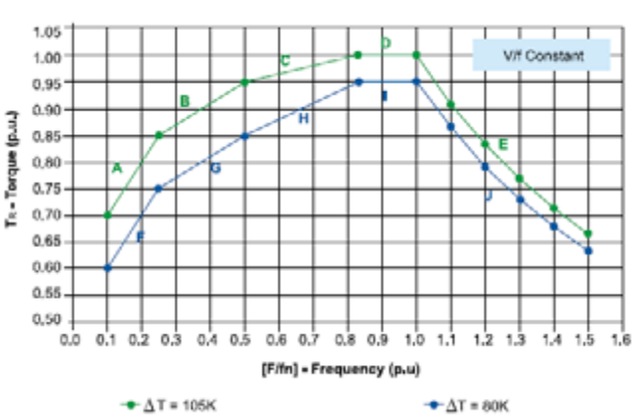


Figure 4.02 - Derating curve for constant flux

Derating factor with temperature rise for the insulation class*		
Interval	Limited by	Apply this equation
A	0,10 ≤ f/fn < 0,25	TR = (f/fn) + 0,60
B	0,25 ≤ f/fn < 0,50	TR = 0,40(f/fn) + 0,75
C	0,50 ≤ f/fn < 0,83	TR = 0,15(f/fn) + 0,87
D	0,83 ≤ f/fn < 1,0	TR = 1,0
E	f/fn > 1,0	TR = 1 / (f/fn)

Table 4.06 - Derating factors for VSD to limit temperature rise for insulation class

Derating factor to maintain temperature rise at sinusoidal source**		
Interval	Limited by	Apply this equation
F	0,10 ≤ f/fn < 0,25	TR = (f/fn) + 0,50
G	0,25 ≤ f/fn < 0,50	TR = 0,40(f/fn) + 0,65
H	0,50 ≤ f/fn < 0,83	TR = 0,30(f/fn) + 0,70
I	0,83 ≤ f/fn < 1,0	TR = 0,95
J	f/fn > 1,0	TR = 0,95(f/fn)

Table 4.07 -Derating factors for VSD to maintain temperature rise at sinusoidal source

(*) When the top curve is used (green), motor temperature rise will be limited by the temperature class of the insulation material. For example, for class F insulation motors, the temperature rise will be limited at 105 K. This curve can only be used for class F insulation and class B temperature rise (80 K) motors in order to ensure that, when driven by a frequency drive, the temperature rise remains class F (above 80 and below 105 K).
(**) When the lower curve is used (blue), the motor temperature rise of the variable frequency drive will be the same driven by sinusoidal source. In other words, class F insulation motors with class B temperature rise will remain with class B temperature rise (≤ 80 K) even when driven by a variable frequency drive.

Notes:
1. The derating curves given in figure 4.02 are related to the temperature on motor winding and thermal class. These curves do not consider thermal tolerance factor of the motors. They are intended to show the torque limitations for variable frequency drive motors.
2. WEG flameproof motors, BFGC4 and W22X lines respect the surface temperature T4 (135ºC) when the winding temperature rise is ≤ 105 K.

4.4.3. Forced ventilation kit

For the cases where independent cooling system is required, BFGC4 and W22X motors can be supplied with a forced ventilation kit, as shown in figures 4.03 and 4.04.
This unit is composed of an electric motor with the same certification of the main motor, fed directly from the net power supply, providing a constant air flow over the main motor fins regardless of the application speed.
The main motor can only be operated when the forced cooling motor is running.

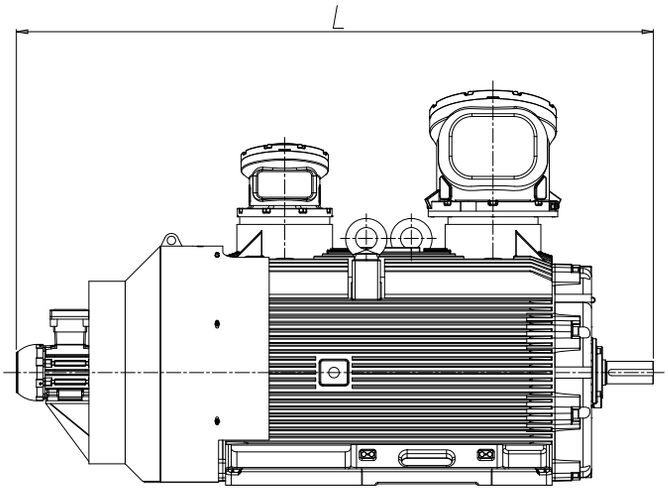


Figure 4.03 - Motor with forced ventilation kit

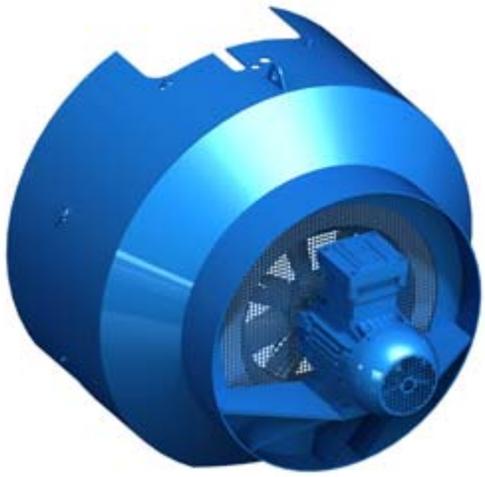


Figure 4.04 - Forced ventilation kit

The total motor length increases with the inclusion of the forced ventilation kit as per table 4.08. WEG can supply alternative forced ventilation on request. Please contact your local WEG branch or representative for details of these dimensions.

Frame size	Flameproof standards	Gas group	Poles	Total motor lenght (L)		Forced ventilation kit				
				Without forced ventilation	With forced ventilation	kW	Poles	V(50Hz)(1)	V(60Hz)(1)	IM
315L	Ex d(e)	IIB	2P	1512	1809	1,5	4	380-415 / 660-690	440-460	B3T
			4P+	1542	1839					
		IIC	2P	1512	1828					
			4P+	1542	1858					
355ML	Ex d(e)	IIB	2P	1576	1906	3	4	380-415 / 660-690	440-460	B3T
			4P+	1646	1976					
		IIC	2P	1576	1938					
			4P+	1646	2008					
355AB	Ex d(e)	IIB	2P	1784	2114					
			4P+	1854	2184					
		IIC	2P	1784	2146					
			4P+	1854	2216					
400LJ	Ex d(e)	IIB	2P	1994	2324					
			4P+	2034	2364					
		IIC	2P	1994	2356					
			4P+	2034	2396					
400G	Ex d(e)	IIB	2P	2234	2564					
			4P+	2274	2604					
		IIC	2P	2234	2596	4	4	380-415 / 660-690	440-460	B3T
			4P+	2274	2636					
450KH	Ex d(e)	IIB	2P	2230	2570					
			4P+	2271	2610					
		IIC	2P	2230	2614					
			4P+	2270	2654					
500KH	Ex d(e)	IIB	2P(2)	2750	3090					
			4P+	2830	3170					
		IIC	2P(2)	2750	3134					
			4P+	2830	3214					

Table 4.08 - Main motor dimensions with forced ventilation kit

(1) Standard voltage. Other executions available under request.
(2) Maximum allowable operating frequency: 50 Hz.

Note:
Forced ventilation kit for Group I Mb, category M2, not available.

4.4.4. Encoders

For an accurate application control an encoder is typically used. Encoders are direct coupled to a motor shaft extension and fixed in the external part of fan cover grid.

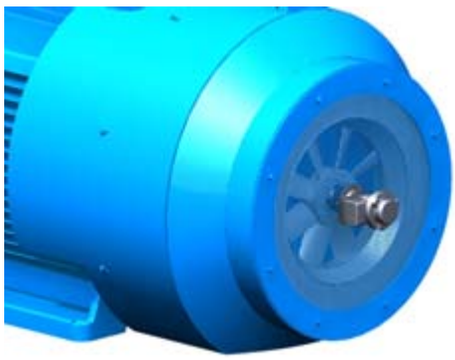


Figure 4.05 - Encoder position

4.4.5. Bearing insulation

In order to avoid current in the bearings, in variable speed drive applications, special bearing arrangements have to be considered. The WEG solution in flameproof motors is to use insulated bearings and internal shaft grounding rings. Motors intended to be used with VSD application must have the following features.

Range	Frame	Standard	Optional
BFGC4	250-280	Standard bearing	Non drive end insulated bearing Non drive end insulated bearing + drive end endshield grounding ring
	315	Non drive end insulated bearing	Non drive end insulated bearing + drive end endshield grounding ring
W22X	315-400	Non drive end insulated bearing	Non drive end insulated bearing + drive end endshield grounding ring
	450-500	Non drive end insulated bearing + drive end endshield grounding ring	Drive and non drive end insulated bearings + drive and non drive end endshields grounding rings

Table 4.09 - Bearings protection for VSD driven motors

4.4.6. Operating speed

For VSD operation motors, the speed ranges must be confirmed. Depending on the operation speed, restriction can arise from bearings/sleeve bearings maximum peripheral speed, from rotational parts or due to rotor natural frequencies.
For more information please refer to paragraph 6.

4.5. Duty Cycles

The different duty types are defined according to IEC 60034-1. Duty types are the different degrees of load regularity at which the motor is submitted. It is customer responsibility to choose the duty. The duty type shall be designated by the appropriate abbreviation, written after the load value. When customer does not declare a duty, the manufacturer considers S1 for duty type (continuous running duty).

S1- Continuous running duty
Operation at a constant load maintained for sufficient amount of time for thermal equilibrium to be reached.

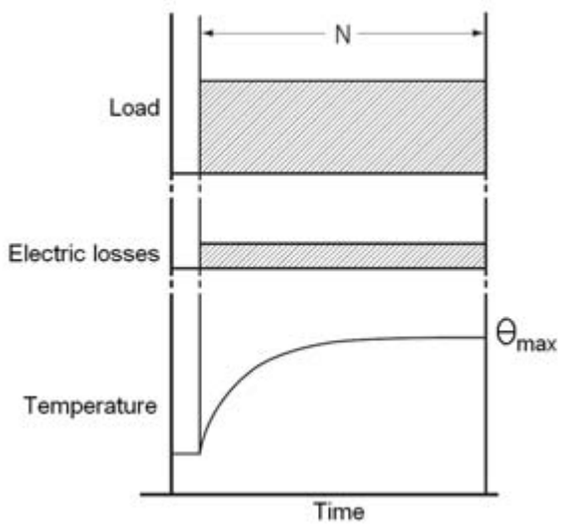


Figure 4.06 - Duty type S1

S2- Short-time duty
Operation at a constant load during a standard time, less than that required to reach thermal equilibrium. Followed by a rest period long enough until winding has cooled down to the ambient temperature. Operating times of 10, 30, 60 or 90 minutes are recommended.

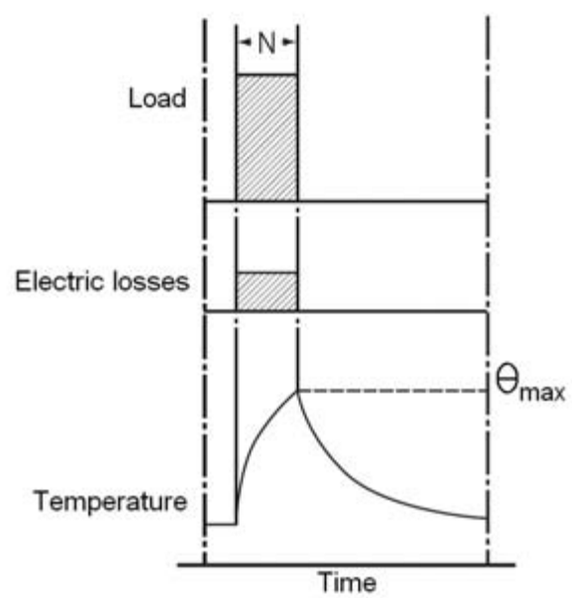


Figure 4.07 - Duty type S2

The table 4.10 shows the overload values, considering a heating time constant of 20 min.

Operating time (in minutes)	P/P_n (Overload)
10	1,6
30	1,13
60	1,03
90	1

Table 4.10 - Overload values

P_n - Nominal Power;
P - Maximum power allowed.

S3- Intermittent periodic duty
Operation with a sequence of identically cycles, each one included a functioning period with a constant load and a rest period. In period of functioning the maximum temperature can be reached. Starting current doesn´t affect the temperature rise. Duty Cycle should have 10 minutes, unless exist other indications. The duration factor of cycles is 15, 25, 40 and 60% recommended.

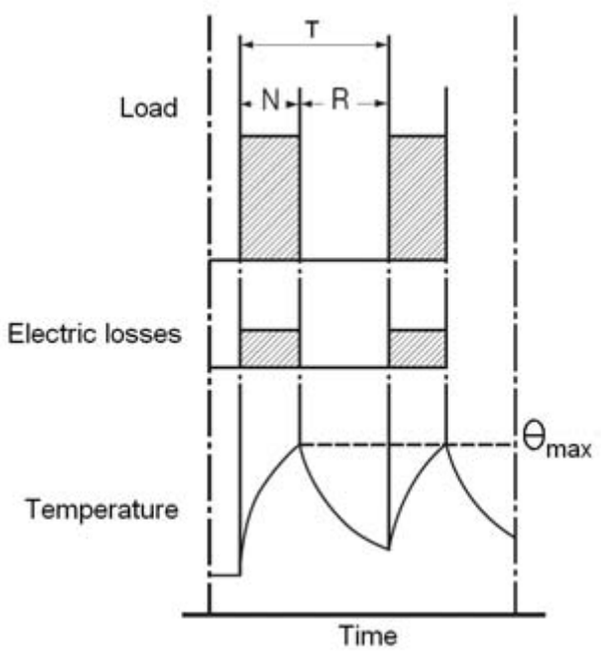


Figure 4.08 - Duty type S3

$$\text{cyclic duration factor} = \frac{N}{T} \times 100\%$$

S4- Intermittent periodic duty with starting
Operation with sequence of identical duty cycles, each one included different periods: start up, functioning with constant load and a rest period. Current of start up affects temperature rise. Details relative of the number of cycles (starts per hour) and inertia constant must also be known.

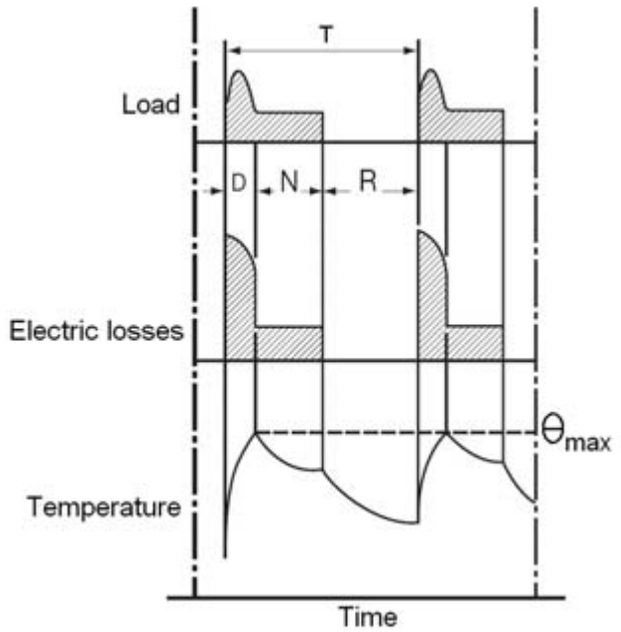


Figure 4.09 - Duty type S4

$$\text{cyclic duration factor} = \frac{(D+N)}{T} \times 100\%$$

S5- Intermittent periodic duty with electrical braking
Similar operation to S4, having electric braking of the machine, which influences on the temperature rise. Starting current also affects temperature rise, the details relative the number of cycles (starts per hour) and inertia constant must also be known.

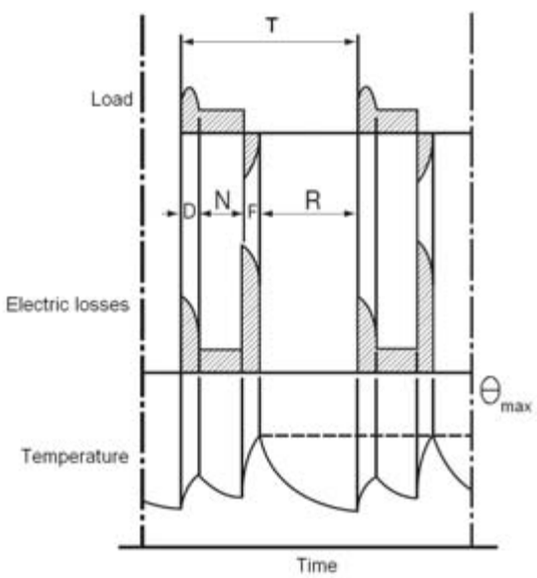


Figure 4.10 - Duty type S5

$$\text{cyclic duration factor} = \frac{(D+N+F)}{T} \times 100\%$$

S6- Continuous running duty with intermitted load
Similar operation to S3, but without the resting period - instead it works continuously without load. Starting current doesn´t affect the temperature rise.

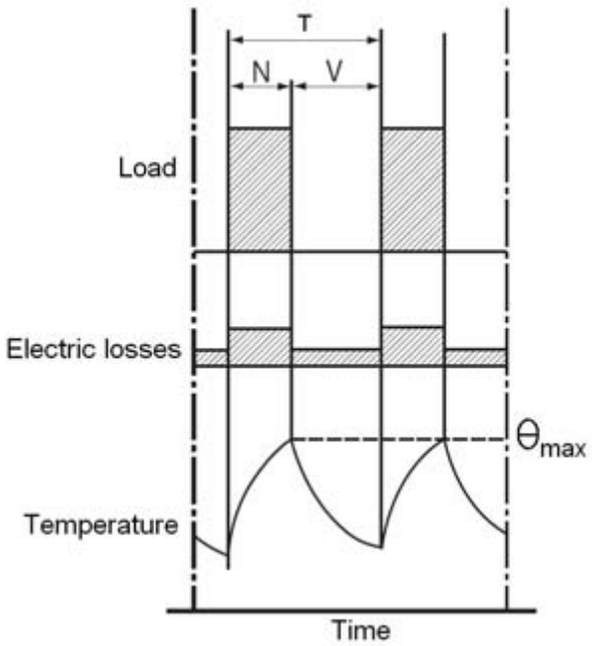


Figure 4.11 - Duty type S6

$$\text{cyclic duration factor} = \frac{N}{N+V} \times 100\%$$

S7- Continuous running duty with electrical braking

Motor works continuously with periods of start up, braking and constant load. This operation is very demanding to the motor.

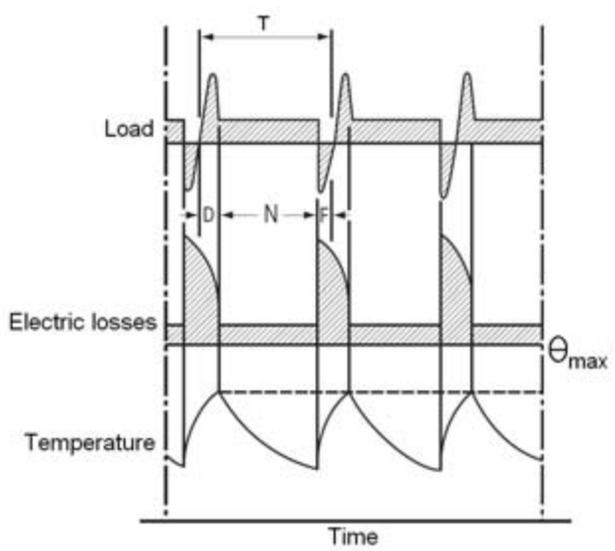


Figure 4.12 - Duty type S7

cyclic duration factor = 1

S8- Continuous running duty with periodic change of load/ speed

Sequence of identical duty cycles, each one contained a time of operation at constant load determined by speed rotation. The alteration of speed only exists with pole amplitude modulated motors.

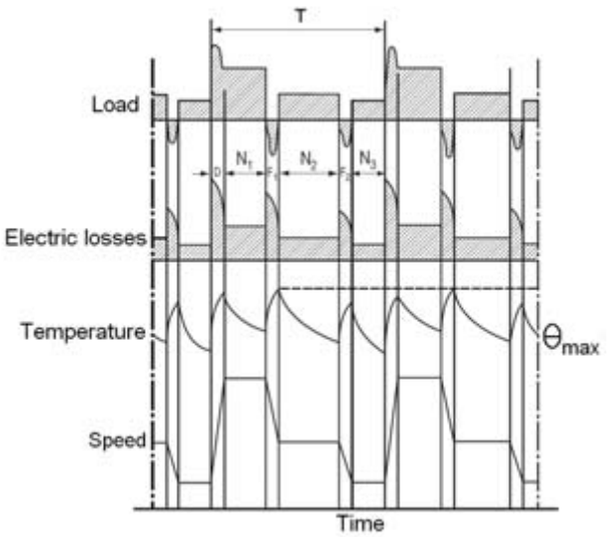


Figure 4.13 - Duty type S8

cyclic duration factor =

$$\frac{D+N_1}{D+N_1+F_1+N_2+F_2+N_3} \times 100\%$$

$$\frac{F_1+N_2}{D+N_1+F_1+N_2+F_2+N_3} \times 100\%$$

$$\frac{F_2+N_3}{D+N_1+F_1+N_2+F_2+N_3} \times 100\%$$

S9- Duty with non periodic variations of load and speed

Duty with non-periodic load and speed variations. It's possible to apply overload which can exceed the reference load. Duty type S1 is used like a reference value to determinate the overloads.

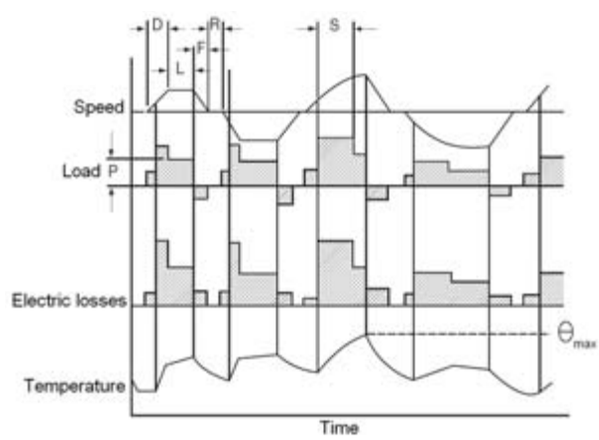


Figure 4.14 - Duty type S9

S10- Operation with discrete constant loads

Duty S10 consists in specific number of discrete values of load. Load and speed variations are proportional. The combination of these two should be maintained for sufficient time to thermal equilibrium of the machine to be reached. It's not necessary that each load cycle be exactly the same.

The minimum load within cycle may have the value zero (no-load or at rest). Duty type S1 is used like a reference value to determinate the overloads.

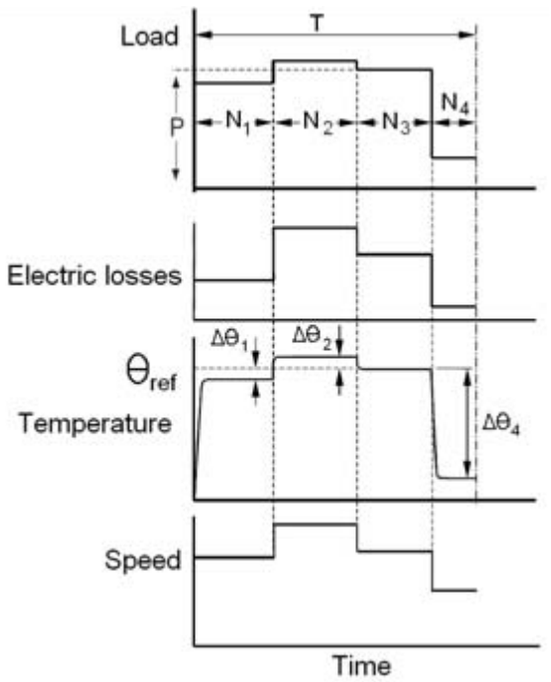


Figure 4.15 - Duty type S10

D	Start-up or acceleration time
F, F1, F2	Electric Braking time
N, N1, N2, N3	Constant load operating time
T	Time of one load cycle
L	Variable load operating time
V	No-load operating time
R	Rest time
S	Overload operating time
P	Full load
θmax	Maximum temperature reached during cycle
θref	Temperature at reference load based on duty type S1
$\Delta\theta_i$	Difference between temperature rise of the winding at each of the various loads within one cycle and the temperature rise based on duty cycle S1 with reference load.

Table 4.11 - Simbology

4.6. Efficiency levels

The approval of IEC 60034-30 has defined a harmonized classification system of minimum requirements for efficiency on electric motors, known as IE-code (International Efficiency code). Four levels of efficiency are defined:

IE1	Standard Efficiency
IE2	High Efficiency
IE3	Premium Efficiency
IE4	Super Premium Efficiency

Table 4.12 - IEC 600034-30 Efficiency Levels

This Standard applies to single speed, three phases, 50Hz and 60Hz, cage induction motors that:

- Have a rated voltage up to 1000V;
- Have an output between 0.75 and 375kW;
- 2, 4 or 6 poles;
- Duty type S1 or S3, with a rated cyclic duration factor of 80% or higher;
- Capable of operating direct-on-line (DOL).

And excludes:

- Motors made solely for converter operation;
- Motors completely integrated into a machine (example: pump, fan and compressor) that cannot be tested separately from the machine.

BFGC4 and W22X low voltage flameproof motors, as standard, are IE2-High Efficiency. In WEG's pursuit of a conscientious and efficient use of energy, in way to assure the sustainability and environmental protection, IE3-Premium Efficiency motors, are already available under request.

4.7. Main Electrical Connections

Single Speed Motors

Low Voltage

Standard flameproof Low Voltage motors with rated current ≤ 1090A have 6 terminals for connection of supply cables.
For rated current ≥ 1090A the motors are equipped with 12 terminals.
In both executions, motors can be star or delta connected.

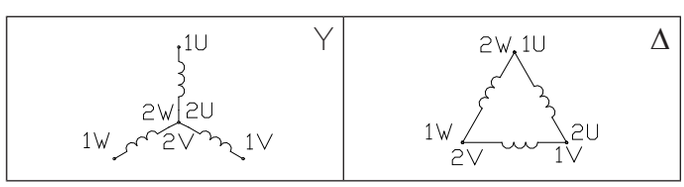


Figure 4.16 - Star & Delta connection

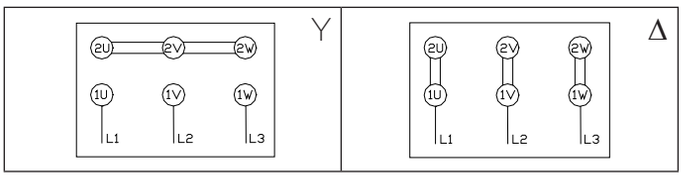


Figure 4.17 - Star & Delta connection terminal block arrangement (6 terminals)

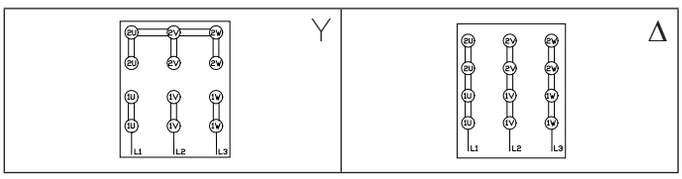


Figure 4.18 - Star & Delta connection terminal block arrangement (12 terminals)

Medium and High Voltage

Standard flameproof Medium Voltage motors with rated current ≤ 400 A have 3 terminals for supply cables connection.
For current line > 400 A, 6 terminals execution is used.

Standard flameproof High Voltage motors have always 3 terminals available for supply cables connection. The maximum allowed rated current is 400 A.

Medium and High Voltage flameproof motors are always star connected.

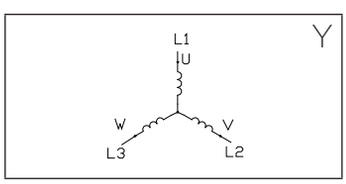


Figure 4.19 - Star connection

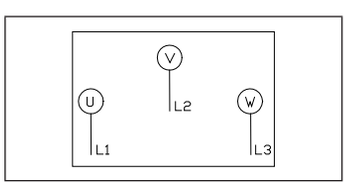


Figure 4.20 - Star connection terminal block arrangement (3 terminals)

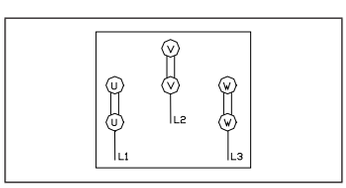


Figure 4.21 - Star connection terminal block arrangement (6 terminals)

Two Speed Motors

Low Voltage

Two types of executions are available for two speed motors:

- Dahlander connection: used when High speed is double of Low speed.
- Two windings: for different ratios between motor speeds (when High speed is not double of Low speed).

For Dahlander motors 1 winding is used and the type of connection defines the torque and power relation between High and Low speeds. In all cases DOL starting.

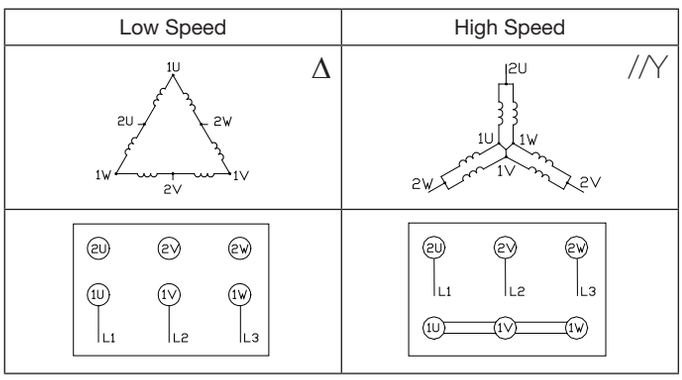


Figure 4.22 - Delta and double star connection for constant torque

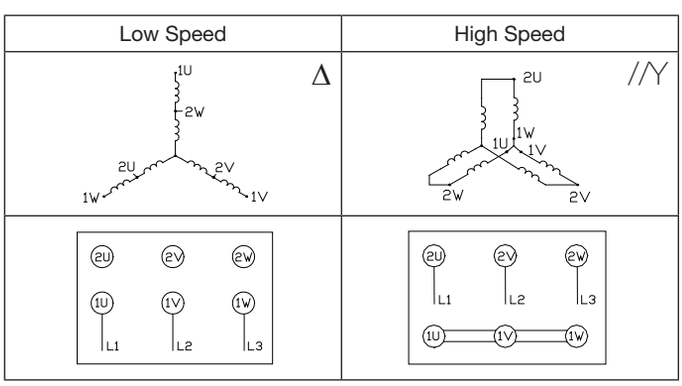


Figure 4.23 - Star and double star connection for variable torque

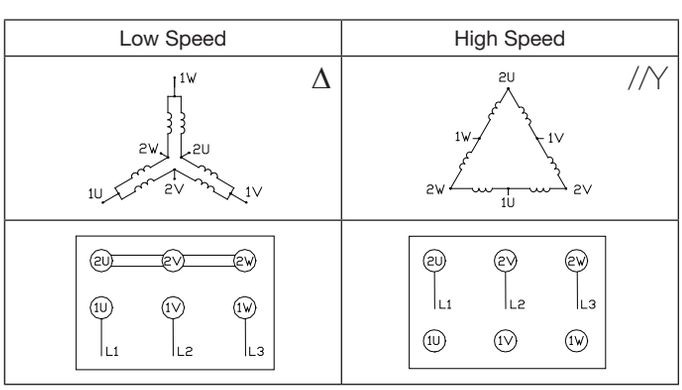


Figure 4.24 - Double star and delta connection for constant power

For 2 speed motors with 2 windings execution both Low and High speeds can be star or delta connected as showed in figure 4.25.

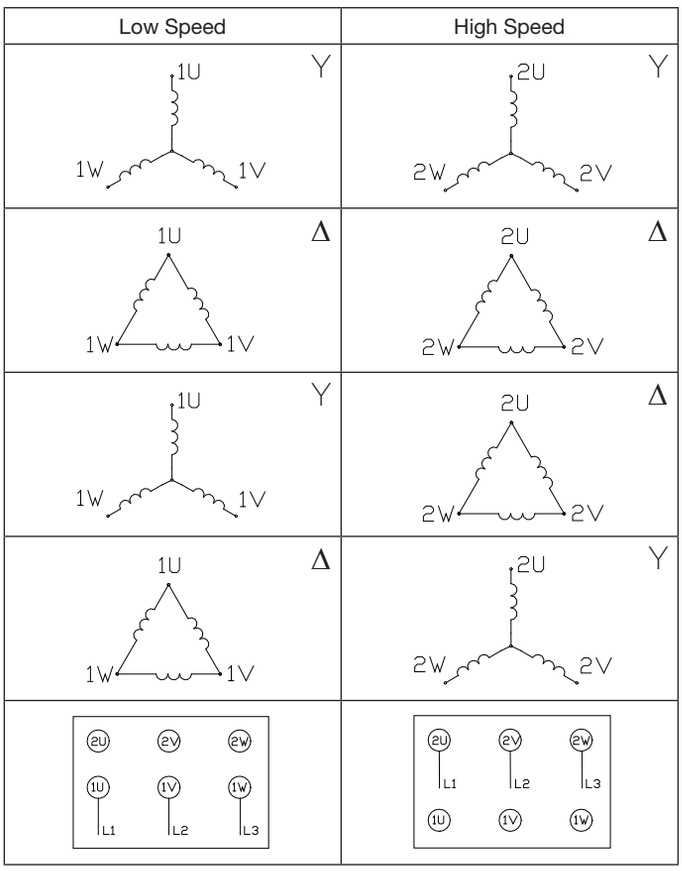


Figure 4.25 - Star or delta connection for two winding motors

4.8. Tolerances for Electrical Data

The following tolarances are allowed in accordance with IEC 60034-1:

Efficiency (η)	-15% (1-η) for Pnom ≤ 150 kW / -10% (1-η) for Pnom > 150 kW
Power factor	-1/6(1-cos φ) Minimum 0,02 and Maximum 0,07
Slip	± 20% for Pnom ≥ 1 kW ± 30% for Pnom < 1kW
Starting current	+20% (without lower limit)
Starting torque	-15% +25%
Breakdown torque	-10%
Moment of inertia	± 10%

Table 4.13 - Tolerances for electrical data

5. Standard Features (Scope)

Line			BFGC4			W22X						
Frame			250M	280S/M	315S/M	315L	355ML	355AB	400LJ	400G	450KH	500KH
General features												
Nameplate markings			ATEX									
Certification marking			Ex d(e) IIC T4 Gb / Ex tb IIIC T125ºC Db IP6X (associated with IIC)			Ex d(e) IIB T4 Gb/ Ex d(e) IIC T4 Gb/ Ex d(e) I Mb / Ex tb IIIC T125ºC Db IP6X (associated with IIB or IIC)						
Ambient temperature			- 20ºC up to +40ºC									
Mechanical features												
Mounting			B3T									
Frame	Material		Cast Iron EN-GJL-200									
Degree of protection			IP55 - Ex d(e) IIC T4 Gb IP65 - Ex tb IIIC T125ºC Db IP6X			IP55 - Ex d(e) IIB/IIC T4 Gb IP65 - Ex tb IIIC T125ºC Db IP6X IP66 - Ex d(e) I Mb						
Grounding			Double grounding in the frame + additional (inside terminal box)									
Cooling method			Totally enclosed fan cooled - IC411									
Fan	Material	2P	Aluminium			Cast iron					Aluminium (Ex d(e) IIB/IIC T4 Gb / Ex tb IIIC T125ºC Db IP6X) Cast iron (Ex d(e) I Mb)	
		4 - 8P	Aluminium			Cast iron					Welded steel	
Fan cover	Material		Steel									
Endshields	Material		Cast iron EN-GJL-200									
Bearings	Clearance D.E		C3									
	Clearance N.D.E		C3									
	Locating bearing configuration	2P	DE bearing locked with inner and outer bearing caps and fitted with pre-load springs in the NDE bearing Ball and roller bearings arrangement: DE and NDE bearings locked with inner and outer bearing caps									
		4 - 8P										
	Drive end	2P	6314	6314	6314	6314	6316	6316	6318	6318	6318	NU220+6020
		4 - 8P	6314	6316	6317	6319	6322	6322	6324	6324	6326	6328 [1]
	Non-drive end	2P	6314	6314	6314	6314	6316	6316	6318	6318 (50Hz) / NU218 (60Hz)	NU218	NU220
		4 - 8P	6314	6314	6314	6316	6319	6319	6324	6324	6326	6328 [1]
Bearing seal		2P	V'ring Seal - Ex d(e) IIC T4 Gb Double Lip Oil Seal - Ex tb IIIC T125ºC Db IP6X			WSeal - Ex d(e) IIB/IIC T4 Gb (nitrillic rubber) Labyrinth Seal - Ex tb IIIC T125ºC Db IP6X W3Seal - Ex d(e) I Mb					Labyrinth Seal - Ex d(e) IIB/IIC T4 Gb / Ex tb IIIC T125ºC Db IP6X W3Seal - Ex d(e) I Mb	
		4 - 8P									V'ring Seal - Ex d(e) IIB/IIC T4 Gb (nitrillic rubber) Labyrinth Seal - Ex tb IIIC T125ºC Db IP6X W3Seal - Ex d(e) I Mb	
Lubrication	Type of grease		Polyrex EM 103 (Exxon Mobil)									
	Grease fitting		With grease fittings in DE and NDE bearings									
Sleeve Bearings [2]	Axial float		NA	NA	NA	6mm (±3mm)						
	Locating bearing configuration		NA	NA	NA	Located DE bearing						
	2P		NA	NA	NA	9 - 80						NA
	4 - 8P		NA	NA	NA	11 - 110					11 - 125	
Main cables connection	LV		I ≤ 345A: 6 x conductor bushings M10 (plus conductor clamps for Ex e terminal boxes execution)			I ≤ 545A: 6 x conductor bushings M12 (plus conductor clamps for Ex e terminal boxes execution) 545A < I ≤ 690A: 6 x conductor bushings M16 (plus conductor clamps for Ex e terminal boxes execution) 690A < I ≤ 1090A: 6 x conductor bushings M20 (plus conductor clamps for Ex e terminal boxes execution) 1090A < I ≤ 1385A: 12 x conductor bushings M16 (plus conductor clamps for Ex e terminal boxes execution) 1385A < I ≤ 1900A: 12 x conductor bushings M20 (plus conductor clamps for Ex e terminal boxes execution)						
	MV		Not applicable			I ≤ 315A: 3 x conductor bushings M12 (plus conductor clamps for Ex e terminal boxes execution) 315A < I ≤ 400A: 3 x conductor bushings M16 (plus conductor clamps for Ex e terminal boxes execution) 400A < I ≤ 630A: 6 x conductor bushings M12 (plus conductor clamps for Ex e terminal boxes execution) 630A < I ≤ 800A: 6 x conductor bushings M16 (plus conductor clamps for Ex e terminal boxes execution)						
	HV		Not applicable			Not applicable			I ≤ 400A: 3 x conductor bushings M16 (plus conductor clamps for Ex e terminal boxes execution)			
Terminal box	Material		Cast Iron EN-GJL-200			Cast iron EN-GJL-200 (standard IIC terminal box for LV and MV in cast iron EN-GJS-400)						
Auxiliary terminal box			Not applicable			With auxiliary terminal box for MV and HV						
Leads inlet	Main terminal box	LV	2 x M63 x 1,5 (+ 1 x M20 x 1,5)			I ≤ 900A: 2 x M63 x 1,5 (+ 1 x M20 x 1,5) 900 < I ≤ 1900A: 4 x M63 x 1,5 (+ 1 x M20 x 1,5)						
		MV	Not applicable			I ≤ 315A: 1 x M63 x 1,5 315A < I ≤ 800A: 3 x M63 x 1,5						
		HV	Not applicable			Not applicable			I ≤ 200A : 1 x M63 x 1,5 200 < I ≤ 400A: 3 x M50 x 1,5			
	Auxiliary terminal box	LV	Not applicable			Not applicable						
		MV	Not applicable			3 x M20 x 1,5						
		HV	Not applicable			Not applicable			3 x M20 x 1,5			
	Plug		Main terminal box: 1 x plastic plug (other entrances with nickel plated brass certified plugs)			Main terminal box: 1 x plastic plug (other entrances with nickel plated brass certified plugs) Auxiliary terminal box: 3 x nickel plated brass certified plugs						
Joint seal			Ex d: Without (only machined surfaces) Ex de: Rubber gaskets in terminal boxes			Without (only machined surfaces)						

Line			BFGC4			W22X						
Frame			250M	280S/M	315S/M	315L	355ML	355AB	400LJ	400G	450KH	500KH
Joints anti-corrosion protection			Exxon Mobil Polyrex EM 103									
Bolts class	Enclosure parts		8,8			12.9 - Ex d(e) IIB/IIC T4 Gb / Ex tb IIIC T125ºC Db IP6X A4-80 - Ex d(e) I Mb						
	Other parts		4,6			8.8 - Ex d(e) IIB/IIC T4 Gb / Ex tb IIIC T125ºC Db IP6X A4-80 - Ex d(e) I Mb						
Shaft (& keys)	Material		AISI 1045			AISI 4140						
	Threaded	2P	DS M20	DS M20	DS M20	DS M20	DS M20	DS M20	DS M20	DS M20	DS M20	DS M24
	hole	4 - 8P	DS M20	DS M20	DS M20	DS M24	DS M24	DS M24	DS M24	DS M24	DS M24	DS M24
Vibration			Grade A									
Balance			With half key									
Nameplate	Material		Stainless steel AISI 304									
Painting	Plan		212P									
	Colour		RAL7001			Ex d(e) IIB T4 Gb: RAL5010 / Ex d(e) IIC T4 Gb: RAL7001 / Ex d(e) I Mb: RAL2003						
Tropical treatment			Alkyd resin based varnish painting in rotor, windings, frame (internal), endshields (internal), terminal boxes (internal) and bearing caps (internal).									
Electrical features												
Voltage			LV (up to 690V)			LV (up to 1100V) MV (up to 6600V)			LV (up to 1100V) MV (up to 6600V) HV (up to 11000V)			
Frequency			50Hz									
Winding	Copper wire		LV: Voltage ≤460V - Class 200 enamel polyester+polyamide-imide grade 2 / Voltage > 460V - Class 200 enamel polyester+polyamide-imide grade 3 MV/HV: Not applicable			LV: Voltage ≤460V - Class 200 enamel polyester+polyamide-imide grade 2 / Voltage > 460V - Class 200 enamel polyester+polyamide-imide grade 3 MV: bare copper with mica tape insulation HV: Not applicable			LV: Class 200 enamel polyester+polyamide-imide grade 3 MV and HV: bare copper with mica tape insulation			
	Insulation materials		Nomex - Mylar -Nomex						Depending of voltage level and type of motor can be used different insulation materials as: Nomex - Mylar - Nomex / Nomex 410 / Nomex impregnated / Mica impregnated			
	Impregnation		LV: Immersion MV/HV: Not applicable			LV: Continuous flow / immersion MV: VPI HV: Not applicable			LV: Continuous flow / immersion MV/HV: VPI			
	Stator cables		LV: Copper with silicone insulation MV/HV: Not applicable			LV: Copper with silicone insulation MV: Copper with silicone insulation and fiber glass braid HV: Not applicable			LV: Copper with silicone insulation MV/HV: Copper with silicone insulation and fiber glass braid			
	Insulation class		F (DT 80K)									
Service factor			1.00									
Rotor			Aluminium die cast							Copper		
Thermal protector	Stator winding		LV: PTC, 1 per phase (triple set), connected in main terminal box. MV and HV: Not applicable			LV: PTC, 1 per phase (triple set), connected in main terminal box. MV: Pt100, 2 per phase (3 wires), connected in the auxiliary terminal box. HV: Not applicable			LV: PTC, 1 per phase (triple set), connected in main terminal box. MV and HV: Pt100, 2 per phase (3 wires), connected in the auxiliary terminal box.			
	Bearings		Not applicable			LV: Not applicable MV: Pt100, 1 per bearing (3 wires), connected in the auxiliary terminal box HV: Not applicable			LV: Not applicable MV and HV: Pt100, 1 per bearing (3 wires), connected in the auxiliary terminal box			
Space heaters	Use		Not applicable			LV: Not applicable MV: Standard, connected in the auxiliary terminal box HV: Not applicable			LV: Not applicable - Ex d(e) IIB/IIC T4 Gb / Ex tb IIIC T125ºC Db IP6X LV: Standard - Ex d(e) I Mb (connected in main terminal box) MV and HV: Standard, connected in the auxiliary terminal box			
	Voltage		Not applicable			230V						
	Power		Not applicable			140W	174W	174W	300W	300W	400W	500W

Notes:

(1) - For the higher outputs the standard bearings arrangement is: Drive end: NU328+6328 / Non-drive end: NU328

(2) - As optional for Ex d(e) IIB T4 Gb / Ex d(e) I Mb motors. Please always refer to us for 2 pole motors frame 400G and above.

6. Optional Features (Scope)

Line		BFGC4			W22X						
Frame		250M	280S/M	315S/M	315L	355ML	355AB	400LJ	400G	450KH	500KH
General optionals											
Nameplate markings	ATEX	S	S	S	S	S	S	S	S	S	S
	IECEx	NA	NA	NA	O	O	O	O	O	O	O
	GOST-RTN	O	O	O	O	O	O	O	O	O	O
	SITIAS - NEPSI	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	CSA_{US}	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Inmetro	O	O	O	O	O	O	O	O	O	O
	CCOE-India	O	O	O	O	O	O	O	O	O	O
Ambient temperature (see specific construction features)	- 20°C up to +40°C	S	S	S	S	S	S	S	S	S	S
	- 40°C up to +40°C	NA	NA	NA	O	O	O	O	O	O	O
	- 55°C up to +40°C	NA	NA	NA	O	O	O	O	O	O	O
	- 20°C up to +50°C	O	O	O	O	O	O	O	O	O	O
	- 20°C up to +60°C	O	O	O	O	O	O	O	O	O	O

Line		BFGC4			W22X						
Frame		250M	280S/M	315S/M	315L	355ML	355AB	400LJ	400G	450KH	500KH
Mechanical optionals											
Mounting											
B3L / B3R / B35T / B35L / B35R		O	O	O	O	O	O	O	O	O	O
B5T / B5L / B5R		O	O	O	O	O	O	O (1)	O (1)	O (1)	O (1)
V1 / V5 / V15 / V3 / V6 / V36	2P	O	O	O	O	O	O	O	O	NA	NA
	4 - 8P	O	O	O	O	O	O	O	O	O	O
Frame											
Material	EN-GJL-200	S	S	S	S	S	S	S	S	S	S
	EN-GJS-400	O	O	O	O	O	O	O	O	O	O
	Steel	O	O	O	O	O	O	O	O	O	O
Endshields											
Material	EN-GJL-200	S	S	S	S	S	S	S	S	S	S
	EN-GJS-400	O	O	O	O	O	O	O	O	O	O
	Steel	O	O	O	O	O	O	O	O	O	O
Main terminal box											
Material	EN-GJL-200	S	S	S	S	S	S	S	S	S	S
	EN-GJS-400	O	O	O	O (2)	O (2)	O (2)	O (2)	O (2)	O (2)	O (2)
	Steel	O	O	O	O	O	O	O	O	O	O
Gland plate (for main terminal box)	Ex d	NA	NA	NA	O	O	O	O	O	O	O
	Ex de	O	O	O	O	O	O	O	O	O	O
External grounding		O	O	O	O	O	O	O	O	O	O
Fault rate level terminal box (Ex d)	Up to 6600V: 30kA	NA	NA	NA	O	O	O	O	O	O	O
	Up to 11000V: 40kA	NA	NA	NA	NA	NA	NA	O	O	O	O
Fault rate level terminal box (Ex e)	Up to 6600V: 15kA	NA	NA	NA	O	O	O	O	O	O	O
	Up to 11000V: 15kA	NA	NA	NA	NA	NA	NA	O	O	O	O
2nd main terminal box for neutral connection (available for MV / HV)		NA	NA	NA	O	O	O	O	O	O	O
Phase segregated terminal box (Ex e certified) - Up to 6600V: 44kA		NA	NA	NA	O	O	O	O	O	O	O
Phase insulated terminal box (Ex e certified) - Up to 6600V: 26,3kA		NA	NA	NA	O	O	O	O	O	O	O
Main cables connection											
LV - Twelve conductor bushings		NA	NA	NA	O (3)	O (3)	O (3)	O (3)	O (3)	O (3)	O (3)
MV - Six conductor bushings		NA	NA	NA	O (4)	O (4)	O (4)	O (4)	O (4)	O (4)	O (4)
HV - Six conductor bushings		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Auxiliary terminal boxes											
Material	EN-GJL-200	S	S	S	S	S	S	S	S	S	S
	EN-GJS-400	O	O	O	O	O	O	O	O	O	O
	Steel	O	O	O	O	O	O	O	O	O	O
1st Auxiliary terminal box		O	O	O	O (5)	O (5)	O (5)	O (5)	O (5)	O (5)	O (5)
2nd Auxiliary terminal box		O	O	O	O	O	O	O	O	O	O
3rd Auxiliary terminal box		NA	NA	NA	O	O	O	O	O	O	O
Bearing probes terminal boxes		O	O	O	O	O	O	O	O	O	O
External grounding		O	O	O	O	O	O	O	O	O	O
Cable glands											
Plastic cable gland		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Brass cable gland		O	O	O	O	O	O	O	O	O	O
Stainless steel cable gland		O	O	O	O	O	O	O	O	O	O
Flange											
Flange FF		O	O	O	O	O	O	O	O	O	O
Flange FF (Superior)		O	O	O	O	O	O	O	O	O	O
Flange FF (Inferior)		O	O	O	O	O	O	O	O	O	O
Double flange FF (DE and NDE)		NA	NA	NA	O	O	O	O	O	O	O
Flange C		O	O	O	O	O	NA	NA	NA	NA	NA
Fan											
Cast iron		O	O	O	S	S	S	S	S	O	O
Aluminium		S	S	S	O (6)	O (6)	O (6)	O (6)	O (6)	O (6)	O (6)
Welded steel		O	O	O	O	O	O	O	O	O	O
Bearing											
Ball bearing (D.E)	2P	S	S	S	S	S	S	S	S	S	S (7)
	4 - 8P	S	S	S	S	S	S	S	S	S	S (7)
Roller bearing in D.E (for radial external thrusts)	2P	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	4 - 8P	O	O	O	O	O	O	O	O	O	O
Ball bearing (N.D.E)	2P	S	S	S	S	S	S	S	S	O	NA
	4 - 8P	S	S	S	S	S	S	S	S	S	S (7)
Angular contact for vertical motors	2P	O	O	O	O	O	S	S	S	NA	NA
	4 - 8P	O	O	O	O	O	S	S	S	S	S
Insulated drive end bearing	2 - 8P	O	O	O	O	O	O	O	O	O	O
Insulated non drive end bearing	2 - 8P	O	O	O	O	O	O	O	O	O	O
Bearing cap											
Without bearing cap		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
With bearing cap		S	S	S	S	S	S	S	S	S	S

Line		BFGC4			W22X						
Frame		250M	280S/M	315S/M	315L	355ML	355AB	400LJ	400G	450KH	500KH
Bearing sealing											
IP56 - Oil Seal	2P	O	O	O	O	O	O	NA	NA	NA	NA
	4 - 8P	O	O	O	O	O	O	O	O	O	O
IP56 - W3seal	2P	NA	NA	NA	O	O	O	O	O	O	O
IP65 - Double lip oil seal	2 - 8P	O (8)	O (8)	O (8)	O	O	O	NA	NA	NA	NA
IP65 - Labyrinth	2 - 8P	NA	NA	NA	O (8)	O (8)	O (8)	O (8)	O (8)	O (8)	O (8)
IP66 - W3Seal	2 - 8p	O (9)	O (9)	O (9)	O (9)	O (9)	O (9)	O (9)	O (9)	O (9)	O (9)
V-ring, Wseal or W3Seal with											
Nitrilic rubber		S	S	S	S	S	S	S	S	S	S
Silicone rubber		O	O	O	O	O	O	O	O	O	O
PTFE		O	O	O	O	O	O	O	O	O	O
Viton		O	O	O	O	O	O	O	O	O	O
Oil seal with											
Nitrilic rubber		S	S	S	S	S	S	S	S	S	S
PTFE		O	O	O	O	O	O	O	O	O	O
Silicone rubber		O	O	O	O	O	O	O	O	O	O
Viton		O	O	O	O	O	O	O	O	O	O
stainless steel spring		O	O	O	O	O	O	O	O	O	O
Other sealing											
Joints sealing and anti-corrosion protection	Polyrex EM 103	O	O	O	O	O	O	O	O	O	O
	Lumomoly PT/04	O	O	O	O	O	O	O	O	O	O
	Molykote 33	O	O	O	O	O	O	O	O	O	O
Shaft											
AISI 1045 / C 45 E		S	S	S	NA	NA	NA	NA	NA	NA	NA
AISI 4140 / 42CrMo4		O	O	O	S	S	S	S	S	S	S
AISI 4337 / 34CrNiMo6		O	O	O	O	O	O	O	O	O	O
AISI 1024 / S355J2G3		O	O	O	O	O	O	O	O	O	O
AISI 3415 / 15NiCr13		O	O	O	O	O	O	O	O	O	O
AISI 4340 / 30CrNiMo8		O	O	O	O	O	O	O	O	O	O
AISI 6150H / 50CrV4		O	O	O	O	O	O	O	O	O	O
AISI 304 (stainless steel) / X 5 CrNi 18 10		O	O	O	O	O	O	O	O	O	O
AISI 316 (stainless steel) / X 5 CrNiMo 17 12 2		O	O	O	O	O	O	O	O	O	O
AISI 420 (stainless steel) / X 20 Cr 13		O	O	O	O	O	O	O	O	O	O
Locking shaft device (standard for roller and angular contact bearing motors)		O	O	O	O	O	O	O	O	O	O
Second shaft end		O	O	O	O	O	O	O	O	O	O
Tapped center hole		S	S	S	S	S	S	S	S	S	S
Painting plan											
202E Primer: One coat with 20 to 55 mm of alkyd oxide red Intermediate: One coat with 20 to 30 mm of isocyanate epoxy paint Finishing: One coat with 100 to 140 mm of epoxy paint N2628 Recommended for pulp and paper, mining and chemical industries		O	O	O	O	O	O	O	O	O	O
202P Primer: One coat with 20 to 55 mm of alkyd oxide red Intermediate: One coat with 20 to 30 mm of isocyanate epoxy paint Finishing: One coat with 70 to 100 mm of polyurethane paint N2677 Recommended for food processing industries.		O	O	O	O	O	O	O	O	O	O
211E Primer: One coat with 100 to 140 mm of epoxy paint N2630. Finishing: One coat with 100 to 140 mm of epoxy paint N2628. Recommended for motors supplied to Petrobras and its suppliers, to be used in refineries such as petrochemical industries that follow Petrobras specifications. Note: Meets Petrobras N 1735 Standard (condition 3)		O	O	O	O	O	O	O	O	O	O
211P Primer: One coat with 100 to 140 mm of epoxy paint N2630. Finishing: One coat with 70 to 100 mm of PU paint N2677. Recommended for motors supplied to Petrobras and its suppliers, to be used in refineries such as petrochemical industries that follow Petrobras specifications. Note: Meets Petrobras N 1735 Standard (condition 3)		O	O	O	O	O	O	O	O	O	O
212E Primer: One coat with 75 to 105 mm of epoxy paint N1277 Intermediate: One coat with 100 to 140 mm of epoxy paint N2630 Finishing: One coat with 100 to 140 mm of epoxy paint N2628 Recommended for applications in pulp and paper, mining, chemical and petrochemical industries Note: Meets Petrobras N 1735 Standard (condition 4)		O	O	O	O	O	O	O	O	O	O
212P Primer: One coat with 75 to 105 mm of epoxy paint N1277 Intermediate: One coat with 100 to 140 mm of epoxy paint N2630 Finishing: One coat with 70 to 100 mm of PU paint N2677 Recommended for applications in pulp and paper, mining, chemical and petrochemical industries Note: Meets Petrobras N 1735 Standard (condition 4)		S	S	S	S	S	S	S	S	S	S
213E Primer: One coat with 75 to 90 mm of Silicate Ethyl paint N1661 Intermediate: One coat with 35 to 50 mm of epoxy paint N1202 Finishing: One coat with 240 to 340 mm of epoxy paint N2628 Recommended for off-shore oil platform. Note: Meets Petrobras N 1374 Standard (condition 5.2).		O	O	O	O	O	O	O	O	O	O

Line			BFGC4			W22X						
Frame			250M	280S/M	315S/M	315L	355ML	355AB	400LJ	400G	450KH	500KH
Lubrication												
Exxon Mobil Polyrex EM			O	O	O	O	O	O	O	O	O	O
Shell Aeroshell 7			O	O	O	O	O	O	O	O	O	O
Kluberplex BEM 41-132			O	O	O	O	O	O	O	O	O	O
Shell Albida RL2			O	O	O	O	O	O	O	O	O	O
Grease nipple												
Carbon steel grease nipple			S	S	S	S	S	S	S	S	S	S
Stalnless steel grease nipple			O	O	O	O	O	O	O	O	O	O
Tecalemit nipple			O	O	O	O	O	O	O	O	O	O
Balance												
Balance with half key			S	S	S	S	S	S	S	S	S	S
Balance with full key			O	O	O	O	O	O	O	O	O	O
Vibration												
Grade A			S	S	S	S	S	S	S	S	S	S
Grade B			O	O	O	O	O	O	O	O	O	O
Vibration monitoring												
Provision for SPM (1 x hole M8 on D.E. and N.D.E. shield for vertical reading)			O	O	O	O	O	O	O	O	O	O
Accelerometers			O	O	O	O	O	O	O	O	O	O
Key-Phasor			O	O	O	O	O	O	O	O	O	O
Drain												
Certified drain valve in steel (frame mounting)			O	O	O	O	O	O	O	O	O	O
Certified drain valve in stainless steel (frame mounting)			O	O	O	O	O	O	O	O	O	O
Certified drain valve in steel (terminal boxes mounting)			NA	NA	NA	O	O	O	O	O	O	O
Certified drain valve in stainless steel (terminal boxes mounting)			NA	NA	NA	O	O	O	O	O	O	O
Other mechanical optionals												
Drip cover (standard for vertical shaft down applications)			O	O	O	O	O	O	O	O	O	O
Sunshade			O	O	O	O	O	O	O	O	O	O
Rubber slinger (recommended for vertical shaft up applications)			O	O	O	O	O	O	O	O	O	O
Stainless steel hardware (bolts A2-70/A4-70/A2-80/A4-80)			O	O	O	O	O	O	O	O	O	O
Grease outlet through the endshield			NA	NA	NA	O	O	O	O	O	O	O
Motor without fan (AOM) - IC418			O	O	O	O	O	O	O	O	O	O
Flying leads			O	O	O	O	O	O	O	O	O	O
Electrical optionals												
Efficiency levels (applicable to Low Voltage motors)												
IE2			S	S	S	S	S	S	S	S	S	S
IE3			O	O	O	O	O	O	O	O	O	O
Surface Temperature (Ex d(e) IIB/IIC Gb)												
T4 (135ºC)			S	S	S	S	S	S	S	S	S	S
T5 (100ºC)			O	O	O	O	O	O	O	O	O	O
Frequency												
60Hz (Bearings application)	2P		O	O	O	O	O	O	O	O	O (10)	NA
	4 - 8P		O	O	O	O	O	O	O	O	O	O
60Hz (Sleeve bearings application) Only for Ex d(e) IIB T4 Gb / Ex d(e) I Mb motors	2P		O	O	O	O	O	O	O	O (10)	O (10)	O (10)
	4 - 8P		O	O	O	O	O	O	O	O	O	O
VSD application (mandatory the use of winding thermal probes)												
Voltage	Up to 690V		O	O	O	O	O	O	O	O	O	O
	Up to 4160V		NA	NA	NA	O	O	O	O	O	O	O
	Up to 6600V		NA	NA	NA	NA	NA	NA	O	O	O	O
Frequency (Bearings application)	Up to 50Hz	2P	O	O	O	O	O	O	O	O	O	O
		4 - 8P	O	O	O	O	O	O	O	O	O	O
	Up to 60Hz	2P	O	O	O	O	O	O	O	O	O (10)	NA
		4 - 8P	O	O	O	O	O	O	O	O	O	O
	Up to 63Hz	2P	O	O	O	O	O	O	NA	NA	NA	NA
		4 - 8P	O	O	O	O	O	O	O	O	O	O
	Up to 65Hz	2P	O	O	O	O	NA	NA	NA	NA	NA	NA
		4 - 8P	O	O	O	O	O	O	O	O	O	O
	Up to 70Hz	2P	O	O	O	O	NA	NA	NA	NA	NA	NA
		4P	O	O	O	O	O	O	O	O	O	NA
		6 - 8P	O	O	O	O	O	O	O	O	O	O
	Up to 75Hz	2P	O	O	O	NA	NA	NA	NA	NA	NA	NA
		4P	O	O	O	O	O	O	O	O	NA	NA
		6 - 8P	O	O	O	O	O	O	O	O	O	O
	Up to 100Hz	2P	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		4P	O	O	O	O	NA	NA	NA	NA	NA	NA
		6 - 8P	O	O	O	O	O	O	O	O	O	O

Line			BFGC4			W22X						
Frame			250M	280S/M	315S/M	315L	355ML	355AB	400LJ	400G	450KH	500KH
Frequency (sleeve bearings application)	Up to 50Hz	2P	NA	NA	NA	O	O	O	O	O	O	NA
		4 - 8P	NA	NA	NA	O	O	O	O	O	O	O
	Up to 60Hz	2P	NA	NA	NA	O	O	O	O	NA	NA	NA
		4 - 8P	NA	NA	NA	O	O	O	O	O	O	O
	Up to 63Hz	2P	NA	NA	NA	O	O	O	NA	NA	NA	NA
		4 - 8P	NA	NA	NA	O	O	O	O	O	O	O
	Up to 65Hz	2P	NA	NA	NA	O	NA	NA	NA	NA	NA	NA
		4 - 8P	NA	NA	NA	O	O	O	O	O	O	O
	Up to 70Hz	2P	NA	NA	NA	O	NA	NA	NA	NA	NA	NA
		4P	NA	NA	NA	O	O	O	O	O	O	NA
		6 - 8P	NA	NA	NA	O	O	O	O	O	O	O
	Up to 75Hz	2P	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		4P	NA	NA	NA	O	O	O	O	O	NA	NA
		6 - 8P	NA	NA	NA	O	O	O	O	O	O	O
	Up to 100Hz	2P	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
		4P	NA	NA	NA	O	NA	NA	NA	NA	NA	NA
		6 - 8P	NA	NA	NA	O	O	O	O	O	O	O
Winding thermal protection												
PTC tripping (standard in LV motors)			S	S	S	O	O	O	O	O	O	O
Pt100 three wires, two per phase (standard in MV and HV motors)			O	O	O	O	O	O	O	O	O	O
Pt100 two or four wires, one or two per phase			O	O	O	O	O	O	O	O	O	O
Pt1000 two or four wires, one or two per phase			O	O	O	O	O	O	O	O	O	O
CU-10			O	O	O	O	O	O	O	O	O	O
KTY 84			O	O	O	O	O	O	O	O	O	O
PTC (alarm / trip)			O	O	O	O	O	O	O	O	O	O
Thermostat (NC or NO)			O	O	O	O	O	O	O	O	O	O
Thermocouple (all types)			O	O	O	O	O	O	O	O	O	O
Surge arresters (connected in thermal probes)			NA	NA	NA	O	O	O	O	O	O	O
Temperature transmitter (4-20mA) in auxiliary terminal box			NA	NA	NA	O	O	O	O	O	O	O
Bearing thermal protection												
Pt100 three wires, one per bearing (standard in MV and HV motors)			O	O	O	O	O	O	O	O	O	O
Pt100 two or four wires, one or two per bearing			O	O	O	O	O	O	O	O	O	O
Pt1000 two, three or four wires, one or two per bearing			O	O	O	O	O	O	O	O	O	O
CU-10			O	O	O	O	O	O	O	O	O	O
Ni-120			O	O	O	O	O	O	O	O	O	O
PTC (alarm / trip)			O	O	O	O	O	O	O	O	O	O
Thermostat (NC or NO)			O	O	O	O	O	O	O	O	O	O
Thermocouple (all types)			O	O	O	O	O	O	O	O	O	O
Thermometers			O	O	O	O	O	O	O	O	O	O
Temperature transmitter (4-20mA) in auxiliary terminal box			NA	NA	NA	O	O	O	O	O	O	O
Space heaters												
Voltage	110-127 V		O	O	O	O	O	O	O	O	O	O
	230V (standard in MV/ HV)		O	O	O	O	O	O	O	O	O	O
	220-240 V		O	O	O	O	O	O	O	O	O	O
	110-127 / 220-240 V		O	O	O	O	O	O	O	O	O	O
	400 V		O	O	O	O	O	O	O	O	O	O
	380-480 V		O	O	O	O	O	O	O	O	O	O
Power	56W		O	O	NA	NA	NA	NA	NA	NA	NA	NA
	84W		NA	NA	O	NA	NA	NA	NA	NA	NA	NA
Direction of rotation												
Both	2P		S	S	S	S	S	O	O	O	O	O
	4 - 8P		S	S	S	S	S	S	S	S	S	S
Clockwise rotation direction	2P		O	O	O	O	O	O	O	O	S	S
	4 - 8P		O	O	O	O	O	O	O	O	O	O
Counter clockwise rotation direction	2 - 8P		O	O	O	O	O	O	O	O	O	O
Nameplate with indication of rotation direction			S	S	S	S	S	S	S	S	S	S
Service factor												
Service factor 1.00			S	S	S	S	S	S	S	S	S	S
Service factor 1.15			O	O	O	O	O	O	O	O	O	O
Insulation class												
F			S	S	S	S	S	S	S	S	S	S
H			O	O	O	O	O	O	O	O	O	O
Winding protection and monitoring												
Surge arresters (only for Ex d terminal boxes)			NA	NA	NA	O	O	O	O	O	O	O
Surge capacitors (only for Ex d terminal boxes)			NA	NA	NA	O	O	O	O	O	O	O
Current transformers (differential protection or measurement) (only for Ex d terminal boxes)			NA	NA	NA	O	O	O	O	O	O	O
Partial discharge sensors (only for Ex d terminal boxes)			NA	NA	NA	O	O	O	O	O	O	O

Line		BFGC4			W22X						
Frame		250M	280S/M	315S/M	315L	355ML	355AB	400LJ	400G	450KH	500KH
Forced ventilation kit											
Forced ventilation kit with encoder provision (to be informed auxiliary motor voltage - standard 400V)	Ex d(e) IIB/IIC T4 Gb Ex tb IIIC T125ºC Db IP6X	O	O	O	O	O	O	O	O	O	O
	Ex d(e) I Mb	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Forced ventilation kit without encoder provision (to be informed auxiliary motor voltage - standard 400V)	Ex d(e) IIB/IIC T4 Gb Ex tb IIIC T125ºC Db IP6X	O	O	O	O	O	O	O	O	O	O
	Ex d(e) I Mb	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other electrical optionals											
Encoder or tacho		O	O	O	O	O	O	O	O	O	O
Drive end endshield grounding ring		O	O	O	O	O	O	O	O	O	O
Non drive end endshield grounding ring		O	O	O	O	O	O	O	O	O	O

Notes:

(1) Requires additional support adaptor
(2) Standard in Ex d(e) IIC LV and MV motors
(3) Standard for LV motors with line current higher than 1090A
(4) Standard for MV motors with line current higher than 400A
(5) Standard for MV and HV motors
(6) Standard for Ex d(e) I motors
(7) Standard for Ex d(e) IIB and IIC motors (also with Ex tD)
(8) Standard for Ex t IIIC T125ºC Db motors
(9) Standard for Ex d(e) I Mb motors
(10) Under request

7. Electrical and Mechanical Data

7.1. W22XB Series - Ex d(e) IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)

W22XB is WEG flameproof TEFC three phase motors line with shaft height from 315mm up to 500mm for IIB group of gas and combustible dust.

W22XB line is available for Low, Medium and High voltage with the following powers:

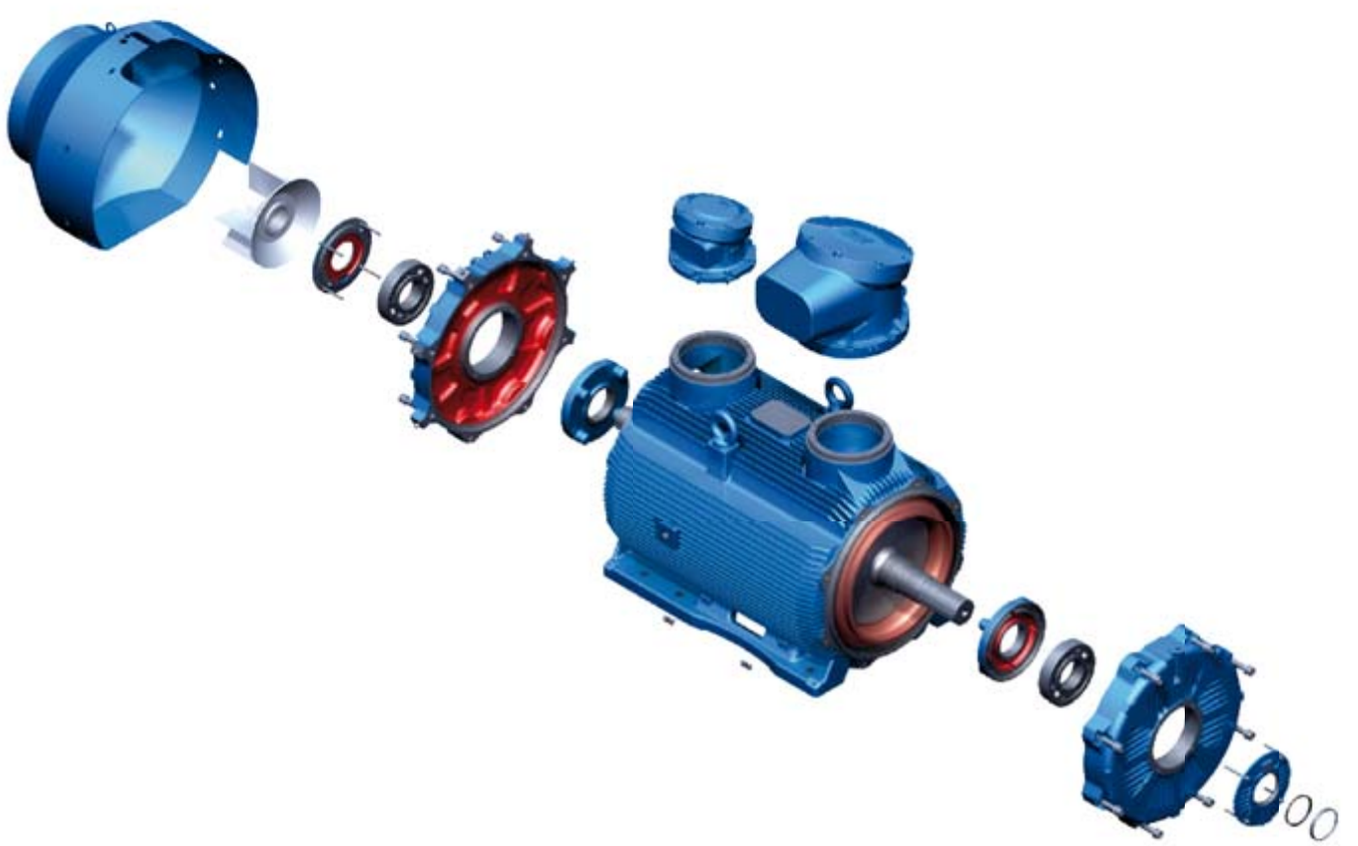
W22XB - Low voltage (≤ 1100V) – IE2 Efficiency level	
Powers (kW)	Speed (RPM)
132 up to 1120	3000
132 up to 1400	1500
90 up to 1000	1000
75 up to 800	750

W22XB - Medium voltage (1100V < U ≤ 6600V)	
Powers (kW)	Speed (RPM)
90 up to 1200	3000
90 up to 1500	1500
90 up to 1120	1000
90 up to 900	750

W22XB - High voltage (6600V < U ≤ 11000V)	
Powers (kW)	Speed (RPM)
355 up to 710	3000
355 up to 900	1500
280 up to 630	1000
200 up to 500	750

In relation to the different available optional features, W22XB motors are designated as follows:

- W22XB – Standard Ex d IIB T4 Gb motor
- W22XBE – Ex d e IIB T4 Gb motor
- W22XBD – Ex d IIB T4 Gb and Ex tb IIIC Db IP6X motor
- W22XBED – Ex d e IIB T4 Gb and Ex tb IIIC Db IP6X motor
- W22XBS - Ex d IIB T4 Gb motor with sleeve bearings
- W22XBES – Ex d e IIB T4 Gb motor with sleeve bearings
- W22XBDS – Ex d IIB T4 Gb and Ex tb IIIC Db IP6X motor with sleeve bearings
- W22XBEDS – Ex d e IIB T4 Gb and Ex tb IIIC Db IP6X motor with sleeve bearings



7.1.1. Low Voltage - Electrical Data - W22XB Series

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
IE2 Efficiency Class according to IEC 60034-30

Output												Δ 400 V/50Hz - Standard terminal box Δ 690 V/50Hz - Standard terminal box							
kW	HP	Frame IEC	T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot (s)	Weight Kg	Sound Pressure dB(A)	RPM	% of full load						I_n (A)
												Efficiency η			Power Factor Cos φ			
												50	75	100	50	75	100	
II Pole - 3000 min-1																		
132	180	W22XB 315L	424	7.3	2.2	2.7	3.4	11/3	1500	80	2975	94.2	95.0	95.0	0.85	0.88	0.89	225
160	215	W22XB 315L	514	7.3	2.2	2.8	3.4	11/3	1550	80	2975	94.0	94.9	95.0	0.85	0.88	0.89	273
200	270	W22XB 315L	642	7.3	2.2	2.8	4.1	11/3	1650	80	2975	94.4	95.2	95.2	0.85	0.88	0.89	341
250	340	W22XB 315L	803	7.3	2.2	2.5	4.2	11/3	1750	80	2975	94.3	95.1	95.2	0.84	0.88	0.89	426
280	380	W22XB 355ML	897	7.5	2.5	2.7	6.0	14/5	2000	80	2980	95.7	96.2	96.2	0.88	0.91	0.91	462
315	425	W22XB 355AB	1009	7.5	2.5	2.7	6.0	14/5	2300	80	2980	95.9	96.2	96.2	0.88	0.91	0.91	519
355	480	W22XB 355AB	1138	7.5	2.5	2.7	6.8	14/5	2500	80	2980	96.1	96.4	96.3	0.89	0.91	0.91	585
400	540	W22XB 355AB	1282	7.5	2.5	2.7	7.7	14/5	2700	80	2980	95.8	96.3	96.3	0.89	0.91	0.91	659
450	610	W22XB 400LJ	1440	7.5	2.0	3.4	8.0	14/5	3750	80	2985	95.5	96.6	97.1	0.84	0.89	0.91	735
500	675	W22XB 400LJ	1600	7.5	1.9	3.2	8.4	14/5	3950	80	2985	95.9	96.9	97.3	0.85	0.89	0.91	815
560	755	W22XB 400G (2)	1789	7.0	0.9	2.9	17.3	14/5	4800	80	2990	97.2	97.5	97.5	0.91	0.92	0.92	901
630	850	W22XB 450KH (2)	2014	7.5	0.6	2.6	18.9	10/3	5800	82	2987	97.3	97.6	97.6	0.84	0.89	0.90	1035
710	960	W22XB 450KH (2)(3)	2270	7.5	0.6	2.6	20.2	10/3	6000	82	2987	97.5	97.7	97.6	0.84	0.89	0.90	676
800	1080	W22XB 450KH (2)(3)	2558	7.5	0.7	2.6	21.4	7/2	6500	82	2987	97.5	97.6	97.6	0.84	0.88	0.90	762
900	1215	W22XB 500KH (2)(3)	2875	5.5	0.5	1.7	23.2	25/9	8800	85	2990	96.9	97.3	97.6	0.84	0.88	0.88	877
1000	1350	W22XB 500KH (2)(3)	3194	5.5	0.5	1.7	24.2	25/9	9500	85	2990	97.0	97.4	97.6	0.85	0.88	0.88	974
1120	1515	W22XB 500KH (2)(3)	3577	5.5	0.5	1.7	24.2	21/7	9700	85	2990	97.2	97.5	97.6	0.85	0.88	0.88	1089
IV Pole - 1500 min -1																		
132	180	W22XB 315L	848	7.3	2.5	2.9	5.4	12/4	1550	76	1487	94.3	94.9	95.0	0.76	0.84	0.86	233
160	215	W22XB 315L	1028	7.3	2.3	2.8	5.4	12/4	1600	76	1487	95.1	95.3	95.2	0.75	0.83	0.86	282
200	270	W22XB 315L	1284	7.3	2.3	2.9	5.4	12/4	1700	76	1487	94.5	95.1	95.2	0.77	0.83	0.86	353
250	340	W22XB 315L	1606	7.3	2.3	2.9	5.4	12/4	1850	76	1487	94.5	95.1	95.2	0.77	0.83	0.86	441
280	380	W22XB 355ML	1795	7.5	2.3	2.7	9.7	11/3	2100	77	1490	95.3	95.9	96.0	0.76	0.83	0.86	490
315	425	W22XB 355AB	2019	7.5	2.5	2.7	11.6	11/3	2200	77	1490	95.9	96.5	96.5	0.77	0.84	0.86	548
355	480	W22XB 355AB	2275	7.5	2.5	2.7	11.6	11/3	2400	77	1490	96.0	96.5	96.5	0.75	0.83	0.86	617
400	540	W22XB 355AB	2564	7.5	2.5	2.7	13.2	11/3	2600	77	1490	95.9	96.4	96.5	0.76	0.83	0.86	696
450	610	W22XB 355AB	2884	7.5	2.5	2.7	14.7	11/3	2800	77	1490	95.9	96.5	96.5	0.75	0.83	0.86	783
500	675	W22XB 400LJ	3205	6.7	1.6	2.6	14.7	16/5	3800	80	1490	96.4	96.9	97.0	0.79	0.85	0.87	855
560	755	W22XB 400LJ	3589	6.8	1.7	2.5	15.8	13/4	3900	80	1490	96.5	97.0	97.1	0.78	0.85	0.87	957
630	850	W22XB 400LJ	4038	7.5	2.1	2.8	16.3	9/3	4000	80	1490	96.4	96.9	97.1	0.75	0.83	0.87	1076
710	960	W22XB 400G (2)(3)	4542	7.5	2.5	2.4	18.2	5/1	4900	80	1493	96.5	96.6	97.0	0.80	0.86	0.87	704
800	1080	W22XB 450KH (2)(3)	5117	7.5	1.2	3.0	31.1	7/2	6200	82	1493	96.8	97.2	97.3	0.80	0.86	0.88	782
900	1215	W22XB 450KH (2)(3)	5757	7.5	1.2	3.0	31.1	6/2	6400	82	1493	96.8	97.2	97.3	0.78	0.86	0.88	880
1000	1350	W22XB 450KH (2)(3)	6397	7.5	1.2	3.0	31.9	5/1	6600	82	1493	97.0	97.3	97.3	0.80	0.86	0.88	977
1120	1515	W22XB 500KH (2)(3)	7155	7.0	0.7	2.4	62.3	20/7	9300	85	1495	96.5	97.2	97.5	0.84	0.85	0.88	1089
1250	1690	W22XB 500KH (2)(3)	7985	7.5	0.8	2.6	69.2	20/7	10300	85	1495	96.5	97.2	97.5	0.84	0.85	0.88	1219
1400	1890	W22XB 500KH (2)(3)	8943	7.5	0.8	2.5	77.9	20/7	11600	85	1495	96.5	97.2	97.5	0.84	0.85	0.88	1365
VI Pole - 1000 min -1																		
90	120	W22XB 315L	868	6.5	1.7	2.4	8.9	11/3	1650	70	990	93.6	94.4	94.6	0.73	0.80	0.83	165
110	150	W22XB 315L	1061	6.5	1.7	2.4	8.9	11/3	1700	70	990	93.9	94.5	94.6	0.74	0.80	0.83	202
132	180	W22XB 315L	1273	6.5	1.7	2.4	8.9	11/3	1800	70	990	93.9	94.5	94.6	0.73	0.80	0.83	243
160	215	W22XB 315L	1543	6.5	1.7	2.4	11.1	11/3	1900	70	990	94.3	94.6	94.6	0.74	0.80	0.83	294
200	270	W22XB 355ML	1929	5.6	1.9	2.6	12.7	28/10	2150	73	990	95.1	95.5	95.5	0.70	0.79	0.82	369
250	340	W22XB 355ML	2412	5.6	1.9	2.6	15.0	28/10	2250	73	990	95.3	95.7	95.6	0.71	0.79	0.82	460
280	380	W22XB 355AB	2701	5.6	1.9	2.6	15.0	28/10	2450	73	990	95.4	95.8	95.7	0.69	0.79	0.82	515
315	425	W22XB 355AB	3039	5.6	1.9	2.6	17.1	28/10	2650	73	990	95.5	95.9	95.8	0.69	0.79	0.82	579
355	480	W22XB 355AB	3424	5.6	1.9	2.6	18.9	28/10	2850	73	990	95.6	95.9	95.8	0.70	0.79	0.82	652
400	540	W22XB 400LJ	3843	7.0	2.3	2.5	21.4	17/6	3900	76	994	95.4	96.2	96.5	0.73	0.81	0.84	712
450	610	W22XB 400LJ	4319	7.0	2.4	2.5	24.0	12/4	4100	76	995	95.2	96.2	96.5	0.71	0.80	0.84	801
500	675	W22XB 400LJ	4804	7.0	2.4	2.5	28.1	12/4	4300	76	994	95.7	96.4	96.6	0.77	0.83	0.84	889
560	755	W22XB 400G (2)	5375	6.5	1.9	3.0	31.2	7/2	4850	76	995	96.5	97.0	97.0	0.80	0.83	0.84	992
630	850	W22XB 450KH (2)	6047	7.5	0.9	3.6	55.7	21/7	6500	78	995	96.2	96.7	96.9	0.76	0.85	0.88	1066
710	960	W22XB 450KH (2)(3)	6815	7.5	0.9	3.6	58.3	21/7	6700	78	995	96.6	97.0	97.0	0.80	0.86	0.88	696
800	1080	W22XB 500KH (2)(3)	7678	5.5	0.8	2.2	100	20/7	9500	80	995	96.5	97.0	97.2	0.80	0.84	0.86	801
900	1215	W22XB 500KH (2)(3)	8638	5.5	0.8	2.2	100	20/7	10400	80	995	96.5	97.0	97.2	0.80	0.84	0.86	901
1000	1350	W22XB 500KH (2)(3)	9598	5.5	0.8	2.2	113	20/7	11700	80	995	96.5	97.0	97.2	0.80	0.84	0.86	1001
VIII Pole - 750 min-1																		
75	100	W22XB 315L	964	6.4	1.8	2.2	7.9	20/7	1650	68	743	94.3	94.7	94.6	0.68	0.77	0.80	143
90	120	W22XB 315L	1157	6.4	1.8	2.2	7.9	20/7	1700	68	743	94.0	94.6	94.6	0.69	0.77	0.80	172
110	150	W22XB 315L	1414	6.4	1.8	2.2	9.3	12/4	1800	68	743	93.9	94.5	94.6	0.67	0.76	0.80	210
132	180	W22XB 315L	1697	6.4	1.8	2.2	11.2	12/4	1900	68	743	93.9	94.5	94.6	0.66	0.76	0.80	252
160	215	W22XB 355ML	2057	6.3	1.1	2.3	18.4	29/10	2250	70	743	94.4	95.1	95.1	0.67	0.76	0.80	304
200	270	W22XB 355AB	2571	6.3	1.1	2.3	21.7	29/10	2650	70	743	94.8	95.4	95.3	0.68	0.77	0.80	379
250	340	W22XB 355AB	3213	6.5	1.2	2.5	25.1	29/10	2850	70	743	94.8	95.4	95.3	0.67	0.76	0.80	473
280	380	W22XB 400LJ	3589	7.0	2.8	2.8	25.7	14/5	3900	74	745	95.6	96.5	96.7	0.68	0.77	0.82	510
315	425	W22XB 400LJ	4038	7.0	2.8	2.8	25.7	14/5	4100	74	745	95.6	96.5	96.7	0.68	0.77	0.82	573
355	480	W22XB 400LJ	4551	7.0	2.9	2.9	28.8	13/4	4300	74	745	94.9	95.8	96.1	0.66	0.76	0.81	658
400	540	W22XB 400LJ	5128	7.0	3.1	3.1	31.7	10/3	4400	74	745	95.2	95.9	96.1	0.67	0.76	0.81	742
450	610	W22XB 400LJ (2)	5761	7.5	3.4	3.4	37.7	5/1	4550	74	746	95.6	96.3	96.5	0.68	0.78	0.82	821
500	675	W22XB 400G (2)	6418	6.0	1.8	2.7	44.4	12/4	5000	74	744	95.6	96.3	96.5	0.70	0.79	0.82	912
560	755	W22XB 450KH (2)	7179	6.5	1.4	2.5	76.8	11/3	6600	76	745	95.0	96.0	96.3	0.74	0.80	0.82	1024
630	850	W22XB 450KH (2)(3)	8076	6.5	1.4	2.5	80.5	10/3	6900	76	745	95.0	96.0	96.3	0.74	0.80	0.82	668
710	960	W22XB 500KH (2)(3)	9077	6.0	0.8	2.1	111	20/7	10500	80	747	96.0	96.5	97.0	0.74	0.80	0.82	747
800	1080	W22XB 500KH (2)(3)	10228	6.0	0.9	2.1	124	20/7	11800	80	747	96.0	96.5	97.0	0.74	0.80	0.82	842

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
IE2 Efficiency Class according to IEC 60034-30

Output													Δ 400 V/50Hz - Oversizedd terminal box (optional)						
													% of full load						
													Efficiency η			Power Factor Cos φ			I_n (A)
kW	HP	Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot (s)	Weight Kg	Sound dB(A)	RPM	50	75	100	50	75	100	
II Pole - 3000 min-1																			
710	960	W22XB 450KH	(2)	2270	7.5	0.6	2.6	20.2	10/3	6400	82	2987	97.5	97.7	97.6	0.84	0.89	0.90	1167
800	1080	W22XB 450KH	(2)	2558	7.5	0.7	2.6	21.4	7/2	6900	82	2987	97.5	97.6	97.6	0.84	0.88	0.90	1315
900	1215	W22XB 500KH	(2)	2875	5.5	0.5	1.7	23.2	25/9	9200	85	2990	96.9	97.3	97.6	0.84	0.88	0.88	1512
1000	1350	W22XB 500KH	(2)	3194	5.5	0.5	1.7	24.2	25/9	9900	85	2990	97.0	97.4	97.6	0.85	0.88	0.88	1681
1120	1515	W22XB 500KH	(2)	3577	5.5	0.5	1.7	24.2	21/7	10100	85	2990	97.2	97.5	97.6	0.85	0.88	0.88	1882
IV Pole - 1500 min -1																			
710	960	W22XB 400G	(2)	4542	7.5	2.5	2.4	18.2	5/1	5300	80	1493	96.5	96.6	97.0	0.80	0.86	0.87	1214
800	1080	W22XB 450KH	(2)	5117	7.5	1.2	3.0	31.1	7/2	6600	82	1493	96.8	97.2	97.3	0.80	0.86	0.88	1349
900	1215	W22XB 450KH	(2)	5757	7.5	1.2	3.0	31.1	6/2	6800	82	1493	96.8	97.2	97.3	0.78	0.86	0.88	1517
1000	1350	W22XB 450KH	(2)	6397	7.5	1.2	3.0	31.9	5/1	7000	82	1493	97.0	97.3	97.3	0.80	0.86	0.88	1686
1120	1515	W22XB 500KH	(2)	7155	7.0	0.7	2.4	62.3	20/7	9700	85	1495	96.5	97.2	97.5	0.84	0.85	0.88	1884
1250	1690	W22XB 500KH	(2)	7985	7.5	0.8	2.6	69.2	20/7	10700	85	1495	96.5	97.2	97.5	0.84	0.85	0.88	2103
VI Pole - 1000 min -1																			
710	960	W22XB 450KH	(2)	6815	7.5	0.9	3.6	58.3	21/7	7100	78	995	96.6	97.0	97.0	0.80	0.86	0.88	1201
800	1080	W22XB 500KH	(2)	7678	5.5	0.8	2.2	100	20/7	9900	80	995	96.5	97.0	97.2	0.80	0.84	0.86	1381
900	1215	W22XB 500KH	(2)	8638	5.5	0.8	2.2	100	20/7	10800	80	995	96.5	97.0	97.2	0.80	0.84	0.86	1554
1000	1350	W22XB 500KH	(2)	9598	5.5	0.8	2.2	113	20/7	12100	80	995	96.5	97.0	97.2	0.80	0.84	0.86	1727
VIII Pole - 750 min-1																			
630	850	W22XB 450KH	(2)	8076	6.5	1.4	2.5	80.5	10/3	7300	76	745	95.0	96.0	96.3	0.74	0.80	0.82	1152
710	960	W22XB 500KH	(2)	9077	6.0	0.8	2.1	111	20/7	10900	80	747	96.0	96.5	97.0	0.74	0.80	0.82	1288
800	1080	W22XB 500KH	(2)	10228	6.0	0.9	2.1	124	20/7	12200	80	747	96.0	96.5	97.0	0.74	0.80	0.82	1452

(1) Temperature rise class F at full load (2) Copper rotor (3) Rated current at 690V (4) Rated current at 760V

Tn = Full load torque
Tmax / Tn = Breakdown torque
Ils / In = Locked rotor current
In = Full load current
Ts / Tn = Locked rotor torque

Notes:
-The indicated values for sound pressure levels are @ 1m no load, with 3 dB(A) tolerance.
-All values are according to IEC 60034-1 tolerances.
-This data can be changed without prior notice.

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
IE2 Efficiency Class according to IEC 60034-30

Output												Δ 460V/60Hz - Standard terminal box Δ 760V/60Hz - Standard terminal box							
kW	HP	Frame IEC		T_n (Nm)	I_s/I_n	T_s/T_n	T_{max}/T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot (s)	Weight Kg	Sound Pressure dB(A)	RPM	% of full load						I_n (A)
													Efficiency η			Power Factor Cos φ			
													50	75	100	50	75	100	
II Pole - 3000 min⁻¹																			
132	180	W22XB 315L		353	7.3	2.2	2.7	3.4	11/3	1500	84	3575	94.4	95.0	95.0	0.85	0.88	0.89	196
160	215	W22XB 315L		427	7.3	2.2	2.8	3.4	11/3	1550	84	3575	94.4	95.0	95.0	0.85	0.88	0.89	238
200	270	W22XB 315L		534	7.3	2.2	2.8	4.1	11/3	1650	84	3575	94.8	95.4	95.4	0.85	0.88	0.89	296
250	340	W22XB 315L		668	7.3	2.2	2.5	4.2	11/3	1750	84	3575	94.8	95.4	95.4	0.84	0.88	0.89	370
280	380	W22XB 355ML		747	7.5	2.5	2.7	6.0	14/5	2000	84	3580	95.1	95.9	95.9	0.88	0.91	0.91	403
315	425	W22XB 355ML		840	7.5	2.5	2.7	6.0	14/5	2300	84	3580	95.3	95.9	95.9	0.88	0.91	0.91	453
355	480	W22XB 355AB		947	7.5	2.5	2.7	6.8	14/5	2500	84	3580	95.5	96.1	96.0	0.89	0.91	0.91	510
400	540	W22XB 355AB		1067	7.5	2.5	2.7	7.7	14/5	2700	84	3580	95.2	96.0	96.0	0.89	0.91	0.91	575
450	610	W22XB 355AB		1200	7.5	2.5	2.7	7.7	14/5	2750	84	3580	95.3	96.0	96.0	0.88	0.91	0.91	647
500	675	W22XB 400LJ		1332	7.5	1.9	3.2	8.4	14/5	3750	84	3585	95.3	96.6	97.0	0.85	0.89	0.91	711
560	755	W22XB 400G	(2)	1490	7.0	0.9	2.9	17.3	14/5	4500	84	3590	96.6	97.2	97.2	0.91	0.92	0.92	786
630	850	W22XB 400G	(2)	1676	7.0	0.9	2.9	17.3	12/4	4800	84	3590	96.6	97.2	97.2	0.91	0.92	0.92	884
710	960	W22XB 450KH	(2)	1890	7.5	0.6	2.6	20.2	10/3	6000	86	3587	96.9	97.4	97.3	0.84	0.89	0.90	1018
800	1080	W22XB 450KH	(2)(4)	2130	7.5	0.7	2.6	21.4	7/2	6500	86	3587	96.9	97.3	97.3	0.84	0.88	0.90	694
IV Pole - 1500 min⁻¹																			
132	180	W22XB 315L		705	7.3	2.5	2.9	5.4	12/4	1550	81	1787	94.0	94.9	95.0	0.76	0.84	0.86	203
160	215	W22XB 315L		855	7.3	2.3	2.8	5.4	12/4	1600	81	1787	94.6	95.1	95.0	0.75	0.83	0.86	246
200	270	W22XB 315L		1069	7.3	2.3	2.9	5.4	12/4	1700	81	1787	94.0	94.9	95.0	0.77	0.83	0.86	307
250	340	W22XB 315L		1336	7.3	2.3	2.8	6.5	12/4	1800	81	1787	94.7	95.4	95.4	0.75	0.83	0.86	382
280	380	W22XB 355ML		1494	7.5	2.3	2.7	9.7	11/3	2100	82	1790	94.7	95.6	95.7	0.76	0.83	0.86	427
315	425	W22XB 355ML		1681	7.5	2.5	2.7	11.6	11/3	2400	82	1790	95.3	96.2	96.2	0.77	0.84	0.86	478
355	480	W22XB 355AB		1894	7.5	2.5	2.7	11.6	11/3	2600	82	1790	95.4	96.2	96.2	0.75	0.83	0.86	539
400	540	W22XB 355AB		2134	7.5	2.5	2.7	13.2	11/3	2800	82	1790	95.3	96.1	96.2	0.76	0.83	0.86	607
450	610	W22XB 355AB		2401	7.5	2.5	2.7	14.7	11/3	2850	82	1790	95.3	96.2	96.2	0.75	0.83	0.86	683
500	675	W22XB 355AB		2668	7.5	2.5	2.7	14.7	11/3	2900	82	1790	95.5	96.2	96.2	0.74	0.83	0.86	759
560	755	W22XB 400LJ		2988	6.8	1.7	2.5	15.8	13/4	3850	84	1790	95.9	96.7	96.8	0.78	0.85	0.87	835
630	850	W22XB 400LJ		3361	7.5	2.1	2.8	16.3	9/3	3950	84	1790	95.8	96.6	96.8	0.75	0.83	0.87	939
710	960	W22XB 400G	(2)	3782	7.5	2.5	2.4	18.2	5/1	4600	84	1793	95.9	96.3	96.7	0.80	0.86	0.87	1059
800	1080	W22XB 400G	(2)(4)	4259	7.5	2.7	2.5	20.1	5/1	4900	84	1794	95.9	96.3	96.7	0.80	0.86	0.87	722
900	1215	W22XB 450KH	(2)(4)	4794	7.5	1.2	3.0	31.1	6/2	6400	86	1793	96.2	96.9	97.0	0.78	0.86	0.88	801
1000	1350	W22XB 450KH	(2)(4)	5326	7.5	1.2	3.0	31.9	5/1	6600	86	1793	96.4	97.0	97.0	0.80	0.86	0.88	890
1120	1515	W22XB 450KH	(2)(4)	5965	7.5	1.2	3.0	31.9	5/1	6700	86	1793	96.4	97.0	97.0	0.80	0.86	0.88	997
1250	1690	W22XB 500KH	(2)(4)	6650	7.5	0.8	2.6	69.2	20/7	10300	89	1795	95.9	96.9	97.2	0.84	0.85	0.88	1110
1400	1890	W22XB 500KH	(2)(4)	7448	7.5	0.8	2.5	77.9	20/7	11600	89	1795	95.9	96.9	97.2	0.84	0.85	0.88	1243
VI Pole - 1000 min -1																			
90	120	W22XB 315L		722	6.5	1.7	2.4	8.9	11/3	1650	73	1190	93.0	94.1	94.3	0.73	0.80	0.83	144
110	150	W22XB 315L		883	6.5	1.7	2.4	8.9	11/3	1700	73	1190	94.0	94.9	95.0	0.74	0.80	0.83	175
132	180	W22XB 315L		1059	6.5	1.7	2.4	8.9	11/3	1800	73	1190	94.0	94.9	95.0	0.73	0.80	0.83	210
160	215	W22XB 315L		1284	6.5	1.7	2.4	11.1	11/3	1900	73	1190	94.4	95.0	95.0	0.74	0.80	0.83	255
200	270	W22XB 355ML		1605	5.6	1.9	2.6	12.7	28/10	2150	77	1190	94.5	95.2	95.2	0.70	0.79	0.82	322
250	340	W22XB 355ML		2006	5.6	1.9	2.6	15.0	28/10	2250	77	1190	94.7	95.4	95.3	0.71	0.79	0.82	402
280	380	W22XB 355AB		2247	5.6	1.9	2.6	15.0	28/10	2450	77	1190	94.8	95.5	95.4	0.69	0.79	0.82	449
315	425	W22XB 355AB		2528	5.6	1.9	2.6	17.1	28/10	2650	77	1190	94.9	95.6	95.5	0.69	0.79	0.82	505
355	480	W22XB 355AB		2849	5.6	1.9	2.6	18.9	28/10	2850	77	1190	95.0	95.6	95.5	0.70	0.79	0.82	569
400	540	W22XB 400LJ		3199	7.0	2.3	2.5	21.4	17/6	3900	80	1194	94.8	95.9	96.2	0.73	0.81	0.84	621
450	610	W22XB 400LJ		3596	7.0	2.4	2.5	24.0	12/4	4100	80	1195	94.6	95.9	96.2	0.71	0.80	0.84	699
500	675	W22XB 400LJ		3999	7.0	2.4	2.5	28.1	12/4	4300	80	1194	95.1	96.1	96.3	0.77	0.83	0.84	776
560	755	W22XB 400G	(2)	4475	6.5	1.9	3.0	31.2	7/2	4850	80	1195	95.9	96.7	96.7	0.80	0.83	0.84	865
630	850	W22XB 400G	(2)	5035	6.5	1.9	3.0	31.2	7/2	4900	80	1195	95.9	96.7	96.7	0.80	0.83	0.84	973
710	960	W22XB 450KH	(2)	5674	7.5	0.9	3.6	58.3	21/7	6500	82	1195	96.0	96.7	96.7	0.80	0.86	0.88	1047
800	1080	W22XB 450KH	(2)(4)	6393	7.5	0.9	3.6	58.3	17/6	6700	82	1195	96.2	96.7	96.7	0.81	0.87	0.88	714
900	1215	W22XB 500KH	(2)(4)	7192	5.5	0.8	2.2	100	20/7	9500	84	1195	95.9	96.7	96.9	0.80	0.84	0.86	820
1000	1350	W22XB 500KH	(2)(4)	7992	5.5	0.8	2.2	113	20/7	10400	84	1195	95.9	96.7	96.9	0.80	0.84	0.86	912
1120	1515	W22XB 500KH	(2)(4)	8951	5.5	0.8	2.2	113	20/7	11700	84	1195	95.9	96.7	96.9	0.80	0.84	0.86	1021
VIII Pole - 750 min⁻¹																			
75	100	W22XB 315L		802	6.4	1.8	2.2	7.9	20/7	1650	71	893	93.7	94.4	94.3	0.68	0.77	0.80	125
90	120	W22XB 315L		962	6.4	1.8	2.2	7.9	20/7	1700	71	893	93.4	94.3	94.3	0.69	0.77	0.80	150
110	150	W22XB 315L		1176	6.4	1.8	2.2	9.3	12/4	1800	71	893	93.3	94.2	94.3	0.67	0.76	0.80	183
132	180	W22XB 315L		1412	6.4	1.8	2.2	11.2	12/4	1900	71	893	93.3	94.2	94.3	0.66	0.76	0.80	220
160	215	W22XB 355ML		1711	6.3	1.1	2.3	18.4	29/10	2250	75	893	93.8	94.8	94.8	0.67	0.76	0.80	265
200	270	W22XB 355ML		2139	6.3	1.1	2.3	21.7	29/10	2350	75	893	94.2	95.1	95.0	0.68	0.77	0.80	330
250	340	W22XB 355AB		2674	6.5	1.2	2.5	25.1	29/10	2650	75	893	94.2	95.1	95.0	0.67	0.76	0.80	413
280	380	W22XB 355AB		2994	6.5	1.2	2.5	25.1	29/10	2850	75	893	94.2	95.1	95.0	0.66	0.76	0.80	462
315	425	W22XB 400LJ		3361	7.0	2.8	2.8	25.7	14/5	4100	78	895	95.0	96.2	96.4	0.68	0.77	0.82	500
355	480	W22XB 400LJ		3788	7.0	2.9	2.9	28.8	13/4	4300	78	895	94.3	95.5	95.8	0.66	0.76	0.81	574
400	540	W22XB 400LJ		4268	7.0	3.1	3.1	31.7	10/3	4400	78	895	94.6	95.6	95.8	0.67	0.76	0.81	647
450	610	W22XB 400LJ	(2)	4796	7.5	3.4	3.4	37.7	5/1	4550	78	896	95.0	96.0	96.2	0.68	0.78	0.82	716
500	675	W22XB 400G	(2)	5341	6.0	1.8	2.7	44.4	12/4	5200	78	894	95.0	96.0	96.2	0.70	0.79	0.82	796
560	755	W22XB 400G	(2)	5982	6.0	1.8	2.7	44.4	12/4	5350	78	894	95.0	96.0	96.2	0.70	0.79	0.82	891
630	850	W22XB 450KH	(2)	6722	6.5	1.4	2.5	80.5	10/3	6900	80	895	94.4	95.7	96.0	0.74	0.80	0.82	1004
710	960	W22XB 500KH	(2)(4)	7559	6.0	0.8	2.1	111	20/7	9800	84	897	95.4	96.2	96.7	0.74	0.80	0.82	680
800	1080	W22XB 500KH	(2)(4)	8517	6.0	0.9	2.1	124	20/7	10500	84	897	95.4	96.2	96.7	0.74	0.80	0.82	766
900	1215	W22XB 500KH	(2)(4)	9582	6.0	0.9	2.2	139	20/7	11800	84	897	95.4	96.2	96.7	0.74	0.80	0.82	862

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
IE2 Efficiency Class according to IEC 60034-30

Output												Δ 460 V/60Hz - Oversizeddd terminal box						
												% of full load						
												Efficiency η			Power Factor Cos φ			I_n (A)
kW	HP	Frame IEC	T_n (Nm)	I_S / I_n	T_S / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot (s)	Weight Kg	Sound dB(A)	RPM	50	75	100	50	75	100	
II Pole - 3000 min-1																		
800	1080	W22XB 450KH	(2)	2130	7.5	0.7	2.6	21.4	7/2	6900	86	3587	96.9	97.3	97.3	0.84	0.88	0.90	1147
IV Pole - 1500 min -1																		
800	1080	W22XB 400G	(2)	4259	7.5	2.7	2.5	20.1	5/1	5300	84	1794	95.9	96.3	96.7	0.80	0.86	0.87	1194
900	1215	W22XB 450KH	(2)	4794	7.5	1.2	3.0	31.1	6/2	6800	86	1793	96.2	96.9	97.0	0.78	0.86	0.88	1323
1000	1350	W22XB 450KH	(2)	5326	7.5	1.2	3.0	31.9	5/1	7000	86	1793	96.4	97.0	97.0	0.80	0.86	0.88	1470
1120	1515	W22XB 450KH	(2)	5965	7.5	1.2	3.0	31.9	5/1	7100	86	1793	96.4	97.0	97.0	0.80	0.86	0.88	1647
1250	1690	W22XB 500KH	(2)	6650	7.5	0.8	2.6	69.2	20/7	10700	89	1795	95.9	96.9	97.2	0.84	0.85	0.88	1834
1400	1890	W22XB 500KH	(2)	7448	7.5	0.8	2.5	77.9	20/7	12000	89	1795	95.9	96.9	97.2	0.84	0.85	0.88	2054
VI Pole - 1000 min -1																		
800	1080	W22XB 450KH	(2)	6393	7.5	0.9	3.6	58.3	17/6	7100	82	1195	96.2	96.7	96.7	0.81	0.87	0.88	1180
900	1215	W22XB 500KH	(2)	7192	5.5	0.8	2.2	100	20/7	9900	84	1195	95.9	96.7	96.9	0.80	0.84	0.86	1356
1000	1350	W22XB 500KH	(2)	7992	5.5	0.8	2.2	113	20/7	10800	84	1195	95.9	96.7	96.9	0.80	0.84	0.86	1506
1120	1515	W22XB 500KH	(2)	8951	5.5	0.8	2.2	113	20/7	12100	84	1195	95.9	96.7	96.9	0.80	0.84	0.86	1687
VIII Pole - 750 min-1																		
710	960	W22XB 500KH	(2)	7559	6.0	0.8	2.1	111	20/7	10200	84	897	95.4	96.2	96.7	0.74	0.80	0.82	1124
800	1080	W22XB 500KH	(2)	8517	6.0	0.9	2.1	124	20/7	10900	84	897	95.4	96.2	96.7	0.74	0.80	0.82	1266
900	1215	W22XB 500KH	(2)	9582	6.0	0.9	2.2	139	20/7	12200	84	897	95.4	96.2	96.7	0.74	0.80	0.82	1425

(1) Temperature rise class F at full load (2) Copper rotor (3) Rated current at 690V (4) Rated current at 760V

Tn = Full load torque
Ils / In = Locked rotor current
Ts / Tn = Locked rotor torque

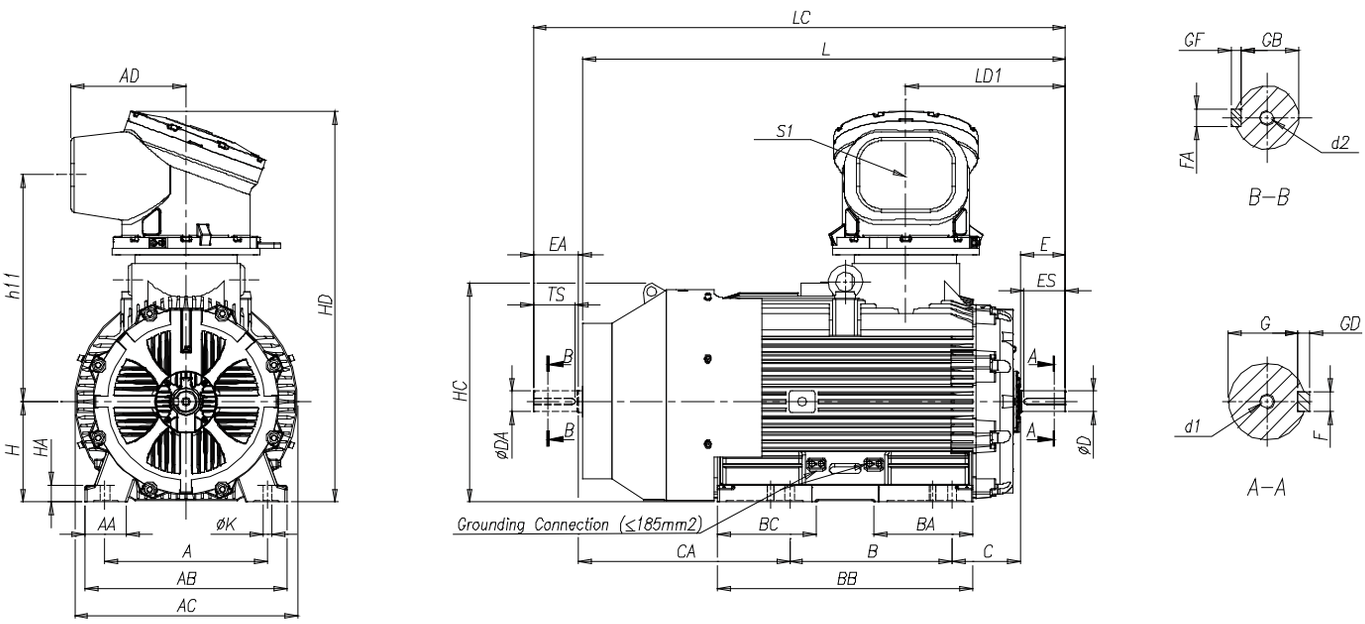
Tmax / Tn = Breakdown torque
In = Full load current

Notes:
-The indicated values for sound pressure levels are @ 1m no load, with 3 dB(A) tolerance.
-All values are according to IEC 60034-1 tolerances.
-This data can be changed without prior notice.

7.1.2. Low Voltage - Mechanical Data - W22XB Series

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Low Voltage

315L - 355ML, IMB3T
Anti-friction bearings



Frame	Poles	A	AA	AB	AC	AD	BA	BB	BC	B	C	CA	H	HA	HC	HD	h11	K	L	LC	LD1
315L	2P	508	130	632	698	360	310	800	310	508	216	663	315	52	684	1224	710	28	1512	1667	500
	4P+																		1542	1697	530
355ML	2P	610	130	730	780	360	315	830	315	560 630	254	567	355	55	765	1312	758	28	1576	1731	514
	4P+																		1646	1831	584

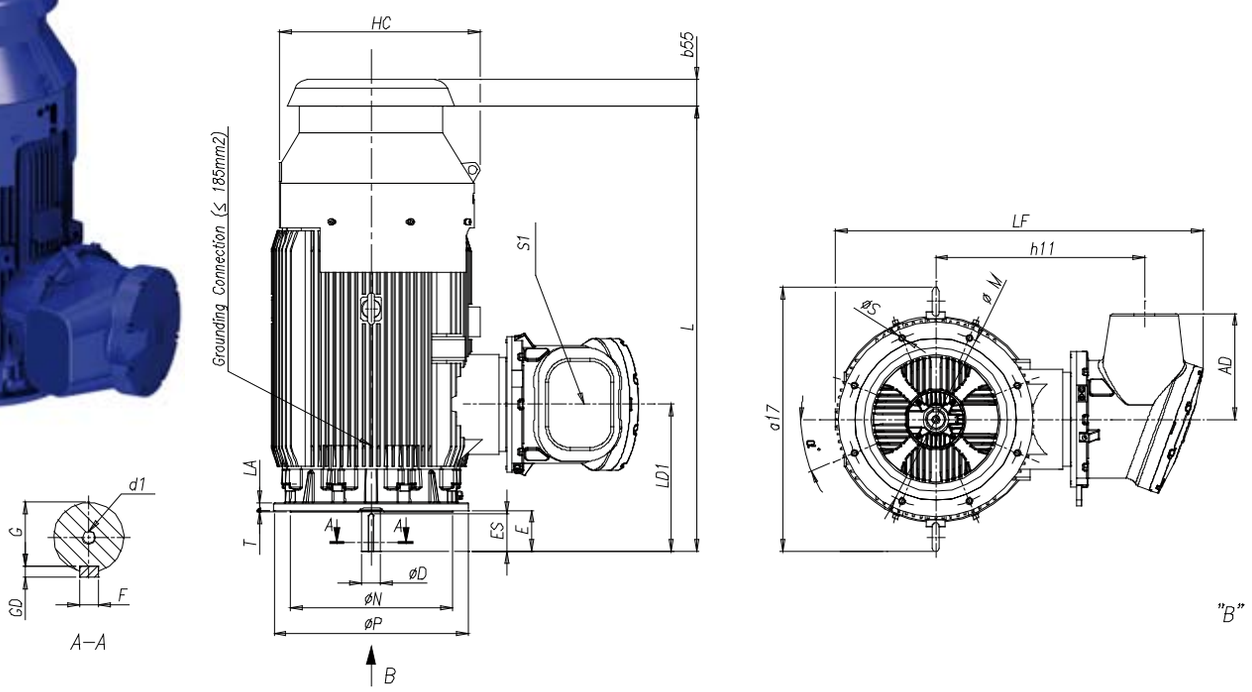
		Shaft dimensions														Bearings		Power terminal box - S1
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	WTBX M
315L	2P	65m6	140	130	18h9	58	11	60m6	140	130	18h9	53	11	DSM20	DSM20	6314C3	6314C3	I ≤ 900A : 2xM63x1,5 + 1xM20x1,5 900A ≤ I ≤ 1090A : 4xM63x1,5 + 1xM20x1,5
	4P+	80m6	170	160	22h9	71	14	65m6				58	11			6319C3	6316C3	
355ML	2P	75m6	140	130	20h9	67,5	12	60m6	140	130	18h9	53	11	DSM20		6316C3	6316C3	
	4P+	100m6	210	200	28h9	90	16	80m6	170	160	22h9	71	14	DSM24		6322C3	6319C3	

Notes:

All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Low Voltage

315L - 355ML, IMV1
Anti-friction bearings



Frame	Poles	AD	HC	h11	L	LA	LD1	LF	b55	a17	M	N	P	T	S	Nr. Holes	α
315L	2P	360	679	710	1514	25	500	1249	90	898	600	550	660	6	24	8	22,5°
	4P+				1544		530										
355ML	2P	360	765	758	1576	30	514	1357	93	988	740	680	800	6	24	8	22,5°
	4P+				1646		584										

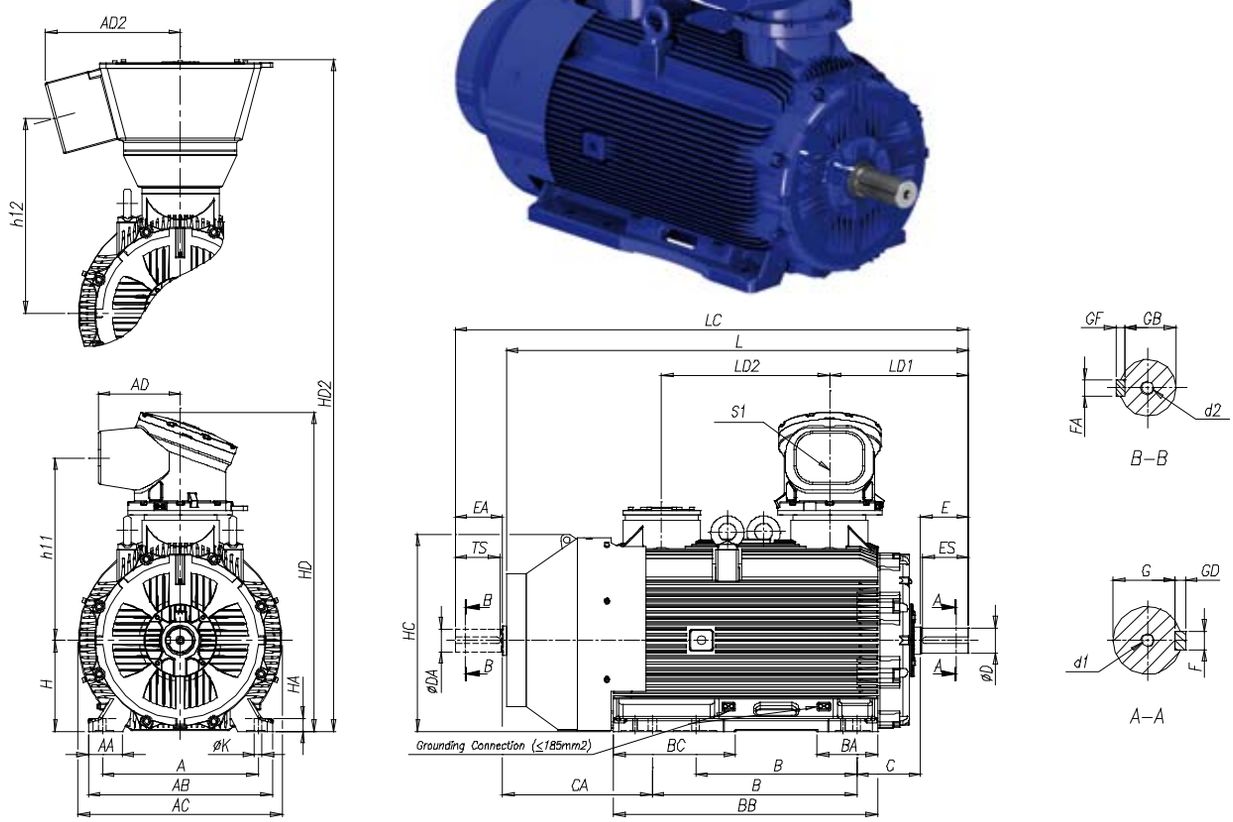
		Shaft dimensions							Bearings		Power terminal box - S1
Frame	Poles	D	E	ES	F	G	GD	d1	D.E.	N.D.E.	WTBX M
315L	2P	65m6	140	130	18h9	58	11	DSM20	6314C3	6314C3	I ≤ 900A : 2xM63x1,5 + 1xM20x1,5 900A ≤ I ≤ 1090A : 4xM63x1,5 + 1xM20x1,5
	4P+	80m6	170	160	22h9	71	14		6319C3	6316C3	
355ML	2P	75m6	140	130	20h9	67,5	12	DSM20	6316C3	6316C3	
	4P+	100m6	210	200	28h9	90	16	DSM24	6322C3	6319C3	

Notes:

All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Low Voltage

355AB - 400LJ - 400G, IMB3T
Anti-friction bearings



Frame	Poles	A	AA	AB	AC	AD[1]	BA	BB	BC	B	C	CA	H	HA	HC	HD[1]	h11[1]	K	L	LC	LD1	LD2
355AB	2P	610	130	730	780	360	225	1038	523	710	254	605	355	55	765	1312	758	28	1784	1939	514	618
	4P+									800									1854	2039	584	
400LJ	2P	686	150	810	898	360	265	1160	535	710	280	659	400	58	867	1402	803	35	1994	2149	570	740
	4P+									900									2034	2219	610	
400G	2P	686	150	810	898	360	420	1400	420	1120	280	679	400	58	867	1402	803	35	2234	2389	570	982
	4P+																		2274	2459	610	

		Shaft dimensions														Bearings		Power terminal box - S1[1]
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	WTBX M
355AB	2P	75m6	140	130	20h9	67,5	12	60m6	140	130	18h9	53	11	DSM20	DSM20	6316C3	6316C3	I ≤ 900A : 2xM63x1,5 + 1xM20x1,5 900A ≤ I ≤ 1090A : 4xM63x1,5 + 1xM20x1,5
	4P+	100m6	210	200	28h9	90	16	80m6	170	160	22h9	71	14	DSM24		6322C3	6319C3	
400LJ	2P	80m6	170	160	22h9	71	14	60m6	140	130	18h9	53	11	DSM20		6318C3	6318C3	
	4P+	110m6	210	200	28h9	100	16	80m6	170	160	22h9	71	14	DSM24		6324C3	6324C3	
400G	2P	80m6	170	160	22h9	71	14	60m6	140	130	18h9	53	11	DSM20		6318C3	6318C3	
	4P+	110m6	210	200	28h9	100	16	80m6	170	160	22h9	71	14	DSM24		6324C3	6324C3	

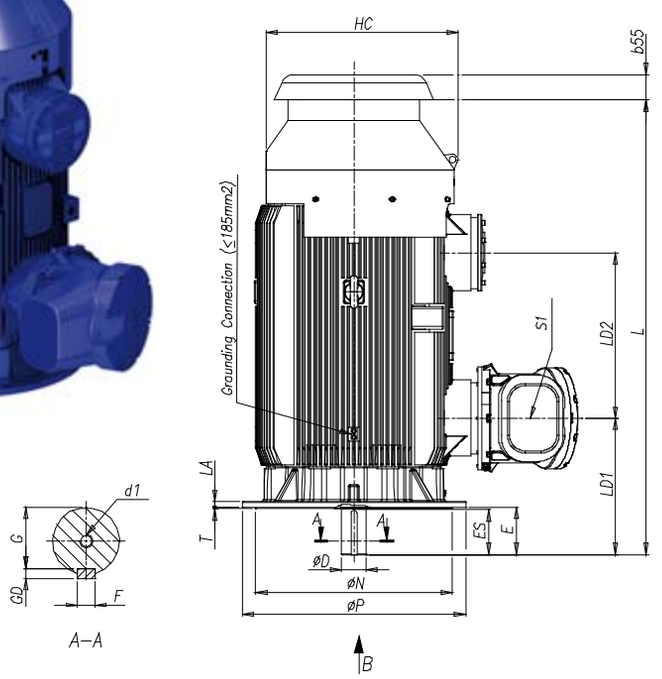
	I>1090A				
Frame	Poles	AD2	HD2	h12	Power terminal box - CEFGH 500 - S1
355AB	2P	75m6	140	130	1090A ≤ I ≤ 1900A : 4xM63x1,5 + 1xM20x1,5
	4P+	100m6	210	200	
400LJ	2P	80m6	170	160	
	4P+	110m6	210	200	
400G	2P	80m6	170	160	
	4P+	110m6	210	200	

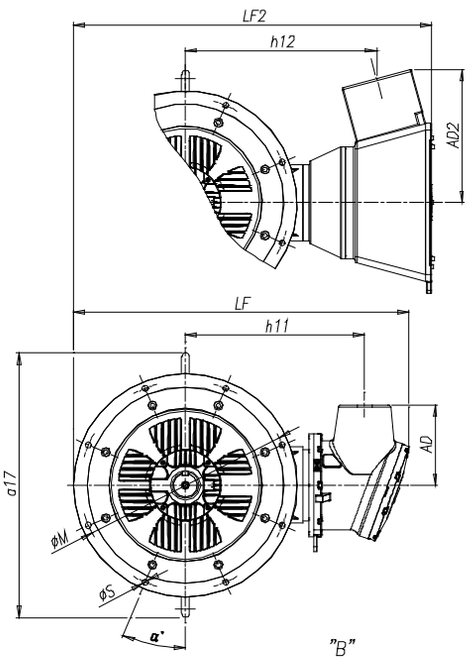
Notes:

(1) I ≤ 1090A
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Low Voltage

355AB - 400LJ - 400G, IMV1
Anti-friction bearings





Frame	Poles	AD(1)	HC	h11(1)	L	LA	LD1	LD2	LF(1)	b55	a17	M	N	P	T	S	Nr. Holes	α
355AB	2P	360	759	758	1784	30	514	618	1357	93	988	740	680	800	6	24	8	22,5°
	4P+				1854		584											
400LJ	2P	360	862	803	1994	28	570	740	1503	106	1184	940	880	1000	6	28	8	22,5°
	4P+				2034		610											
400G	2P	360	862	803	2234	28	570	980	1503	106	1184	940	880	1000	6	28	8	22,5°
	4P+				2274		610											

		Shaft dimensions							Bearings		Power terminal box - S1(1)
Frame	Poles	D	E	ES	F	G	GD	d1	D.E.	N.D.E.	WTBX M
355AB	2P	75m6	140	130	20h9	67,5	12	DSM20	7316	6316C3	I ≤ 900A : 2xM63x1,5 + 1xM20x1,5 900A ≤ I ≤ 1090A : 4xM63x1,5 + 1xM20x1,5
	4P+	100m6	210	200	28h9	90	16	DSM24	7322	6319C3	
400LJ	2P	80m6	170	160	22h9	71	14	DSM20	7318	6318C3	
	4P+	110m6	210	200	28h9	100	16	DSM24	7324	6324C3	
400G	2P	80m6	170	160	22h9	71	14	DSM20	7318	6318C3	
	4P+	110m6	210	200	28h9	100	16	DSM24	7324	6324C3	

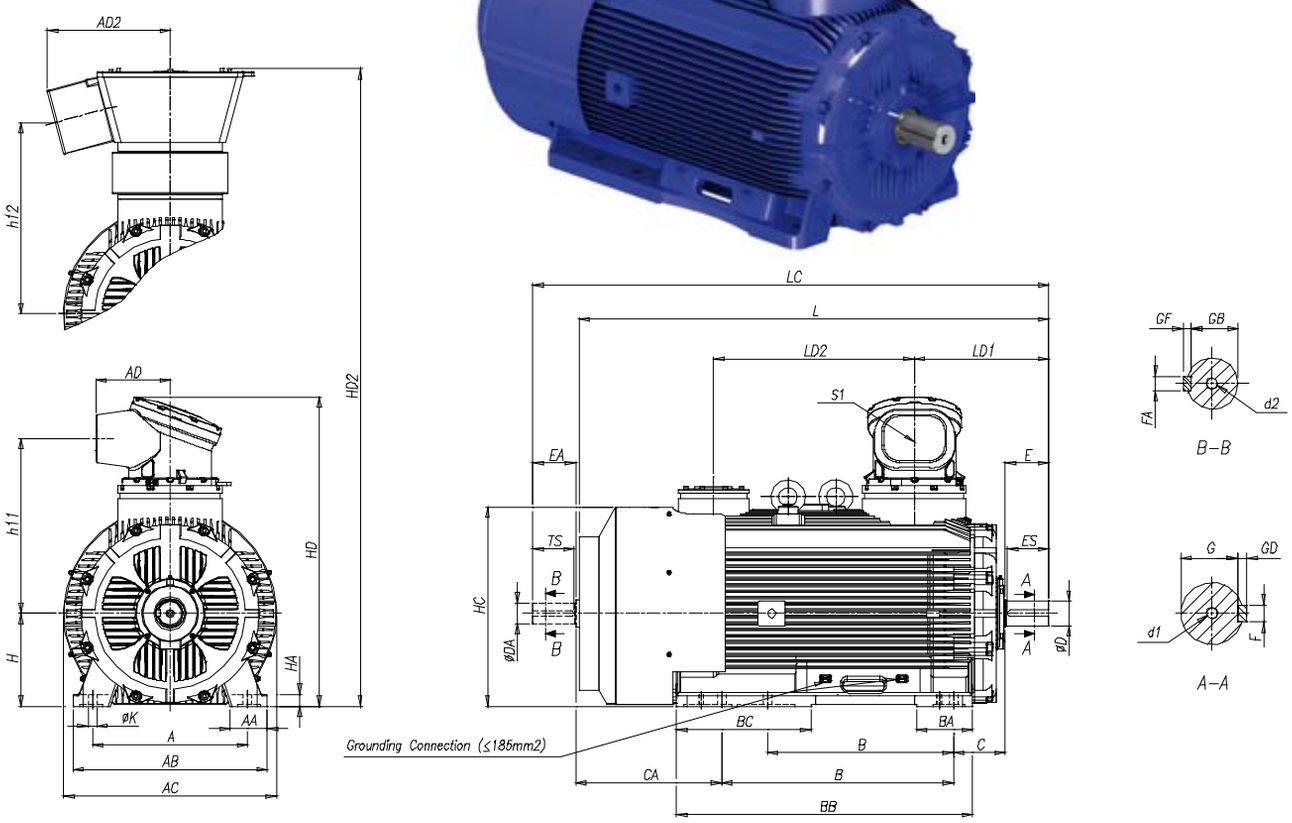
	I>1090A				
Frame	Poles	AD2	LF2	h12	Power terminal box - CEFGH 500 - S1
355AB	2P	594	1040	812	1090A ≤ I ≤ 1900A : 4xM63x1,5 + 1xM20x1,5
	4P+				
400LJ	2P	594	1616	857	
	4P+				
400G	2P	594	1616	857	
	4P+				

Notes:

(1) I ≤ 1090A
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Low Voltage

450KH - 500KH, IMB3T
Anti-friction bearings



Frame	Poles	A	AA	AB	AC	AD[1]	BA	BB	BC	B	C	CA	H	HA	HC	HD[1]	h11[1]	K	L	LC	LD1	LD2
450KH	2P	750	180	940	1030	360	270	1430	650	900 1120	250	705	450	60	965	1495	846	42	2230	2385	610	970
	4P+																		2270	2495	650	
500KH	2P	850	200	1020	1162	360	375	1800	915	1000 1250	280	1065	500	65	1081	1565	866	42	2750	2905	635	1300
	4P+																		2830	3055	715	

		Shaft dimensions														Bearings		Power terminal box - S1[1]
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	WTBX M
450KH	2P	85m6	170	160	22h9	76	14	75m6	140	130	20h9	67,5	12	DSM20	DSM20	6318C3	NU218C3	I ≤ 900A : 2xM63x1,5 + 1xM20x1,5 900A ≤ I ≤ 1090A : 4xM63x1,5 + 1xM20x1,5
	4P+	120m6	210	200	32h9	109	18	100m6	210	200	28h9	90	16	DSM24	DSM24	6326C3	6326C3	
500KH	2P	90m6	170	160	25	81	14	75m6	140	130	20	67,5	12	DSM24	DSM20	NU220C3+6020C3	NU220C3	
	4P+	130m6	250	240	32	119	18	110m6	210	200	28	100	16		DSM24	6328C3	6328C3	

	I>1090A				
Frame	Poles	AD2	HD2	h12	Power terminal box - CEFGH 500 - S1
450KH	2P	594	1634	925	1090A ≤ I ≤ 1900A : 4xM63x1,5 + 1xM20x1,5
	4P+				
500KH	2P	594	1704	945	
	4P+				

Notes:

(1) I ≤ 1090A
All the dimensions are in millimeters.
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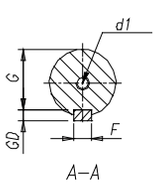
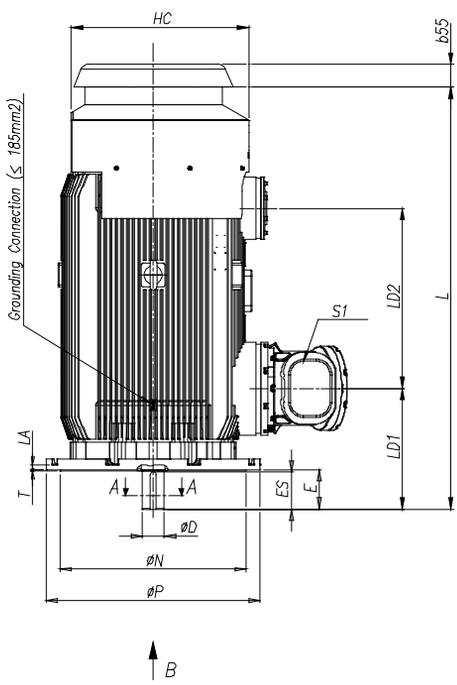
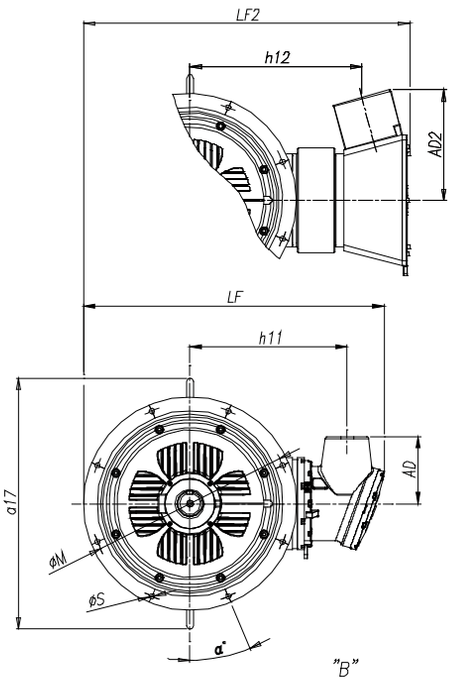
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Low Voltage

450KH - 500KH, IMV1
Anti-friction bearings







Frame	Poles	AD(1)	HC	h11(1)	L	LA	LD1	LD2	LF(1)	b55	a17	M	N	P	T	S	Nr. Holes	α
450KH	2P	360	955	846	2270	30	650	970	1620	125	1352	1080	1000	1150	6	28	8	22,5º
	4P+																	
500KH	2P	360	1162	866	2830	30	715	1300	1640	130	1482	1080	1000	1150	7	28	8	22,5º
	4P+																	

		Shaft dimensions							Bearings		Power terminal box - S1(1)
Frame	Poles	D	E	ES	F	G	GD	d1	D.E.	N.D.E.	WTBX M
450KH	2P	120m6	210	200	32h9	109	18	DSM24	7326	6326C3	I ≤ 900A : 2xM63x1,5 + 1xM20x1,5 900A ≤ I ≤ 1090A : 4xM63x1,5 + 1xM20x1,5
	4P+										
500KH	2P	130m6	250	240	32h9	119	18	DSM24	7328	6328C3	
	4P+										

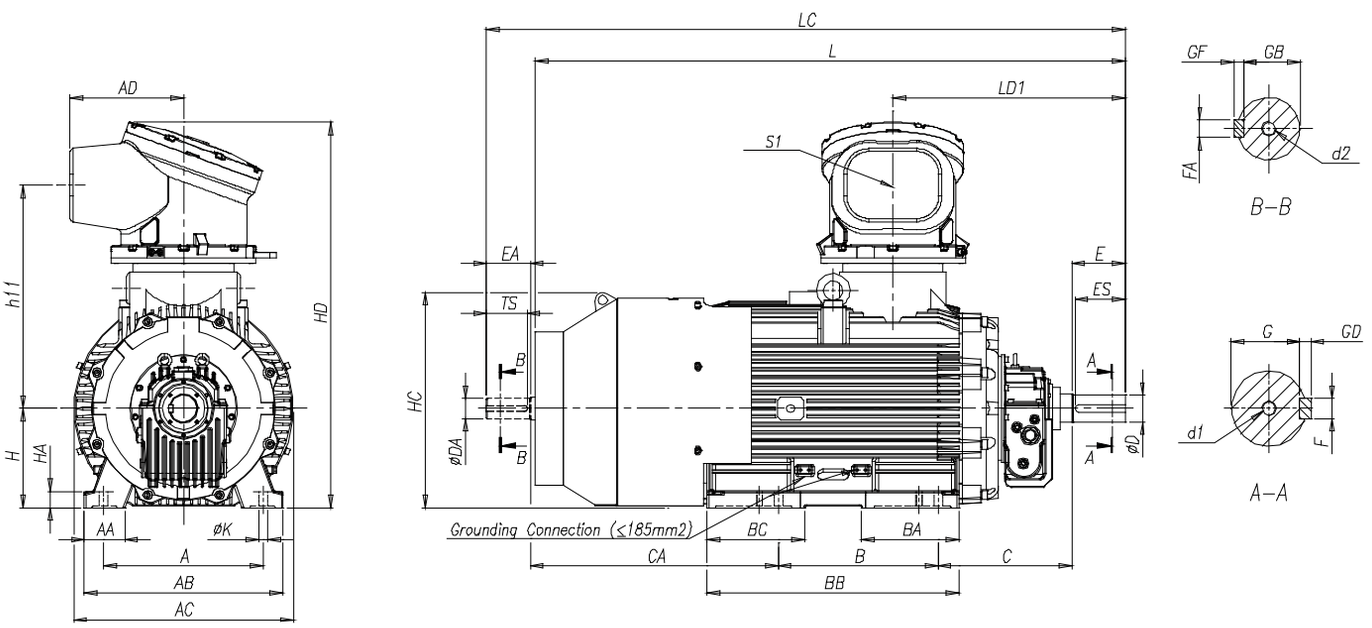
	I>1090A				
Frame	Poles	AD2	LF2	h12	Power terminal box - CEFGH 500 - S1
450KH	2P	594	1759	925	1090A ≤ I ≤ 1900A : 4xM63x1,5 + 1xM20x1,5
	4P+				
500KH	2P	594	1779	945	
	4P+				

Notes:

(1) I ≤ 1090A
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XBS - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBES - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Low Voltage

315L - 355ML, IMB3T
Sleeve bearings



Frame	Poles	A	AA	AB	AC	AD	BA	BB	BC	B	C	CA	H	HA	HC	HD	h11	K	L	LC	LD1
315L	2P	508	130	632	698	360	310	800	310	508	425	788	315	52	684	1224	710	28	1846	2001	709
	4P+										450								1901	2056	764
355ML	2P	610	130	730	780	360	315	830	315	560 630	455	685	355	55	765	1312	758	28	1902	2057	514
	4P+										475								1992	2177	805

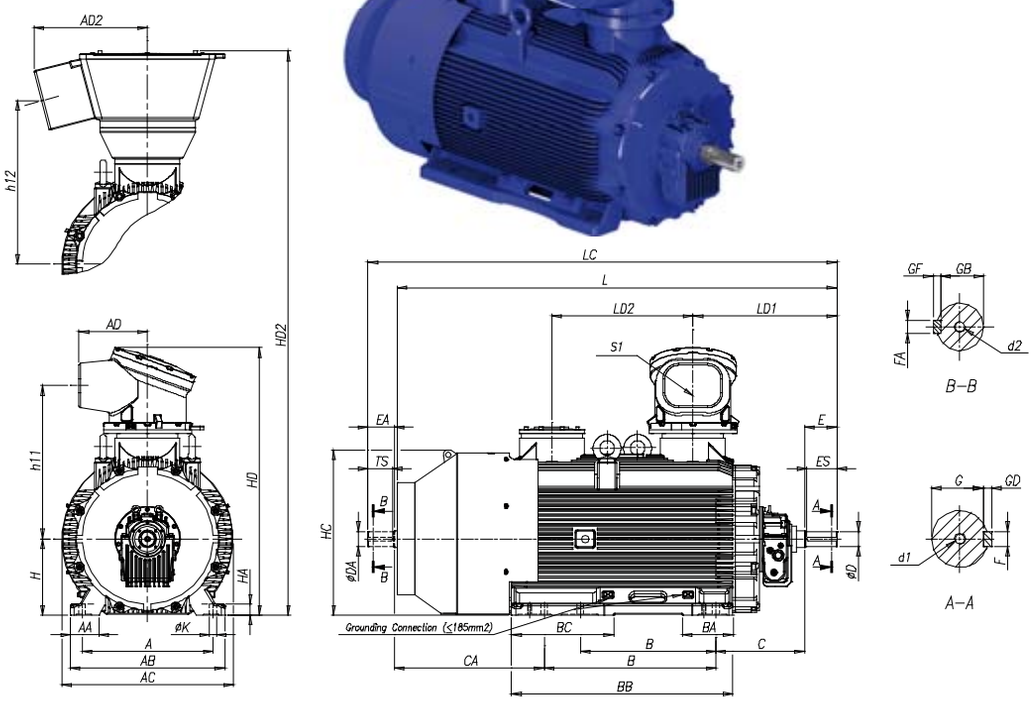
		Shaft dimensions														Bearings		Power terminal box - S1
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	WTBX M
315L	2P	65m6	140	130	18h9	58	11	60m6	140	130	18h9	53	11	DSM20	DSM20	EFNLB 9-80	EFNLQ 9-80	I ≤ 900A : 2xM63x1,5 + 1xM20x1,5
	4P+	80m6	170	160	22h9	71	14	65m6				58	11			EFNLB 11-110	EFNLQ 11-110	900A ≤ I ≤ 1090A : 4xM63x1,5 + 1xM20x1,5
355ML	2P	75m6	140	130	20h9	67,5	12	60m6	140	130	18h9	53	11	DSM20		EFNLB 9-80	EFNLB 9-80	
	4P+	100m6	210	200	28h9	90	16	80m6	170	160	22h9	71	14	DSM24		EFNLB 11-110	EFNLB 11-110	

Notes:

All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.
Rotor is not self-aligned, costumer must ensure alignment.
Over speed not allowed.
Rotor maximum axial play: ± 3mm.
Motor rotation only available in one sense (CW or CCW), please inform desired sense at the time of Inquiry/Order.

W22XBS - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBES - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Low Voltage

355AB - 400LJ - 400G, IMB3T
Sleeve bearings



Frame	Poles	A	AA	AB	AC	AD[1]	BA	BB	BC	B	C	CA	H	HA	HC	HD[1]	h11[1]	K	L	LC	LD1	LD2
355AB	2P	610	130	730	780	360	225	1038	523	710	455	723	55	55	765	1312	758	28	2110	2265	715	618
	4P+									800	475								2200	2385	805	
400LJ	2P	686	150	810	898	360	265	1160	535	710	465	784	58	58	867	1402	802	35	2304	2459	755	740
	4P+									900	490								2369	2554	820	
400G	2P	686	150	810	898	360	420	1400	420	1120	465	804	58	58	867	1402	802	35	2544	2699	755	980
	4P+										490								2609	2794	820	

		Shaft dimensions														Bearings		Power terminal box - S1[1]
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	WTBX M
355AB	2P	75m6	140	130	20h9	67,5	12	60m6	140	130	18h9	53	11	DSM20	DSM20	EFNLB 9-80	EFNLQ 9-80	I ≤ 900A : 2xM63x1,5 + 1xM20x1,5 900A ≤ I ≤ 1090A : 4xM63x1,5 + 1xM20x1,5
	4P+	100m6	210	200	28h9	90	16	80m6	170	160	22h9	71	14	DSM24		EFNLB 11-110	EFNLQ 11-110	
400LJ	2P	80m6	170	160	22h9	71	14	60m6	140	130	18h9	53	11	DSM20		EFNLB 9-80	EFNLQ 9-80	
	4P+	110m6	210	200	28h9	100	16	80m6	170	160	22h9	71	14	DSM24		EFNLB 11-110	EFNLQ 11-110	
400G	2P	80m6	170	160	22h9	71	14	60m6	140	130	18h9	53	11	DSM20		EFNLB 9-80	EFNLQ 9-80	
	4P+	110m6	210	200	28h9	100	16	80m6	170	160	22h9	71	14	DSM24		EFNLB 11-110	EFNLQ 11-110	

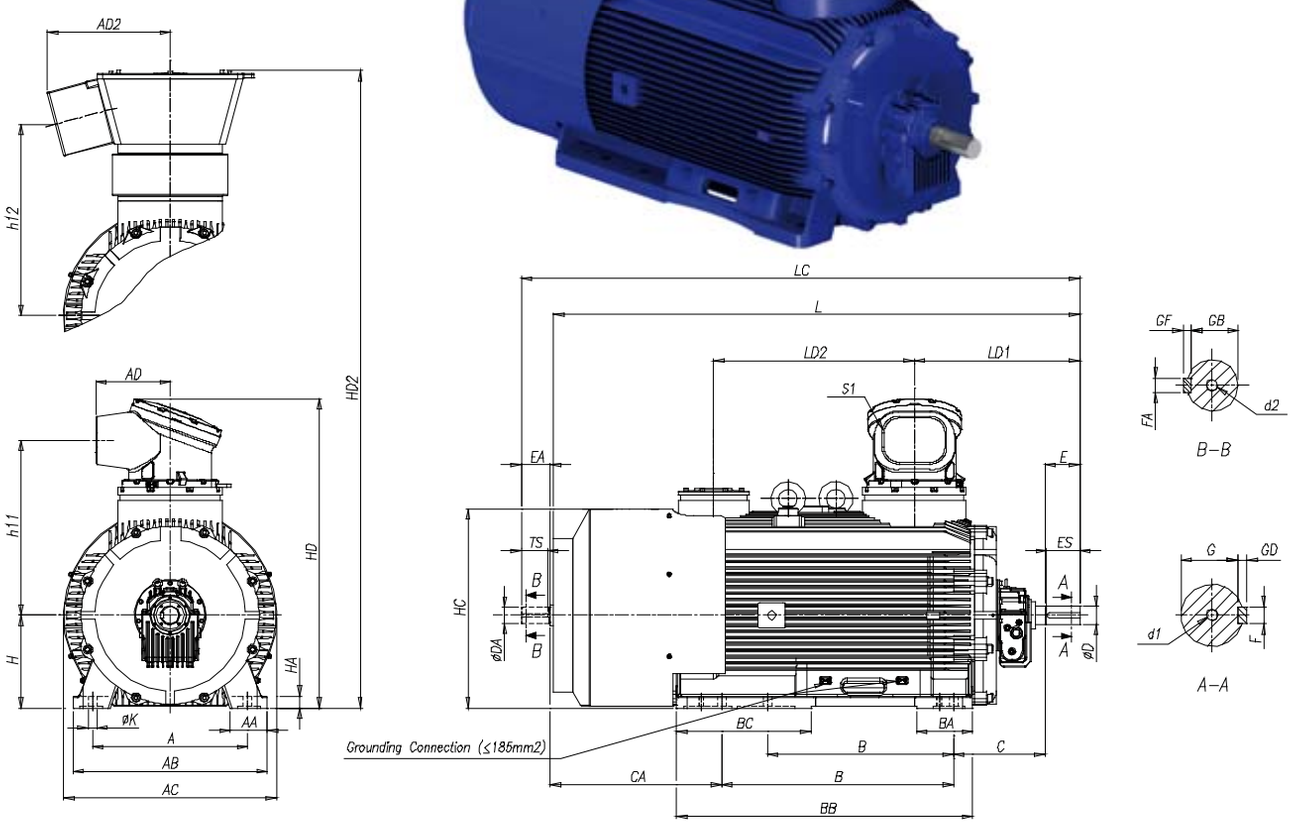
	I>1090A				
Frame	Poles	AD2	HD2	h12	Power terminal box - CEFGH 500 - S1
355AB	2P	594	1425	812	1090A ≤ I ≤ 1900A : 4xM63x1,5 + 1xM20x1,5
	4P+				
400LJ	2P	594	1516	857	
	4P+				
400G	2P	594	1516	857	
	4P+				

Notes:

(1) I ≤ 1090A
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.
Rotor is not self-aligned, costumer must ensure alignment.
Over speed not allowed.
Rotor maximum axial play: ± 3mm.
Motor rotation only available in one sense (CW or CCW), please inform desired sense at the time of Inquiry/Order.

W22XBS - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBES - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Low Voltage

450KH - 500KH, IMB3T
Sleeve bearings



Frame	Poles	A	AA	AB	AC	AD[1]	BA	BB	BC	B	C	CA	H	HA	HC	HD[1]	h11[1]	K	L	LC	LD1	LD2
450KH	2P	750	180	940	1030	360	270	1430	650	900	440	830	450	60	965	1495	846	42	2545	2700	800	970
	4P+									1120	465								2610	2835	865	
500KH	2P	850	200	1020	1162	360	375	1800	915	1000	490	1190	500	65	1081	1565	866	42	3165	3390	925	1300
	4P+									1250												

		Shaft dimensions														Bearings		Power terminal box - S1[1]
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	WTBX M
450KH	2P	85m6	170	160	22h9	76	14	75m6	140	130	20h9	67,5	12	DSM20	DSM20	EFNLB 9-80	EFNLQ 9-80	I ≤ 900A : 2xM63x1,5 + 1xM20x1,5 900A ≤ I ≤ 1090A : 4xM63x1,5 + 1xM20x1,5
	4P+	120m6	210	200	32h9	109	18	100m6	210	200	28h9	90	16	DSM24	DSM24	EFNLB 11-125	EFNLQ 11-125	
500KH	2P	130m6	250	240	32	119	18	110m6	210	200	28	100	16	DSM24	DSM24	EFNLB 11-125	EFNLQ 11-125	
	4P+																	

		I>1090A			
Frame	Poles	AD2	HD2	h12	Power terminal box - CEFGH 500 - S1
450KH	2P	594	1634	925	1090A ≤ I ≤ 1900A : 4xM63x1,5 + 1xM20x1,5
	4P+				
500KH	2P	594	1704	945	
	4P+				

Notes:

(1) I ≤ 1090A
(2) Available only for 50Hz
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.
Rotor is not self-aligned, costumer must ensure alignment.
Over speed not allowed.
Rotor maximum axial play: ± 3mm.
Motor rotation only available in one sense (CW or CCW), please inform desired sense at the time of Inquiry/Order.

7.1.3. Medium Voltage - Electrical Data - W22XB Series

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)

Output												Y 3000V/50Hz							
												% of full load							
kW	HP	Frame IEC	T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot(s)	Weight Kg	Sound Pressure dB(A)	RPM	Efficiency η			Power Factor Cos φ			I_n (A)
												50	75	100	50	75	100	
II Pole - 3000 min-1																			
90	120	W22XB 315L	289	6.7	1.5	2.5	1.3	10/5	1700	80	2970	91.3	93.6	94.5	0.76	0.83	0.86	21.3
110	150	W22XB 315L	354	6.8	1.6	2.6	1.5	8/4	1800	80	2970	92.0	93.9	94.6	0.78	0.85	0.87	25.7
132	180	W22XB 315L	424	6.8	1.6	2.6	1.6	8/4	1900	80	2970	92.3	94.0	94.7	0.79	0.85	0.87	30.8
160	215	W22XB 355ML	512	7.5	1.4	3.1	3.4	15/7	2050	80	2987	93.4	94.8	95.3	0.78	0.85	0.87	37.1
200	270	W22XB 355ML	639	7.5	1.4	3.1	3.8	10/5	2150	80	2987	94.1	95.2	95.6	0.80	0.85	0.87	46.3
250	340	W22XB 355AB	801	7.0	1.5	2.7	4.9	10/5	2400	80	2982	95.5	96.1	96.3	0.81	0.87	0.89	56.1
280	380	W22XB 355AB	897	7.5	1.5	2.9	5.2	10/5	2500	80	2982	95.7	96.3	96.5	0.81	0.87	0.89	62.7
315	425	W22XB 355AB	1009	7.5	1.5	2.9	5.5	8/4	2650	80	2982	95.9	96.5	96.6	0.82	0.88	0.89	70.5
355	480	W22XB 355AB	1137	7.5	1.5	2.9	5.9	8/4	2850	80	2983	96.0	96.6	96.7	0.82	0.87	0.89	79.4
400	540	W22XB 400LJ	1280	6.5	1.5	2.6	9.9	8/3	3750	80	2984	96.5	96.9	97.0	0.83	0.86	0.87	91.2
450	610	W22XB 400LJ	1440	6.5	1.5	2.6	10.2	7/3	3900	80	2984	96.3	96.9	97.0	0.82	0.86	0.87	103
500	675	W22XB 400LJ	1600	6.7	1.6	2.8	10.8	6/2	4100	80	2984	96.3	96.9	97.0	0.81	0.86	0.87	114
560	755	W22XB 400G (2)	1792	6.7	1.6	2.8	12.5	7/3	4800	80	2984	96.4	96.8	97.0	0.81	0.86	0.87	128
630	850	W22XB 400G (2)	2012	7.0	1.0	3.0	13.5	12/3	4950	80	2991	96.7	97.1	97.3	0.86	0.90	0.90	138
710	960	W22XB 450KH (2)	2267	7.0	0.7	2.9	14.8	47/12	6150	82	2991	96.5	97.1	97.2	0.84	0.89	0.90	156
800	1080	W22XB 450KH (2)	2554	7.0	0.7	2.9	15.8	42/11	6650	82	2991	96.6	97.1	97.2	0.84	0.89	0.90	176
900	1215	W22XB 500KH (2)	2874	7.5	1.0	3.3	21.7	20/8	9000	85	2991	96.9	97.4	97.5	0.84	0.89	0.90	197
1000	1350	W22XB 500KH (2)	3193	7.5	1.0	3.3	23.2	19/8	9200	85	2991	96.9	97.4	97.5	0.84	0.89	0.90	219
1120	1515	W22XB 500KH (2)	3576	7.5	1.0	3.3	24.7	17/6	9650	85	2991	97.0	97.4	97.5	0.84	0.89	0.90	246
1200	1620	W22XB 500KH (2)	3831	7.5	1.0	3.3	24.7	15/5	9850	85	2991	97.0	97.4	97.6	0.84	0.89	0.90	263
IV Pole - 1500 min -1																			
90	120	W22XB 315L	578	6.7	1.4	2.5	1.7	43/20	1750	76	1486	91.9	93.5	94.1	0.59	0.70	0.76	24.2
110	150	W22XB 315L	707	6.7	1.4	2.5	1.9	32/15	1850	76	1486	92.4	93.8	94.4	0.59	0.70	0.76	29.5
132	180	W22XB 315L	848	6.7	1.4	2.5	2.0	32/15	1950	76	1486	93.0	94.2	94.7	0.60	0.70	0.76	35.3
160	215	W22XB 355ML	1026	6.5	1.1	3.0	5.6	39/18	2100	77	1490	93.4	94.8	95.3	0.72	0.81	0.84	38.5
200	270	W22XB 355ML	1282	6.5	1.1	3.0	6.5	34/16	2200	77	1490	94.0	95.1	95.5	0.73	0.81	0.84	48.0
250	340	W22XB 355AB	1602	7.0	1.3	3.0	7.6	23/11	2450	77	1490	94.7	95.8	96.1	0.72	0.81	0.84	59.6
280	380	W22XB 355AB	1795	7.0	1.3	3.0	7.8	21/10	2550	77	1490	94.7	95.8	96.1	0.72	0.80	0.84	66.8
315	425	W22XB 355AB	2019	7.0	1.3	3.0	8.4	19/9	2700	77	1490	95.0	95.9	96.2	0.72	0.81	0.84	75.0
355	480	W22XB 355AB	2275	7.0	1.3	3.0	9.0	17/8	2900	77	1490	95.1	96.0	96.3	0.72	0.81	0.84	84.5
400	540	W22XB 400LJ	2564	6.7	1.4	2.7	11.7	25/10	3800	80	1490	95.7	96.3	96.5	0.75	0.82	0.84	95.0
450	610	W22XB 400LJ	2884	6.8	1.5	2.6	12.2	20/8	3950	80	1490	95.6	96.3	96.5	0.69	0.79	0.83	108
500	675	W22XB 400LJ	3205	6.8	1.5	2.6	13.0	19/8	4150	80	1490	95.7	96.3	96.5	0.70	0.79	0.83	120
560	755	W22XB 400G (2)	3592	6.8	0.7	2.7	15.7	20/9	4850	80	1489	95.9	96.6	96.8	0.74	0.82	0.85	131
630	850	W22XB 400G (2)	4041	6.8	0.7	2.7	16.5	20/9	5000	80	1489	96.1	96.6	96.8	0.75	0.82	0.85	147
710	960	W22XB 400G (2)	4554	6.8	0.7	2.6	16.8	20/9	5100	80	1489	96.2	96.7	96.8	0.75	0.82	0.85	166
800	1080	W22XB 450KH (2)	5134	6.5	0.8	2.5	28.2	28/14	6200	82	1488	96.7	97.2	97.3	0.75	0.82	0.85	186
900	1215	W22XB 450KH (2)	5776	6.5	0.8	2.5	29.6	24/12	6700	82	1488	96.7	97.2	97.3	0.74	0.82	0.85	209
1000	1350	W22XB 500KH (2)	6388	5.6	0.7	2.1	61.1	18/9	10050	85	1495	95.5	96.6	97.0	0.81	0.86	0.87	228
1120	1515	W22XB 500KH (2)	7155	5.3	0.7	2.1	65.0	18/9	10250	85	1495	96.0	96.8	97.2	0.82	0.86	0.87	255
1250	1690	W22XB 500KH (2)	7985	5.3	0.7	2.1	69.4	18/9	10500	85	1495	96.1	96.9	97.2	0.82	0.86	0.87	284
1400	1890	W22XB 500KH (2)	8943	5.6	0.7	2.1	72.2	18/9	11000	85	1495	96.1	96.9	97.2	0.82	0.86	0.87	319
1500	2025	W22XB 500KH (2)	9595	5.3	0.7	2.0	75.0	18/9	11700	85	1493	96.1	96.9	97.2	0.82	0.86	0.87	341
VI Pole - 1000 min -1																			
90	120	W22XB 315L	870	6.7	1.4	2.4	3.0	39/18	1850	70	988	92.4	93.4	93.6	0.59	0.69	0.75	24.7
110	150	W22XB 315L	1063	6.7	1.4	2.4	3.2	39/18	1950	70	988	93.2	93.9	93.9	0.59	0.69	0.75	30.1
132	180	W22XB 355ML	1273	6.8	1.2	2.9	5.8	47/22	2250	73	990	94.6	95.3	95.3	0.74	0.80	0.82	32.5
160	215	W22XB 355ML	1543	6.8	1.3	3.1	6.4	47/22	2350	73	990	94.6	95.3	95.4	0.72	0.79	0.82	39.4
200	270	W22XB 355AB	1929	6.8	1.4	2.9	7.4	47/22	2550	73	990	94.9	95.4	95.5	0.73	0.80	0.82	49.2
250	340	W22XB 355AB	2412	6.8	1.4	2.9	8.3	47/22	2650	73	990	94.9	95.5	95.5	0.72	0.79	0.82	61.4
280	380	W22XB 355AB	2701	6.8	1.5	3.0	9.0	43/20	2750	73	990	95.2	95.7	95.6	0.73	0.80	0.82	68.7
315	425	W22XB 355AB	3039	6.8	1.5	3.0	9.3	43/20	2950	73	990	95.2	95.7	95.7	0.73	0.80	0.82	77.3
355	480	W22XB 400LJ	3421	6.7	1.4	2.7	19.1	32/15	4200	76	991	96.5	96.5	96.5	0.77	0.81	0.84	84.3
400	540	W22XB 400LJ	3855	6.7	1.4	2.7	20.4	32/15	4400	76	991	96.6	96.6	96.5	0.79	0.82	0.84	95.0
450	610	W22XB 400G (2)	4337	6.5	0.7	2.1	23.3	32/15	4800	76	991	95.6	96.0	96.2	0.81	0.82	0.83	108
500	675	W22XB 400G (2)	4818	6.5	0.7	2.1	26.6	32/15	4850	76	991	95.5	96.0	96.2	0.80	0.82	0.83	121
560	755	W22XB 400G (2)	5397	6.5	0.7	2.1	27.9	32/15	4900	76	991	95.9	96.2	96.4	0.80	0.82	0.83	135
630	850	W22XB 450KH (2)	6053	6.0	0.7	2.8	52.2	32/15	6600	78	994	95.5	96.3	96.5	0.74	0.82	0.85	148
710	960	W22XB 450KH (2)	6821	6.0	0.7	2.8	54.8	32/15	6800	78	994	95.6	96.3	96.5	0.74	0.82	0.85	167
800	1080	W22XB 500KH (2)	7678	6.0	0.7	2.4	80.9	20/11	10400	80	995	96.7	97.1	97.2	0.74	0.82	0.84	189
900	1215	W22XB 500KH (2)	8638	6.0	0.7	2.4	91.0	20/11	10650	80	995	96.9	97.3	97.3	0.75	0.82	0.84	212
1000	1350	W22XB 500KH (2)	9598	6.0	0.7	2.4	95.8	20/11	11100	80	995	96.9	97.3	97.3	0.75	0.82	0.84	235
1120	1515	W22XB 500KH (2)	10750	6.0	0.7	2.4	101	20/11	11800	80	995	97.1	97.4	97.4	0.75	0.82	0.84	263

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)

Output		Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot(s)	Weight Kg	Sound Pressure dB(A)	Y 3000V/50Hz							
												RPM	% of full load						I_n (A)
													Efficiency η			Power Factor Cos φ			
kW	HP												50	75	100	50	75	100	
VIII Pole - 750 min⁻¹																			
90	120	W22XB 315L		1158	7.5	1.4	2.4	3.8	37/17	1950	68	742	89.3	91.3	92.0	0.50	0.63	0.71	26.5
110	150	W22XB 355ML		1420	6.8	1.3	2.4	7.7	39/18	2350	70	740	94.2	94.7	94.5	0.69	0.77	0.80	28.0
132	180	W22XB 355ML		1704	6.8	1.3	2.4	8.3	39/18	2450	70	740	94.6	94.9	94.6	0.71	0.78	0.80	33.6
160	215	W22XB 355AB		2065	6.8	1.3	2.4	9.1	39/18	2950	70	740	94.8	95.0	94.7	0.71	0.78	0.80	40.6
200	270	W22XB 400LJ	(2)	2581	5.0	0.6	2.1	36.7	20/11	4000	74	740	96.9	96.9	96.4	0.73	0.80	0.82	48.7
250	340	W22XB 400LJ	(2)	3226	5.0	0.6	2.1	38.4	20/11	4200	74	740	96.9	96.9	96.4	0.73	0.80	0.82	60.9
280	380	W22XB 400LJ	(2)	3614	5.0	0.6	2.1	39.7	20/11	4400	74	740	96.9	96.9	96.4	0.73	0.80	0.82	68.2
315	425	W22XB 400G	(2)	4065	5.0	0.6	2.1	43.2	37/17	5050	74	740	96.5	96.7	96.4	0.71	0.79	0.82	76.7
355	480	W22XB 400G	(2)	4581	5.0	0.6	2.1	45.4	37/17	5150	74	740	96.2	96.6	96.4	0.69	0.78	0.82	86.4
400	540	W22XB 400G	(2)	5162	5.0	0.6	2.1	47.5	37/17	5200	74	740	96.9	96.9	96.4	0.73	0.80	0.82	97.4
450	610	W22XB 450KH	(2)	5807	5.5	0.6	2.3	53.8	20/11	6400	76	740	96.0	96.4	96.3	0.72	0.79	0.80	112
500	675	W22XB 450KH	(2)	6453	5.5	0.6	2.3	56.5	20/11	6700	76	740	95.9	96.4	96.3	0.71	0.79	0.80	125
560	755	W22XB 450KH	(2)	7227	5.5	0.6	2.3	60.1	20/11	7000	76	740	95.9	96.3	96.2	0.72	0.79	0.80	140
630	850	W22XB 500KH	(2)	8065	5.3	0.8	2.4	134	20/11	10500	80	746	97.0	97.3	97.0	0.73	0.80	0.80	156
710	960	W22XB 500KH	(2)	9089	5.6	0.8	2.4	137	20/11	10600	80	746	97.0	97.2	97.0	0.72	0.79	0.80	176
800	1080	W22XB 500KH	(2)	10241	5.2	0.8	2.3	149	20/11	11200	80	746	97.1	97.3	97.0	0.73	0.80	0.80	198
900	1215	W22XB 500KH	(2)	11521	5.5	0.8	2.3	159	20/11	11800	80	746	97.1	97.3	97.1	0.72	0.79	0.80	223

(1) Temperature rise class F at full load (2) Copper rotor (3) Rated current at 690V (4) Rated current at 760V

Tn = Full load torque
Ils / In = Locked rotor current
Ts / Tn = Locked rotor torque

Tmax / Tn = Breakdown torque
In = Full load current

Notes:
-The indicated values for sound pressure levels are @ 1m no load, with 3 dB(A) tolerance.
-All values are according to IEC 60034-1 tolerances.
-This data can be changed without prior notice.

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)

Output												Y 4160V/60Hz							
													% of full load						
kW	HP	Frame IEC	T_n (Nm)	I_S / I_n	T_S / T_n	T_{max} / T_n	Inertia J Kgm^2	Allowable locked rotor time Cold/ Hot(s)	Weight Kg	Sound Pressure dB(A)	RPM	Efficiency η			Power Factor Cos φ			I_n (A)
												50	75	100	50	75	100	
II Pole - 3000 min^{-1}																		
90	120	W22XB 315L	241	6.7	1.5	2.5	1.3	10/5	1700	84	3564	90.7	93.3	94.2	0.76	0.83	0.86	15.4
110	150	W22XB 315L	295	6.8	1.6	2.6	1.5	8/4	1800	84	3564	91.4	93.6	94.3	0.78	0.85	0.87	18.6
132	180	W22XB 315L	354	6.8	1.6	2.6	1.6	8/4	1900	84	3564	91.7	93.7	94.4	0.79	0.85	0.87	22.3
160	215	W22XB 355ML	426	7.5	1.4	3.1	3.4	15/7	2000	84	3584	92.8	94.5	95.3	0.78	0.85	0.87	26.8
200	270	W22XB 355ML	533	7.5	1.4	3.1	3.8	10/5	2050	84	3584	93.5	94.9	95.6	0.80	0.85	0.87	33.4
250	340	W22XB 355ML	667	7.0	1.5	2.7	4.9	10/5	2150	84	3578	94.9	95.8	96.3	0.81	0.87	0.89	40.5
280	380	W22XB 355AB	747	7.5	1.5	2.9	5.2	10/5	2400	84	3578	95.1	96.0	96.5	0.81	0.87	0.89	45.2
315	425	W22XB 355AB	841	7.5	1.5	2.9	5.5	8/4	2500	84	3578	95.3	96.2	96.6	0.82	0.88	0.89	50.8
355	480	W22XB 355AB	947	7.5	1.5	2.9	5.9	8/4	2650	84	3580	95.4	96.3	96.4	0.82	0.87	0.89	57.4
400	540	W22XB 355AB	1067	7.5	1.5	2.9	5.9	7/3	2850	84	3580	95.4	96.3	96.4	0.82	0.87	0.89	64.7
450	610	W22XB 400LJ	1199	6.5	1.5	2.6	10.2	7/3	3900	84	3584	95.7	96.6	96.7	0.82	0.86	0.87	74.2
500	675	W22XB 400LJ	1332	6.7	1.6	2.8	10.8	6/2	4100	84	3584	95.7	96.6	96.7	0.81	0.86	0.87	82.5
560	755	W22XB 400G	1492	6.7	1.6	2.8	12.5	7/3	4700	84	3584	95.8	96.5	96.7	0.81	0.86	0.87	92.4
630	850	W22XB 400G (2)	1675	7.0	1.0	3.0	13.5	12/3	4800	84	3591	96.1	96.8	97.0	0.86	0.90	0.90	100
710	960	W22XB 400G (2)	1888	7.0	1.0	3.0	13.5	12/3	4950	84	3591	96.1	96.8	97.0	0.86	0.90	0.90	113
800	1080	W22XB 450KH (2)	2128	7.0	0.7	2.9	15.8	42/11	6150	86	3591	96.0	96.8	96.9	0.84	0.89	0.90	127
900	1215	W22XB 450KH (2)	2393	7.0	0.7	2.9	15.8	35/9	6650	86	3591	96.1	96.8	96.9	0.85	0.89	0.90	143
IV Pole - 1500 min^{-1}																		
90	120	W22XB 315L	483	6.7	1.4	2.5	1.7	43/20	1750	81	1781	91.3	93.2	93.8	0.59	0.70	0.76	17.5
110	150	W22XB 315L	590	6.7	1.4	2.5	1.9	32/15	1850	81	1781	91.8	93.5	94.1	0.59	0.70	0.76	21.3
132	180	W22XB 315L	708	6.7	1.4	2.5	2.0	32/15	1950	81	1781	92.4	93.9	94.4	0.60	0.70	0.76	25.5
160	215	W22XB 355ML	855	6.5	1.1	3.0	5.6	39/18	2100	82	1788	92.8	94.5	95.0	0.72	0.81	0.84	27.8
200	270	W22XB 355ML	1068	6.5	1.1	3.0	6.5	34/16	2200	82	1788	93.4	94.8	95.2	0.73	0.81	0.84	34.7
250	340	W22XB 355AB	1335	7.0	1.3	3.0	7.6	23/11	2450	82	1788	94.1	95.5	95.8	0.72	0.81	0.84	43.1
280	380	W22XB 355AB	1496	7.0	1.3	3.0	7.8	21/10	2550	82	1788	94.1	95.5	95.8	0.72	0.80	0.84	48.3
315	425	W22XB 355AB	1682	7.0	1.3	3.0	8.4	19/9	2700	82	1788	94.4	95.6	95.9	0.72	0.81	0.84	54.3
355	480	W22XB 355AB	1896	7.0	1.3	3.0	9.0	17/8	2900	82	1788	94.5	95.7	96.0	0.72	0.81	0.84	61.1
400	540	W22XB 355AB	2136	7.0	1.3	3.0	9.0	17/8	2950	82	1788	94.5	95.7	96.0	0.72	0.81	0.84	68.8
450	610	W22XB 400LJ	2401	6.8	1.5	2.6	12.2	20/8	3950	84	1790	95.0	96.0	96.2	0.69	0.79	0.83	78.2
500	675	W22XB 400LJ	2668	6.8	1.5	2.6	13.0	19/8	4150	84	1790	95.1	96.0	96.2	0.70	0.79	0.83	86.9
560	755	W22XB 400G (2)	2989	6.8	0.7	2.7	15.7	20/9	4700	84	1789	95.3	96.3	96.5	0.74	0.82	0.85	94.8
630	850	W22XB 400G (2)	3363	6.8	0.7	2.7	16.5	20/9	4850	89	1789	95.5	96.3	96.5	0.75	0.82	0.85	107
710	960	W22XB 400G (2)	3790	6.8	0.7	2.6	16.8	20/9	5000	89	1789	95.6	96.4	96.5	0.75	0.82	0.85	120
800	1080	W22XB 400G (2)	4271	6.8	0.7	2.6	16.8	20/9	5100	89	1789	95.6	96.4	96.5	0.75	0.82	0.85	135
900	1215	W22XB 450KH (2)	4807	6.5	0.8	2.5	29.6	24/12	6200	86	1788	96.1	96.9	97.0	0.74	0.82	0.85	151
1000	1350	W22XB 450KH (2)	5341	6.5	0.8	2.5	29.6	21/11	6700	86	1788	96.3	96.9	97.0	0.76	0.83	0.85	168
1120	1515	W22XB 500KH (2)	5959	5.3	0.7	2.1	65.0	18/9	10250	89	1795	95.4	96.5	96.9	0.82	0.86	0.87	184
1250	1690	W22XB 500KH (2)	6650	5.3	0.7	2.1	69.4	18/9	10500	89	1795	95.5	96.6	96.9	0.82	0.86	0.87	206
1400	1890	W22XB 500KH (2)	7448	5.6	0.7	2.1	72.2	18/9	11000	89	1795	95.5	96.6	96.9	0.82	0.86	0.87	230
1500	2025	W22XB 500KH (2)	7989	5.3	0.7	2.0	75.0	18/9	11700	89	1793	95.5	96.6	96.9	0.82	0.86	0.87	247
VI Pole - 1000 min -1																		
90	120	W22XB 315L	725	6.7	1.4	2.4	3.0	39/18	1850	73	1186	91.8	93.1	93.3	0.59	0.69	0.75	17.9
110	150	W22XB 315L	886	6.7	1.4	2.4	3.2	39/18	1950	73	1186	92.6	93.6	93.6	0.59	0.69	0.75	21.7
132	180	W22XB 355ML	1061	6.8	1.2	2.9	5.8	47/22	2250	77	1188	94.0	95.0	95.0	0.74	0.80	0.82	23.5
160	215	W22XB 355ML	1286	6.8	1.3	3.1	6.4	47/22	2350	77	1188	94.0	95.0	95.1	0.72	0.79	0.82	28.5
200	270	W22XB 355AB	1608	6.8	1.4	2.9	7.4	47/22	2550	77	1188	94.3	95.1	95.2	0.73	0.80	0.82	35.6
250	340	W22XB 355AB	2010	6.8	1.4	2.9	8.3	47/22	2650	77	1188	94.3	95.2	95.2	0.72	0.79	0.82	44.4
280	380	W22XB 355AB	2251	6.8	1.5	3.0	9.0	43/20	2750	77	1188	94.6	95.4	95.3	0.73	0.80	0.82	49.7
315	425	W22XB 355AB	2532	6.8	1.5	3.0	9.3	43/20	2900	77	1188	94.6	95.4	95.4	0.73	0.80	0.82	55.9
355	480	W22XB 355AB	2854	6.8	1.5	3.0	9.3	43/20	2950	77	1188	94.6	95.4	95.4	0.73	0.80	0.82	63.0
400	540	W22XB 400LJ	3207	6.7	1.4	2.7	20.4	32/15	4400	80	1191	96.0	96.3	96.2	0.79	0.82	0.84	68.7
450	610	W22XB 400G (2)	3608	6.5	0.7	2.1	23.3	32/15	4700	80	1191	95.0	95.7	95.9	0.81	0.82	0.83	78.5
500	675	W22XB 400G (2)	4009	6.5	0.7	2.1	26.6	32/15	4800	80	1191	94.9	95.7	95.9	0.80	0.82	0.83	87.2
560	755	W22XB 400G (2)	4490	6.5	0.7	2.1	27.9	32/15	4850	80	1191	95.3	95.9	96.1	0.80	0.82	0.83	97.4
630	850	W22XB 400G (2)	5052	6.5	0.7	2.1	27.9	32/15	4900	80	1191	95.3	95.9	96.1	0.80	0.82	0.83	110
710	960	W22XB 450KH (2)	5679	6.0	0.7	2.8	54.8	32/15	6600	82	1194	95.0	96.0	96.2	0.74	0.82	0.85	121
800	1080	W22XB 450KH (2)	6399	6.0	0.7	2.8	54.8	32/15	6800	82	1194	95.2	96.1	96.2	0.76	0.83	0.85	136
900	1215	W22XB 500KH (2)	7192	6.0	0.7	2.4	91.0	20/11	10400	84	1195	96.3	97.0	97.0	0.75	0.82	0.84	153
1000	1350	W22XB 500KH (2)	7992	6.0	0.7	2.4	95.8	20/11	10650	84	1195	96.3	97.0	97.0	0.75	0.82	0.84	170
1120	1515	W22XB 500KH (2)	8951	6.0	0.7	2.4	101	20/11	11100	84	1195	96.5	97.1	97.1	0.75	0.82	0.84	191
1250	1690	W22XB 500KH (2)	9990	6.0	0.7	2.4	101	20/11	11800	84	1195	96.5	97.1	97.1	0.75	0.82	0.84	213

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)

Output		Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm^2	Allowable locked rotor time Cold/ Hot(s)	Weight Kg	Sound Pressure dB(A)	Y 4160V/60Hz							
												RPM	% of full load						I_n (A)
													Efficiency η			Power Factor Cos φ			
kW	HP												50	75	100	50	75	100	
VIII Pole - 750 min-1																			
90	120	W22XB 315L		966	7.5	1.4	2.4	3.8	37/17	1950	71	890	88.7	91.0	91.7	0.50	0.63	0.71	19.2
110	150	W22XB 355ML		1183	6.8	1.3	2.4	7.7	39/18	2350	75	888	93.6	94.4	94.2	0.69	0.77	0.80	20.3
132	180	W22XB 355ML		1420	6.8	1.3	2.4	8.3	39/18	2450	75	888	94.0	94.6	94.3	0.71	0.78	0.80	24.3
160	215	W22XB 355ML		1721	6.8	1.3	2.4	9.1	39/18	2550	75	888	94.2	94.7	94.4	0.71	0.78	0.80	29.4
200	270	W22XB 400LJ	(2)	2146	5.0	0.6	2.1	36.7	20/11	4000	78	890	96.3	96.6	96.1	0.73	0.80	0.82	35.2
250	340	W22XB 400LJ	(2)	2683	5.0	0.6	2.1	38.4	20/11	4200	78	890	96.3	96.6	96.1	0.73	0.80	0.82	44.0
280	380	W22XB 400LJ	(2)	3004	5.0	0.6	2.1	39.7	20/11	4400	78	890	96.3	96.6	96.1	0.73	0.80	0.82	49.3
315	425	W22XB 400G	(2)	3380	5.0	0.6	2.1	43.2	37/17	5050	78	890	95.9	96.4	96.1	0.71	0.79	0.82	55.5
355	480	W22XB 400G	(2)	3809	5.0	0.6	2.1	45.4	37/17	5150	78	890	95.6	96.3	96.1	0.69	0.78	0.82	62.5
400	540	W22XB 400G	(2)	4292	5.0	0.6	2.1	47.5	37/17	5200	78	890	96.3	96.6	96.1	0.73	0.80	0.82	70.4
450	610	W22XB 400G	(2)	4829	5.0	0.6	2.1	47.5	37/17	5250	78	890	96.3	96.6	96.1	0.73	0.80	0.82	79.3
500	675	W22XB 450KH	(2)	5365	5.5	0.6	2.3	56.5	20/11	6400	80	890	95.3	96.1	96.0	0.71	0.79	0.80	90.4
560	755	W22XB 450KH	(2)	6009	5.5	0.6	2.3	60.1	20/11	6700	80	890	95.3	96.0	95.9	0.72	0.79	0.80	101
630	850	W22XB 450KH	(2)	6760	5.5	0.6	2.3	60.1	20/11	7000	80	890	95.2	96.0	95.9	0.71	0.78	0.80	114
710	960	W22XB 500KH	(2)	7568	5.6	0.8	2.4	137	20/11	10500	84	896	96.4	96.9	96.7	0.72	0.79	0.80	127
800	1080	W22XB 500KH	(2)	8527	5.2	0.8	2.3	149	20/11	10600	84	896	96.5	97.0	96.7	0.73	0.80	0.80	144
900	1215	W22XB 500KH	(2)	9593	5.5	0.8	2.3	159	20/11	11200	84	896	96.5	97.0	96.8	0.72	0.79	0.80	161
1000	1350	W22XB 500KH	(2)	10658	5.5	0.8	2.3	159	20/11	11800	84	896	96.5	97.0	96.8	0.72	0.79	0.80	179

(1) Temperature rise class F at full load (2) Copper rotor (3) Rated current at 690V (4) Rated current at 760V

Tn = Full load torque
Ils / In = Locked rotor current
Ts / Tn = Locked rotor torque

Tmax / Tn = Breakdown torque
In = Full load current

Notes:
-The indicated values for sound pressure levels are @ 1m no load, with 3 dB(A) tolerance.
-All values are according to IEC 60034-1 tolerances.
-This data can be changed without prior notice.

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)

Output												Y 6000V/50Hz							
												% of full load							
kW	HP	Frame IEC	T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot(s)	Weight Kg	Sound Pressure dB(A)	RPM	Efficiency η			Power Factor Cos φ			I_n (A)
												50	75	100	50	75	100	
II Pole - 3000 min-1																			
90	120	W22XB 315L	289	6.7	1.5	2.5	1.3	10/5	1700	80	2970	91.3	93.6	94.5	0.76	0.83	0.86	10.7
110	150	W22XB 315L	354	6.8	1.6	2.6	1.5	8/4	1800	80	2970	92.0	93.9	94.6	0.78	0.85	0.87	12.9
132	180	W22XB 315L	424	6.8	1.6	2.6	1.6	8/4	1900	80	2970	92.3	94.0	94.7	0.79	0.85	0.87	15.4
160	215	W22XB 355ML	512	7.5	1.4	3.1	3.4	15/7	2050	80	2987	93.4	94.8	95.3	0.78	0.85	0.87	18.6
200	270	W22XB 355ML	639	7.5	1.4	3.1	3.8	10/5	2150	80	2987	94.1	95.2	95.6	0.80	0.85	0.87	23.1
250	340	W22XB 355AB	801	7.0	1.5	2.7	4.9	10/5	2400	80	2982	95.5	96.1	96.3	0.81	0.87	0.89	28.1
280	380	W22XB 355AB	897	7.5	1.5	2.9	5.2	10/5	2500	80	2982	95.7	96.3	96.5	0.81	0.87	0.89	31.4
315	425	W22XB 355AB	1009	7.5	1.5	2.9	5.5	8/4	2650	80	2982	95.9	96.5	96.6	0.82	0.88	0.89	35.3
355	480	W22XB 355AB	1137	7.5	1.5	2.9	5.9	8/4	2850	80	2983	96.0	96.6	96.7	0.82	0.87	0.89	39.7
400	540	W22XB 400LJ	1280	6.5	1.5	2.6	9.9	8/3	3750	80	2984	96.5	96.9	97.0	0.83	0.86	0.87	45.6
450	610	W22XB 400LJ	1440	6.5	1.5	2.6	10.2	7/3	3900	80	2984	96.3	96.9	97.0	0.82	0.86	0.87	51.3
500	675	W22XB 400LJ	1600	6.7	1.6	2.8	10.8	6/2	4100	80	2984	96.3	96.9	97.0	0.81	0.86	0.87	57.0
560	755	W22XB 400G	1792	6.7	1.6	2.8	12.5	7/3	4800	80	2984	96.4	96.8	97.0	0.81	0.86	0.87	63.9
630	850	W22XB 400G (2)	2012	7.0	1.0	3.0	13.5	12/3	4950	80	2991	96.7	97.1	97.3	0.86	0.90	0.90	69.2
710	960	W22XB 450KH (2)	2267	7.0	0.7	2.9	14.8	47/12	6150	82	2991	96.5	97.1	97.2	0.84	0.89	0.90	78.1
800	1080	W22XB 450KH (2)	2554	7.0	0.7	2.9	15.8	42/11	6650	82	2991	96.6	97.1	97.2	0.84	0.89	0.90	88.0
900	1215	W22XB 500KH (2)	2874	7.5	1.0	3.3	21.7	20/8	9000	85	2991	96.9	97.4	97.5	0.84	0.89	0.90	98.7
1000	1350	W22XB 500KH (2)	3193	7.5	1.0	3.3	23.2	19/8	9200	85	2991	96.9	97.4	97.5	0.84	0.89	0.90	110
1120	1515	W22XB 500KH (2)	3576	7.5	1.0	3.3	24.7	17/6	9650	85	2991	97.0	97.4	97.5	0.84	0.89	0.90	123
1200	1620	W22XB 500KH (2)	3831	7.5	1.0	3.3	24.7	15/5	9850	85	2991	97.0	97.4	97.6	0.84	0.89	0.90	131
IV Pole - 1500 min -1																			
90	120	W22XB 315L	578	6.7	1.4	2.5	1.7	43/20	1750	76	1486	91.9	93.5	94.1	0.59	0.70	0.76	12.1
110	150	W22XB 315L	707	6.7	1.4	2.5	1.9	32/15	1850	76	1486	92.4	93.8	94.4	0.59	0.70	0.76	14.8
132	180	W22XB 315L	848	6.7	1.4	2.5	2.0	32/15	1950	76	1486	93.0	94.2	94.7	0.60	0.70	0.76	17.6
160	215	W22XB 355ML	1026	6.5	1.1	3.0	5.6	39/18	2100	77	1490	93.4	94.8	95.3	0.72	0.81	0.84	19.2
200	270	W22XB 355ML	1282	6.5	1.1	3.0	6.5	34/16	2200	77	1490	94.0	95.1	95.5	0.73	0.81	0.84	24.0
250	340	W22XB 355AB	1602	7.0	1.3	3.0	7.6	23/11	2450	77	1490	94.7	95.8	96.1	0.72	0.81	0.84	29.8
280	380	W22XB 355AB	1795	7.0	1.3	3.0	7.8	21/10	2550	77	1490	94.7	95.8	96.1	0.72	0.80	0.84	33.4
315	425	W22XB 355AB	2019	7.0	1.3	3.0	8.4	19/9	2700	77	1490	95.0	95.9	96.2	0.72	0.81	0.84	37.5
355	480	W22XB 355AB	2275	7.0	1.3	3.0	9.0	17/8	2900	77	1490	95.1	96.0	96.3	0.72	0.81	0.84	42.2
400	540	W22XB 400LJ	2564	6.7	1.4	2.7	11.7	25/10	3800	80	1490	95.7	96.3	96.5	0.75	0.82	0.84	47.5
450	610	W22XB 400LJ	2884	6.8	1.5	2.6	12.2	20/8	3950	80	1490	95.6	96.3	96.5	0.69	0.79	0.83	54.1
500	675	W22XB 400LJ	3205	6.8	1.5	2.6	13.0	19/8	4150	80	1490	95.7	96.3	96.5	0.70	0.79	0.83	60.1
560	755	W22XB 400G (2)	3592	6.8	0.7	2.7	15.7	20/9	4850	80	1489	95.9	96.6	96.8	0.74	0.82	0.85	65.5
630	850	W22XB 400G (2)	4041	6.8	0.7	2.7	16.5	20/9	5000	80	1489	96.1	96.6	96.8	0.75	0.82	0.85	73.7
710	960	W22XB 400G (2)	4554	6.8	0.7	2.6	16.8	20/9	5100	80	1489	96.2	96.7	96.8	0.75	0.82	0.85	83.0
800	1080	W22XB 450KH (2)	5134	6.5	0.8	2.5	28.2	28/14	6200	82	1488	96.7	97.2	97.3	0.75	0.82	0.85	93.1
900	1215	W22XB 450KH (2)	5776	6.5	0.8	2.5	29.6	24/12	6700	82	1488	96.7	97.2	97.3	0.74	0.82	0.85	105
1000	1350	W22XB 500KH (2)	6388	5.6	0.7	2.1	61.1	18/9	10050	85	1495	95.5	96.6	97.0	0.81	0.86	0.87	114
1120	1515	W22XB 500KH (2)	7155	5.3	0.7	2.1	65.0	18/9	10250	85	1495	96.0	96.8	97.2	0.82	0.86	0.87	127
1250	1690	W22XB 500KH (2)	7985	5.3	0.7	2.1	69.4	18/9	10500	85	1495	96.1	96.9	97.2	0.82	0.86	0.87	142
1400	1890	W22XB 500KH (2)	8943	5.6	0.7	2.1	72.2	18/9	11000	85	1495	96.1	96.9	97.2	0.82	0.86	0.87	159
1500	2025	W22XB 500KH (2)	9595	5.3	0.7	2.0	75.0	18/9	11700	85	1493	96.1	96.9	97.2	0.82	0.86	0.87	171
VI Pole - 1000 min -1																			
90	120	W22XB 315L	870	6.7	1.4	2.4	3.0	39/18	1850	70	988	92.4	93.4	93.6	0.59	0.69	0.75	12.3
110	150	W22XB 315L	1063	6.7	1.4	2.4	3.2	39/18	1950	70	988	93.2	93.9	93.9	0.59	0.69	0.75	15.0
132	180	W22XB 355ML	1273	6.8	1.2	2.9	5.8	47/22	2250	73	990	94.6	95.3	95.3	0.74	0.80	0.82	16.3
160	215	W22XB 355ML	1543	6.8	1.3	3.1	6.4	47/22	2350	73	990	94.6	95.3	95.4	0.72	0.79	0.82	19.7
200	270	W22XB 355AB	1929	6.8	1.4	2.9	7.4	47/22	2550	73	990	94.9	95.4	95.5	0.73	0.80	0.82	24.6
250	340	W22XB 355AB	2412	6.8	1.4	2.9	8.3	47/22	2650	73	990	94.9	95.5	95.5	0.72	0.79	0.82	30.7
280	380	W22XB 355AB	2701	6.8	1.5	3.0	9.0	43/20	2750	73	990	95.2	95.7	95.6	0.73	0.80	0.82	34.4
315	425	W22XB 355AB	3039	6.8	1.5	3.0	9.3	43/20	2950	73	990	95.2	95.7	95.7	0.73	0.80	0.82	38.6
355	480	W22XB 400LJ	3421	6.7	1.4	2.7	19.1	32/15	4200	76	991	96.5	96.5	96.5	0.77	0.81	0.84	42.1
400	540	W22XB 400LJ	3855	6.7	1.4	2.7	20.4	32/15	4400	76	991	96.6	96.6	96.5	0.79	0.82	0.84	47.5
450	610	W22XB 400G (2)	4337	6.5	0.7	2.1	23.3	32/15	4800	76	991	95.6	96.0	96.2	0.81	0.82	0.83	54.2
500	675	W22XB 400G (2)	4818	6.5	0.7	2.1	26.6	32/15	4850	76	991	95.5	96.0	96.2	0.80	0.82	0.83	60.3
560	755	W22XB 400G (2)	5397	6.5	0.7	2.1	27.9	32/15	4900	76	991	95.9	96.2	96.4	0.80	0.82	0.83	67.3
630	850	W22XB 450KH (2)	6053	6.0	0.7	2.8	52.2	32/15	6600	78	994	95.5	96.3	96.5	0.74	0.82	0.85	73.9
710	960	W22XB 450KH (2)	6821	6.0	0.7	2.8	54.8	32/15	6800	78	994	95.6	96.3	96.5	0.74	0.82	0.85	83.3
800	1080	W22XB 500KH (2)	7678	6.0	0.7	2.4	80.9	20/11	10400	80	995	96.7	97.1	97.2	0.74	0.82	0.84	94.3
900	1215	W22XB 500KH (2)	8638	6.0	0.7	2.4	91.0	20/11	10650	80	995	96.9	97.3	97.3	0.75	0.82	0.84	106
1000	1350	W22XB 500KH (2)	9598	6.0	0.7	2.4	95.8	20/11	11100	80	995	96.9	97.3	97.3	0.75	0.82	0.84	118
1120	1515	W22XB 500KH (2)	10750	6.0	0.7	2.4	101	20/11	11800	80	995	97.1	97.4	97.4	0.75	0.82	0.84	132

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)

Output		Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot(s)	Weight Kg	Sound Pressure dB(A)	Y 6000V/50Hz							
												RPM	% of full load						I_n (A)
													Efficiency η			Power Factor Cos φ			
kW	HP												50	75	100	50	75	100	
VIII Pole - 750 min⁻¹																			
90	120	W22XB 315L		1158	7.5	1.4	2.4	3.8	37/17	1950	68	742	89.3	91.3	92.0	0.50	0.63	0.71	13.3
110	150	W22XB 355ML		1420	6.8	1.3	2.4	7.7	39/18	2350	70	740	94.2	94.7	94.5	0.69	0.77	0.80	14.0
132	180	W22XB 355ML		1704	6.8	1.3	2.4	8.3	39/18	2450	70	740	94.6	94.9	94.6	0.71	0.78	0.80	16.8
160	215	W22XB 355AB		2065	6.8	1.3	2.4	9.1	39/18	2950	70	740	94.8	95.0	94.7	0.71	0.78	0.80	20.3
200	270	W22XB 400LJ	(2)	2581	5.0	0.6	2.1	36.7	20/11	4000	74	740	96.9	96.9	96.4	0.73	0.80	0.82	24.3
250	340	W22XB 400LJ	(2)	3226	5.0	0.6	2.1	38.4	20/11	4200	74	740	96.9	96.9	96.4	0.73	0.80	0.82	30.4
280	380	W22XB 400LJ	(2)	3614	5.0	0.6	2.1	39.7	20/11	4400	74	740	96.9	96.9	96.4	0.73	0.80	0.82	34.1
315	425	W22XB 400G	(2)	4065	5.0	0.6	2.1	43.2	37/17	5050	74	740	96.5	96.7	96.4	0.71	0.79	0.82	38.3
355	480	W22XB 400G	(2)	4581	5.0	0.6	2.1	45.4	37/17	5150	74	740	96.2	96.6	96.4	0.69	0.78	0.82	43.2
400	540	W22XB 400G	(2)	5162	5.0	0.6	2.1	47.5	37/17	5200	74	740	96.9	96.9	96.4	0.73	0.80	0.82	48.7
450	610	W22XB 450KH	(2)	5807	5.5	0.6	2.3	53.8	20/11	6400	76	740	96.0	96.4	96.3	0.72	0.79	0.80	56.2
500	675	W22XB 450KH	(2)	6453	5.5	0.6	2.3	56.5	20/11	6700	76	740	95.9	96.4	96.3	0.71	0.79	0.80	62.5
560	755	W22XB 450KH	(2)	7227	5.5	0.6	2.3	60.1	20/11	7000	76	740	95.9	96.3	96.2	0.72	0.79	0.80	70.0
630	850	W22XB 500KH	(2)	8065	5.3	0.8	2.4	134	20/11	10500	80	746	97.0	97.3	97.0	0.73	0.80	0.80	78.1
710	960	W22XB 500KH	(2)	9089	5.6	0.8	2.4	137	20/11	10600	80	746	97.0	97.2	97.0	0.72	0.79	0.80	88.0
800	1080	W22XB 500KH	(2)	10241	5.2	0.8	2.3	149	20/11	11200	80	746	97.1	97.3	97.0	0.73	0.80	0.80	99.2
900	1215	W22XB 500KH	(2)	11521	5.5	0.8	2.3	159	20/11	11800	80	746	97.1	97.3	97.1	0.72	0.79	0.80	111

(1) Temperature rise class F at full load (2) Copper rotor (3) Rated current at 690V (4) Rated current at 760V

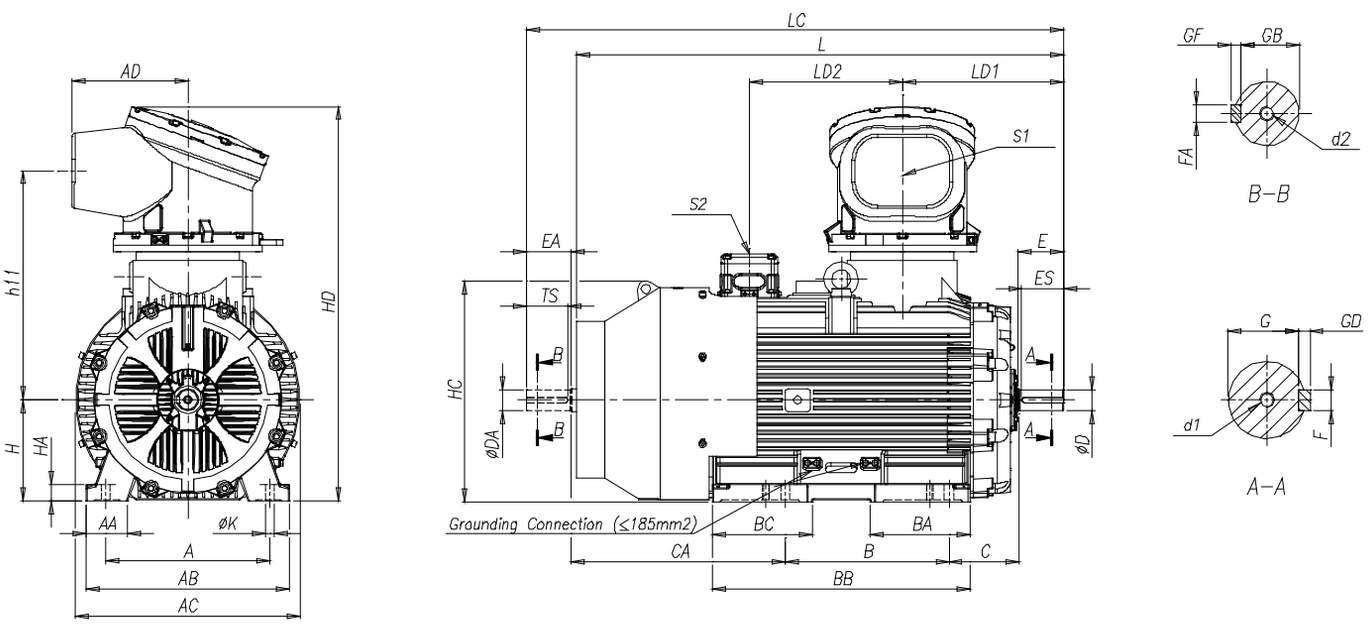
Tn = Full load torque
Tmax / Tn = Breakdown torque
Ils / In = Locked rotor current
In = Full load current
Ts / Tn = Locked rotor torque

Notes:
-The indicated values for sound pressure levels are @ 1m no load, with 3 dB(A) tolerance.
-All values are according to IEC 60034-1 tolerances.
-This data can be changed without prior notice.

7.1.4. Medium Voltage - Mechanical Data - W22XB Series

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Medium Voltage

315L - 355ML, IMB3T
Anti-friction bearings



Frame	Poles	A	AA	AB	AC	AD	BA	BB	BC	B	C	CA	H	HA	HC	HD	h11	K	L	LC	LD1	LD2
315L	2P	508	130	632	698	360	310	800	310	508	216	663	315	52	684	1224	710	28	1512	1667	500	475
	4P+																		1542	1697	530	
355ML	2P	610	130	730	780	360	315	830	315	560 630	254	567	355	55	765	1312	758	28	1576	1731	514	462
	4P+																		1646	1831	584	

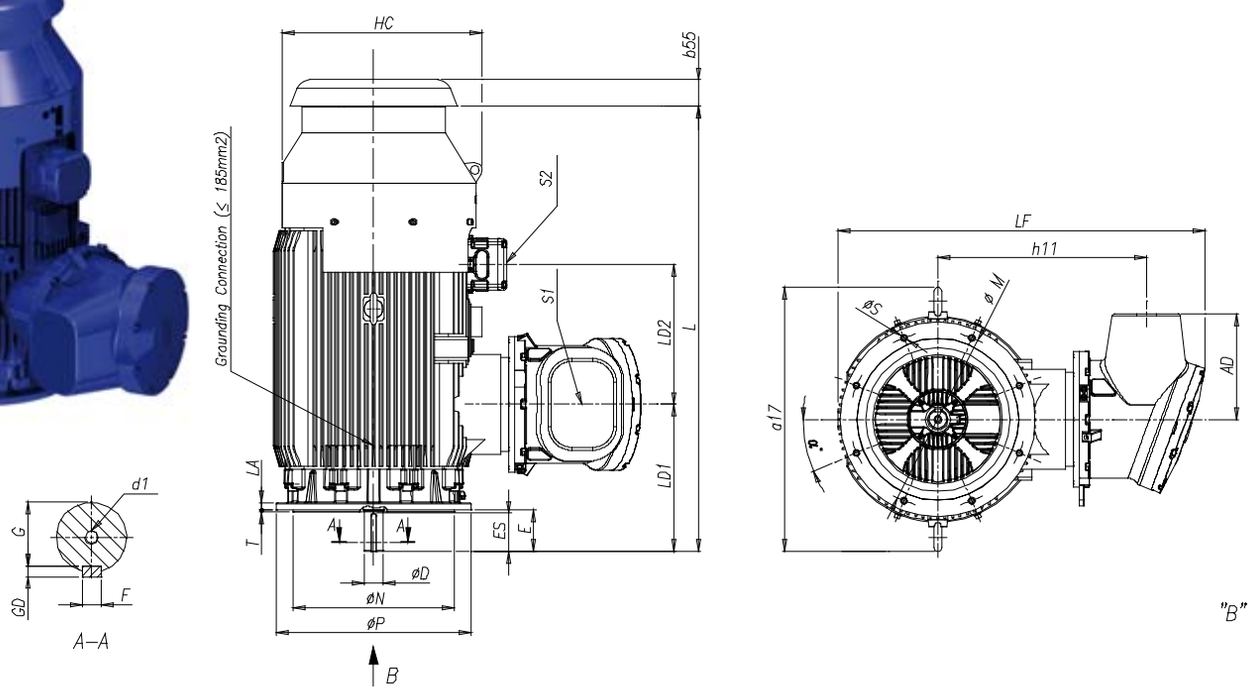
		Shaft dimensions														Bearings		Power terminal box - S1	Auxiliary terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	WTBX M	WTBX XS
315L	2P	65m6	140	130	18h9	58	11	60m6	140	130	18h9	53	11	DSM20	DSM20	6314C3	6314C3	I ≤ 315A : 1xM63x1,5 315A ≤ I ≤ 400A : 3xM63x1,5	3xM20x1,5
	4P+	80m6	170	160	22h9	71	14	65m6				58	11			6319C3	6316C3		
355ML	2P	75m6	140	130	20h9	67,5	12	60m6	140	130	18h9	53	11	DSM20		6316C3	6316C3		
	4P+	100m6	210	200	28h9	90	16	80m6	170	160	22h9	71	14	DSM24		6322C3	6319C3		

Notes:

All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Medium Voltage

315L - 355ML, IMV1
Anti-friction bearings



Frame	Poles	AD	HC	h11	L	LA	LD1	LD2	LF	b55	a17	M	N	P	T	S	Nr. Holes	α
315L	2P	360	679	710	1514	25	500	475	1249	90	898	600	550	660	6	24	8	22,5º
	4P+				1544		530											
355ML	2P	360	765	758	1576	30	514	462	1357	93	988	740	680	800	6	24	8	22,5º
	4P+				1646		584											

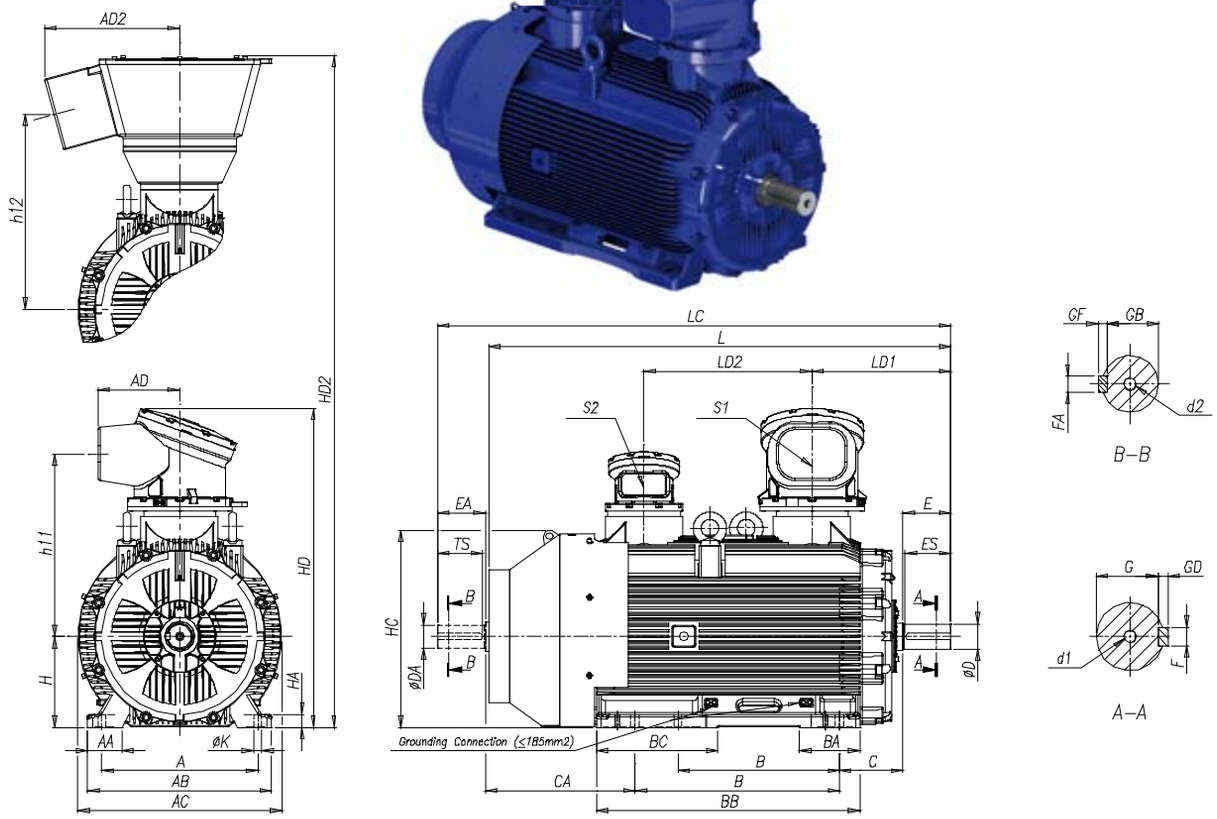
		Shaft dimensions							Bearings		Power terminal box - S1	Auxiliary terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	d1	D.E.	N.D.E.	WTBX M	WTBX XS
315L	2P	65m6	140	130	18h9	58	11	DSM20	6314C3	6314C3	I ≤ 315A : 1xM63x1,5 315A ≤ I ≤ 400A : 3xM63x1,5	3xM20x1,5
	4P+	80m6	170	160	22h9	71	14		6319C3	6316C3		
355ML	2P	75m6	140	130	20h9	67,5	12	DSM20	6316C3	6316C3		
	4P+	100m6	210	200	28h9	90	16	DSM24	6322C3	6319C3		

Notes:

All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Medium Voltage

355AB - 400LJ - 400G, IMB3T
Anti-friction bearings



Frame	Poles	A	AA	AB	AC	AD[1]	BA	BB	BC	B	C	CA	H	HA	HC	HD[1]	h11[1]	K	L	LC	LD1	LD2
355AB	2P	610	130	730	780	360	225	1038	523	710	254	605	355	55	765	1312	758	28	1784	1939	514	618
	4P+									800									1854	2039	584	
400LJ	2P	686	150	810	898	360	265	1160	535	710	280	659	400	58	867	1402	803	35	1994	2149	570	740
	4P+									900									2034	2219	610	
400G	2P	686	150	810	898	360	420	1400	420	1120	280	679	400	58	867	1402	803	35	2234	2389	570	982
	4P+																		2274	2459	610	

		Shaft dimensions														Bearings		Power terminal box - S1[1]	Power terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	WTBX M	WTBX S
355AB	2P	75m6	140	130	20h9	67,5	12	60m6	140	130	18h9	53	11	DSM20	DSM20	6316C3	6316C3	I ≤ 315A : 1xM63x1,5 315A ≤ I ≤ 400A : 3xM63x1,5	3xM20x1,5
	4P+	100m6	210	200	28h9	90	16	80m6	170	160	22h9	71	14	DSM24		6322C3	6319C3		
400LJ	2P	80m6	170	160	22h9	71	14	60m6	140	130	18h9	53	11	DSM20		6318C3	6318C3		
	4P+	110m6	210	200	28h9	100	16	80m6	170	160	22h9	71	14	DSM24		6324C3	6324C3		
400G	2P	80m6	170	160	22h9	71	14	60m6	140	130	18h9	53	11	DSM20		6318C3	6318C3		
	4P+	110m6	210	200	28h9	100	16	80m6	170	160	22h9	71	14	DSM24		6324C3	6324C3		

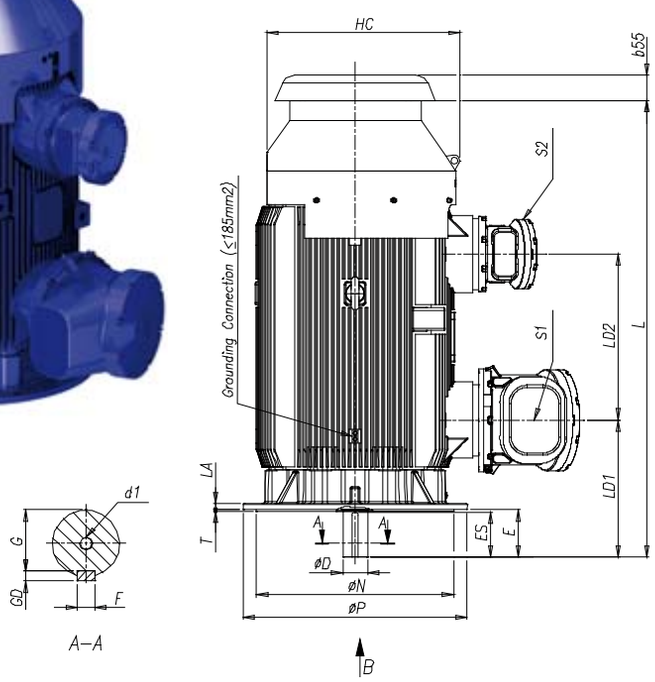
	I>400A				
Frame	Poles	AD2	HD2	h12	Power terminal box - CEFGH 500 - S1
355AB	2P	75m6	140	130	400A ≤ I ≤ 800A : 3xM63x1,5
	4P+	100m6	210	200	
400LJ	2P	80m6	170	160	
	4P+	110m6	210	200	
400G	2P	80m6	170	160	
	4P+	110m6	210	200	

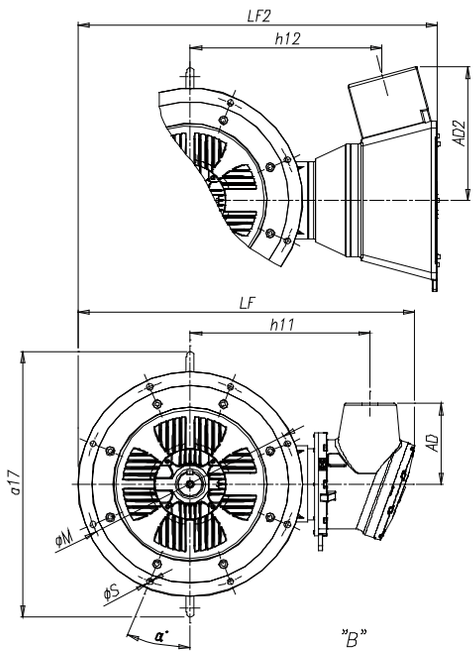
Notes:

(1) ≤ 400A
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Medium Voltage

355AB - 400LJ - 400G, IMV1
Anti-friction bearings





Frame	Poles	AD[1]	HC	h11[1]	L	LA	LD1	LD2	LF[1]	b55	a17	M	N	P	T	S	Nr. Holes	α
355AB	2P	360	759	758	1784	30	514	618	1357	93	988	740	680	800	6	24	8	22,5º
	4P+				1854		584											
400LJ	2P	360	862	803	1994	28	570	740	1503	106	1184	940	880	1000	6	28	8	22,5º
	4P+				2034		610											
400G	2P	360	862	803	2234	28	570	980	1503	106	1184	940	880	1000	6	28	8	22,5º
	4P+				2274		610											

		Shaft dimensions							Bearings		Power terminal box - S1[1]	Auxiliary terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	d1	D.E.	N.D.E.	WTBX M	WTBX S
355AB	2P	75m6	140	130	20h9	67,5	12	DSM20	7316	6316C3	I ≤ 315A : 1xM63x1,5 315A ≤ I ≤ 400A : 3xM63x1,5	3xM20x1,5
	4P+	100m6	210	200	28h9	90	16	DSM24	7322	6319C3		
400LJ	2P	80m6	170	160	22h9	71	14	DSM20	7318	6318C3		
	4P+	110m6	210	200	28h9	100	16	DSM24	7324	6324C3		
400G	2P	80m6	170	160	22h9	71	14	DSM20	7318	6318C3		
	4P+	110m6	210	200	28h9	100	16	DSM24	7324	6324C3		

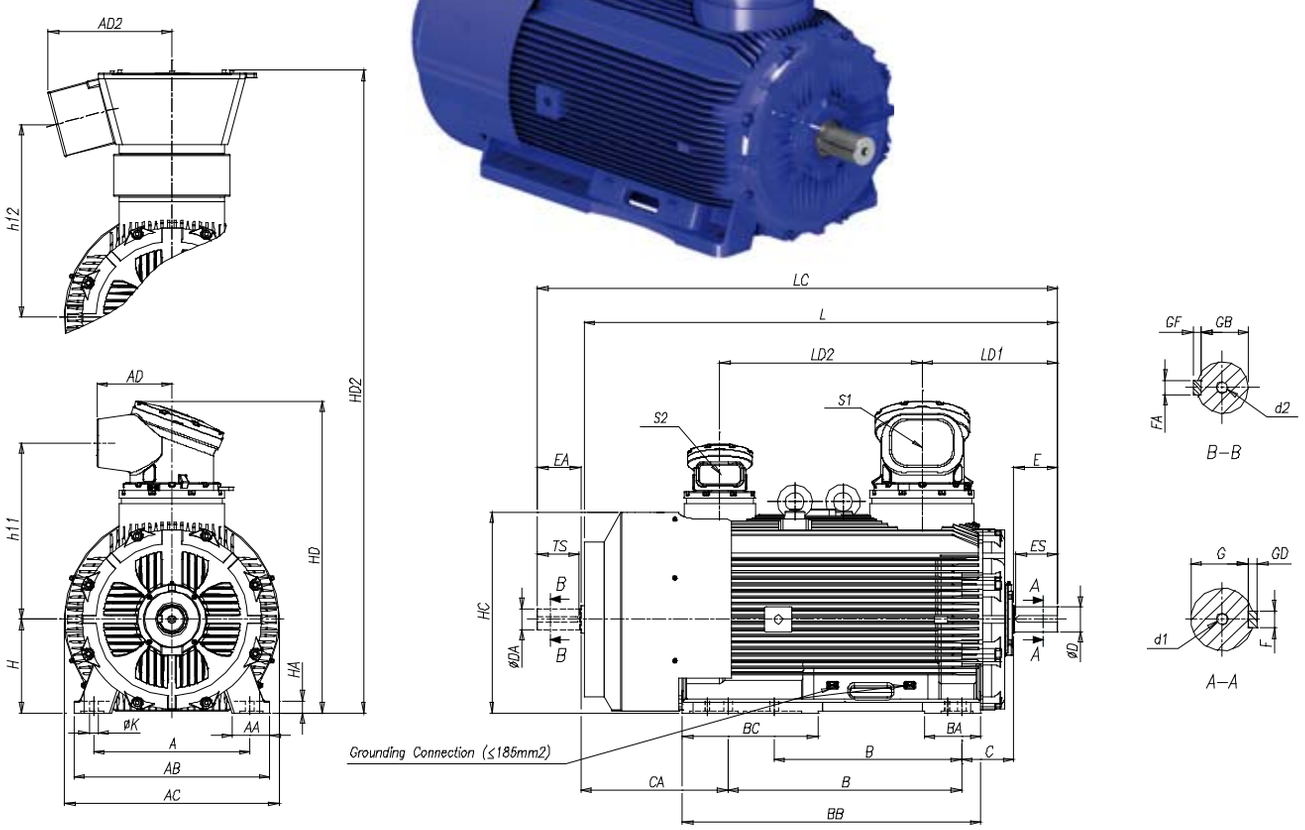
	I>400A				
Frame	Poles	AD2	LF2	h12	Power terminal box - CEFGH 500 - S1
355AB	2P	594	1040	812	400A ≤ I ≤ 800A : 3xM63x1,5
	4P+				
400LJ	2P	594	1616	857	
	4P+				
400G	2P	594	1616	857	
	4P+				

Notes:

(1) I ≤ 400A
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Medium Voltage

450KH - 500KH, IMB3T
Anti-friction bearings



Frame	Poles	A	AA	AB	AC	AD[1]	BA	BB	BC	B	C	CA	H	HA	HC	HD[1]	h11[1]	K	L	LC	LD1	LD2
450KH	2P	750	180	940	1030	360	270	1430	650	900 1120	250	705	450	60	965	1495	846	42	2230	2385	610	970
	4P+																		2270	2495	650	
500KH	2P	850	200	1020	1162	360	375	1800	915	1000 1250	280	1065	500	65	1081	1565	866	42	2750	2905	635	1300
	4P+																		2830	3055	715	

		Shaft dimensions														Bearings		Power terminal box - S1[1]	Auxiliary terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	WTBX M	WTBX S
450KH	2P	85m6	170	160	22h9	76	14	75m6	140	130	20h9	67,5	12	DSM20	DSM20	6318C3	NU218C3	I ≤ 315A : 1xM63x1,5 315A ≤ I ≤ 400A : 3xM63x1,5	3xM20x1,5
	4P+	120m6	210	200	32h9	109	18	100m6	210	200	28h9	90	16	DSM24	DSM24	6326C3	6326C3		
500KH	2P	90m6	170	160	25	81	14	75m6	140	130	20	67,5	12	DSM24	DSM20	NU220C3+6020C3	NU220C3		
	4P+	130m6	250	240	32	119	18	110m6	210	200	28	100	16		DSM24	6328C3	6328C3		

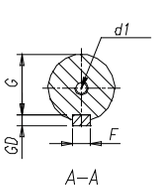
		I>400A			
Frame	Poles	AD2	HD2	h12	Power terminal box - CEFGH 500 - S1
450KH	2P	594	1634	925	400A ≤ I ≤ 800A : 3xM63x1,5
	4P+				
500KH	2P	594	1704	945	
	4P+				

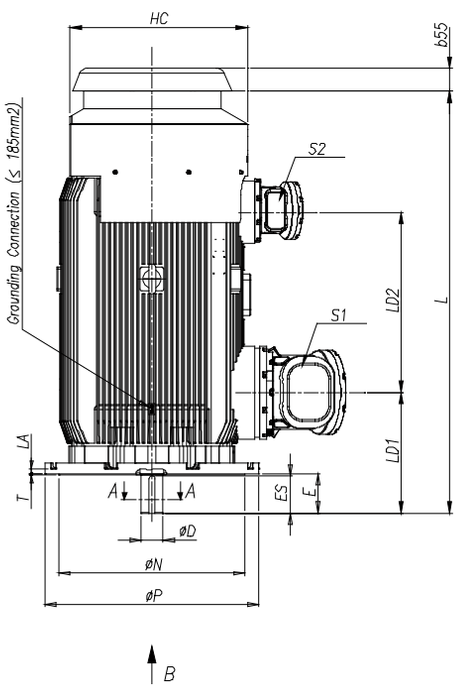
Notes:

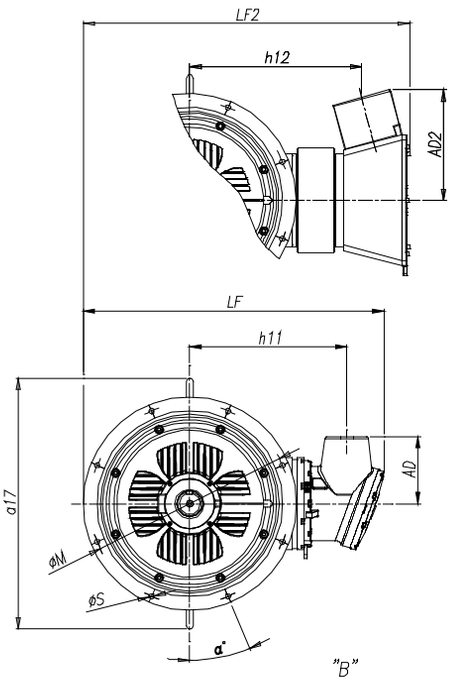
(1) I ≤ 1090A
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Medium Voltage

450KH - 500KH, IMV1
Anti-friction bearings







Frame	Poles	AD(1)	HC	h11(1)	L	LA	LD1	LD2	LF(1)	b55	a17	M	N	P	T	S	Nr. Holes	α
450KH	2P	360	955	846	2270	30	650	970	1620	125	1352	1080	1000	1150	6	28	8	22,5°
	4P+																	
500KH	2P	360	1162	866	2830	30	715	1300	1640	130	1482	1080	1000	1150	7	28	8	22,5°
	4P+																	

		Shaft dimensions							Bearings		Power terminal box - S1(1)	Auxiliary terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	d1	D.E.	N.D.E.	WTBX M	WTBX S
450KH	2P	120m6	210	200	32h9	109	18	DSM24	7326	6326C3	I ≤ 315A : 1xM63x1,5 315A ≤ I ≤ 400A : 3xM63x1,5	3xM20x1,5
	4P+											
500KH	2P	130m6	250	240	32h9	119	18	DSM24	7328	6328C3		
	4P+											

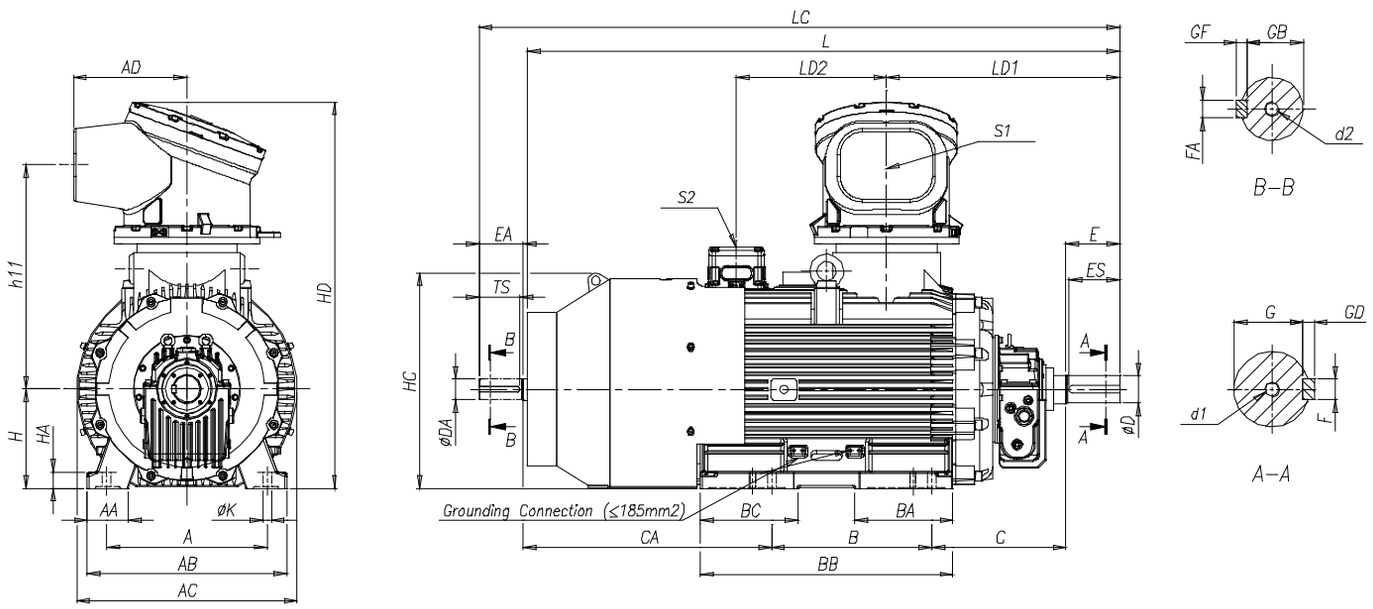
	I>400A				
Frame	Poles	AD2	LF2	h12	Power terminal box - CEFGH 500 - S1
450KH	2P	594	1759	925	400A ≤ I ≤ 800A : 3xM63x1,5
	4P+				
500KH	2P	594	1779	945	
	4P+				

Notes:

(1) I ≤ 1090A
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XBS - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBES - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Medium Voltage

315L - 355ML, IMB3T
Sleeve bearings



Frame	Poles	A	AA	AB	AC	AD	BA	BB	BC	B	C	CA	H	HA	HC	HD	h11	K	L	LC	LD1	LD2
315L	2P	508	130	632	698	360	310	800	310	508	425	788	315	52	684	1224	710	28	1846	2001	709	475
	4P+										450								1901	2056	764	
355ML	2P	610	130	730	780	360	315	830	315	560 630	455	685	355	55	765	1312	758	28	1902	2057	514	462
	4P+										475								1992	2177	805	

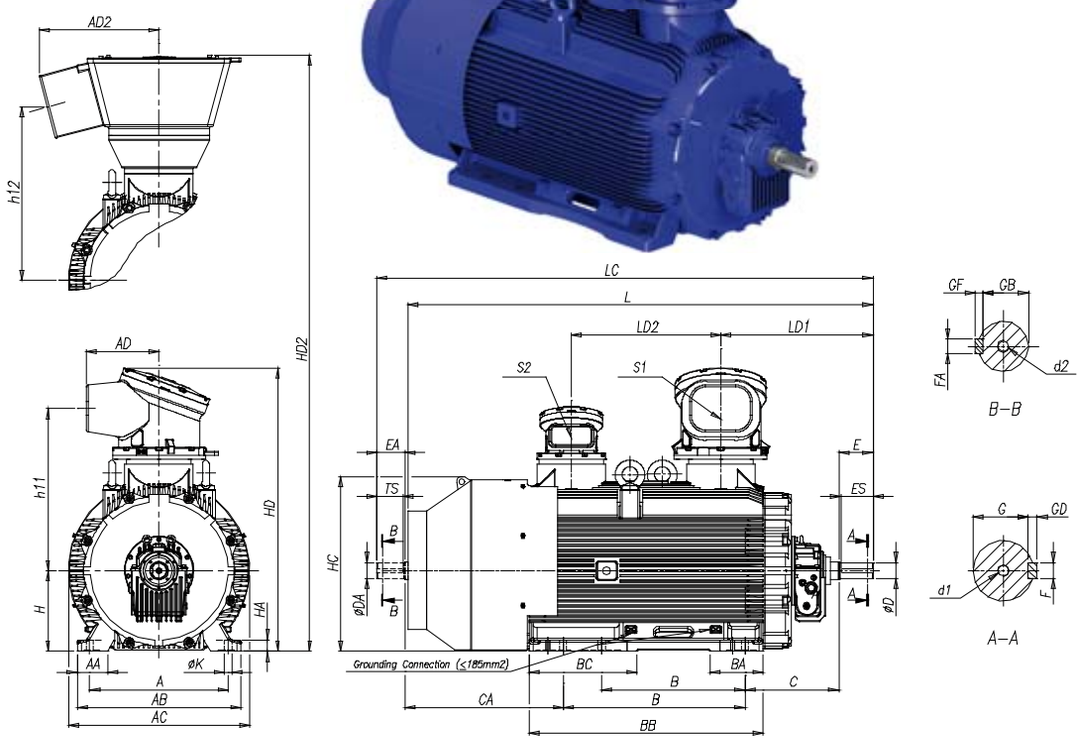
		Shaft dimensions														Bearings		Power terminal box - S1	Auxiliary terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	WTBX M	WTBX XS
315L	2P	65m6	140	130	18h9	58	11	60m6	140	130	18h9	53	11	DSM20	DSM20	EFNLB 9-80	EFNLQ 9-80	I ≤ 315A : 1xM63x1,5 315A ≤ I ≤ 400A : 3xM63x1,5	3xM20x1,5
	4P+	80m6	170	160	22h9	71	14	65m6				58	11			EFNLB 11-110	EFNLQ 11-110		
355ML	2P	75m6	140	130	20h9	67,5	12	60m6	140	130	18h9	53	11	DSM20		EFNLB 9-80	EFNLB 9-80		
	4P+	100m6	210	200	28h9	90	16	80m6	170	160	22h9	71	14	DSM24		EFNLB 11-110	EFNLB 11-110		

Notes:

All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.
Rotor is not self-aligned, costumer must ensure alignment.
Over speed not allowed.
Rotor maximum axial play: ± 3mm.
Motor rotation only available in one sense (CW or CCW), please inform desired sense at the time of Inquiry/Order.

W22XBS - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBES - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Medium Voltage

355AB - 400LJ - 400G, IMB3T
Sleeve bearings



Frame	Poles	A	AA	AB	AC	AD[1]	BA	BB	BC	B	C	CA	H	HA	HC	HD[1]	h11[1]	K	L	LC	LD1	LD2
355AB	2P	610	130	730	780	360	225	1038	523	710	455	723	55	55	765	1312	758	28	2110	2265	715	618
	4P+									800	475								2200	2385	805	
400LJ	2P	686	150	810	898	360	265	1160	535	710	465	784	58	58	867	1402	802	35	2304	2459	755	740
	4P+									900	490								2369	2554	820	
400G	2P	686	150	810	898	360	420	1400	420	1120	465	804	58	58	867	1402	802	35	2544	2699	755	980
	4P+										490								2609	2794	820	

		Shaft dimensions														Bearings		Power terminal box - S1[1]	Auxiliary terminal box - S1[1]
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	WTBX M	WTBX S
355AB	2P	75m6	140	130	20h9	67,5	12	60m6	140	130	18h9	53	11	DSM20	DSM20	EFNLB 9-80	EFNLQ 9-80	I ≤ 315A : 1xM63x1,5 315A ≤ I ≤ 400A : 3xM63x1,5	3XM20X1,5
	4P+	100m6	210	200	28h9	90	16	80m6	170	160	22h9	71	14	DSM24		EFNLB 11-110	EFNLQ 11-110		
400LJ	2P	80m6	170	160	22h9	71	14	60m6	140	130	18h9	53	11	DSM20		EFNLB 9-80	EFNLQ 9-80		
	4P+	110m6	210	200	28h9	100	16	80m6	170	160	22h9	71	14	DSM24		EFNLB 11-110	EFNLQ 11-110		
400G	2P	80m6	170	160	22h9	71	14	60m6	140	130	18h9	53	11	DSM20		EFNLB 9-80	EFNLQ 9-80		
	4P+	110m6	210	200	28h9	100	16	80m6	170	160	22h9	71	14	DSM24		EFNLB 11-110	EFNLQ 11-110		

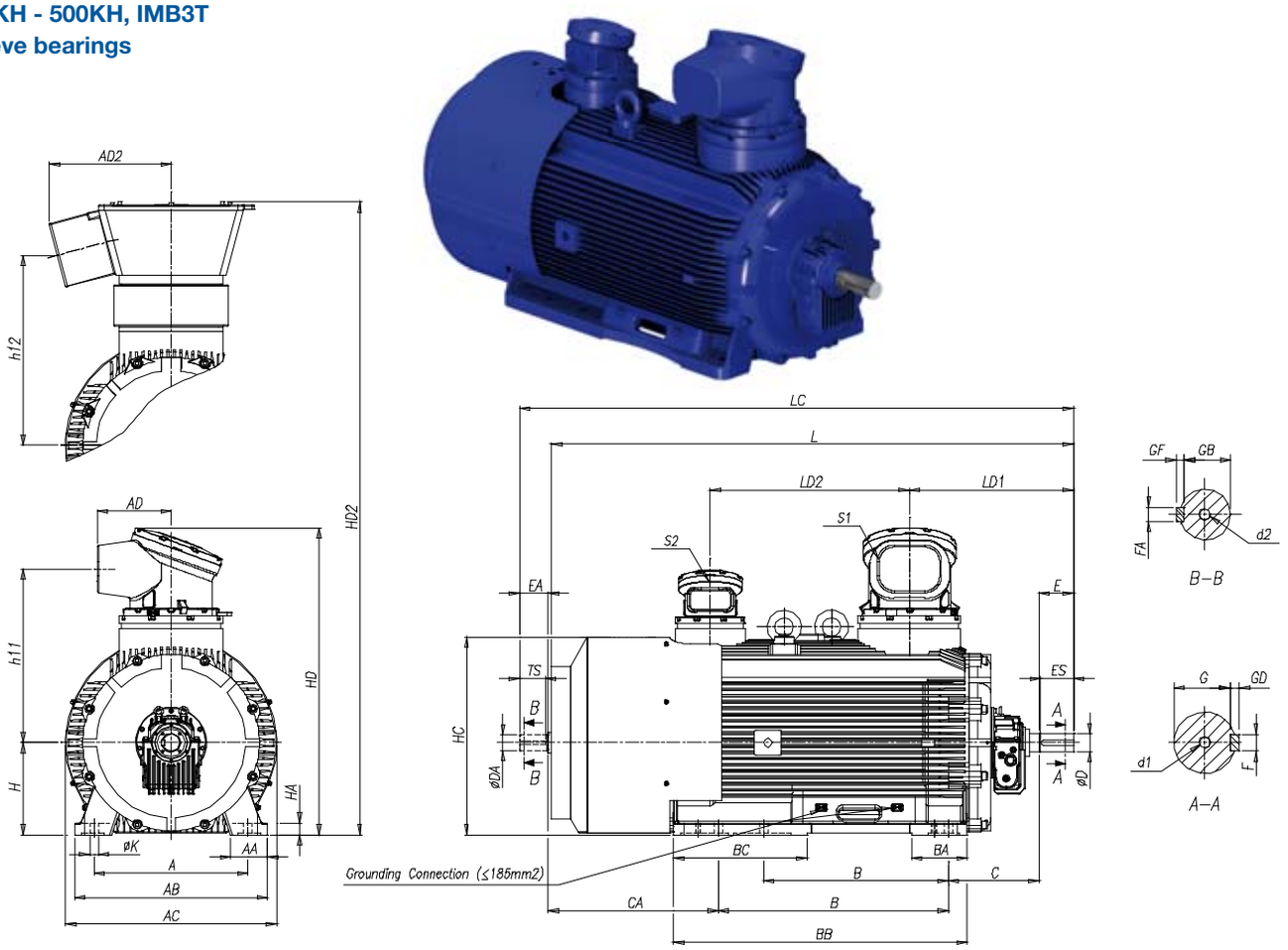
	I>1090A				
Frame	Poles	AD2	HD2	h12	Power terminal box - CEFGH 500 - S1
355AB	2P	594	1425	812	1090A ≤ I ≤ 1900A : 4xM63x1,5 + 1xM20x1,5
	4P+				
400LJ	2P	594	1516	857	
	4P+				
400G	2P	594	1516	857	
	4P+				

Notes:

(1) I ≤ 400A
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.
Rotor is not self-aligned, costumer must ensure alignment.
Over speed not allowed.
Rotor maximum axial play: ± 3mm.
Motor rotation only available in one sense (CW or CCW), please inform desired sense at the time of Inquiry/Order.

W22XBS - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBES - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Medium Voltage

450KH - 500KH, IMB3T
Sleeve bearings



Frame	Poles	A	AA	AB	AC	AD[1]	BA	BB	BC	B	C	CA	H	HA	HC	HD[1]	h11[1]	K	L	LC	LD1	LD2
450KH	2P	750	180	940	1030	360	270	1430	650	900	440	830	450	60	965	1495	846	42	2545	2700	800	970
	4P+									1120	465								2610	2835	865	
500KH	2P	850	200	1020	1162	360	375	1800	915	1000	490	1190	500	65	1081	1565	866	42	3165	3390	925	1300
	4P+									1250												

		Shaft dimensions														Bearings		Power terminal box - S1[1]	Auxiliary terminal box - S1[2]
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	WTBX M	WTBX S
450KH	2P	85m6	170	160	22h9	76	14	75m6	140	130	20h9	67,5	12	DSM20	DSM20	EFNLB 9-80	EFNLQ 9-80	I ≤ 315A : 1xM63x1,5 315A ≤ I ≤ 400A : 3xM63x1,5	3xM20x1,5
	4P+	120m6	210	200	32h9	109	18	100m6	210	200	28h9	90	16	DSM24	DSM24	EFNLB 11-125	EFNLQ 11-125		
500KH	2P	130m6	250	240	32	119	18	110m6	210	200	28	100	16	DSM24	DSM24	EFNLB 11-125	EFNLQ 11-125		
	4P+																		

	I>400A				
Frame	Poles	AD2	HD2	h12	Power terminal box - CEFGH 500 - S1
450KH	2P	594	1634	925	400A ≤ I ≤ 800A : 4xM63x1,5
	4P+				
500KH	2P	594	1704	945	
	4P+				

Notes:

(1) I ≤ 400A
(2) Available only for 50Hz
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.
Rotor is not self-aligned, costumer must ensure alignment.
Over speed not allowed.
Rotor maximum axial play: ± 3mm.
Motor rotation only available in one sense (CW or CCW), please inform desired sense at the time of Inquiry/Order.

7.1.5. High Voltage - Electrical Data - W22XB Series

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)

Output		Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Hot/Cold (s)	Weight Kg	Sound Pressure dB(A)	Y 10000V/50Hz							
												RPM	% of full load						I_n (A)
													Efficiency η			Power Factor Cos φ			
kW	HP												50	75	100	50	75	100	
II Pole - 3000 min⁻¹																			
355	480	W22XB 450KH	(2)	1134	6.5	0.7	2.7	9.0	19/10	6150	82	2990	95.8	96.6	96.7	0.82	0.87	0.89	23.8
400	540	W22XB 450KH	(2)	1278	6.5	0.7	2.7	9.9	18/9	6300	82	2990	95.6	96.5	96.7	0.82	0.87	0.89	26.8
450	610	W22XB 450KH	(2)	1437	6.5	0.7	2.7	10.6	16/8	6550	82	2990	95.6	96.5	96.7	0.83	0.88	0.89	30.2
500	675	W22XB 450KH	(2)	1597	6.5	0.7	2.7	11.6	15/8	7050	82	2990	96.0	96.7	96.8	0.83	0.88	0.89	33.5
560	755	W22XB 500KH	(2)	1789	7.0	0.7	3.1	12.7	15/8	9600	85	2990	96.0	96.5	96.8	0.82	0.88	0.89	37.5
630	850	W22XB 500KH	(2)	2012	7.0	0.7	3.1	13.5	13/7	10050	85	2990	96.0	96.5	96.8	0.83	0.88	0.89	42.2
710	960	W22XB 500KH	(2)	2268	7.0	0.7	3.1	14.2	12/6	10250	85	2990	96.0	96.5	96.8	0.83	0.88	0.89	47.6
IV Pole - 1500min⁻¹																			
355	480	W22XB 450KH	(2)	2274	6.5	0.7	2.0	16.8	9/5	6150	82	1491	94.3	95.4	95.8	0.72	0.80	0.83	25.8
400	540	W22XB 450KH	(2)	2562	6.5	0.7	2.0	16.8	9/5	6300	82	1491	95.8	96.0	96.1	0.75	0.81	0.83	29.0
450	610	W22XB 450KH	(2)	2882	6.5	0.7	2.0	17.8	9/5	6500	82	1491	96.0	96.4	96.4	0.75	0.81	0.83	32.5
500	675	W22XB 450KH	(2)	3203	6.5	0.7	2.0	19.3	9/5	6800	82	1491	96.0	96.4	96.4	0.75	0.81	0.83	36.1
560	755	W22XB 450KH	(2)	3584	6.5	0.7	2.0	20.5	9/5	7200	82	1492	96.0	96.4	96.4	0.75	0.81	0.83	40.4
630	850	W22XB 500KH	(2)	4024	6.7	1.0	2.8	44.5	15/8	10650	85	1495	95.0	96.0	96.5	0.82	0.87	0.88	42.8
710	960	W22XB 500KH	(2)	4535	6.7	1.0	2.7	49.3	15/8	10900	85	1495	95.0	96.3	96.7	0.84	0.88	0.89	47.6
800	1080	W22XB 500KH	(2)	5110	6.7	1.1	2.7	54.3	15/8	11400	85	1495	95.4	96.5	97.0	0.84	0.88	0.89	53.5
900	1215	W22XB 500KH	(2)	5749	6.8	1.1	2.7	59.3	15/8	12100	85	1495	95.5	96.5	97.0	0.84	0.88	0.89	60.2
VI Pole - 1000min -1																			
280	380	W22XB 450KH	(2)	2693	5.5	0.8	3.1	20.2	15/8	6500	78	993	94.0	95.0	95.2	0.60	0.72	0.77	22.1
315	425	W22XB 450KH	(2)	3029	5.5	0.8	3.1	21.7	15/8	6800	78	993	94.0	95.0	95.2	0.62	0.73	0.78	24.5
355	480	W22XB 450KH	(2)	3418	5.5	0.8	3.1	24.5	15/8	7100	78	992	94.2	95.1	95.3	0.64	0.74	0.79	27.2
400	540	W22XB 450KH	(2)	3851	5.5	0.8	3.1	21.7	15/8	7300	78	992	94.2	95.1	95.3	0.64	0.74	0.79	30.7
450	610	W22XB 450KH	(2)	4332	5.5	0.8	3.1	22.7	15/8	7500	78	992	94.2	95.1	95.3	0.64	0.74	0.79	34.5
500	675	W22XB 500KH	(2)	4794	6.3	0.9	2.6	56.4	15/8	11050	80	996	96.5	97.0	97.0	0.71	0.80	0.83	35.9
560	755	W22XB 500KH	(2)	5369	6.3	0.9	2.6	59.1	15/8	11500	80	996	96.5	97.0	97.0	0.81	0.80	0.83	40.2
630	850	W22XB 500KH	(2)	6041	6.5	0.9	2.7	64.5	15/8	12200	80	996	96.5	97.0	97.0	0.81	0.80	0.83	45.2
VIII Pole - 750 min⁻¹																			
200	270	W22XB 450KH	(2)	2557	6.5	1.2	3	23.1	15/8	6500	76	747	93.0	94.4	94.4	0.56	0.68	0.76	16.1
250	340	W22XB 450KH	(2)	3196	6.5	1.2	3	25.8	15/8	6800	76	747	93.0	94.4	94.4	0.56	0.68	0.76	20.1
280	380	W22XB 450KH	(2)	3580	6.5	1.2	3	27.4	15/8	7200	76	747	93.0	94.4	94.4	0.56	0.68	0.76	22.5
315	425	W22XB 450KH	(2)	4027	6.5	1.2	3	29.2	15/8	7700	76	747	93.0	94.4	94.4	0.56	0.68	0.76	25.3
355	480	W22XB 450KH	(2)	4538	6.5	1.2	3	31.0	15/8	7900	76	747	93.0	94.4	94.4	0.56	0.68	0.76	28.6
400	540	W22XB 500KH	(2)	5114	5.0	0.6	2.2	80.1	15/8	11000	80	747	96.3	96.5	96.5	0.73	0.79	0.80	29.9
450	610	W22XB 500KH	(2)	5753	5.0	0.6	2.2	87.4	15/8	11600	80	747	96.3	96.5	96.5	0.73	0.79	0.80	33.7
500	675	W22XB 500KH	(2)	6392	5.1	0.7	2.3	96.1	15/8	12200	80	747	96.3	96.5	96.5	0.73	0.79	0.80	37.4

High voltage motors are also available under request for frame size 400.

(1) Temperature rise class F at full load (2) Copper rotor (3) Rated current at 690V (4) Rated current at 760V

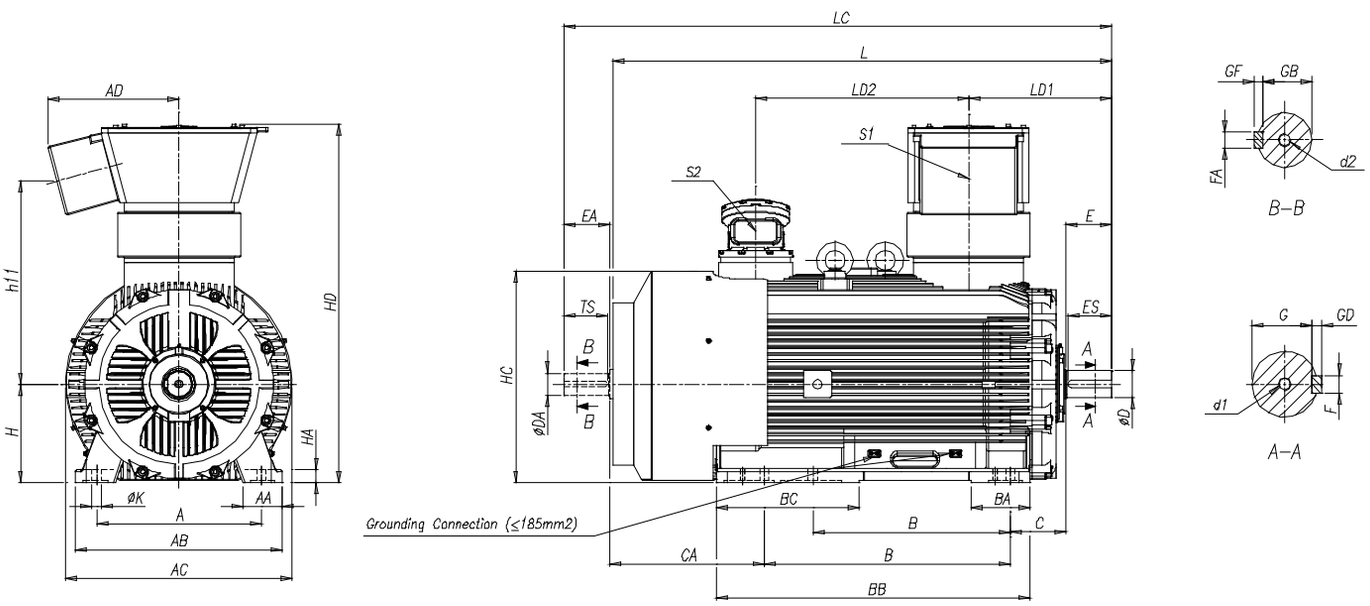
Tn = Full load torque
Ils / In = Locked rotor current
Ts / Tn = Locked rotor torque

Tmax / Tn = Breakdown torque
In = Full load current

Notes:
-The indicated values for sound pressure levels are @ 1m no load, with 3 dB(A) tolerance.
-All values are according to IEC 60034-1 tolerances.
-This data can be changed without prior notice.

7.1.6. High Voltage - Mechanical Data - W22XB Series

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
High Voltage
450KH - 500KH, IMB3T
Anti-friction bearings



Frame	Poles	A	AA	AB	AC	AD	BA	BB	BC	B	C	CA	H	HA	HC	HD	h11	K	L	LC	LD1	LD2
450KH	2P	750	180	940	1030	594	270	1430	650	900	250	705	450	60	965	1634	925	42	2230	2385	610	970
	4P+									1120									2270	2495	650	
500KH	2P	850	200	1020	1162	594	375	1800	915	1000	280	1065	500	65	1081	1704	945	42	2750	2905	635	1300
	4P+									1250									2830	3055	715	

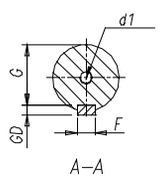
		Shaft dimensions														Bearings		Power terminal box - S1	Auxiliary terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	CEFGH 500	WTBX S
450KH	2P	85m6	170	160	22h9	76	14	75m6	140	130	20h9	67,5	12	DSM20	DSM20	6318C3	NU218C3	I ≤ 200A : 1xM63x1,5	3xM20x1,5
	4P+	120m6	210	200	32h9	109	18	100m6	210	200	28h9	90	16	DSM24	DSM24	6326C3	6326C3	200A ≤ I ≤ 400A : 3xM63x1,5	
500KH	2P	90m6	170	160	25	81	14	75m6	140	130	20	67,5	12	DSM24	DSM20	NU220C3+6020C3	NU220C3		
	4P+	130m6	250	240	32	119	18	110m6	210	200	28	100	16		DSM24	6328C3	6328C3		

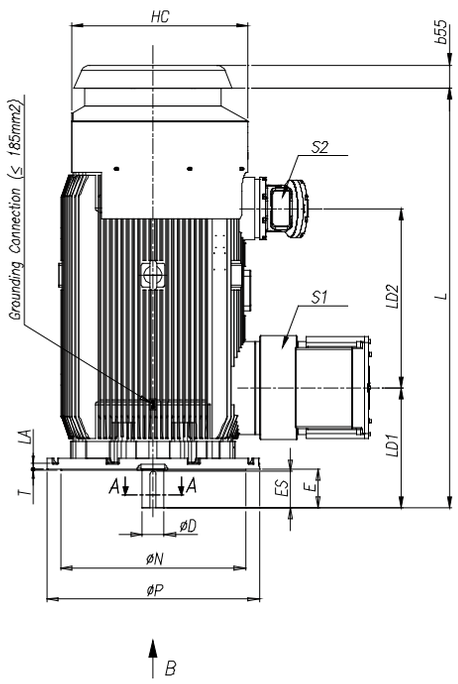
Notes:

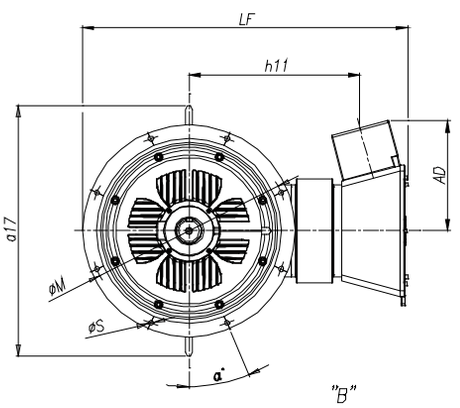
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XB - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)

450KH - 500KH, IMV1
Anti-friction bearings







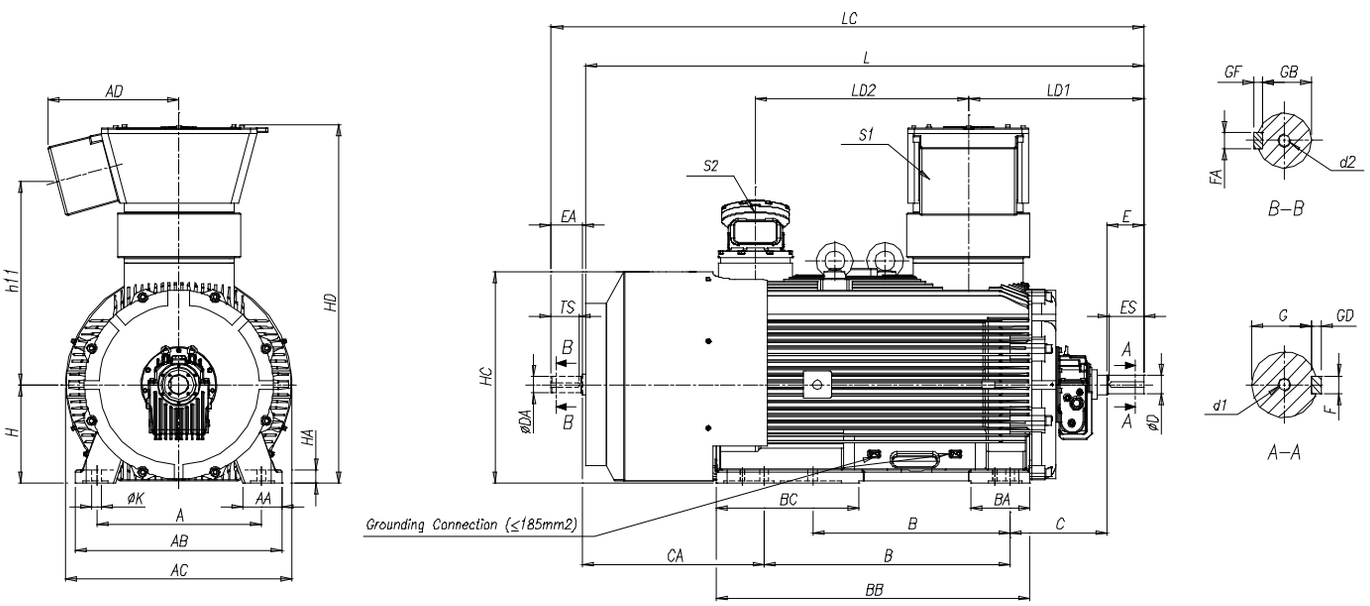
Frame	Poles	AD	HC	h11	L	LA	LD1	LD2	LF	b55	a17	M	N	P	T	S	Nr. Holes	α
450KH	4P+	594	955	925	2270	30	650	970	1759	125	1352	1080	1000	1150	6	28	8	22,5º
500KH	4P+	594	1162	945	2830	30	715	1300	1779	130	1482	1080	1000	1150	7	28	8	22,5º

		Shaft dimensions							Bearings		Power terminal box - S1	Auxiliary terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	d1	D.E.	N.D.E.	CEFGH 500	WTBX S
450KH	4P+	120m6	210	200	32h9	109	18	DSM24	7326	6326C3	I ≤ 200A : 1xM63x1,5	3xM20x1,5
500KH	4P+	130m6	250	240	32h9	119	18	DSM24	7328	6328C3	200A ≤ I ≤ 400A : 3xM63x1,5	

Notes:

All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XBS - Flameproof Motors – Ex d IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XBES - Flameproof Motors with Increased Safety Terminal box – Ex d e IIB T4 Gb (Ex tb IIIC T125ºC Db IP6X)
High Voltage
450KH - 500KH, IMB3T
Sleeve bearings



Frame	Poles	A	AA	AB	AC	AD	BA	BB	BC	B	C	CA	H	HA	HC	HD	h11	K	L	LC	LD1	LD2
450KH	2P (1)	750	180	940	1030	594	270	1430	650	900	440	830	450	60	965	1634	925	42	2545	2700	800	970
	4P+									1120	465								2610	2835	865	
500KH	4P+	850	200	1020	1162	594	375	1800	915	1000 1250	490	1190	500	65	1081	1704	945	42	3165	3390	925	1300

		Shaft dimensions														Bearings		Power terminal box - S1	Auxiliary terminal box - S1
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	CEFGH 500	WTBX S
450KH	2P(1)	85m6	170	160	22h9	76	14	75m6	140	130	20h9	67,5	12	DSM20	DSM20	EFNLB 9-80	EFNLQ 9-80	I ≤ 200A : 1xM63x1,5 200A ≤ I ≤ 400A : 3xM63x1,5	3xM20x1,5
	4P+	120m6	210	200	32h9	109	18	100m6	210	200	28h9	90	16	DSM24	DSM24	EFNLB 11-125	EFNLQ 11-125		
500KH	4P+	130m6	250	240	32	119	18	110m6	210	200	28	100	16	DSM24	DSM24	EFNLB 11-125	EFNLQ 11-125		

Notes:

(1) Available only for 50Hz
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.
Rotor is not self-aligned, costumer must ensure alignment.
Over speed not allowed.
Rotor maximum axial play: ± 3mm.
Motor rotation only available in one sense (CW or CCW), please inform desired sense at the time of Inquiry/Order.

7.2. BFGC4/BFGC8/W22XC Series - Ex d(e) IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)

BFGC8, BFGC4 and W22XC are WEG flameproof TEFC three phase motors lines for IIC group of gas and combustible dust.
BFGC8 line is available for shaft height 71 up to 225.
BFGC4 line is available for shaft height 250 up to 315M.
W22XC line is available for shaft height 315L up to 500.

BFGC8 and BFGC4 lines are available for Low voltage and W22XC line is available for Low, Medium and High voltage with the following powers:

BFGC8 - Low voltage (≤ 690V)	
Powers (kW)	Speed (RPM)
0,37 up to 45	3000
0,25 up to 45	1500
0,18 up to 30	1000
0,12 up to 22	750

BFGC4 - Low voltage (≤ 690V)	
Powers (kW)	Speed (RPM)
55 up to 132	3000
55 up to 132	1500
37 up to 90	1000
30 up to 75	750

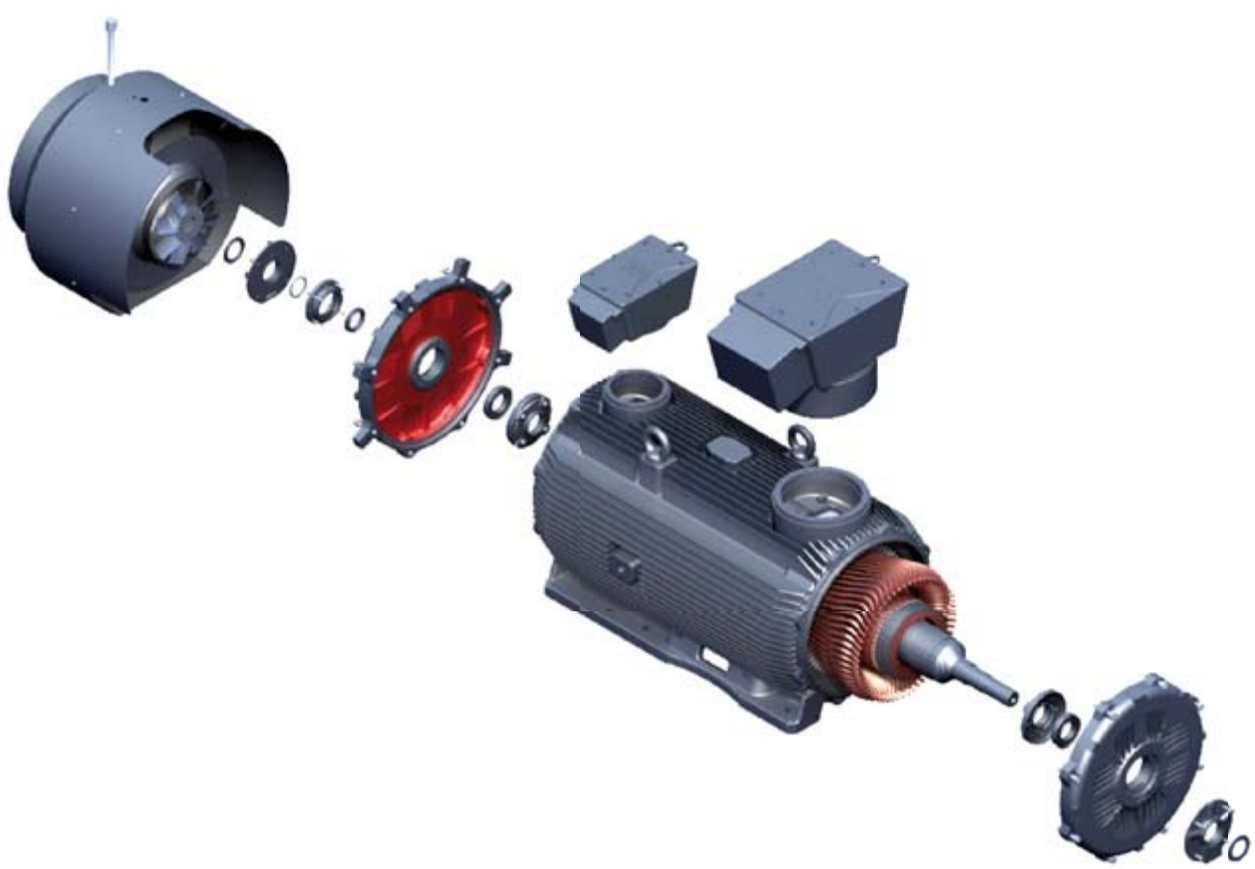
W22XC - Low voltage (≤ 1100V) – IE2 Efficiency level	
Powers (kW)	Speed (RPM)
132 up to 1120	3000
132 up to 1400	1500
90 up to 1000	1000
75 up to 800	750

W22XC - Medium voltage (1100V < U ≤ 6600V)	
Powers (kW)	Speed (RPM)
90 up to 1200	3000
90 up to 1500	1500
90 up to 1120	1000
90 up to 900	750

W22XC - High voltage (6600V < U ≤ 11000V)	
Powers (kW)	Speed (RPM)
355 up to 710	3000
355 up to 900	1500
280 up to 630	1000
200 up to 500	750

In relation to the different available optional features, BFGC8, BFGC4 and W22XC motors are designated as follows:

- BFGC8 / BFGC4 / W22XC – Standard Ex d IIC T4 Gb motor
- BFGCE8 / BFGCE4 / W22XCE – Ex d e IIC T4 Gb motor
- BFGCD4 / W22XCD – Ex d IIC T4 Gb and Ex tb IIIC Db IP6X motor
- BFGCED4 / W22XCED – Ex d e IIB T4 Gb and Ex tb IIIC Db IP6X motor



7.2.1. Low Voltage - Electrical Data - BFGC8 Series

BFGC8 - Flameproof Motors - Ex d IIC T4
BFGCE8 - Flameproof Motors with Increased Safety Terminal Box - Ex d e IIC T4

Output		Frame IEC	T_n (Nm)	I_S / I_n	T_S / T_n	T_{max} / T_n	Inertia J Kgm²	Weight Kg	D 400 V/50Hz							
									RPM	% of full load						I_n (A)
										Efficiency h			Power Factor Cos j			
kW	HP									50	75	100	50	75	100	
II Pole - 3000 min⁻¹																
0.37	0.50	BFGC8 71M	1.3	4.2	3.0	2.8	0.000	15	2800	56.0	59.5	59.5	0.55	0.83	0.86	1.1
0.55	0.75	BFGC8 71M	1.9	5.5	2.9	3.1	0.000	16	2805	67.0	70.0	70.0	0.55	0.83	0.86	1.3
0.75	1.0	BFGC8 80M	2.6	5.4	2.3	2.6	0.001	24	2790	69.0	72.0	72.0	0.60	0.88	0.89	1.7
1.1	1.5	BFGC8 80M	3.8	6.1	2.6	2.9	0.001	26	2790	75.0	77.0	77.0	0.57	0.84	0.87	2.4
1.5	2.0	BFGC8 90S	5.1	6.3	2.5	2.8	0.001	32	2830	75.0	77.0	77.0	0.57	0.84	0.87	3.3
2.2	3.0	BFGC8 90L	7.4	6.9	2.8	2.7	0.002	34	2845	80.5	82.0	82.0	0.58	0.85	0.88	4.4
3	4	BFGC8 100L	10	7.1	2.5	2.9	0.003	43	2865	81.0	83.0	83.5	0.57	0.84	0.87	6.0
4	5.5	BFGC8 112M	13	7.6	2.5	3.0	0.005	58	2890	83.0	84.0	84.5	0.58	0.85	0.88	7.8
5.5	7.5	BFGC8 132S	18	6.6	2.7	2.8	0.010	77	2910	83.0	84.0	84.5	0.58	0.85	0.88	10.8
7.5	10	BFGC8 132S	25	7.9	2.7	3.1	0.012	84	2925	84.0	85.0	85.5	0.60	0.88	0.89	14.5
11	15	BFGC8 160M	36	6.9	2.8	3.0	0.029	148	2940	80.0	81.0	80.6	0.58	0.85	0.88	22.3
15	20	BFGC8 160M	49	7.7	3.0	3.2	0.039	166	2940	81.0	83.0	83.0	0.65	0.89	0.92	28.5
18.5	25	BFGC8 160L	60	8.0	3.3	3.0	0.046	178	2945	84.5	86.0	86.1	0.64	0.88	0.91	32.4
22	30	BFGC8 180M	72	7.2	2.4	2.9	0.062	205	2930	90.0	92.0	92.0	0.60	0.88	0.89	39.0
30	40	BFGC8 200L	98	7.3	2.1	2.8	0.104	240	2930	91.0	93.0	93.0	0.58	0.85	0.88	53.0
37	50	BFGC8 200L	121	7.3	2.2	2.9	0.127	250	2930	91.0	93.0	93.5	0.60	0.88	0.89	64.0
45	60	BFGC8 225M	146	7.2	2.0	2.6	0.222	375	2945	91.0	93.0	93.5	0.58	0.85	0.88	79.0
IV Pole - 1500 min⁻¹																
0.25	0.33	BFGC8 71M	1.8	3.8	2.2	2.5	0.001	15	1355	56.0	59.5	59.5	0.43	0.75	0.80	0.8
0.37	0.50	BFGC8 71M	2.6	3.8	2.3	2.9	0.001	16	1350	60.0	63.0	63.0	0.45	0.76	0.81	1.1
0.55	0.75	BFGC8 80M	3.7	4.6	2.3	2.7	0.001	24	1410	69.0	72.0	72.0	0.45	0.76	0.81	1.4
0.75	1.00	BFGC8 80M	5.1	5.0	2.4	2.6	0.001	26	1400	74.0	76.0	76.0	0.43	0.75	0.80	1.8
1.1	1.50	BFGC8 90S	7.5	5.4	2.3	2.4	0.002	32	1410	78.0	79.0	79.0	0.51	0.81	0.84	2.4
1.5	2.00	BFGC8 90L	10	5.8	2.5	2.6	0.003	35	1405	78.0	79.0	79.0	0.51	0.81	0.84	3.3
2.2	3.00	BFGC8 100L	15	5.1	2.1	2.2	0.004	43	1405	78.0	79.0	79.0	0.51	0.81	0.84	4.8
3	4.00	BFGC8 100L	21	5.3	2.1	2.3	0.005	46	1400	80.0	81.0	81.0	0.51	0.81	0.84	6.4
4	5.50	BFGC8 112M	27	6.6	2.2	2.8	0.010	60	1430	84.0	85.0	85.0	0.51	0.81	0.84	8.2
5.5	7.50	BFGC8 132S	37	5.5	2.3	2.7	0.021	84	1435	83.0	84.0	84.5	0.55	0.83	0.86	10.9
7.5	10.00	BFGC8 132M	50	6.5	2.8	2.9	0.028	94	1445	85.0	87.0	87.0	0.53	0.82	0.85	14.8
11	15.0	BFGC8 160M	72	6.7	2.7	2.8	0.054	159	1470	85.0	87.0	87.0	0.49	0.80	0.83	22.0
15	20	BFGC8 160L	98	6.3	2.6	2.7	0.071	178	1460	85.0	87.0	87.5	0.53	0.82	0.85	29.0
18.5	25	BFGC8 180M	121	6.5	2.5	2.3	0.113	215	1460	90.0	92.0	92.0	0.51	0.81	0.84	35.0
22	30	BFGC8 180L	144	6.4	2.5	2.3	0.134	236	1460	90.0	92.0	92.5	0.55	0.83	0.86	40.0
30	40	BFGC8 200L	196	6.2	2.2	3.0	0.213	250	1460	91.0	93.0	93.0	0.49	0.80	0.83	56.0
37	50	BFGC8 225S	242	6.3	2.2	2.8	0.362	310	1465	91.0	93.0	93.5	0.51	0.81	0.84	68.0
45	60	BFGC8 225M	293	6.2	2.3	2.8	0.428	390	1465	92.0	94.0	94.0	0.49	0.80	0.83	83.0
VI Pole - 1000 min -1																
0.18	0.25	BFGC8 71M	1.9	3.1	2.1	2.3	0.001	15	930	56.0	59.5	60.0	0.30	0.55	0.65	0.7
0.25	0.33	BFGC8 71M	2.6	3.7	2.2	2.5	0.001	16	940	59.5	63.5	64.0	0.30	0.59	0.67	0.9
0.37	0.50	BFGC8 80M	3.8	3.6	2.3	2.5	0.002	25	925	62.0	66.5	67.0	0.34	0.65	0.72	1.1
0.55	0.75	BFGC8 80M	5.7	4.1	2.4	2.5	0.002	27	915	69.0	72.0	72.0	0.36	0.67	0.74	1.5
0.75	1.00	BFGC8 90S	7.8	3.7	1.8	2.1	0.003	32	915	67.0	70.0	70.0	0.36	0.67	0.74	2.1
1.1	1.50	BFGC8 90L	12	4.1	2.1	2.3	0.004	35	915	71.0	73.0	73.0	0.35	0.66	0.73	3.0
1.5	2.00	BFGC8 100L	15	4.7	2.2	2.3	0.007	46	930	74.0	76.0	76.0	0.40	0.72	0.77	3.7
2.2	3.00	BFGC8 112M	22	6.1	2.6	2.7	0.016	60	960	80.5	82.0	82.0	0.41	0.73	0.78	5.0
3	4.00	BFGC8 132S	29	6.3	2.3	2.5	0.027	84	975	81.0	83.0	83.5	0.42	0.73	0.79	6.6
4	5.50	BFGC8 132M	40	6.3	2.4	2.9	0.032	88	960	81.0	83.0	83.0	0.43	0.75	0.80	8.8
5.5	7.50	BFGC8 132M	55	6.1	2.3	2.9	0.038	95	955	81.0	83.0	83.5	0.45	0.76	0.81	11.8
7.5	10.00	BFGC8 160M	74	6.7	2.7	2.4	0.081	161	970	84.5	86.0	86.0	0.43	0.75	0.80	15.8
11	15.00	BFGC8 160L	109	6.0	2.2	2.3	0.109	182	965	85.5	88.0	88.5	0.40	0.72	0.77	23.5
15	20	BFGC8 180L	148	5.2	1.9	2.3	0.227	236	965	86.0	89.0	89.5	0.41	0.73	0.78	31.0
18.5	25	BFGC8 200L	183	6.0	1.9	2.4	0.244	240	965	89.0	91.0	91.0	0.45	0.76	0.81	36.0
22	30	BFGC8 200L	219	6.0	1.9	2.4	0.279	250	965	89.0	91.0	91.5	0.45	0.76	0.81	43.0
30	40	BFGC8 225M	293	5.8	1.8	2.5	0.661	390	975	90.0	92.0	92.5	0.49	0.80	0.83	56.0

BFGC8 - Flameproof Motors - Ex d IIC T4
BFGCE8 - Flameproof Motors with Increased Safety Terminal Box - Ex d e IIC T4

Output		Frame IEC	T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Weight Kg	D 400 V/50Hz							
									RPM	% of full load						I_n (A)
										Efficiency h			Power Factor Cos j			
kW	HP									50	75	100	50	75	100	
VIII Pole - 750 min⁻¹																
0.12	0.16	BFGC8 71M	1.8	2.4	1.8	2.1	0.001	16	655	42.0	44.5	45.0	0.34	0.64	0.71	0.54
0.18	0.25	BFGC8 80M	2.5	2.9	2.1	2.2	0.002	25	680	57.0	60.0	61.0	0.30	0.55	0.65	0.66
0.25	0.33	BFGC8 80M	3.5	3.1	2.1	2.3	0.002	27	680	54.0	57.0	58.0	0.32	0.61	0.68	0.92
0.37	0.50	BFGC8 90S	5.2	3.0	1.7	2	0.003	32	685	61.0	65.0	66.0	0.30	0.55	0.65	1.25
0.55	0.75	BFGC8 90L	7.7	3.1	1.8	2.1	0.004	35	685	66.0	69.0	69.0	0.30	0.57	0.66	1.75
0.75	1.00	BFGC8 100L	10	3.5	1.8	2.1	0.007	43	690	66.0	69.0	69.0	0.33	0.62	0.69	2.30
1.1	1.50	BFGC8 100L	15	3.8	1.9	2.2	0.009	46	695	67.0	70.0	70.0	0.34	0.63	0.70	3.25
1.5	2.00	BFGC8 112M	20	4.3	2.0	2.5	0.016	60	710	76.0	78.0	78.0	0.30	0.59	0.67	4.15
2.2	3.00	BFGC8 132S	30	4.3	1.9	2.2	0.026	79	710	78.0	79.0	79.0	0.36	0.67	0.74	5.50
3	4.00	BFGC8 132M	40	4.8	2.1	2.3	0.034	85	710	79.0	80.0	80.0	0.38	0.70	0.76	7.20
4	5.50	BFGC8 160M	53	4.8	1.8	2.3	0.069	146	720	81.0	83.0	82.6	0.34	0.64	0.71	10.00
5.5	7.50	BFGC8 160M	74	4.8	1.8	2.1	0.089	160	715	83.0	84.0	84.0	0.34	0.64	0.71	13.40
7.5	10.00	BFGC8 160L	99	5.8	2.3	2.1	0.120	182	725	84.5	86.0	86.5	0.36	0.69	0.75	16.70
11	15.00	BFGC8 180L	147	4.2	1.8	2.5	0.227	236	715	85.0	87.0	86.7	0.36	0.67	0.74	25.00
15	20	BFGC8 200L	196	4.5	2.1	2.5	0.378	250	720	89.0	91.0	91.0	0.47	0.78	0.82	29.00
18.5	25	BFGC8 225S	249	4.6	2.1	2.6	0.570	310	710	89.0	91.0	91.0	0.42	0.73	0.79	37.00
22	30	BFGC8 225M	294	4.6	2.1	2.6	0.678	390	715	89.0	91.0	91.5	0.40	0.72	0.77	45.00

Tn = Full load torque
Ils / In = Locked rotor current
Ts / Tn = Locked rotor torque

Tmax / Tn = Breakdown torque
In = Full load current

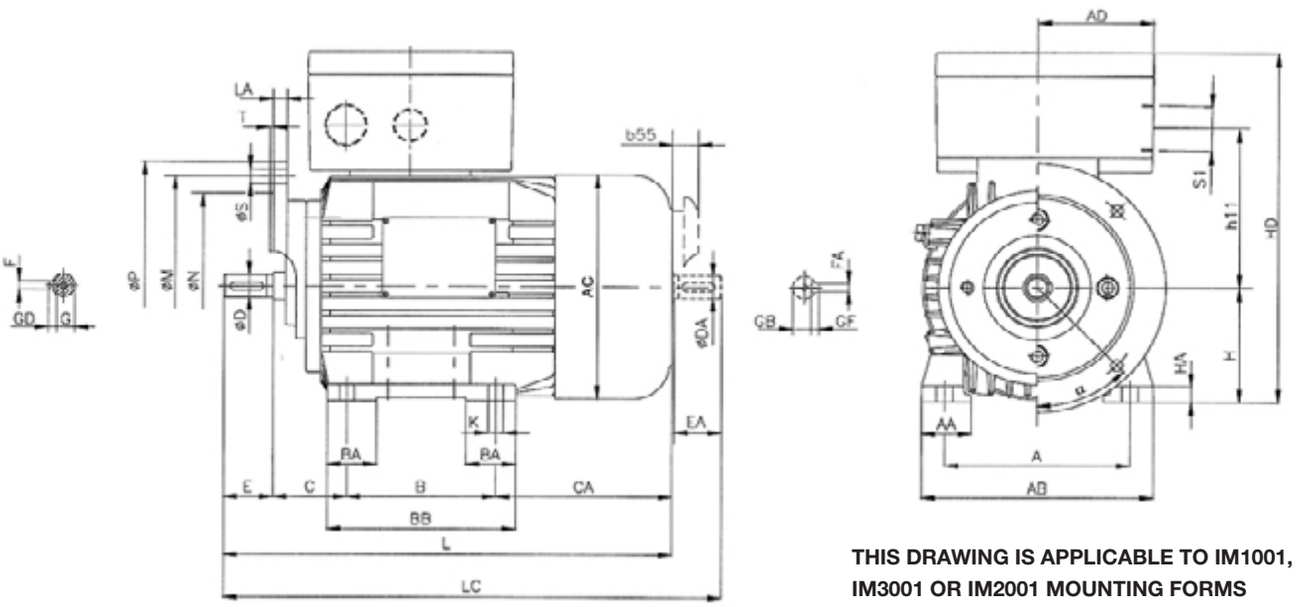
Standard voltage, connection and frequency:
400V Δ 50Hz
690V Y 50Hz
480V Δ 60Hz

Notes:
- The motors can also operate on a 60Hz supply.
- To obtain this change in the electrical data for 60 Hz, please refer to us.
- All values are according to IEC 60034-1 tolerances.
- This data can be changed without prior notice.

7.2.2. Low Voltage - Mechanical Data - BFGC8 Series

BFGC8 - Flameproof Motors - Ex d IIC T4
BFGCE8 - Flameproof Motors with Increased Safety Terminal Box - Ex d e IIC T4
Low Voltage

BFGC8 IMB3T, IMB5, IMV1



THIS DRAWING IS APPLICABLE TO IM1001, IM3001 OR IM2001 MOUNTING FORMS

Frame	A	AA	AB	AC	AD	B	BA	BB	C	CA	Shaft Dimensions										H	HA	HD[3]	h11 [3]	K	L	LC	S1	d1	d2	Bearings	
											D	E	F	G	GD	DA	EA	FA	GB	GF											D.E.	N.D.E
71	112	30	140	139	_	90	30	114	45	106	14	30	5	11	5	14	30	5	11	5	71		218	99	9	271	307		M5	M5	6203	6203
80	125	32	160	157		100	35	130	50	127	19	40	6	15,5	6	19	40	6	15,5	6	80	10	249	132	10	317	362	1xM25x1,5	M6	M6	6204	6204
90S	140	35	180	177			60	155	56	129	24	50	8	20	7	24	50	8	20	7	90		271	140		360	415		M8	M8	6205	6205
90L						125																										
100L	160	45	205	195	79	140	45	175	63	153	28	60		24		28	60		24		100	17	288	153	12	416	481	1xM32x1,5	M10	M10	6206	6206
112M	190	50	235	219				180	70	168											112	15	311	149		438	504	2xM32x1,5				
132S	216	55	266	258			75	218	89	225	38	80	10	33	8	38	80	10	33	8	132	18	350	181		534	619		M12	M12	6208	6208
132M						178				187																						
160M	254	60	312	310	144	210	90	300	108	239	42	110	12	37	8	42	110	12	37	8	160	21	436	181	14	667	785	2xM40x1,5	M16	M16	6309	6309
160L						254																										
180M	279	70	348	352	99	241	80	295	121	249	48		14	42	9	48		14	42	9	180		492	260		721	841				6310	6310
180L						279		333		250																761	881					
200L	318	80	398	392	128	305	90	395	133	269	55		16	49	10	55		16	49	10	200		543		18	817	937	2xM50x1,5	M20	M20	6312	6312
225S	356		436	438		286		346	149	248	60	140	18	53	11	60	140	18	53	11	225		593	285		823	973				6313	6313
225M [1]						311		371		283																883	1033					
225M [2]											55	110	16	49	10	55	110	16	49	10						853	973					

NOTES: (1) 1500, 1000 and 750 RPM (2) 3000

Frame	"FF" Flange Dimensions									Nr. holes
	Flange	LA	M	N	P	T	S	a	b55	
71	FF-130	10	130	110	160	3,5	9	45°	21	4
80	FF-165		165	130	200		12		23	
90S/L									30	
100L	FF-215	11	215	180	250	4	14		35	
112M									35	
132S/M	FF-265	16	265	230	300				35	
160M/L	FF-300	19	300	250	350	5	18		35	
180M/L		15							58	
200L	FF-350	18	350	300	400				64	
225S	FF-400		400	350	450			22,5°	58	8
225M (1)									58	
225M (2)									58	

Notes:

All the dimensions are in millimeters.
For all vertical applications or unusual coupling conditions, the costumer shall inform the load figure with the inpuiry/order.
Construction drawings with guaranteed values are available under request.
Shaft dimensions for 2 pole motors, only for directing couple.
Execution with second shaft end available on request.
"Ex de" execution dimensions under request.
The average values shown are subject to change without prior notice.

7.2.3. Low Voltage - Electrical Data - BFGC4 Series

BFGC4 - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
BFGCE4 - Flameproof Motors with Increased Safety Terminal box – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
IE2 Efficiency Class according to IEC 60034-30

Output		Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot (s)	Weight Kg	Sound Pressure dB(A)	Δ 400 V/50Hz - Standard terminal box							
												RPM	% of full load						I_n (A)
													Efficiency η			Power Factor Cos φ			
kW	HP												50	75	100	50	75	100	
II Pole - 3000 min⁻¹																			
55	75	BFGC4 250M		178	6.8	2.1	2.7	0.32	35/12	450	85	2958	91.1	92.6	93.2	0.87	0.91	0.91	93.6
75	100	BFGC4 280S	(1)	242	8.2	2.9	3.2	0.40	16/5	580	83	2963	91.3	93.3	94.0	0.82	0.88	0.90	128
90	120	BFGC4 280M		290	8.4	2.9	3.0	0.50	15/5	620	83	2959	93.1	94.3	94.5	0.88	0.90	0.90	153
110	150	BFGC4 315S		353	7.0	2.0	2.3	1.10	11/3	750	84	2976	92.8	94.2	94.6	0.80	0.85	0.86	195
132	180	BFGC4 315M		423	6.8	2.0	2.2	1.24	9/3	890	84	2977	93.4	94.7	95.1	0.83	0.88	0.89	225
IV Pole - 1500 min⁻¹																			
55	75	BFGC4 250M		354	6.6	1.8	2.4	0.67	14/5	465	74	1482	92.2	93.2	93.5	0.71	0.79	0.83	102
75	100	BFGC4 280S	(1)	484	7.1	1.6	2.6	0.64	15/5	600	76	1480	93.9	94.3	94.0	0.70	0.79	0.83	139
90	120	BFGC4 280M		581	6.9	1.9	2.3	1.13	15/5	650	76	1480	93.6	93.8	94.2	0.77	0.84	0.86	160
110	150	BFGC4 315S		711	7.5	3.0	3.2	1.35	7/2	850	80	1477	94.0	94.6	94.5	0.73	0.81	0.84	200
132	180	BFGC4 315M		854	7.6	3.0	3.3	1.61	6/2	900	80	1476	95.5	94.9	94.7	0.76	0.83	0.85	237
VI Pole - 1000 min -1																			
37	50	BFGC4 250M	(1)	359	6.2	2.4	2.6	0.68	10/3	450	68	984	90.9	92.3	92.2	0.64	0.75	0.80	72.4
45	60	BFGC4 280S	(1)	437	6.7	2.6	2.7	0.82	8/2	610	71	983	91.9	92.9	92.7	0.68	0.77	0.81	86.5
55	75	BFGC4 280M		533	7.0	2.3	2.3	1.07	13/4	650	71	985	93.6	93.6	93.1	0.72	0.80	0.82	104
75	100	BFGC4 315S		727	7.3	2.8	3.0	2.07	16/5	700	69	985	92.8	93.7	93.7	0.78	0.83	0.85	136
90	120	BFGC4 315M		873	7.0	2.4	2.4	2.89	24/8	850	69	985	93.0	94.0	94.0	0.79	0.84	0.86	161
VIII Pole - 750 min⁻¹																			
30	40	BFGC4 250M	(1)	389	6.0	2.2	2.2	0.82	12/4	450	61	737	90.5	91.2	90.8	0.59	0.69	0.74	64.4
37	50	BFGC4 280S	(1)	479	5.7	2.4	2.4	0.99	13/4	610	61	737	89.4	90.3	90.0	0.59	0.69	0.74	80.2
45	60	BFGC4 280M		582	6.5	2.6	2.6	1.26	16/5	630	61	739	91.1	92.1	92.0	0.57	0.68	0.73	96.7
55	75	BFGC4 315S		713	5.3	2.3	2.5	1.95	11/3	800	62	737	88.8	90.7	91.1	0.54	0.65	0.71	123
75	100	BFGC4 315M		973	5.2	2.6	2.6	2.43	22/7	900	62	736	90.8	92.0	92.1	0.56	0.66	0.71	166

Output		Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot (s)	Weight Kg	Sound dB(A)	Δ 460V/60Hz - Standard terminal box							
												RPM	% of full load						I_n (A)
													Efficiency η			Power Factor Cos φ			
kW	HP												50	75	100	50	75	100	
II Pole - 3000 min⁻¹																			
66	90	BFGC4 250M		177	6.8	2.1	2.7	0.32	35/12	450	90	3558	91.9	93.7	94.3	0.87	0.91	0.91	96.5
90	120	BFGC4 280S	(1)	241	8.2	2.9	3.2	0.40	16/5	580	87	3563	91.7	94.0	94.7	0.82	0.88	0.90	133
108	145	BFGC4 280M		290	8.4	2.9	3.0	0.50	15/5	620	87	3559	93.3	94.8	95.0	0.88	0.90	0.90	159
132	180	BFGC4 315S		353	7.0	2.0	2.3	1.10	11/3	750	88	3576	93.1	94.8	95.2	0.80	0.85	0.86	202
158	215	BFGC4 315M		422	6.8	2.0	2.2	1.24	9/3	890	88	3577	93.4	95.0	95.4	0.83	0.88	0.89	234
IV Pole - 1500 min⁻¹																			
66	90	BFGC4 250M		354	6.6	1.8	2.4	0.67	14/5	465	78	1782	93.0	94.3	94.6	0.71	0.79	0.83	106
90	120	BFGC4 280S	(1)	483	7.1	1.6	2.6	0.64	15/5	600	80	1780	94.6	95.3	95.0	0.70	0.79	0.83	143
108	145	BFGC4 280M		579	6.9	1.9	2.3	1.13	15/5	650	80	1780	94.3	94.8	95.2	0.77	0.84	0.86	166
132	180	BFGC4 315S		709	7.5	3.0	3.2	1.35	7/2	850	84	1777	94.6	95.5	95.4	0.73	0.81	0.84	207
158	215	BFGC4 315M		850	7.6	3.0	3.3	1.61	6/2	900	84	1776	95.1	95.8	95.6	0.76	0.83	0.85	244
VI Pole - 1000 min -1																			
44	60	BFGC4 250M	(1)	355	6.2	2.4	2.6	0.68	10/3	450	71	1184	91.7	93.4	93.3	0.64	0.75	0.80	74.0
54	75	BFGC4 280S	(1)	436	6.7	2.6	2.7	0.82	8/2	610	75	1183	92.6	93.9	93.7	0.68	0.77	0.81	89.3
66	90	BFGC4 280M		532	7.0	2.3	2.3	1.07	13/4	650	75	1185	94.3	94.6	94.1	0.72	0.80	0.82	107
90	120	BFGC4 315S		725	7.3	2.8	3.0	2.07	16/5	700	72	1185	93.4	94.6	94.6	0.78	0.83	0.85	140
108	145	BFGC4 315M		870	7.0	2.4	2.4	2.89	24/8	850	72	1185	93.7	94.9	94.9	0.79	0.84	0.86	166
VIII Pole - 750 min⁻¹																			
36	50	BFGC4 250M	(1)	388	6.0	2.2	2.2	0.82	12/4	450	65	887	89.9	90.9	90.5	0.59	0.69	0.74	67.5
44	60	BFGC4 280S	(1)	474	5.7	2.4	2.4	0.99	13/4	610	65	887	88.8	90.0	89.7	0.59	0.69	0.74	83.2
54	75	BFGC4 280M		580	6.5	2.6	2.6	1.26	16/5	630	65	889	90.5	91.8	91.7	0.57	0.68	0.73	101
66	90	BFGC4 315S		711	5.3	2.3	2.5	1.95	11/3	800	65	887	88.2	90.4	90.8	0.54	0.65	0.71	128
90	120	BFGC4 315M		970	5.2	2.6	2.6	2.43	22/7	900	65	886	90.2	91.7	91.8	0.56	0.66	0.71	173

(1) Temperature rise class F at full load (2) Copper rotor (3) Rated current at 690V (4) Rated current at 760V

Tn = Full load torque
Ils / In = Locked rotor current
Ts / Tn = Locked rotor torque

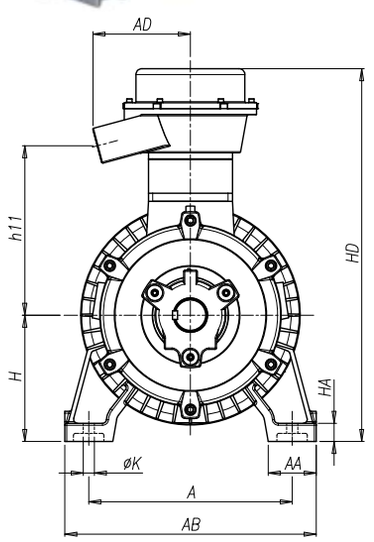
Tmax / Tn = Breakdown torque
In = Full load current

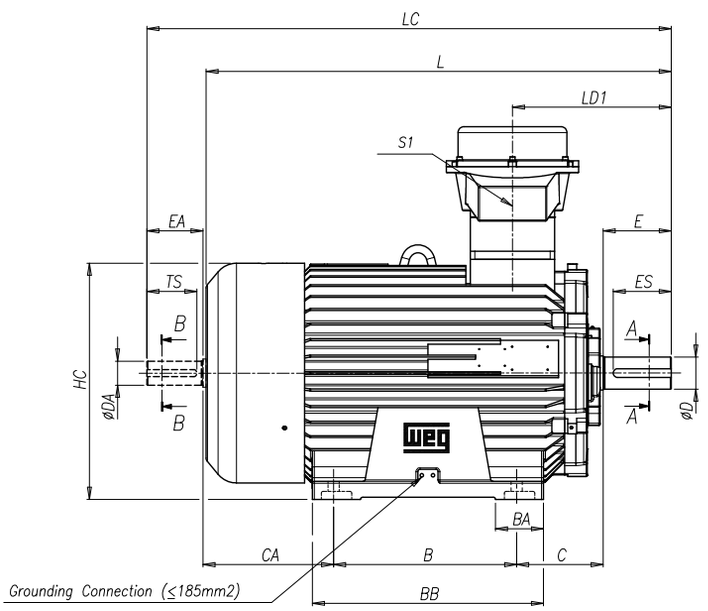
Notes:
-The indicated values for sound pressure levels are @ 1m no load, with 3 dB(A) tolerance.
-All values are according to IEC 60034-1 tolerances.
-This data can be changed without prior notice.

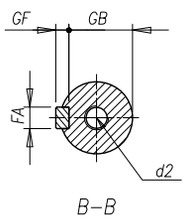
7.2.4. Low Voltage - Mechanical Data - BFGC4 Series

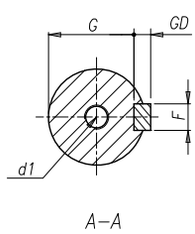
BFGC4 - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Low Voltage

250M - 280S - 280M - 315S - 315M, IMB3T









Frame	Poles	A	AA	AB	AD	BA	BB	B	C	CA	H	HA	HC	HD	h11	K	L	LC	LD1
250M	2P	406	100	506	244	-	406	349	190	207	280	40	522	863	390	24	856	1004	347
	4P+																		
280S	2P	457	105	537			438	368		236							926	1074	
	4P+																		
280M	2P						525	419		272							1013	1161	
	4P+																		
315S	2P	508	120	628		120	526	406	216	327	315	45	589	930	422	28	1081	1229	366,5
	4P+																1111	1259	396,5
315M	2P						577	457									1132	1280	366,5
	4P+																1161	1309	396,5

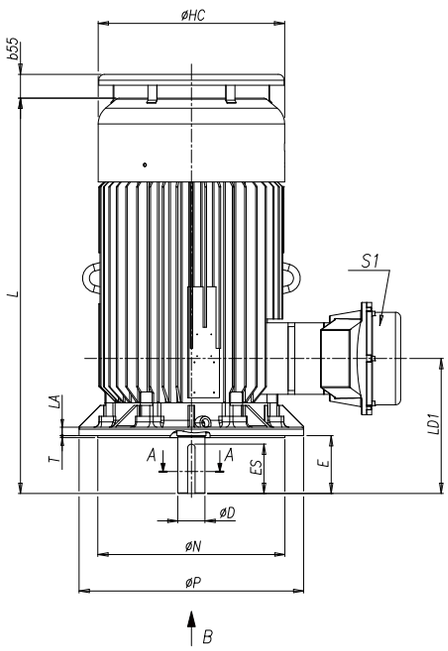
		Shaft dimensions														Bearings		Power terminal box - S1
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	Exd 175
250M	2P	60m6	140	125	18h9	53	11	60m6	140	120	18	53	11	DSM20	DSM20	6314C3	6314C3	2xM63X1,5 +1xM20X1,5
	4P+	65m6		125		58												
280S	2P	65m6		125	18h9	58	11									6314C3		
	4P+	75m6		125	20h9	67,5	12									6316C3		
280M	2P	65m6		125	18h9	58	11									6314C3		
	4P+	75m6		125	20h9	67,5	12									6316C3		
315S	2P	65m6	140	125	18h9	58	11									6314C3		
	4P+	80m6	170	160	22h9	71	14									6317C3		
315M	2P	65m6	140	125	18h9	58	11									6314C3		
	4P+	80m6	170	160	22h9	71	14									6317C3		

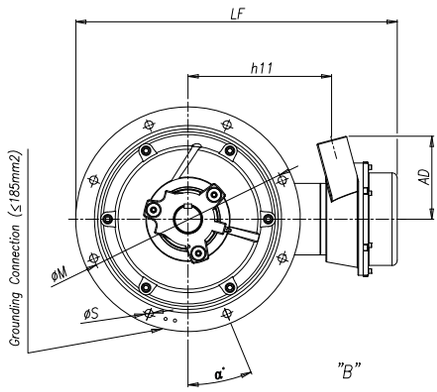
Notes:

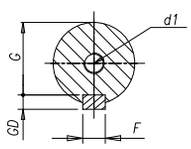
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

BFGC4 - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Low Voltage

250M - 280S - 280M - 315S - 315M, IMV1







Frame	Poles	Flange	AD	HC	h11	L	LA	LD1	LF	b55	M	N	P	T	S	Nr. Holes	α
250M	2P	FF-500	244	548	390	856	21	347	833	60	500	450	550	5	18,5	8	22,5°
	4P+																
280S	2P					926			863								
	4P+																
280M	2P					1013											
	4P+																
315S	2P	FF-600			422	1081	25	366,5	930	70	600	550	660	6	24		
	4P+					1111		396,5									
315M	2P					1132		366,5									
	4P+					1161		396,5									

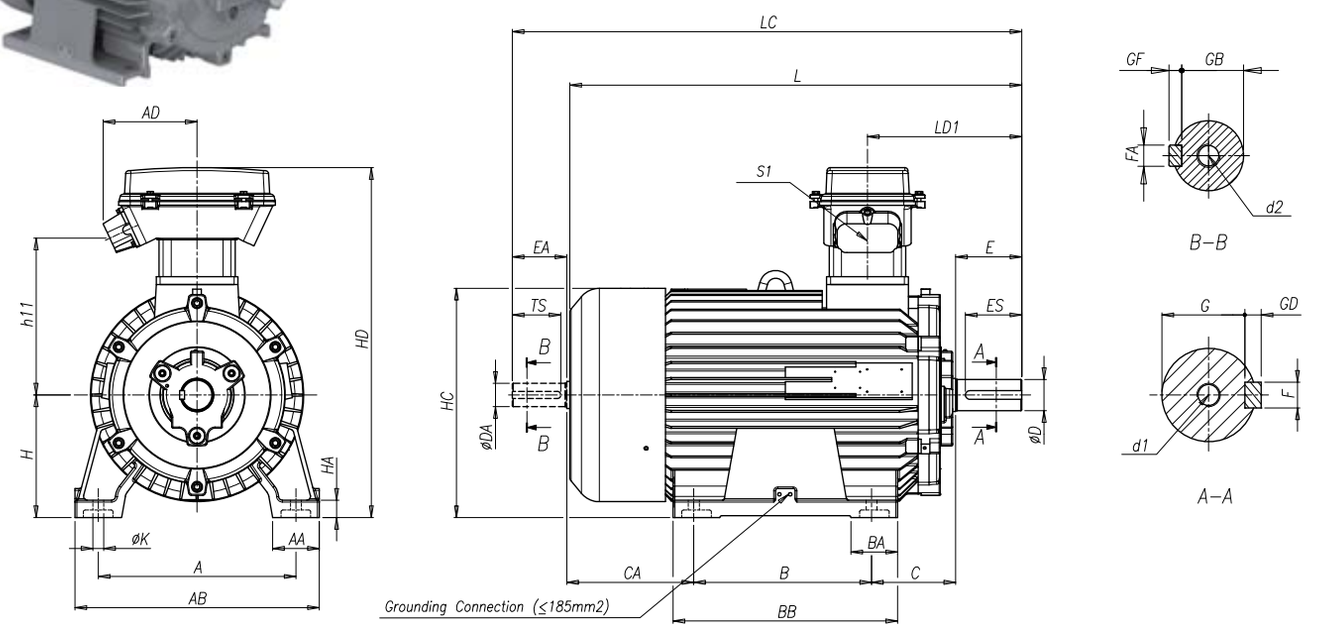
		Shaft dimensions							Bearings		Power terminal box - S1
Frame	Poles	D	E	ES	F	G	GD	d1	D .E .	N .D .E .	Exd 175
250M	2P	60m6	140	125	18h9	53	11	DSM20	6314C3	6314C3	2xM63X1,5+1xM20X1,5
	4P+	65m6		125		58					
280S	2P	65m6		125	18h9	58	11		6314C3		
	4P+	75m6		125	20h9	67,5	12		6316C3		
280M	2P	65m6		125	18h9	58	11		6314C3		
	4P+	75m6		125	20h9	67,5	12		6316C3		
315S	2P	65m6	140	125	18h9	58	11		6314C3		
	4P+	80m6	170	160	22h9	71	14		6317C3		
315M	2P	65m6	140	125	18h9	58	11		6314C3		
	4P+	80m6	170	160	22h9	71	14		6317C3		

Notes:

All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

BFGCE4 - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Low Voltage

250M - 280S - 280M - 315S - 315M, IMB3T



Frame	Poles	A	AA	AB	AD	BA	BB	B	C	CA	H	HA	HC	HD	h11	K	L	LC	LD1
250M	2P	406	100	506	244	-	406	349	168	207	250	32	492	833	371	24	856	1004	347
	4P+																		
280S	2P	457	105	537			438	368	190	236	280	40	522	863			926	1074	
	4P+																		
280M	2P						525	419		272							1013	1161	
	4P+																		
315S	2P	508	120	628		120	526	406	216	327	315	45	589	930	403	28	1081	1229	366,5
	4P+																1111	1259	396,5
315M	2P						577	457									1132	1280	366,5
	4P+																1161	1309	396,5

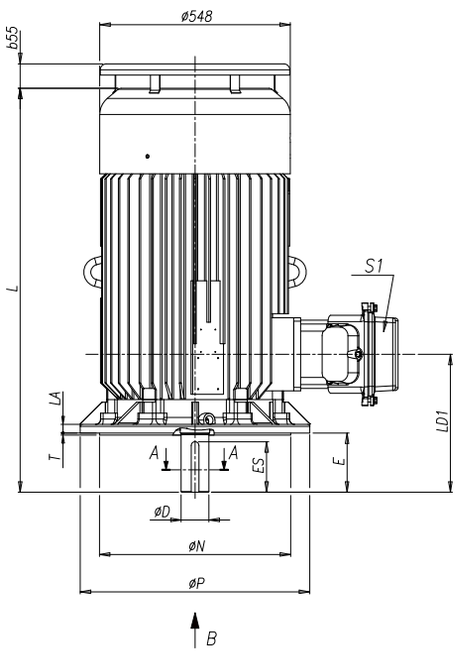
		Shaft dimensions														Bearings		Power terminal box - S1
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	Exe 175
250M	2P	60m6	140	125	18h9	53	11	60m6	140	120	18	53	11	DSM20	DSM20	6314C3	6314C3	2xM63X1,5 +1xM20X1,5
	4P+	65m6		125		58												
280S	2P	65m6		125	18h9	58	11									6314C3		
	4P+	75m6		125	20h9	67,5	12									6316C3		
280M	2P	65m6		125	18h9	58	11									6314C3		
	4P+	75m6		125	20h9	67,5	12									6316C3		
315S	2P	65m6	140	125	18h9	58	11									6314C3		
	4P+	80m6	170	160	22h9	71	14									6317C3		
315M	2P	65m6	140	125	18h9	58	11									6314C3		
	4P+	80m6	170	160	22h9	71	14									6317C3		

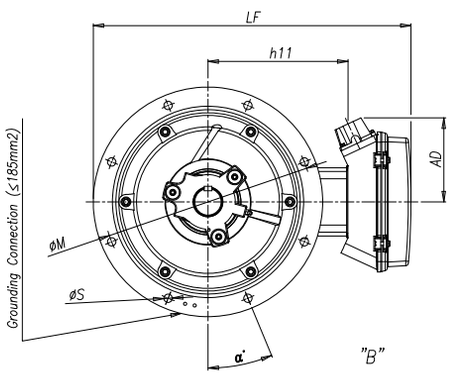
Notes:

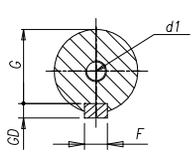
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

BFGCE4 - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Low Voltage

250M - 280S - 280M - 315S - 315M, IMV1







A–A

Frame	Poles	Flange	AD	HC	h11	L	LA	LD1	LF	b55	M	N	P	T	S	Nr. Holes	α
250M	2P	FF-500	244	548	371	856	21	347	833	60	500	450	550	5	18,5	8	22,5°
	4P+																
280S	2P					926			863								
	4P+																
280M	2P					1013											
	4P+																
315S	2P	FF-600			403	1081	25	366,5	930	70	600	550	660	6	24		
	4P+					1111		396,5									
315M	2P					1132		366,5									
	4P+					1161		396,5									

		Shaft dimensions							Bearings		Power terminal box - S1
Frame	Poles	D	E	ES	F	G	GD	d1	D.E.	N.D.E.	Exe 175
250M	2P	60m6	140	125	18h9	53	11	DSM20	6314C3	6314C3	2xM63X1,5+1xM20X1,5
	4P+	65m6		125		58					
280S	2P	65m6		125	18h9	58	11		6314C3		
	4P+	75m6		125	20h9	67,5	12		6316C3		
280M	2P	65m6		125	18h9	58	11		6314C3		
	4P+	75m6		125	20h9	67,5	12		6316C3		
315S	2P	65m6	140	125	18h9	58	11		6314C3		
	4P+	80m6	170	160	22h9	71	14		6317C3		
315M	2P	65m6	140	125	18h9	58	11		6314C3		
	4P+	80m6	170	160	22h9	71	14		6317C3		

Notes:

All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

7.2.5. Low Voltage - Electrical Data - W22XC Series

W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
IE2 Efficiency Class according to IEC 60034-30

Output		Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot (s)	Weight Kg	Sound Pressure dB(A)	RPM	Δ 400 V/50Hz - Standard terminal box Δ 690 V/50Hz - Standard terminal box						I_n (A)
													% of full load						
													Efficiency η			Power Factor Cos φ			
kW	HP												50	75	100	50	75	100	
II Pole - 3000 min⁻¹																			
132	180	W22XC 315L		424	7.3	2.2	2.7	3.4	11/3	1500	80	2975	94.2	95.0	95.0	0.85	0.88	0.89	225
160	215	W22XC 315L		514	7.3	2.2	2.8	3.4	11/3	1550	80	2975	94.0	94.9	95.0	0.85	0.88	0.89	273
200	270	W22XC 315L		642	7.3	2.2	2.8	4.1	11/3	1650	80	2975	94.4	95.2	95.2	0.85	0.88	0.89	341
250	340	W22XC 315L		803	7.3	2.2	2.5	4.2	11/3	1750	80	2975	94.3	95.1	95.2	0.84	0.88	0.89	426
280	380	W22XC 355ML		897	7.5	2.5	2.7	6.0	14/5	2000	80	2980	95.7	96.2	96.2	0.88	0.91	0.91	462
315	425	W22XC 355AB		1009	7.5	2.5	2.7	6.0	14/5	2300	80	2980	95.9	96.2	96.2	0.88	0.91	0.91	519
355	480	W22XC 355AB		1138	7.5	2.5	2.7	6.8	14/5	2500	80	2980	96.1	96.4	96.3	0.89	0.91	0.91	585
400	540	W22XC 355AB		1282	7.5	2.5	2.7	7.7	14/5	2700	80	2980	95.8	96.3	96.3	0.89	0.91	0.91	659
450	610	W22XC 400LJ		1440	7.5	2.0	3.4	8.0	14/5	3750	80	2985	95.5	96.6	97.1	0.84	0.89	0.91	735
500	675	W22XC 400LJ		1600	7.5	1.9	3.2	8.4	14/5	3950	80	2985	95.9	96.9	97.3	0.85	0.89	0.91	815
560	755	W22XC 400G	(2)	1789	7.0	0.9	2.9	17.3	14/5	4800	80	2990	97.2	97.5	97.5	0.91	0.92	0.92	901
630	850	W22XC 450KH	(2)	2014	7.5	0.6	2.6	18.9	10/3	5800	82	2987	97.3	97.6	97.6	0.84	0.89	0.90	1035
710	960	W22XC 450KH	(2)(3)	2270	7.5	0.6	2.6	20.2	10/3	6000	82	2987	97.5	97.7	97.6	0.84	0.89	0.90	676
800	1080	W22XC 450KH	(2)(3)	2558	7.5	0.7	2.6	21.4	7/2	6500	82	2987	97.5	97.6	97.6	0.84	0.88	0.90	762
900	1215	W22XC 500KH	(2)(3)	2875	5.5	0.5	1.7	23.2	25/9	8800	85	2990	96.9	97.3	97.6	0.84	0.88	0.88	877
1000	1350	W22XC 500KH	(2)(3)	3194	5.5	0.5	1.7	24.2	25/9	9500	85	2990	97.0	97.4	97.6	0.85	0.88	0.88	974
1120	1515	W22XC 500KH	(2)(3)	3577	5.5	0.5	1.7	24.2	21/7	9700	85	2990	97.2	97.5	97.6	0.85	0.88	0.88	1089
IV Pole - 1500 min⁻¹																			
132	180	W22XC 315L		848	7.3	2.5	2.9	5.4	12/4	1550	76	1487	94.3	94.9	95.0	0.76	0.84	0.86	233
160	215	W22XC 315L		1028	7.3	2.3	2.8	5.4	12/4	1600	76	1487	95.1	95.3	95.2	0.75	0.83	0.86	282
200	270	W22XC 315L		1284	7.3	2.3	2.9	5.4	12/4	1700	76	1487	94.5	95.1	95.2	0.77	0.83	0.86	353
250	340	W22XC 315L		1606	7.3	2.3	2.9	5.4	12/4	1850	76	1487	94.5	95.1	95.2	0.77	0.83	0.86	441
280	380	W22XC 355ML		1795	7.5	2.3	2.7	9.7	11/3	2100	77	1490	95.3	95.9	96.0	0.76	0.83	0.86	490
315	425	W22XC 355AB		2019	7.5	2.5	2.7	11.6	11/3	2200	77	1490	95.9	96.5	96.5	0.77	0.84	0.86	548
355	480	W22XC 355AB		2275	7.5	2.5	2.7	11.6	11/3	2400	77	1490	96.0	96.5	96.5	0.75	0.83	0.86	617
400	540	W22XC 355AB		2564	7.5	2.5	2.7	13.2	11/3	2600	77	1490	95.9	96.4	96.5	0.76	0.83	0.86	696
450	610	W22XC 355AB		2884	7.5	2.5	2.7	14.7	11/3	2800	77	1490	95.9	96.5	96.5	0.75	0.83	0.86	783
500	675	W22XC 400LJ		3205	6.7	1.6	2.6	14.7	16/5	3800	80	1490	96.4	96.9	97.0	0.79	0.85	0.87	855
560	755	W22XC 400LJ		3589	6.8	1.7	2.5	15.8	13/4	3900	80	1490	96.5	97.0	97.1	0.78	0.85	0.87	957
630	850	W22XC 400LJ		4038	7.5	2.1	2.8	16.3	9/3	4000	80	1490	96.4	96.9	97.1	0.75	0.83	0.87	1076
710	960	W22XC 400G	(2)(3)	4542	7.5	2.5	2.4	18.2	5/1	4900	80	1493	96.5	96.6	97.0	0.80	0.86	0.87	704
800	1080	W22XC 450KH	(2)(3)	5117	7.5	1.2	3.0	31.1	7/2	6200	82	1493	96.8	97.2	97.3	0.80	0.86	0.88	782
900	1215	W22XC 450KH	(2)(3)	5757	7.5	1.2	3.0	31.1	6/2	6400	82	1493	96.8	97.2	97.3	0.78	0.86	0.88	880
1000	1350	W22XC 450KH	(2)(3)	6397	7.5	1.2	3.0	31.9	5/1	6600	82	1493	97.0	97.3	97.3	0.80	0.86	0.88	977
1120	1515	W22XC 500KH	(2)(3)	7155	7.0	0.7	2.4	62.3	20/7	9300	85	1495	96.5	97.2	97.5	0.84	0.85	0.88	1089
1250	1690	W22XC 500KH	(2)(3)	7985	7.5	0.8	2.6	69.2	20/7	10300	85	1495	96.5	97.2	97.5	0.84	0.85	0.88	1219
1400	1890	W22XC 500KH	(2)(3)	8943	7.5	0.8	2.5	77.9	20/7	11600	85	1495	96.5	97.2	97.5	0.84	0.85	0.88	1365
VI Pole - 1000 min -1																			
90	120	W22XC 315L		868	6.5	1.7	2.4	8.9	11/3	1650	70	990	93.6	94.4	94.6	0.73	0.80	0.83	165
110	150	W22XC 315L		1061	6.5	1.7	2.4	8.9	11/3	1700	70	990	93.9	94.5	94.6	0.74	0.80	0.83	202
132	180	W22XC 315L		1273	6.5	1.7	2.4	8.9	11/3	1800	70	990	93.9	94.5	94.6	0.73	0.80	0.83	243
160	215	W22XC 315L		1543	6.5	1.7	2.4	11.1	11/3	1900	70	990	94.3	94.6	94.6	0.74	0.80	0.83	294
200	270	W22XC 355ML		1929	5.6	1.9	2.6	12.7	28/10	2150	73	990	95.1	95.5	95.5	0.70	0.79	0.82	369
250	340	W22XC 355ML		2412	5.6	1.9	2.6	15.0	28/10	2250	73	990	95.3	95.7	95.6	0.71	0.79	0.82	460
280	380	W22XC 355AB		2701	5.6	1.9	2.6	15.0	28/10	2450	73	990	95.4	95.8	95.7	0.69	0.79	0.82	515
315	425	W22XC 355AB		3039	5.6	1.9	2.6	17.1	28/10	2650	73	990	95.5	95.9	95.8	0.69	0.79	0.82	579
355	480	W22XC 355AB		3424	5.6	1.9	2.6	18.9	28/10	2850	73	990	95.6	95.9	95.8	0.70	0.79	0.82	652
400	540	W22XC 400LJ		3843	7.0	2.3	2.5	21.4	17/6	3900	76	994	95.4	96.2	96.5	0.73	0.81	0.84	712
450	610	W22XC 400LJ		4319	7.0	2.4	2.5	24.0	12/4	4100	76	995	95.2	96.2	96.5	0.71	0.80	0.84	801
500	675	W22XC 400LJ		4804	7.0	2.4	2.5	28.1	12/4	4300	76	994	95.7	96.4	96.6	0.77	0.83	0.84	889
560	755	W22XC 400G	(2)	5375	6.5	1.9	3.0	31.2	7/2	4850	76	995	96.5	97.0	97.0	0.80	0.83	0.84	992
630	850	W22XC 450KH	(2)	6047	7.5	0.9	3.6	55.7	21/7	6500	78	995	96.2	96.7	96.9	0.76	0.85	0.88	1066
710	960	W22XC 450KH	(2)(3)	6815	7.5	0.9	3.6	58.3	21/7	6700	78	995	96.6	97.0	97.0	0.80	0.86	0.88	696
800	1080	W22XC 500KH	(2)(3)	7678	5.5	0.8	2.2	100	20/7	9500	80	995	96.5	97.0	97.2	0.80	0.84	0.86	801
900	1215	W22XC 500KH	(2)(3)	8638	5.5	0.8	2.2	100	20/7	10400	80	995	96.5	97.0	97.2	0.80	0.84	0.86	901
1000	1350	W22XC 500KH	(2)(3)	9598	5.5	0.8	2.2	113	20/7	11700	80	995	96.5	97.0	97.2	0.80	0.84	0.86	1001
VIII Pole - 750 min⁻¹																			
75	100	W22XC 315L		964	6.4	1.8	2.2	7.9	20/7	1650	68	743	94.3	94.7	94.6	0.68	0.77	0.80	143
90	120	W22XC 315L		1157	6.4	1.8	2.2	7.9	20/7	1700	68	743	94.0	94.6	94.6	0.69	0.77	0.80	172
110	150	W22XC 315L		1414	6.4	1.8	2.2	9.3	12/4	1800	68	743	93.9	94.5	94.6	0.67	0.76	0.80	210
132	180	W22XC 315L		1697	6.4	1.8	2.2	11.2	12/4	1900	68	743	93.9	94.5	94.6	0.66	0.76	0.80	252
160	215	W22XC 355ML		2057	6.3	1.1	2.3	18.4	29/10	2250	70	743	94.4	95.1	95.1	0.67	0.76	0.80	304
200	270	W22XC 355AB		2571	6.3	1.1	2.3	21.7	29/10	2650	70	743	94.8	95.4	95.3	0.68	0.77	0.80	379
250	340	W22XC 355AB		3213	6.5	1.2	2.5	25.1	29/10	2850	70	743	94.8	95.4	95.3	0.67	0.76	0.80	473
280	380	W22XC 400LJ		3589	7.0	2.8	2.8	25.7	14/5	3900	74	745	95.6	96.5	96.7	0.68	0.77	0.82	510
315	425	W22XC 400LJ		4038	7.0	2.8	2.8	25.7	14/5	4100	74	745	95.6	96.5	96.7	0.68	0.77	0.82	573
355	480	W22XC 400LJ		4551	7.0	2.9	2.9	28.8	13/4	4300	74	745	94.9	95.8	96.1	0.66	0.76	0.81	658
400	540	W22XC 400LJ		5128	7.0	3.1	3.1	31.7	10/3	4400	74	745	95.2	95.9	96.1	0.67	0.76	0.81	742
450	610	W22XC 400LJ	(2)	5761	7.5	3.4	3.4	37.7	5/1	4550	74	746	95.6	96.3	96.5	0.68	0.78	0.82	821
500	675	W22XC 400G	(2)	6418	6.0	1.8	2.7	44.4	12/4	5000	74	744	95.6	96.3	96.5	0.70	0.79	0.82	912
560	755	W22XC 450KH	(2)	7179	6.5	1.4	2.5	76.8	11/3	6600	76	745	95.0	96.0	96.3	0.74	0.80	0.82	1024
630	850	W22XC 450KH	(2)(3)	8076	6.5	1.4	2.5	80.5	10/3	6900	76	745	95.0	96.0	96.3	0.74	0.80	0.82	668
710	960	W22XC 500KH	(2)(3)	9077	6.0	0.8	2.1	111	20/7	10500	80	747	96.0	96.5	97.0	0.74	0.80	0.82	747
800	1080	W22XC 500KH	(2)(3)	10228	6.0	0.9	2.1	124	20/7	11800	80	747	96.0	96.5	97.0	0.74	0.80	0.82	842

W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
IE2 Efficiency Class according to IEC 60034-30

Output												Δ 400 V/50Hz - Oversizedd terminal box (optional)						
												% of full load						
												Efficiency η			Power Factor Cos φ			I_n (A)
kW	HP	Frame IEC	T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot (s)	Weight Kg	Sound Pressure dB(A)	RPM	50	75	100	50	75	100	
II Pole - 3000 min-1																		
710	960	W22XC 450KH (2)	2270	7.5	0.6	2.6	20.2	10/3	6400	82	2987	97.5	97.7	97.6	0.84	0.89	0.90	1167
800	1080	W22XC 450KH (2)	2558	7.5	0.7	2.6	21.4	7/2	6900	82	2987	97.5	97.6	97.6	0.84	0.88	0.90	1315
900	1215	W22XC 500KH (2)	2875	5.5	0.5	1.7	23.2	25/9	9200	85	2990	96.9	97.3	97.6	0.84	0.88	0.88	1512
1000	1350	W22XC 500KH (2)	3194	5.5	0.5	1.7	24.2	25/9	9900	85	2990	97.0	97.4	97.6	0.85	0.88	0.88	1681
1120	1515	W22XC 500KH (2)	3577	5.5	0.5	1.7	24.2	21/7	10100	85	2990	97.2	97.5	97.6	0.85	0.88	0.88	1882
IV Pole - 1500 min -1																		
710	960	W22XC 400G (2)	4542	7.5	2.5	2.4	18.2	5/1	5300	80	1493	96.5	96.6	97.0	0.80	0.86	0.87	1214
800	1080	W22XC 450KH (2)	5117	7.5	1.2	3.0	31.1	7/2	6600	82	1493	96.8	97.2	97.3	0.80	0.86	0.88	1349
900	1215	W22XC 450KH (2)	5757	7.5	1.2	3.0	31.1	6/2	6800	82	1493	96.8	97.2	97.3	0.78	0.86	0.88	1517
1000	1350	W22XC 450KH (2)	6397	7.5	1.2	3.0	31.9	5/1	7000	82	1493	97.0	97.3	97.3	0.80	0.86	0.88	1686
1120	1515	W22XC 500KH (2)	7155	7.0	0.7	2.4	62.3	20/7	9700	85	1495	96.5	97.2	97.5	0.84	0.85	0.88	1884
1250	1690	W22XC 500KH (2)	7985	7.5	0.8	2.6	69.2	20/7	10700	85	1495	96.5	97.2	97.5	0.84	0.85	0.88	2103
VI Pole - 1000 min -1																		
710	960	W22XC 450KH (2)	6815	7.5	0.9	3.6	58.3	21/7	7100	78	995	96.6	97.0	97.0	0.80	0.86	0.88	1201
800	1080	W22XC 500KH (2)	7678	5.5	0.8	2.2	100	20/7	9900	80	995	96.5	97.0	97.2	0.80	0.84	0.86	1381
900	1215	W22XC 500KH (2)	8638	5.5	0.8	2.2	100	20/7	10800	80	995	96.5	97.0	97.2	0.80	0.84	0.86	1554
1000	1350	W22XC 500KH (2)	9598	5.5	0.8	2.2	113	20/7	12100	80	995	96.5	97.0	97.2	0.80	0.84	0.86	1727
VIII Pole - 750 min-1																		
630	850	W22XC 450KH (2)	8076	6.5	1.4	2.5	80.5	10/3	7300	76	745	95.0	96.0	96.3	0.74	0.80	0.82	1152
710	960	W22XC 500KH (2)	9077	6.0	0.8	2.1	111	20/7	10900	80	747	96.0	96.5	97.0	0.74	0.80	0.82	1288
800	1080	W22XC 500KH (2)	10228	6.0	0.9	2.1	124	20/7	12200	80	747	96.0	96.5	97.0	0.74	0.80	0.82	1452

(1) Temperature rise class F at full load (2) Copper rotor (3) Rated current at 690V (4) Rated current at 760V

Tn = Full load torque
Ils / In = Locked rotor current
Ts / Tn = Locked rotor torque

Tmax / Tn = Breakdown torque
In = Full load current

Notes:
-The indicated values for sound pressure levels are @ 1m no load, with 3 dB(A) tolerance.
-All values are according to IEC 60034-1 tolerances.
-This data can be changed without prior notice.

W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
IE2 Efficiency Class according to IEC 60034-30

Output												Δ 460V/60Hz - Standard terminal box Δ 760V/60Hz - Standard terminal box							
kW	HP	Frame IEC	T_n (Nm)	I_s/I_n	T_s/T_n	T_{max}/T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot (s)	Weight Kg	Sound Pressure dB(A)	RPM	% of full load						I_n (A)
												Efficiency η			Power Factor Cos φ			
												50	75	100	50	75	100	
II Pole - 3000 min-1																		
132	180	W22XC 315L	353	7.3	2.2	2.7	3.4	11/3	1500	84	3575	94.4	95.0	95.0	0.85	0.88	0.89	196
160	215	W22XC 315L	427	7.3	2.2	2.8	3.4	11/3	1550	84	3575	94.4	95.0	95.0	0.85	0.88	0.89	238
200	270	W22XC 315L	534	7.3	2.2	2.8	4.1	11/3	1650	84	3575	94.8	95.4	95.4	0.85	0.88	0.89	296
250	340	W22XC 315L	668	7.3	2.2	2.5	4.2	11/3	1750	84	3575	94.8	95.4	95.4	0.84	0.88	0.89	370
280	380	W22XC 355ML	747	7.5	2.5	2.7	6.0	14/5	2000	84	3580	95.1	95.9	95.9	0.88	0.91	0.91	403
315	425	W22XC 355ML	840	7.5	2.5	2.7	6.0	14/5	2300	84	3580	95.3	95.9	95.9	0.88	0.91	0.91	453
355	480	W22XC 355AB	947	7.5	2.5	2.7	6.8	14/5	2500	84	3580	95.5	96.1	96.0	0.89	0.91	0.91	510
400	540	W22XC 355AB	1067	7.5	2.5	2.7	7.7	14/5	2700	84	3580	95.2	96.0	96.0	0.89	0.91	0.91	575
450	610	W22XC 355AB	1200	7.5	2.5	2.7	7.7	14/5	2750	84	3580	95.3	96.0	96.0	0.88	0.91	0.91	647
500	675	W22XC 400LJ	1332	7.5	1.9	3.2	8.4	14/5	3750	84	3585	95.3	96.6	97.0	0.85	0.89	0.91	711
560	755	W22XC 400G (2)	1490	7.0	0.9	2.9	17.3	14/5	4500	84	3590	96.6	97.2	97.2	0.91	0.92	0.92	786
630	850	W22XC 400G (2)	1676	7.0	0.9	2.9	17.3	12/4	4800	84	3590	96.6	97.2	97.2	0.91	0.92	0.92	884
710	960	W22XC 450KH (2)	1890	7.5	0.6	2.6	20.2	10/3	6000	86	3587	96.9	97.4	97.3	0.84	0.89	0.90	1018
800	1080	W22XC 450KH (2)(4)	2130	7.5	0.7	2.6	21.4	7/2	6500	86	3587	96.9	97.3	97.3	0.84	0.88	0.90	694
IV Pole - 1500 min -1																		
132	180	W22XC 315L	705	7.3	2.5	2.9	5.4	12/4	1550	81	1787	94.0	94.9	95.0	0.76	0.84	0.86	203
160	215	W22XC 315L	855	7.3	2.3	2.8	5.4	12/4	1600	81	1787	94.6	95.1	95.0	0.75	0.83	0.86	246
200	270	W22XC 315L	1069	7.3	2.3	2.9	5.4	12/4	1700	81	1787	94.0	94.9	95.0	0.77	0.83	0.86	307
250	340	W22XC 315L	1336	7.3	2.3	2.8	6.5	12/4	1800	81	1787	94.7	95.4	95.4	0.75	0.83	0.86	382
280	380	W22XC 355ML	1494	7.5	2.3	2.7	9.7	11/3	2100	82	1790	94.7	95.6	95.7	0.76	0.83	0.86	427
315	425	W22XC 355ML	1681	7.5	2.5	2.7	11.6	11/3	2400	82	1790	95.3	96.2	96.2	0.77	0.84	0.86	478
355	480	W22XC 355AB	1894	7.5	2.5	2.7	11.6	11/3	2600	82	1790	95.4	96.2	96.2	0.75	0.83	0.86	539
400	540	W22XC 355AB	2134	7.5	2.5	2.7	13.2	11/3	2800	82	1790	95.3	96.1	96.2	0.76	0.83	0.86	607
450	610	W22XC 355AB	2401	7.5	2.5	2.7	14.7	11/3	2850	82	1790	95.3	96.2	96.2	0.75	0.83	0.86	683
500	675	W22XC 355AB	2668	7.5	2.5	2.7	14.7	11/3	2900	82	1790	95.5	96.2	96.2	0.74	0.83	0.86	759
560	755	W22XC 400LJ	2988	6.8	1.7	2.5	15.8	13/4	3850	84	1790	95.9	96.7	96.8	0.78	0.85	0.87	835
630	850	W22XC 400LJ	3361	7.5	2.1	2.8	16.3	9/3	3950	84	1790	95.8	96.6	96.8	0.75	0.83	0.87	939
710	960	W22XC 400G (2)	3782	7.5	2.5	2.4	18.2	5/1	4600	84	1793	95.9	96.3	96.7	0.80	0.86	0.87	1059
800	1080	W22XC 400G (2)(4)	4259	7.5	2.7	2.5	20.1	5/1	4900	84	1794	95.9	96.3	96.7	0.80	0.86	0.87	722
900	1215	W22XC 450KH (2)(4)	4794	7.5	1.2	3.0	31.1	6/2	6400	86	1793	96.2	96.9	97.0	0.78	0.86	0.88	801
1000	1350	W22XC 450KH (2)(4)	5326	7.5	1.2	3.0	31.9	5/1	6600	86	1793	96.4	97.0	97.0	0.80	0.86	0.88	890
1120	1515	W22XC 450KH (2)(4)	5965	7.5	1.2	3.0	31.9	5/1	6700	86	1793	96.4	97.0	97.0	0.80	0.86	0.88	997
1250	1690	W22XC 500KH (2)(4)	6650	7.5	0.8	2.6	69.2	20/7	10300	89	1795	95.9	96.9	97.2	0.84	0.85	0.88	1110
1400	1890	W22XC 500KH (2)(4)	7448	7.5	0.8	2.5	77.9	20/7	11600	89	1795	95.9	96.9	97.2	0.84	0.85	0.88	1243
VI Pole - 1000 min -1																		
90	120	W22XC 315L	722	6.5	1.7	2.4	8.9	11/3	1650	73	1190	93.0	94.1	94.3	0.73	0.80	0.83	144
110	150	W22XC 315L	883	6.5	1.7	2.4	8.9	11/3	1700	73	1190	94.0	94.9	95.0	0.74	0.80	0.83	175
132	180	W22XC 315L	1059	6.5	1.7	2.4	8.9	11/3	1800	73	1190	94.0	94.9	95.0	0.73	0.80	0.83	210
160	215	W22XC 315L	1284	6.5	1.7	2.4	11.1	11/3	1900	73	1190	94.4	95.0	95.0	0.74	0.80	0.83	255
200	270	W22XC 355ML	1605	5.6	1.9	2.6	12.7	28/10	2150	77	1190	94.5	95.2	95.2	0.70	0.79	0.82	322
250	340	W22XC 355ML	2006	5.6	1.9	2.6	15.0	28/10	2250	77	1190	94.7	95.4	95.3	0.71	0.79	0.82	402
280	380	W22XC 355AB	2247	5.6	1.9	2.6	15.0	28/10	2450	77	1190	94.8	95.5	95.4	0.69	0.79	0.82	449
315	425	W22XC 355AB	2528	5.6	1.9	2.6	17.1	28/10	2650	77	1190	94.9	95.6	95.5	0.69	0.79	0.82	505
355	480	W22XC 355AB	2849	5.6	1.9	2.6	18.9	28/10	2850	77	1190	95.0	95.6	95.5	0.70	0.79	0.82	569
400	540	W22XC 400LJ	3199	7.0	2.3	2.5	21.4	17/6	3900	80	1194	94.8	95.9	96.2	0.73	0.81	0.84	621
450	610	W22XC 400LJ	3596	7.0	2.4	2.5	24.0	12/4	4100	80	1195	94.6	95.9	96.2	0.71	0.80	0.84	699
500	675	W22XC 400LJ	3999	7.0	2.4	2.5	28.1	12/4	4300	80	1194	95.1	96.1	96.3	0.77	0.83	0.84	776
560	755	W22XC 400G (2)	4475	6.5	1.9	3.0	31.2	7/2	4850	80	1195	95.9	96.7	96.7	0.80	0.83	0.84	865
630	850	W22XC 400G (2)	5035	6.5	1.9	3.0	31.2	7/2	4900	80	1195	95.9	96.7	96.7	0.80	0.83	0.84	973
710	960	W22XC 450KH (2)	5674	7.5	0.9	3.6	58.3	21/7	6500	82	1195	96.0	96.7	96.7	0.80	0.86	0.88	1047
800	1080	W22XC 450KH (2)(4)	6393	7.5	0.9	3.6	58.3	17/6	6700	82	1195	96.2	96.7	96.7	0.81	0.87	0.88	714
900	1215	W22XC 500KH (2)(4)	7192	5.5	0.8	2.2	100	20/7	9500	84	1195	95.9	96.7	96.9	0.80	0.84	0.86	820
1000	1350	W22XC 500KH (2)(4)	7992	5.5	0.8	2.2	113	20/7	10400	84	1195	95.9	96.7	96.9	0.80	0.84	0.86	912
1120	1515	W22XC 500KH (2)(4)	8951	5.5	0.8	2.2	113	20/7	11700	84	1195	95.9	96.7	96.9	0.80	0.84	0.86	1021
VIII Pole - 750 min-1																		
75	100	W22XC 315L	802	6.4	1.8	2.2	7.9	20/7	1650	71	893	93.7	94.4	94.3	0.68	0.77	0.80	125
90	120	W22XC 315L	962	6.4	1.8	2.2	7.9	20/7	1700	71	893	93.4	94.3	94.3	0.69	0.77	0.80	150
110	150	W22XC 315L	1176	6.4	1.8	2.2	9.3	12/4	1800	71	893	93.3	94.2	94.3	0.67	0.76	0.80	183
132	180	W22XC 315L	1412	6.4	1.8	2.2	11.2	12/4	1900	71	893	93.3	94.2	94.3	0.66	0.76	0.80	220
160	215	W22XC 355ML	1711	6.3	1.1	2.3	18.4	29/10	2250	75	893	93.8	94.8	94.8	0.67	0.76	0.80	265
200	270	W22XC 355ML	2139	6.3	1.1	2.3	21.7	29/10	2350	75	893	94.2	95.1	95.0	0.68	0.77	0.80	330
250	340	W22XC 355AB	2674	6.5	1.2	2.5	25.1	29/10	2650	75	893	94.2	95.1	95.0	0.67	0.76	0.80	413
280	380	W22XC 355AB	2994	6.5	1.2	2.5	25.1	29/10	2850	75	893	94.2	95.1	95.0	0.66	0.76	0.80	462
315	425	W22XC 400LJ	3361	7.0	2.8	2.8	25.7	14/5	4100	78	895	95.0	96.2	96.4	0.68	0.77	0.82	500
355	480	W22XC 400LJ	3788	7.0	2.9	2.9	28.8	13/4	4300	78	895	94.3	95.5	95.8	0.66	0.76	0.81	574
400	540	W22XC 400LJ	4268	7.0	3.1	3.1	31.7	10/3	4400	78	895	94.6	95.6	95.8	0.67	0.76	0.81	647
450	610	W22XC 400LJ (2)	4796	7.5	3.4	3.4	37.7	5/1	4550	78	896	95.0	96.0	96.2	0.68	0.78	0.82	716
500	675	W22XC 400G (2)	5341	6.0	1.8	2.7	44.4	12/4	5200	78	894	95.0	96.0	96.2	0.70	0.79	0.82	796
560	755	W22XC 400G (2)	5982	6.0	1.8	2.7	44.4	12/4	5350	78	894	95.0	96.0	96.2	0.70	0.79	0.82	891
630	850	W22XC 450KH (2)	6722	6.5	1.4	2.5	80.5	10/3	6900	80	895	94.4	95.7	96.0	0.74	0.80	0.82	1004
710	960	W22XC 500KH (2)(4)	7559	6.0	0.8	2.1	111	20/7	9800	84	897	95.4	96.2	96.7	0.74	0.80	0.82	680
800	1080	W22XC 500KH (2)(4)	8517	6.0	0.9	2.1	124	20/7	10500	84	897	95.4	96.2	96.7	0.74	0.80	0.82	766
900	1215	W22XC 500KH (2)(4)	9582	6.0	0.9	2.2	139	20/7	11800	84	897	95.4	96.2	96.7	0.74	0.80	0.82	862

W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
IE2 Efficiency Class according to IEC 60034-30

Output		Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot (s)	Weight Kg	Sound Pressure dB(A)	D 460 V/60Hz - Oversizeddd terminal box						
												RPM	% of full load					I_n (A)
													Efficiency h			Power Factor Cos j		
kW	HP												50	75	100	50	75	100
II Pole - 3000 min⁻¹																		
800	1080	W22XC 450KH	(2)	2130	7.5	0.7	2.6	21.4	7/2	6900	86	3587	96.9	97.3	97.3	0.84	0.88	0.90	1147
IV Pole - 1500 min⁻¹																		
800	1080	W22XC 400G	(2)	4259	7.5	2.7	2.5	20.1	5/1	5300	84	1794	95.9	96.3	96.7	0.80	0.86	0.87	1194
900	1215	W22XC 450KH	(2)	4794	7.5	1.2	3.0	31.1	6/2	6800	86	1793	96.2	96.9	97.0	0.78	0.86	0.88	1323
1000	1350	W22XC 450KH	(2)	5326	7.5	1.2	3.0	31.9	5/1	7000	86	1793	96.4	97.0	97.0	0.80	0.86	0.88	1470
1120	1515	W22XC 450KH	(2)	5965	7.5	1.2	3.0	31.9	5/1	7100	86	1793	96.4	97.0	97.0	0.80	0.86	0.88	1647
1250	1690	W22XC 500KH	(2)	6650	7.5	0.8	2.6	69.2	20/7	10700	89	1795	95.9	96.9	97.2	0.84	0.85	0.88	1834
1400	1890	W22XC 500KH	(2)	7448	7.5	0.8	2.5	77.9	20/7	12000	89	1795	95.9	96.9	97.2	0.84	0.85	0.88	2054
VI Pole - 1000 min -1																		
800	1080	W22XC 450KH	(2)	6393	7.5	0.9	3.6	58.3	17/6	7100	82	1195	96.2	96.7	96.7	0.81	0.87	0.88	1180
900	1215	W22XC 500KH	(2)	7192	5.5	0.8	2.2	100	20/7	9900	84	1195	95.9	96.7	96.9	0.80	0.84	0.86	1356
1000	1350	W22XC 500KH	(2)	7992	5.5	0.8	2.2	113	20/7	10800	84	1195	95.9	96.7	96.9	0.80	0.84	0.86	1506
1120	1515	W22XC 500KH	(2)	8951	5.5	0.8	2.2	113	20/7	12100	84	1195	95.9	96.7	96.9	0.80	0.84	0.86	1687
VIII Pole - 750 min⁻¹																		
710	960	W22XC 500KH	(2)	7559	6.0	0.8	2.1	111	20/7	10200	84	897	95.4	96.2	96.7	0.74	0.80	0.82	1124
800	1080	W22XC 500KH	(2)	8517	6.0	0.9	2.1	124	20/7	10900	84	897	95.4	96.2	96.7	0.74	0.80	0.82	1266
900	1215	W22XC 500KH	(2)	9582	6.0	0.9	2.2	139	20/7	12200	84	897	95.4	96.2	96.7	0.74	0.80	0.82	1425

(1) Temperature rise class F at full load (2) Copper rotor (3) Rated current at 690V (4) Rated current at 760V

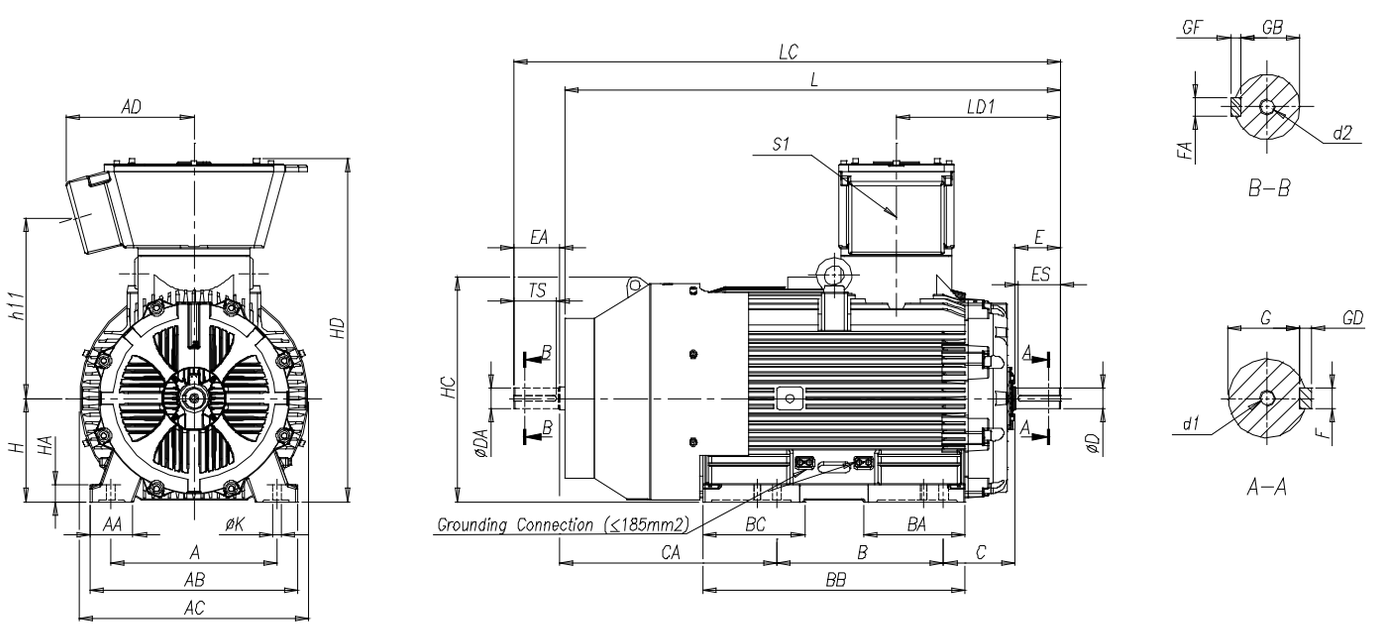
Tn = Full load torque
Tmax / Tn = Breakdown torque
Ils / In = Locked rotor current
In = Full load current
Ts / Tn = Locked rotor torque

Notes:
-The indicated values for sound pressure levels are @ 1m no load, with 3 dB(A) tolerance.
-All values are according to IEC 60034-1 tolerances.
-This data can be changed without prior notice.

7.2.6. Low Voltage - Mechanical Data - W22XC Series

W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Low Voltage

315L - 355ML, IMB3T



Frame	Poles	A	AA	AB	AC	AD	BA	BB	BC	B	C	CA	H	HA	HC	HD	h11	K	L	LC	LD1
315L	2P	508	130	632	698	388	310	800	310	508	216	663	315	52	684	1044	548	28	1512	1667	500
	4P+																		1542	1697	530
355ML	2P	610	130	730	780	388	315	830	315	560 630	254	567	355	55	765	1083	758	28	1576	1731	514
	4P+																		1646	1831	584

		Shaft dimensions														Bearings		Power terminal box - S1
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	CEFGH 340
315L	2P	65m6	140	130	18h9	58	11	60m6	140	130	18h9	53	11	DSM20	DSM20	6314C3	6314C3	I ≤ 900A : 2xM63x1,5 + 1xM20x1,5 900A ≤ I ≤ 1090A : 4xM63x1,5 + 1xM20x1,5
	4P+	80m6	170	160	22h9	71	14	65m6				58	11			6319C3	6316C3	
355ML	2P	75m6	140	130	20h9	67,5	12	60m6	140	130	18h9	53	11	DSM20		6316C3	6316C3	
	4P+	100m6	210	200	28h9	90	16	80m6	170	160	22h9	71	14	DSM24		6322C3	6319C3	

Notes:

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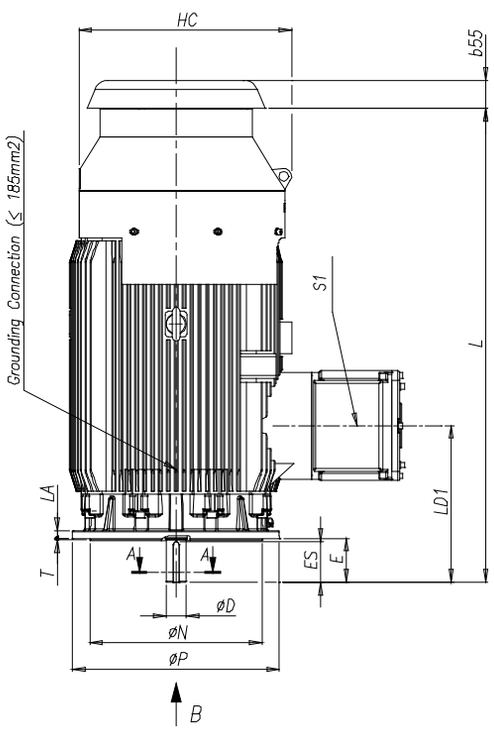
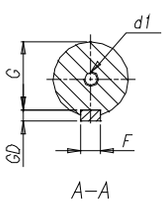
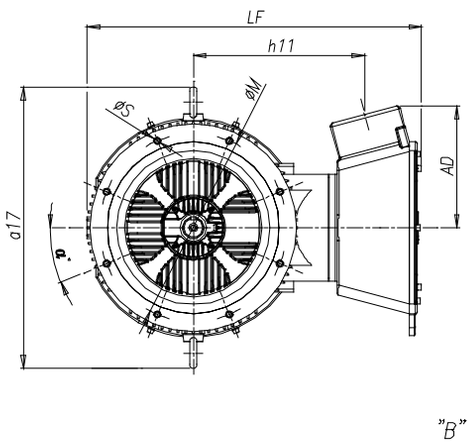
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Low Voltage

315L - 355ML, IMV1







Frame	Poles	AD	HC	h11	L	LA	LD1	LF	b55	a17	M	N	P	T	S	Nr. Holes	α
315L	2P	388	679	548	1514	25	500	1069	90	898	600	550	660	6	24	8	22,5°
	4P+				1544		530										
355ML	2P	388	765	547	1576	30	514	1171,5	93	988	740	680	800	6	24	8	22,5°
	4P+				1646		584										

		Shaft dimensions							Bearings		Power terminal box - S1
Frame	Poles	D	E	ES	F	G	GD	d1	D.E.	N.D.E.	CEFGH 340
315L	2P	65m6	140	130	18h9	58	11	DSM20	6314C3	6314C3	I ≤ 900A : 2xM63x1,5 + 1xM20x1,5 900A ≤ I ≤ 1090A : 4xM63x1,5 + 1xM20x1,5
	4P+	80m6	170	160	22h9	71	14		6319C3	6316C3	
355ML	2P	75m6	140	130	20h9	67,5	12	DSM20	6316C3	6316C3	
	4P+	100m6	210	200	28h9	90	16	DSM24	6322C3	6319C3	

Notes:

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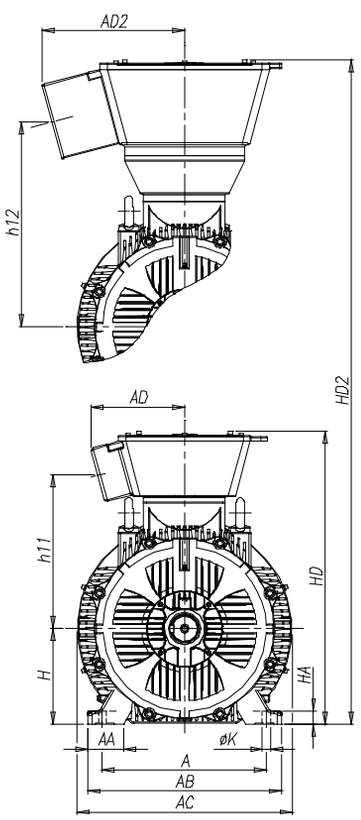
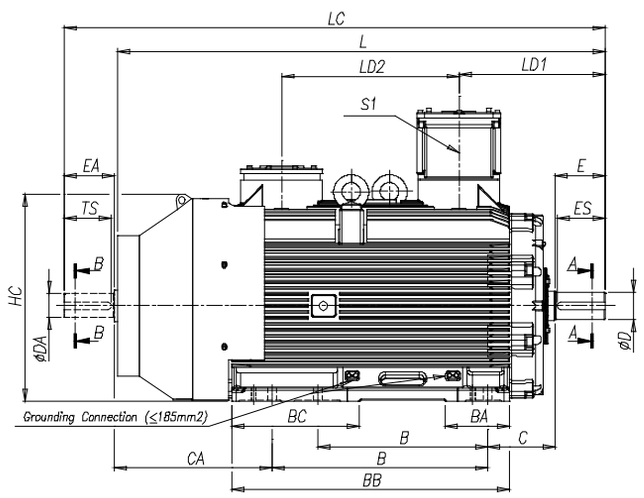
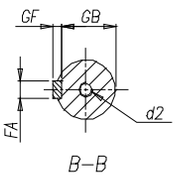
The dimensions shown are subject to change without prior notice.

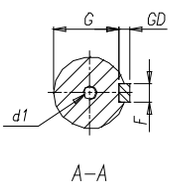
W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Low Voltage

355AB - 400LJ - 400G, IMB3T









Frame	Poles	A	AA	AB	AC	AD[1]	BA	BB	BC	B	C	CA	H	HA	HC	HD[1]	h11[1]	K	L	LC	LD1	LD2
355AB	2P	610	130	730	780	388	225	1038	523	710	254	605	355	55	765	1131	521	28	1784	1939	514	618
	4P+									800									1854	2039	584	
400LJ	2P	686	150	810	898	388	265	1160	535	710	280	659	400	58	867	1222	641	35	1994	2149	570	740
	4P+									900									2034	2219	610	
400G	2P	686	150	810	898	388	420	1400	420	1120	280	679	400	58	867	1222	641	35	2234	2389	570	982
	4P+																		2274	2459	610	

		Shaft dimensions														Bearings		Power terminal box - S1[1]
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	CEFGH 340
355AB	2P	75m6	140	130	20h9	67,5	12	60m6	140	130	18h9	53	11	DSM20	DSM20	6316C3	6316C3	I ≤ 900A : 2xM63x1,5 + 1xM20x1,5 900A ≤ I ≤ 1090A : 4xM63x1,5 + 1xM20x1,5
	4P+	100m6	210	200	28h9	90	16	80m6	170	160	22h9	71	14	DSM24		6322C3	6319C3	
400LJ	2P	80m6	170	160	22h9	71	14	60m6	140	130	18h9	53	11	DSM20		6318C3	6318C3	
	4P+	110m6	210	200	28h9	100	16	80m6	170	160	22h9	71	14	DSM24		6324C3	6324C3	
400G	2P	80m6	170	160	22h9	71	14	60m6	140	130	18h9	53	11	DSM20		6318C3	6318C3	
	4P+	110m6	210	200	28h9	100	16	80m6	170	160	22h9	71	14	DSM24		6324C3	6324C3	

	I>1090A				
Frame	Poles	AD2	HD2	h12	Power terminal box - CEFGH 500 - S1
355AB	2P	75m6	140	130	1090A ≤ I ≤ 1900A : 4xM63x1,5 + 1xM20x1,5
	4P+	100m6	210	200	
400LJ	2P	80m6	170	160	
	4P+	110m6	210	200	
400G	2P	80m6	170	160	
	4P+	110m6	210	200	

Notes:

(1) I ≤ 1090A
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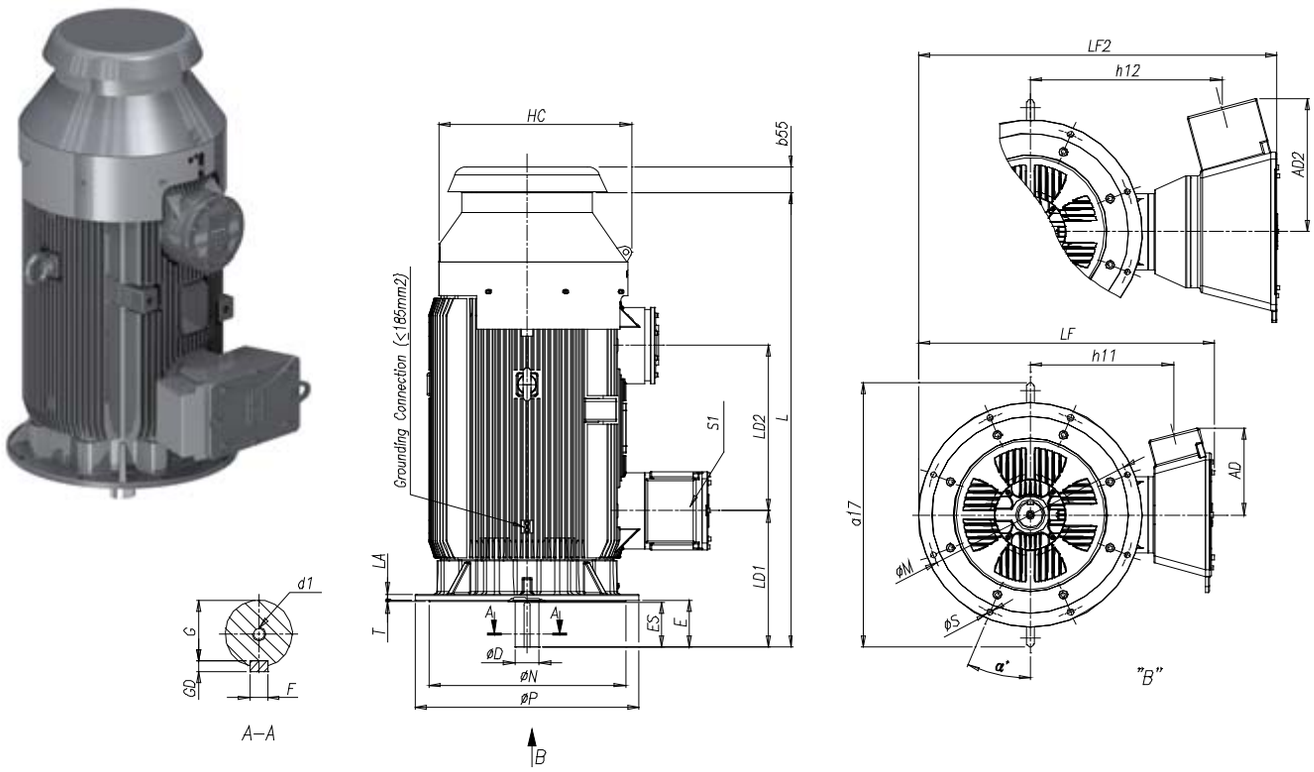
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Low Voltage

355AB - 400LJ - 400G, IMV1



Frame	Poles	AD[1]	HC	h11[1]	L	LA	LD1	LD2	LF[1]	b55	a17	M	N	P	T	S	Nr. Holes	α
355AB	2P	388	759	595	1784	30	514	618	1176	93	988	740	680	800	6	24	8	22,5°
	4P+				1854		584											
400LJ	2P	388	862	641	1994	28	570	740	1323	106	1184	940	880	1000	6	28	8	22,5°
	4P+				2034		610											
400G	2P	388	862	641	2234	28	570	980	1323	106	1184	940	880	1000	6	28	8	22,5°
	4P+				2274		610											

		Shaft dimensions							Bearings		Power terminal box - S1[1]
Frame	Poles	D	E	ES	F	G	GD	d1	D.E.	N.D.E.	CEFGH 340
355AB	2P	75m6	140	130	20h9	67,5	12	DSM20	7316	6316C3	I ≤ 900A : 2xM63x1,5 + 1xM20x1,5 900A ≤ I ≤ 1090A : 4xM63x1,5 + 1xM20x1,5
	4P+	100m6	210	200	28h9	90	16	DSM24	7322	6319C3	
400LJ	2P	80m6	170	160	22h9	71	14	DSM20	7318	6318C3	
	4P+	110m6	210	200	28h9	100	16	DSM24	7324	6324C3	
400G	2P	80m6	170	160	22h9	71	14	DSM20	7318	6318C3	
	4P+	110m6	210	200	28h9	100	16	DSM24	7324	6324C3	

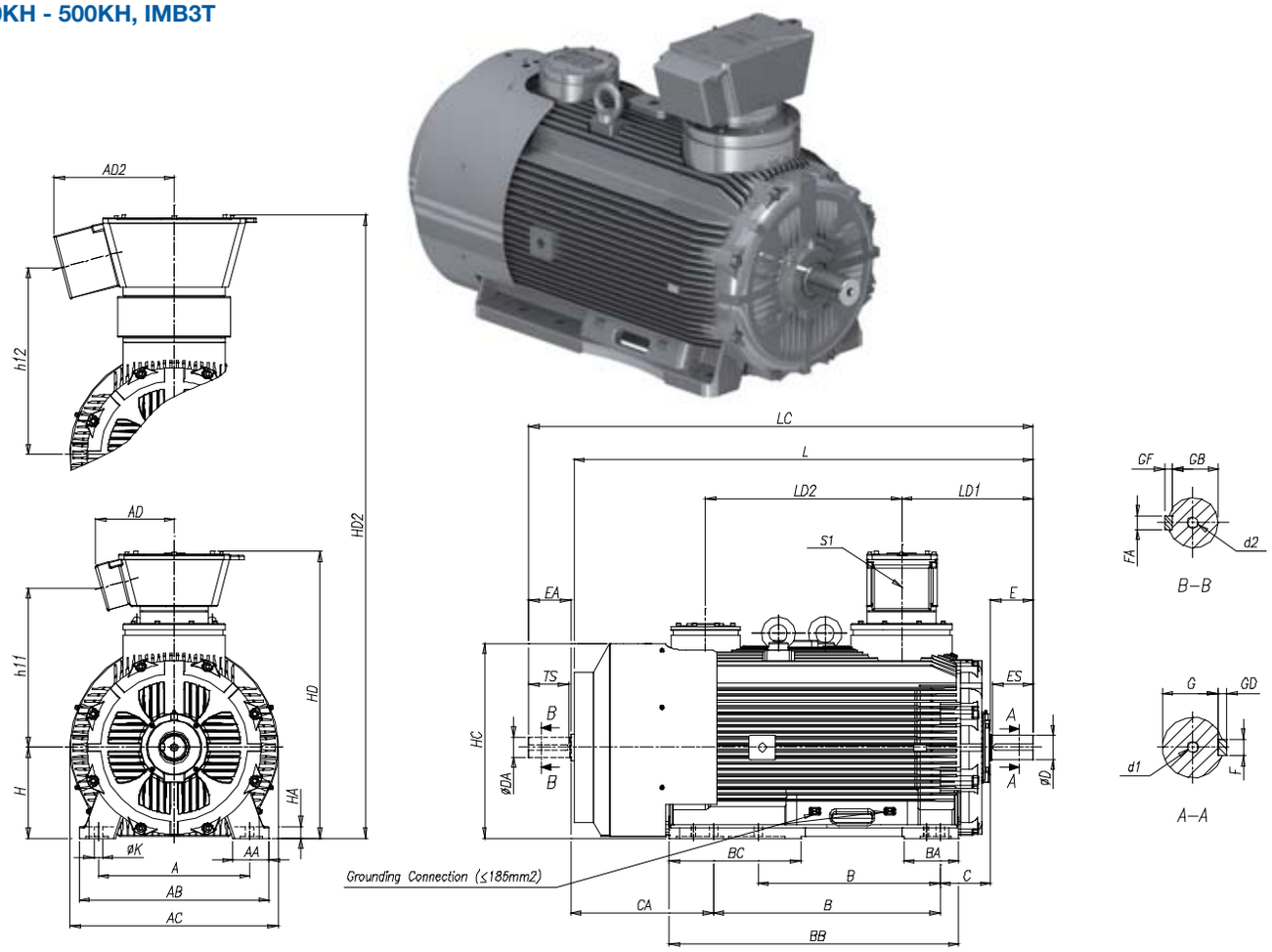
		I>1090A			
Frame	Poles	AD2	LF2	h12	Power terminal box - CEFGH 500 - S1
355AB	2P	594	1040	812	1090A ≤ I ≤ 1900A : 4xM63x1,5 + 1xM20x1,5
	4P+				
400LJ	2P	594	1616	857	
	4P+				
400G	2P	594	1616	857	
	4P+				

Notes:

(1) I ≤ 1090A
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Low Voltage

450KH - 500KH, IMB3T



Frame	Poles	A	AA	AB	AC	AD(1)	BA	BB	BC	B	C	CA	H	HA	HC	HD(1)	h11(1)	K	L	LC	LD1	LD2
450KH	2P	750	180	940	1030	389	270	1430	650	900 1120	250	705	450	60	965	1419	787	42	2230	2385	610	970
	4P+																		2270	2495	650	
500KH	2P	850	200	1020	1162	389	375	1800	915	1000	280	1065	500	65	1081	1489	807	42	2750	2905	635	1300
	4P+									1250									2830	3055	715	

		Shaft dimensions														Bearings		Power terminal box - S1(1)
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	CEFGH 340
450KH	2P	85m6	170	160	22h9	76	14	75m6	140	130	20h9	67,5	12	DSM20	DSM20	6318C3	NU218C3	I ≤ 900A : 2xM63x1,5 + 1xM20x1,5
	4P+	120m6	210	200	32h9	109	18	100m6	210	200	28h9	90	16	DSM24	DSM24	6326C3	6326C3	900A ≤ I ≤ 1090A : 4xM63x1,5 + 1xM20x1,5
500KH	2P	90m6	170	160	25	81	14	75m6	140	130	20	67,5	12	DSM24	DSM20	NU220C3+6020C3	NU220C3	
	4P+	130m6	250	240	32	119	18	110m6	210	200	28	100	16		DSM24	6328C3	6328C3	

	I>1090A				
Frame	Poles	AD2	HD2	h12	Power terminal box - CEFGH 500 - S1
450KH	2P	594	1634	925	1090A ≤ I ≤ 1900A : 4xM63x1,5 + 1xM20x1,5
	4P+				
500KH	2P	594	1704	945	
	4P+				

Notes:

(1) I ≤ 1090A
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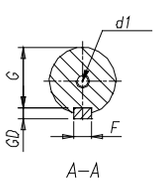
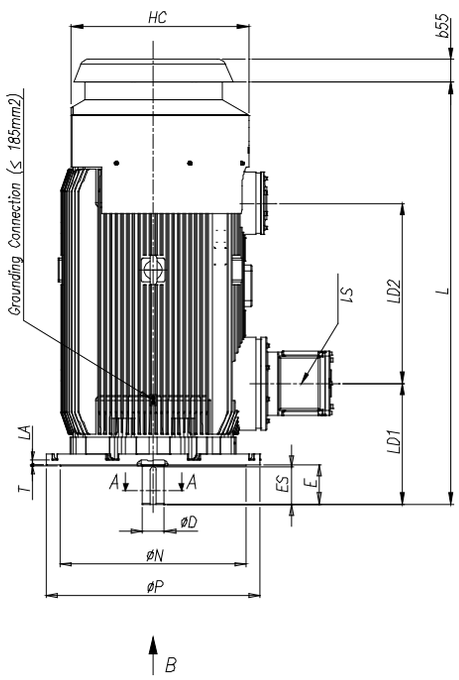
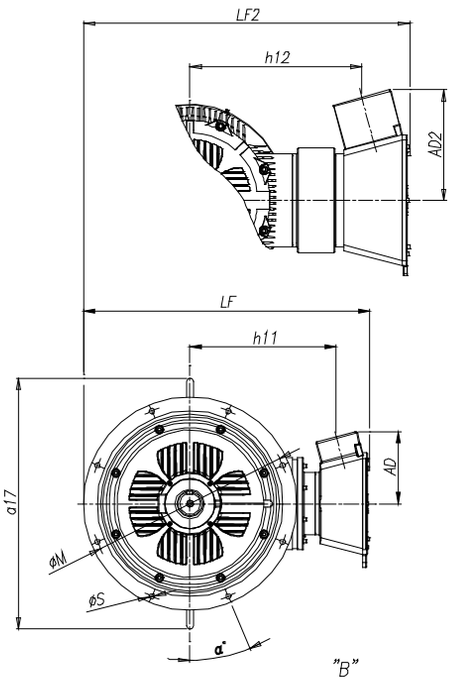
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Low Voltage

450KH - 500KH, IMV1







Frame	Poles	AD(1)	HC	h11(1)	L	LA	LD1	LD2	LF(1)	b55	a17	M	N	P	T	S	Nr. Holes	α
450KH	2P	389	955	787	2270	30	650	970	1544	125	1352	1080	1000	1150	6	28	8	22,5°
	4P+																	
500KH	2P	389	1162	807	2830	30	715	1300	1564	130	1482	1080	1000	1150	7	28	8	22,5°
	4P+																	

		Shaft dimensions							Bearings		Power terminal box - S1(1)
Frame	Poles	D	E	ES	F	G	GD	d1	D.E.	N.D.E.	CEFGH 340
450KH	2P	120m6	210	200	32h9	109	18	DSM24	7326	6326C3	I ≤ 900A : 2xM63x1,5 + 1xM20x1,5
	4P+										900A ≤ I ≤ 1090A : 4xM63x1,5 + 1xM20x1,5
500KH	2P	130m6	250	240	32h9	119	18	DSM24	7328	6328C3	
	4P+										

		I>1090A			
Frame	Poles	AD2	LF2	h12	Power terminal box - CEFGH 500 - S1
450KH	2P	594	1759	925	1090A ≤ I ≤ 1900A : 4xM63x1,5 + 1xM20x1,5
	4P+				
500KH	2P	594	1779	945	
	4P+				

Notes:

(1) I ≤ 1090A
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External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

7.2.7. Medium Voltage - Electrical Data - W22XC Series

W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)

Output												Y 3000V/50Hz							
												% of full load							
												Efficiency η			Power Factor Cos φ				
kW	HP	Frame IEC	T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot(s)	Weight Kg	Sound Pressure dB(A)	RPM	50	75	100	50	75	100	I_n (A)
II Pole - 3000 min⁻¹																			
90	120	W22XC 315L	289	6.7	1.5	2.5	1.3	10/5	1700	80	2970	91.3	93.6	94.5	0.76	0.83	0.86	21.3
110	150	W22XC 315L	354	6.8	1.6	2.6	1.5	8/4	1800	80	2970	92.0	93.9	94.6	0.78	0.85	0.87	25.7
132	180	W22XC 315L	424	6.8	1.6	2.6	1.6	8/4	1900	80	2970	92.3	94.0	94.7	0.79	0.85	0.87	30.8
160	215	W22XC 355ML	512	7.5	1.4	3.1	3.4	15/7	2050	80	2987	93.4	94.8	95.3	0.78	0.85	0.87	37.1
200	270	W22XC 355ML	639	7.5	1.4	3.1	3.8	10/5	2150	80	2987	94.1	95.2	95.6	0.80	0.85	0.87	46.3
250	340	W22XC 355AB	801	7.0	1.5	2.7	4.9	10/5	2400	80	2982	95.5	96.1	96.3	0.81	0.87	0.89	56.1
280	380	W22XC 355AB	897	7.5	1.5	2.9	5.2	10/5	2500	80	2982	95.7	96.3	96.5	0.81	0.87	0.89	62.7
315	425	W22XC 355AB	1009	7.5	1.5	2.9	5.5	8/4	2650	80	2982	95.9	96.5	96.6	0.82	0.88	0.89	70.5
355	480	W22XC 355AB	1137	7.5	1.5	2.9	5.9	8/4	2850	80	2983	96.0	96.6	96.7	0.82	0.87	0.89	79.4
400	540	W22XC 400LJ	1280	6.5	1.5	2.6	9.9	8/3	3750	80	2984	96.5	96.9	97.0	0.83	0.86	0.87	91.2
450	610	W22XC 400LJ	1440	6.5	1.5	2.6	10.2	7/3	3900	80	2984	96.3	96.9	97.0	0.82	0.86	0.87	103
500	675	W22XC 400LJ	1600	6.7	1.6	2.8	10.8	6/2	4100	80	2984	96.3	96.9	97.0	0.81	0.86	0.87	114
560	755	W22XC 400G (2)	1792	6.7	1.6	2.8	12.5	7/3	4800	80	2984	96.4	96.8	97.0	0.81	0.86	0.87	128
630	850	W22XC 400G (2)	2012	7.0	1.0	3.0	13.5	12/3	4950	80	2991	96.7	97.1	97.3	0.86	0.90	0.90	138
710	960	W22XC 450KH (2)	2267	7.0	0.7	2.9	14.8	47/12	6150	82	2991	96.5	97.1	97.2	0.84	0.89	0.90	156
800	1080	W22XC 450KH (2)	2554	7.0	0.7	2.9	15.8	42/11	6650	82	2991	96.6	97.1	97.2	0.84	0.89	0.90	176
900	1215	W22XC 500KH (2)	2874	7.5	1.0	3.3	21.7	20/8	9000	85	2991	96.9	97.4	97.5	0.84	0.89	0.90	197
1000	1350	W22XC 500KH (2)	3193	7.5	1.0	3.3	23.2	19/8	9200	85	2991	96.9	97.4	97.5	0.84	0.89	0.90	219
1120	1515	W22XC 500KH (2)	3576	7.5	1.0	3.3	24.7	17/6	9650	85	2991	97.0	97.4	97.5	0.84	0.89	0.90	246
1200	1620	W22XC 500KH (2)	3831	7.5	1.0	3.3	24.7	15/5	9850	85	2991	97.0	97.4	97.6	0.84	0.89	0.90	263
IV Pole - 1500 min⁻¹																			
90	120	W22XC 315L	578	6.7	1.4	2.5	1.7	43/20	1750	76	1486	91.9	93.5	94.1	0.59	0.70	0.76	24.2
110	150	W22XC 315L	707	6.7	1.4	2.5	1.9	32/15	1850	76	1486	92.4	93.8	94.4	0.59	0.70	0.76	29.5
132	180	W22XC 315L	848	6.7	1.4	2.5	2.0	32/15	1950	76	1486	93.0	94.2	94.7	0.60	0.70	0.76	35.3
160	215	W22XC 355ML	1026	6.5	1.1	3.0	5.6	39/18	2100	77	1490	93.4	94.8	95.3	0.72	0.81	0.84	38.5
200	270	W22XC 355ML	1282	6.5	1.1	3.0	6.5	34/16	2200	77	1490	94.0	95.1	95.5	0.73	0.81	0.84	48.0
250	340	W22XC 355AB	1602	7.0	1.3	3.0	7.6	23/11	2450	77	1490	94.7	95.8	96.1	0.72	0.81	0.84	59.6
280	380	W22XC 355AB	1795	7.0	1.3	3.0	7.8	21/10	2550	77	1490	94.7	95.8	96.1	0.72	0.80	0.84	66.8
315	425	W22XC 355AB	2019	7.0	1.3	3.0	8.4	19/9	2700	77	1490	95.0	95.9	96.2	0.72	0.81	0.84	75.0
355	480	W22XC 355AB	2275	7.0	1.3	3.0	9.0	17/8	2900	77	1490	95.1	96.0	96.3	0.72	0.81	0.84	84.5
400	540	W22XC 400LJ	2564	6.7	1.4	2.7	11.7	25/10	3800	80	1490	95.7	96.3	96.5	0.75	0.82	0.84	95.0
450	610	W22XC 400LJ	2884	6.8	1.5	2.6	12.2	20/8	3950	80	1490	95.6	96.3	96.5	0.69	0.79	0.83	108
500	675	W22XC 400LJ	3205	6.8	1.5	2.6	13.0	19/8	4150	80	1490	95.7	96.3	96.5	0.70	0.79	0.83	120
560	755	W22XC 400G (2)	3592	6.8	0.7	2.7	15.7	20/9	4850	80	1489	95.9	96.6	96.8	0.74	0.82	0.85	131
630	850	W22XC 400G (2)	4041	6.8	0.7	2.7	16.5	20/9	5000	80	1489	96.1	96.6	96.8	0.75	0.82	0.85	147
710	960	W22XC 400G (2)	4554	6.8	0.7	2.6	16.8	20/9	5100	80	1489	96.2	96.7	96.8	0.75	0.82	0.85	166
800	1080	W22XC 450KH (2)	5134	6.5	0.8	2.5	28.2	28/14	6200	82	1488	96.7	97.2	97.3	0.75	0.82	0.85	186
900	1215	W22XC 450KH (2)	5776	6.5	0.8	2.5	29.6	24/12	6700	82	1488	96.7	97.2	97.3	0.74	0.82	0.85	209
1000	1350	W22XC 500KH (2)	6388	5.6	0.7	2.1	61.1	18/9	10050	85	1495	95.5	96.6	97.0	0.81	0.86	0.87	228
1120	1515	W22XC 500KH (2)	7155	5.3	0.7	2.1	65.0	18/9	10250	85	1495	96.0	96.8	97.2	0.82	0.86	0.87	255
1250	1690	W22XC 500KH (2)	7985	5.3	0.7	2.1	69.4	18/9	10500	85	1495	96.1	96.9	97.2	0.82	0.86	0.87	284
1400	1890	W22XC 500KH (2)	8943	5.6	0.7	2.1	72.2	18/9	11000	85	1495	96.1	96.9	97.2	0.82	0.86	0.87	319
1500	2025	W22XC 500KH (2)	9595	5.3	0.7	2.0	75.0	18/9	11700	85	1493	96.1	96.9	97.2	0.82	0.86	0.87	341
VI Pole - 1000 min -1																			
90	120	W22XC 315L	870	6.7	1.4	2.4	3.0	39/18	1850	70	988	92.4	93.4	93.6	0.59	0.69	0.75	24.7
110	150	W22XC 315L	1063	6.7	1.4	2.4	3.2	39/18	1950	70	988	93.2	93.9	93.9	0.59	0.69	0.75	30.1
132	180	W22XC 355ML	1273	6.8	1.2	2.9	5.8	47/22	2250	73	990	94.6	95.3	95.3	0.74	0.80	0.82	32.5
160	215	W22XC 355ML	1543	6.8	1.3	3.1	6.4	47/22	2350	73	990	94.6	95.3	95.4	0.72	0.79	0.82	39.4
200	270	W22XC 355AB	1929	6.8	1.4	2.9	7.4	47/22	2550	73	990	94.9	95.4	95.5	0.73	0.80	0.82	49.2
250	340	W22XC 355AB	2412	6.8	1.4	2.9	8.3	47/22	2650	73	990	94.9	95.5	95.5	0.72	0.79	0.82	61.4
280	380	W22XC 355AB	2701	6.8	1.5	3.0	9.0	43/20	2750	73	990	95.2	95.7	95.6	0.73	0.80	0.82	68.7
315	425	W22XC 355AB	3039	6.8	1.5	3.0	9.3	43/20	2950	73	990	95.2	95.7	95.7	0.73	0.80	0.82	77.3
355	480	W22XC 400LJ	3421	6.7	1.4	2.7	19.1	32/15	4200	76	991	96.5	96.5	96.5	0.77	0.81	0.84	84.3
400	540	W22XC 400LJ	3855	6.7	1.4	2.7	20.4	32/15	4400	76	991	96.6	96.6	96.5	0.79	0.82	0.84	95.0
450	610	W22XC 400G (2)	4337	6.5	0.7	2.1	23.3	32/15	4800	76	991	95.6	96.0	96.2	0.81	0.82	0.83	108
500	675	W22XC 400G (2)	4818	6.5	0.7	2.1	26.6	32/15	4850	76	991	95.5	96.0	96.2	0.80	0.82	0.83	121
560	755	W22XC 400G (2)	5397	6.5	0.7	2.1	27.9	32/15	4900	76	991	95.9	96.2	96.4	0.80	0.82	0.83	135
630	850	W22XC 450KH (2)	6053	6.0	0.7	2.8	52.2	32/15	6600	78	994	95.5	96.3	96.5	0.74	0.82	0.85	148
710	960	W22XC 450KH (2)	6821	6.0	0.7	2.8	54.8	32/15	6800	78	994	95.6	96.3	96.5	0.74	0.82	0.85	167
800	1080	W22XC 500KH (2)	7678	6.0	0.7	2.4	80.9	20/11	10400	80	995	96.7	97.1	97.2	0.74	0.82	0.84	189
900	1215	W22XC 500KH (2)	8638	6.0	0.7	2.4	91.0	20/11	10650	80	995	96.9	97.3	97.3	0.75	0.82	0.84	212
1000	1350	W22XC 500KH (2)	9598	6.0	0.7	2.4	95.8	20/11	11100	80	995	96.9	97.3	97.3	0.75	0.82	0.84	235
1120	1515	W22XC 500KH (2)	10750	6.0	0.7	2.4	101	20/11	11800	80	995	97.1	97.4	97.4	0.75	0.82	0.84	263

W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)

Output		Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot(s)	Weight Kg	Sound Pressure dB(A)	Y 3000V/50Hz							
												RPM	% of full load						I_n (A)
													Efficiency η			Power Factor Cos φ			
kW	HP												50	75	100	50	75	100	
VIII Pole - 750 min⁻¹																			
90	120	W22XC 315L		1158	7.5	1.4	2.4	3.8	37/17	1950	68	742	89.3	91.3	92.0	0.50	0.63	0.71	26.5
110	150	W22XC 355ML		1420	6.8	1.3	2.4	7.7	39/18	2350	70	740	94.2	94.7	94.5	0.69	0.77	0.80	28.0
132	180	W22XC 355ML		1704	6.8	1.3	2.4	8.3	39/18	2450	70	740	94.6	94.9	94.6	0.71	0.78	0.80	33.6
160	215	W22XC 355AB		2065	6.8	1.3	2.4	9.1	39/18	2950	70	740	94.8	95.0	94.7	0.71	0.78	0.80	40.6
200	270	W22XC 400LJ	(2)	2581	5.0	0.6	2.1	36.7	20/11	4000	74	740	96.9	96.9	96.4	0.73	0.80	0.82	48.7
250	340	W22XC 400LJ	(2)	3226	5.0	0.6	2.1	38.4	20/11	4200	74	740	96.9	96.9	96.4	0.73	0.80	0.82	60.9
280	380	W22XC 400LJ	(2)	3614	5.0	0.6	2.1	39.7	20/11	4400	74	740	96.9	96.9	96.4	0.73	0.80	0.82	68.2
315	425	W22XC 400G	(2)	4065	5.0	0.6	2.1	43.2	37/17	5050	74	740	96.5	96.7	96.4	0.71	0.79	0.82	76.7
355	480	W22XC 400G	(2)	4581	5.0	0.6	2.1	45.4	37/17	5150	74	740	96.2	96.6	96.4	0.69	0.78	0.82	86.4
400	540	W22XC 400G	(2)	5162	5.0	0.6	2.1	47.5	37/17	5200	74	740	96.9	96.9	96.4	0.73	0.80	0.82	97.4
450	610	W22XC 450KH	(2)	5807	5.5	0.6	2.3	53.8	20/11	6400	76	740	96.0	96.4	96.3	0.72	0.79	0.80	112
500	675	W22XC 450KH	(2)	6453	5.5	0.6	2.3	56.5	20/11	6700	76	740	95.9	96.4	96.3	0.71	0.79	0.80	125
560	755	W22XC 450KH	(2)	7227	5.5	0.6	2.3	60.1	20/11	7000	76	740	95.9	96.3	96.2	0.72	0.79	0.80	140
630	850	W22XC 500KH	(2)	8065	5.3	0.8	2.4	134	20/11	10500	80	746	97.0	97.3	97.0	0.73	0.80	0.80	156
710	960	W22XC 500KH	(2)	9089	5.6	0.8	2.4	137	20/11	10600	80	746	97.0	97.2	97.0	0.72	0.79	0.80	176
800	1080	W22XC 500KH	(2)	10241	5.2	0.8	2.3	149	20/11	11200	80	746	97.1	97.3	97.0	0.73	0.80	0.80	198
900	1215	W22XC 500KH	(2)	11521	5.5	0.8	2.3	159	20/11	11800	80	746	97.1	97.3	97.1	0.72	0.79	0.80	223

(1) Temperature rise class F at full load (2) Copper rotor (3) Rated current at 690V (4) Rated current at 760V

Tn = Full load torque
Tmax / Tn = Breakdown torque
Ils / In = Locked rotor current
In = Full load current
Ts / Tn = Locked rotor torque

Notes:
-The indicated values for sound pressure levels are @ 1m no load, with 3 dB(A) tolerance.
-All values are according to IEC 60034-1 tolerances.
-This data can be changed without prior notice.

W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)

Output		Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot(s)	Weight Kg	Sound Pressure dB(A)	Y 4160V/60Hz							
												RPM	% of full load						I_n (A)
													Efficiency h			Power Factor Cos j			
kW	HP												50	75	100	50	75	100	
II Pole - 3000 min⁻¹																			
90	120	W22XC 315L		241	6.7	1.5	2.5	1.3	10/5	1700	84	3564	90.7	93.3	94.2	0.76	0.83	0.86	15.4
110	150	W22XC 315L		295	6.8	1.6	2.6	1.5	8/4	1800	84	3564	91.4	93.6	94.3	0.78	0.85	0.87	18.6
132	180	W22XC 315L		354	6.8	1.6	2.6	1.6	8/4	1900	84	3564	91.7	93.7	94.4	0.79	0.85	0.87	22.3
160	215	W22XC 355ML		426	7.5	1.4	3.1	3.4	15/7	2000	84	3584	92.8	94.5	95.3	0.78	0.85	0.87	26.8
200	270	W22XC 355ML		533	7.5	1.4	3.1	3.8	10/5	2050	84	3584	93.5	94.9	95.6	0.80	0.85	0.87	33.4
250	340	W22XC 355ML		667	7.0	1.5	2.7	4.9	10/5	2150	84	3578	94.9	95.8	96.3	0.81	0.87	0.89	40.5
280	380	W22XC 355AB		747	7.5	1.5	2.9	5.2	10/5	2400	84	3578	95.1	96.0	96.5	0.81	0.87	0.89	45.2
315	425	W22XC 355AB		841	7.5	1.5	2.9	5.5	8/4	2500	84	3578	95.3	96.2	96.6	0.82	0.88	0.89	50.8
355	480	W22XC 355AB		947	7.5	1.5	2.9	5.9	8/4	2650	84	3580	95.4	96.3	96.4	0.82	0.87	0.89	57.4
400	540	W22XC 355AB		1067	7.5	1.5	2.9	5.9	7/3	2850	84	3580	95.4	96.3	96.4	0.82	0.87	0.89	64.7
450	610	W22XC 400LJ		1199	6.5	1.5	2.6	10.2	7/3	3900	84	3584	95.7	96.6	96.7	0.82	0.86	0.87	74.2
500	675	W22XC 400LJ		1332	6.7	1.6	2.8	10.8	6/2	4100	84	3584	95.7	96.6	96.7	0.81	0.86	0.87	82.5
560	755	W22XC 400G		1492	6.7	1.6	2.8	12.5	7/3	4700	84	3584	95.8	96.5	96.7	0.81	0.86	0.87	92.4
630	850	W22XC 400G	(2)	1675	7.0	1.0	3.0	13.5	12/3	4800	84	3591	96.1	96.8	97.0	0.86	0.90	0.90	100
710	960	W22XC 400G	(2)	1888	7.0	1.0	3.0	13.5	12/3	4950	84	3591	96.1	96.8	97.0	0.86	0.90	0.90	113
800	1080	W22XC 450KH	(2)	2128	7.0	0.7	2.9	15.8	42/11	6150	86	3591	96.0	96.8	96.9	0.84	0.89	0.90	127
900	1215	W22XC 450KH	(2)	2393	7.0	0.7	2.9	15.8	35/9	6650	86	3591	96.1	96.8	96.9	0.85	0.89	0.90	143
IV Pole - 1500 min⁻¹																			
90	120	W22XC 315L		483	6.7	1.4	2.5	1.7	43/20	1750	81	1781	91.3	93.2	93.8	0.59	0.70	0.76	17.5
110	150	W22XC 315L		590	6.7	1.4	2.5	1.9	32/15	1850	81	1781	91.8	93.5	94.1	0.59	0.70	0.76	21.3
132	180	W22XC 315L		708	6.7	1.4	2.5	2.0	32/15	1950	81	1781	92.4	93.9	94.4	0.60	0.70	0.76	25.5
160	215	W22XC 355ML		855	6.5	1.1	3.0	5.6	39/18	2100	82	1788	92.8	94.5	95.0	0.72	0.81	0.84	27.8
200	270	W22XC 355ML		1068	6.5	1.1	3.0	6.5	34/16	2200	82	1788	93.4	94.8	95.2	0.73	0.81	0.84	34.7
250	340	W22XC 355AB		1335	7.0	1.3	3.0	7.6	23/11	2450	82	1788	94.1	95.5	95.8	0.72	0.81	0.84	43.1
280	380	W22XC 355AB		1496	7.0	1.3	3.0	7.8	21/10	2550	82	1788	94.1	95.5	95.8	0.72	0.80	0.84	48.3
315	425	W22XC 355AB		1682	7.0	1.3	3.0	8.4	19/9	2700	82	1788	94.4	95.6	95.9	0.72	0.81	0.84	54.3
355	480	W22XC 355AB		1896	7.0	1.3	3.0	9.0	17/8	2900	82	1788	94.5	95.7	96.0	0.72	0.81	0.84	61.1
400	540	W22XC 355AB		2136	7.0	1.3	3.0	9.0	17/8	2950	82	1788	94.5	95.7	96.0	0.72	0.81	0.84	68.8
450	610	W22XC 400LJ		2401	6.8	1.5	2.6	12.2	20/8	3950	84	1790	95.0	96.0	96.2	0.69	0.79	0.83	78.2
500	675	W22XC 400LJ		2668	6.8	1.5	2.6	13.0	19/8	4150	84	1790	95.1	96.0	96.2	0.70	0.79	0.83	86.9
560	755	W22XC 400G	(2)	2989	6.8	0.7	2.7	15.7	20/9	4700	84	1789	95.3	96.3	96.5	0.74	0.82	0.85	94.8
630	850	W22XC 400G	(2)	3363	6.8	0.7	2.7	16.5	20/9	4850	89	1789	95.5	96.3	96.5	0.75	0.82	0.85	107
710	960	W22XC 400G	(2)	3790	6.8	0.7	2.6	16.8	20/9	5000	89	1789	95.6	96.4	96.5	0.75	0.82	0.85	120
800	1080	W22XC 400G	(2)	4271	6.8	0.7	2.6	16.8	20/9	5100	89	1789	95.6	96.4	96.5	0.75	0.82	0.85	135
900	1215	W22XC 450KH	(2)	4807	6.5	0.8	2.5	29.6	24/12	6200	86	1788	96.1	96.9	97.0	0.74	0.82	0.85	151
1000	1350	W22XC 450KH	(2)	5341	6.5	0.8	2.5	29.6	21/11	6700	86	1788	96.3	96.9	97.0	0.76	0.83	0.85	168
1120	1515	W22XC 500KH	(2)	5959	5.3	0.7	2.1	65.0	18/9	10250	89	1795	95.4	96.5	96.9	0.82	0.86	0.87	184
1250	1690	W22XC 500KH	(2)	6650	5.3	0.7	2.1	69.4	18/9	10500	89	1795	95.5	96.6	96.9	0.82	0.86	0.87	206
1400	1890	W22XC 500KH	(2)	7448	5.6	0.7	2.1	72.2	18/9	11000	89	1795	95.5	96.6	96.9	0.82	0.86	0.87	230
1500	2025	W22XC 500KH	(2)	7989	5.3	0.7	2.0	75.0	18/9	11700	89	1793	95.5	96.6	96.9	0.82	0.86	0.87	247
VI Pole - 1000 min -1																			
90	120	W22XC 315L		725	6.7	1.4	2.4	3.0	39/18	1850	73	1186	91.8	93.1	93.3	0.59	0.69	0.75	17.9
110	150	W22XC 315L		886	6.7	1.4	2.4	3.2	39/18	1950	73	1186	92.6	93.6	93.6	0.59	0.69	0.75	21.7
132	180	W22XC 355ML		1061	6.8	1.2	2.9	5.8	47/22	2250	77	1188	94.0	95.0	95.0	0.74	0.80	0.82	23.5
160	215	W22XC 355ML		1286	6.8	1.3	3.1	6.4	47/22	2350	77	1188	94.0	95.0	95.1	0.72	0.79	0.82	28.5
200	270	W22XC 355AB		1608	6.8	1.4	2.9	7.4	47/22	2550	77	1188	94.3	95.1	95.2	0.73	0.80	0.82	35.6
250	340	W22XC 355AB		2010	6.8	1.4	2.9	8.3	47/22	2650	77	1188	94.3	95.2	95.2	0.72	0.79	0.82	44.4
280	380	W22XC 355AB		2251	6.8	1.5	3.0	9.0	43/20	2750	77	1188	94.6	95.4	95.3	0.73	0.80	0.82	49.7
315	425	W22XC 355AB		2532	6.8	1.5	3.0	9.3	43/20	2900	77	1188	94.6	95.4	95.4	0.73	0.80	0.82	55.9
355	480	W22XC 355AB		2854	6.8	1.5	3.0	9.3	43/20	2950	77	1188	94.6	95.4	95.4	0.73	0.80	0.82	63.0
400	540	W22XC 400LJ		3207	6.7	1.4	2.7	20.4	32/15	4400	80	1191	96.0	96.3	96.2	0.79	0.82	0.84	68.7
450	610	W22XC 400G	(2)	3608	6.5	0.7	2.1	23.3	32/15	4700	80	1191	95.0	95.7	95.9	0.81	0.82	0.83	78.5
500	675	W22XC 400G	(2)	4009	6.5	0.7	2.1	26.6	32/15	4800	80	1191	94.9	95.7	95.9	0.80	0.82	0.83	87.2
560	755	W22XC 400G	(2)	4490	6.5	0.7	2.1	27.9	32/15	4850	80	1191	95.3	95.9	96.1	0.80	0.82	0.83	97.4
630	850	W22XC 400G	(2)	5052	6.5	0.7	2.1	27.9	32/15	4900	80	1191	95.3	95.9	96.1	0.80	0.82	0.83	110
710	960	W22XC 450KH	(2)	5679	6.0	0.7	2.8	54.8	32/15	6600	82	1194	95.0	96.0	96.2	0.74	0.82	0.85	121
800	1080	W22XC 450KH	(2)	6399	6.0	0.7	2.8	54.8	32/15	6800	82	1194	95.2	96.1	96.2	0.76	0.83	0.85	136
900	1215	W22XC 500KH	(2)	7192	6.0	0.7	2.4	91.0	20/11	10400	84	1195	96.3	97.0	97.0	0.75	0.82	0.84	153
1000	1350	W22XC 500KH	(2)	7992	6.0	0.7	2.4	95.8	20/11	10650	84	1195	96.3	97.0	97.0	0.75	0.82	0.84	170
1120	1515	W22XC 500KH	(2)	8951	6.0	0.7	2.4	101	20/11	11100	84	1195	96.5	97.1	97.1	0.75	0.82	0.84	191
1250	1690	W22XC 500KH	(2)	9990	6.0	0.7	2.4	101	20/11	11800	84	1195	96.5	97.1	97.1	0.75	0.82	0.84	213

W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)

Output		Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot(s)	Weight Kg	Sound Pressure dB(A)	Y 4160V/60Hz							
												RPM	% of full load						I_n (A)
													Efficiency h			Power Factor Cos j			
kW	HP												50	75	100	50	75	100	
VIII Pole - 750 min^{-1}																			
90	120	W22XC 315L		966	7.5	1.4	2.4	3.8	37/17	1950	71	890	88.7	91.0	91.7	0.50	0.63	0.71	19.2
110	150	W22XC 355ML		1183	6.8	1.3	2.4	7.7	39/18	2350	75	888	93.6	94.4	94.2	0.69	0.77	0.80	20.3
132	180	W22XC 355ML		1420	6.8	1.3	2.4	8.3	39/18	2450	75	888	94.0	94.6	94.3	0.71	0.78	0.80	24.3
160	215	W22XC 355ML		1721	6.8	1.3	2.4	9.1	39/18	2550	75	888	94.2	94.7	94.4	0.71	0.78	0.80	29.4
200	270	W22XC 400LJ	(2)	2146	5.0	0.6	2.1	36.7	20/11	4000	78	890	96.3	96.6	96.1	0.73	0.80	0.82	35.2
250	340	W22XC 400LJ	(2)	2683	5.0	0.6	2.1	38.4	20/11	4200	78	890	96.3	96.6	96.1	0.73	0.80	0.82	44.0
280	380	W22XC 400LJ	(2)	3004	5.0	0.6	2.1	39.7	20/11	4400	78	890	96.3	96.6	96.1	0.73	0.80	0.82	49.3
315	425	W22XC 400G	(2)	3380	5.0	0.6	2.1	43.2	37/17	5050	78	890	95.9	96.4	96.1	0.71	0.79	0.82	55.5
355	480	W22XC 400G	(2)	3809	5.0	0.6	2.1	45.4	37/17	5150	78	890	95.6	96.3	96.1	0.69	0.78	0.82	62.5
400	540	W22XC 400G	(2)	4292	5.0	0.6	2.1	47.5	37/17	5200	78	890	96.3	96.6	96.1	0.73	0.80	0.82	70.4
450	610	W22XC 400G	(2)	4829	5.0	0.6	2.1	47.5	37/17	5250	78	890	96.3	96.6	96.1	0.73	0.80	0.82	79.3
500	675	W22XC 450KH	(2)	5365	5.5	0.6	2.3	56.5	20/11	6400	80	890	95.3	96.1	96.0	0.71	0.79	0.80	90.4
560	755	W22XC 450KH	(2)	6009	5.5	0.6	2.3	60.1	20/11	6700	80	890	95.3	96.0	95.9	0.72	0.79	0.80	101
630	850	W22XC 450KH	(2)	6760	5.5	0.6	2.3	60.1	20/11	7000	80	890	95.2	96.0	95.9	0.71	0.78	0.80	114
710	960	W22XC 500KH	(2)	7568	5.6	0.8	2.4	137	20/11	10500	84	896	96.4	96.9	96.7	0.72	0.79	0.80	127
800	1080	W22XC 500KH	(2)	8527	5.2	0.8	2.3	149	20/11	10600	84	896	96.5	97.0	96.7	0.73	0.80	0.80	144
900	1215	W22XC 500KH	(2)	9593	5.5	0.8	2.3	159	20/11	11200	84	896	96.5	97.0	96.8	0.72	0.79	0.80	161
1000	1350	W22XC 500KH	(2)	10658	5.5	0.8	2.3	159	20/11	11800	84	896	96.5	97.0	96.8	0.72	0.79	0.80	179

(1) Temperature rise class F at full load (2) Copper rotor (3) Rated current at 690V (4) Rated current at 760V

Tn = Full load torque
Ils / In = Locked rotor current
Ts / Tn = Locked rotor torque

Tmax / Tn = Breakdown torque
In = Full load current

Notes:
-The indicated values for sound pressure levels are @ 1m no load, with 3 dB(A) tolerance.
-All values are according to IEC 60034-1 tolerances.
-This data can be changed without prior notice.

W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)

Output		Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot(s)	Weight Kg	Sound Pressure dB(A)	Y 6000V/50Hz							
												RPM	% of full load						I_n (A)
													Efficiency η			Power Factor Cos φ			
kW	HP												50	75	100	50	75	100	
II Pole - 3000 min⁻¹																			
90	120	W22XC 315L		289	6.7	1.5	2.5	1.3	10/5	1700	80	2970	91.3	93.6	94.5	0.76	0.83	0.86	10.7
110	150	W22XC 315L		354	6.8	1.6	2.6	1.5	8/4	1800	80	2970	92.0	93.9	94.6	0.78	0.85	0.87	12.9
132	180	W22XC 315L		424	6.8	1.6	2.6	1.6	8/4	1900	80	2970	92.3	94.0	94.7	0.79	0.85	0.87	15.4
160	215	W22XC 355ML		512	7.5	1.4	3.1	3.4	15/7	2050	80	2987	93.4	94.8	95.3	0.78	0.85	0.87	18.6
200	270	W22XC 355ML		639	7.5	1.4	3.1	3.8	10/5	2150	80	2987	94.1	95.2	95.6	0.80	0.85	0.87	23.1
250	340	W22XC 355AB		801	7.0	1.5	2.7	4.9	10/5	2400	80	2982	95.5	96.1	96.3	0.81	0.87	0.89	28.1
280	380	W22XC 355AB		897	7.5	1.5	2.9	5.2	10/5	2500	80	2982	95.7	96.3	96.5	0.81	0.87	0.89	31.4
315	425	W22XC 355AB		1009	7.5	1.5	2.9	5.5	8/4	2650	80	2982	95.9	96.5	96.6	0.82	0.88	0.89	35.3
355	480	W22XC 355AB		1137	7.5	1.5	2.9	5.9	8/4	2850	80	2983	96.0	96.6	96.7	0.82	0.87	0.89	39.7
400	540	W22XC 400LJ		1280	6.5	1.5	2.6	9.9	8/3	3750	80	2984	96.5	96.9	97.0	0.83	0.86	0.87	45.6
450	610	W22XC 400LJ		1440	6.5	1.5	2.6	10.2	7/3	3900	80	2984	96.3	96.9	97.0	0.82	0.86	0.87	51.3
500	675	W22XC 400LJ		1600	6.7	1.6	2.8	10.8	6/2	4100	80	2984	96.3	96.9	97.0	0.81	0.86	0.87	57.0
560	755	W22XC 400G		1792	6.7	1.6	2.8	12.5	7/3	4800	80	2984	96.4	96.8	97.0	0.81	0.86	0.87	63.9
630	850	W22XC 400G	(2)	2012	7.0	1.0	3.0	13.5	12/3	4950	80	2991	96.7	97.1	97.3	0.86	0.90	0.90	69.2
710	960	W22XC 450KH	(2)	2267	7.0	0.7	2.9	14.8	47/12	6150	82	2991	96.5	97.1	97.2	0.84	0.89	0.90	78.1
800	1080	W22XC 450KH	(2)	2554	7.0	0.7	2.9	15.8	42/11	6650	82	2991	96.6	97.1	97.2	0.84	0.89	0.90	88.0
900	1215	W22XC 500KH	(2)	2874	7.5	1.0	3.3	21.7	20/8	9000	85	2991	96.9	97.4	97.5	0.84	0.89	0.90	98.7
1000	1350	W22XC 500KH	(2)	3193	7.5	1.0	3.3	23.2	19/8	9200	85	2991	96.9	97.4	97.5	0.84	0.89	0.90	110
1120	1515	W22XC 500KH	(2)	3576	7.5	1.0	3.3	24.7	17/6	9650	85	2991	97.0	97.4	97.5	0.84	0.89	0.90	123
1200	1620	W22XC 500KH	(2)	3831	7.5	1.0	3.3	24.7	15/5	9850	85	2991	97.0	97.4	97.6	0.84	0.89	0.90	131
IV Pole - 1500 min⁻¹																			
90	120	W22XC 315L		578	6.7	1.4	2.5	1.7	43/20	1750	76	1486	91.9	93.5	94.1	0.59	0.70	0.76	12.1
110	150	W22XC 315L		707	6.7	1.4	2.5	1.9	32/15	1850	76	1486	92.4	93.8	94.4	0.59	0.70	0.76	14.8
132	180	W22XC 315L		848	6.7	1.4	2.5	2.0	32/15	1950	76	1486	93.0	94.2	94.7	0.60	0.70	0.76	17.6
160	215	W22XC 355ML		1026	6.5	1.1	3.0	5.6	39/18	2100	77	1490	93.4	94.8	95.3	0.72	0.81	0.84	19.2
200	270	W22XC 355ML		1282	6.5	1.1	3.0	6.5	34/16	2200	77	1490	94.0	95.1	95.5	0.73	0.81	0.84	24.0
250	340	W22XC 355AB		1602	7.0	1.3	3.0	7.6	23/11	2450	77	1490	94.7	95.8	96.1	0.72	0.81	0.84	29.8
280	380	W22XC 355AB		1795	7.0	1.3	3.0	7.8	21/10	2550	77	1490	94.7	95.8	96.1	0.72	0.80	0.84	33.4
315	425	W22XC 355AB		2019	7.0	1.3	3.0	8.4	19/9	2700	77	1490	95.0	95.9	96.2	0.72	0.81	0.84	37.5
355	480	W22XC 355AB		2275	7.0	1.3	3.0	9.0	17/8	2900	77	1490	95.1	96.0	96.3	0.72	0.81	0.84	42.2
400	540	W22XC 400LJ		2564	6.7	1.4	2.7	11.7	25/10	3800	80	1490	95.7	96.3	96.5	0.75	0.82	0.84	47.5
450	610	W22XC 400LJ		2884	6.8	1.5	2.6	12.2	20/8	3950	80	1490	95.6	96.3	96.5	0.69	0.79	0.83	54.1
500	675	W22XC 400LJ		3205	6.8	1.5	2.6	13.0	19/8	4150	80	1490	95.7	96.3	96.5	0.70	0.79	0.83	60.1
560	755	W22XC 400G	(2)	3592	6.8	0.7	2.7	15.7	20/9	4850	80	1489	95.9	96.6	96.8	0.74	0.82	0.85	65.5
630	850	W22XC 400G	(2)	4041	6.8	0.7	2.7	16.5	20/9	5000	80	1489	96.1	96.6	96.8	0.75	0.82	0.85	73.7
710	960	W22XC 400G	(2)	4554	6.8	0.7	2.6	16.8	20/9	5100	80	1489	96.2	96.7	96.8	0.75	0.82	0.85	83.0
800	1080	W22XC 450KH	(2)	5134	6.5	0.8	2.5	28.2	28/14	6200	82	1488	96.7	97.2	97.3	0.75	0.82	0.85	93.1
900	1215	W22XC 450KH	(2)	5776	6.5	0.8	2.5	29.6	24/12	6700	82	1488	96.7	97.2	97.3	0.74	0.82	0.85	105
1000	1350	W22XC 500KH	(2)	6388	5.6	0.7	2.1	61.1	18/9	10050	85	1495	95.5	96.6	97.0	0.81	0.86	0.87	114
1120	1515	W22XC 500KH	(2)	7155	5.3	0.7	2.1	65.0	18/9	10250	85	1495	96.0	96.8	97.2	0.82	0.86	0.87	127
1250	1690	W22XC 500KH	(2)	7985	5.3	0.7	2.1	69.4	18/9	10500	85	1495	96.1	96.9	97.2	0.82	0.86	0.87	142
1400	1890	W22XC 500KH	(2)	8943	5.6	0.7	2.1	72.2	18/9	11000	85	1495	96.1	96.9	97.2	0.82	0.86	0.87	159
1500	2025	W22XC 500KH	(2)	9595	5.3	0.7	2.0	75.0	18/9	11700	85	1493	96.1	96.9	97.2	0.82	0.86	0.87	171
VI Pole - 1000 min -1																			
90	120	W22XC 315L		870	6.7	1.4	2.4	3.0	39/18	1850	70	988	92.4	93.4	93.6	0.59	0.69	0.75	12.3
110	150	W22XC 315L		1063	6.7	1.4	2.4	3.2	39/18	1950	70	988	93.2	93.9	93.9	0.59	0.69	0.75	15.0
132	180	W22XC 355ML		1273	6.8	1.2	2.9	5.8	47/22	2250	73	990	94.6	95.3	95.3	0.74	0.80	0.82	16.3
160	215	W22XC 355ML		1543	6.8	1.3	3.1	6.4	47/22	2350	73	990	94.6	95.3	95.4	0.72	0.79	0.82	19.7
200	270	W22XC 355AB		1929	6.8	1.4	2.9	7.4	47/22	2550	73	990	94.9	95.4	95.5	0.73	0.80	0.82	24.6
250	340	W22XC 355AB		2412	6.8	1.4	2.9	8.3	47/22	2650	73	990	94.9	95.5	95.5	0.72	0.79	0.82	30.7
280	380	W22XC 355AB		2701	6.8	1.5	3.0	9.0	43/20	2750	73	990	95.2	95.7	95.6	0.73	0.80	0.82	34.4
315	425	W22XC 355AB		3039	6.8	1.5	3.0	9.3	43/20	2950	73	990	95.2	95.7	95.7	0.73	0.80	0.82	38.6
355	480	W22XC 400LJ		3421	6.7	1.4	2.7	19.1	32/15	4200	76	991	96.5	96.5	96.5	0.77	0.81	0.84	42.1
400	540	W22XC 400LJ		3855	6.7	1.4	2.7	20.4	32/15	4400	76	991	96.6	96.6	96.5	0.79	0.82	0.84	47.5
450	610	W22XC 400G	(2)	4337	6.5	0.7	2.1	23.3	32/15	4800	76	991	95.6	96.0	96.2	0.81	0.82	0.83	54.2
500	675	W22XC 400G	(2)	4818	6.5	0.7	2.1	26.6	32/15	4850	76	991	95.5	96.0	96.2	0.80	0.82	0.83	60.3
560	755	W22XC 400G	(2)	5397	6.5	0.7	2.1	27.9	32/15	4900	76	991	95.9	96.2	96.4	0.80	0.82	0.83	67.3
630	850	W22XC 450KH	(2)	6053	6.0	0.7	2.8	52.2	32/15	6600	78	994	95.5	96.3	96.5	0.74	0.82	0.85	73.9
710	960	W22XC 450KH	(2)	6821	6.0	0.7	2.8	54.8	32/15	6800	78	994	95.6	96.3	96.5	0.74	0.82	0.85	83.3
800	1080	W22XC 500KH	(2)	7678	6.0	0.7	2.4	80.9	20/11	10400	80	995	96.7	97.1	97.2	0.74	0.82	0.84	94.3
900	1215	W22XC 500KH	(2)	8638	6.0	0.7	2.4	91.0	20/11	10650	80	995	96.9	97.3	97.3	0.75	0.82	0.84	106
1000	1350	W22XC 500KH	(2)	9598	6.0	0.7	2.4	95.8	20/11	11100	80	995	96.9	97.3	97.3	0.75	0.82	0.84	118
1120	1515	W22XC 500KH	(2)	10750	6.0	0.7	2.4	101	20/11	11800	80	995	97.1	97.4	97.4	0.75	0.82	0.84	132

W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)

Output		Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot(s)	Weight Kg	Sound Pressure dB(A)	Y 6000V/50Hz							
												RPM	% of full load						I_n (A)
													Efficiency η			Power Factor Cos φ			
kW	HP												50	75	100	50	75	100	
VIII Pole - 750 min⁻¹																			
90	120	W22XC 315L		1158	7.5	1.4	2.4	3.8	37/17	1950	68	742	89.3	91.3	92.0	0.50	0.63	0.71	13.3
110	150	W22XC 355ML		1420	6.8	1.3	2.4	7.7	39/18	2350	70	740	94.2	94.7	94.5	0.69	0.77	0.80	14.0
132	180	W22XC 355ML		1704	6.8	1.3	2.4	8.3	39/18	2450	70	740	94.6	94.9	94.6	0.71	0.78	0.80	16.8
160	215	W22XC 355AB		2065	6.8	1.3	2.4	9.1	39/18	2950	70	740	94.8	95.0	94.7	0.71	0.78	0.80	20.3
200	270	W22XC 400LJ	(2)	2581	5.0	0.6	2.1	36.7	20/11	4000	74	740	96.9	96.9	96.4	0.73	0.80	0.82	24.3
250	340	W22XC 400LJ	(2)	3226	5.0	0.6	2.1	38.4	20/11	4200	74	740	96.9	96.9	96.4	0.73	0.80	0.82	30.4
280	380	W22XC 400LJ	(2)	3614	5.0	0.6	2.1	39.7	20/11	4400	74	740	96.9	96.9	96.4	0.73	0.80	0.82	34.1
315	425	W22XC 400G	(2)	4065	5.0	0.6	2.1	43.2	37/17	5050	74	740	96.5	96.7	96.4	0.71	0.79	0.82	38.3
355	480	W22XC 400G	(2)	4581	5.0	0.6	2.1	45.4	37/17	5150	74	740	96.2	96.6	96.4	0.69	0.78	0.82	43.2
400	540	W22XC 400G	(2)	5162	5.0	0.6	2.1	47.5	37/17	5200	74	740	96.9	96.9	96.4	0.73	0.80	0.82	48.7
450	610	W22XC 450KH	(2)	5807	5.5	0.6	2.3	53.8	20/11	6400	76	740	96.0	96.4	96.3	0.72	0.79	0.80	56.2
500	675	W22XC 450KH	(2)	6453	5.5	0.6	2.3	56.5	20/11	6700	76	740	95.9	96.4	96.3	0.71	0.79	0.80	62.5
560	755	W22XC 450KH	(2)	7227	5.5	0.6	2.3	60.1	20/11	7000	76	740	95.9	96.3	96.2	0.72	0.79	0.80	70.0
630	850	W22XC 500KH	(2)	8065	5.3	0.8	2.4	134	20/11	10500	80	746	97.0	97.3	97.0	0.73	0.80	0.80	78.1
710	960	W22XC 500KH	(2)	9089	5.6	0.8	2.4	137	20/11	10600	80	746	97.0	97.2	97.0	0.72	0.79	0.80	88.0
800	1080	W22XC 500KH	(2)	10241	5.2	0.8	2.3	149	20/11	11200	80	746	97.1	97.3	97.0	0.73	0.80	0.80	99.2
900	1215	W22XC 500KH	(2)	11521	5.5	0.8	2.3	159	20/11	11800	80	746	97.1	97.3	97.1	0.72	0.79	0.80	111

(1) Temperature rise class F at full load (2) Copper rotor (3) Rated current at 690V (4) Rated current at 760V

Tn = Full load torque
Ils / In = Locked rotor current
Ts / Tn = Locked rotor torque

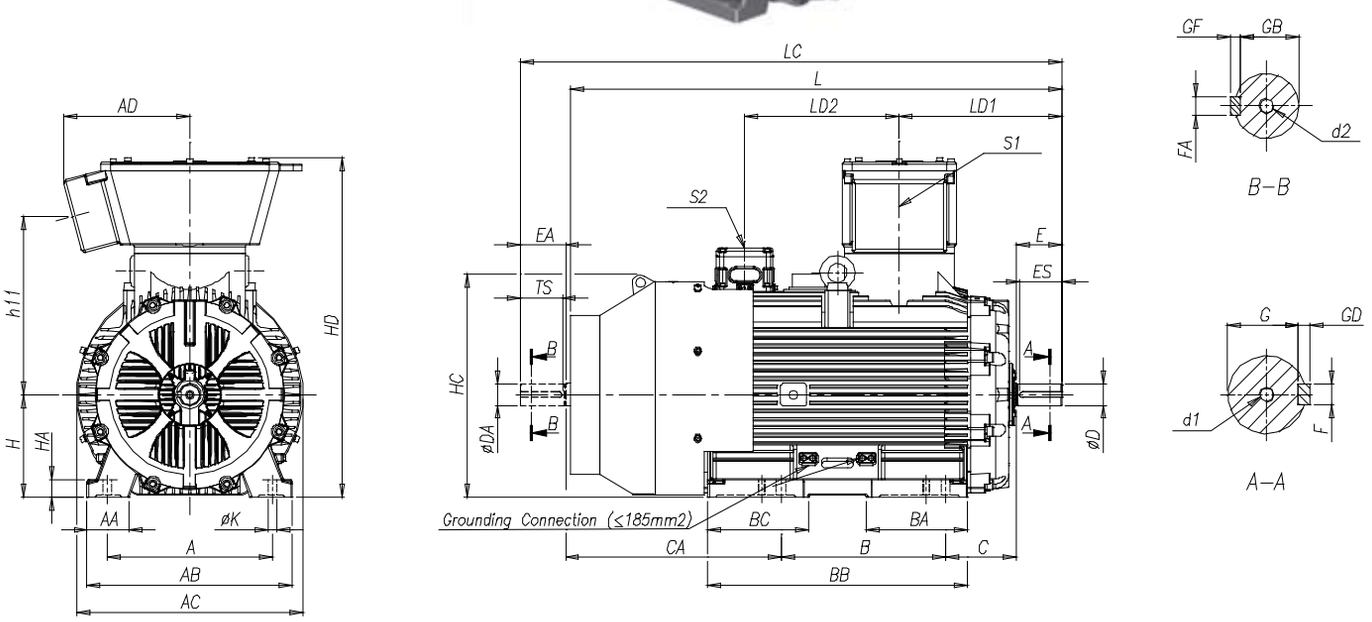
Tmax / Tn = Breakdown torque
In = Full load current

Notes:
-The indicated values for sound pressure levels are @ 1m no load, with 3 dB(A) tolerance.
-All values are according to IEC 60034-1 tolerances.
-This data can be changed without prior notice.

7.2.8. Medium Voltage - Mechanical Data - W22XC Series

W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Medium Voltage

315L - 355ML, IMB3T



Frame	Poles	A	AA	AB	AC	AD	BA	BB	BC	B	C	CA	H	HA	HC	HD	h11	K	L	LC	LD1	LD2
315L	2P	508	130	632	698	388	310	800	310	508	216	663	315	52	684	1044	548	28	1512	1667	500	475
	4P+																		1542	1697	530	
355ML	2P	610	130	730	780	388	315	830	315	560 630	254	567	355	55	765	1312	58	28	1576	1731	514	462
	4P+																		1646	1831	584	

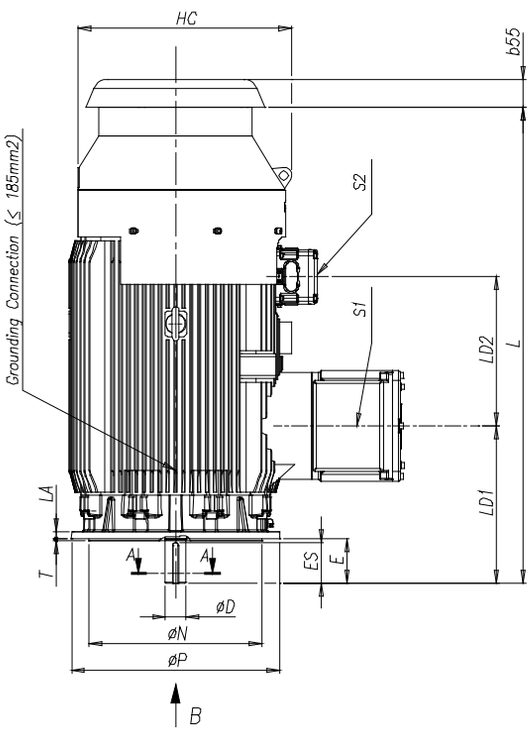
		Shaft dimensions														Bearings		Power terminal box - S1	Auxiliary terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	CEFGH 340	WTBX XS
315L	2P	65m6	140	130	18h9	58	11	60m6	140	130	18h9	53	11	DSM20	DSM20	6314C3	6314C3	I ≤ 315A : 1xM63x1,5	3xM20x1,5
	4P+	80m6	170	160	22h9	71	14	65m6				58	11			6319C3	6316C3		
355ML	2P	75m6	140	130	20h9	67,5	12	60m6	140	130	18h9	53	11	DSM20		6316C3	6316C3	315A ≤ I ≤ 400A : 3xM63x1,5	
	4P+	100m6	210	200	28h9	90	16	80m6	170	160	22h9	71	14	DSM24		6322C3	6319C3		

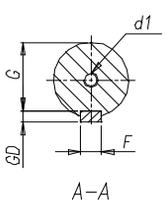
Notes:

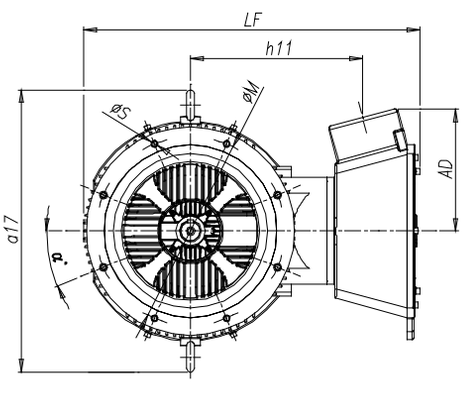
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Medium Voltage

315L - 355ML, IMV1







Frame	Poles	AD	HC	h11	L	LA	LD1	LD2	LF	b55	a17	M	N	P	T	S	Nr. Holes	α
315L	2P	388	679	548	1514	25	500	475	1069	90	898	600	550	660	6	24	8	22,5°
	4P+				1544		530											
355ML	2P	388	765	547	1576	30	514	462	1171,5	93	988	740	680	800	6	24	8	22,5°
	4P+				1646		584											

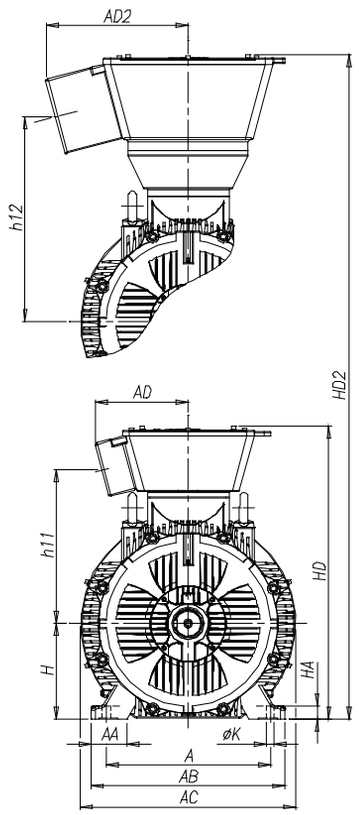
		Shaft dimensions							Bearings		Power terminal box - S1	Auxiliary terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	d1	D.E.	N.D.E.	CEFGH 340	WTBX XS
315L	2P	65m6	140	130	18h9	58	11	DSM20	6314C3	6314C3	I ≤ 315A : 1xM63x1,5	3xM20x1,5
	4P+	80m6	170	160	22h9	71	14		6319C3	6316C3	315A ≤ I ≤ 400A : 3xM63x1,5	
355ML	2P	75m6	140	130	20h9	67,5	12	DSM20	6316C3	6316C3		
	4P+	100m6	210	200	28h9	90	16	DSM24	6322C3	6319C3		

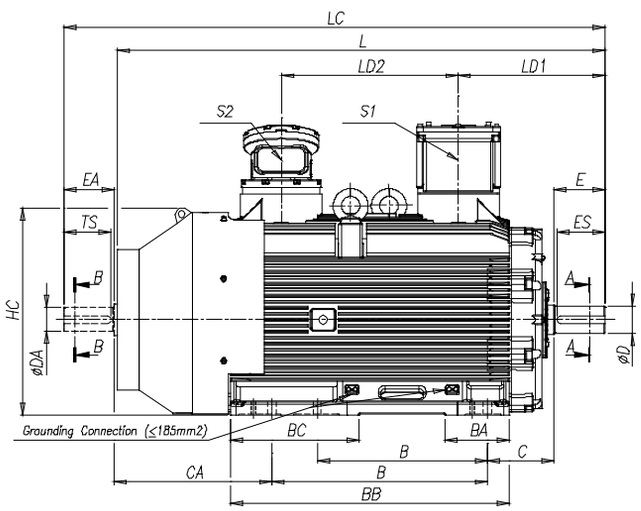
Notes:

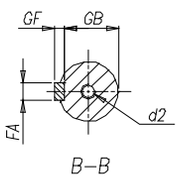
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

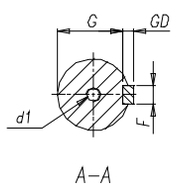
W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Medium Voltage

355AB - 400LJ - 400G, IMB3T









Frame	Poles	A	AA	AB	AC	AD(1)	BA	BB	BC	B	C	CA	H	HA	HC	HD(1)	h11(1)	K	L	LC	LD1	LD2
355AB	2P	610	130	730	780	388	225	1038	523	710	254	605	355	55	765	1131	521	28	1784	1939	514	618
	4P+									800									1854	2039	584	
400LJ	2P	686	150	810	898	388	265	1160	535	710	280	659	400	58	867	1222	641	35	1994	2149	570	740
	4P+									900									2034	2219	610	
400G	2P	686	150	810	898	388	420	1400	420	1120	280	679	400	58	867	1222	641	35	2234	2389	570	982
	4P+																		2274	2459	610	

		Shaft dimensions														Bearings		Power terminal box - S1(1)	Power terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	CEFGH 340	WTBX S
355AB	2P	75m6	140	130	20h9	67,5	12	60m6	140	130	18h9	53	11	DSM20	DSM20	6316C3	6316C3	I ≤ 315A : 1xM63x1,5 315A ≤ I ≤ 400A : 3xM63x1,5	3xM20x1,5
	4P+	100m6	210	200	28h9	90	16	80m6	170	160	22h9	71	14	DSM24		6322C3	6319C3		
400LJ	2P	80m6	170	160	22h9	71	14	60m6	140	130	18h9	53	11	DSM20		6318C3	6318C3		
	4P+	110m6	210	200	28h9	100	16	80m6	170	160	22h9	71	14	DSM24		6324C3	6324C3		
400G	2P	80m6	170	160	22h9	71	14	60m6	140	130	18h9	53	11	DSM20		6318C3	6318C3		
	4P+	110m6	210	200	28h9	100	16	80m6	170	160	22h9	71	14	DSM24		6324C3	6324C3		

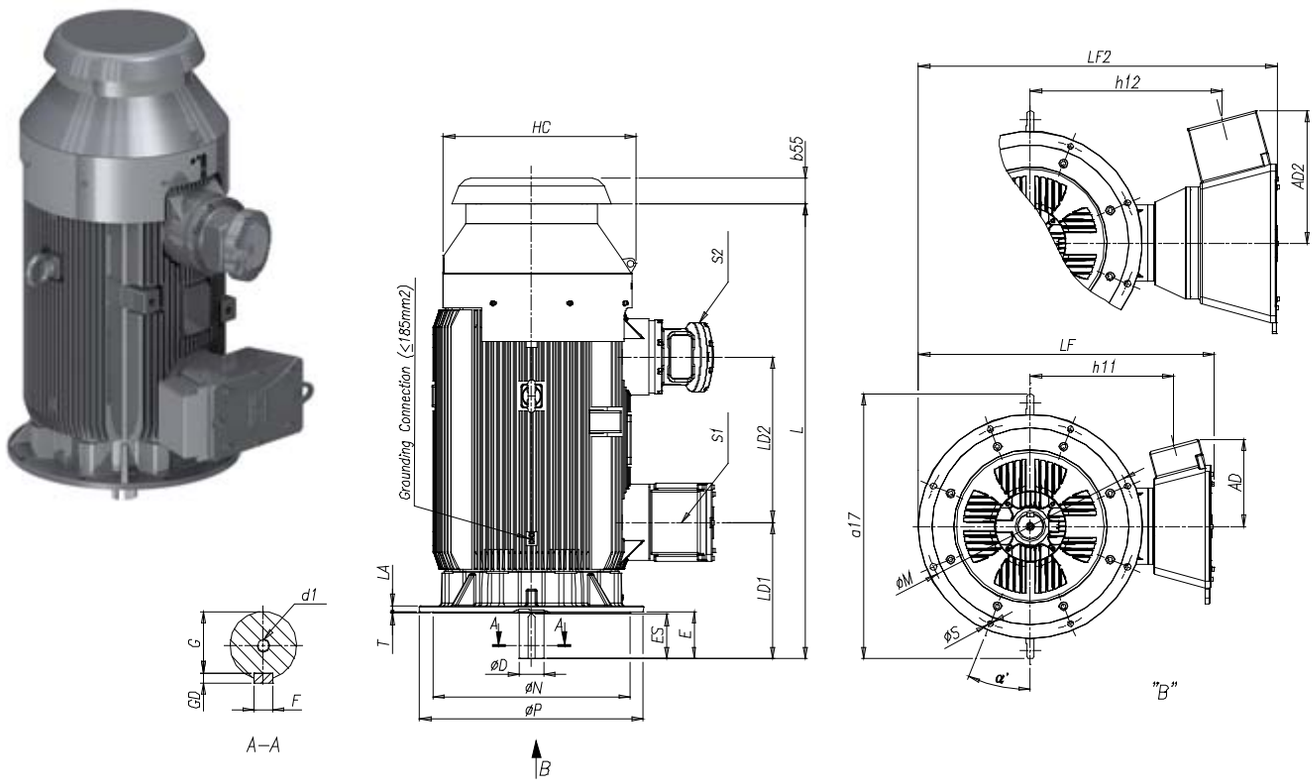
	I>400A				
Frame	Poles	AD2	HD2	h12	Power terminal box - CEFGH 500 - S1
355AB	2P	75m6	140	130	400A ≤ I ≤ 800A : 3xM63x1,5
	4P+	100m6	210	200	
400LJ	2P	80m6	170	160	
	4P+	110m6	210	200	
400G	2P	80m6	170	160	
	4P+	110m6	210	200	

Notes:

(1) ≤ 400A
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Medium Voltage

355AB - 400LJ - 400G, IMV1



Frame	Poles	AD[1]	HC	h11[1]	L	LA	LD1	LD2	LF[1]	b55	a17	M	N	P	T	S	Nr. Holes	α
355AB	2P	388	759	595	1784	30	514	618	1176	93	988	740	680	800	6	24	8	22,5º
	4P+				1854		584											
400LJ	2P	388	862	641	1994	28	570	740	1323	106	1184	940	880	1000	6	28	8	22,5º
	4P+				2034		610											
400G	2P	388	862	641	2234	28	570	980	1323	106	1184	940	880	1000	6	28	8	22,5º
	4P+				2274		610											

		Shaft dimensions							Bearings		Power terminal box - S1[1]	Auxiliary terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	d1	D.E.	N.D.E.	CEFGH 340	WTBX S
355AB	2P	75m6	140	130	20h9	67,5	12	DSM20	7316	6316C3	I ≤ 315A : 1xM63x1,5 315A ≤ I ≤ 400A : 3xM63x1,5	3xM20x1,5
	4P+	100m6	210	200	28h9	90	16	DSM24	7322	6319C3		
400LJ	2P	80m6	170	160	22h9	71	14	DSM20	7318	6318C3		
	4P+	110m6	210	200	28h9	100	16	DSM24	7324	6324C3		
400G	2P	80m6	170	160	22h9	71	14	DSM20	7318	6318C3		
	4P+	110m6	210	200	28h9	100	16	DSM24	7324	6324C3		

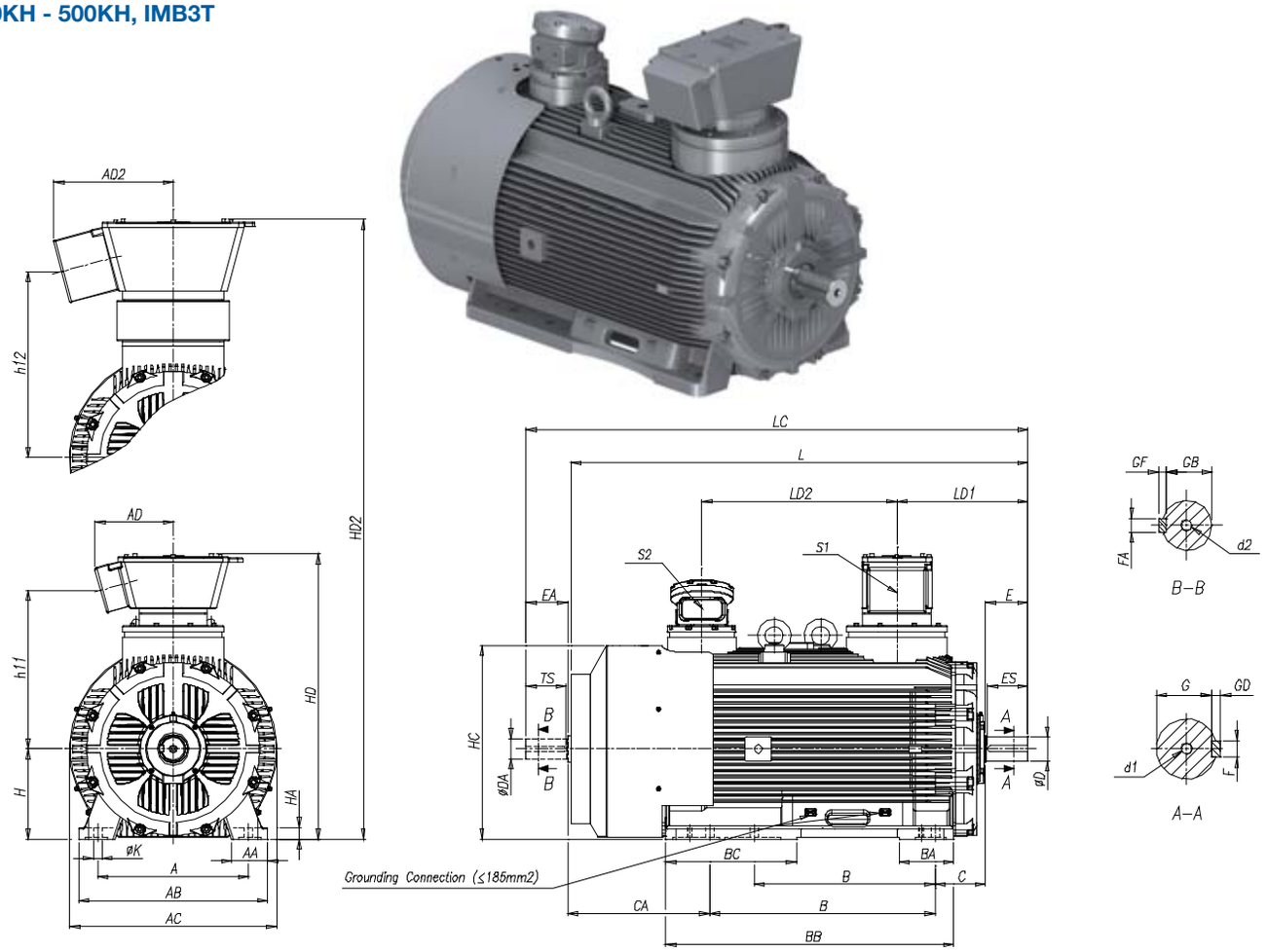
	I>400A				
Frame	Poles	AD2	LF2	h12	Power terminal box - CEFGH 500 - S1
355AB	2P	594	1040	812	400A ≤ I ≤ 800A : 3xM63x1,5
	4P+				
400LJ	2P	594	1616	857	
	4P+				
400G	2P	594	1616	857	
	4P+				

Notes:

(1) I ≤ 400A
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Medium Voltage

450KH - 500KH, IMB3T



Frame	Poles	A	AA	AB	AC	AD(1)	BA	BB	BC	B	C	CA	H	HA	HC	HD(1)	h11(1)	K	L	LC	LD1	LD2
450KH	2P	750	180	940	1030	389	270	1430	650	900 1120	250	705	450	60	965	1419	787	42	2230	2385	610	970
	4P+																		2270	2495	650	
500KH	2P	850	200	1020	1162	389	375	1800	915	1000	280	1065	500	65	1081	1489	807	42	2750	2905	635	1300
	4P+									1250									2830	3055	715	

		Shaft dimensions														Bearings		Power terminal box - S1(1)	Auxiliary terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	CEFGH 340	WTBX S
450KH	2P	85m6	170	160	22h9	76	14	75m6	140	130	20h9	67,5	12	DSM20	DSM20	6318C3	NU218C3	I ≤ 315A : 1xM63x1,5	3xM20x1,5
	4P+	120m6	210	200	32h9	109	18	100m6	210	200	28h9	90	16	DSM24	DSM24	6326C3	6326C3	315A ≤ I ≤ 400A : 3xM63x1,5	
500KH	2P	90m6	170	160	25	81	14	75m6	140	130	20	67,5	12	DSM24	DSM20	NU220C3+6020C3	NU220C3		
	4P+	130m6	250	240	32	119	18	110m6	210	200	28	100	16		DSM24	6328C3	6328C3		

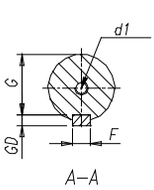
	I>400A				
Frame	Poles	AD2	HD2	h12	Power terminal box - CEFGH 500 - S1
450KH	2P	594	1634	925	400A ≤ I ≤ 800A : 3xM63x1,5
	4P+				
500KH	2P	594	1704	945	
	4P+				

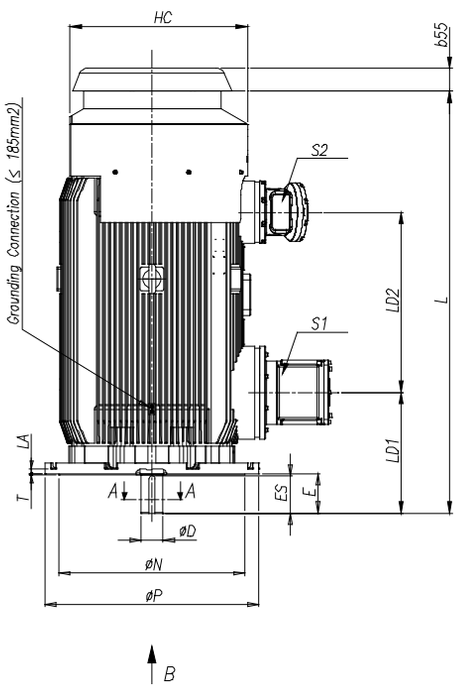
Notes:

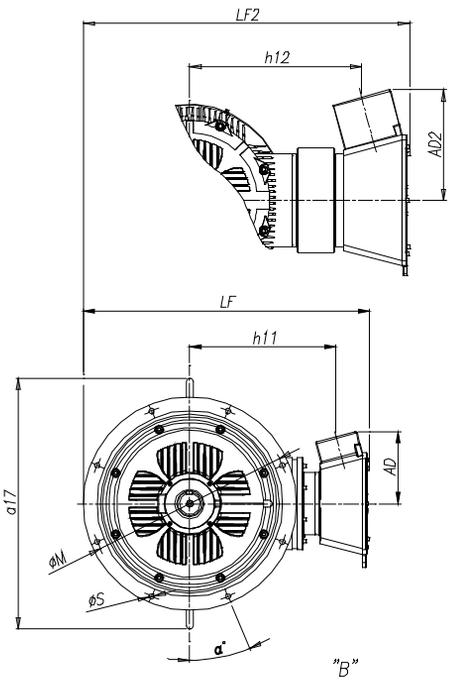
(1) I ≤ 1090A
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
Medium Voltage

450KH - 500KH, IMV1







Frame	Poles	AD[1]	HC	h11[1]	L	LA	LD1	LD2	LF[1]	b55	a17	M	N	P	T	S	Nr. Holes	α
450KH	2P	389	955	787	2270	30	650	970	1544	125	1352	1080	1000	1150	6	28	8	22,5°
	4P+																	
500KH	2P	389	1162	807	2830	30	715	1300	1564	130	1482	1080	1000	1150	7	28	8	22,5°
	4P+																	

		Shaft dimensions							Bearings		Power terminal box - S1[1]	Auxiliary terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	d1	D.E.	N.D.E.	CEFGH 340	WTBX S
450KH	2P	120m6	210	200	32h9	109	18	DSM24	7326	6326C3	I ≤ 315A : 1xM63x1,5 315A ≤ I ≤ 400A : 3xM63x1,5	3xM20x1,5
	4P+											
500KH	2P	130m6	250	240	32h9	119	18	DSM24	7328	6328C3		
	4P+											

		I>400A			
Frame	Poles	AD2	LF2	h12	Power terminal box - CEFGH 500 - S1
450KH	2P	594	1759	925	400A ≤ I ≤ 800A : 3xM63x1,5
	4P+				
500KH	2P	594	1779	945	
	4P+				

Notes:

(1) I ≤ 1090A
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

7.2.9. High Voltage - Electrical Data - W22XC Series

W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box, W22XC – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)

Output												Y 10000V/50Hz							
												% of full load							
kW	HP	Frame IEC	T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Hot/Cold (s)	Weight Kg	Sound Pressure dB(A)	RPM	Efficiency η			Power Factor Cos φ			I_n (A)
												50	75	100	50	75	100	
II Pole - 3000 min⁻¹																			
355	480	W22XC 450KH (2)	1134	6.5	0.7	2.7	9.0	19/10	6150	82	2990	95.8	96.6	96.7	0.82	0.87	0.89	23.8
400	540	W22XC 450KH (2)	1278	6.5	0.7	2.7	9.9	18/9	6300	82	2990	95.6	96.5	96.7	0.82	0.87	0.89	26.8
450	610	W22XC 450KH (2)	1437	6.5	0.7	2.7	10.6	16/8	6550	82	2990	95.6	96.5	96.7	0.83	0.88	0.89	30.2
500	675	W22XC 450KH (2)	1597	6.5	0.7	2.7	11.6	15/8	7050	82	2990	96.0	96.7	96.8	0.83	0.88	0.89	33.5
560	755	W22XC 500KH (2)	1789	7.0	0.7	3.1	12.7	15/8	9600	85	2990	96.0	96.5	96.8	0.82	0.88	0.89	37.5
630	850	W22XC 500KH (2)	2012	7.0	0.7	3.1	13.5	13/7	10050	85	2990	96.0	96.5	96.8	0.83	0.88	0.89	42.2
710	960	W22XC 500KH (2)	2268	7.0	0.7	3.1	14.2	12/6	10250	85	2990	96.0	96.5	96.8	0.83	0.88	0.89	47.6
IV Pole - 1500min⁻¹																			
355	480	W22XC 450KH (2)	2274	6.5	0.7	2.0	16.8	9/5	6150	82	1491	94.3	95.4	95.8	0.72	0.80	0.83	25.8
400	540	W22XC 450KH (2)	2562	6.5	0.7	2.0	16.8	9/5	6300	82	1491	95.8	96.0	96.1	0.75	0.81	0.83	29.0
450	610	W22XC 450KH (2)	2882	6.5	0.7	2.0	17.8	9/5	6500	82	1491	96.0	96.4	96.4	0.75	0.81	0.83	32.5
500	675	W22XC 450KH (2)	3203	6.5	0.7	2.0	19.3	9/5	6800	82	1491	96.0	96.4	96.4	0.75	0.81	0.83	36.1
560	755	W22XC 450KH (2)	3584	6.5	0.7	2.0	20.5	9/5	7200	82	1492	96.0	96.4	96.4	0.75	0.81	0.83	40.4
630	850	W22XC 500KH (2)	4024	6.7	1.0	2.8	44.5	15/8	10650	85	1495	95.0	96.0	96.5	0.82	0.87	0.88	42.8
710	960	W22XC 500KH (2)	4535	6.7	1.0	2.7	49.3	15/8	10900	85	1495	95.0	96.3	96.7	0.84	0.88	0.89	47.6
800	1080	W22XC 500KH (2)	5110	6.7	1.1	2.7	54.3	15/8	11400	85	1495	95.4	96.5	97.0	0.84	0.88	0.89	53.5
900	1215	W22XC 500KH (2)	5749	6.8	1.1	2.7	59.3	15/8	12100	85	1495	95.5	96.5	97.0	0.84	0.88	0.89	60.2
VI Pole - 1000min -1																			
280	380	W22XC 450KH (2)	2693	5.5	0.8	3.1	20.2	15/8	6500	78	993	94.0	95.0	95.2	0.60	0.72	0.77	22.1
315	425	W22XC 450KH (2)	3029	5.5	0.8	3.1	21.7	15/8	6800	78	993	94.0	95.0	95.2	0.62	0.73	0.78	24.5
355	480	W22XC 450KH (2)	3418	5.5	0.8	3.1	24.5	15/8	7100	78	992	94.2	95.1	95.3	0.64	0.74	0.79	27.2
400	540	W22XC 450KH (2)	3851	5.5	0.8	3.1	21.7	15/8	7300	78	992	94.2	95.1	95.3	0.64	0.74	0.79	30.7
450	610	W22XC 450KH (2)	4332	5.5	0.8	3.1	22.7	15/8	7500	78	992	94.2	95.1	95.3	0.64	0.74	0.79	34.5
500	675	W22XC 500KH (2)	4794	6.3	0.9	2.6	56.4	15/8	11050	80	996	96.5	97.0	97.0	0.71	0.80	0.83	35.9
560	755	W22XC 500KH (2)	5369	6.3	0.9	2.6	59.1	15/8	11500	80	996	96.5	97.0	97.0	0.81	0.80	0.83	40.2
630	850	W22XC 500KH (2)	6041	6.5	0.9	2.7	64.5	15/8	12200	80	996	96.5	97.0	97.0	0.81	0.80	0.83	45.2
VIII Pole - 750 min⁻¹																			
200	270	W22XC 450KH (2)	2557	6.5	1.2	3	23.1	15/8	6500	76	747	93.0	94.4	94.4	0.56	0.68	0.76	16.1
250	340	W22XC 450KH (2)	3196	6.5	1.2	3	25.8	15/8	6800	76	747	93.0	94.4	94.4	0.56	0.68	0.76	20.1
280	380	W22XC 450KH (2)	3580	6.5	1.2	3	27.4	15/8	7200	76	747	93.0	94.4	94.4	0.56	0.68	0.76	22.5
315	425	W22XC 450KH (2)	4027	6.5	1.2	3	29.2	15/8	7700	76	747	93.0	94.4	94.4	0.56	0.68	0.76	25.3
355	480	W22XC 450KH (2)	4538	6.5	1.2	3	31.0	15/8	7900	76	747	93.0	94.4	94.4	0.56	0.68	0.76	28.6
400	540	W22XC 500KH (2)	5114	5.0	0.6	2.2	80.1	15/8	11000	80	747	96.3	96.5	96.5	0.73	0.79	0.80	29.9
450	610	W22XC 500KH (2)	5753	5.0	0.6	2.2	87.4	15/8	11600	80	747	96.3	96.5	96.5	0.73	0.79	0.80	33.7
500	675	W22XC 500KH (2)	6392	5.1	0.7	2.3	96.1	15/8	12200	80	747	96.3	96.5	96.5	0.73	0.79	0.80	37.4

High voltage motors are also available under request for frame size 400.

(1) Temperature rise class F at full load (2) Copper rotor (3) Rated current at 690V (4) Rated current at 760V

Tn = Full load torque
Ils / In = Locked rotor current
Ts / Tn = Locked rotor torque

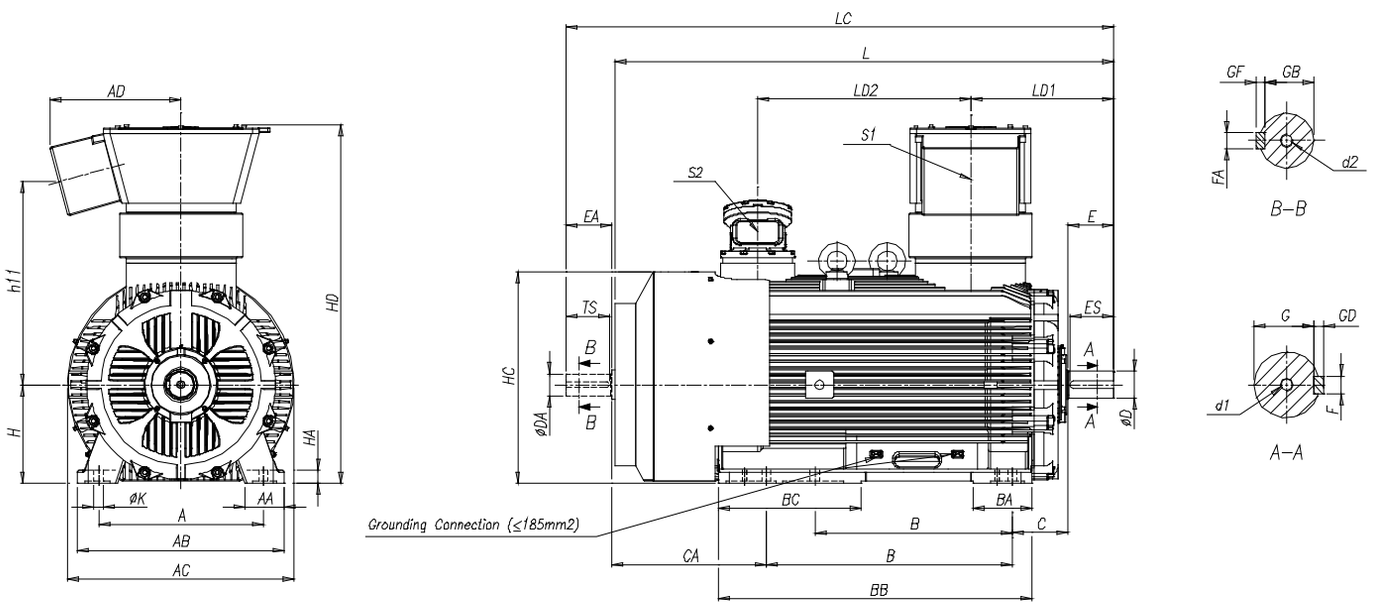
Tmax / Tn = Breakdown torque
In = Full load current

Notes:
-The indicated values for sound pressure levels are @ 1m no load, with 3 dB(A) tolerance.
-All values are according to IEC 60034-1 tolerances.
-This data can be changed without prior notice.

7.2.10. High Voltage - Mechanical Data - W22XC Series

W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box, W22XC – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
High Voltage

450KH - 500KH, IMB3T



Frame	Poles	A	AA	AB	AC	AD	BA	BB	BC	B	C	CA	H	HA	HC	HD	h11	K	L	LC	LD1	LD2
450KH	2P	750	180	940	1030	594	270	1430	650	900 1120	250	705	450	60	965	1634	925	42	2230	2385	610	970
	4P+																		2270	2495	650	
500KH	2P	850	200	1020	1162	594	375	1800	915	1000	280	1065	500	65	1081	1704	945	42	2750	2905	635	1300
	4P+									1250									2830	3055	715	

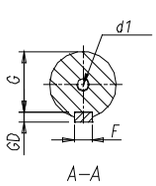
		Shaft dimensions														Bearings		Power terminal box - S1	Auxiliary terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	CEFGH 500	WTBX S
450KH	2P	85m6	170	160	22h9	76	14	75m6	140	130	20h9	67,5	12	DSM20	DSM20	6318C3	NU218C3	I ≤ 200A : 1xM63x1,5	3xM20x1,5
	4P+	120m6	210	200	32h9	109	18	100m6	210	200	28h9	90	16	DSM24	DSM24	6326C3	6326C3	200A ≤ I ≤ 400A : 3xM63x1,5	
500KH	2P	90m6	170	160	25	81	14	75m6	140	130	20	67,5	12	DSM24	DSM20	NU220C3+6020C3	NU220C3		
	4P+	130m6	250	240	32	119	18	110m6	210	200	28	100	16		DSM24	6328C3	6328C3		

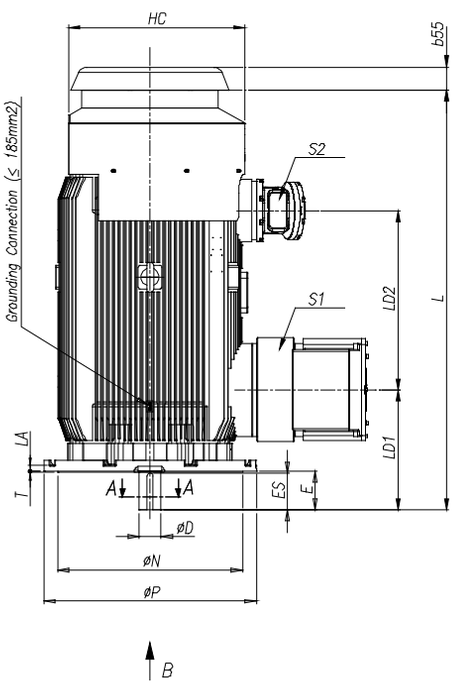
Notes:

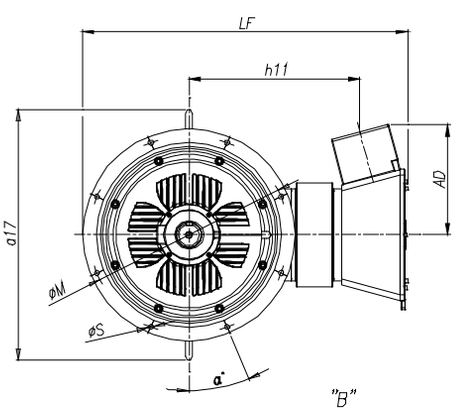
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XC - Flameproof Motors – Ex d IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
W22XCE - Flameproof Motors with Increased Safety Terminal box, W22XC – Ex d e IIC T4 Gb (Ex tb IIIC T125ºC Db IP6X)
High Voltage

450KH - 500KH, IMV1







Frame	Poles	AD	HC	h11	L	LA	LD1	LD2	LF	b55	a17	M	N	P	T	S	Nr. Holes	α
450KH	4P+	594	955	925	2270	30	650	970	1759	125	1352	1080	1000	1150	6	28	8	22,5º
500KH	4P+	594	1162	945	2830	30	715	1300	1779	130	1482	1080	1000	1150	7	28	8	22,5º

		Shaft dimensions							Bearings		Power terminal box - S1	Auxiliary terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	d1	D.E.	N.D.E.	CEFGH 500	WTBX S
450KH	4P+	120m6	210	200	32h9	109	18	DSM24	7326	6326C3	I ≤ 200A : 1xM63x1,5	3xM20x1,5
500KH	4P+	130m6	250	240	32h9	119	18	DSM24	7328	6328C3	200A ≤ I ≤ 400A : 3xM63x1,5	

Notes:

All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

7.3. W22XM Series - Ex d(e) I Mb

W22XM is WEG flameproof TEFC three phase motors line with shaft height from 315mm up to 500mm for group I (mines).

W22XM line is available for Low, Medium and High voltage with the following powers:

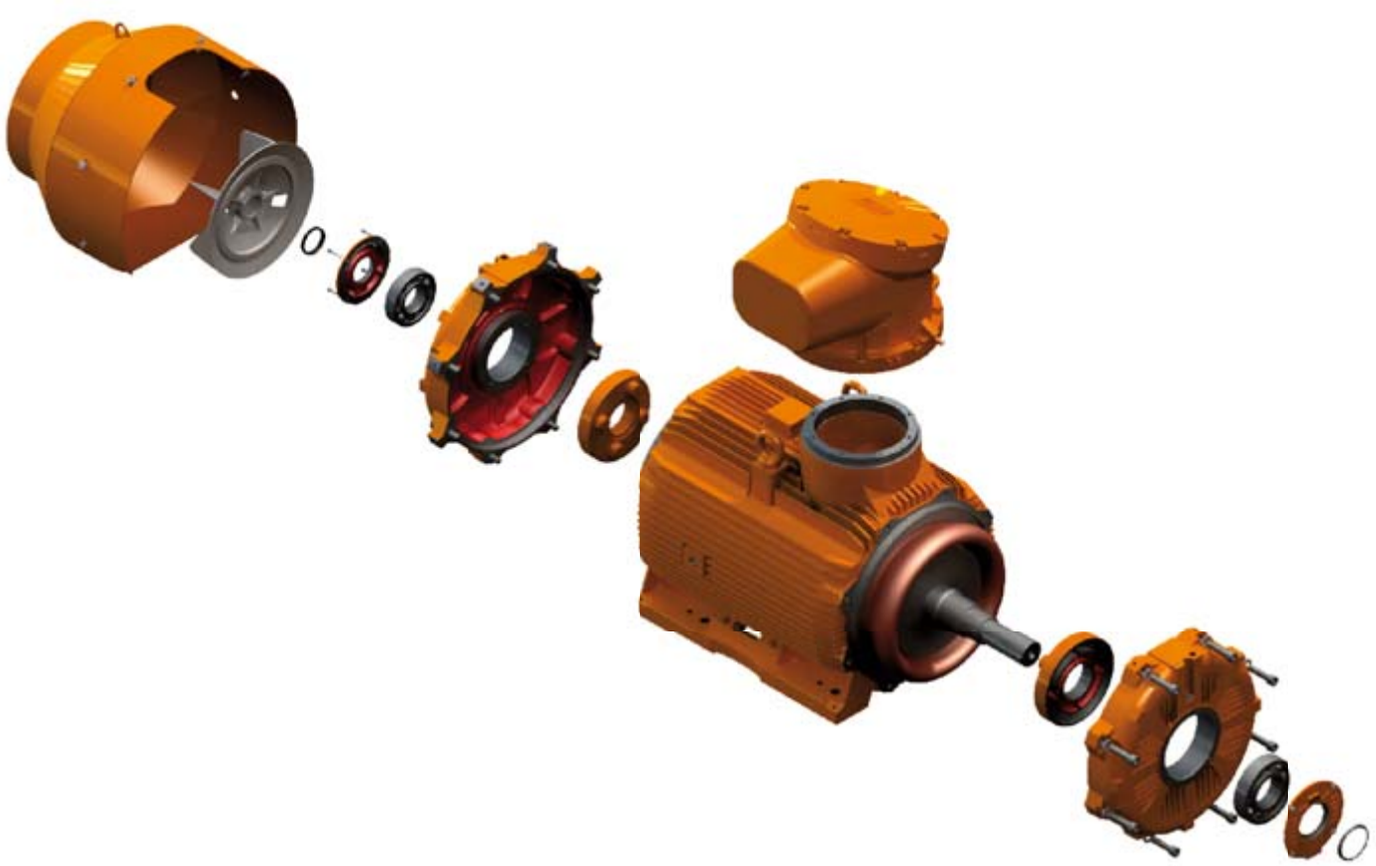
W22XM - Low voltage (≤ 1100V) – IE2 Efficiency level	
Powers (kW)	Speed (RPM)
132 up to 1120	3000
132 up to 1400	1500
90 up to 1000	1000
75 up to 800	750

W22XM - Medium voltage (1100V < U ≤ 6600V)	
Powers (kW)	Speed (RPM)
90 up to 1200	3000
90 up to 1500	1500
90 up to 1120	1000
90 up to 900	750

W22XM - High voltage (6600V < U ≤ 11000V)	
Powers (kW)	Speed (RPM)
355 up to 710	3000
355 up to 900	1500
280 up to 630	1000
200 up to 500	750

In relation to the different available optional features, W22XM motors are designated as follows:

- W22XM – Standard Ex d I Mb motor
- W22XME – Ex d e I Mb motor
- W22XMS - Ex d I Mb motor with sleeve bearings
- W22XMES – Ex d I Mb motor with sleeve bearings



7.3.1. Low Voltage - Electrical Data - W22XM Series

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
IE2 Efficiency Class according to IEC 60034-30

Output		Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot (s)	Weight Kg	Sound dB(A)	RPM	Δ 400 V/50Hz - Standard terminal box Δ 690 V/50Hz - Standard terminal box						I_n (A)
kW	HP												% of full load						
													Efficiency η			Power Factor Cos φ			
													50	75	100	50	75	100	
II Pole - 3000 min⁻¹																			
132	180	W22XM 315L		424	7.3	2.2	2.7	3.4	11/3	1500	80	2975	94.2	95.0	95.0	0.85	0.88	0.89	225
160	215	W22XM 315L		514	7.3	2.2	2.8	3.4	11/3	1550	80	2975	94.0	94.9	95.0	0.85	0.88	0.89	273
200	270	W22XM 315L		642	7.3	2.2	2.8	4.1	11/3	1650	80	2975	94.4	95.2	95.2	0.85	0.88	0.89	341
250	340	W22XM 315L		803	7.3	2.2	2.5	4.2	11/3	1750	80	2975	94.3	95.1	95.2	0.84	0.88	0.89	426
280	380	W22XM 355ML		897	7.5	2.5	2.7	6.0	14/5	2000	80	2980	95.7	96.2	96.2	0.88	0.91	0.91	462
315	425	W22XM 355AB		1009	7.5	2.5	2.7	6.0	14/5	2300	80	2980	95.9	96.2	96.2	0.88	0.91	0.91	519
355	480	W22XM 355AB		1138	7.5	2.5	2.7	6.8	14/5	2500	80	2980	96.1	96.4	96.3	0.89	0.91	0.91	585
400	540	W22XM 355AB		1282	7.5	2.5	2.7	7.7	14/5	2700	80	2980	95.8	96.3	96.3	0.89	0.91	0.91	659
450	610	W22XM 400LJ		1440	7.5	2.0	3.4	8.0	14/5	3750	80	2985	95.5	96.6	97.1	0.84	0.89	0.91	735
500	675	W22XM 400LJ		1600	7.5	1.9	3.2	8.4	14/5	3950	80	2985	95.9	96.9	97.3	0.85	0.89	0.91	815
560	755	W22XM 400G	(2)	1789	7.0	0.9	2.9	17.3	14/5	4800	80	2990	97.2	97.5	97.5	0.91	0.92	0.92	901
630	850	W22XM 450KH	(2)	2014	7.5	0.6	2.6	18.9	10/3	5800	82	2987	97.3	97.6	97.6	0.84	0.89	0.90	1035
710	960	W22XM 450KH	(2)(3)	2270	7.5	0.6	2.6	20.2	10/3	6000	82	2987	97.5	97.7	97.6	0.84	0.89	0.90	676
800	1080	W22XM 450KH	(2)(3)	2558	7.5	0.7	2.6	21.4	7/2	6500	82	2987	97.5	97.6	97.6	0.84	0.88	0.90	762
900	1215	W22XM 500KH	(2)(3)	2875	5.5	0.5	1.7	23.2	25/9	8800	85	2990	96.9	97.3	97.6	0.84	0.88	0.88	877
1000	1350	W22XM 500KH	(2)(3)	3194	5.5	0.5	1.7	24.2	25/9	9500	85	2990	97.0	97.4	97.6	0.85	0.88	0.88	974
1120	1515	W22XM 500KH	(2)(3)	3577	5.5	0.5	1.7	24.2	21/7	9700	85	2990	97.2	97.5	97.6	0.85	0.88	0.88	1089
IV Pole - 1500 min⁻¹																			
132	180	W22XM 315L		848	7.3	2.5	2.9	5.4	12/4	1550	76	1487	94.3	94.9	95.0	0.76	0.84	0.86	233
160	215	W22XM 315L		1028	7.3	2.3	2.8	5.4	12/4	1600	76	1487	95.1	95.3	95.2	0.75	0.83	0.86	282
200	270	W22XM 315L		1284	7.3	2.3	2.9	5.4	12/4	1700	76	1487	94.5	95.1	95.2	0.77	0.83	0.86	353
250	340	W22XM 315L		1606	7.3	2.3	2.9	5.4	12/4	1850	76	1487	94.5	95.1	95.2	0.77	0.83	0.86	441
280	380	W22XM 355ML		1795	7.5	2.3	2.7	9.7	11/3	2100	77	1490	95.3	95.9	96.0	0.76	0.83	0.86	490
315	425	W22XM 355AB		2019	7.5	2.5	2.7	11.6	11/3	2200	77	1490	95.9	96.5	96.5	0.77	0.84	0.86	548
355	480	W22XM 355AB		2275	7.5	2.5	2.7	11.6	11/3	2400	77	1490	96.0	96.5	96.5	0.75	0.83	0.86	617
400	540	W22XM 355AB		2564	7.5	2.5	2.7	13.2	11/3	2600	77	1490	95.9	96.4	96.5	0.76	0.83	0.86	696
450	610	W22XM 355AB		2884	7.5	2.5	2.7	14.7	11/3	2800	77	1490	95.9	96.5	96.5	0.75	0.83	0.86	783
500	675	W22XM 400LJ		3205	6.7	1.6	2.6	14.7	16/5	3800	80	1490	96.4	96.9	97.0	0.79	0.85	0.87	855
560	755	W22XM 400LJ		3589	6.8	1.7	2.5	15.8	13/4	3900	80	1490	96.5	97.0	97.1	0.78	0.85	0.87	957
630	850	W22XM 400LJ		4038	7.5	2.1	2.8	16.3	9/3	4000	80	1490	96.4	96.9	97.1	0.75	0.83	0.87	1076
710	960	W22XM 400G	(2)(3)	4542	7.5	2.5	2.4	18.2	5/1	4900	80	1493	96.5	96.6	97.0	0.80	0.86	0.87	704
800	1080	W22XM 450KH	(2)(3)	5117	7.5	1.2	3.0	31.1	7/2	6200	82	1493	96.8	97.2	97.3	0.80	0.86	0.88	782
900	1215	W22XM 450KH	(2)(3)	5757	7.5	1.2	3.0	31.1	6/2	6400	82	1493	96.8	97.2	97.3	0.78	0.86	0.88	880
1000	1350	W22XM 450KH	(2)(3)	6397	7.5	1.2	3.0	31.9	5/1	6600	82	1493	97.0	97.3	97.3	0.80	0.86	0.88	977
1120	1515	W22XM 500KH	(2)(3)	7155	7.0	0.7	2.4	62.3	20/7	9300	85	1495	96.5	97.2	97.5	0.84	0.85	0.88	1089
1250	1690	W22XM 500KH	(2)(3)	7985	7.5	0.8	2.6	69.2	20/7	10300	85	1495	96.5	97.2	97.5	0.84	0.85	0.88	1219
1400	1890	W22XM 500KH	(2)(3)	8943	7.5	0.8	2.5	77.9	20/7	11600	85	1495	96.5	97.2	97.5	0.84	0.85	0.88	1365
VI Pole - 1000 min -1																			
90	120	W22XM 315L		868	6.5	1.7	2.4	8.9	11/3	1650	70	990	93.6	94.4	94.6	0.73	0.80	0.83	165
110	150	W22XM 315L		1061	6.5	1.7	2.4	8.9	11/3	1700	70	990	93.9	94.5	94.6	0.74	0.80	0.83	202
132	180	W22XM 315L		1273	6.5	1.7	2.4	8.9	11/3	1800	70	990	93.9	94.5	94.6	0.73	0.80	0.83	243
160	215	W22XM 315L		1543	6.5	1.7	2.4	11.1	11/3	1900	70	990	94.3	94.6	94.6	0.74	0.80	0.83	294
200	270	W22XM 355ML		1929	5.6	1.9	2.6	12.7	28/10	2150	73	990	95.1	95.5	95.5	0.70	0.79	0.82	369
250	340	W22XM 355ML		2412	5.6	1.9	2.6	15.0	28/10	2250	73	990	95.3	95.7	95.6	0.71	0.79	0.82	460
280	380	W22XM 355AB		2701	5.6	1.9	2.6	15.0	28/10	2450	73	990	95.4	95.8	95.7	0.69	0.79	0.82	515
315	425	W22XM 355AB		3039	5.6	1.9	2.6	17.1	28/10	2650	73	990	95.5	95.9	95.8	0.69	0.79	0.82	579
355	480	W22XM 355AB		3424	5.6	1.9	2.6	18.9	28/10	2850	73	990	95.6	95.9	95.8	0.70	0.79	0.82	652
400	540	W22XM 400LJ		3843	7.0	2.3	2.5	21.4	17/6	3900	76	994	95.4	96.2	96.5	0.73	0.81	0.84	712
450	610	W22XM 400LJ		4319	7.0	2.4	2.5	24.0	12/4	4100	76	995	95.2	96.2	96.5	0.71	0.80	0.84	801
500	675	W22XM 400LJ		4804	7.0	2.4	2.5	28.1	12/4	4300	76	994	95.7	96.4	96.6	0.77	0.83	0.84	889
560	755	W22XM 400G	(2)	5375	6.5	1.9	3.0	31.2	7/2	4850	76	995	96.5	97.0	97.0	0.80	0.83	0.84	992
630	850	W22XM 450KH	(2)	6047	7.5	0.9	3.6	55.7	21/7	6500	78	995	96.2	96.7	96.9	0.76	0.85	0.88	1066
710	960	W22XM 450KH	(2)(3)	6815	7.5	0.9	3.6	58.3	21/7	6700	78	995	96.6	97.0	97.0	0.80	0.86	0.88	696
800	1080	W22XM 500KH	(2)(3)	7678	5.5	0.8	2.2	100	20/7	9500	80	995	96.5	97.0	97.2	0.80	0.84	0.86	801
900	1215	W22XM 500KH	(2)(3)	8638	5.5	0.8	2.2	100	20/7	10400	80	995	96.5	97.0	97.2	0.80	0.84	0.86	901
1000	1350	W22XM 500KH	(2)(3)	9598	5.5	0.8	2.2	113	20/7	11700	80	995	96.5	97.0	97.2	0.80	0.84	0.86	1001
VIII Pole - 750 min⁻¹																			
75	100	W22XM 315L		964	6.4	1.8	2.2	7.9	20/7	1650	68	743	94.3	94.7	94.6	0.68	0.77	0.80	143
90	120	W22XM 315L		1157	6.4	1.8	2.2	7.9	20/7	1700	68	743	94.0	94.6	94.6	0.69	0.77	0.80	172
110	150	W22XM 315L		1414	6.4	1.8	2.2	9.3	12/4	1800	68	743	93.9	94.5	94.6	0.67	0.76	0.80	210
132	180	W22XM 315L		1697	6.4	1.8	2.2	11.2	12/4	1900	68	743	93.9	94.5	94.6	0.66	0.76	0.80	252
160	215	W22XM 355ML		2057	6.3	1.1	2.3	18.4	29/10	2250	70	743	94.4	95.1	95.1	0.67	0.76	0.80	304
200	270	W22XM 355AB		2571	6.3	1.1	2.3	21.7	29/10	2650	70	743	94.8	95.4	95.3	0.68	0.77	0.80	379
250	340	W22XM 355AB		3213	6.5	1.2	2.5	25.1	29/10	2850	70	743	94.8	95.4	95.3	0.67	0.76	0.80	473
280	380	W22XM 400LJ		3589	7.0	2.8	2.8	25.7	14/5	3900	74	745	95.6	96.5	96.7	0.68	0.77	0.82	510
315	425	W22XM 400LJ		4038	7.0	2.8	2.8	25.7	14/5	4100	74	745	95.6	96.5	96.7	0.68	0.77	0.82	573
355	480	W22XM 400LJ		4551	7.0	2.9	2.9	28.8	13/4	4300	74	745	94.9	95.8	96.1	0.66	0.76	0.81	658
400	540	W22XM 400LJ		5128	7.0	3.1	3.1	31.7	10/3	4400	74	745	95.2	95.9	96.1	0.67	0.76	0.81	742
450	610	W22XM 400LJ	(2)	5761	7.5	3.4	3.4	37.7	5/1	4550	74	746	95.6	96.3	96.5	0.68	0.78	0.82	821
500	675	W22XM 400G	(2)	6418	6.0	1.8	2.7	44.4	12/4	5000	74	744	95.6	96.3	96.5	0.70	0.79	0.82	912
560	755	W22XM 450KH	(2)	7179	6.5	1.4	2.5	76.8	11/3	6600	76	745	95.0	96.0	96.3	0.74	0.80	0.82	1024
630	850	W22XM 450KH	(2)(3)	8076	6.5	1.4	2.5	80.5	10/3	6900	76	745	95.0	96.0	96.3	0.74	0.80	0.82	668
710	960	W22XM 500KH	(2)(3)	9077	6.0	0.8	2.1	111	20/7	10500	80	747	96.0	96.5	97.0	0.74	0.80	0.82	747
800	1080	W22XM 500KH	(2)(3)	10228	6.0	0.9	2.1	124	20/7	11800	80	747	96.0	96.5	97.0	0.74	0.80	0.82	842

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
IE2 Efficiency Class according to IEC 60034-30

Output		Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot (s)	Weight Kg	Sound dB(A)	RPM	Δ 400 V/50Hz - Oversizedd terminal box (optional)						
													% of full load						I_n (A)
													Efficiency η			Power Factor Cos φ			
kW	HP												50	75	100	50	75	100	
II Pole - 3000 min-1																			
710	960	W22XM 450KH	(2)	2270	7.5	0.6	2.6	20.2	10/3	6400	82	2987	97.5	97.7	97.6	0.84	0.89	0.90	1167
800	1080	W22XM 450KH	(2)	2558	7.5	0.7	2.6	21.4	7/2	6900	82	2987	97.5	97.6	97.6	0.84	0.88	0.90	1315
900	1215	W22XM 500KH	(2)	2875	5.5	0.5	1.7	23.2	25/9	9200	85	2990	96.9	97.3	97.6	0.84	0.88	0.88	1512
1000	1350	W22XM 500KH	(2)	3194	5.5	0.5	1.7	24.2	25/9	9900	85	2990	97.0	97.4	97.6	0.85	0.88	0.88	1681
1120	1515	W22XM 500KH	(2)	3577	5.5	0.5	1.7	24.2	21/7	10100	85	2990	97.2	97.5	97.6	0.85	0.88	0.88	1882
IV Pole - 1500 min -1																			
710	960	W22XM 400G	(2)	4542	7.5	2.5	2.4	18.2	5/1	5300	80	1493	96.5	96.6	97.0	0.80	0.86	0.87	1214
800	1080	W22XM 450KH	(2)	5117	7.5	1.2	3.0	31.1	7/2	6600	82	1493	96.8	97.2	97.3	0.80	0.86	0.88	1349
900	1215	W22XM 450KH	(2)	5757	7.5	1.2	3.0	31.1	6/2	6800	82	1493	96.8	97.2	97.3	0.78	0.86	0.88	1517
1000	1350	W22XM 450KH	(2)	6397	7.5	1.2	3.0	31.9	5/1	7000	82	1493	97.0	97.3	97.3	0.80	0.86	0.88	1686
1120	1515	W22XM 500KH	(2)	7155	7.0	0.7	2.4	62.3	20/7	9700	85	1495	96.5	97.2	97.5	0.84	0.85	0.88	1884
1250	1690	W22XM 500KH	(2)	7985	7.5	0.8	2.6	69.2	20/7	10700	85	1495	96.5	97.2	97.5	0.84	0.85	0.88	2103
VI Pole - 1000 min -1																			
710	960	W22XM 450KH	(2)	6815	7.5	0.9	3.6	58.3	21/7	7100	78	995	96.6	97.0	97.0	0.80	0.86	0.88	1201
800	1080	W22XM 500KH	(2)	7678	5.5	0.8	2.2	100	20/7	9900	80	995	96.5	97.0	97.2	0.80	0.84	0.86	1381
900	1215	W22XM 500KH	(2)	8638	5.5	0.8	2.2	100	20/7	10800	80	995	96.5	97.0	97.2	0.80	0.84	0.86	1554
1000	1350	W22XM 500KH	(2)	9598	5.5	0.8	2.2	113	20/7	12100	80	995	96.5	97.0	97.2	0.80	0.84	0.86	1727
VIII Pole - 750 min -1																			
630	850	W22XM 450KH	(2)	8076	6.5	1.4	2.5	80.5	10/3	7300	76	745	95.0	96.0	96.3	0.74	0.80	0.82	1152
710	960	W22XM 500KH	(2)	9077	6.0	0.8	2.1	111	20/7	10900	80	747	96.0	96.5	97.0	0.74	0.80	0.82	1288
800	1080	W22XM 500KH	(2)	10228	6.0	0.9	2.1	124	20/7	12200	80	747	96.0	96.5	97.0	0.74	0.80	0.82	1452

(1) Temperature rise class F at full load (2) Copper rotor (3) Rated current at 690V (4) Rated current at 760V

Tn = Full load torque
Tmax / Tn = Breakdown torque
Ils / In = Locked rotor current
In = Full load current
Ts / Tn = Locked rotor torque

Notes:
-The indicated values for sound pressure levels are @ 1m no load, with 3 dB(A) tolerance.
-All values are according to IEC 60034-1 tolerances.
-This data can be changed without prior notice.

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
IE2 Efficiency Class according to IEC 60034-30

Output												Δ 460V/60Hz - Standard terminal box Δ 760V/60Hz - Standard terminal box							
kW	HP	Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot (s)	Weight Kg	Sound Pressure dB(A)	RPM	% of full load						I_n (A)
													Efficiency η			Power Factor Cos φ			
													50	75	100	50	75	100	
II Pole - 3000 min⁻¹																			
132	180	W22XM 315L		353	7.3	2.2	2.7	3.4	11/3	1500	84	3575	94.4	95.0	95.0	0.85	0.88	0.89	196
160	215	W22XM 315L		427	7.3	2.2	2.8	3.4	11/3	1550	84	3575	94.4	95.0	95.0	0.85	0.88	0.89	238
200	270	W22XM 315L		534	7.3	2.2	2.8	4.1	11/3	1650	84	3575	94.8	95.4	95.4	0.85	0.88	0.89	296
250	340	W22XM 315L		668	7.3	2.2	2.5	4.2	11/3	1750	84	3575	94.8	95.4	95.4	0.84	0.88	0.89	370
280	380	W22XM 355ML		747	7.5	2.5	2.7	6.0	14/5	2000	84	3580	95.1	95.9	95.9	0.88	0.91	0.91	403
315	425	W22XM 355ML		840	7.5	2.5	2.7	6.0	14/5	2300	84	3580	95.3	95.9	95.9	0.88	0.91	0.91	453
355	480	W22XM 355AB		947	7.5	2.5	2.7	6.8	14/5	2500	84	3580	95.5	96.1	96.0	0.89	0.91	0.91	510
400	540	W22XM 355AB		1067	7.5	2.5	2.7	7.7	14/5	2700	84	3580	95.2	96.0	96.0	0.89	0.91	0.91	575
450	610	W22XM 355AB		1200	7.5	2.5	2.7	7.7	14/5	2750	84	3580	95.3	96.0	96.0	0.88	0.91	0.91	647
500	675	W22XM 400LJ		1332	7.5	1.9	3.2	8.4	14/5	3750	84	3585	95.3	96.6	97.0	0.85	0.89	0.91	711
560	755	W22XM 400G	(2)	1490	7.0	0.9	2.9	17.3	14/5	4500	84	3590	96.6	97.2	97.2	0.91	0.92	0.92	786
630	850	W22XM 400G	(2)	1676	7.0	0.9	2.9	17.3	12/4	4800	84	3590	96.6	97.2	97.2	0.91	0.92	0.92	884
710	960	W22XM 450KH	(2)	1890	7.5	0.6	2.6	20.2	10/3	6000	86	3587	96.9	97.4	97.3	0.84	0.89	0.90	1018
800	1080	W22XM 450KH	(2)(4)	2130	7.5	0.7	2.6	21.4	7/2	6500	86	3587	96.9	97.3	97.3	0.84	0.88	0.90	694
IV Pole - 1500 min⁻¹																			
132	180	W22XM 315L		705	7.3	2.5	2.9	5.4	12/4	1550	81	1787	94.0	94.9	95.0	0.76	0.84	0.86	203
160	215	W22XM 315L		855	7.3	2.3	2.8	5.4	12/4	1600	81	1787	94.6	95.1	95.0	0.75	0.83	0.86	246
200	270	W22XM 315L		1069	7.3	2.3	2.9	5.4	12/4	1700	81	1787	94.0	94.9	95.0	0.77	0.83	0.86	307
250	340	W22XM 315L		1336	7.3	2.3	2.8	6.5	12/4	1800	81	1787	94.7	95.4	95.4	0.75	0.83	0.86	382
280	380	W22XM 355ML		1494	7.5	2.3	2.7	9.7	11/3	2100	82	1790	94.7	95.6	95.7	0.76	0.83	0.86	427
315	425	W22XM 355ML		1681	7.5	2.5	2.7	11.6	11/3	2400	82	1790	95.3	96.2	96.2	0.77	0.84	0.86	478
355	480	W22XM 355AB		1894	7.5	2.5	2.7	11.6	11/3	2600	82	1790	95.4	96.2	96.2	0.75	0.83	0.86	539
400	540	W22XM 355AB		2134	7.5	2.5	2.7	13.2	11/3	2800	82	1790	95.3	96.1	96.2	0.76	0.83	0.86	607
450	610	W22XM 355AB		2401	7.5	2.5	2.7	14.7	11/3	2850	82	1790	95.3	96.2	96.2	0.75	0.83	0.86	683
500	675	W22XM 355AB		2668	7.5	2.5	2.7	14.7	11/3	2900	82	1790	95.5	96.2	96.2	0.74	0.83	0.86	759
560	755	W22XM 400LJ		2988	6.8	1.7	2.5	15.8	13/4	3850	84	1790	95.9	96.7	96.8	0.78	0.85	0.87	835
630	850	W22XM 400LJ		3361	7.5	2.1	2.8	16.3	9/3	3950	84	1790	95.8	96.6	96.8	0.75	0.83	0.87	939
710	960	W22XM 400G	(2)	3782	7.5	2.5	2.4	18.2	5/1	4600	84	1793	95.9	96.3	96.7	0.80	0.86	0.87	1059
800	1080	W22XM 400G	(2)(4)	4259	7.5	2.7	2.5	20.1	5/1	4900	84	1794	95.9	96.3	96.7	0.80	0.86	0.87	722
900	1215	W22XM 450KH	(2)(4)	4794	7.5	1.2	3.0	31.1	6/2	6400	86	1793	96.2	96.9	97.0	0.78	0.86	0.88	801
1000	1350	W22XM 450KH	(2)(4)	5326	7.5	1.2	3.0	31.9	5/1	6600	86	1793	96.4	97.0	97.0	0.80	0.86	0.88	890
1120	1515	W22XM 450KH	(2)(4)	5965	7.5	1.2	3.0	31.9	5/1	6700	86	1793	96.4	97.0	97.0	0.80	0.86	0.88	997
1250	1690	W22XM 500KH	(2)(4)	6650	7.5	0.8	2.6	69.2	20/7	10300	89	1795	95.9	96.9	97.2	0.84	0.85	0.88	1110
1400	1890	W22XM 500KH	(2)(4)	7448	7.5	0.8	2.5	77.9	20/7	11600	89	1795	95.9	96.9	97.2	0.84	0.85	0.88	1243
VI Pole - 1000 min -1																			
90	120	W22XM 315L		722	6.5	1.7	2.4	8.9	11/3	1650	73	1190	93.0	94.1	94.3	0.73	0.80	0.83	144
110	150	W22XM 315L		883	6.5	1.7	2.4	8.9	11/3	1700	73	1190	94.0	94.9	95.0	0.74	0.80	0.83	175
132	180	W22XM 315L		1059	6.5	1.7	2.4	8.9	11/3	1800	73	1190	94.0	94.9	95.0	0.73	0.80	0.83	210
160	215	W22XM 315L		1284	6.5	1.7	2.4	11.1	11/3	1900	73	1190	94.4	95.0	95.0	0.74	0.80	0.83	255
200	270	W22XM 355ML		1605	5.6	1.9	2.6	12.7	28/10	2150	77	1190	94.5	95.2	95.2	0.70	0.79	0.82	322
250	340	W22XM 355ML		2006	5.6	1.9	2.6	15.0	28/10	2250	77	1190	94.7	95.4	95.3	0.71	0.79	0.82	402
280	380	W22XM 355AB		2247	5.6	1.9	2.6	15.0	28/10	2450	77	1190	94.8	95.5	95.4	0.69	0.79	0.82	449
315	425	W22XM 355AB		2528	5.6	1.9	2.6	17.1	28/10	2650	77	1190	94.9	95.6	95.5	0.69	0.79	0.82	505
355	480	W22XM 355AB		2849	5.6	1.9	2.6	18.9	28/10	2850	77	1190	95.0	95.6	95.5	0.70	0.79	0.82	569
400	540	W22XM 400LJ		3199	7.0	2.3	2.5	21.4	17/6	3900	80	1194	94.8	95.9	96.2	0.73	0.81	0.84	621
450	610	W22XM 400LJ		3596	7.0	2.4	2.5	24.0	12/4	4100	80	1195	94.6	95.9	96.2	0.71	0.80	0.84	699
500	675	W22XM 400LJ		3999	7.0	2.4	2.5	28.1	12/4	4300	80	1194	95.1	96.1	96.3	0.77	0.83	0.84	776
560	755	W22XM 400G	(2)	4475	6.5	1.9	3.0	31.2	7/2	4850	80	1195	95.9	96.7	96.7	0.80	0.83	0.84	865
630	850	W22XM 400G	(2)	5035	6.5	1.9	3.0	31.2	7/2	4900	80	1195	95.9	96.7	96.7	0.80	0.83	0.84	973
710	960	W22XM 450KH	(2)	5674	7.5	0.9	3.6	58.3	21/7	6500	82	1195	96.0	96.7	96.7	0.80	0.86	0.88	1047
800	1080	W22XM 450KH	(2)(4)	6393	7.5	0.9	3.6	58.3	17/6	6700	82	1195	96.2	96.7	96.7	0.81	0.87	0.88	714
900	1215	W22XM 500KH	(2)(4)	7192	5.5	0.8	2.2	100	20/7	9500	84	1195	95.9	96.7	96.9	0.80	0.84	0.86	820
1000	1350	W22XM 500KH	(2)(4)	7992	5.5	0.8	2.2	113	20/7	10400	84	1195	95.9	96.7	96.9	0.80	0.84	0.86	912
1120	1515	W22XM 500KH	(2)(4)	8951	5.5	0.8	2.2	113	20/7	11700	84	1195	95.9	96.7	96.9	0.80	0.84	0.86	1021
VIII Pole - 750 min⁻¹																			
75	100	W22XM 315L		802	6.4	1.8	2.2	7.9	20/7	1650	71	893	93.7	94.4	94.3	0.68	0.77	0.80	125
90	120	W22XM 315L		962	6.4	1.8	2.2	7.9	20/7	1700	71	893	93.4	94.3	94.3	0.69	0.77	0.80	150
110	150	W22XM 315L		1176	6.4	1.8	2.2	9.3	12/4	1800	71	893	93.3	94.2	94.3	0.67	0.76	0.80	183
132	180	W22XM 315L		1412	6.4	1.8	2.2	11.2	12/4	1900	71	893	93.3	94.2	94.3	0.66	0.76	0.80	220
160	215	W22XM 355ML		1711	6.3	1.1	2.3	18.4	29/10	2250	75	893	93.8	94.8	94.8	0.67	0.76	0.80	265
200	270	W22XM 355ML		2139	6.3	1.1	2.3	21.7	29/10	2350	75	893	94.2	95.1	95.0	0.68	0.77	0.80	330
250	340	W22XM 355AB		2674	6.5	1.2	2.5	25.1	29/10	2650	75	893	94.2	95.1	95.0	0.67	0.76	0.80	413
280	380	W22XM 355AB		2994	6.5	1.2	2.5	25.1	29/10	2850	75	893	94.2	95.1	95.0	0.66	0.76	0.80	462
315	425	W22XM 400LJ		3361	7.0	2.8	2.8	25.7	14/5	4100	78	895	95.0	96.2	96.4	0.68	0.77	0.82	500
355	480	W22XM 400LJ		3788	7.0	2.9	2.9	28.8	13/4	4300	78	895	94.3	95.5	95.8	0.66	0.76	0.81	574
400	540	W22XM 400LJ		4268	7.0	3.1	3.1	31.7	10/3	4400	78	895	94.6	95.6	95.8	0.67	0.76	0.81	647
450	610	W22XM 400LJ	(2)	4796	7.5	3.4	3.4	37.7	5/1	4550	78	896	95.0	96.0	96.2	0.68	0.78	0.82	716
500	675	W22XM 400G	(2)	5341	6.0	1.8	2.7	44.4	12/4	5200	78	894	95.0	96.0	96.2	0.70	0.79	0.82	796
560	755	W22XM 400G	(2)	5982	6.0	1.8	2.7	44.4	12/4	5350	78	894	95.0	96.0	96.2	0.70	0.79	0.82	891
630	850	W22XM 450KH	(2)	6722	6.5	1.4	2.5	80.5	10/3	6900	80	895	94.4	95.7	96.0	0.74	0.80	0.82	1004
710	960	W22XM 500KH	(2)(4)	7559	6.0	0.8	2.1	111	20/7	9800	84	897	95.4	96.2	96.7	0.74	0.80	0.82	680
800	1080	W22XM 500KH	(2)(4)	8517	6.0	0.9	2.1	124	20/7	10500	84	897	95.4	96.2	96.7	0.74	0.80	0.82	766
900	1215	W22XM 500KH	(2)(4)	9582	6.0	0.9	2.2	139	20/7	11800	84	897	95.4	96.2	96.7	0.74	0.80	0.82	862

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
IE2 Efficiency Class according to IEC 60034-30

Output		Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot (s)	Weight Kg	Sound Pressure dB(A)	Δ 460 V/60Hz - Oversizeddd terminal box							
												RPM	% of full load						I_n (A)
													Efficiency η			Power Factor Cos φ			
kW	HP												50	75	100	50	75	100	
II Pole - 3000 min⁻¹																			
800	1080	W22XM 450KH	(2)	2130	7.5	0.7	2.6	21.4	7/2	6900	86	3587	96.9	97.3	97.3	0.84	0.88	0.90	1147
IV Pole - 1500 min⁻¹																			
800	1080	W22XM 400G	(2)	4259	7.5	2.7	2.5	20.1	5/1	5300	84	1794	95.9	96.3	96.7	0.80	0.86	0.87	1194
900	1215	W22XM 450KH	(2)	4794	7.5	1.2	3.0	31.1	6/2	6800	86	1793	96.2	96.9	97.0	0.78	0.86	0.88	1323
1000	1350	W22XM 450KH	(2)	5326	7.5	1.2	3.0	31.9	5/1	7000	86	1793	96.4	97.0	97.0	0.80	0.86	0.88	1470
1120	1515	W22XM 450KH	(2)	5965	7.5	1.2	3.0	31.9	5/1	7100	86	1793	96.4	97.0	97.0	0.80	0.86	0.88	1647
1250	1690	W22XM 500KH	(2)	6650	7.5	0.8	2.6	69.2	20/7	10700	89	1795	95.9	96.9	97.2	0.84	0.85	0.88	1834
1400	1890	W22XM 500KH	(2)	7448	7.5	0.8	2.5	77.9	20/7	12000	89	1795	95.9	96.9	97.2	0.84	0.85	0.88	2054
VI Pole - 1000 min -1																			
800	1080	W22XM 450KH	(2)	6393	7.5	0.9	3.6	58.3	17/6	7100	82	1195	96.2	96.7	96.7	0.81	0.87	0.88	1180
900	1215	W22XM 500KH	(2)	7192	5.5	0.8	2.2	100	20/7	9900	84	1195	95.9	96.7	96.9	0.80	0.84	0.86	1356
1000	1350	W22XM 500KH	(2)	7992	5.5	0.8	2.2	113	20/7	10800	84	1195	95.9	96.7	96.9	0.80	0.84	0.86	1506
1120	1515	W22XM 500KH	(2)	8951	5.5	0.8	2.2	113	20/7	12100	84	1195	95.9	96.7	96.9	0.80	0.84	0.86	1687
VIII Pole - 750 min⁻¹																			
710	960	W22XM 500KH	(2)	7559	6.0	0.8	2.1	111	20/7	10200	84	897	95.4	96.2	96.7	0.74	0.80	0.82	1124
800	1080	W22XM 500KH	(2)	8517	6.0	0.9	2.1	124	20/7	10900	84	897	95.4	96.2	96.7	0.74	0.80	0.82	1266
900	1215	W22XM 500KH	(2)	9582	6.0	0.9	2.2	139	20/7	12200	84	897	95.4	96.2	96.7	0.74	0.80	0.82	1425

(1) Temperature rise class F at full load (2) Copper rotor (3) Rated current at 690V (4) Rated current at 760V

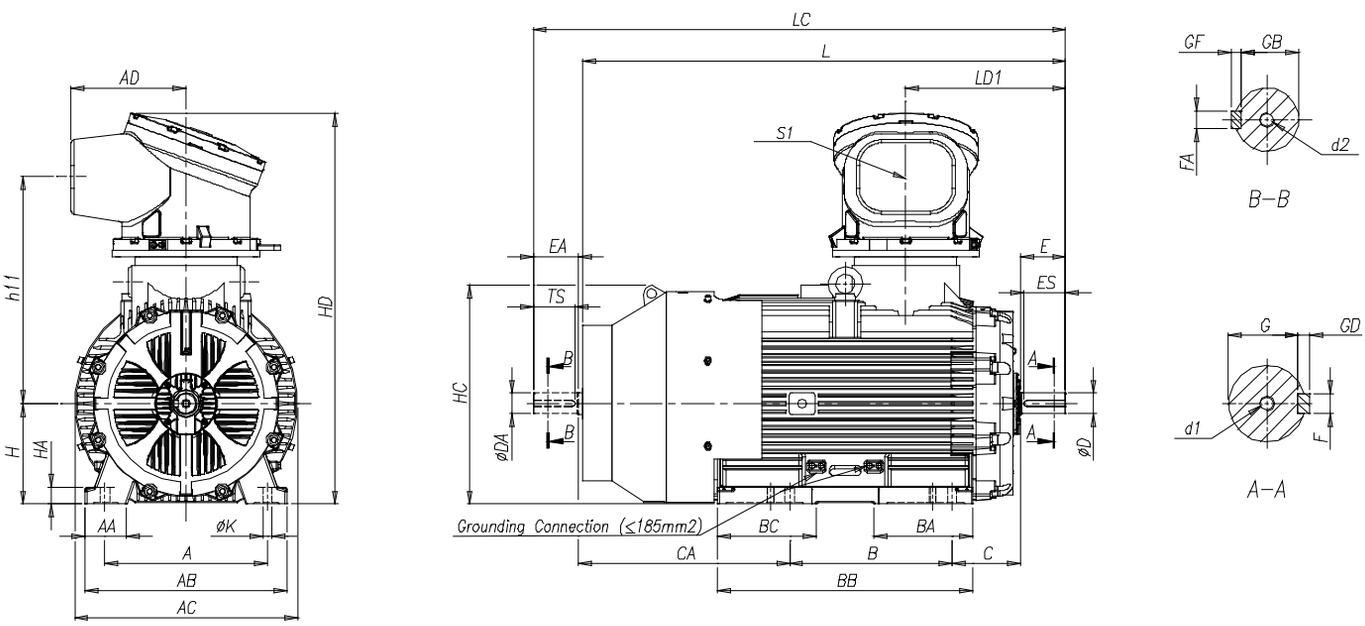
Tn = Full load torque
Tmax / Tn = Breakdown torque
Ils / In = Locked rotor current
In = Full load current
Ts / Tn = Locked rotor torque

Notes:
-The indicated values for sound pressure levels are @ 1m no load, with 3 dB(A) tolerance.
-All values are according to IEC 60034-1 tolerances.
-This data can be changed without prior notice.

7.3.2. Low Voltage - Mechanical Data - W22XM Series

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
Low Voltage

315L - 355ML, IMB3T
Anti-friction bearings



Frame	Poles	A	AA	AB	AC	AD	BA	BB	BC	B	C	CA	H	HA	HC	HD	h11	K	L	LC	LD1
315L	2P	508	130	632	698	360	310	800	310	508	216	663	315	52	684	1224	710	28	1512	1667	500
	4P+																		1542	1697	530
355ML	2P	610	130	730	780	360	315	830	315	560 630	254	567	355	55	765	1312	758	28	1576	1731	514
	4P+																		1646	1831	584

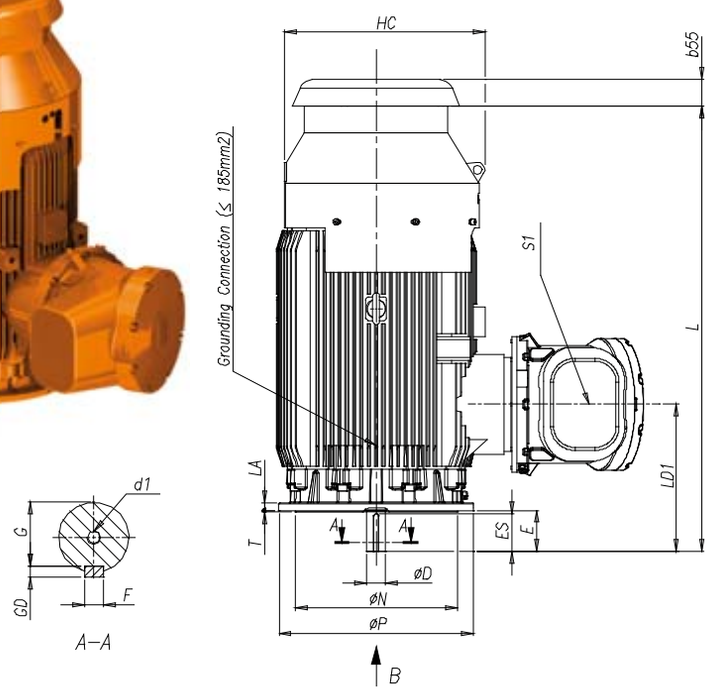
		Shaft dimensions														Bearings		Power terminal box - S1
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	WTBX M
315L	2P	65m6	140	130	18h9	58	11	60m6	140	130	18h9	53	11	DSM20	DSM20	6314C3	6314C3	I ≤ 900A : 2xM63x1,5 + 1xM20x1,5 900A ≤ I ≤ 1090A : 4xM63x1,5 + 1xM20x1,5
	4P+	80m6	170	160	22h9	71	14	65m6				58	11			6319C3	6316C3	
355ML	2P	75m6	140	130	20h9	67,5	12	60m6	140	130	18h9	53	11	DSM20		6316C3	6316C3	
	4P+	100m6	210	200	28h9	90	16	80m6	170	160	22h9	71	14	DSM24		6322C3	6319C3	

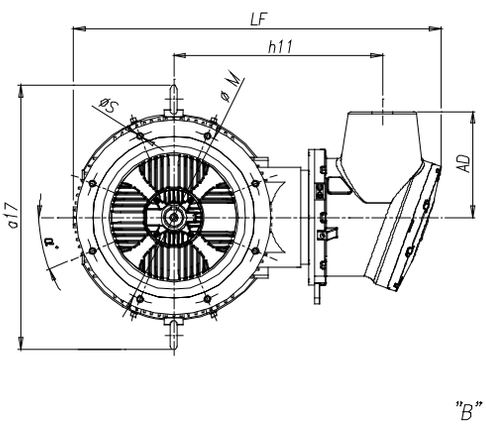
Notes:

All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
Low Voltage

315L - 355ML, IMV1
Anti-friction bearings





Frame	Poles	AD	HC	h11	L	LA	LD1	LF	b55	a17	M	N	P	T	S	Nr. Holes	α
315L	2P	360	679	710	1514	25	500	1249	90	898	600	550	660	6	24	8	22,5°
	4P+				1544		530										
355ML	2P	360	765	758	1576	30	514	1357	93	988	740	680	800	6	24	8	22,5°
	4P+				1646		584										

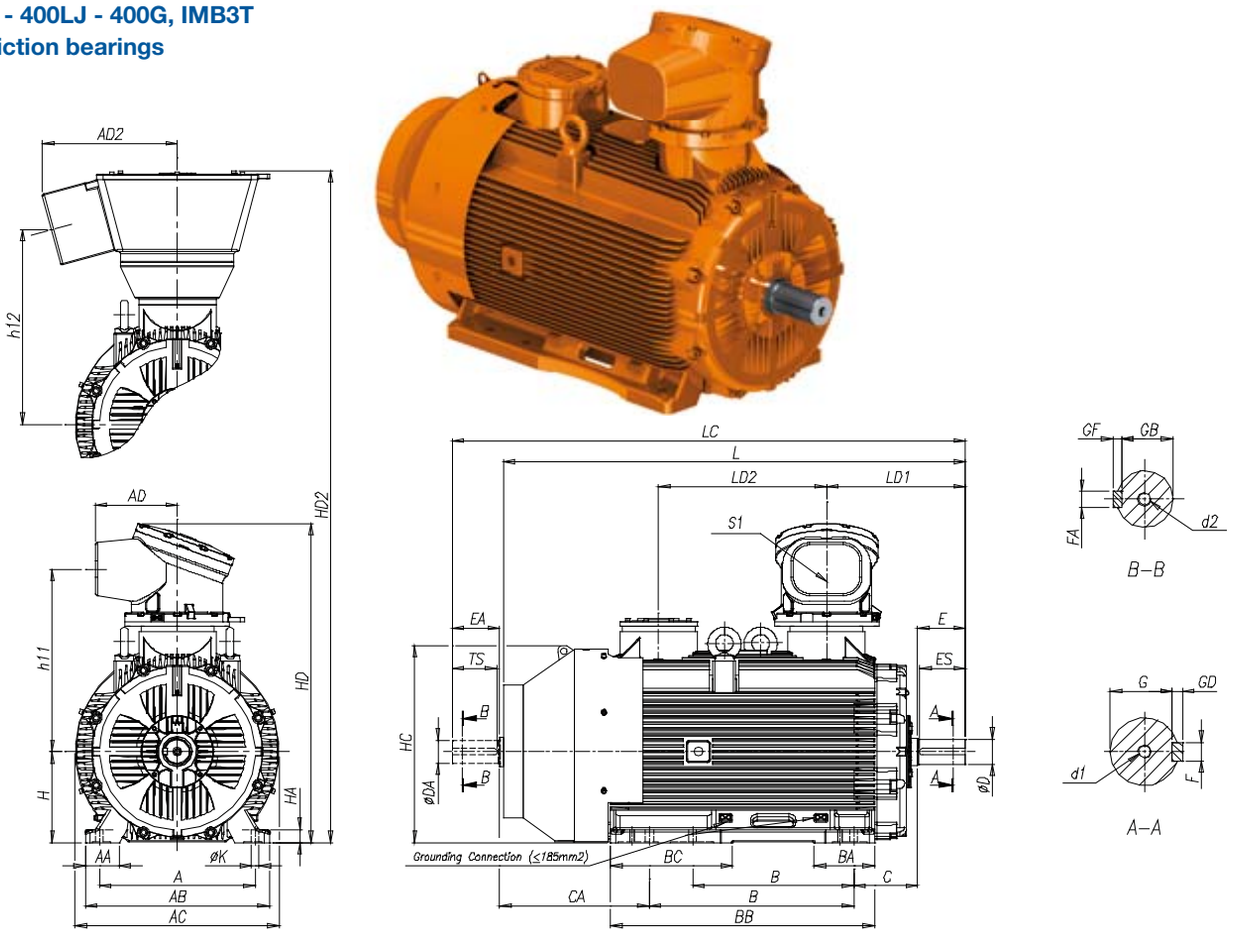
		Shaft dimensions							Bearings		Power terminal box - S1
Frame	Poles	D	E	ES	F	G	GD	d1	D.E.	N.D.E.	WTBX M
315L	2P	65m6	140	130	18h9	58	11	DSM20	6314C3	6314C3	I ≤ 900A : 2xM63x1,5 + 1xM20x1,5 900A ≤ I ≤ 1090A : 4xM63x1,5 + 1xM20x1,5
	4P+	80m6	170	160	22h9	71	14		6319C3	6316C3	
355ML	2P	75m6	140	130	20h9	67,5	12	DSM20	6316C3	6316C3	
	4P+	100m6	210	200	28h9	90	16	DSM24	6322C3	6319C3	

Notes:

All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
Low Voltage

355AB - 400LJ - 400G, IMB3T
Anti-friction bearings



Frame	Poles	A	AA	AB	AC	AD[1]	BA	BB	BC	B	C	CA	H	HA	HC	HD[1]	h11[1]	K	L	LC	LD1	LD2
355AB	2P	610	130	730	780	360	225	1038	523	710	254	605	355	55	765	1312	758	28	1784	1939	514	618
	4P+									800									1854	2039	584	
400LJ	2P	686	150	810	898	360	265	1160	535	710	280	659	400	58	867	1402	803	35	1994	2149	570	740
	4P+									900									2034	2219	610	
400G	2P	686	150	810	898	360	420	1400	420	1120	280	679	400	58	867	1402	803	35	2234	2389	570	982
	4P+																		2274	2459	610	

		Shaft dimensions														Bearings		Power terminal box - S1[1]
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	WTBX M
355AB	2P	75m6	140	130	20h9	67,5	12	60m6	140	130	18h9	53	11	DSM20	DSM20	6316C3	6316C3	I ≤ 900A : 2xM63x1,5 + 1xM20x1,5 900A ≤ I ≤ 1090A : 4xM63x1,5 + 1xM20x1,5
	4P+	100m6	210	200	28h9	90	16	80m6	170	160	22h9	71	14	DSM24		6322C3	6319C3	
400LJ	2P	80m6	170	160	22h9	71	14	60m6	140	130	18h9	53	11	DSM20		6318C3	6318C3	
	4P+	110m6	210	200	28h9	100	16	80m6	170	160	22h9	71	14	DSM24		6324C3	6324C3	
400G	2P	80m6	170	160	22h9	71	14	60m6	140	130	18h9	53	11	DSM20		6318C3	6318C3	
	4P+	110m6	210	200	28h9	100	16	80m6	170	160	22h9	71	14	DSM24		6324C3	6324C3	

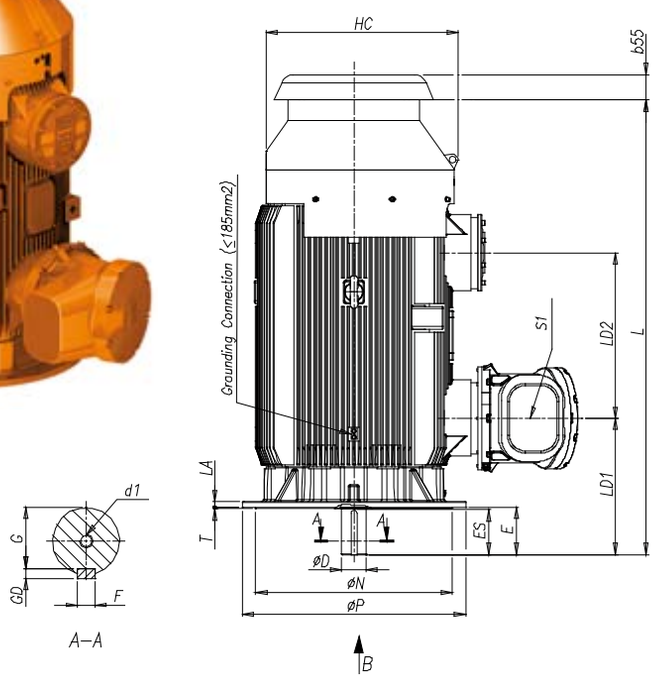
	I>1090A				
Frame	Poles	AD2	HD2	h12	Power terminal box - CEFGH 500 - S1
355AB	2P	75m6	140	130	1090A ≤ I ≤ 1900A : 4xM63x1,5 + 1xM20x1,5
	4P+	100m6	210	200	
400LJ	2P	80m6	170	160	
	4P+	110m6	210	200	
400G	2P	80m6	170	160	
	4P+	110m6	210	200	

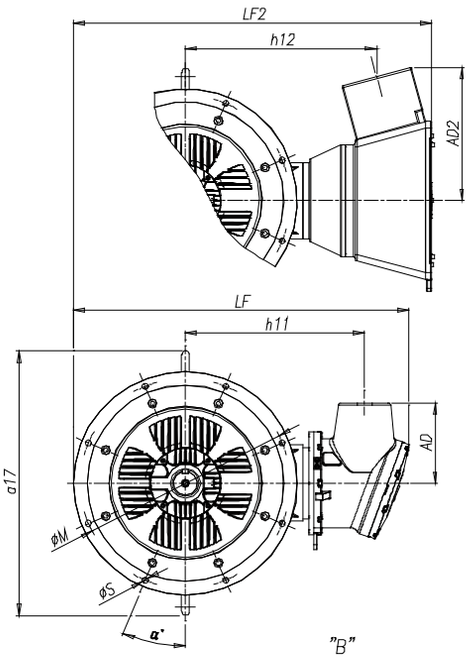
Notes:

(1) I ≤ 1090A
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
Low Voltage

355AB - 400LJ - 400G, IMV1
Anti-friction bearings





Frame	Poles	AD[1]	HC	h11[1]	L	LA	LD1	LD2	LF[1]	b55	a17	M	N	P	T	S	Nr. Holes	α
355AB	2P	360	759	758	1784	30	514	618	1357	93	988	740	680	800	6	24	8	22,5°
	4P+				1854		584											
400LJ	2P	360	862	803	1994	28	570	740	1503	106	1184	940	880	1000	6	28	8	22,5°
	4P+				2034		610											
400G	2P	360	862	803	2234	28	570	980	1503	106	1184	940	880	1000	6	28	8	22,5°
	4P+				2274		610											

		Shaft dimensions							Bearings		Power terminal box - S1[(1)]
Frame	Poles	D	E	ES	F	G	GD	d1	D.E.	N.D.E.	WTBX M
355AB	2P	75m6	140	130	20h9	67,5	12	DSM20	7316	6316C3	I ≤ 900A : 2xM63x1,5 + 1xM20x1,5 900A ≤ I ≤ 1090A : 4xM63x1,5 + 1xM20x1,5
	4P+	100m6	210	200	28h9	90	16	DSM24	7322	6319C3	
400LJ	2P	80m6	170	160	22h9	71	14	DSM20	7318	6318C3	
	4P+	110m6	210	200	28h9	100	16	DSM24	7324	6324C3	
400G	2P	80m6	170	160	22h9	71	14	DSM20	7318	6318C3	
	4P+	110m6	210	200	28h9	100	16	DSM24	7324	6324C3	

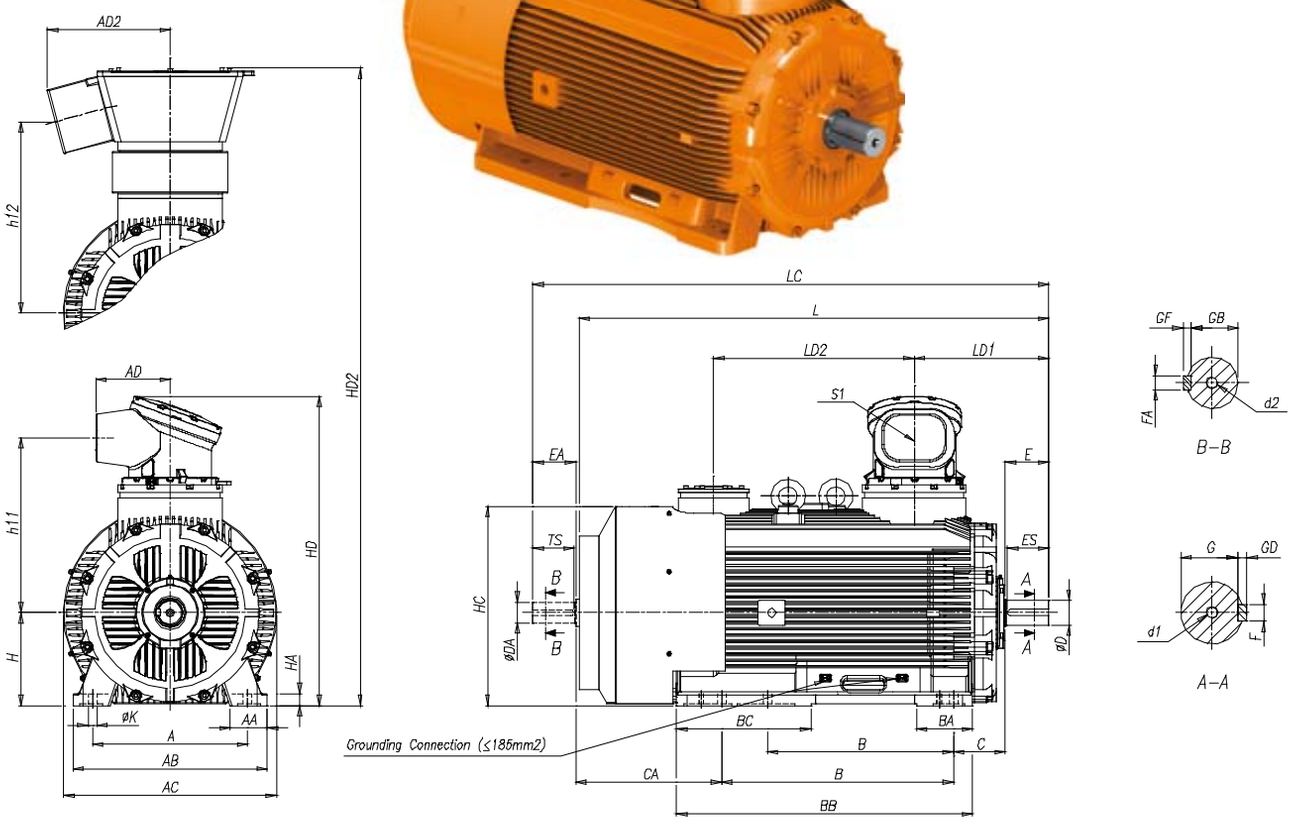
	I>1090A				
Frame	Poles	AD2	LF2	h12	Power terminal box - CEFGH 500 - S1
355AB	2P	594	1040	812	1090A ≤ I ≤ 1900A : 4xM63x1,5 + 1xM20x1,5
	4P+				
400LJ	2P	594	1616	857	
	4P+				
400G	2P	594	1616	857	
	4P+				

Notes:

(1) I ≤ 1090A
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
Low Voltage

450KH - 500KH, IMB3T
Anti-friction bearings



Frame	Poles	A	AA	AB	AC	AD[1]	BA	BB	BC	B	C	CA	H	HA	HC	HD[1]	h11[1]	K	L	LC	LD1	LD2
450KH	2P	750	180	940	1030	360	270	1430	650	900	250	705	450	60	965	1495	846	42	2230	2385	610	970
	4P+									1120									2270	2495	650	
500KH	2P	850	200	1020	1162	360	375	1800	915	1000	280	1065	500	65	1081	1565	866	42	2750	2905	635	1300
	4P+									1250									2830	3055	715	

		Shaft dimensions														Bearings		Power terminal box - S1[1]
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	WTBX M
450KH	2P	85m6	170	160	22h9	76	14	75m6	140	130	20h9	67,5	12	DSM20	DSM20	6318C3	NU218C3	I ≤ 900A : 2xM63x1,5 + 1xM20x1,5
	4P+	120m6	210	200	32h9	109	18	100m6	210	200	28h9	90	16	DSM24	DSM24	6326C3	6326C3	900A ≤ I ≤ 1090A : 4xM63x1,5 + 1xM20x1,5
500KH	2P	90m6	170	160	25	81	14	75m6	140	130	20	67,5	12	DSM24	DSM20	NU220C3+6020C3	NU220C3	
	4P+	130m6	250	240	32	119	18	110m6	210	200	28	100	16		DSM24	6328C3	6328C3	

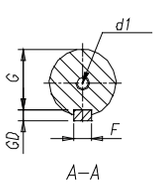
	I>1090A				
Frame	Poles	AD2	HD2	h12	Power terminal box - CEFGH 500 - S1
450KH	2P	594	1634	925	1090A ≤ I ≤ 1900A : 4xM63x1,5 + 1xM20x1,5
	4P+				
500KH	2P	594	1704	945	
	4P+				

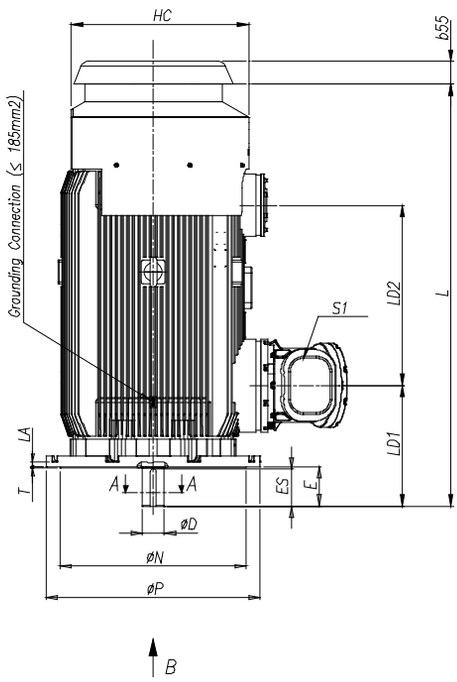
Notes:

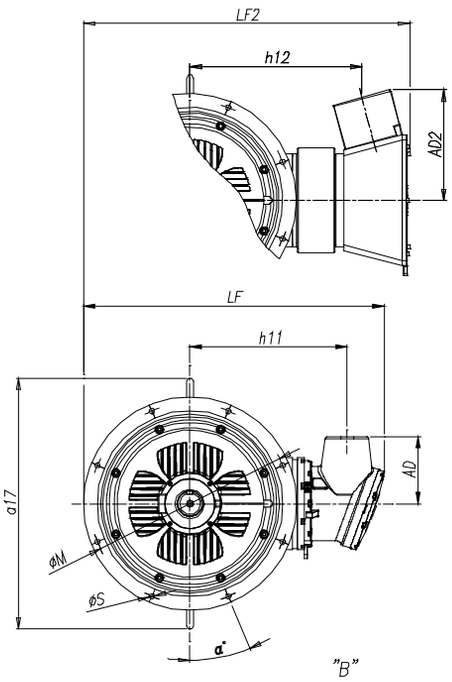
(1) I ≤ 1090A
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
Low Voltage

450KH - 500KH, IMV1
Anti-friction bearings







Frame	Poles	AD[1]	HC	h11[1]	L	LA	LD1	LD2	LF[1]	b55	a17	M	N	P	T	S	Nr. Holes	α
450KH	2P	360	955	846	2270	30	650	970	1620	125	1352	1080	1000	1150	6	28	8	22,5°
	4P+																	
500KH	2P	360	1162	866	2830	30	715	1300	1640	130	1482	1080	1000	1150	7	28	8	22,5°
	4P+																	

		Shaft dimensions							Bearings		Power terminal box - S1[1]
Frame	Poles	D	E	ES	F	G	GD	d1	D.E.	N.D.E.	WTBX M
450KH	2P	120m6	210	200	32h9	109	18	DSM24	7326	6326C3	I ≤ 900A : 2xM63x1,5 + 1xM20x1,5
	4P+										900A ≤ I ≤ 1090A : 4xM63x1,5 + 1xM20x1,5
500KH	2P	130m6	250	240	32h9	119	18	DSM24	7328	6328C3	
	4P+										

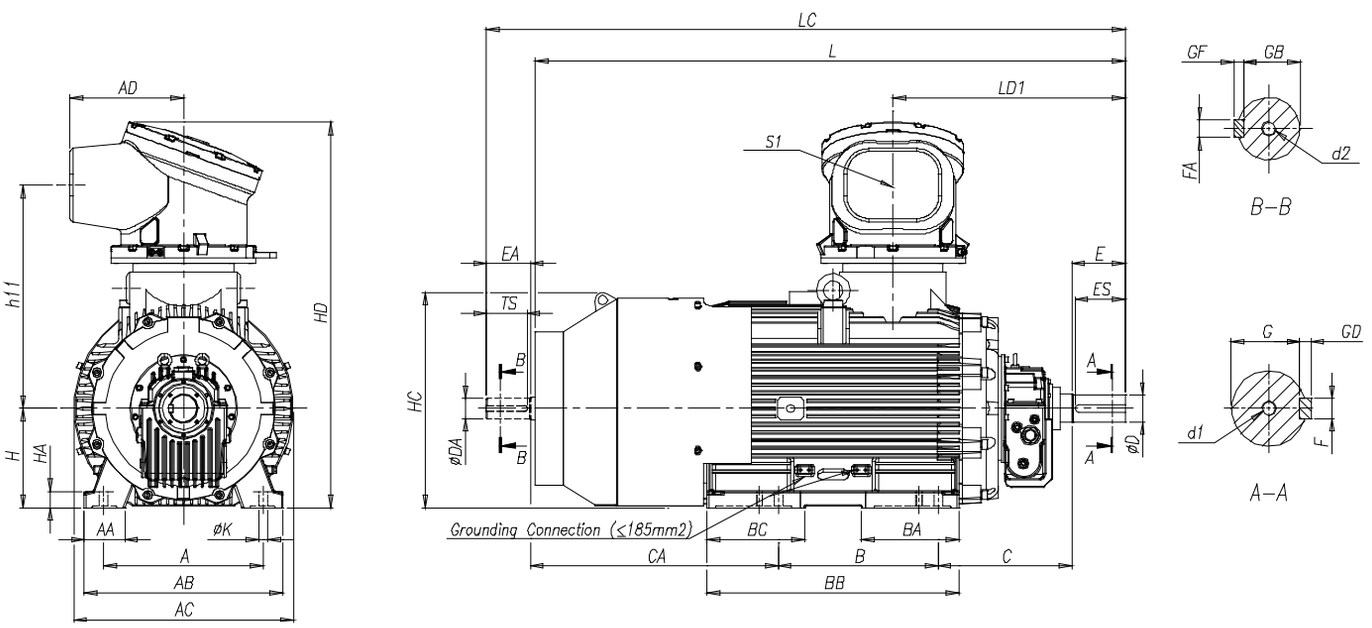
	I>1090A				
Frame	Poles	AD2	LF2	h12	Power terminal box - CEFGH 500 - S1
450KH	2P	594	1759	925	1090A ≤ I ≤ 1900A : 4xM63x1,5 + 1xM20x1,5
	4P+				
500KH	2P	594	1779	945	
	4P+				

Notes:

(1) I ≤ 1090A
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XMS - Flameproof Motors – Ex d I Mb
W22XMES - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
Low Voltage

315L - 355ML, IMB3T
Sleeve bearings



Frame	Poles	A	AA	AB	AC	AD	BA	BB	BC	B	C	CA	H	HA	HC	HD	h11	K	L	LC	LD1
315L	2P	508	130	632	698	360	310	800	310	508	425	788	315	52	684	1224	710	28	1846	2001	709
	4P+										450								1901	2056	764
355ML	2P	610	130	730	780	360	315	830	315	560 630	455	685	355	55	765	1312	758	28	1902	2057	514
	4P+										475								1992	2177	805

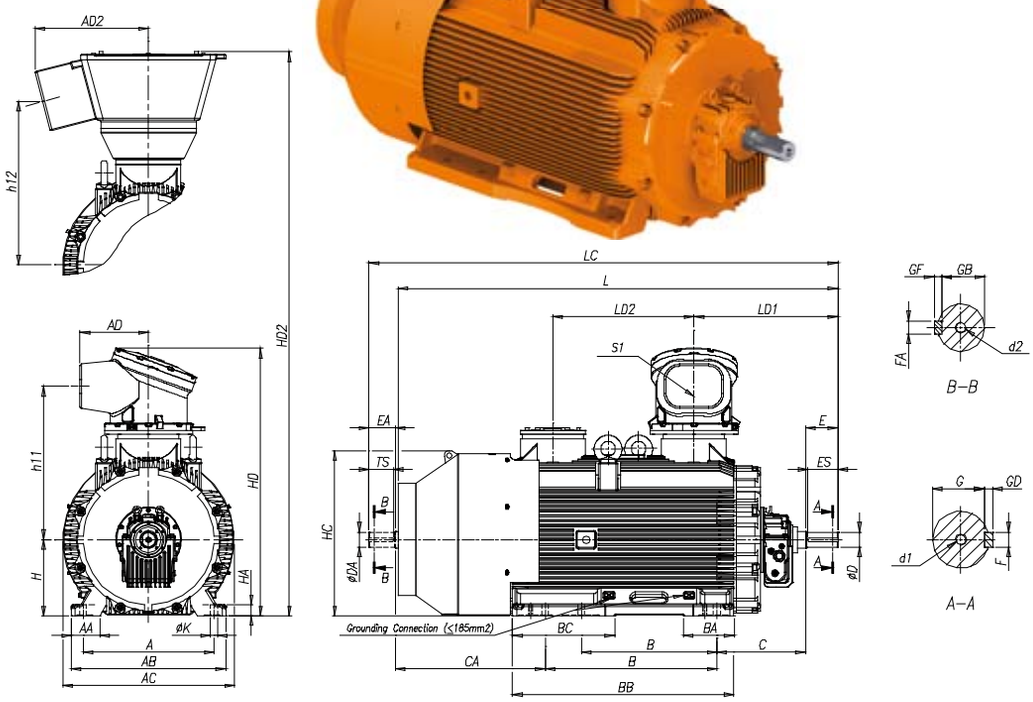
		Shaft dimensions														Bearings		Power terminal box - S1
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	WTBX M
315L	2P	65m6	140	130	18h9	58	11	60m6	140	130	18h9	53	11	DSM20	DSM20	EFNLB 9-80	EFNLQ 9-80	I ≤ 900A : 2xM63x1,5 + 1xM20x1,5
	4P+	80m6	170	160	22h9	71	14	65m6				58	11			EFNLB 11-110	EFNLQ 11-110	900A ≤ I ≤ 1090A : 4xM63x1,5 + 1xM20x1,5
355ML	2P	75m6	140	130	20h9	67,5	12	60m6	140	130	18h9	53	11	DSM20		EFNLB 9-80	EFNLB 9-80	
	4P+	100m6	210	200	28h9	90	16	80m6	170	160	22h9	71	14	DSM24		EFNLB 11-110	EFNLB 11-110	

Notes:

All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.
Rotor is not self-aligned, costumer must ensure alignment.
Over speed not allowed.
Rotor maximum axial play: ± 3mm.
Motor rotation only available in one sense (CW or CCW), please inform desired sense at the time of Inquiry/Order.

W22XMS - Flameproof Motors – Ex d I Mb
W22XMES - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
Low Voltage

355AB - 400LJ - 400G, IMB3T
Sleeve bearings



Frame	Poles	A	AA	AB	AC	AD(1)	BA	BB	BC	B	C	CA	H	HA	HC	HD(1)	h11(1)	K	L	LC	LD1	LD2
355AB	2P	610	130	730	780	360	225	1038	523	710	455	723	55	55	765	1312	758	28	2110	2265	715	618
	4P+									800	475								2200	2385	805	
400LJ	2P	686	150	810	898	360	265	1160	535	710	465	784	58	58	867	1402	802	35	2304	2459	755	740
	4P+									900	490								2369	2554	820	
400G	2P	686	150	810	898	360	420	1400	420	1120	465	804	58	58	867	1402	802	35	2544	2699	755	980
	4P+										490								2609	2794	820	

		Shaft dimensions														Bearings		Power terminal box - S1(1)
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	WTBX M
355AB	2P	75m6	140	130	20h9	67,5	12	60m6	140	130	18h9	53	11	DSM20	DSM20	EFNLB 9-80	EFNLQ 9-80	I ≤ 900A : 2xM63x1,5 + 1xM20x1,5 900A ≤ I ≤ 1090A : 4xM63x1,5 + 1xM20x1,5
	4P+	100m6	210	200	28h9	90	16	80m6	170	160	22h9	71	14	DSM24		EFNLB 11-110	EFNLQ 11-110	
400LJ	2P	80m6	170	160	22h9	71	14	60m6	140	130	18h9	53	11	DSM20		EFNLB 9-80	EFNLQ 9-80	
	4P+	110m6	210	200	28h9	100	16	80m6	170	160	22h9	71	14	DSM24		EFNLB 11-110	EFNLQ 11-110	
400G	2P	80m6	170	160	22h9	71	14	60m6	140	130	18h9	53	11	DSM20		EFNLB 9-80	EFNLQ 9-80	
	4P+	110m6	210	200	28h9	100	16	80m6	170	160	22h9	71	14	DSM24		EFNLB 11-110	EFNLQ 11-110	

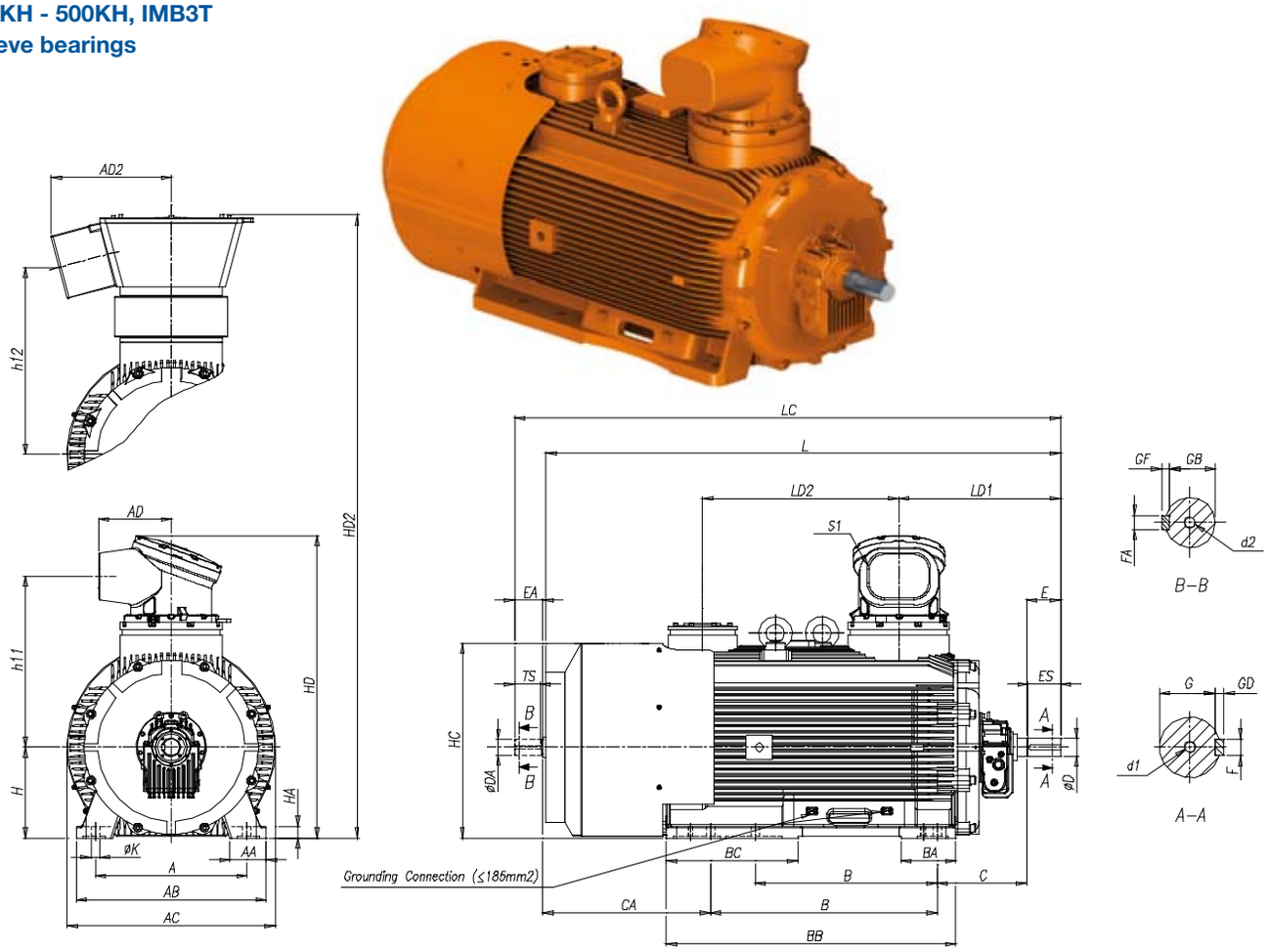
	I>1090A				
Frame	Poles	AD2	HD2	h12	Power terminal box - CEFGH 500 - S1
355AB	2P	594	1425	812	1090A ≤ I ≤ 1900A : 4xM63x1,5 + 1xM20x1,5
	4P+				
400LJ	2P	594	1516	857	
	4P+				
400G	2P	594	1516	857	
	4P+				

Notes:

(1) I ≤ 1090A
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.
Rotor is not self-aligned, costumer must ensure alignment.
Over speed not allowed.
Rotor maximum axial play: ± 3mm.
Motor rotation only available in one sense (CW or CCW), please inform desired sense at the time of Inquiry/Order.

W22XMS - Flameproof Motors – Ex d I Mb
W22XMES - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
Low Voltage

450KH - 500KH, IMB3T
Sleeve bearings



Frame	Poles	A	AA	AB	AC	AD(1)	BA	BB	BC	B	C	CA	H	HA	HC	HD(1)	h11(1)	K	L	LC	LD1	LD2
450KH	2P	750	180	940	1030	360	270	1430	650	900	440	830	450	60	965	1495	846	42	2545	2700	800	970
	4P+									1120	465								2610	2835	865	
500KH	2P	850	200	1020	1162	360	375	1800	915	1000	490	1190	500	65	1081	1565	866	42	3165	3390	925	1300
	4P+									1250												

		Shaft dimensions														Bearings		Power terminal box - S1(1)
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	WTBX M
450KH	2P	85m6	170	160	22h9	76	14	75m6	140	130	20h9	67,5	12	DSM20	DSM20	EFNLB 9-80	EFNLQ 9-80	I ≤ 900A : 2xM63x1,5 + 1xM20x1,5
	4P+	120m6	210	200	32h9	109	18	100m6	210	200	28h9	90	16	DSM24	DSM24	EFNLB 11-125	EFNLQ 11-125	
500KH	2P	130m6	250	240	32	119	18	110m6	210	200	28	100	16	DSM24	DSM24	EFNLB 11-125	EFNLQ 11-125	900A ≤ I ≤ 1090A : 4xM63x1,5 + 1xM20x1,5
	4P+																	

		I>1090A			
Frame	Poles	AD2	HD2	h12	Power terminal box - CEFGH 500 - S1
450KH	2P	594	1634	925	1090A ≤ I ≤ 1900A : 4xM63x1,5 + 1xM20x1,5
	4P+				
500KH	2P	594	1704	945	
	4P+				

Notes:

(1) I ≤ 1090A
(2) Available only for 50Hz
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.
Rotor is not self-aligned, costumer must ensure alignment.
Over speed not allowed.
Rotor maximum axial play: ± 3mm.
Motor rotation only available in one sense (CW or CCW), please inform desired sense at the time of Inquiry/Order.

7.3.3. Medium Voltage - Electrical Data - W22XM Series

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb

Output		Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot(s)	Weight Kg	Sound Pressure dB(A)	Y 3000V/50Hz							
												RPM	% of full load						I_n (A)
													Efficiency η			Power Factor Cos φ			
kW	HP												50	75	100	50	75	100	
II Pole - 3000 min⁻¹																			
90	120	W22XM 315L		289	6.7	1.5	2.5	1.3	10/5	1700	80	2970	91.3	93.6	94.5	0.76	0.83	0.86	21.3
110	150	W22XM 315L		354	6.8	1.6	2.6	1.5	8/4	1800	80	2970	92.0	93.9	94.6	0.78	0.85	0.87	25.7
132	180	W22XM 315L		424	6.8	1.6	2.6	1.6	8/4	1900	80	2970	92.3	94.0	94.7	0.79	0.85	0.87	30.8
160	215	W22XM 355ML		512	7.5	1.4	3.1	3.4	15/7	2050	80	2987	93.4	94.8	95.3	0.78	0.85	0.87	37.1
200	270	W22XM 355ML		639	7.5	1.4	3.1	3.8	10/5	2150	80	2987	94.1	95.2	95.6	0.80	0.85	0.87	46.3
250	340	W22XM 355AB		801	7.0	1.5	2.7	4.9	10/5	2400	80	2982	95.5	96.1	96.3	0.81	0.87	0.89	56.1
280	380	W22XM 355AB		897	7.5	1.5	2.9	5.2	10/5	2500	80	2982	95.7	96.3	96.5	0.81	0.87	0.89	62.7
315	425	W22XM 355AB		1009	7.5	1.5	2.9	5.5	8/4	2650	80	2982	95.9	96.5	96.6	0.82	0.88	0.89	70.5
355	480	W22XM 355AB		1137	7.5	1.5	2.9	5.9	8/4	2850	80	2983	96.0	96.6	96.7	0.82	0.87	0.89	79.4
400	540	W22XM 400LJ		1280	6.5	1.5	2.6	9.9	8/3	3750	80	2984	96.5	96.9	97.0	0.83	0.86	0.87	91.2
450	610	W22XM 400LJ		1440	6.5	1.5	2.6	10.2	7/3	3900	80	2984	96.3	96.9	97.0	0.82	0.86	0.87	103
500	675	W22XM 400LJ		1600	6.7	1.6	2.8	10.8	6/2	4100	80	2984	96.3	96.9	97.0	0.81	0.86	0.87	114
560	755	W22XM 400G	(2)	1792	6.7	1.6	2.8	12.5	7/3	4800	80	2984	96.4	96.8	97.0	0.81	0.86	0.87	128
630	850	W22XM 400G	(2)	2012	7.0	1.0	3.0	13.5	12/3	4950	80	2991	96.7	97.1	97.3	0.86	0.90	0.90	138
710	960	W22XM 450KH	(2)	2267	7.0	0.7	2.9	14.8	47/12	6150	82	2991	96.5	97.1	97.2	0.84	0.89	0.90	156
800	1080	W22XM 450KH	(2)	2554	7.0	0.7	2.9	15.8	42/11	6650	82	2991	96.6	97.1	97.2	0.84	0.89	0.90	176
900	1215	W22XM 500KH	(2)	2874	7.5	1.0	3.3	21.7	20/8	9000	85	2991	96.9	97.4	97.5	0.84	0.89	0.90	197
1000	1350	W22XM 500KH	(2)	3193	7.5	1.0	3.3	23.2	19/8	9200	85	2991	96.9	97.4	97.5	0.84	0.89	0.90	219
1120	1515	W22XM 500KH	(2)	3576	7.5	1.0	3.3	24.7	17/6	9650	85	2991	97.0	97.4	97.5	0.84	0.89	0.90	246
1200	1620	W22XM 500KH	(2)	3831	7.5	1.0	3.3	24.7	15/5	9850	85	2991	97.0	97.4	97.6	0.84	0.89	0.90	263
IV Pole - 1500 min⁻¹																			
90	120	W22XM 315L		578	6.7	1.4	2.5	1.7	43/20	1750	76	1486	91.9	93.5	94.1	0.59	0.70	0.76	24.2
110	150	W22XM 315L		707	6.7	1.4	2.5	1.9	32/15	1850	76	1486	92.4	93.8	94.4	0.59	0.70	0.76	29.5
132	180	W22XM 315L		848	6.7	1.4	2.5	2.0	32/15	1950	76	1486	93.0	94.2	94.7	0.60	0.70	0.76	35.3
160	215	W22XM 355ML		1026	6.5	1.1	3.0	5.6	39/18	2100	77	1490	93.4	94.8	95.3	0.72	0.81	0.84	38.5
200	270	W22XM 355ML		1282	6.5	1.1	3.0	6.5	34/16	2200	77	1490	94.0	95.1	95.5	0.73	0.81	0.84	48.0
250	340	W22XM 355AB		1602	7.0	1.3	3.0	7.6	23/11	2450	77	1490	94.7	95.8	96.1	0.72	0.81	0.84	59.6
280	380	W22XM 355AB		1795	7.0	1.3	3.0	7.8	21/10	2550	77	1490	94.7	95.8	96.1	0.72	0.80	0.84	66.8
315	425	W22XM 355AB		2019	7.0	1.3	3.0	8.4	19/9	2700	77	1490	95.0	95.9	96.2	0.72	0.81	0.84	75.0
355	480	W22XM 355AB		2275	7.0	1.3	3.0	9.0	17/8	2900	77	1490	95.1	96.0	96.3	0.72	0.81	0.84	84.5
400	540	W22XM 400LJ		2564	6.7	1.4	2.7	11.7	25/10	3800	80	1490	95.7	96.3	96.5	0.75	0.82	0.84	95.0
450	610	W22XM 400LJ		2884	6.8	1.5	2.6	12.2	20/8	3950	80	1490	95.6	96.3	96.5	0.69	0.79	0.83	108
500	675	W22XM 400LJ		3205	6.8	1.5	2.6	13.0	19/8	4150	80	1490	95.7	96.3	96.5	0.70	0.79	0.83	120
560	755	W22XM 400G	(2)	3592	6.8	0.7	2.7	15.7	20/9	4850	80	1489	95.9	96.6	96.8	0.74	0.82	0.85	131
630	850	W22XM 400G	(2)	4041	6.8	0.7	2.7	16.5	20/9	5000	80	1489	96.1	96.6	96.8	0.75	0.82	0.85	147
710	960	W22XM 400G	(2)	4554	6.8	0.7	2.6	16.8	20/9	5100	80	1489	96.2	96.7	96.8	0.75	0.82	0.85	166
800	1080	W22XM 450KH	(2)	5134	6.5	0.8	2.5	28.2	28/14	6200	82	1488	96.7	97.2	97.3	0.75	0.82	0.85	186
900	1215	W22XM 450KH	(2)	5776	6.5	0.8	2.5	29.6	24/12	6700	82	1488	96.7	97.2	97.3	0.74	0.82	0.85	209
1000	1350	W22XM 500KH	(2)	6388	5.6	0.7	2.1	61.1	18/9	10050	85	1495	95.5	96.6	97.0	0.81	0.86	0.87	228
1120	1515	W22XM 500KH	(2)	7155	5.3	0.7	2.1	65.0	18/9	10250	85	1495	96.0	96.8	97.2	0.82	0.86	0.87	255
1250	1690	W22XM 500KH	(2)	7985	5.3	0.7	2.1	69.4	18/9	10500	85	1495	96.1	96.9	97.2	0.82	0.86	0.87	284
1400	1890	W22XM 500KH	(2)	8943	5.6	0.7	2.1	72.2	18/9	11000	85	1495	96.1	96.9	97.2	0.82	0.86	0.87	319
1500	2025	W22XM 500KH	(2)	9595	5.3	0.7	2.0	75.0	18/9	11700	85	1493	96.1	96.9	97.2	0.82	0.86	0.87	341
VI Pole - 1000 min -1																			
90	120	W22XM 315L		870	6.7	1.4	2.4	3.0	39/18	1850	70	988	92.4	93.4	93.6	0.59	0.69	0.75	24.7
110	150	W22XM 315L		1063	6.7	1.4	2.4	3.2	39/18	1950	70	988	93.2	93.9	93.9	0.59	0.69	0.75	30.1
132	180	W22XM 355ML		1273	6.8	1.2	2.9	5.8	47/22	2250	73	990	94.6	95.3	95.3	0.74	0.80	0.82	32.5
160	215	W22XM 355ML		1543	6.8	1.3	3.1	6.4	47/22	2350	73	990	94.6	95.3	95.4	0.72	0.79	0.82	39.4
200	270	W22XM 355AB		1929	6.8	1.4	2.9	7.4	47/22	2550	73	990	94.9	95.4	95.5	0.73	0.80	0.82	49.2
250	340	W22XM 355AB		2412	6.8	1.4	2.9	8.3	47/22	2650	73	990	94.9	95.5	95.5	0.72	0.79	0.82	61.4
280	380	W22XM 355AB		2701	6.8	1.5	3.0	9.0	43/20	2750	73	990	95.2	95.7	95.6	0.73	0.80	0.82	68.7
315	425	W22XM 355AB		3039	6.8	1.5	3.0	9.3	43/20	2950	73	990	95.2	95.7	95.7	0.73	0.80	0.82	77.3
355	480	W22XM 400LJ		3421	6.7	1.4	2.7	19.1	32/15	4200	76	991	96.5	96.5	96.5	0.77	0.81	0.84	84.3
400	540	W22XM 400LJ		3855	6.7	1.4	2.7	20.4	32/15	4400	76	991	96.6	96.6	96.5	0.79	0.82	0.84	95.0
450	610	W22XM 400G	(2)	4337	6.5	0.7	2.1	23.3	32/15	4800	76	991	95.6	96.0	96.2	0.81	0.82	0.83	108
500	675	W22XM 400G	(2)	4818	6.5	0.7	2.1	26.6	32/15	4850	76	991	95.5	96.0	96.2	0.80	0.82	0.83	121
560	755	W22XM 400G	(2)	5397	6.5	0.7	2.1	27.9	32/15	4900	76	991	95.9	96.2	96.4	0.80	0.82	0.83	135
630	850	W22XM 450KH	(2)	6053	6.0	0.7	2.8	52.2	32/15	6600	78	994	95.5	96.3	96.5	0.74	0.82	0.85	148
710	960	W22XM 450KH	(2)	6821	6.0	0.7	2.8	54.8	32/15	6800	78	994	95.6	96.3	96.5	0.74	0.82	0.85	167
800	1080	W22XM 500KH	(2)	7678	6.0	0.7	2.4	80.9	20/11	10400	80	995	96.7	97.1	97.2	0.74	0.82	0.84	189
900	1215	W22XM 500KH	(2)	8638	6.0	0.7	2.4	91.0	20/11	10650	80	995	96.9	97.3	97.3	0.75	0.82	0.84	212
1000	1350	W22XM 500KH	(2)	9598	6.0	0.7	2.4	95.8	20/11	11100	80	995	96.9	97.3	97.3	0.75	0.82	0.84	235
1120	1515	W22XM 500KH	(2)	10750	6.0	0.7	2.4	101	20/11	11800	80	995	97.1	97.4	97.4	0.75	0.82	0.84	263

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb

Output		Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot(s)	Weight Kg	Sound Pressure dB(A)	Y 3000V/50Hz							
												RPM	% of full load						I_n (A)
													Efficiency η			Power Factor Cos φ			
kW	HP												50	75	100	50	75	100	
VIII Pole - 750 min⁻¹																			
90	120	W22XM 315L		1158	7.5	1.4	2.4	3.8	37/17	1950	68	742	89.3	91.3	92.0	0.50	0.63	0.71	26.5
110	150	W22XM 355ML		1420	6.8	1.3	2.4	7.7	39/18	2350	70	740	94.2	94.7	94.5	0.69	0.77	0.80	28.0
132	180	W22XM 355ML		1704	6.8	1.3	2.4	8.3	39/18	2450	70	740	94.6	94.9	94.6	0.71	0.78	0.80	33.6
160	215	W22XM 355AB		2065	6.8	1.3	2.4	9.1	39/18	2950	70	740	94.8	95.0	94.7	0.71	0.78	0.80	40.6
200	270	W22XM 400LJ	(2)	2581	5.0	0.6	2.1	36.7	20/11	4000	74	740	96.9	96.9	96.4	0.73	0.80	0.82	48.7
250	340	W22XM 400LJ	(2)	3226	5.0	0.6	2.1	38.4	20/11	4200	74	740	96.9	96.9	96.4	0.73	0.80	0.82	60.9
280	380	W22XM 400LJ	(2)	3614	5.0	0.6	2.1	39.7	20/11	4400	74	740	96.9	96.9	96.4	0.73	0.80	0.82	68.2
315	425	W22XM 400G	(2)	4065	5.0	0.6	2.1	43.2	37/17	5050	74	740	96.5	96.7	96.4	0.71	0.79	0.82	76.7
355	480	W22XM 400G	(2)	4581	5.0	0.6	2.1	45.4	37/17	5150	74	740	96.2	96.6	96.4	0.69	0.78	0.82	86.4
400	540	W22XM 400G	(2)	5162	5.0	0.6	2.1	47.5	37/17	5200	74	740	96.9	96.9	96.4	0.73	0.80	0.82	97.4
450	610	W22XM 450KH	(2)	5807	5.5	0.6	2.3	53.8	20/11	6400	76	740	96.0	96.4	96.3	0.72	0.79	0.80	112
500	675	W22XM 450KH	(2)	6453	5.5	0.6	2.3	56.5	20/11	6700	76	740	95.9	96.4	96.3	0.71	0.79	0.80	125
560	755	W22XM 450KH	(2)	7227	5.5	0.6	2.3	60.1	20/11	7000	76	740	95.9	96.3	96.2	0.72	0.79	0.80	140
630	850	W22XM 500KH	(2)	8065	5.3	0.8	2.4	134	20/11	10500	80	746	97.0	97.3	97.0	0.73	0.80	0.80	156
710	960	W22XM 500KH	(2)	9089	5.6	0.8	2.4	137	20/11	10600	80	746	97.0	97.2	97.0	0.72	0.79	0.80	176
800	1080	W22XM 500KH	(2)	10241	5.2	0.8	2.3	149	20/11	11200	80	746	97.1	97.3	97.0	0.73	0.80	0.80	198
900	1215	W22XM 500KH	(2)	11521	5.5	0.8	2.3	159	20/11	11800	80	746	97.1	97.3	97.1	0.72	0.79	0.80	223

(1) Temperature rise class F at full load (2) Copper rotor (3) Rated current at 690V (4) Rated current at 760V

Tn = Full load torque
Ils / In = Locked rotor current
Ts / Tn = Locked rotor torque

Tmax / Tn = Breakdown torque
In = Full load current

Notes:
-The indicated values for sound pressure levels are @ 1m no load, with 3 dB(A) tolerance.
-All values are according to IEC 60034-1 tolerances.
-This data can be changed without prior notice.

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb

Output		Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot(s)	Weight Kg	Sound Pressure dB(A)	Y 4160V/60Hz							
												RPM	% of full load						I_n (A)
													Efficiency η			Power Factor Cos φ			
kW	HP												50	75	100	50	75	100	
II Pole - 3000 min⁻¹																			
90	120	W22XM 315L		241	6.7	1.5	2.5	1.3	10/5	1700	84	3564	90.7	93.3	94.2	0.76	0.83	0.86	15.4
110	150	W22XM 315L		295	6.8	1.6	2.6	1.5	8/4	1800	84	3564	91.4	93.6	94.3	0.78	0.85	0.87	18.6
132	180	W22XM 315L		354	6.8	1.6	2.6	1.6	8/4	1900	84	3564	91.7	93.7	94.4	0.79	0.85	0.87	22.3
160	215	W22XM 355ML		426	7.5	1.4	3.1	3.4	15/7	2000	84	3584	92.8	94.5	95.3	0.78	0.85	0.87	26.8
200	270	W22XM 355ML		533	7.5	1.4	3.1	3.8	10/5	2050	84	3584	93.5	94.9	95.6	0.80	0.85	0.87	33.4
250	340	W22XM 355ML		667	7.0	1.5	2.7	4.9	10/5	2150	84	3578	94.9	95.8	96.3	0.81	0.87	0.89	40.5
280	380	W22XM 355AB		747	7.5	1.5	2.9	5.2	10/5	2400	84	3578	95.1	96.0	96.5	0.81	0.87	0.89	45.2
315	425	W22XM 355AB		841	7.5	1.5	2.9	5.5	8/4	2500	84	3578	95.3	96.2	96.6	0.82	0.88	0.89	50.8
355	480	W22XM 355AB		947	7.5	1.5	2.9	5.9	8/4	2650	84	3580	95.4	96.3	96.4	0.82	0.87	0.89	57.4
400	540	W22XM 355AB		1067	7.5	1.5	2.9	5.9	7/3	2850	84	3580	95.4	96.3	96.4	0.82	0.87	0.89	64.7
450	610	W22XM 400LJ		1199	6.5	1.5	2.6	10.2	7/3	3900	84	3584	95.7	96.6	96.7	0.82	0.86	0.87	74.2
500	675	W22XM 400LJ		1332	6.7	1.6	2.8	10.8	6/2	4100	84	3584	95.7	96.6	96.7	0.81	0.86	0.87	82.5
560	755	W22XM 400G		1492	6.7	1.6	2.8	12.5	7/3	4700	84	3584	95.8	96.5	96.7	0.81	0.86	0.87	92.4
630	850	W22XM 400G	(2)	1675	7.0	1.0	3.0	13.5	12/3	4800	84	3591	96.1	96.8	97.0	0.86	0.90	0.90	100
710	960	W22XM 400G	(2)	1888	7.0	1.0	3.0	13.5	12/3	4950	84	3591	96.1	96.8	97.0	0.86	0.90	0.90	113
800	1080	W22XM 450KH	(2)	2128	7.0	0.7	2.9	15.8	42/11	6150	86	3591	96.0	96.8	96.9	0.84	0.89	0.90	127
900	1215	W22XM 450KH	(2)	2393	7.0	0.7	2.9	15.8	35/9	6650	86	3591	96.1	96.8	96.9	0.85	0.89	0.90	143
IV Pole - 1500 min⁻¹																			
90	120	W22XM 315L		483	6.7	1.4	2.5	1.7	43/20	1750	81	1781	91.3	93.2	93.8	0.59	0.70	0.76	17.5
110	150	W22XM 315L		590	6.7	1.4	2.5	1.9	32/15	1850	81	1781	91.8	93.5	94.1	0.59	0.70	0.76	21.3
132	180	W22XM 315L		708	6.7	1.4	2.5	2.0	32/15	1950	81	1781	92.4	93.9	94.4	0.60	0.70	0.76	25.5
160	215	W22XM 355ML		855	6.5	1.1	3.0	5.6	39/18	2100	82	1788	92.8	94.5	95.0	0.72	0.81	0.84	27.8
200	270	W22XM 355ML		1068	6.5	1.1	3.0	6.5	34/16	2200	82	1788	93.4	94.8	95.2	0.73	0.81	0.84	34.7
250	340	W22XM 355AB		1335	7.0	1.3	3.0	7.6	23/11	2450	82	1788	94.1	95.5	95.8	0.72	0.81	0.84	43.1
280	380	W22XM 355AB		1496	7.0	1.3	3.0	7.8	21/10	2550	82	1788	94.1	95.5	95.8	0.72	0.80	0.84	48.3
315	425	W22XM 355AB		1682	7.0	1.3	3.0	8.4	19/9	2700	82	1788	94.4	95.6	95.9	0.72	0.81	0.84	54.3
355	480	W22XM 355AB		1896	7.0	1.3	3.0	9.0	17/8	2900	82	1788	94.5	95.7	96.0	0.72	0.81	0.84	61.1
400	540	W22XM 355AB		2136	7.0	1.3	3.0	9.0	17/8	2950	82	1788	94.5	95.7	96.0	0.72	0.81	0.84	68.8
450	610	W22XM 400LJ		2401	6.8	1.5	2.6	12.2	20/8	3950	84	1790	95.0	96.0	96.2	0.69	0.79	0.83	78.2
500	675	W22XM 400LJ		2668	6.8	1.5	2.6	13.0	19/8	4150	84	1790	95.1	96.0	96.2	0.70	0.79	0.83	86.9
560	755	W22XM 400G	(2)	2989	6.8	0.7	2.7	15.7	20/9	4700	84	1789	95.3	96.3	96.5	0.74	0.82	0.85	94.8
630	850	W22XM 400G	(2)	3363	6.8	0.7	2.7	16.5	20/9	4850	89	1789	95.5	96.3	96.5	0.75	0.82	0.85	107
710	960	W22XM 400G	(2)	3790	6.8	0.7	2.6	16.8	20/9	5000	89	1789	95.6	96.4	96.5	0.75	0.82	0.85	120
800	1080	W22XM 400G	(2)	4271	6.8	0.7	2.6	16.8	20/9	5100	89	1789	95.6	96.4	96.5	0.75	0.82	0.85	135
900	1215	W22XM 450KH	(2)	4807	6.5	0.8	2.5	29.6	24/12	6200	86	1788	96.1	96.9	97.0	0.74	0.82	0.85	151
1000	1350	W22XM 450KH	(2)	5341	6.5	0.8	2.5	29.6	21/11	6700	86	1788	96.3	96.9	97.0	0.76	0.83	0.85	168
1120	1515	W22XM 500KH	(2)	5959	5.3	0.7	2.1	65.0	18/9	10250	89	1795	95.4	96.5	96.9	0.82	0.86	0.87	184
1250	1690	W22XM 500KH	(2)	6650	5.3	0.7	2.1	69.4	18/9	10500	89	1795	95.5	96.6	96.9	0.82	0.86	0.87	206
1400	1890	W22XM 500KH	(2)	7448	5.6	0.7	2.1	72.2	18/9	11000	89	1795	95.5	96.6	96.9	0.82	0.86	0.87	230
1500	2025	W22XM 500KH	(2)	7989	5.3	0.7	2.0	75.0	18/9	11700	89	1793	95.5	96.6	96.9	0.82	0.86	0.87	247
VI Pole - 1000 min -1																			
90	120	W22XM 315L		725	6.7	1.4	2.4	3.0	39/18	1850	73	1186	91.8	93.1	93.3	0.59	0.69	0.75	17.9
110	150	W22XM 315L		886	6.7	1.4	2.4	3.2	39/18	1950	73	1186	92.6	93.6	93.6	0.59	0.69	0.75	21.7
132	180	W22XM 355ML		1061	6.8	1.2	2.9	5.8	47/22	2250	77	1188	94.0	95.0	95.0	0.74	0.80	0.82	23.5
160	215	W22XM 355ML		1286	6.8	1.3	3.1	6.4	47/22	2350	77	1188	94.0	95.0	95.1	0.72	0.79	0.82	28.5
200	270	W22XM 355AB		1608	6.8	1.4	2.9	7.4	47/22	2550	77	1188	94.3	95.1	95.2	0.73	0.80	0.82	35.6
250	340	W22XM 355AB		2010	6.8	1.4	2.9	8.3	47/22	2650	77	1188	94.3	95.2	95.2	0.72	0.79	0.82	44.4
280	380	W22XM 355AB		2251	6.8	1.5	3.0	9.0	43/20	2750	77	1188	94.6	95.4	95.3	0.73	0.80	0.82	49.7
315	425	W22XM 355AB		2532	6.8	1.5	3.0	9.3	43/20	2900	77	1188	94.6	95.4	95.4	0.73	0.80	0.82	55.9
355	480	W22XM 355AB		2854	6.8	1.5	3.0	9.3	43/20	2950	77	1188	94.6	95.4	95.4	0.73	0.80	0.82	63.0
400	540	W22XM 400LJ		3207	6.7	1.4	2.7	20.4	32/15	4400	80	1191	96.0	96.3	96.2	0.79	0.82	0.84	68.7
450	610	W22XM 400G	(2)	3608	6.5	0.7	2.1	23.3	32/15	4700	80	1191	95.0	95.7	95.9	0.81	0.82	0.83	78.5
500	675	W22XM 400G	(2)	4009	6.5	0.7	2.1	26.6	32/15	4800	80	1191	94.9	95.7	95.9	0.80	0.82	0.83	87.2
560	755	W22XM 400G	(2)	4490	6.5	0.7	2.1	27.9	32/15	4850	80	1191	95.3	95.9	96.1	0.80	0.82	0.83	97.4
630	850	W22XM 400G	(2)	5052	6.5	0.7	2.1	27.9	32/15	4900	80	1191	95.3	95.9	96.1	0.80	0.82	0.83	110
710	960	W22XM 450KH	(2)	5679	6.0	0.7	2.8	54.8	32/15	6600	82	1194	95.0	96.0	96.2	0.74	0.82	0.85	121
800	1080	W22XM 450KH	(2)	6399	6.0	0.7	2.8	54.8	32/15	6800	82	1194	95.2	96.1	96.2	0.76	0.83	0.85	136
900	1215	W22XM 500KH	(2)	7192	6.0	0.7	2.4	91.0	20/11	10400	84	1195	96.3	97.0	97.0	0.75	0.82	0.84	153
1000	1350	W22XM 500KH	(2)	7992	6.0	0.7	2.4	95.8	20/11	10650	84	1195	96.3	97.0	97.0	0.75	0.82	0.84	170
1120	1515	W22XM 500KH	(2)	8951	6.0	0.7	2.4	101	20/11	11100	84	1195	96.5	97.1	97.1	0.75	0.82	0.84	191
1250	1690	W22XM 500KH	(2)	9990	6.0	0.7	2.4	101	20/11	11800	84	1195	96.5	97.1	97.1	0.75	0.82	0.84	213

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb

Output		Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm^2	Allowable locked rotor time Cold/ Hot(s)	Weight Kg	Sound Pressure dB(A)	Y 4160V/60Hz							
												RPM	% of full load						I_n (A)
													Efficiency η			Power Factor Cos φ			
kW	HP												50	75	100	50	75	100	
VIII Pole - 750 min^{-1}																			
90	120	W22XM 315L		966	7.5	1.4	2.4	3.8	37/17	1950	71	890	88.7	91.0	91.7	0.50	0.63	0.71	19.2
110	150	W22XM 355ML		1183	6.8	1.3	2.4	7.7	39/18	2350	75	888	93.6	94.4	94.2	0.69	0.77	0.80	20.3
132	180	W22XM 355ML		1420	6.8	1.3	2.4	8.3	39/18	2450	75	888	94.0	94.6	94.3	0.71	0.78	0.80	24.3
160	215	W22XM 355ML		1721	6.8	1.3	2.4	9.1	39/18	2550	75	888	94.2	94.7	94.4	0.71	0.78	0.80	29.4
200	270	W22XM 400LJ	(2)	2146	5.0	0.6	2.1	36.7	20/11	4000	78	890	96.3	96.6	96.1	0.73	0.80	0.82	35.2
250	340	W22XM 400LJ	(2)	2683	5.0	0.6	2.1	38.4	20/11	4200	78	890	96.3	96.6	96.1	0.73	0.80	0.82	44.0
280	380	W22XM 400LJ	(2)	3004	5.0	0.6	2.1	39.7	20/11	4400	78	890	96.3	96.6	96.1	0.73	0.80	0.82	49.3
315	425	W22XM 400G	(2)	3380	5.0	0.6	2.1	43.2	37/17	5050	78	890	95.9	96.4	96.1	0.71	0.79	0.82	55.5
355	480	W22XM 400G	(2)	3809	5.0	0.6	2.1	45.4	37/17	5150	78	890	95.6	96.3	96.1	0.69	0.78	0.82	62.5
400	540	W22XM 400G	(2)	4292	5.0	0.6	2.1	47.5	37/17	5200	78	890	96.3	96.6	96.1	0.73	0.80	0.82	70.4
450	610	W22XM 400G	(2)	4829	5.0	0.6	2.1	47.5	37/17	5250	78	890	96.3	96.6	96.1	0.73	0.80	0.82	79.3
500	675	W22XM 450KH	(2)	5365	5.5	0.6	2.3	56.5	20/11	6400	80	890	95.3	96.1	96.0	0.71	0.79	0.80	90.4
560	755	W22XM 450KH	(2)	6009	5.5	0.6	2.3	60.1	20/11	6700	80	890	95.3	96.0	95.9	0.72	0.79	0.80	101
630	850	W22XM 450KH	(2)	6760	5.5	0.6	2.3	60.1	20/11	7000	80	890	95.2	96.0	95.9	0.71	0.78	0.80	114
710	960	W22XM 500KH	(2)	7568	5.6	0.8	2.4	137	20/11	10500	84	896	96.4	96.9	96.7	0.72	0.79	0.80	127
800	1080	W22XM 500KH	(2)	8527	5.2	0.8	2.3	149	20/11	10600	84	896	96.5	97.0	96.7	0.73	0.80	0.80	144
900	1215	W22XM 500KH	(2)	9593	5.5	0.8	2.3	159	20/11	11200	84	896	96.5	97.0	96.8	0.72	0.79	0.80	161
1000	1350	W22XM 500KH	(2)	10658	5.5	0.8	2.3	159	20/11	11800	84	896	96.5	97.0	96.8	0.72	0.79	0.80	179

(1) Temperature rise class F at full load (2) Copper rotor (3) Rated current at 690V (4) Rated current at 760V

Tn = Full load torque
Tmax / Tn = Breakdown torque
Ils / In = Locked rotor current
In = Full load current
Ts / Tn = Locked rotor torque

Notes:
-The indicated values for sound pressure levels are @ 1m no load, with 3 dB(A) tolerance.
-All values are according to IEC 60034-1 tolerances.
-This data can be changed without prior notice.

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb

Output		Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot(s)	Weight Kg	Sound Pressure dB(A)	Y 6000V/50Hz							
												RPM	% of full load						I_n (A)
													Efficiency η			Power Factor Cos φ			
kW	HP												50	75	100	50	75	100	
II Pole - 3000 min⁻¹																			
90	120	W22XM 315L		289	6.7	1.5	2.5	1.3	10/5	1700	80	2970	91.3	93.6	94.5	0.76	0.83	0.86	10.7
110	150	W22XM 315L		354	6.8	1.6	2.6	1.5	8/4	1800	80	2970	92.0	93.9	94.6	0.78	0.85	0.87	12.9
132	180	W22XM 315L		424	6.8	1.6	2.6	1.6	8/4	1900	80	2970	92.3	94.0	94.7	0.79	0.85	0.87	15.4
160	215	W22XM 355ML		512	7.5	1.4	3.1	3.4	15/7	2050	80	2987	93.4	94.8	95.3	0.78	0.85	0.87	18.6
200	270	W22XM 355ML		639	7.5	1.4	3.1	3.8	10/5	2150	80	2987	94.1	95.2	95.6	0.80	0.85	0.87	23.1
250	340	W22XM 355AB		801	7.0	1.5	2.7	4.9	10/5	2400	80	2982	95.5	96.1	96.3	0.81	0.87	0.89	28.1
280	380	W22XM 355AB		897	7.5	1.5	2.9	5.2	10/5	2500	80	2982	95.7	96.3	96.5	0.81	0.87	0.89	31.4
315	425	W22XM 355AB		1009	7.5	1.5	2.9	5.5	8/4	2650	80	2982	95.9	96.5	96.6	0.82	0.88	0.89	35.3
355	480	W22XM 355AB		1137	7.5	1.5	2.9	5.9	8/4	2850	80	2983	96.0	96.6	96.7	0.82	0.87	0.89	39.7
400	540	W22XM 400LJ		1280	6.5	1.5	2.6	9.9	8/3	3750	80	2984	96.5	96.9	97.0	0.83	0.86	0.87	45.6
450	610	W22XM 400LJ		1440	6.5	1.5	2.6	10.2	7/3	3900	80	2984	96.3	96.9	97.0	0.82	0.86	0.87	51.3
500	675	W22XM 400LJ		1600	6.7	1.6	2.8	10.8	6/2	4100	80	2984	96.3	96.9	97.0	0.81	0.86	0.87	57.0
560	755	W22XM 400G		1792	6.7	1.6	2.8	12.5	7/3	4800	80	2984	96.4	96.8	97.0	0.81	0.86	0.87	63.9
630	850	W22XM 400G	(2)	2012	7.0	1.0	3.0	13.5	12/3	4950	80	2991	96.7	97.1	97.3	0.86	0.90	0.90	69.2
710	960	W22XM 450KH	(2)	2267	7.0	0.7	2.9	14.8	47/12	6150	82	2991	96.5	97.1	97.2	0.84	0.89	0.90	78.1
800	1080	W22XM 450KH	(2)	2554	7.0	0.7	2.9	15.8	42/11	6650	82	2991	96.6	97.1	97.2	0.84	0.89	0.90	88.0
900	1215	W22XM 500KH	(2)	2874	7.5	1.0	3.3	21.7	20/8	9000	85	2991	96.9	97.4	97.5	0.84	0.89	0.90	98.7
1000	1350	W22XM 500KH	(2)	3193	7.5	1.0	3.3	23.2	19/8	9200	85	2991	96.9	97.4	97.5	0.84	0.89	0.90	110
1120	1515	W22XM 500KH	(2)	3576	7.5	1.0	3.3	24.7	17/6	9650	85	2991	97.0	97.4	97.5	0.84	0.89	0.90	123
1200	1620	W22XM 500KH	(2)	3831	7.5	1.0	3.3	24.7	15/5	9850	85	2991	97.0	97.4	97.6	0.84	0.89	0.90	131
IV Pole - 1500 min⁻¹																			
90	120	W22XM 315L		578	6.7	1.4	2.5	1.7	43/20	1750	76	1486	91.9	93.5	94.1	0.59	0.70	0.76	12.1
110	150	W22XM 315L		707	6.7	1.4	2.5	1.9	32/15	1850	76	1486	92.4	93.8	94.4	0.59	0.70	0.76	14.8
132	180	W22XM 315L		848	6.7	1.4	2.5	2.0	32/15	1950	76	1486	93.0	94.2	94.7	0.60	0.70	0.76	17.6
160	215	W22XM 355ML		1026	6.5	1.1	3.0	5.6	39/18	2100	77	1490	93.4	94.8	95.3	0.72	0.81	0.84	19.2
200	270	W22XM 355ML		1282	6.5	1.1	3.0	6.5	34/16	2200	77	1490	94.0	95.1	95.5	0.73	0.81	0.84	24.0
250	340	W22XM 355AB		1602	7.0	1.3	3.0	7.6	23/11	2450	77	1490	94.7	95.8	96.1	0.72	0.81	0.84	29.8
280	380	W22XM 355AB		1795	7.0	1.3	3.0	7.8	21/10	2550	77	1490	94.7	95.8	96.1	0.72	0.80	0.84	33.4
315	425	W22XM 355AB		2019	7.0	1.3	3.0	8.4	19/9	2700	77	1490	95.0	95.9	96.2	0.72	0.81	0.84	37.5
355	480	W22XM 355AB		2275	7.0	1.3	3.0	9.0	17/8	2900	77	1490	95.1	96.0	96.3	0.72	0.81	0.84	42.2
400	540	W22XM 400LJ		2564	6.7	1.4	2.7	11.7	25/10	3800	80	1490	95.7	96.3	96.5	0.75	0.82	0.84	47.5
450	610	W22XM 400LJ		2884	6.8	1.5	2.6	12.2	20/8	3950	80	1490	95.6	96.3	96.5	0.69	0.79	0.83	54.1
500	675	W22XM 400LJ		3205	6.8	1.5	2.6	13.0	19/8	4150	80	1490	95.7	96.3	96.5	0.70	0.79	0.83	60.1
560	755	W22XM 400G	(2)	3592	6.8	0.7	2.7	15.7	20/9	4850	80	1489	95.9	96.6	96.8	0.74	0.82	0.85	65.5
630	850	W22XM 400G	(2)	4041	6.8	0.7	2.7	16.5	20/9	5000	80	1489	96.1	96.6	96.8	0.75	0.82	0.85	73.7
710	960	W22XM 400G	(2)	4554	6.8	0.7	2.6	16.8	20/9	5100	80	1489	96.2	96.7	96.8	0.75	0.82	0.85	83.0
800	1080	W22XM 450KH	(2)	5134	6.5	0.8	2.5	28.2	28/14	6200	82	1488	96.7	97.2	97.3	0.75	0.82	0.85	93.1
900	1215	W22XM 450KH	(2)	5776	6.5	0.8	2.5	29.6	24/12	6700	82	1488	96.7	97.2	97.3	0.74	0.82	0.85	105
1000	1350	W22XM 500KH	(2)	6388	5.6	0.7	2.1	61.1	18/9	10050	85	1495	95.5	96.6	97.0	0.81	0.86	0.87	114
1120	1515	W22XM 500KH	(2)	7155	5.3	0.7	2.1	65.0	18/9	10250	85	1495	96.0	96.8	97.2	0.82	0.86	0.87	127
1250	1690	W22XM 500KH	(2)	7985	5.3	0.7	2.1	69.4	18/9	10500	85	1495	96.1	96.9	97.2	0.82	0.86	0.87	142
1400	1890	W22XM 500KH	(2)	8943	5.6	0.7	2.1	72.2	18/9	11000	85	1495	96.1	96.9	97.2	0.82	0.86	0.87	159
1500	2025	W22XM 500KH	(2)	9595	5.3	0.7	2.0	75.0	18/9	11700	85	1493	96.1	96.9	97.2	0.82	0.86	0.87	171
VI Pole - 1000 min -1																			
90	120	W22XM 315L		870	6.7	1.4	2.4	3.0	39/18	1850	70	988	92.4	93.4	93.6	0.59	0.69	0.75	12.3
110	150	W22XM 315L		1063	6.7	1.4	2.4	3.2	39/18	1950	70	988	93.2	93.9	93.9	0.59	0.69	0.75	15.0
132	180	W22XM 355ML		1273	6.8	1.2	2.9	5.8	47/22	2250	73	990	94.6	95.3	95.3	0.74	0.80	0.82	16.3
160	215	W22XM 355ML		1543	6.8	1.3	3.1	6.4	47/22	2350	73	990	94.6	95.3	95.4	0.72	0.79	0.82	19.7
200	270	W22XM 355AB		1929	6.8	1.4	2.9	7.4	47/22	2550	73	990	94.9	95.4	95.5	0.73	0.80	0.82	24.6
250	340	W22XM 355AB		2412	6.8	1.4	2.9	8.3	47/22	2650	73	990	94.9	95.5	95.5	0.72	0.79	0.82	30.7
280	380	W22XM 355AB		2701	6.8	1.5	3.0	9.0	43/20	2750	73	990	95.2	95.7	95.6	0.73	0.80	0.82	34.4
315	425	W22XM 355AB		3039	6.8	1.5	3.0	9.3	43/20	2950	73	990	95.2	95.7	95.7	0.73	0.80	0.82	38.6
355	480	W22XM 400LJ		3421	6.7	1.4	2.7	19.1	32/15	4200	76	991	96.5	96.5	96.5	0.77	0.81	0.84	42.1
400	540	W22XM 400LJ		3855	6.7	1.4	2.7	20.4	32/15	4400	76	991	96.6	96.6	96.5	0.79	0.82	0.84	47.5
450	610	W22XM 400G	(2)	4337	6.5	0.7	2.1	23.3	32/15	4800	76	991	95.6	96.0	96.2	0.81	0.82	0.83	54.2
500	675	W22XM 400G	(2)	4818	6.5	0.7	2.1	26.6	32/15	4850	76	991	95.5	96.0	96.2	0.80	0.82	0.83	60.3
560	755	W22XM 400G	(2)	5397	6.5	0.7	2.1	27.9	32/15	4900	76	991	95.9	96.2	96.4	0.80	0.82	0.83	67.3
630	850	W22XM 450KH	(2)	6053	6.0	0.7	2.8	52.2	32/15	6600	78	994	95.5	96.3	96.5	0.74	0.82	0.85	73.9
710	960	W22XM 450KH	(2)	6821	6.0	0.7	2.8	54.8	32/15	6800	78	994	95.6	96.3	96.5	0.74	0.82	0.85	83.3
800	1080	W22XM 500KH	(2)	7678	6.0	0.7	2.4	80.9	20/11	10400	80	995	96.7	97.1	97.2	0.74	0.82	0.84	94.3
900	1215	W22XM 500KH	(2)	8638	6.0	0.7	2.4	91.0	20/11	10650	80	995	96.9	97.3	97.3	0.75	0.82	0.84	106
1000	1350	W22XM 500KH	(2)	9598	6.0	0.7	2.4	95.8	20/11	11100	80	995	96.9	97.3	97.3	0.75	0.82	0.84	118
1120	1515	W22XM 500KH	(2)	10750	6.0	0.7	2.4	101	20/11	11800	80	995	97.1	97.4	97.4	0.75	0.82	0.84	132

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb

Output		Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Cold/ Hot(s)	Weight Kg	Sound Pressure dB(A)	Y 6000V/50Hz							
												RPM	% of full load						I_n (A)
													Efficiency η			Power Factor Cos φ			
kW	HP												50	75	100	50	75	100	
VIII Pole - 750 min^{-1}																			
90	120	W22XM 315L		1158	7.5	1.4	2.4	3.8	37/17	1950	68	742	89.3	91.3	92.0	0.50	0.63	0.71	13.3
110	150	W22XM 355ML		1420	6.8	1.3	2.4	7.7	39/18	2350	70	740	94.2	94.7	94.5	0.69	0.77	0.80	14.0
132	180	W22XM 355ML		1704	6.8	1.3	2.4	8.3	39/18	2450	70	740	94.6	94.9	94.6	0.71	0.78	0.80	16.8
160	215	W22XM 355AB		2065	6.8	1.3	2.4	9.1	39/18	2950	70	740	94.8	95.0	94.7	0.71	0.78	0.80	20.3
200	270	W22XM 400LJ	(2)	2581	5.0	0.6	2.1	36.7	20/11	4000	74	740	96.9	96.9	96.4	0.73	0.80	0.82	24.3
250	340	W22XM 400LJ	(2)	3226	5.0	0.6	2.1	38.4	20/11	4200	74	740	96.9	96.9	96.4	0.73	0.80	0.82	30.4
280	380	W22XM 400LJ	(2)	3614	5.0	0.6	2.1	39.7	20/11	4400	74	740	96.9	96.9	96.4	0.73	0.80	0.82	34.1
315	425	W22XM 400G	(2)	4065	5.0	0.6	2.1	43.2	37/17	5050	74	740	96.5	96.7	96.4	0.71	0.79	0.82	38.3
355	480	W22XM 400G	(2)	4581	5.0	0.6	2.1	45.4	37/17	5150	74	740	96.2	96.6	96.4	0.69	0.78	0.82	43.2
400	540	W22XM 400G	(2)	5162	5.0	0.6	2.1	47.5	37/17	5200	74	740	96.9	96.9	96.4	0.73	0.80	0.82	48.7
450	610	W22XM 450KH	(2)	5807	5.5	0.6	2.3	53.8	20/11	6400	76	740	96.0	96.4	96.3	0.72	0.79	0.80	56.2
500	675	W22XM 450KH	(2)	6453	5.5	0.6	2.3	56.5	20/11	6700	76	740	95.9	96.4	96.3	0.71	0.79	0.80	62.5
560	755	W22XM 450KH	(2)	7227	5.5	0.6	2.3	60.1	20/11	7000	76	740	95.9	96.3	96.2	0.72	0.79	0.80	70.0
630	850	W22XM 500KH	(2)	8065	5.3	0.8	2.4	134	20/11	10500	80	746	97.0	97.3	97.0	0.73	0.80	0.80	78.1
710	960	W22XM 500KH	(2)	9089	5.6	0.8	2.4	137	20/11	10600	80	746	97.0	97.2	97.0	0.72	0.79	0.80	88.0
800	1080	W22XM 500KH	(2)	10241	5.2	0.8	2.3	149	20/11	11200	80	746	97.1	97.3	97.0	0.73	0.80	0.80	99.2
900	1215	W22XM 500KH	(2)	11521	5.5	0.8	2.3	159	20/11	11800	80	746	97.1	97.3	97.1	0.72	0.79	0.80	111

(1) Temperature rise class F at full load (2) Copper rotor (3) Rated current at 690V (4) Rated current at 760V

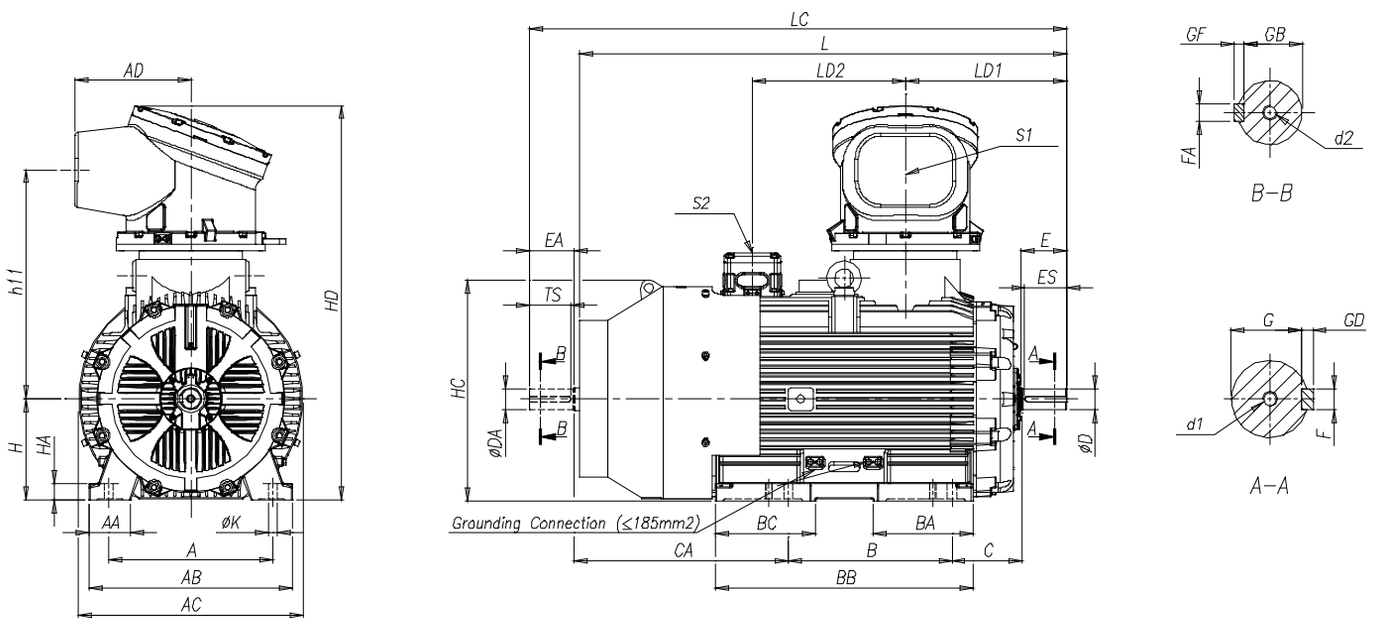
Tn = Full load torque
Tmax / Tn = Breakdown torque
Ils / In = Locked rotor current
In = Full load current
Ts / Tn = Locked rotor torque

Notes:
-The indicated values for sound pressure levels are @ 1m no load, with 3 dB(A) tolerance.
-All values are according to IEC 60034-1 tolerances.
-This data can be changed without prior notice.

7.3.4. Medium Voltage - Mechanical Data - W22XM Series

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
Medium Voltage

315L - 355ML, IMB3T
Anti-friction bearings



Frame	Poles	A	AA	AB	AC	AD	BA	BB	BC	B	C	CA	H	HA	HC	HD	h11	K	L	LC	LD1	LD2
315L	2P	508	130	632	698	360	310	800	310	508	216	663	315	52	684	1224	710	28	1512	1667	500	475
	4P+																		1542	1697	530	
355ML	2P	610	130	730	780	360	315	830	315	560 630	254	567	355	55	765	1312	758	28	1576	1731	514	462
	4P+																		1646	1831	584	

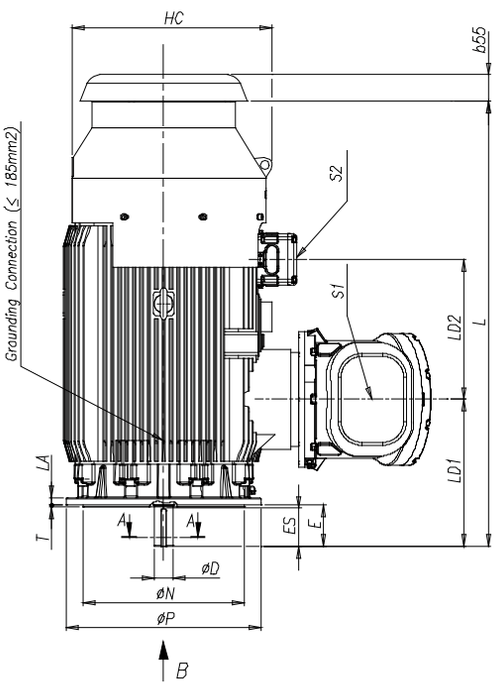
		Shaft dimensions														Bearings		Power terminal box - S1	Auxiliary terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	WTBX M	WTBX XS
315L	2P	65m6	140	130	18h9	58	11	60m6	140	130	18h9	53	11	DSM20	DSM20	6314C3	6314C3	I ≤ 315A : 1xM63x1,5 315A ≤ I ≤ 400A : 3xM63x1,5	3xM20x1,5
	4P+	80m6	170	160	22h9	71	14	65m6				58	11			6319C3	6316C3		
355ML	2P	75m6	140	130	20h9	67,5	12	60m6	140	130	18h9	53	11	DSM20		6316C3	6316C3		
	4P+	100m6	210	200	28h9	90	16	80m6	170	160	22h9	71	14	DSM24		6322C3	6319C3		

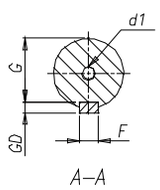
Notes:

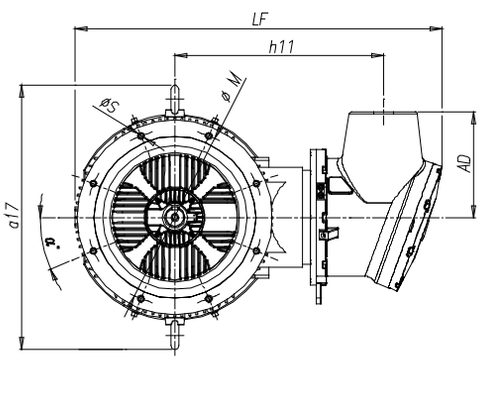
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
Medium Voltage

315L - 355ML, IMV1
Anti-friction bearings







Frame	Poles	AD	HC	h11	L	LA	LD1	LD2	LF	b55	a17	M	N	P	T	S	Nr. Holes	α
315L	2P	360	679	710	1514	25	500	475	1249	90	898	600	550	660	6	24	8	22,5°
	4P+				1544		530											
355ML	2P	360	765	758	1576	30	514	462	1357	93	988	740	680	800	6	24	8	22,5°
	4P+				1646		584											

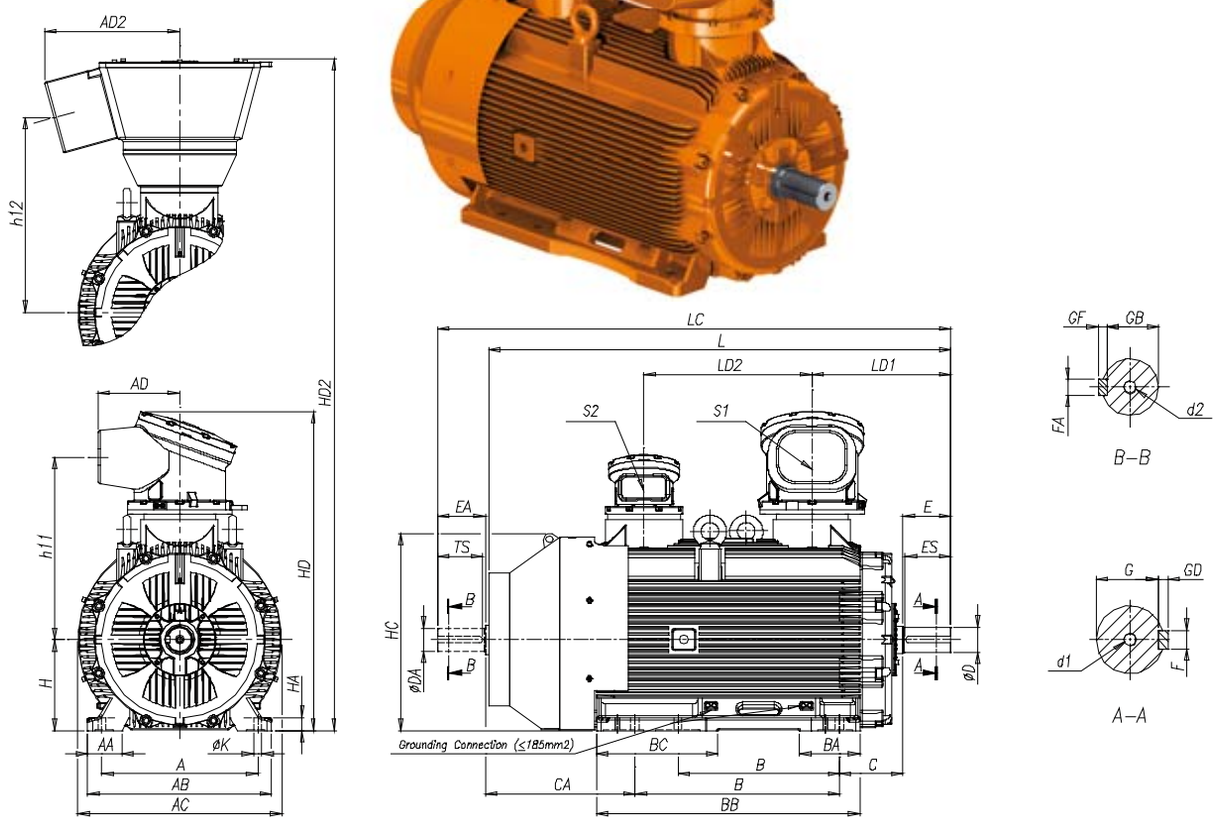
		Shaft dimensions							Bearings		Power terminal box - S1	Auxiliary terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	d1	D.E.	N.D.E.	WTBX M	WTBX XS
315L	2P	65m6	140	130	18h9	58	11	DSM20	6314C3	6314C3	I ≤ 315A : 1xM63x1,5 315A ≤ I ≤ 400A : 3xM63x1,5	3xM20x1,5
	4P+	80m6	170	160	22h9	71	14		6319C3	6316C3		
355ML	2P	75m6	140	130	20h9	67,5	12	DSM20	6316C3	6316C3		
	4P+	100m6	210	200	28h9	90	16	DSM24	6322C3	6319C3		

Notes:

All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
Medium Voltage

355AB - 400LJ - 400G, IMB3T
Anti-friction bearings



Frame	Poles	A	AA	AB	AC	AD[1]	BA	BB	BC	B	C	CA	H	HA	HC	HD[1]	h11[1]	K	L	LC	LD1	LD2
355AB	2P	610	130	730	780	360	225	1038	523	710	254	605	355	55	765	1312	758	28	1784	1939	514	618
	4P+									800									1854	2039	584	
400LJ	2P	686	150	810	898	360	265	1160	535	710	280	659	400	58	867	1402	803	35	1994	2149	570	740
	4P+									900									2034	2219	610	
400G	2P	686	150	810	898	360	420	1400	420	1120	280	679	400	58	867	1402	803	35	2234	2389	570	982
	4P+																		2274	2459	610	

		Shaft dimensions														Bearings		Power terminal box - S1[1]	Power terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	WTBX M	WTBX S
355AB	2P	75m6	140	130	20h9	67,5	12	60m6	140	130	18h9	53	11	DSM20	DSM20	6316C3	6316C3	I ≤ 315A : 1xM63x1,5 315A ≤ I ≤ 400A : 3xM63x1,5	3xM20x1,5
	4P+	100m6	210	200	28h9	90	16	80m6	170	160	22h9	71	14	DSM24		6322C3	6319C3		
400LJ	2P	80m6	170	160	22h9	71	14	60m6	140	130	18h9	53	11	DSM20		6318C3	6318C3		
	4P+	110m6	210	200	28h9	100	16	80m6	170	160	22h9	71	14	DSM24		6324C3	6324C3		
400G	2P	80m6	170	160	22h9	71	14	60m6	140	130	18h9	53	11	DSM20		6318C3	6318C3		
	4P+	110m6	210	200	28h9	100	16	80m6	170	160	22h9	71	14	DSM24		6324C3	6324C3		

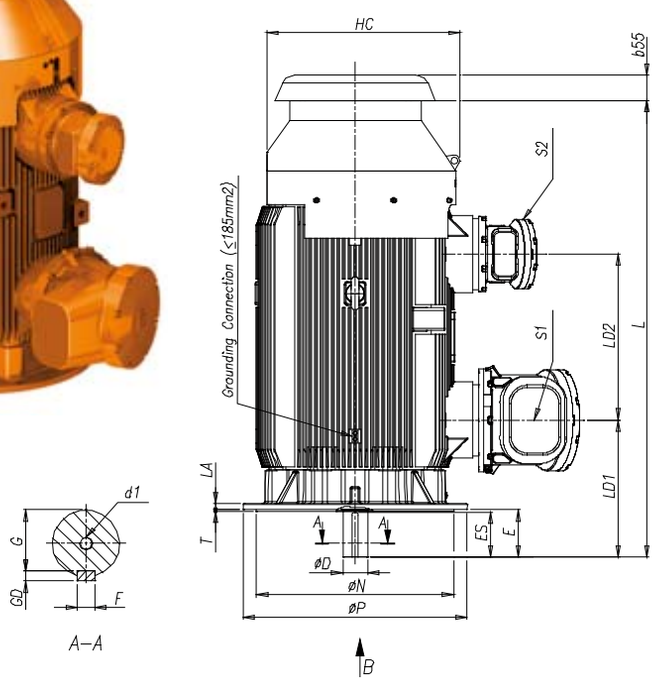
	I>400A				
Frame	Poles	AD2	HD2	h12	Power terminal box - CEFGH 500 - S1
355AB	2P	75m6	140	130	400A ≤ I ≤ 800A : 3xM63x1,5
	4P+	100m6	210	200	
400LJ	2P	80m6	170	160	
	4P+	110m6	210	200	
400G	2P	80m6	170	160	
	4P+	110m6	210	200	

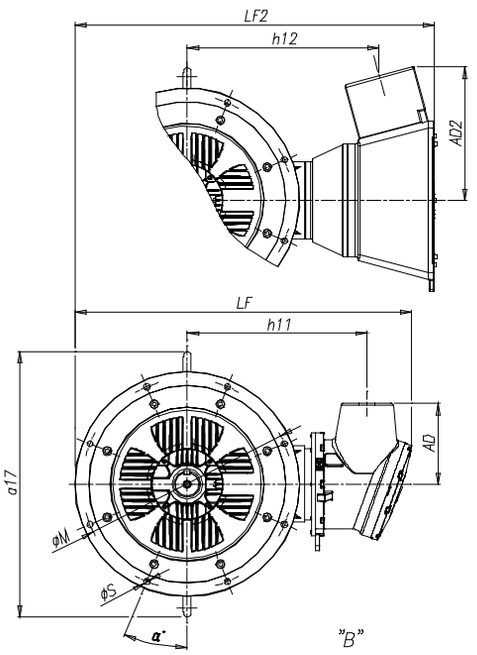
Notes:

(1) ≤ 400A
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
Medium Voltage

355AB - 400LJ - 400G, IMV1
Anti-friction bearings





Frame	Poles	AD[1]	HC	h11[1]	L	LA	LD1	LD2	LF[1]	b55	a17	M	N	P	T	S	Nr. Holes	α
355AB	2P	360	759	758	1784	30	514	618	1357	93	988	740	680	800	6	24	8	22,5°
	4P+				1854		584											
400LJ	2P	360	862	803	1994	28	570	740	1503	106	1184	940	880	1000	6	28	8	22,5°
	4P+				2034		610											
400G	2P	360	862	803	2234	28	570	980	1503	106	1184	940	880	1000	6	28	8	22,5°
	4P+				2274		610											

		Shaft dimensions							Bearings		Power terminal box - S1[1]	Auxiliary terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	d1	D.E.	N.D.E.	WTBX M	WTBX S
355AB	2P	75m6	140	130	20h9	67,5	12	DSM20	7316	6316C3	I ≤ 315A : 1xM63x1,5 315A ≤ I ≤ 400A : 3xM63x1,5	3xM20x1,5
	4P+	100m6	210	200	28h9	90	16	DSM24	7322	6319C3		
400LJ	2P	80m6	170	160	22h9	71	14	DSM20	7318	6318C3		
	4P+	110m6	210	200	28h9	100	16	DSM24	7324	6324C3		
400G	2P	80m6	170	160	22h9	71	14	DSM20	7318	6318C3		
	4P+	110m6	210	200	28h9	100	16	DSM24	7324	6324C3		

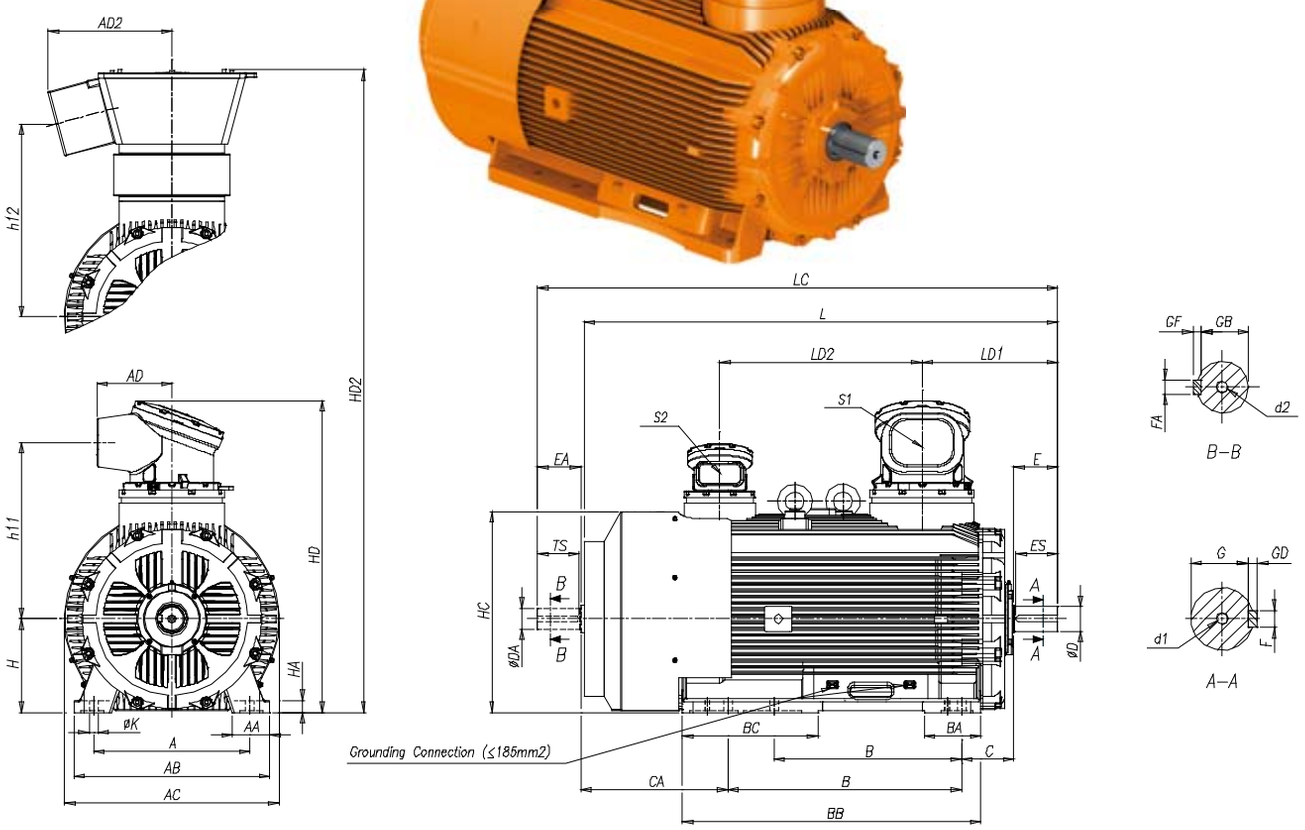
	I>400A				
Frame	Poles	AD2	LF2	h12	Power terminal box - CEFGH 500 - S1
355AB	2P	594	1040	812	400A ≤ I ≤ 800A : 3xM63x1,5
	4P+				
400LJ	2P	594	1616	857	
	4P+				
400G	2P	594	1616	857	
	4P+				

Notes:

(1) I ≤ 400A
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
Medium Voltage

450KH - 500KH, IMB3T
Anti-friction bearings



Frame	Poles	A	AA	AB	AC	AD[1]	BA	BB	BC	B	C	CA	H	HA	HC	HD[1]	h11[1]	K	L	LC	LD1	LD2
450KH	2P	750	180	940	1030	360	270	1430	650	900	250	705	450	60	965	1495	846	42	2230	2385	610	970
	4P+									1120									2270	2495	650	
500KH	2P	850	200	1020	1162	360	375	1800	915	1000	280	1065	500	65	1081	1565	866	42	2750	2905	635	1300
	4P+									1250									2830	3055	715	

		Shaft dimensions														Bearings		Power terminal box - S1[1]	Auxiliary terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	WTBX M	WTBX S
450KH	2P	85m6	170	160	22h9	76	14	75m6	140	130	20h9	67,5	12	DSM20	DSM20	6318C3	NU218C3	I ≤ 315A : 1xM63x1,5	3xM20x1,5
	4P+	120m6	210	200	32h9	109	18	100m6	210	200	28h9	90	16	DSM24	DSM24	6326C3	6326C3	315A ≤ I ≤ 400A : 3xM63x1,5	
500KH	2P	90m6	170	160	25	81	14	75m6	140	130	20	67,5	12	DSM24	DSM20	NU220C3+6020C3	NU220C3		
	4P+	130m6	250	240	32	119	18	110m6	210	200	28	100	16		DSM24	6328C3	6328C3		

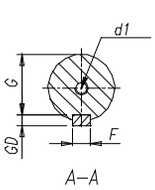
	I>400A				
Frame	Poles	AD2	HD2	h12	Power terminal box - CEFGH 500 - S1
450KH	2P	594	1634	925	400A ≤ I ≤ 800A : 3xM63x1,5
	4P+				
500KH	2P	594	1704	945	
	4P+				

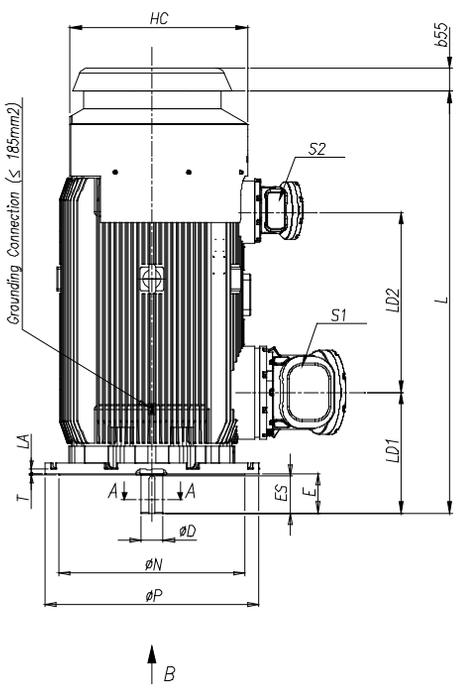
Notes:

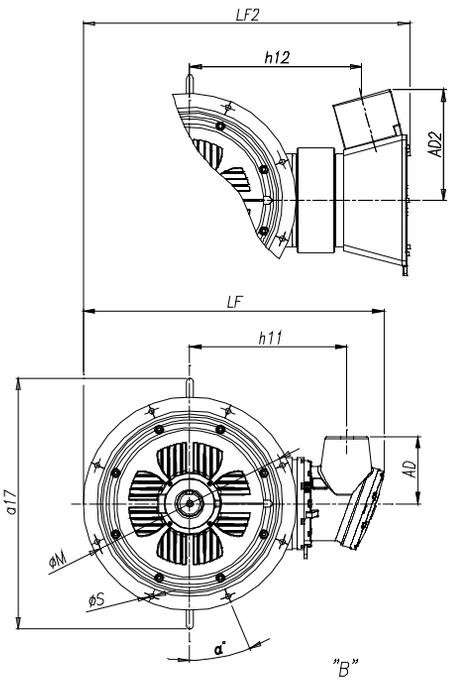
(1) I ≤ 1090A
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
Medium Voltage

450KH - 500KH, IMV1
Anti-friction bearings







Frame	Poles	AD[1]	HC	h11[1]	L	LA	LD1	LD2	LF[1]	b55	a17	M	N	P	T	S	Nr. Holes	α
450KH	2P	360	955	846	2270	30	650	970	1620	125	1352	1080	1000	1150	6	28	8	22,5°
	4P+																	
500KH	2P	360	1162	866	2830	30	715	1300	1640	130	1482	1080	1000	1150	7	28	8	22,5°
	4P+																	

		Shaft dimensions							Bearings		Power terminal box - S1[1]	Auxiliary terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	d1	D.E.	N.D.E.	WTBX M	WTBX S
450KH	2P	120m6	210	200	32h9	109	18	DSM24	7326	6326C3	I ≤ 315A : 1xM63x1,5 315A ≤ I ≤ 400A : 3xM63x1,5	3xM20x1,5
	4P+											
500KH	2P	130m6	250	240	32h9	119	18	DSM24	7328	6328C3		
	4P+											

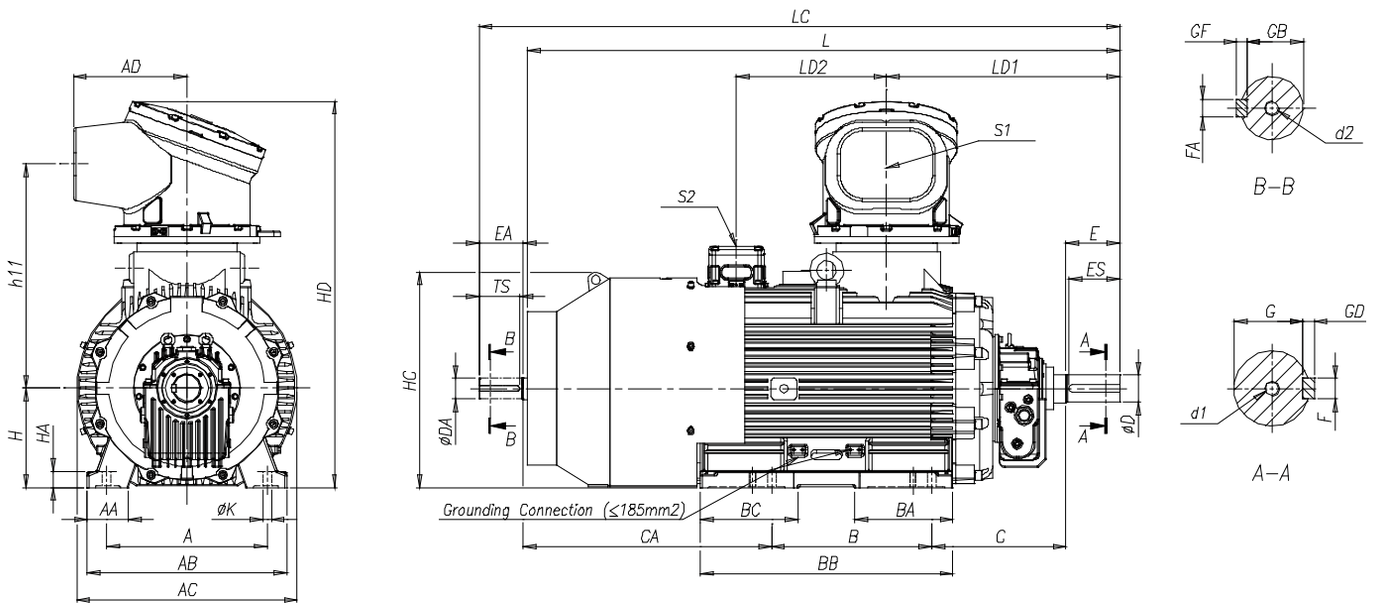
	I>400A				
Frame	Poles	AD2	LF2	h12	Power terminal box - CEFGH 500 - S1
450KH	2P	594	1759	925	400A ≤ I ≤ 800A : 3xM63x1,5
	4P+				
500KH	2P	594	1779	945	
	4P+				

Notes:

(1) I ≤ 1090A
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XMS - Flameproof Motors – Ex d I Mb
W22XMES - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
Medium Voltage

315L - 355ML, IMB3T
Sleeve bearings



Frame	Poles	A	AA	AB	AC	AD	BA	BB	BC	B	C	CA	H	HA	HC	HD	h11	K	L	LC	LD1	LD2
315L	2P	508	130	632	698	360	310	800	310	508	425	788	315	52	684	1224	710	28	1846	2001	709	475
	4P+										450								1901	2056	764	
355ML	2P	610	130	730	780	360	315	830	315	560 630	455	685	355	55	765	1312	758	28	1902	2057	514	462
	4P+										475								1992	2177	805	

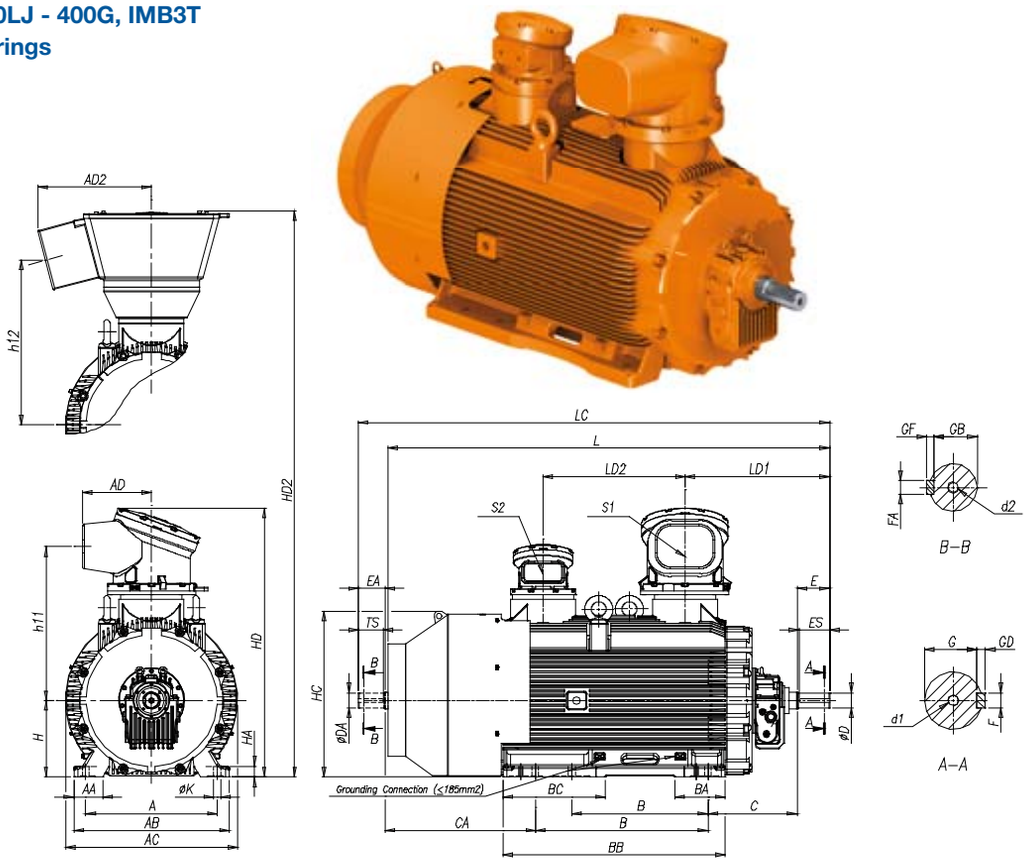
		Shaft dimensions														Bearings		Power terminal box - S1	Auxiliary terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	WTBX M	WTBX XS
315L	2P	65m6	140	130	18h9	58	11	60m6	140	130	18h9	53	11	DSM20	DSM20	EFNLB 9-80	EFNLQ 9-80	I ≤ 315A : 1xM63x1,5	3xM20x1,5
	4P+	80m6	170	160	22h9	71	14	65m6				58	11			EFNLB 11-110	EFNLQ 11-110	315A ≤ I ≤ 400A : 3xM63x1,5	
355ML	2P	75m6	140	130	20h9	67,5	12	60m6	140	130	18h9	53	11	DSM20		EFNLB 9-80	EFNLB 9-80		
	4P+	100m6	210	200	28h9	90	16	80m6	170	160	22h9	71	14	DSM24		EFNLB 11-110	EFNLB 11-110		

Notes:

All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.
Rotor is not self-aligned, costumer must ensure alignment.
Over speed not allowed.
Rotor maximum axial play: ± 3mm.
Motor rotation only available in one sense (CW or CCW), please inform desired sense at the time of Inquiry/Order.

W22XMS - Flameproof Motors – Ex d I Mb
W22XMES - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
Medium Voltage

355AB - 400LJ - 400G, IMB3T
Sleeve bearings



Frame	Poles	A	AA	AB	AC	AD[1]	BA	BB	BC	B	C	CA	H	HA	HC	HD[1]	h11[1]	K	L	LC	LD1	LD2
355AB	2P	610	130	730	780	360	225	1038	523	710	455	723	55	55	765	1312	758	28	2110	2265	715	618
	4P+									800	475								2200	2385	805	
400LJ	2P	686	150	810	898	360	265	1160	535	710	465	784	58	58	867	1402	802	35	2304	2459	755	740
	4P+									900	490								2369	2554	820	
400G	2P	686	150	810	898	360	420	1400	420	1120	465	804	58	58	867	1402	802	35	2544	2699	755	980
	4P+										490								2609	2794	820	

		Shaft dimensions														Bearings		Power terminal box - S1[1]	Auxiliary terminal box - S1[1]
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	WTBX M	WTBX S
355AB	2P	75m6	140	130	20h9	67,5	12	60m6	140	130	18h9	53	11	DSM20	DSM20	EFNLB 9-80	EFNLQ 9-80	I ≤ 315A : 1xM63x1,5 315A ≤ I ≤ 400A : 3xM63x1,5	3XM20X1,5
	4P+	100m6	210	200	28h9	90	16	80m6	170	160	22h9	71	14	DSM24		EFNLB 11-110	EFNLQ 11-110		
400LJ	2P	80m6	170	160	22h9	71	14	60m6	140	130	18h9	53	11	DSM20		EFNLB 9-80	EFNLQ 9-80		
	4P+	110m6	210	200	28h9	100	16	80m6	170	160	22h9	71	14	DSM24		EFNLB 11-110	EFNLQ 11-110		
400G	2P	80m6	170	160	22h9	71	14	60m6	140	130	18h9	53	11	DSM20		EFNLB 9-80	EFNLQ 9-80		
	4P+	110m6	210	200	28h9	100	16	80m6	170	160	22h9	71	14	DSM24		EFNLB 11-110	EFNLQ 11-110		

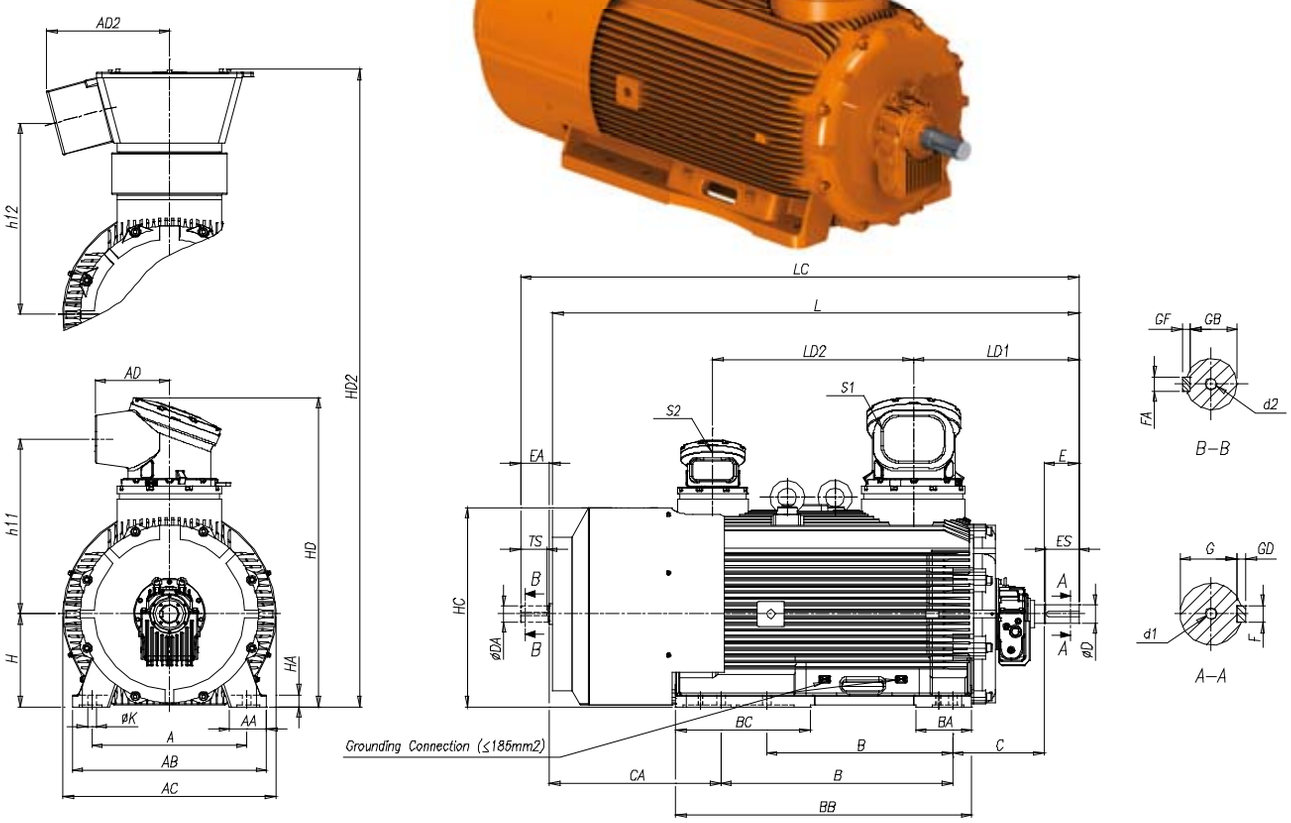
	I>1090A				
Frame	Poles	AD2	HD2	h12	Power terminal box - CEFGH 500 - S1
355AB	2P	594	1425	812	1090A ≤ I ≤ 1900A : 4xM63x1,5 + 1xM20x1,5
	4P+				
400LJ	2P	594	1516	857	
	4P+				
400G	2P	594	1516	857	
	4P+				

Notes:

(1) I ≤ 400A
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.
Rotor is not self-aligned, costumer must ensure alignment.
Over speed not allowed.
Rotor maximum axial play: ± 3mm.
Motor rotation only available in one sense (CW or CCW), please inform desired sense at the time of Inquiry/Order.

W22XMS - Flameproof Motors – Ex d I Mb
W22XMES - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
Medium Voltage

450KH - 500KH, IMB3T
Sleeve bearings



Frame	Poles	A	AA	AB	AC	AD[1]	BA	BB	BC	B	C	CA	H	HA	HC	HD[1]	h11[1]	K	L	LC	LD1	LD2
450KH	2P	750	180	940	1030	360	270	1430	650	900	440	830	450	60	965	1495	846	42	2545	2700	800	970
	4P+									1120	465								2610	2835	865	
500KH	2P	850	200	1020	1162	360	375	1800	915	1000	490	1190	500	65	1081	1565	866	42	3165	3390	925	1300
	4P+									1250												

		Shaft dimensions													Bearings		Power terminal box - S1[1]	Auxiliary terminal box - S1[2]
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	WTBX M	WTBX S
450KH	2P	85m6	170	160	22h9	76	14	75m6	140	130	20h9	67,5	12	DSM20	DSM20	EFNLB 9-80	EFNLQ 9-80	I ≤ 315A : 1xM63x1,5	
	4P+	120m6	210	200	32h9	109	18	100m6	210	200	28h9	90	16	DSM24	DSM24	EFNLB 11-125	EFNLQ 11-125	315A ≤ I ≤ 400A :	3xM20x1,5
500KH	2P	130m6	250	240	32	119	18	110m6	210	200	28	100	16	DSM24	DSM24	EFNLB 11-125	EFNLQ 11-125	3xM63x1,5	
	4P+																		

		I>400A			
Frame	Poles	AD2	HD2	h12	Power terminal box - CEFGH 500 - S1
50KH	2P	594	1634	925	400A ≤ I ≤ 800A : 4xM63x1,5
	4P+				
500KH	2P	594	1704	945	
	4P+				

Notes:

(1) I ≤ 400A
(2) Available only for 50Hz
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.
Rotor is not self-aligned, costumer must ensure alignment.
Over speed not allowed.
Rotor maximum axial play: ± 3mm.
Motor rotation only available in one sense (CW or CCW), please inform desired sense at the time of Inquiry/Order.

7.3.5. High Voltage - Electrical Data - W22XM Series

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb

Output		Frame IEC		T_n (Nm)	I_s / I_n	T_s / T_n	T_{max} / T_n	Inertia J Kgm²	Allowable locked rotor time Hot/Cold (s)	Weight Kg	Sound Pressure dB(A)	Y 10000V/50Hz							
												RPM	% of full load						I_n (A)
													Efficiency η			Power Factor Cos φ			
kW	HP												50	75	100	50	75	100	
II Pole - 3000 min⁻¹																			
355	480	W22XM 450KH	(2)	1134	6.5	0.7	2.7	9.0	19/10	6150	82	2990	95.8	96.6	96.7	0.82	0.87	0.89	23.8
400	540	W22XM 450KH	(2)	1278	6.5	0.7	2.7	9.9	18/9	6300	82	2990	95.6	96.5	96.7	0.82	0.87	0.89	26.8
450	610	W22XM 450KH	(2)	1437	6.5	0.7	2.7	10.6	16/8	6550	82	2990	95.6	96.5	96.7	0.83	0.88	0.89	30.2
500	675	W22XM 450KH	(2)	1597	6.5	0.7	2.7	11.6	15/8	7050	82	2990	96.0	96.7	96.8	0.83	0.88	0.89	33.5
560	755	W22XM 500KH	(2)	1789	7.0	0.7	3.1	12.7	15/8	9600	85	2990	96.0	96.5	96.8	0.82	0.88	0.89	37.5
630	850	W22XM 500KH	(2)	2012	7.0	0.7	3.1	13.5	13/7	10050	85	2990	96.0	96.5	96.8	0.83	0.88	0.89	42.2
710	960	W22XM 500KH	(2)	2268	7.0	0.7	3.1	14.2	12/6	10250	85	2990	96.0	96.5	96.8	0.83	0.88	0.89	47.6
IV Pole - 1500min⁻¹																			
355	480	W22XM 450KH	(2)	2274	6.5	0.7	2.0	16.8	9/5	6150	82	1491	94.3	95.4	95.8	0.72	0.80	0.83	25.8
400	540	W22XM 450KH	(2)	2562	6.5	0.7	2.0	16.8	9/5	6300	82	1491	95.8	96.0	96.1	0.75	0.81	0.83	29.0
450	610	W22XM 450KH	(2)	2882	6.5	0.7	2.0	17.8	9/5	6500	82	1491	96.0	96.4	96.4	0.75	0.81	0.83	32.5
500	675	W22XM 450KH	(2)	3203	6.5	0.7	2.0	19.3	9/5	6800	82	1491	96.0	96.4	96.4	0.75	0.81	0.83	36.1
560	755	W22XM 450KH	(2)	3584	6.5	0.7	2.0	20.5	9/5	7200	82	1492	96.0	96.4	96.4	0.75	0.81	0.83	40.4
630	850	W22XM 500KH	(2)	4024	6.7	1.0	2.8	44.5	15/8	10650	85	1495	95.0	96.0	96.5	0.82	0.87	0.88	42.8
710	960	W22XM 500KH	(2)	4535	6.7	1.0	2.7	49.3	15/8	10900	85	1495	95.0	96.3	96.7	0.84	0.88	0.89	47.6
800	1080	W22XM 500KH	(2)	5110	6.7	1.1	2.7	54.3	15/8	11400	85	1495	95.4	96.5	97.0	0.84	0.88	0.89	53.5
900	1215	W22XM 500KH	(2)	5749	6.8	1.1	2.7	59.3	15/8	12100	85	1495	95.5	96.5	97.0	0.84	0.88	0.89	60.2
VI Pole - 1000min -1																			
280	380	W22XM 450KH	(2)	2693	5.5	0.8	3.1	20.2	15/8	6500	78	993	94.0	95.0	95.2	0.60	0.72	0.77	22.1
315	425	W22XM 450KH	(2)	3029	5.5	0.8	3.1	21.7	15/8	6800	78	993	94.0	95.0	95.2	0.62	0.73	0.78	24.5
355	480	W22XM 450KH	(2)	3418	5.5	0.8	3.1	24.5	15/8	7100	78	992	94.2	95.1	95.3	0.64	0.74	0.79	27.2
400	540	W22XM 450KH	(2)	3851	5.5	0.8	3.1	21.7	15/8	7300	78	992	94.2	95.1	95.3	0.64	0.74	0.79	30.7
450	610	W22XM 450KH	(2)	4332	5.5	0.8	3.1	22.7	15/8	7500	78	992	94.2	95.1	95.3	0.64	0.74	0.79	34.5
500	675	W22XM 500KH	(2)	4794	6.3	0.9	2.6	56.4	15/8	11050	80	996	96.5	97.0	97.0	0.71	0.80	0.83	35.9
560	755	W22XM 500KH	(2)	5369	6.3	0.9	2.6	59.1	15/8	11500	80	996	96.5	97.0	97.0	0.81	0.80	0.83	40.2
630	850	W22XM 500KH	(2)	6041	6.5	0.9	2.7	64.5	15/8	12200	80	996	96.5	97.0	97.0	0.81	0.80	0.83	45.2
VIII Pole - 750 min⁻¹																			
200	270	W22XM 450KH	(2)	2557	6.5	1.2	3	23.1	15/8	6500	76	747	93.0	94.4	94.4	0.56	0.68	0.76	16.1
250	340	W22XM 450KH	(2)	3196	6.5	1.2	3	25.8	15/8	6800	76	747	93.0	94.4	94.4	0.56	0.68	0.76	20.1
280	380	W22XM 450KH	(2)	3580	6.5	1.2	3	27.4	15/8	7200	76	747	93.0	94.4	94.4	0.56	0.68	0.76	22.5
315	425	W22XM 450KH	(2)	4027	6.5	1.2	3	29.2	15/8	7700	76	747	93.0	94.4	94.4	0.56	0.68	0.76	25.3
355	480	W22XM 450KH	(2)	4538	6.5	1.2	3	31.0	15/8	7900	76	747	93.0	94.4	94.4	0.56	0.68	0.76	28.6
400	540	W22XM 500KH	(2)	5114	5.0	0.6	2.2	80.1	15/8	11000	80	747	96.3	96.5	96.5	0.73	0.79	0.80	29.9
450	610	W22XM 500KH	(2)	5753	5.0	0.6	2.2	87.4	15/8	11600	80	747	96.3	96.5	96.5	0.73	0.79	0.80	33.7
500	675	W22XM 500KH	(2)	6392	5.1	0.7	2.3	96.1	15/8	12200	80	747	96.3	96.5	96.5	0.73	0.79	0.80	37.4

High voltage motors are also available under request for frame size 400.

(1) Temperature rise class F at full load (2) Copper rotor (3) Rated current at 690V (4) Rated current at 760V

Tn = Full load torque
Ils / In = Locked rotor current
Ts / Tn = Locked rotor torque

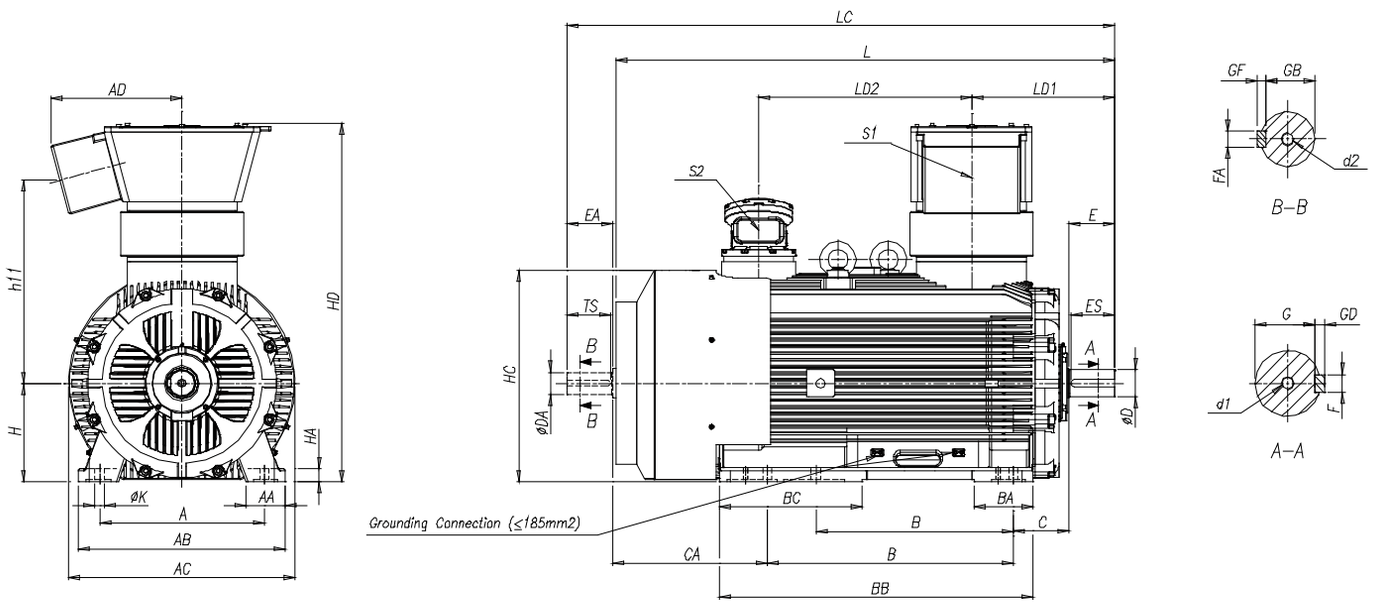
Tmax / Tn = Breakdown torque
In = Full load current

Notes:
-The indicated values for sound pressure levels are @ 1m no load, with 3 dB(A) tolerance.
-All values are according to IEC 60034-1 tolerances.
-This data can be changed without prior notice.

7.3.6. High Voltage - Mechanical Data - W22XM Series

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
High Voltage

450KH - 500KH, IMB3T
Anti-friction bearings



Frame	Poles	A	AA	AB	AC	AD	BA	BB	BC	B	C	CA	H	HA	HC	HD	h11	K	L	LC	LD1	LD2
450KH	2P	750	180	940	1030	594	270	1430	650	900	250	705	450	60	965	1634	925	42	2230	2385	610	970
	4P+									1120									2270	2495	650	
500KH	2P	850	200	1020	1162	594	375	1800	915	1000	280	1065	500	65	1081	1704	945	42	2750	2905	635	1300
	4P+									1250									2830	3055	715	

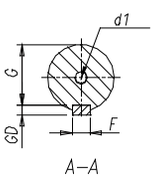
		Shaft dimensions														Bearings		Power terminal box - S1	Auxiliary terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	CEFGH 500	WTBX S
450KH	2P	85m6	170	160	22h9	76	14	75m6	140	130	20h9	67,5	12	DSM20	DSM20	6318C3	NU218C3	I ≤ 200A : 1xM63x1,5	3xM20x1,5
	4P+	120m6	210	200	32h9	109	18	100m6	210	200	28h9	90	16	DSM24	DSM24	6326C3	6326C3	200A ≤ I ≤ 400A : 3xM63x1,5	
500KH	2P	90m6	170	160	25	81	14	75m6	140	130	20	67,5	12	DSM24	DSM20	NU220C3+6020C3	NU220C3		
	4P+	130m6	250	240	32	119	18	110m6	210	200	28	100	16		DSM24	6328C3	6328C3		

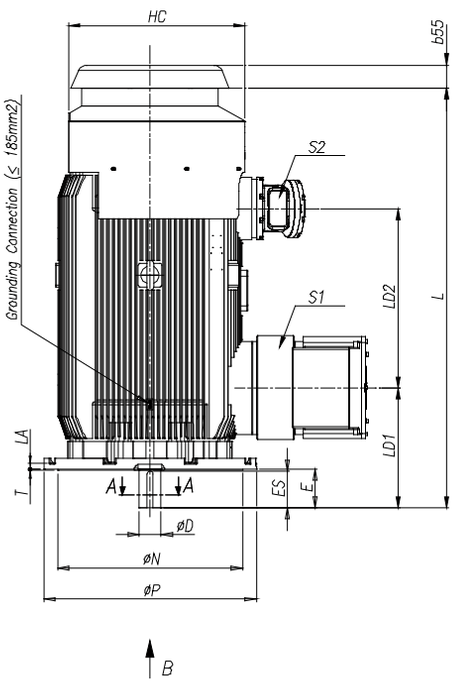
Notes:

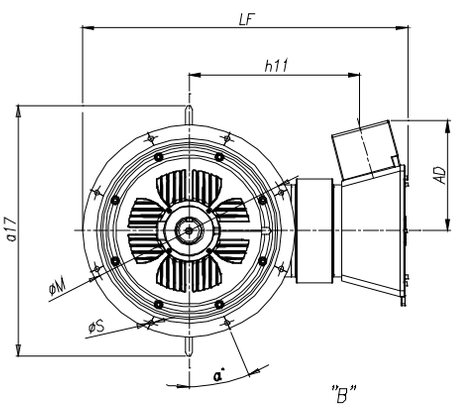
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XM - Flameproof Motors – Ex d I Mb
W22XME - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
High Voltage

450KH - 500KH, IMV1
Anti-friction bearings







Frame	Poles	AD	HC	h11	L	LA	LD1	LD2	LF	b55	a17	M	N	P	T	S	Nr. Holes	α
450KH	4P+	594	955	925	2270	30	650	970	1759	125	1352	1080	1000	1150	6	28	8	22,5°
500KH	4P+	594	1162	945	2830	30	715	1300	1779	130	1482	1080	1000	1150	7	28	8	22,5°

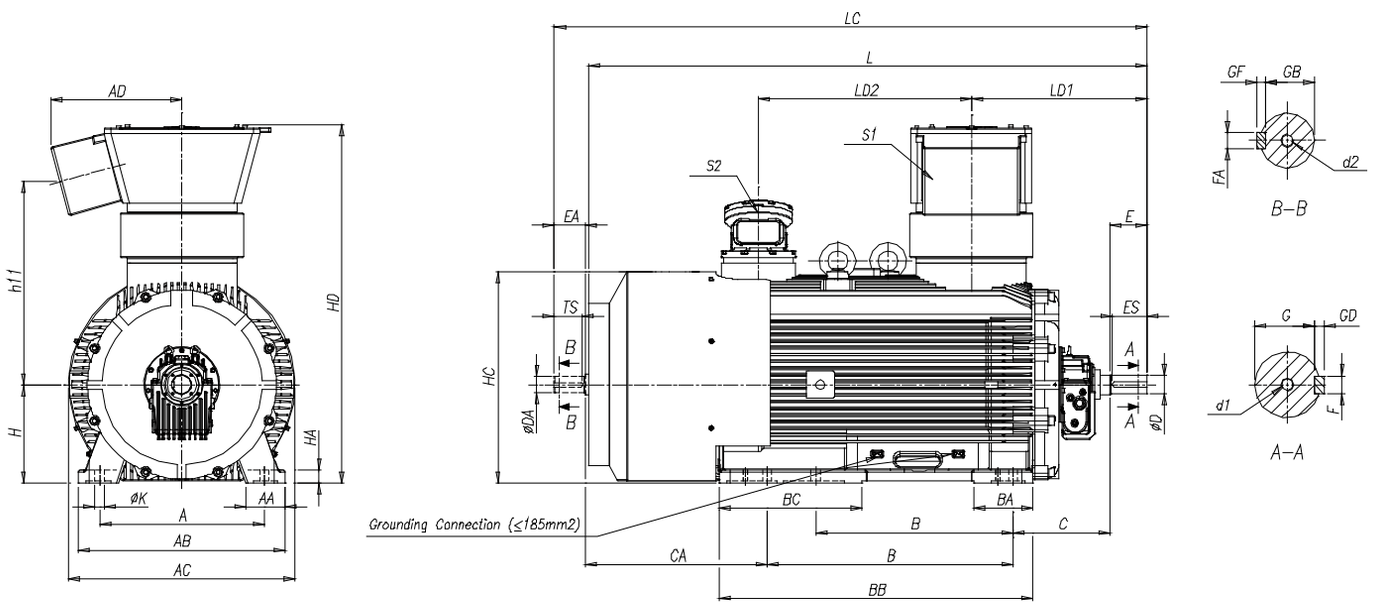
		Shaft dimensions							Bearings		Power terminal box - S1	Auxiliary terminal box - S2
Frame	Poles	D	E	ES	F	G	GD	d1	D.E.	N.D.E.	CEFGH 500	WTBX S
450KH	4P+	120m6	210	200	32h9	109	18	DSM24	7326	6326C3	I ≤ 200A : 1xM63x1,5	3xM20x1,5
500KH	4P+	130m6	250	240	32h9	119	18	DSM24	7328	6328C3	200A ≤ I ≤ 400A : 3xM63x1,5	

Notes:

All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.

W22XMS - Flameproof Motors – Ex d I Mb
W22XMES - Flameproof Motors with Increased Safety Terminal box – Ex d e I Mb
High Voltage

450KH - 500KH, IMB3T
Sleeve bearings



Frame	Poles	A	AA	AB	AC	AD	BA	BB	BC	B	C	CA	H	HA	HC	HD	h11	K	L	LC	LD1	LD2
450KH	2P (1)	750	180	940	1030	594	270	1430	650	900	440	830	450	60	965	1634	925	42	2545	2700	800	970
	4P+									1120	465								2610	2835	865	
500KH	4P+	850	200	1020	1162	594	375	1800	915	1000 1250	490	1190	500	65	1081	1704	945	42	3165	3390	925	1300

		Shaft dimensions													Bearings		Power terminal box - S1	Auxiliary terminal box - S1
Frame	Poles	D	E	ES	F	G	GD	DA	EA	TS	FA	GB	GF	d1	d2	D.E.	N.D.E.	CEFGH 500	WTBX S
450KH	2P(1)	85m6	170	160	22h9	76	14	75m6	140	130	20h9	67,5	12	DSM20	DSM20	EFNLB 9-80	EFNLQ 9-80	I ≤ 200A : 1xM63x1,5 200A ≤ I ≤ 400A : 3xM63x1,5	3xM20x1,5
	4P+	120m6	210	200	32h9	109	18	100m6	210	200	28h9	90	16	DSM24	DSM24	EFNLB 11-125	EFNLQ 11-125		
500KH	4P+	130m6	250	240	32	119	18	110m6	210	200	28	100	16	DSM24	DSM24	EFNLB 11-125	EFNLQ 11-125		

Notes:

(1) Available only for 50Hz
All the dimensions are in millimeters.
Please, do not use these dimensions for construction. Certified drawings under request.
External thrust shall be informed at the time of Inquiry/Order.
Executions with auxiliary terminal box and second shaft end are optional and available under request.
For other special executions please refer to us.
The dimensions shown are subject to change without prior notice.
Rotor is not self-aligned, costumer must ensure alignment.
Over speed not allowed.
Rotor maximum axial play: ± 3mm.
Motor rotation only available in one sense (CW or CCW), please inform desired sense at the time of Inquiry/Order.

8. Terminal Boxes

8.1. BFGC4 Line

8.1.1. Power Terminal Boxes

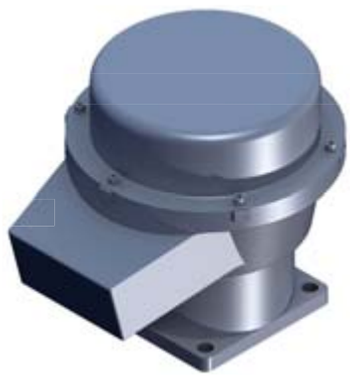
Standard Terminal Box for Flameproof Motors - Ex d IIC (Ex tb IIIC) Terminal Box Model: Exd 175 Low Voltage: Un ≤ 690V	

Certification
Ex d IIC (Ex tb IIIC)

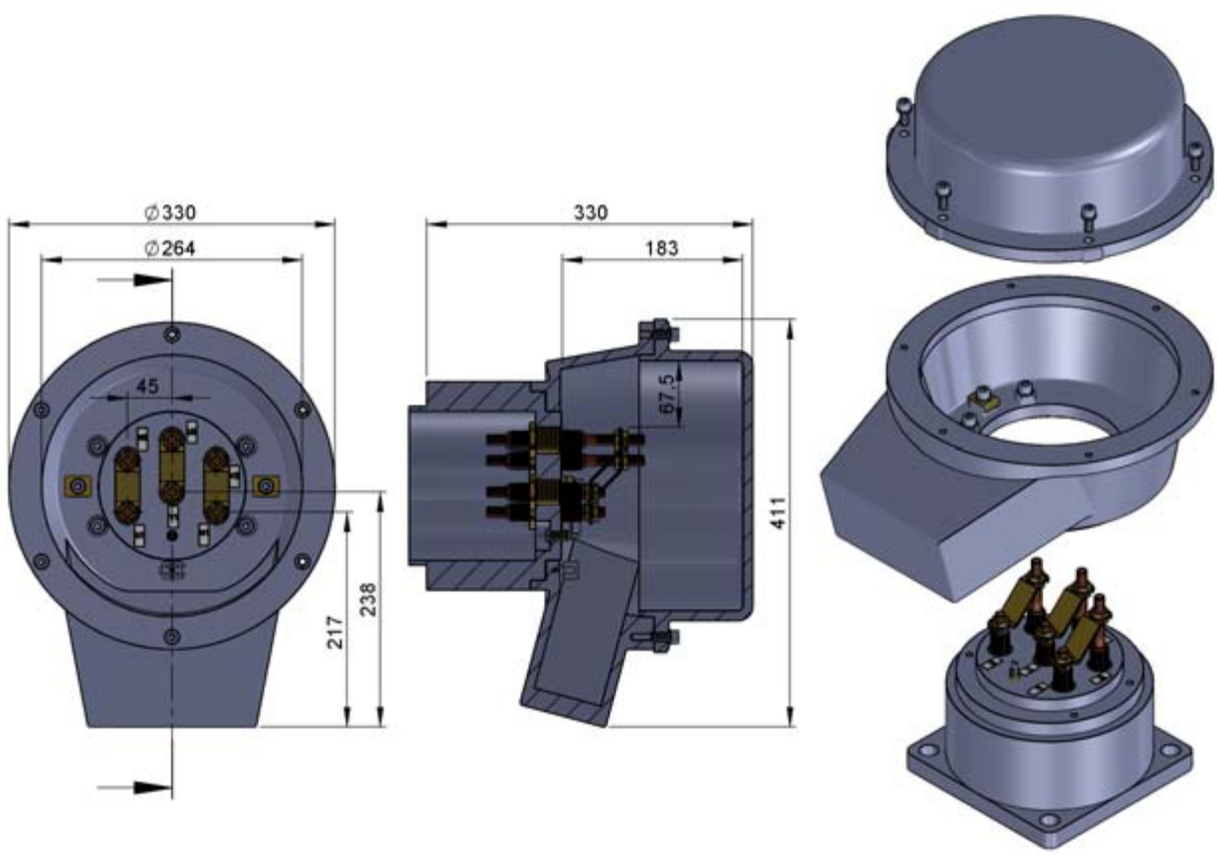
Protection Level
IP 66

Grounding	
Quantity	2
Cross section cables (max.)	95 mm²
Material	Stainless steel

Thermal Protections	
Standard	1 PTC per phase (2 terminals)
Number of connectors (max.)	14
Cross section cable (max.)	2,5 mm²/cable



Current Level	I ≤ 345A
Entrance Holes	2 x M63 x 1,5
Cross section cables (max.)	185 mm²
Cable Type (max.)	3 core - 2x(3x185+1G95)
Bushing / Terminal	6 x M10



Standard Terminal Box for Flameproof Motors - Ex d e IIC (Ex tb IIIC)
Terminal Box Model: Exe 175
Low Voltage: Un ≤ 690V

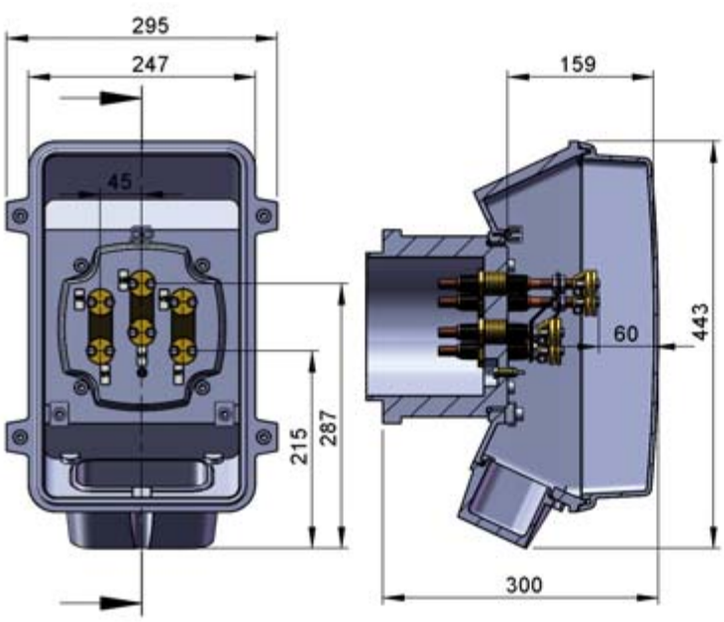
Certification
Ex d e IIC (Ex tb IIIC)

Protection Level
IP 66

Grounding	
Quantity	2
Cross section cables (max.)	185 mm²
Material	Stainless steel

Thermal Protections	
Standard	1 PTC per phase (2 terminals)
Number of connectors (max.)	14
Cross section cable (max.)	2,5 mm²/cable

Current Level	I ≤ 345A
Entrance Holes	2 x M63 x 1,5
Cross section cables (max.)	70 mm² (1)
Cable Type (max.)	3 core - 2 x (3x70+1G35)
Bushing / Terminal	6 x M10



Notes:

(1) As optional can be adapted for a 95mm² cross section cable.

8.1.2. Auxiliaries Terminal Boxes - Protection devices connection

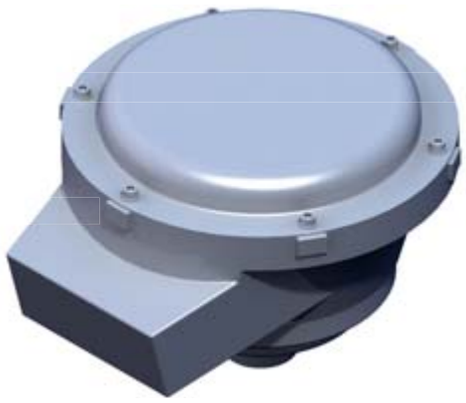
Auxiliary Terminal Box for Flameproof Motors - Ex d IIC (Ex tb IIIC)
Auxiliary Terminal Box Model: Exd 105

Certification
Ex d IIC (Ex tb IIIC)

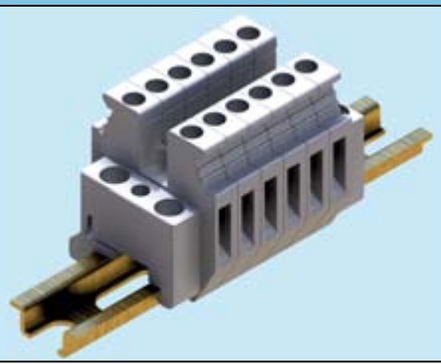
Protection Level
IP 66

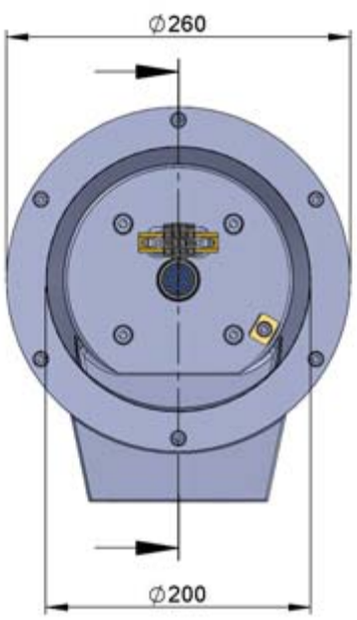
Grounding	
Quantity	1
Cross section cables (max.)	70 mm²
Material	Stainless steel

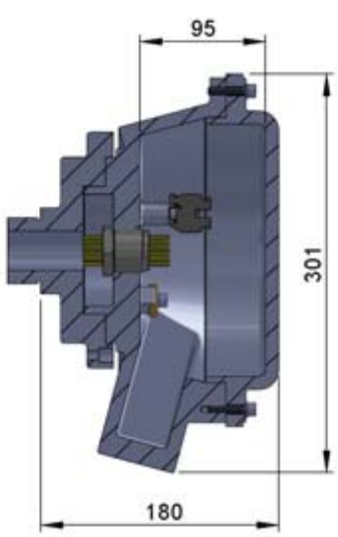
Technical Data	
Voltage (max.)	500V
Current (max.)	24A
Cross section cable (max.)	4 mm² (solid) / 2,5 mm² (stranded)
Number of connectors (max.)	26

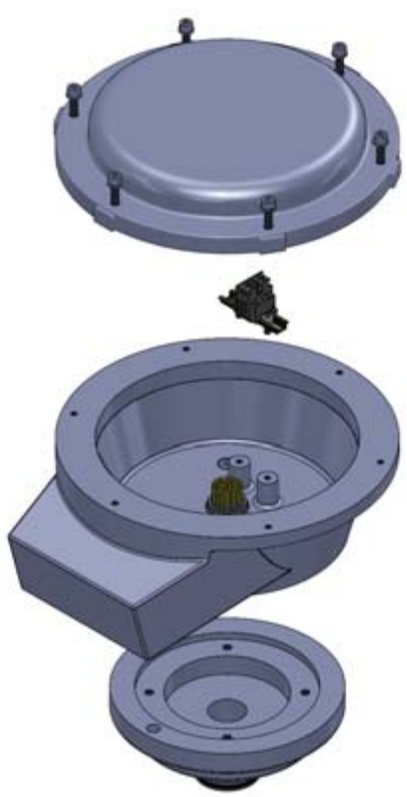


Terminal Connection









Auxiliary Terminal Box for Flameproof Motors - Ex d e IIC (Ex tb IIIC)
Auxiliary Terminal Box Model: Exe 105

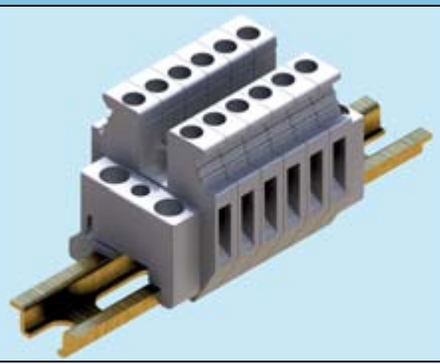
Certification
Ex d e IIC (Ex tb IIIC)

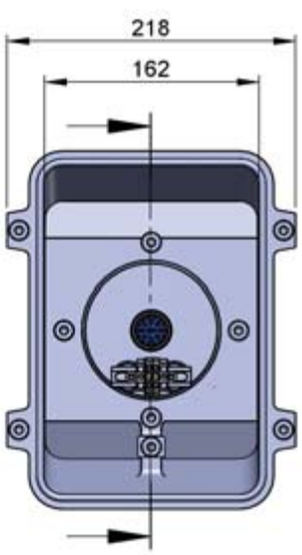
Protection Level
IP 66

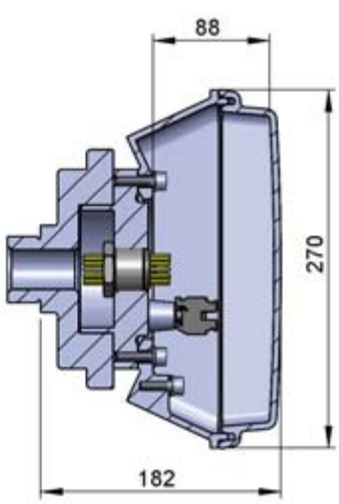
Grounding	
Quantity	1
Cross section cables (max.)	70 mm²
Material	Stainless steel

Technical Data	
Voltage (max.)	500V
Current (max.)	24A
Cross section cable (max.)	4 mm² (solid) / 2,5 mm² (stranded)
Number of connectors (max.)	26

Terminal Connection







8.2. W22X Line

8.2.1. Power Terminal Boxes
8.2.1.1. Ex d(e) I / Ex d(e) IIB (Ex tb IIIC)
8.2.1.1.1. Low Voltage

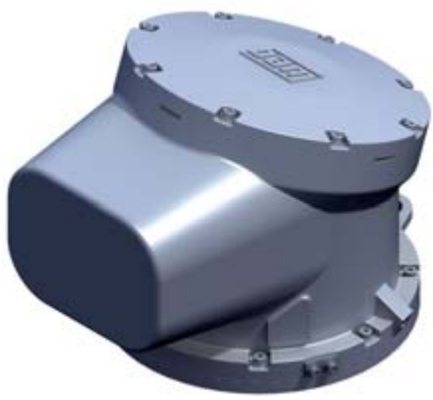
Standard Terminal Box for Flameproof Motors - Ex d I / Ex d IIB (Ex tb IIIC)
Terminal Box Model: WTBX M
Low Voltage: Un ≤ 1100V

Certification	
Standard	Ex d I / Ex d IIB (Ex tb IIIC)
Optional	Ex d IIC (Ex tb IIIC)

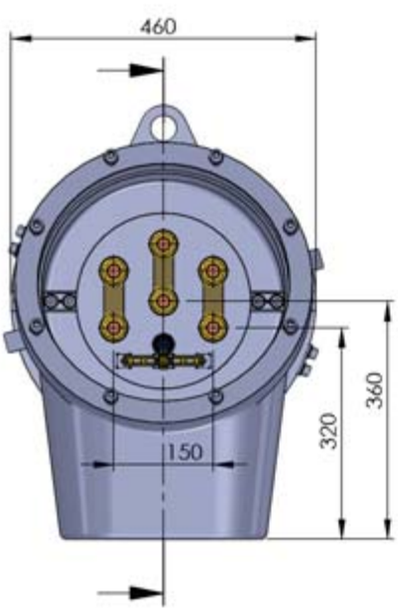
Protection Level
IP 66

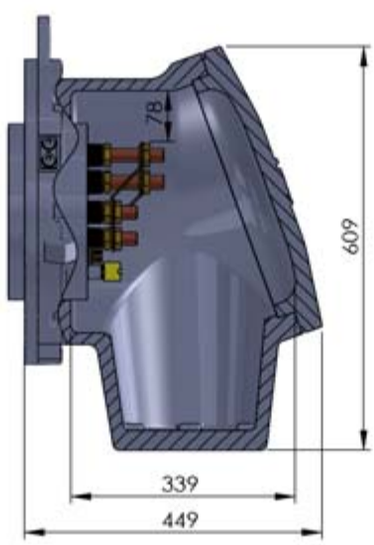
Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel

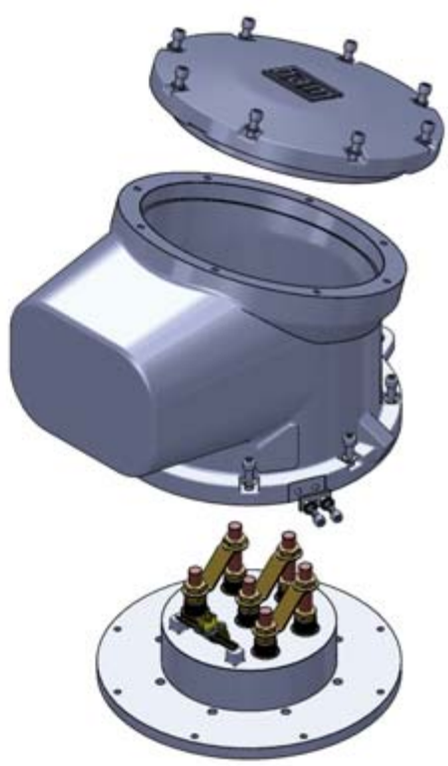
Thermal protections	
Standard	1 PTC per phase (2 terminals)
Number of connectors (max.)	18
Cross section cables (max.)	4 mm² (solid) / 2,5 mm² (stranded)



Current Level	I ≤ 545A	545A < I ≤ 690A	690A < I ≤ 900A	900A < I ≤ 1090A
Entrance Holes	2 x M63 x 1,5	2 x M63 x 1,5	2 x M63 x 1,5	4 x M63 x 1,5
Cross section cables (max.)	300 mm²			
Cable Type (max.)	3 core - 2x (3x300 + 1G150)			
Bushing / Terminal	6 x M12	6 x M16	6 x M20	







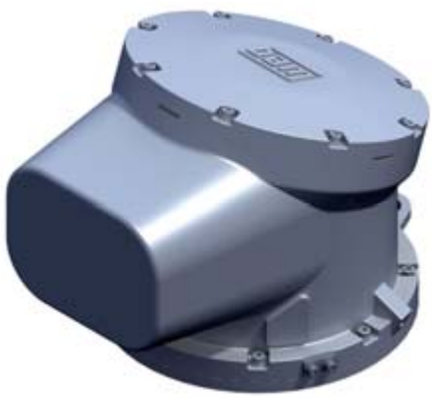
Standard Terminal Box for Flameproof Motors - Ex d e I / Ex d e IIB (Ex tb IIIC)
Terminal Box Model: WTBX M
Low Voltage: Un ≤ 1100V

Certification	
Standard	Ex d e I / Ex d e IIB (Ex tb IIIC)
Optional	Ex d e IIC (Ex tb IIIC)

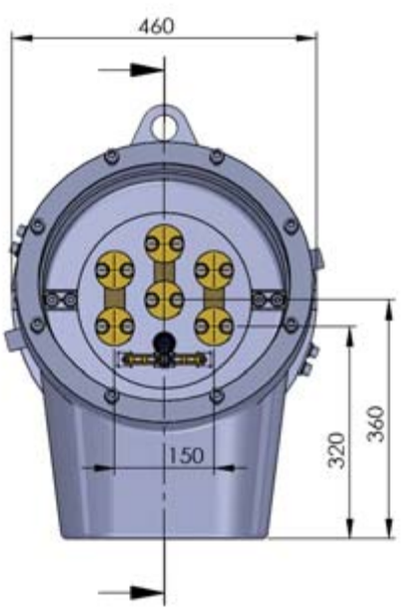
Protection Level
IP 66

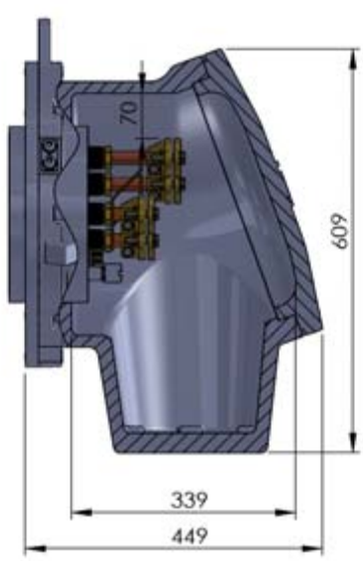
Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel

Thermal protections	
Standard	1 PTC per phase (2 terminals)
Number of connectors (max.)	18
Cross section cables (max.)	4 mm² (solid) / 2,5 mm² (stranded)



Current Level	I ≤ 545 A	545 A < I ≤ 690 A	690 A < I ≤ 900 A	900 A < I ≤ 1090 A
Entrance Holes	2 x M63 x 1,5	2 x M63 x 1,5	2 x M63 x 1,5	4 x M63 x 1,5
Cross section cables (max.)	95 mm² (1)	150 mm² (2)	300 mm²	
Cable Type (max.)	3 Core - 2x(3x95+1G50)	3 Core - 2x(3x150+1G95)	3 Core - 2x(3x300+1G150)	
Bushing / Terminal	6 x M12	6 x M16	6 x M20	
				





Notes:

(1) As optional can be adapted for a 150mm² cross section cable.
(2) As optional can be adapted for a 300mm² cross section cable.

Standard Terminal Box for Flameproof Motors - Ex d I / Ex d IIB (Ex tb IIIC)
Terminal Box Model: CEFGH 500
Low Voltage: Un ≤ 1100V

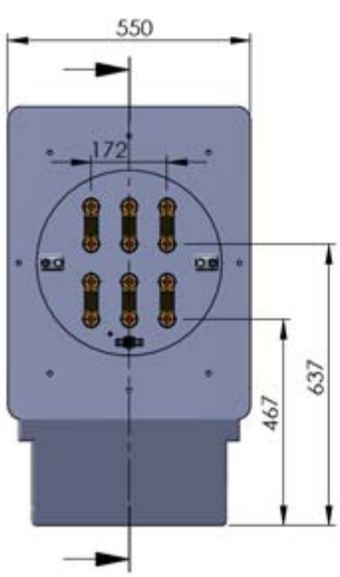
Certification	
Standard	Ex d I / Ex d IIB (Ex tb IIIC)
Optional	Ex d IIC (Ex tb IIIC)

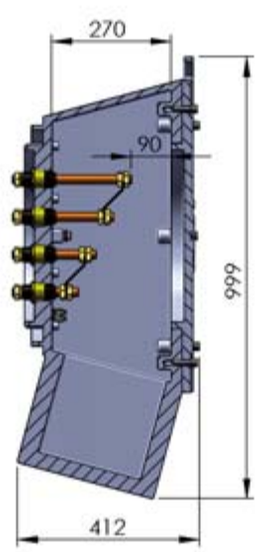
Protection Level
IP 66

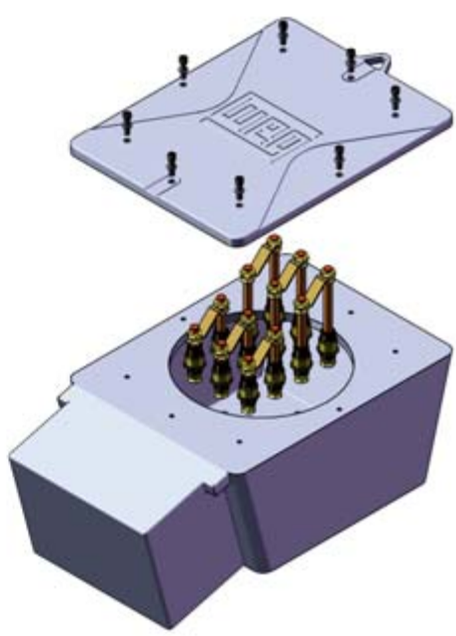
Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel

Thermal protections	
Standard	1 PTC per phase (2 terminals)
Number of connectors (max.)	20
Cross section cables (max.)	4 mm² (solid) / 2,5mm² (stranded)

Current Level	1090A < I ≤ 1385A	1385A < I ≤ 1900A
Entrance Holes	4 x M63 x 1,5	
Cross section cables (max.)	300 mm²	
Cable Type (max.)	3 Core - 3x(3x300 + 1G150)	3 Core - 4x(3x300 + 1G150)
Bushing / Terminal	12 x M16 	12 x M20 







Standard Terminal Box for Flameproof Motors - Ex d e I / Ex d e IIB (Ex tb IIIC)
Terminal Box Box Model: CEFGH 500
Low Voltage: ≤1100V

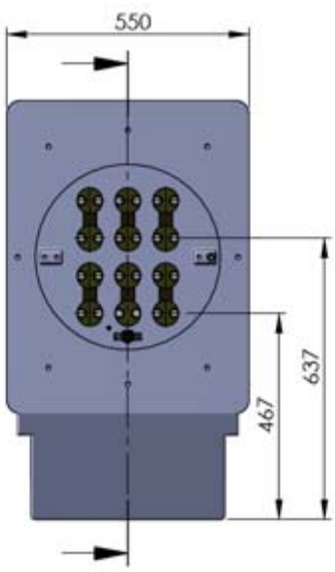
Certification	
Standard	Ex d e I / Ex d e IIB (Ex tb IIIC)
Optional	Ex d e IIC (Ex tb IIIC)

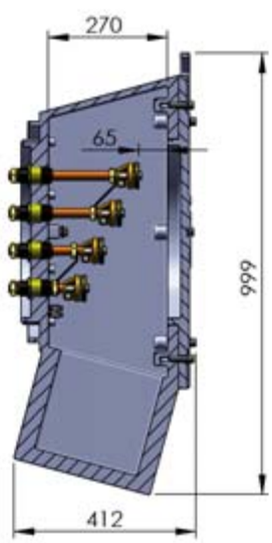
Protection Level
IP 66

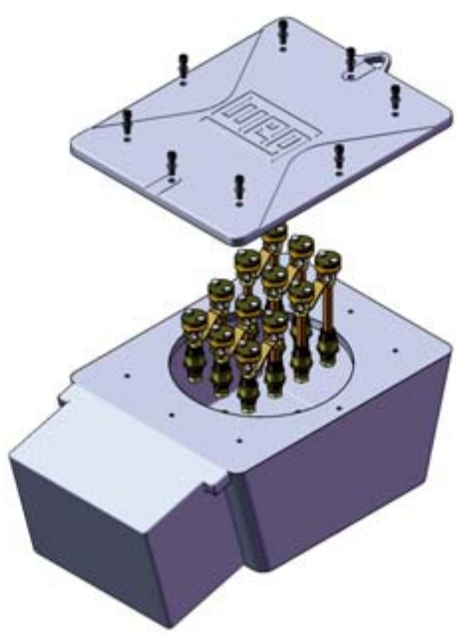
Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel

Thermal protections	
Standard	1 PTC per phase (2 terminals)
Number of connectors (max.)	20
Cross section cables (max.)	4 mm² (solid) / 2,5mm² (stranded)

Current Level	1090A < I ≤ 1385A	1385A < I ≤ 1900A
Entrance Holes	4 x M63 x 1,5	
Cross section cables (max.)	150 mm² (1)	300 mm²
Cable Type (max.)	3 Core - 3x(3x150 + 1G90)	3 Core - 4x(3x300 + 1G150)
Bushing / Terminal	12 x M16 	12 x M20 







Notes:

(1) As optional can be adapted for a 300mm² cross section cable.

8.2.1.1.2. Medium Voltage

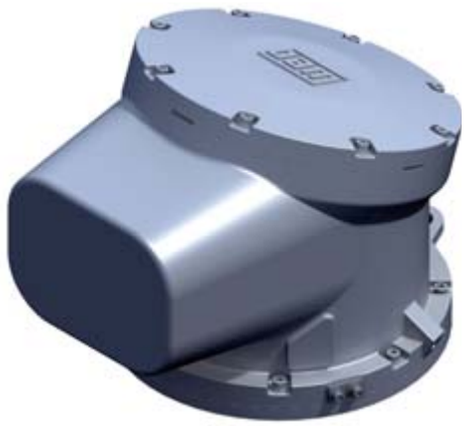
Standard Terminal Box for Flameproof Motors - Ex d I / Ex d IIB (Ex tb IIIC)
Terminal Box Model: WTBX M
Medium Voltage: 1100V < Un ≤ 6600V

Certification	
Standard	Ex d I / Ex d IIB (Ex tb IIIC)
Optional	Ex d IIC (Ex tb IIIC)

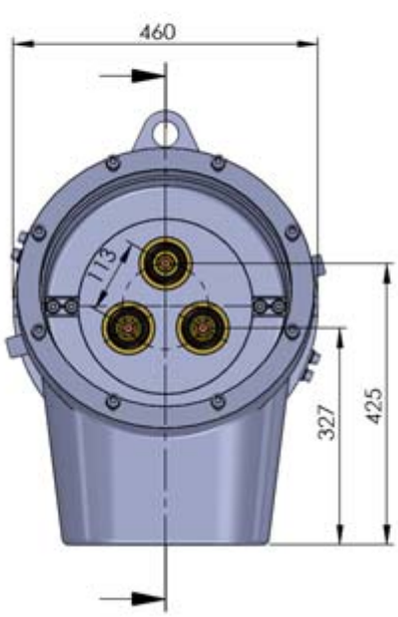
Protection Level
IP 66

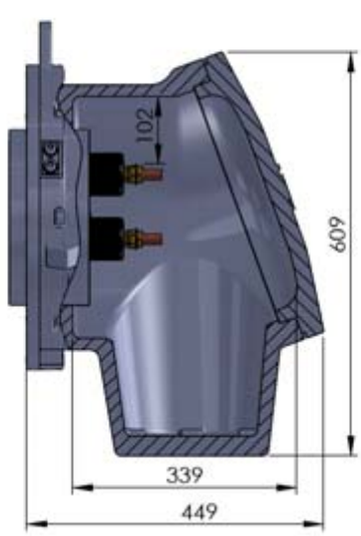
Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel

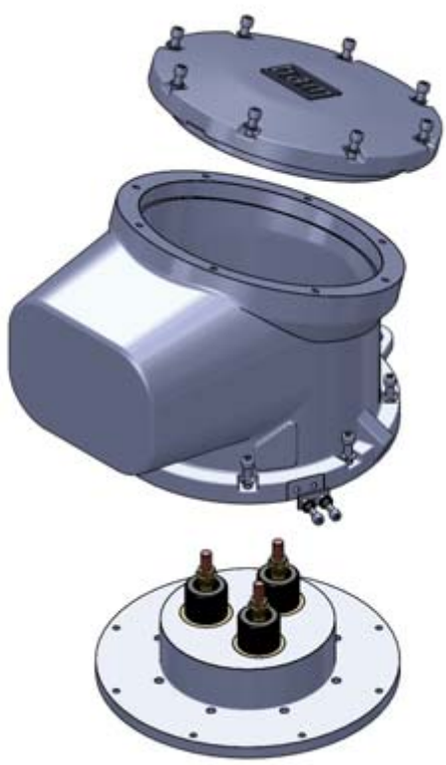
Fault level	I ≤ 400A
Nominal	30kA for 0,25 sec.
Peak	78kA
Stator cross section cable (min.)	120 mm²
Bushing / Terminal	3 x M16



Current Level	I ≤ 315A	315A < I ≤ 400A
Entrance Holes	1 x M63 x 1,5	3x M63 x 1,5
Cross section cables (max.)	120 mm²	500 mm²
Cable Type (max.)	3 Core - 1x(3x120+1G70)	1 Core - 3x(1x500)
Bushing / Terminal	3 x M12	3 x M16
		







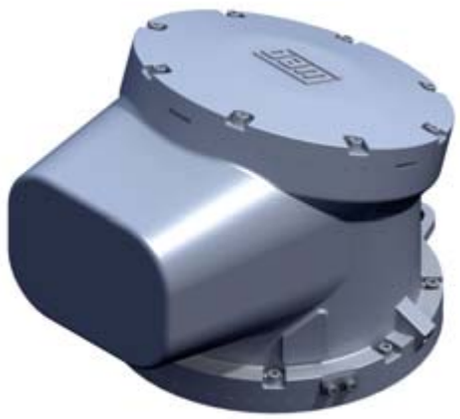
Standard Terminal Box for Flameproof Motors - Ex d e I / Ex d e IIB (Ex tb IIIC)
Terminal Box Model: WTBX M
Medium Voltage: 1100V < Un ≤ 6600V

Certification	
Standard	Ex d e I / Ex d e IIB (Ex tb IIIC)
Optional	Ex d e IIC (Ex tb IIIC)

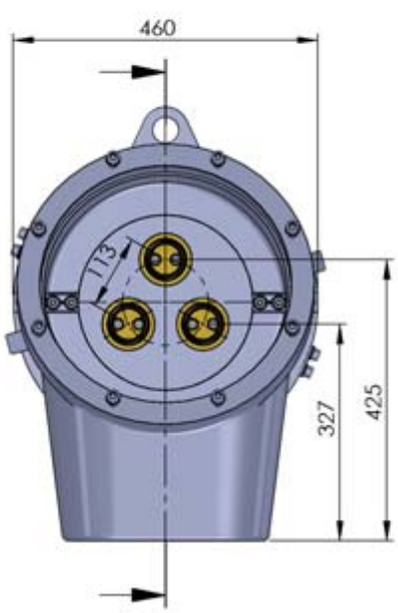
Protection Level
IP 66

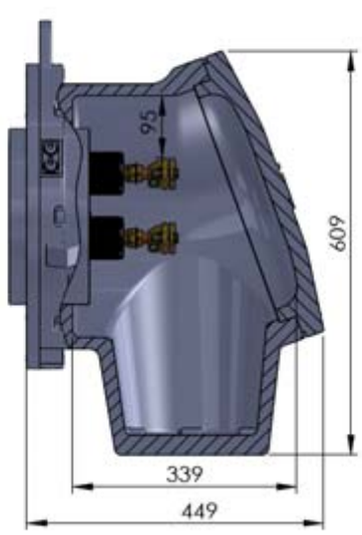
Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel

Fault level	I ≤ 400A
Nominal	15kA for 0,25 sec.
Peak	39kA
Stator cross section cable (min.)	120mm²
Bushing / Terminal	3 x M16



Current Level	I ≤ 315A	315A < I ≤ 400A
Entrance Holes	1 x M63 x 1,5	3x M63 x 1,5
Cross section cables (max.)	95 mm² (1)	150 mm² (2)
Cable Type (max.)	3 Core - 1x(3x95+1G50)	1 Core - 3x(1x150)
Bushing / Terminal	3 x M12	3 x M16
		





Notes:

(1) As optional can be adapted for a 150mm² cross section cable.
(2) As optional can be adapted for a 300mm² cross section cable.

Standard Terminal Box for Flameproof Motors - Ex d I / Ex d IIB (Ex tb IIIC)
Terminal Box Model: CEFGH 500
Medium Voltage: 1100V < Un ≤ 6600V

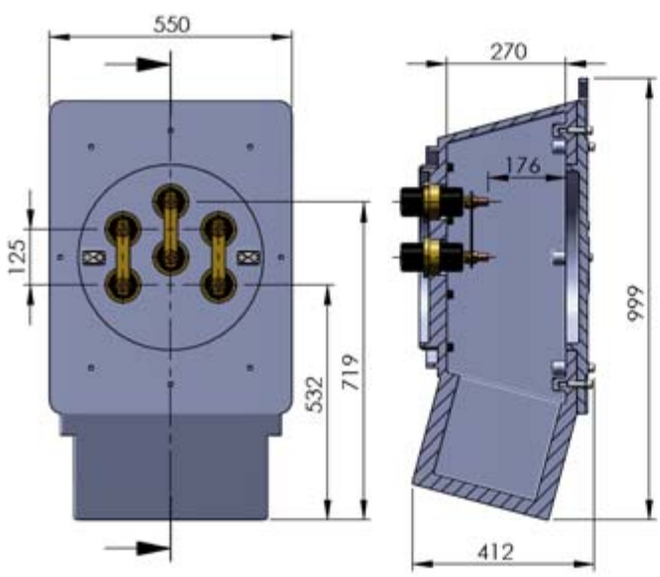
Certification	
Standard	Ex d I / Ex d IIB (Ex tb IIIC)
Optional	Ex d IIC (Ex tb IIIC)

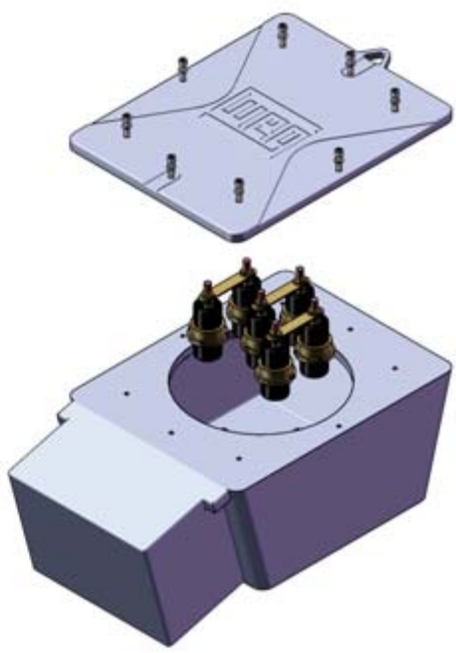
Protection Level
IP 66

Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel

Fault level	I ≤ 400A
Nominal	30kA for 0,25 sec.
Peak	78kA
Stator cross section cable (min.)	120 mm²
Bushing / Terminal	3 x M16

Current Level	400A < I ≤ 630A	630A < I ≤ 800A
Entrance Holes	3 x M63 x 1,5	
Cross section cables (max.)	500 mm²	
Cable Type (max.)	1 Core - 3x(1x500)	
Bushing / Terminal	6 x M12	6 x M16





Standard Terminal Box for Flameproof Motors - Ex d e I / Ex d e IIB (Ex tb IIIC)
Terminal Box Model: CEFGH 500
Medium Voltage: 1100V < Un ≤ 6600V

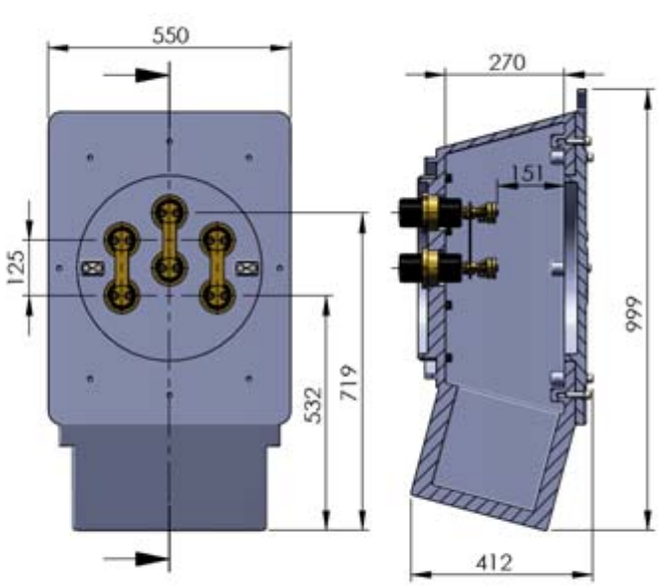
Certification	
Standard	Ex d e I / Ex d e IIB (Ex tb IIIC)
Optional	Ex d e IIC (Ex tb IIIC)

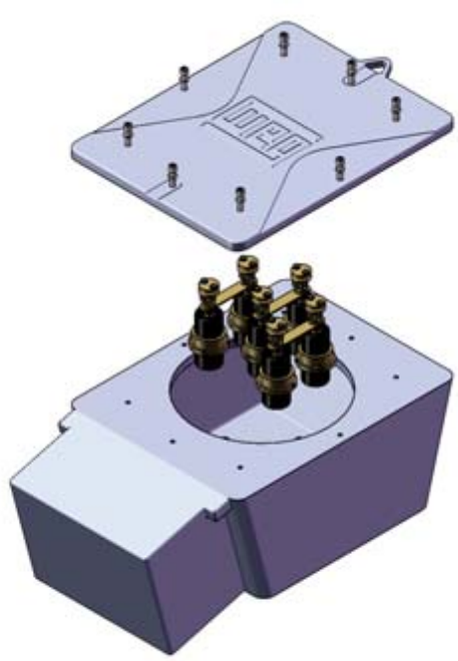
Protection Level
IP 66

Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel

Fault level	I ≤ 400A
Nominal	15kA for 0,25 sec.
Peak	39kA
Stator cross section cable (min.)	120 mm²
Bushing / Terminal	6 x M16

Current Level	400A < I ≤ 630A	630A < I ≤ 800A
Entrance Holes	3x M63 x 1,5	
Cross section cables (max.)	95 mm² (1)	150 mm² (2)
Cable Type (max.)	3 Core - 2x(3x95+1G50)	3 Core - 2x(3x120+1G70)
Bushing / Terminal	6 x M12	6 x M16
		





Notes:

(1) As optional can be adapted for a 150 mm² cross section cable.
(2) As optional can be adapted for a 300 mm² cross section cable.

8.2.1.1.3. High Voltage

Standard Terminal Box for Flameproof Motors - Ex d I / Ex d IIB (Ex tb IIIC)
Terminal Box Model: CEFGH 500
High Voltage: 6600V < Un ≤ 11000V

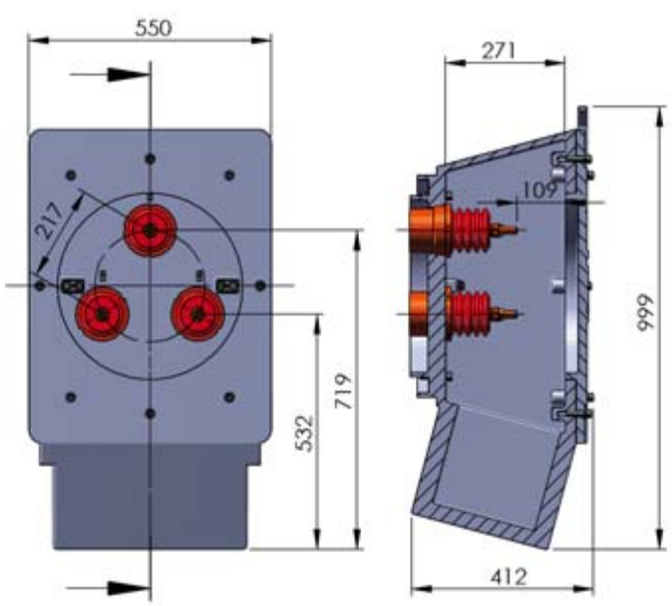
Certification	
Standard	Ex d I / Ex d IIB (Ex tb IIIC)
Optional	Ex d IIC (Ex tb IIIC)

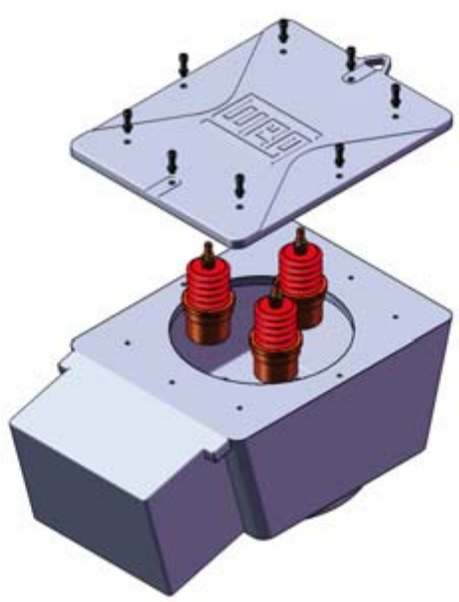
Protection Level
IP 66

Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel

Fault level	I ≤ 400A
Nominal	40kA for 0,25 sec.
Peak	104kA
Stator cross section cable (min.)	120 mm²
Bushing / Terminal	3 x M16

Current Level	I ≤ 200A	200A < I ≤ 400A
Entrance Holes	1 x M63 x 1,5	3 x M50 x 1,5
Cross section cables (max.)	50 mm²	400 mm²
Cable Type (max.)	3 Core - 1x(3x50+1G25)	1 Core - 3x(1x400)
Bushing / Terminal	3 x M16	





Standard Terminal Box for Flameproof Motors - Ex d e I / Ex d e IIB (Ex tb IIIC)
Terminal Box Model: CEFGH 500
High Voltage: 6600V < Un ≤ 11000V

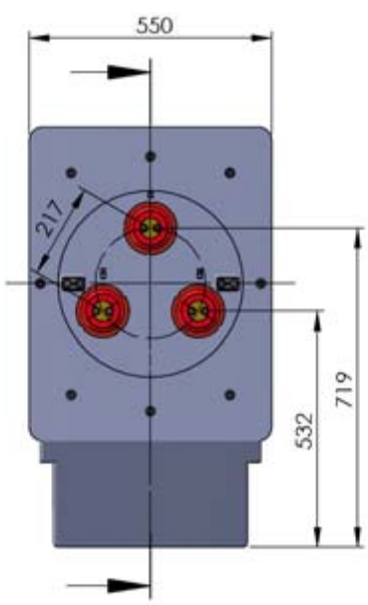
Certification	
Standard	Ex d e I / Ex d e IIB (Ex tb IIIC)
Optional	Ex d e IIC (Ex tb IIIC)

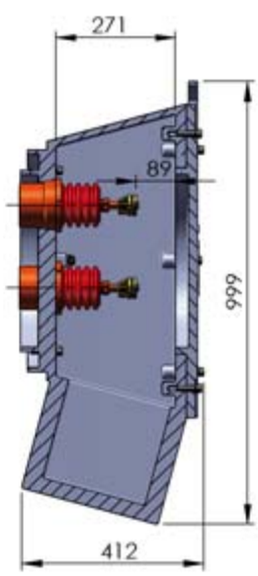
Protection Level
IP 66

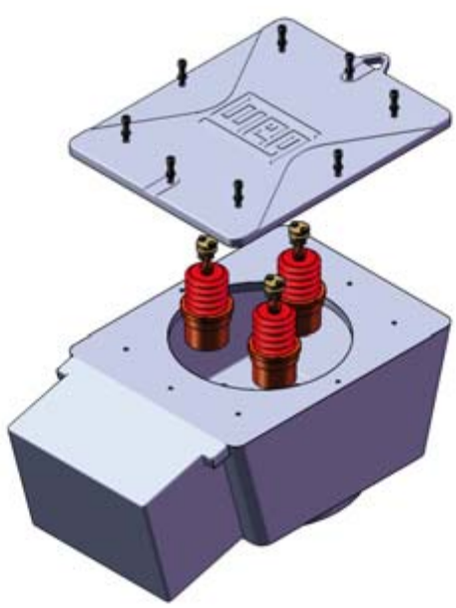
Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel

Fault level	I ≤ 400A
Nominal	15kA for 0,25 sec.
Peak	39kA
Stator cross section cable (min.)	120 mm²
Bushing / Terminal	3 x M16

Current Level	I ≤ 200A	200A < I ≤ 400A
Entrance Holes	1 x M63 x 1,5	3 x M50 x 1,5
Cross section cables (max.)	150 mm² (1)	150 mm² (1)
Cable Type (max.)	3 Core - 1x(3x50+1G25)	1 Core - 3x(1x150)
Bushing / Terminal	3 x M16 	







Notes:

(1) As optional can be adapted for a 300 mm² cross section cable.

8.2.1.2. Ex d IIC (Ex tb IIIC)
8.2.1.2.1 Low Voltage

Standard Terminal Box for Flameproof Motors - Ex d IIC (Ex tb IIIC)
Terminal Box Model: CEFGH 340
Low Voltage: Un ≤ 1100V

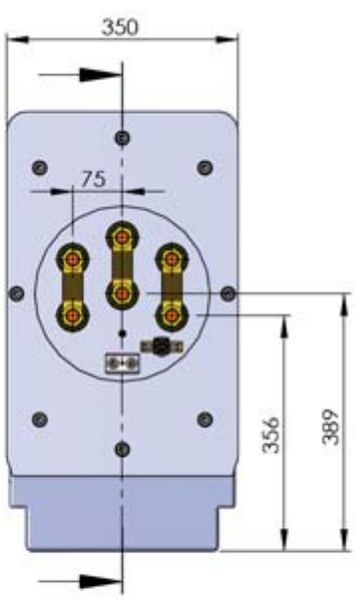
Certification	
Standard	Ex d IIC (Ex tb IIIC)
Optional	Ex d I / Ex d IIB (Ex tb IIIC)

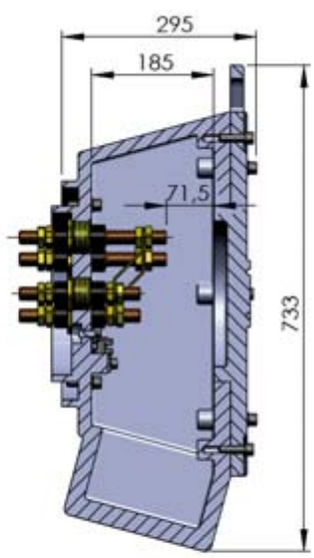
Protection Level
IP 66

Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel

Thermal protections	
Standard	1 PTC per phase (2 terminals)
Auxiliary terminals (max.)	18
Cross section cables (max.)	4 mm² (solid) / 2,5 mm² (stranded)

Current Level	I ≤ 545A	545A < I ≤ 690A	690A < I ≤ 900A	900A < I ≤ 1090A
Entrance Holes	2 x M63 x 1,5	2 x M63 x 1,5	2 x M63 x 1,5	4 x M63 x 1,5
Cross section cables (max.)	300 mm²			
Cable Type (max.)	3 core - 2x (3x300 + 1G150)			
Bushing / Terminal	6 x M12	6 x M16	6 x M20	





Standard Terminal Box for Flameproof Motors - Ex d e IIC (Ex tb IIIC)
Terminal Box Model: CEFGH 340
Low Voltage: Un ≤ 1100V

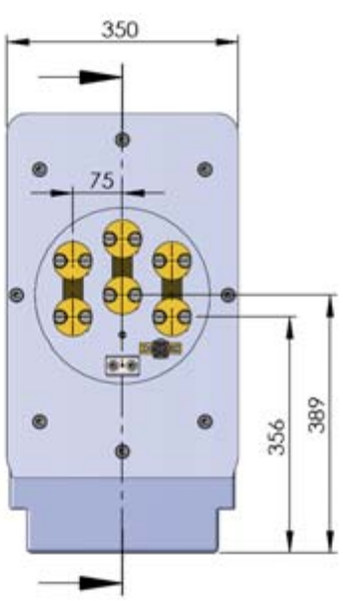
Certification	
Standard	Ex d e IIC (Ex tb IIIC)
Optional	Ex d e I / Ex d e IIB (Ex tb IIIC)

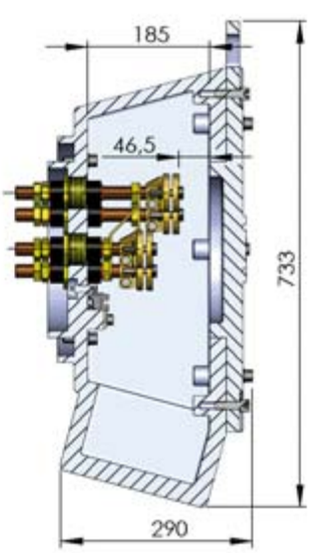
Protection Level
IP 66

Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel

Thermal protections	
Standard	1 PTC per phase (2 terminals)
Auxiliary terminals (max.)	18
Cross section cables (max.)	4 mm² (solid) / 2,5 mm² (stranded)

Current Level	I ≤ 545A	545A < I ≤ 690A	690A < I ≤ 900A	900A < I ≤ 1090A
Entrance Holes	2 x M63 x 1,5	2 x M63 x 1,5	2 x M63 x 1,5	4 x M63 x 1,5
Cross section cables (max.)	95mm² (1)	150mm² (2)	300mm²	
Cable Type (max.)	3 Core - 2x(3x95+1G50)	3 Core - 2x(3x150+1G95)	3 Core - 2x(3x300+1G150)	
Bushing / Terminal	6 x M12	6 x M16	6 x M20	
				





Notes:

(1) As optional can be adapted for a 150 mm² cross section cable.
(2) As optional can be adapted for a 300 mm² cross section cable.

Standard Terminal Box for Flameproof Motors - Ex d IIC (Ex tb IIIC)
Terminal Box Model: CEFGH 500
Low Voltage: Un ≤ 1100V

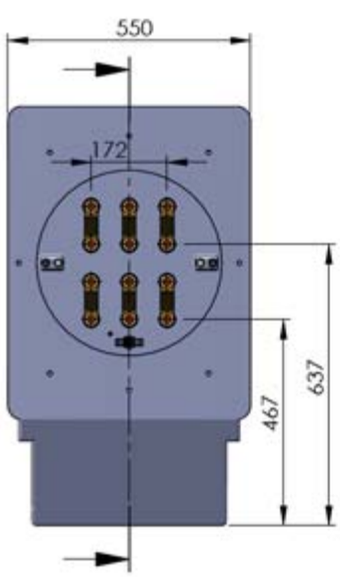
Certification	
Standard	Ex d IIC (Ex tb IIIC)
Optional	Ex d I / Ex d IIB (Ex tb IIIC)

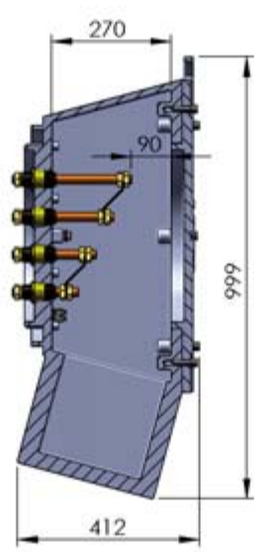
Protection Level
IP 66

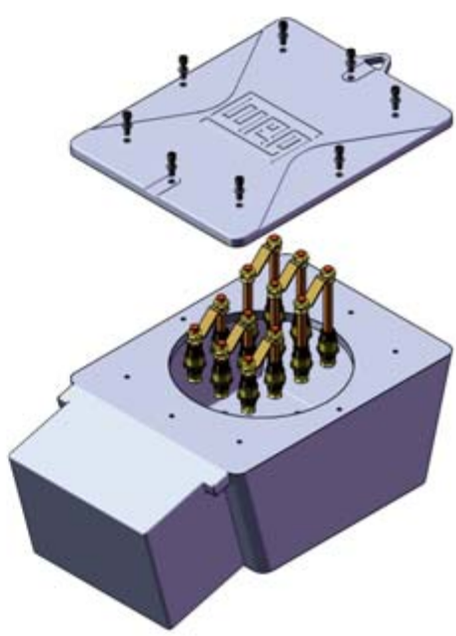
Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel

Thermal protections	
Standard	1 PTC per phase (2 terminals)
Number of connectors (max.)	20
Cross section cables (max.)	4 mm² (solid) / 2,5 mm² (stranded)

Current Level	1090A < I ≤ 1385A	1385A < I ≤ 1900A
Entrance Holes	4 x M63 x 1,5	
Cross section cables (max.)	300mm²	
Cable Type (max.)	3 Core - 3x(3x300 + 1G150)	3 Core - 4x(3x300 + 1G150)
Bushing / Terminal	12 x M16	12 x M20







Standard Terminal Box for Flameproof Motors - Ex d e IIC (Ex tb IIIC)
Terminal Box Model: CEFGH 500
Low Voltage: ≤1100V

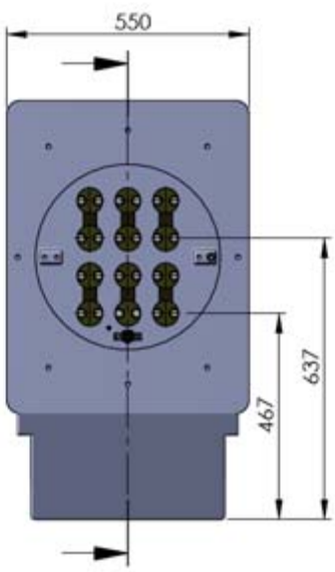
Certification	
Standard	Ex d e IIC (Ex tb IIIC)
Optional	Ex d e I / Ex d e IIB (Ex tb IIIC)

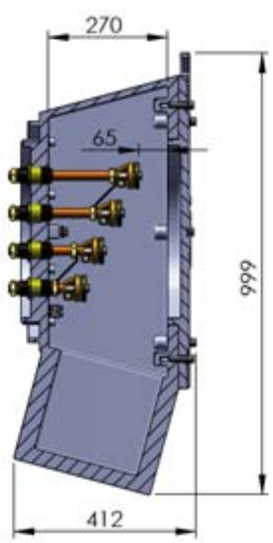
Protection Level
IP 66

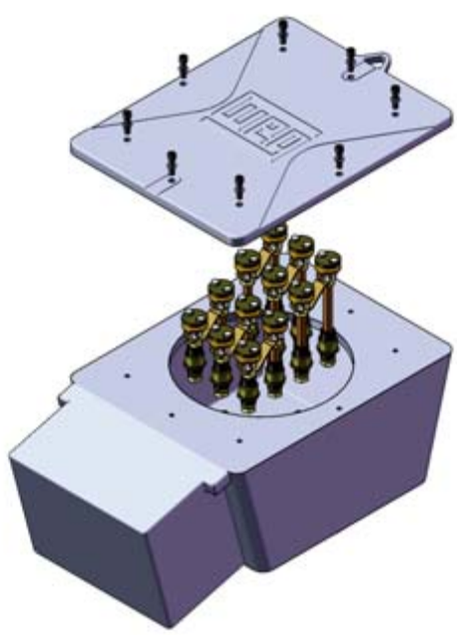
Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel

Thermal protections	
Standard	1 PTC per phase (2 terminals)
Number of connectors (max.)	20
Cross section cables (max.)	4 mm² (solid) / 2,5 mm² (stranded)

Current Level	1090A < I ≤ 1385A	1385A < I ≤ 1900A
Entrance Holes	4 x M63 x 1,5	4x M63 x 1,5
Cross section cables (max.)	150 mm² (1)	300 mm²
Cable Type (max.)	3 Core - 4x(3x150 + 1G90)	3 Core - 4x(3x300 + 1G150)
Bushing / Terminal	12 x M16 	12 x M20 







Notes:

(1) As optional can be adapted for a 300 mm² cross section cable.

8.2.1.2.2. Medium Voltage

Standard Terminal Box for Flameproof Motors - Ex d IIC (Ex tb IIIC)
Terminal Box Model: CEFGH 340
Medium Voltage: 1100V < Un ≤ 6600V

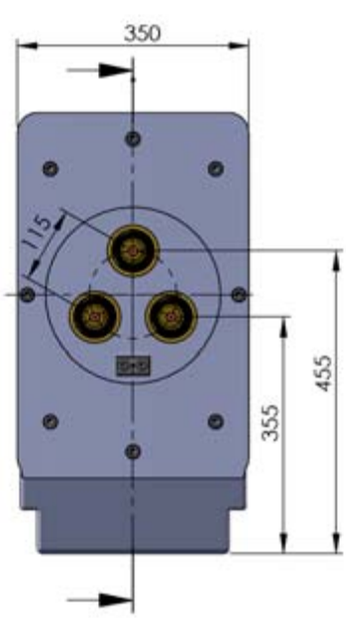
Certification	
Standard	Ex d IIC (Ex tb IIIC)
Optional	Ex d I / Ex d IIB (Ex tb IIIC)

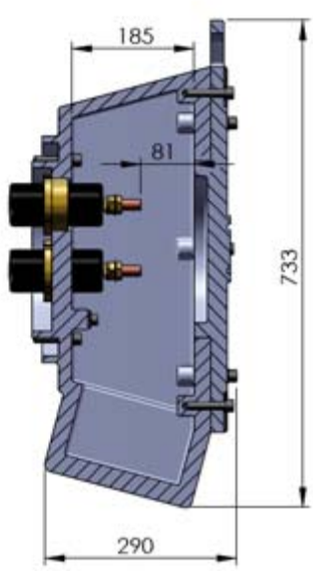
Protection Level
IP 66

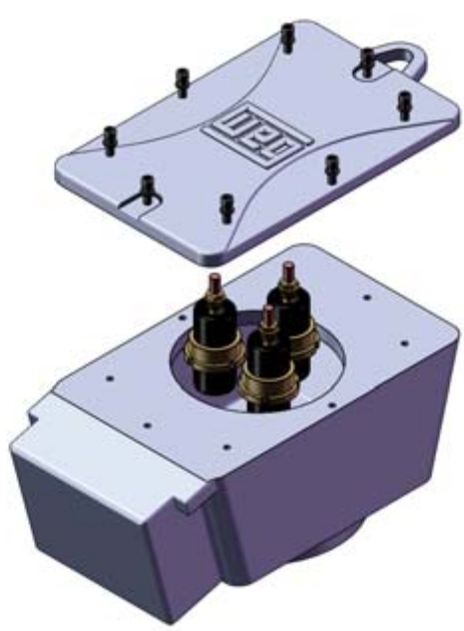
Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel

Fault level	I ≤ 400A
Nominal	30kA for 0,25 sec.
Peak	78kA
Stator cross section cable (min.)	120 mm²
Bushing / Terminal	3 x M16

Current Level	I ≤ 315A	315A < I ≤ 400A
Entrance Holes	1 x M63 x 1,5	3x M63 x 1,5
Cross section cables (max.)	120 mm²	500 mm²
Expected Cable Type (max.)	3 Core - 1x(3x120+1G70)	1 Core - 3x(1x500)
Bushing / Terminal	3 x M12	3 x M16
		







Standard Terminal Box for Flameproof Motors - Ex d e IIC (Ex tb IIIC)
Terminal Box Model: CEFGH 340
Medium Voltage: 1100V < Un ≤ 6600V

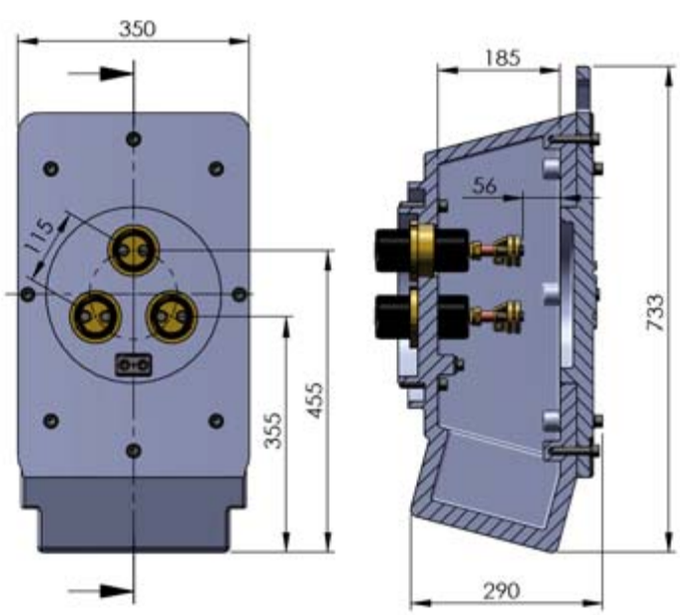
Certification	
Standard	Ex d e IIC (Ex tb IIIC)
Optional	Ex d e I / Ex d e IIB (Ex tb IIIC)

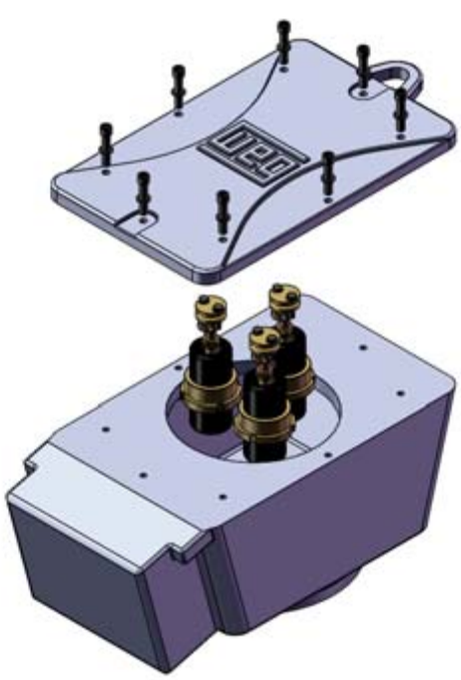
Protection Level
IP 66

Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel

Fault level	I ≤ 400A
Nominal	15kA for 0,25 sec.
Peak	39kA
Stator cross section cable (min.)	120 mm²
Bushing / Terminal	3 x M16

Current Level	I ≤ 315A	315A < I ≤ 400A
Entrance Holes	1 x M63 x 1,5	3x M63 x 1,5
Cross section cables (max.)	95 mm² (1)	150 mm² (2)
Expected Cable Type (max.)	3 Core - 1x(3x95+1G50)	1 Core - 3x(1x150)
Bushing / Terminal	3 x M12	3 x M16





Notes:

(1) As optional can be adapted for a 150 mm² cross section cable.
(2) As optional can be adapted for a 300 mm² cross section cable.

Standard Terminal Box for Flameproof Motors - Ex d IIC (Ex tb IIIC)
Terminal Box Model: CEFGH 500
Medium Voltage: 1100V < Un ≤ 6600V

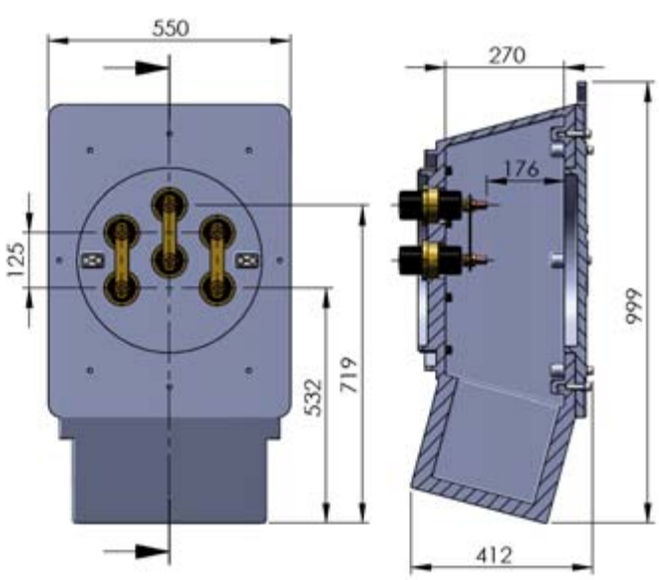
Certification	
Standard	Ex d IIC (Ex tb IIIC)
Optional	Ex d I / Ex d IIB (Ex tb IIIC)

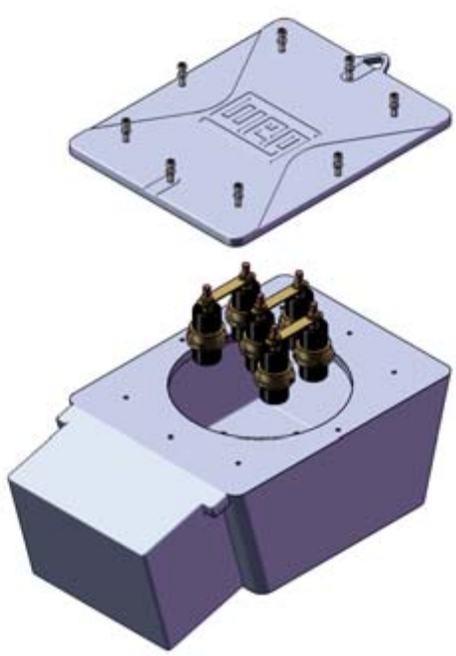
Protection Level
IP 66

Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel

Fault level	I ≤ 800A
Nominal	30kA for 0,25 sec.
Peak	78kA
Stator cross section cable (min.)	120mm²
Bushing / Terminal	6 x M16

Current Level	400A < I ≤ 630A	630A < I ≤ 800A
Entrance Holes	3 x M63 x 1,5	
Cross section cables (max.)	500 mm²	
Cable Type (max.)	1 Core - 3x(1x500)	
Bushing / Terminal	6 x M12 	6 x M16 





Standard Terminal Box for Flameproof Motors - Ex d e IIC (Ex tb IIIC)
Terminal Box Model: CEFGH 500
Medium Voltage: 1100V < Un ≤ 6600V

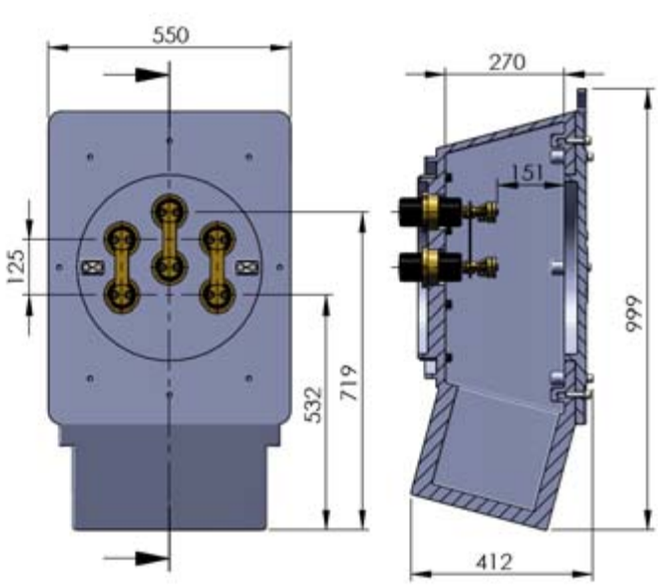
Certification	
Standard	Ex d e IIC (Ex tb IIIC)
Optional	Ex d e I / Ex d e IIB (Ex tb IIIC)

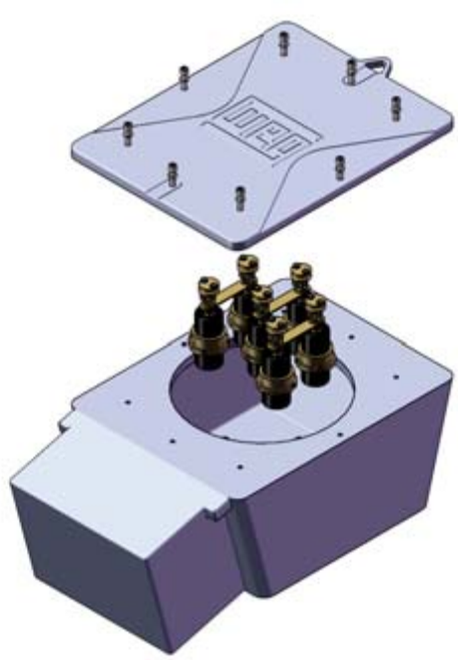
Protection Level
IP 66

Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel

Fault level	I ≤ 800A
Nominal	15kA for 0,25 sec.
Peak	39kA
Stator cross section cable (min.)	120 mm²
Bushing / Terminal	6 x M16

Current Level	400A < I ≤ 630A	630A < I ≤ 800A
Entrance Holes	3x M63 x 1,5	
Cross section cables (max.)	95 mm² (1)	150 mm² (2)
Cable Type (max.)	3 Core - 2x(3x95+1G50)	3 Core - 2x(3x120+1G70)
Bushing / Terminal	6 x M12	6 x M16
		





Notes:

(1) As optional can be adapted for a 150 mm² cross section cable.
(2) As optional can be adapted for a 300 mm² cross section cable.

8.2.1.2.3. High Voltage

Standard Terminal Box for Flameproof Motors - Ex d IIC (Ex tb IIIC)
Terminal Box Model: CEFGH 500
High Voltage: 6600V < Un ≤ 11000V

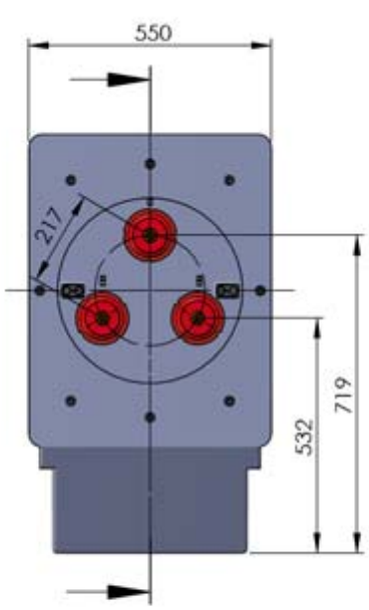
Certification	
Standard	Ex d IIC (Ex tb IIIC)
Optional	Ex d I / Ex d IIB (Ex tb IIIC)

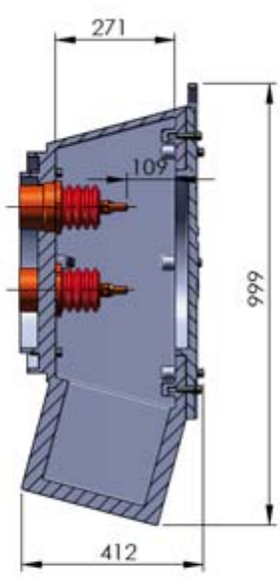
Protection Level
IP 66

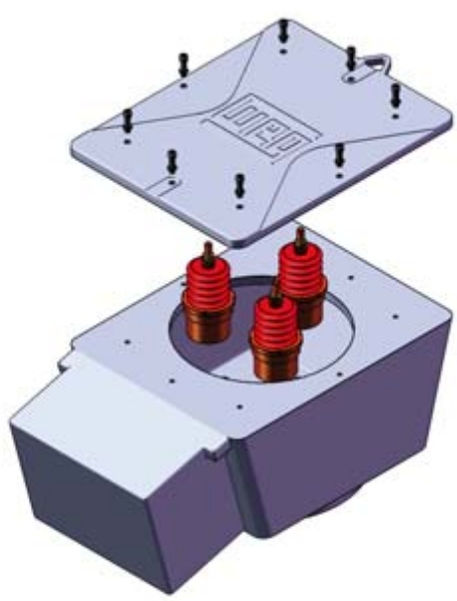
Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel

Fault level	I ≤ 400A
Nominal	40kA for 0,25 sec.
Peak	104kA
Stator cross section cable (min.)	120mm²
Bushing / Terminal	3 x M16

Current Level	I ≤ 200A	200A < I ≤ 400A
Entrance Holes	1 x M63 x 1,5	3 x M50 x 1,5
Cross section cables (max.)	50mm²	400mm²
Cable Type (max.)	3 Core - 1x(3x50+1G25)	1 Core - 3x(1x400)
Bushing / Terminal	3 x M16 	







Standard Terminal Box for Flameproof Motors - Ex d e IIC (Ex tb IIIC)
Terminal Box Model: CEFGH 500
High Voltage: 6600V < Un ≤ 11000V

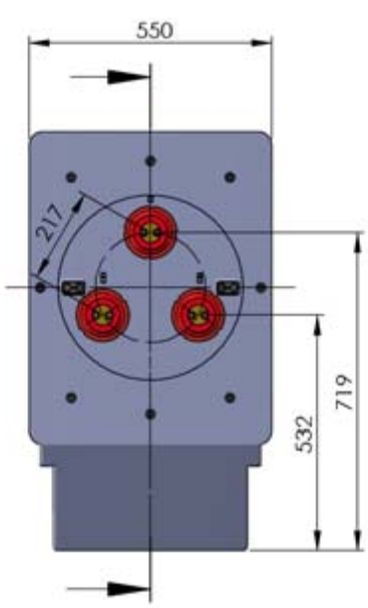
Certification	
Standard	Ex d e IIC (Ex tb IIIC)
Optional	Ex d e I / Ex d e IIB (Ex tb IIIC)

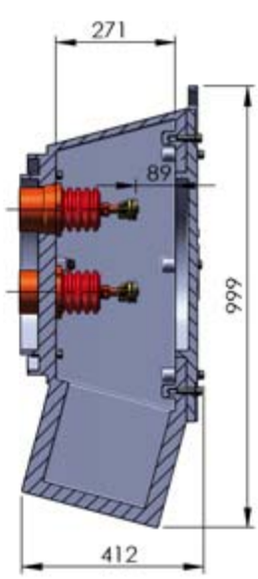
Protection Level
IP 66

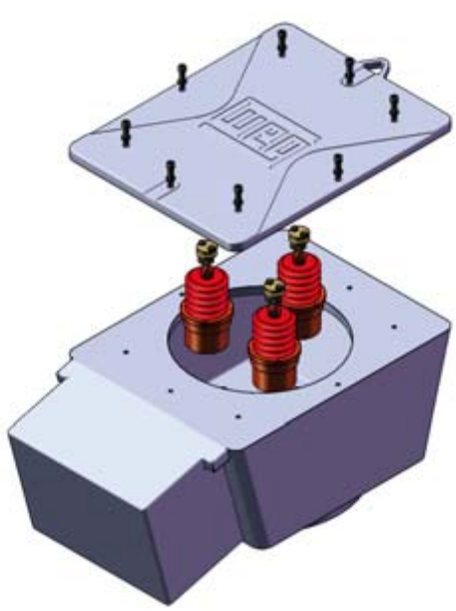
Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel

Fault level	I ≤ 400A
Nominal	15kA for 0,25 sec.
Peak	39kA
Stator cross section cable (min.)	120mm²
Bushing / Terminal	3 x M16

Current Level	I ≤ 200A	200A < I ≤ 400A
Entrance Holes	1 x M63 x 1,5	3 x M50 x 1,5
Cross section cables (max.)	150mm² (1)	150mm² (1)
Cable Type (max.)	3 Core - 1x(3x50+1G25)	1 Core - 3x(1x150)
Bushing / Terminal	3 x M16 	







Notes:

(1) As optional can be adapted for a 300 mm² cross section cable.

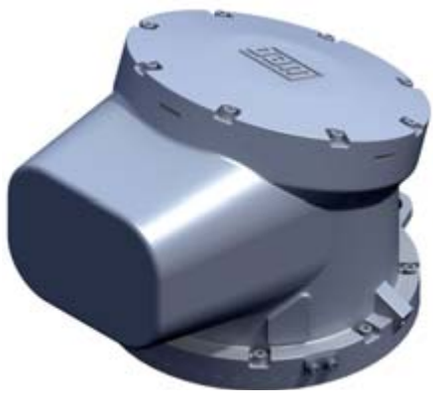
8.2.2. Auxiliary Terminal Boxes
8.2.2.1. Neutral Point Terminal Boxes
8.2.2.1.1. Ex d(e) I / Ex d(e) IIB (Ex tb IIIC)

Neutral Point Terminal Box for Flameproof Motors - Ex d(e) I / Ex d(e) IIB (Ex tb IIIC)
Terminal Box Model: WTBX M
Medium Voltage: 1100V < Un ≤ 6600V

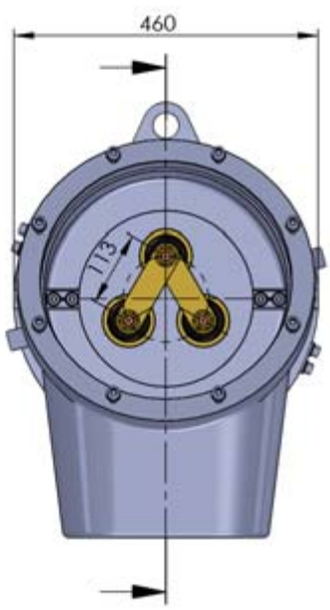
Certification	
Standard	Ex d(e) I / Ex d(e) IIB (Ex tb IIIC)
Optional	Ex d(e) IIC (Ex tb IIIC)

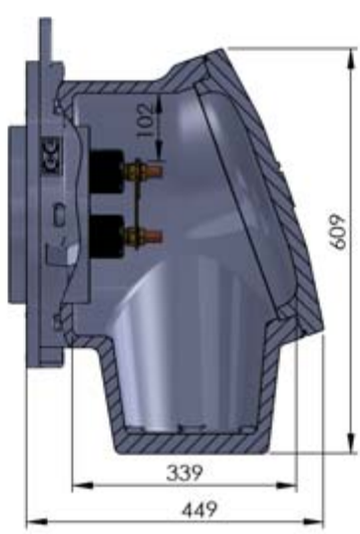
Protection Level
IP 66

Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel



Current Level	I ≤ 315A	315A < I ≤ 400A
	3 x M12	3 x M16
Bushing / Terminal		





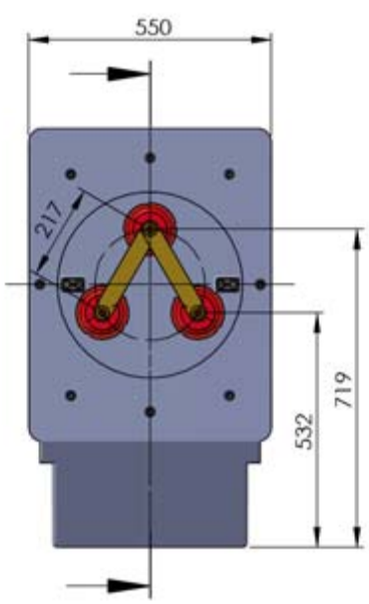
Neutral Point Terminal Box for Flameproof Motors - Ex d(e) I / Ex d(e) IIB (Ex tb IIIC)
Terminal Box Model: CEFGH 500
High Voltage: 6600V < Un ≤ 11000V

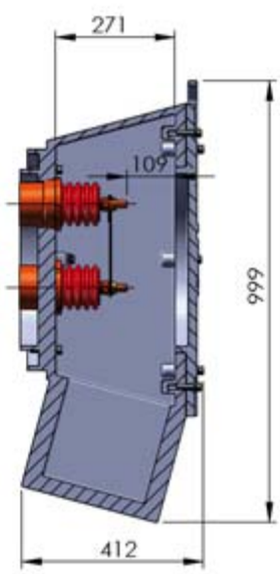
Certification	
Standard	Ex d(e) I / Ex d(e) IIB (Ex tb IIIC)
Optional	Ex d(e) IIC (Ex tb IIIC)

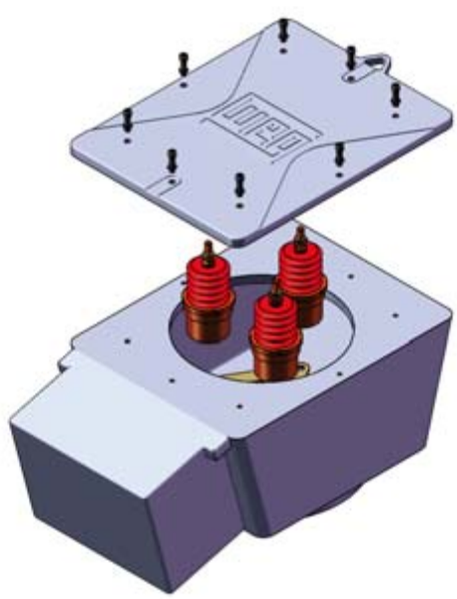
Protection Level
IP 66

Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel

Current Level	I ≤ 200A	200 A < I ≤ 400A
Bushing / Terminal	3 x M16 	







8.2.2.1.1. Ex d(e) IIC (Ex tb IIIC)

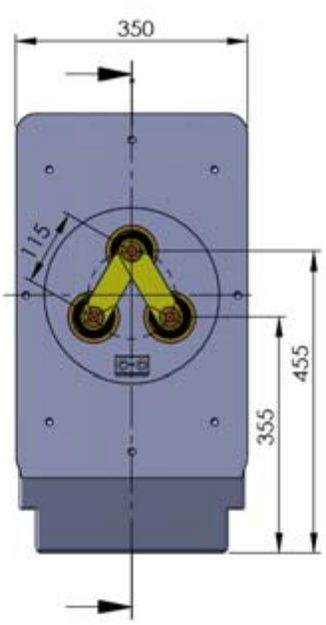
Neutral Point Terminal Box for Flameproof Motors - Ex d(e) IIC (Ex tb IIIC)
Terminal Box Model: CEFGH 340
Medium Voltage: 1100V < Un ≤ 6600V

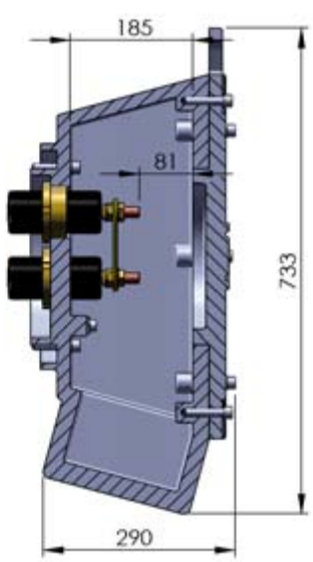
Certification	
Standard	Ex d(e) IIC (Ex tb IIIC)
Optional	Ex d(e) I / Ex d(e) IIB (Ex tb IIIC)

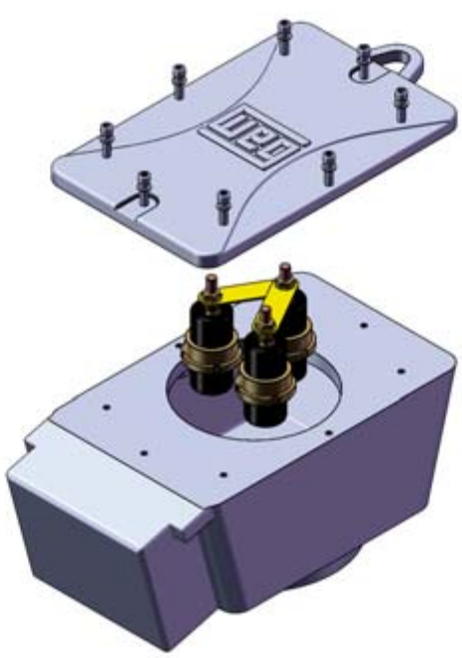
Protection Level
IP 66

Grounding	
Quantity	2
Cross section cables (max.)	185 mm²
Material	Stainless steel

Current Level	I ≤ 315A	315A < I ≤ 400A
	3 x M12	3 x M16
Bushing / Terminal		







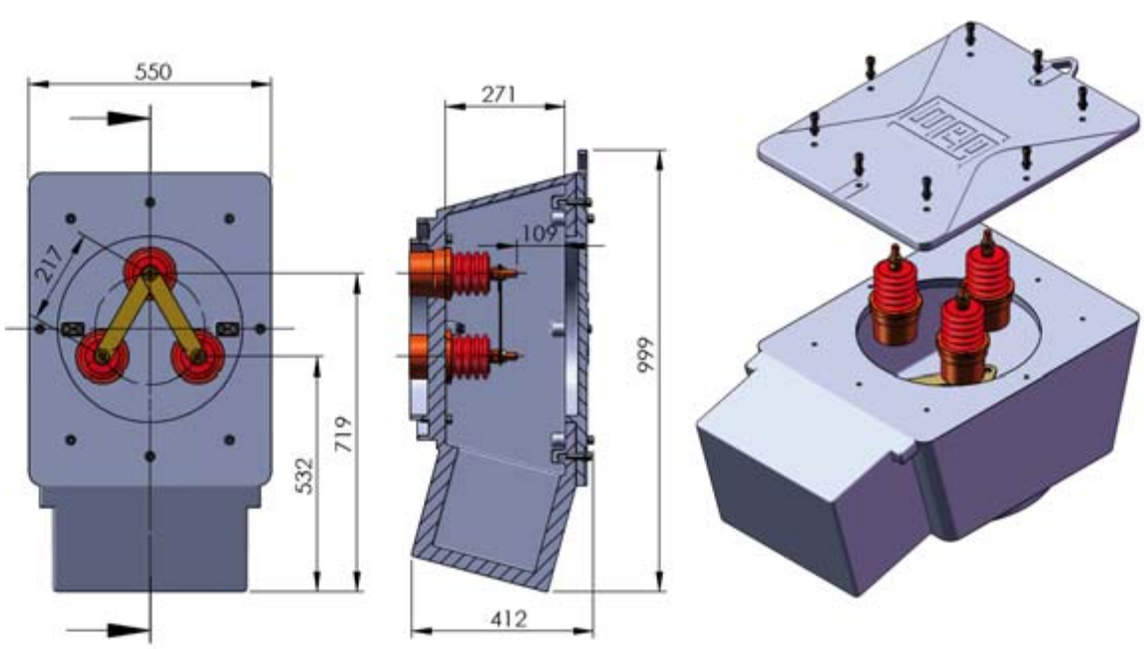
Neutral Point Terminal Box for Flameproof Motors - Ex d(e) IIC (Ex tb IIIC)
Terminal Box Model: CEFGH 500
High Voltage: 6600V < Un ≤ 11000V

Certification	
Standard	Ex d(e) IIC (Ex tb IIIC)
Optional	Ex d(e) I / Ex d(e) IIB (Ex tb IIIC)

Protection Level
IP 66

Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel

Current Level	I ≤ 200A	200A < I ≤ 400A
Entrance Holes	1 x M63 x 1,5	3 x M50 x 1,5
Cross section cables (max.)	50mm²	400mm²
Expected Cable Type (max.)	3 Core - 1x(3x50)	1 Core - 3x(1x400)
Bushing / Terminal	3 x M16 	



8.2.2.2. Current Transformers Auxiliary Terminal Boxes

Protection Current Transformer
Auxiliary Terminal Box Model: CEFGH 500
Voltage: Un ≤ 6600V

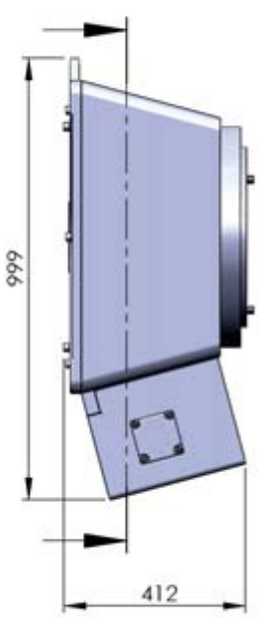
Certification
Ex d I / Ex d IIB (Ex tb IIIC) / Ex d IIC (Ex tb IIIC)

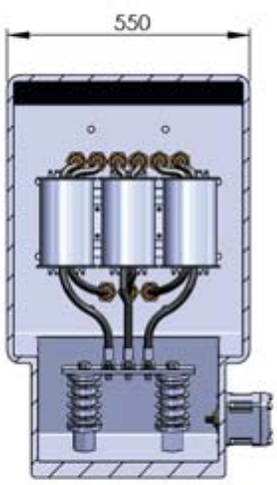
Protection Level
IP 66

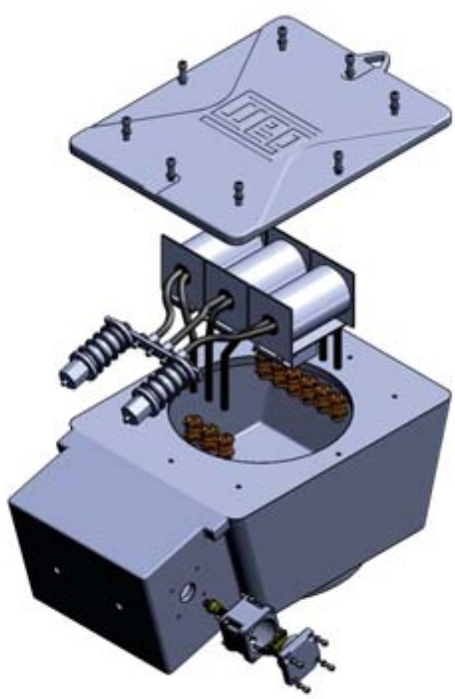
Grounding	
Quantity	1
Cross section cables (max.)	185 mm²
Material	Stainless steel

Technical Data	
Ratio	50/1
VA	5
Class	5 P 10

Terminal Connection







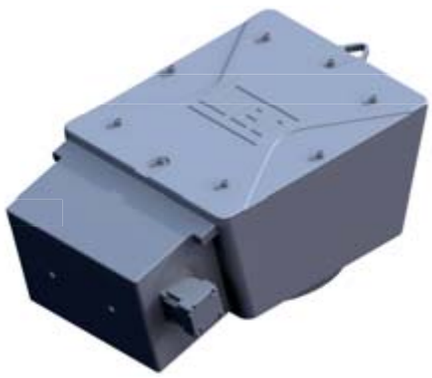
Measuring Current Transformer
Auxiliary Terminal Box Model: CEFGH 500
Voltage: Un ≤ 6600V

Certification
Ex d I / Ex d IIB (Ex tb IIIC) / Ex d IIC (Ex tb IIIC)

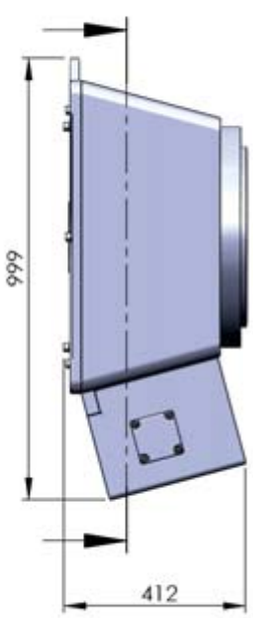
Protection Level
IP 66

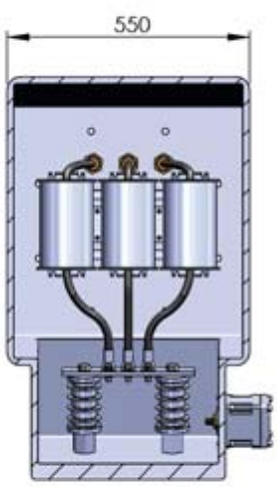
Grounding	
Quantity	1
Cross section cables (max.)	185 mm²
Material	Stainless steel

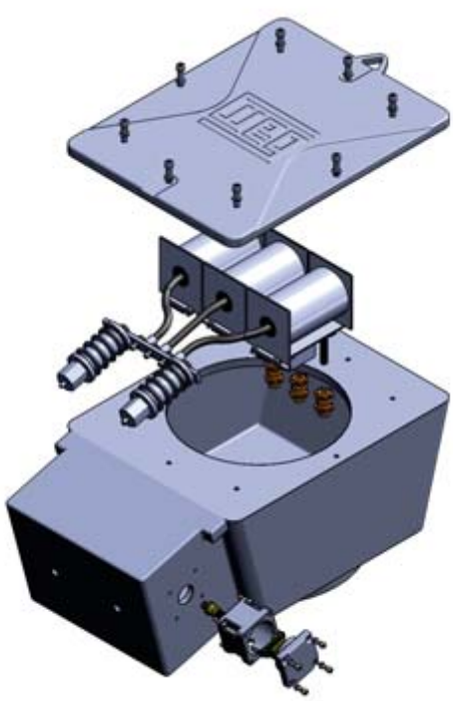
Technical Data	
Ratio	170/1
VA	5
Class	1



Terminal Connection







8.2.2.3. Surge Protection Auxiliary Terminal Boxes

Surge Arrestors Terminal Box
Auxiliary Terminal Box Model: CEFGH 500
Voltage: Un ≤ 6600V

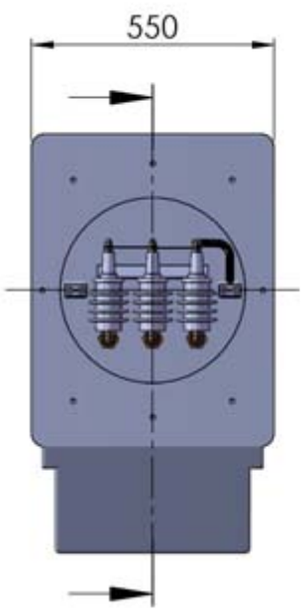
Certification
Ex d I / Ex d IIB (Ex tb IIIC) / Ex d IIC (Ex tb IIIC)

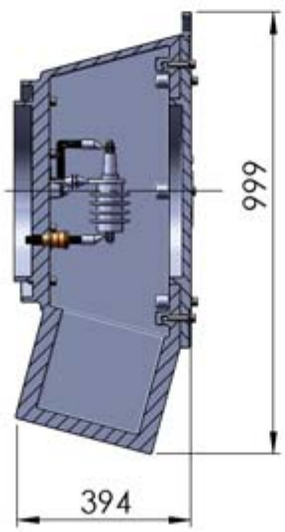
Protection Level
IP 66

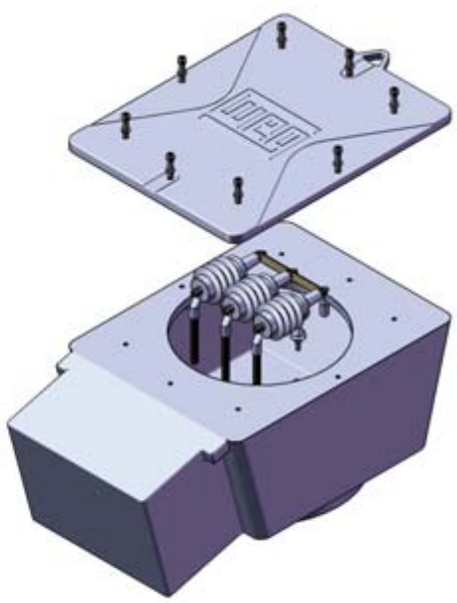
Grounding	
Quantity	1
Cross section cables (max.)	185 mm²
Material	Stainless steel

Technical Data	
Voltage	3kV / 6kV

Surge Arrestor





Surge Capacitors Terminal Box
Auxiliary Terminal Box Model: CEFGH 500
Voltage: Un ≤ 6600V

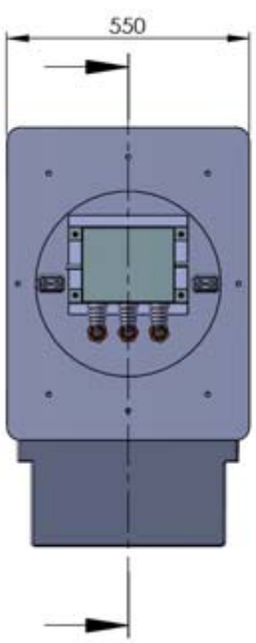
Certification
Ex d I / Ex d IIB (Ex tb IIIC) / Ex d IIC (Ex tb IIIC)

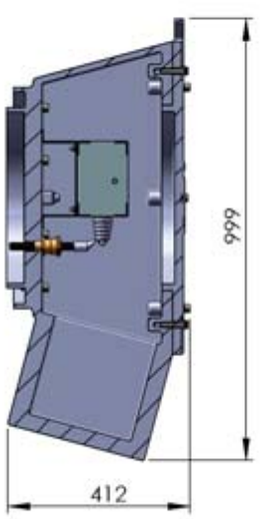
Protection Level
IP 66

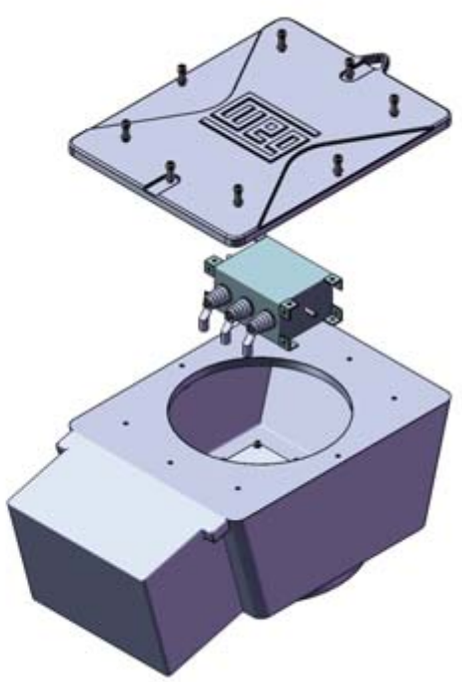
Grounding	
Quantity	1
Cross section cables (max.)	185 mm²
Material	Stainless steel

Technical Data	
Voltage	3kV / 6kV
Frequency	50 Hz / 60 Hz

Surge Capacitor







Surge Arrestors and Capacitors Terminal Box
Auxiliary Terminal Box Model: CEFGH 500
Voltage: Un ≤ 6600V

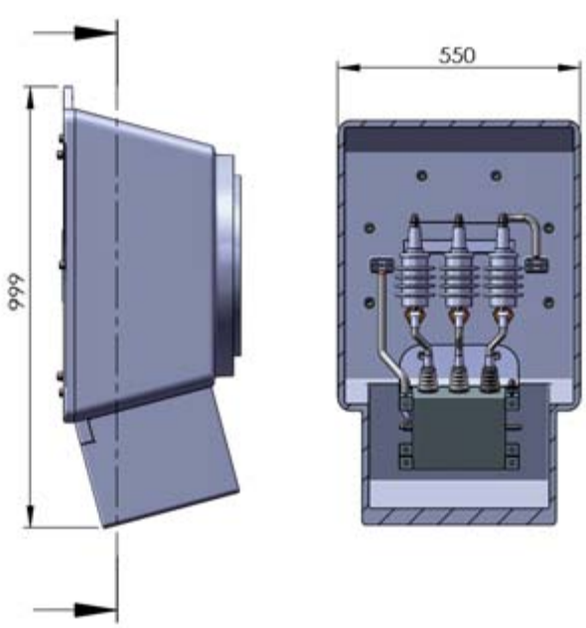
Certification
Ex d I / Ex d IIB (Ex tb IIIC) / Ex d IIC (Ex tb IIIC)

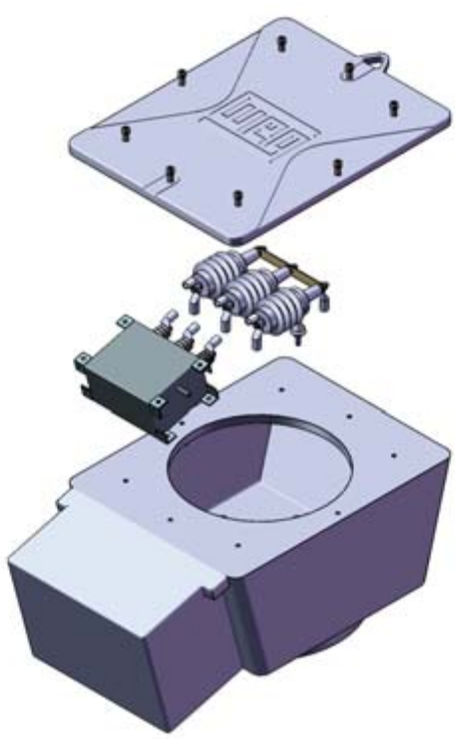
Protection Level
IP 66

Grounding	
Quantity	1
Cross section cables (max.)	185 mm²
Material	Stainless steel

Technical Data	
Voltage	3kV / 6kV
Frequency	50 Hz / 60 Hz

Surge Arrestor	Surge Capacitor
	





8.2.2.4. Protection Devices Connection

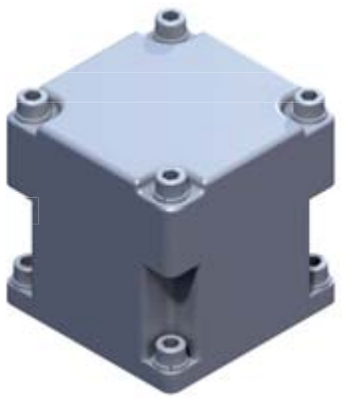
Space Heaters Terminal Box for Flameproof Motors
Auxiliary Terminal Box Model: CG 47

Certification
Ex d(e) I / Ex d(e) IIB (Ex tb IIIC) / Ex d(e) IIC (Ex tb IIIC)

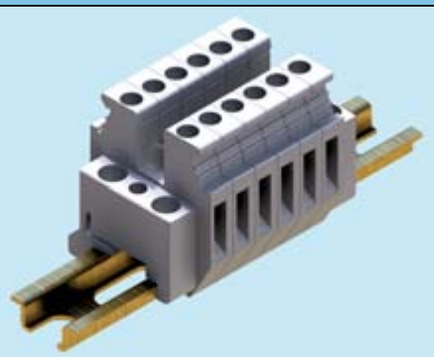
Protection Level
IP 66

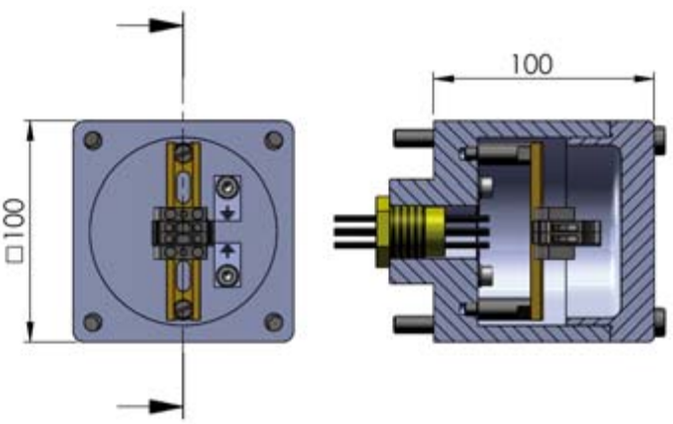
Grounding	
Quantity	2
Cross section cables (max.)	70 mm²
Material	Stainless steel

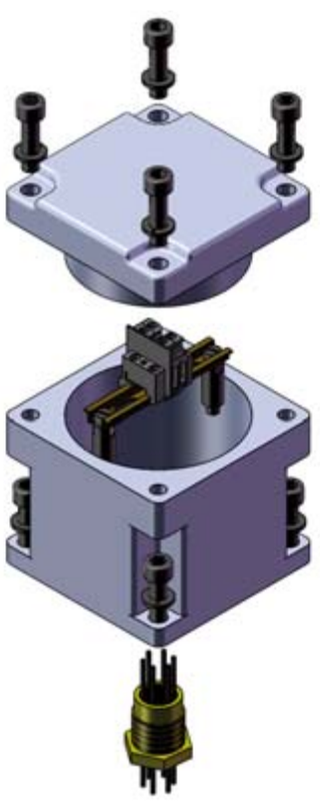
Technical data	
Voltage (max.)	500V
Current (max.)	24A
Cross section of cables (max.)	4 mm² (solid) / 2,5 mm² (stranded)
Number of connectors (max.)	9



Terminal connection







Thermal Protections Terminal Box for Flameproof Motors
Auxiliary Terminal Box Model: WTBX XS

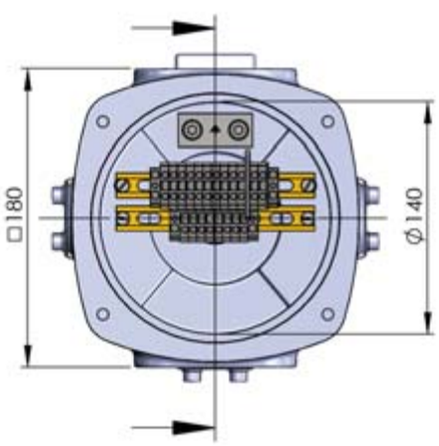
Certification
Ex d(e) I / Ex d(e) IIB (Ex tb IIIC) / Ex d(e) IIC (Ex tb IIIC)

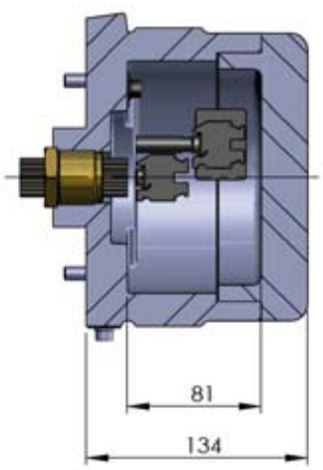
Protection Level
IP 66

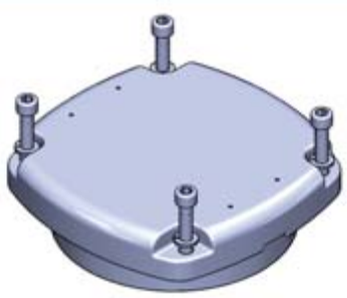
Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel

Technical data	
Voltage (max.)	500V
Current (max.)	24A
Cross section of cables (max.)	4 mm² (solid) / 2,5 mm² (stranded)
Number of connectors (max.)	30

Terminal connection







Thermal Protections Terminal Box for Flameproof Motors
Auxiliary Terminal Box Model: WTBX S

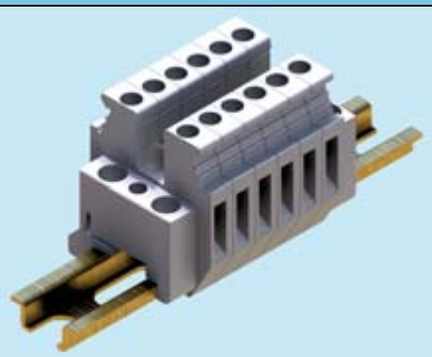
Certification
Ex d(e) I / Ex d(e) IIB (Ex tb IIIC) / Ex d(e) IIC (Ex tb IIIC)

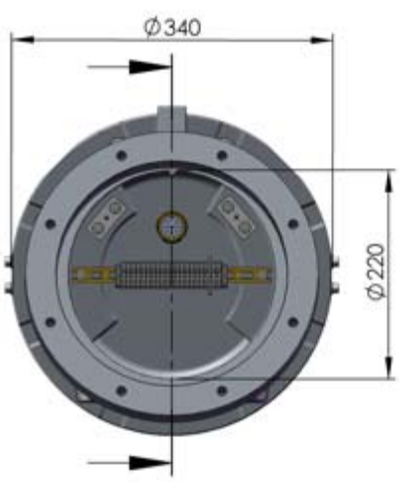
Protection Level
IP 66

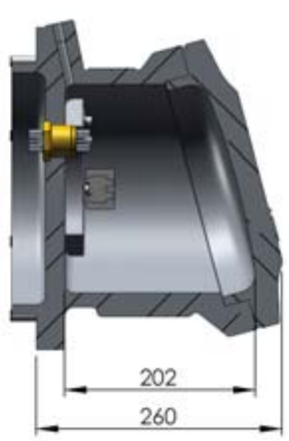
Grounding	
Quantity	3
Cross section cables (max.)	185 mm²
Material	Stainless steel

Technical data	
Voltage (max.)	500V
Current (max.)	24A
Cross section of cables (max.)	4 mm² (solid) / 2,5 mm² (stranded)
Number of connectors (max.)	62

Terminal connection







9. Spare Parts

For the first two years it is not necessary to buy spare parts for motors with a continuous duty under normal operation conditions. If requested, spare parts can be supplied and for this it is necessary to inform WEG the motor serial number.
In the table below the common spare parts are listed.

Common spare parts:
Bearings
Axial or radial seal
Fan
Protections for winding and/or bearings
Grease nipple
Connectors (Auxiliary terminals)
Gasket

Table 9.01 – Spare parts list

Notes:

- Constitution of spare parts stock should be decided based upon the importance of the application.
- According to IEC60079-19, maintenance and repair works must be carried out only by certified personnel.

10. Packaging

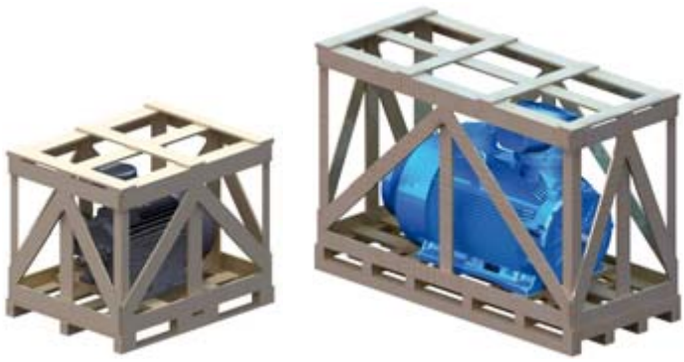
BFGC4 and W22X motors are packed in wooden crates. All wooden crates have phytosanitary treatement to comply with international standard demands ISPM 15.
Vertical motors for frame sizes 250 up to and including 355 are packed in horizontal position. Vertical motors for frame sizes above 355 are packed in vertical position. All motors fitted with roller bearings, angular contact bearings or sleeve bearings are supplied with shaft locking device.

Standard dimensions, weights and volumes are described in the next tables.

Horizontal motors (Terminal Box on top)

		External height [m]	External width [m]	External length [m]	Weight [kg]	Volume [m³]
BFGC4	250	1,14	1,07	1,24	52	1,5
	280	1,20	1,10	1,40	56	1,9
	315	1,27	1,17	1,55	64	2,3
W22X	315L	1,59	1,14	1,94	75	3,5
	355ML	1,70	1,27	2,06	81	4,4
	355AB	1,70	1,27	2,27	84	4,9
	400LJ	1,84	1,15	2,52	163	5,3
	400G	1,84	1,15	2,76	170	5,8
	450KH	1,94	1,35	2,80	188	7,3
	500KH	2,01	1,49	3,36	215	10,1

Table 10.01 – Horizontal motors packaging



Frames 250-355 Frames 400-500

Figure 10.01 – Road Transport (Wooden crates)

Vertical motors

		External height [m]	External width [m]	External length [m]	Weight [kg]	Volume [m³]
BFGC4	250	1,14	1,07	1,24	64	1,52
	280	1,20	1,10	1,40	69	1,86
	315	1,27	1,17	1,55	79	2,3
W22X	315L	1,59	1,14	1,94	97	3,5
	355ML	1,70	1,27	2,06	107	4,44
	355AB	1,70	1,27	2,27	110	4,9
	400LJ	2,64	1,80	1,48	180	7,03
	400G	2,88	1,80	1,48	197	7,67
	450KH	2,90	1,92	1,65	230	9,19
	500KH	3,46	1,94	1,78	254	11,95

Table 10.02 – Vertical motors packaging

Frames 250-355 Frames 400-500

Figure 10.02 – Road Transport (Wooden crates)

Sea/airworthy packing for shipments worldwide are also available.

Figure 10.03 – Sea/Airworthy packing

11. Environmental Issues

WEG is committed to environment sustainability. In our policy a concern is expressed not only in environmental monitoring of the production process internally, but also in control after product delivery to our customers.

We ensure the sustainability of our products throughout their life cycles,from the project conception and the adequation of production processes to the use of technology, facilities, resources and practices to prevent or reduce adverse consequences, going beyond compliance with applicable laws.

We always care for with reuse and recovery. Around 90% of the waste produced during manufacturing process is recycled, contributing to the saving of our natural resources.
During motors life time, the used lubrication oil or grease should not be rejected to the soil or treated as a normal waste, but sent to skilled operators to have special treatment. This is the only waste produced by the motor. Nevertheless this represents a very small quantity that can't be avoided.
In the end of motors life cycle, 98% of the materials used in its manufacture can be recovered by proper recycling operators.
Our concern doesn't end with the recycling of our products.
The conception of the package, intends also to minimize the environment impact. To complete this achievement, the materials that make part of our packaging (wood, plastic and nails), should be collected and sent to recycling by our customers. The plastic materials used in our package are considered virgin polymers, providing the capability of making new products. Wood can also be transformed, in proper companies, by a simple process, in chipboard used widely in several applications.
Please bear in mind that all wastes should always be sent for waste certified managers to assure the best treatment.

12. Inquiry / Order Check List

This check list refers the essential information to be transmitted with inquiry/order. The maximum details provided will help both WEG/ CUSTOMER to select/supply the correct motor to the application.

12.1. Basic Motor Data And Features

Motor Standards:

Basic Design:

- Rating: [kW]
- Frequency: [Hz]
- Poles/Speed:
- Insulation class: (F) / (H)
- Motor temp. rise: [K]
- Mounting form IM:
- Balancing grade: (A/B)
- Rotation view from D.E. side: CW ☐ CCW ☐ Both ☐

Supply terminal box arrangement:

- 2nd power term. box: ☐ Neutral point
  ☐ Protection current transformer
  ☐ Measuring current transformer
  ☐ Surge arrestor
  ☐ Surge supressor
  ☐ Other
- Terminal box adapter

Auxiliaries & Accessories:

- Protection on windings (if different from standard):
  - Thermistor: (PTC / NTC)
  - Pt100: - Nº per phase:
    - Nº wires:
  - Auxiliary terminal box:
- Protection on bearings (if different from standard):
  - Thermistor: (PTC / NTC)
  - Pt100: - Nº per bearing:
    - Nº wires:
  - Auxiliary terminal box: ☐ Same terminal box of windings protections
    ☐ 2nd auxiliary terminal box
    ☐ 2 separate terminal boxes (1/endshield)
- Space heaters (if different from standard): ☐
  - Voltage: [V]
  - Individual terminal box:

Cable Entry Details: **RHS** ☐ **LHS** ☐

- Cable entry direction view from D.E. side:
- Nº of cable entries:
  - Supply terminal box:
  - Auxiliary terminal box(es):
  - Glands thread size(s):
- Supply/Instrumentation cable information:
  - Nº cables:
  - Type of cables: (armoured / non armoured)
  - Cables diameter: - External:
    - Without armour:
- Cable gland supplied with motor: ☐ (WEG can supply glands acc. to info about cables):
  - Cable gland(s) size(s):
  - Cable gland(s) type(s):

12.2. Site & Working Conditions

Starting:

- Starting method:
  - ☐ DOL:
  - ☐ VSD: Speed range: Min./Max. torque:
  - ☐ Soft starter:
  - ☐ Star / Delta:
  - ☐ Other:
- Duty (S1):
- Service factor (1,0):
- Nº starts/hour: Cold:
  Hot:

Coupling:

- ☐ Direct
- ☐ Pulley/Belt (in this case, complete form in the next page)
- ☐ Gearbox.:
  - Gearbox ratio:

Ambient Conditions:

- Ambient temperature: (ºC)
- Min. temperature: (ºC)
- Max. temperature: (ºC)
- Humidity: (%)
- Altitude: (m.a.s.l.)
- Environment: (Saline; Alcaline; Marine; Petrochemical; Sulphur (H2S); Other...)

Paint Scheme (if different from standard):

- ☐ 202E
- ☐ 202P
- ☐ 211E
- ☐ 211P
- ☐ 212E
- ☐ 212P
- ☐ 213E

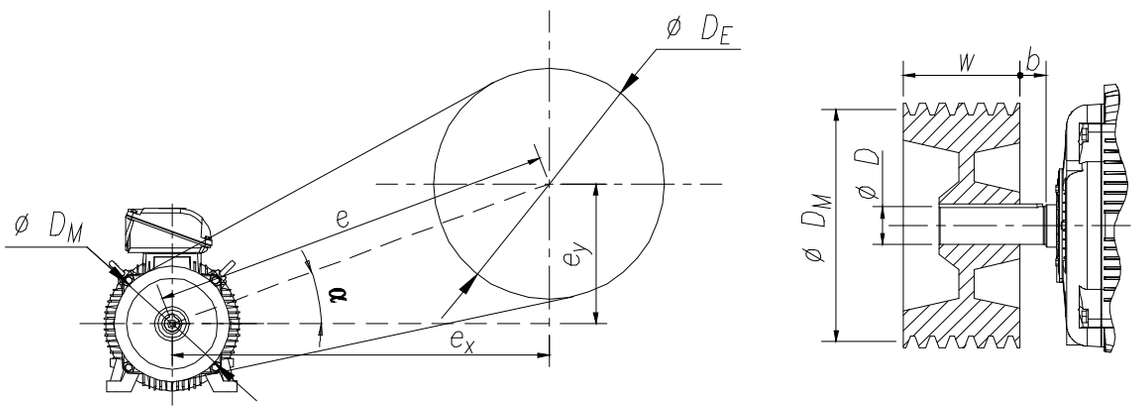
Color (RAL):

Driven Machine Data:

- Driven machine type:
  (centrífugal fan/pump; reciprocating pump/compressor; blower; mills; cranes; conveyor belt; ....)
- Absorved power: [kW]
- Driven machine torque curve:
  (Quadratic; constant; other...)
- Starting torque: [Nm]
- Rated torque: [Nm]
- Load inertia: (J or PD^2)

PULLEY/BELT POWER TRANSMISSION

Customer	
Motor	



	Driven machine Type		
	Motor's nominal output		*[kW]*
	Motor's nominal speed		*[rpm]*
	Motor's pulley diameter (Ø D_M)		*[mm]*
(1)	*Driven machine's pulley diameter (Ø D_E)*		*[mm]*
(1)	*Driven machine's nominal speed*		*[rpm]*
(2)	*x-component of the distance between pulleys center (e_x)*		*[mm]*
(2)	*y-component of the distance between pulleys center (e_y)*		*[mm]*
(2)	*Distance between pulleys' centers (e)*		*[mm]*
(2)	*Angle between pulleys alignment and horizontal plane (α)*		*[°]*
	Belt Type		*ex.: Plain, SPZ, SPB,SPC...*
	Number of belts		
	Motor's pulley total width (w) + dist. to the shaft shoulder (b)	*w =* *b =*	*[mm]*
	Weight of motor pulley		*[kg]*
(3)	*End shaft diameter (D)*		*[mm]*

(1) *Fill in at least one.*

(2) *Fill in at least two.*

(3) *Fill in for special cases.*

13. International System of Units (SI)

Measure	Measure Symbol	Unit	Symbol	Definition
(*) Length	l	meter	m	-
(*) Mass	m	kilogram	kg	-
(*) Time	t	second	s	-
(*) Electric Current	I	ampere	A	-
(*) Thermodynamic Temperature	T	kelvin	K	1°K=1°C+273.15
Plane Angle	α, β, ...	radian	rad	1° = π / 180 rad
Frequency	f	hertz	Hz	1Hz = 1/s
Force	F	newton	N	$1N=1Kg.m/s^2$
Pressure	p	pascal	Pa	$1Pa=1N/m^2$
Energy	E			
Work	W	joule	J	1J=1N.m=1W.s
Quantity of Heat	Q			
Power	P	watt	W	1W = 1J / s
Electric Charge	Q	coulomb	C	1C = 1J/s = 1A.s
Electric Potencial	V			
Electromotive Force	E	volt	V	1V = 1J/C = 1W/A
Potencial Difference	U			
Electric Capacitance	C	farad	F	1F = 1C / V
Electric Resistance	R	ohm	Ω	1Ω = 1V / A
Electric Condutance	G	siemens	S	1S = 1 / Ω
Magnetic Flux	Φ	weber	Wb	1Wb = 1V . s
Magnetic Flux Density	B	tesla	T	$1T = 1Wb / m^2$

Measure	Measure Symbol	Unit	Symbol	Definition
Indutance	L	henry	H	1H = 1Wb / A
Power Factor	Cos φ	-	-	(W/VA)
Magnetic Field	H	-	A / m	-
Inertia	J	-	kg. m^2	1J=Σ $m.r^2$=$G.D^2$ / 4
Sound Power	Lw	decibel	dB	-
Sound Pressure	Lp	decibel	dB	-
Area	A	-	m^2	-
Volume	V	-	m^3	-
Force Moment (Torque)	M	-	N . m	M = F . r
Angular Speed	ω	-	rad / s	-
Linear Speed	v	-	m / s	-
Speed of Rotation	N	-	s^{-1}	-
(*) Luminous Intensity	Iv	candela	cd	lm/sr (**)
Luminous Flux	F	lumen	lm	cd.sr
Iluminance	Ev	lux	lx	1lx = 1 cd / m^2

(*) Base Units
(**) sr-steradian

Metric Prefixs & Symbols

To designate multiples and submultiples

Factor	Prefix	Symbol
10^{24}	iota	Y
10^{21}	zeta	Z
10^{18}	exa	E
10^{15}	peta	P
10^{12}	tera	T
10^{9}	giga	G
10^{6}	mega	M
10^{3}	quilo	k
10^{2}	hecto	h
10^{1}	deca	da

Factor	Prefix	Symbol
10^{-1}	deci	d
10^{-2}	centi	c
10^{-3}	mili	m
10^{-6}	micro	μ
10^{-9}	nano	n
10^{-12}	pico	p
10^{-15}	fento	f
10^{-18}	ato	a
10^{-21}	zepto	z
10^{-24}	iocto	y

Useful Formulae

Measure		Formula		Unit
Output Power		$Put = \frac{Bmot \times N}{9.55 \times 1000} = \frac{\sqrt{3} \times U \times I \times \cos\varphi \times \eta}{1000 \times 100}$		kW
Absorbed Power		$Pabs = \frac{Put \times 100}{\eta} = \frac{\sqrt{3} \times U \times I \times \cos\varphi}{1000}$		kW
Reactive Power		$Q = \frac{P_{ut} \times tg\varphi \times 100}{\eta} = P_{abs} \times tg\varphi = \frac{\sqrt{3} \times U \times I \times sen\varphi}{1000}$		kVAr
Apparent Power		$S = \frac{P_{ut} \times 100}{\eta \times \cos\varphi} = \frac{\sqrt{3} \times U \times I}{1000}$		kVA
Nominal Current		$I = \frac{P_{abs} \times 1000}{\sqrt{3} \times U \times \cos\varphi} = \frac{P_{ut} \times 1000 \times 100}{\sqrt{3} \times U \times \cos\varphi \times \eta}$		A
Power Factor		$\cos\varphi = \frac{P_{abs} \times 1000}{\sqrt{3} \times U \times I} = \frac{P_{ut} \times 1000 \times 100}{\sqrt{3} \times U \times I \times \eta}$		-
Slip		$g = \frac{N_s - N}{N_s} \times 100$		%
Efficiency		$\eta = \frac{P_{ut} \times 100}{P_{abs}}$		%
Synchronous Speed		$N_s = \frac{60 \times f}{p}$		rpm
Force		$F = m \times a$		N
Moment		$M = F \times r$		N.m
Power	a) rotation	$P = M \times \omega$	$\omega = \frac{2 \times \pi \times N}{60}$	W
	b) linear	$P = F \times V$		
Moment of Inertia	a) gravity centre	$J = m \times r^2$		kgm²
	b) solid cylinder	$J = m \times \frac{r^2}{2}$		
	c) hollow cylinder	$J = m \times \frac{r_1^2 + r_2^2}{2}$		
Inertia in Linear Movement		$J = m \times \left(\frac{V}{\omega}\right)^2$		kgm²

Symbols used in formulas

Symbol	Unit	Meaning
P_{ut}	kW	Output power at motor shaft
P_{abs}	kW	Absorbed power from supply net
S	kVA	Apparent power
Q	kVAr	Reactive power
I	A	Phase current
cos φ	-	Power factor
□	%	Efficiency
Ns	rpm	Synchronous speed
N	rpm	Nominal speed
g	%	Slip
B_{mot}	N.m	Motor torque

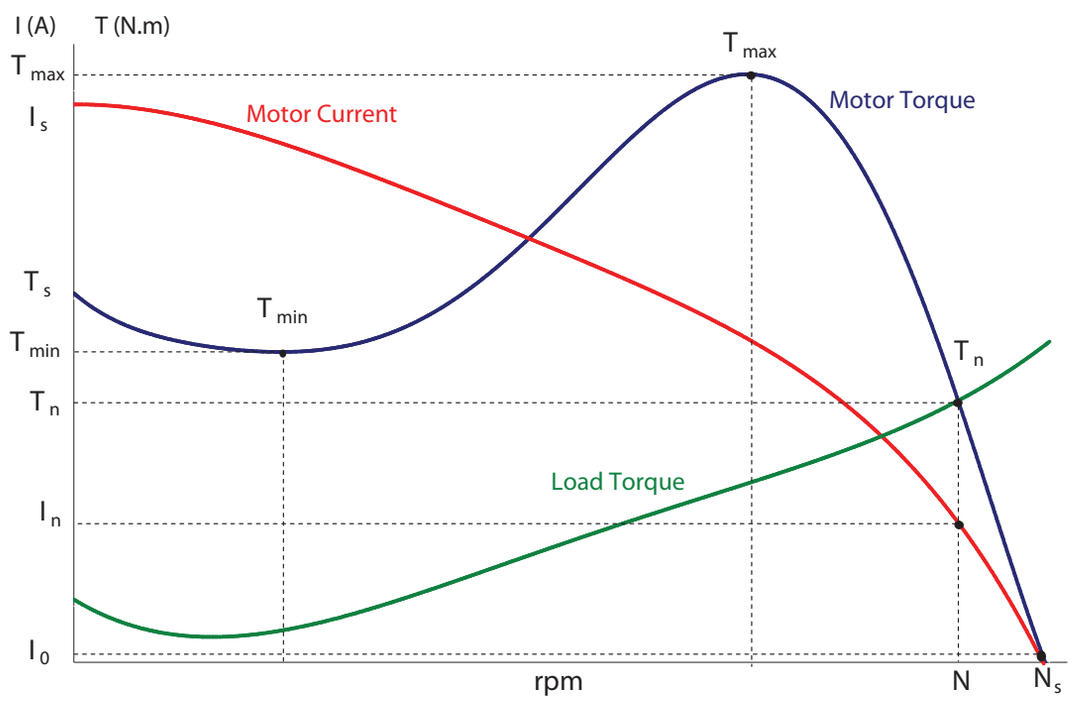
Symbol	Unit	Meaning
f	Hz	Frequency
p	-	Pole pars
F	N	Force
m	Kg	Mass
a	m / s^2	Acceleration
M	N.m	Moment
□	rad / s	Angular speed
P	W	Power
V	m / s	Linear speed
J	$Kg.m^2$	Moment of inertia
r	m	Radius

Typical Motor Curve with Load Quadratic Torque

Measure	Symbol	Unit
Starting current	I_a	A
Full load current	I_n	
No load current	I_o	
Synchronous speed	N_s	rpm ou min^{-1}
Assynchronous or nominal speed	N	

Measure	Symbol	Unit
Starting torque	B_a	N.m
Pull up torque	B_{min}	
Breakdown torque	B_{max}	
Rated torque	B_n	

Motor Torque / Current vs Speed Curves



Notes

Notes

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