

Slipring columns



Manufactured by ALFO CAVOTEC GmbH

ALFO

Slipring columns

The Cavotec Group

Cavotec is the name of a group of companies specialized in power supply technology for cranes and other industrial equipment. It is formed by 6 manufacturing companies located in Australia, France, Germany, Italy, Sweden and U.S.A., as well as by 18 Cavotec sales companies which, together with a network of Distributors, serve more than 30 countries in five continents. Each manufacturing company, no matter where it is located, aims at being a market leader in its field by providing innovative and reliable products to Group customers. Although they manufacture different products in different countries, they are globally supported and coordinated by the Cavotec Group in their product development and marketing activities. Each sales company, and each distributor, has a policy aiming at better serving its local market with the full support of the Cavotec Group.

Our aim is to be local everywhere

Great emphasis is put in providing the highest quality not only in the selected products, but also in customer service and support. Our philosophy is to be local everywhere.

The fields of application of our products are:



**Mining ,
Tunnelling**



Steel Mills



Forestry



**Ports,
Terminals**



**Robots,
Automation**



Offshore



Construction

ALFO — world leader in slipring columns

Established in 1991, ALFO is a German manufacturing company in the specialised field of spring driven cable reels and slipring columns. Its founder, Günter Hackauf, started ALFO after 25 years of experience in manufacturing and marketing these specific products. This explains the success of the ALFO company, which in only 5 years has become a leading manufacturer in its sector.

In 1997 ALFO became a member of the Cavotec Group, one of the market leaders in motor-powered cable reels. The ALFO range of products developed by Günter Hackauf is of the highest quality level, manufactured in the most cost-effective way. Standard components produced in large series enable ALFO to meet both standard and special requirements at competitive prices and with short delivery times.

The emphasis on quality and customer service, which distinguishes the ALFO operation, totally corresponds to the Cavotec Group policy adopted worldwide.

The Cavotec Group sales and service organization covering more than 30 countries is therefore well prepared to serve ALFO customers all over the world.

Client/Company: _____

Contact person: _____ Request No.: _____

Phone No.: _____ Fax No.: _____ Date: _____

Questionnaire for slipring columns

1. Which equipment is the slipring column required for?:
2. Indoor operation Outdoor operation, desired protection IP _____
3. Installation position: vertical hanging horizontal ?
4. Ambient temperature: +..... °C/- °C, further notes:
5. Ambient conditions:
(humidity, dust, aggressive media, etc.)
6. Working time: 100% ED 60% ED 40% ED 25% ED
7. Revolutions per minute: Revs/min, Performance at a standstill:..... KW in min.
8. with heating without heating, Voltage V ~ =
9. Is a tube inserted through the slipring column: no yes External ø max mm
10. Are there any restrictions of space / max. installation dimensions: ø.....mm, height.....mm
11. Power supply voltage V~ Signal and control voltage V... Data voltage V...
12. Number of poles and relevant current rating

Power section:	Signal and control section:	Data section / Data type
.....•..... A (..... Kw)	+•.....A +•.....A +•.....A	+
.....•..... A (..... Kw)	(mA) (mA) (mA)	

13. Desired conductor cross section:

14. Desired with direct connection:

..... m ring side, m housing side (brush gear)

15. Peculiarities / Client's requests / Sketches

ALFO CAVOTEC

Slipring columns

The ALFO CAVOTEC range of slipring columns covers a wide spectrum of applications and requirements.

The current standard types are listed in the following pages. The slipring columns are constantly adapted and developed to meet market requirements.

In addition to them, a diversified range of special versions is available to satisfy customers' needs.

Please contact us for further information.



Type		SK02	SK03	SK 05	SK09	SK14	SK15
Page:		32+35 39	32+34 36,39	58+60	58+60	62+64	66+70
Current rating - Amp	technical data						
In the standard version-	mA						
	16A						
	25A						
	50A						
	90A						
	150A					100A	
	200A						
	300A						
Voltage in the standard version-	~380V						
	~415V						
	~ 500V	S	S				
	~ 660V			S	S	S	S
Installation - Slipring column	IP00	S	S	S	S	S	S
Slipring columns with housing	IP55						
	IP65			S	S	S	S
	IP66	S	S				
Coating of the ring multi layers/gold		0				0	
Brush gear with silver contacts/carbon brushes		0				0	
Max. number of poles (according to version<)		30	24	12	7 and>	24/36 and>	7 and>
Range of rpm - revs/min-	<60						S
varying according to version	<100			S	S	S	
and arrangement	<200	S	S				
	><1000						
Inside ø of the axis		40/60	40/60	65/and>	65/and>	60/and>	80/100 and>
Housing bearing:	Plastic	S	S				
	Aluminium	S	S	S	S	S	S
	Steel	S	S	S	S	S	S
Housing:	Plastic	S	S				
	Steel	S	S	S	S	S	S
Split cover:		0	0	0	0	0	S/0
With connection box for rings		S/0	S/0			0	
With terminal box for brush gear						0	
Connection of the rings		0	0	0	0	0	0
Connection of the brush gear		0	0	0	0	0	0
Version with different ring types available		S	S	0	0	S	0
Adaptor flange through slipring column for tube passage etc.			0	0	0	0	0
	max ø: 10/15/20/25	0	0				
	50u.<->			0	0	0	0
	<130						
	<190						
	<220						
Heating for slipring column		0	0	0	0	0	0
Inst. of potentiometer/encoder/measuring instr.		0	0	0	0	0	0
Div. screen plates		0	0	0	0	0	
Additional support above with ball bearings		0	0	0	0	0	0
Version with ball bearings		S	S	S	S	S	S
Optional locks and divider plate		0	0	0	0	0	0
Special flange		0	0	0	0	0	0
Slipring ø	(mm)	85	85	150	150	110	200
Pole pitch	(mm)	17	20	36	36	*13/20 and>	45
Cover outside ø	(mm)	205	205	340	340	280	400
		250	250	400	400	340	430
		280	280				

S= Standard **0**= Option

* varies according to voltage

SK30	SK45/46	SK47	SK50	SK58	SK80	SK98	SK145	SK190	SK185	SK260	SK315	SK400	SK500	Your request	GSK-Mercotac
8+9	10+11	12+13	14+15	16+23	24+27	28+30 35,36,38,39	40+45	46,47	48,49 50	48,49,52	54+57	48,49,53	48,49		72
								40A	40A	40A		40A	40A		30A
				80A	80A	80A	80A	80A	80A	80A		80A	80A		
S				S	S										
	S			S	S		S and >	S							
	O	S	S	S	S	S		S	S	S	S	S	S		S
		O and >				O and >									
S	S	S	S	S	S	S	S	S	S	S	S	S	S		S
								S	S	S	S	S			
S	S	S	S	S	S	S	S								S
O	O	O	O	O	O	O	O	O	O	O	O	O			
O	O	O	O	S	S	O	O	O	O	O	O	O			
10	18	8	24	64 (80)	80	80(100)	120 and >	50and >	34 and >	34 and >	8/30 and>	34 and >	34 and >		8
				S	S		<40	<40	S	S	S	S	<40		
S	S					S									
		S	S												
															1200 and <
12	20	20	27	20/27/40	40	40/60	80	88/100	88/100	140 and >	200 and >	225 and >			Pg 16/21/29
	S	S		O		S									
S			S	S	S	S	S	S	S		S	S	S		S
										S	S	S			
S	S	S	S	S	S	S									Alu
						S	S	S	S	S	S	S			
S	S	S	S	S	S	S	S	S	S	S	S/O	S/O	S/O		S
O	O	O	O	O	O	O	O	O	O	O	O	O	O		S
O	O	O	S	S	S	S	S	O	O	O	O	O	O		
O	O	O	S/O	S/O	S/O	O	S/O	O	O	O	O	O			
			S	S	S	S	O	S	S		S				
O		O	O	O	O	O	O	O	S	S	S	S	S	S	S
	O	O		O	O	O									
							O and >	S 85	S 85						
								S and <	S and <	S					
											S and >				
												S	S and 220		
	O	O	O	O	O	O	O	O	O	O	O	O	O		
O	O	O	O	O	O	O	O								
	O	O	O	O	O	O	O	O	O	O	O	O			
			O	O	O	O	O	O							
S	S	S	S	S	S	S	S	S	S	S	S	S			S
	O	O	O	O	O	O	O	O	O	O	O	O	O		
O	O	O	O	O	O	O	O	O	O	O	O	O			
30	45	45	50	58	80	98	145	190	185	260	315	400	500		
12	14	18	6	4,4/5,2/6,5	4,4/5,2/6,5	7	4,4/5,2/6,5	11,5/13,5	18	18	18/36	18	18		
110	140	140	125	110	160	205	280	-	-	430	530	530			60
				125	200	250	340	340	340						65
				160		280									75
				200		340									

Type overview

Type Families

Type	30	45 46	47	50	02	03	58	80	98	145	190	185	260	315	400	500	05	09	14	15	M
Tech. data																					
mA																					
16A																					
25A																					
50A																					
90A																					
150A																					
200A																					
300A																					

Available Types - Combinations on the same SRC bolts in one column

Type	30	45 46	47	50	58	80	98	02	03	145	190	185	260	315	400	500	05	09	14	15	M
Tech. data																					
mA																					
16A																					
25A																					
50A																					
90A																					
150A																					
200A																					
300A																					

Possible combinations of different rings in one housing

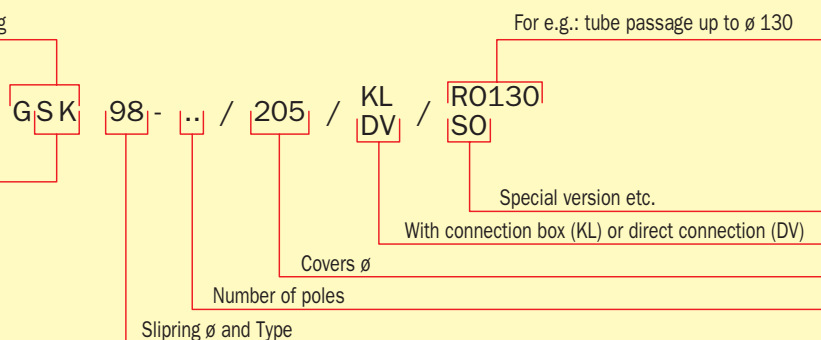
Type	30	45 46	47	50	58	80	98	02	03	145	190	185	260	315	400	500	05	09	14	15	M
30																					
45,46																					
47																					
50																					
58																					
80																					
98																					
02																					
03																					
145																					
190																					
185																					
260																					
315																					
400																					
500																					
05																					
09																					
14																					
15																					
M																					

Key type

Example:

Slipring column with housing
IP 54 and >

Opened slipring column
IP00 protection type





Slipring column installation



Slipring column with housing



Technical Data

Current rating:	mA - 16 A, 100% ED
Voltage:	max. 380 V ~, 415 V =
Revolutions per minute:	1-100 revs/min
Number of poles:	max. 10 (Standard incl. PE)
Pole pitch:	12 mm
Slipring:	ø 30 mm, material: MS, solder terminal
Brush gear:	With 2 large bronze carbon brushes, spring mounted, with connection: flat connector 4,8 mm according to DIN 46248 for flat mounting bush. Special version: silver carbon brushes.
Connection box:	Completely pre-wired with 1,5 mm ² / 2,5 mm ² connection to shell terminals
Insulation:	Slipring column and insulator PA6 with glass-fiber parts
Insulation group:	C
Current values: (at max. +30°C)	Standard 50 mA - 16 A at 24 V to 380 V~/ 415 V= With multi-layer coating (ML) 25 mA and > at 24 V and > With multi-layer coating and silver carbon brushes (ML + Ag) 5 mA and > at 6 V and >
Ambient temperature:	max. +50°C / -35°C At +50°C the max. permissible amp. load must be consequently reduced. For higher temperature values, please contact the manufacturer.
Corrosion protection:	Hot-galvanised steel parts Housing and cover of aluminium, with plastic coating on customer's request. Plastic housing.
Installation positions:	Vertical, hanging, horizontal
Inst.dim.for slipring column with housing:	Boring ø 15 E8 or thread M20
Order example:	(Standard version) Installation slipring column open: SK 30-04 / 3 + PE 3 x 10 A + PE, 220 V Slipring column with housing: GSK 30-04/110/KL/3+PE/M20 3x15 A + PE, 380 V, vertical

SK 30..

Slipring column open, technical data on page 8

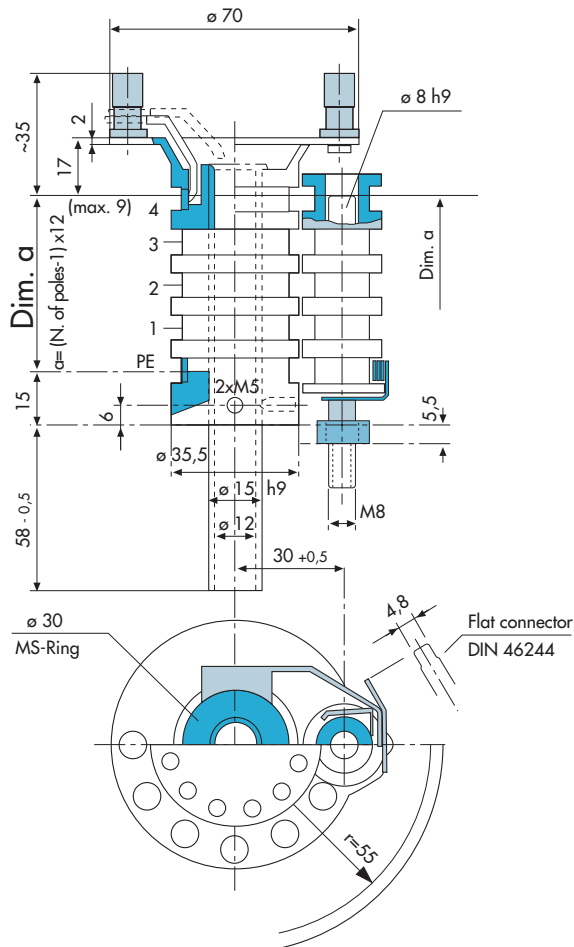
Slipring column open, protection IP00 with connection box completely pre-wired.

Standard number of poles: 3, 4, 5, 7

Fixing: The axis housing tube should be fixed on site with 2 grub screws M5, DIN 914 to prevent rotation.

Items supplied: slipring column complete with screws, with brush gears, insulator, cable terminal and brush bolts.

Ring coating and brush gear version according to quotation.



Type	No. of poles		Dimensions a mm	Weight Kg
	Normal with PE	Special w/out PE		
SK 30-01	1	–	–	
SK 30-02	–	2	12	
SK 30-03	2+PE	3	24	
SK 30-04	3+PE	4	36	–
SK 30-05	4+PE	5	48	
SK 30-06	5+PE	6	60	
SK 30-07	6+PE	7	72	
SK 30-08	7+PE	8	84	
SK 30-09	8+PE	9	96	
SK 30-10	9+PE	10	108	

Number of poles: Normal including PE
Please specify version without PE.

GSK 30../110/KL/..

Slipring column with housing, techn. data page 8

Slipring column with housing, protection IP66^(*)

Standard pole numbers: 3, 4, 5, 7

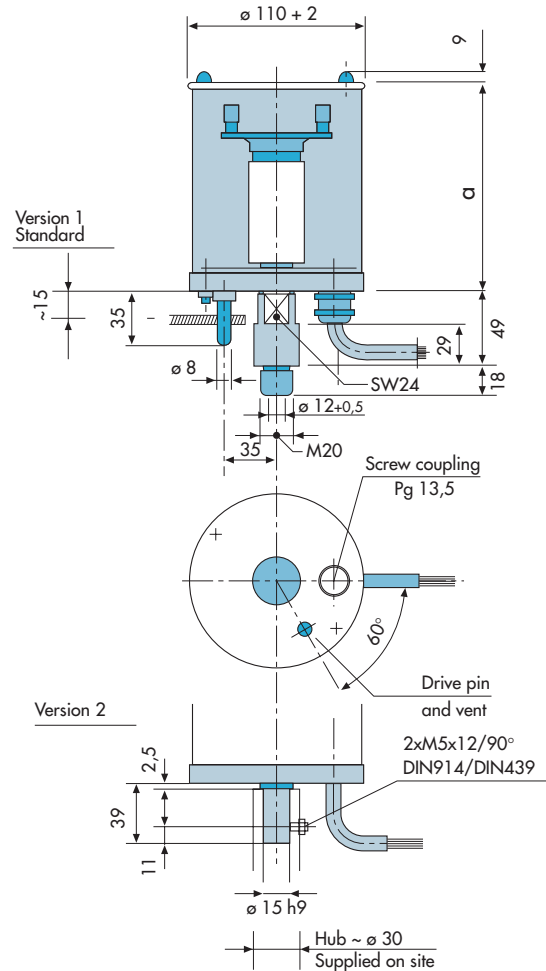
Ball bearing support sealed on both sides, bearing and cover of aluminium, protection cover of plastic, weatherproof and frost resistant.

Standard: version 1 with M20 fixing

Special: version 2 with axis section $\phi 15$

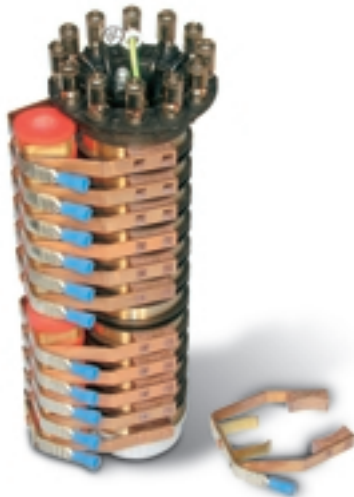
Screw coupling: In the axis boring $\phi 12,5 / \phi 12$
In the housing Pg 13,5, terminal range 8-15 mm
Special Pg 9/11

Options: See Overview page 4 and 5
vent screw in cover G1/2
 $\phi 30$ mm, 20 mm high



Type	No. of poles		Dim. a mm	Special Dim. a mm	Wgt Kg
	Normal with PE	Special w/out PE			
GSK 30-01/110/KL/SO	1	–	87		1,3
GSK 30-02/110/KL/SO	–	2	100		1,3
GSK 30-03/110/KL/..	2+PE	3	111		1,4
GSK 30-04/110/KL/..	3+PE	4	135	123	1,4
GSK 30-05/110/KL/..	4+PE	5	135		1,4
GSK 30-06/110/KL/..	5+PE	6	159	147	1,5
GSK 30-07/110/KL/..	6+PE	7	159		1,5
GSK 30-08/110/KL/..	7+PE	8	195	171	1,6
GSK 30-09/110/KL/..	8+PE	9	195	183	1,6
GSK 30-10/110/KL/..	9+PE	10	195		1,6

^(*) only with cable gland (PG) screw coupling in axis and 1 conductor per cable gland (not included in the standard version).



Technical Data

Current rating:	mA - 25 A, 100% ED (parallel connection up to 47 A)
Voltage:	max. 415 V~, = (with locks up to 750 V~)
Revolutions per minute:	1-100 revs/min
Number of poles:	max. 18 (standard incl. PE), Type SK 46 = max. 12 poles
Pole pitch:	14 mm
Slipring:	ø 45 mm, material: MS, solder terminal
Brush gear:	With 2 large bronze carbon brushes, spring mounted, with connection: flat connector 6,3 mm according to DIN 46248 for flat mounting bush. Special version: silver carbon brushes.
Connection box:	Completely pre-wired with 2,5 mm ² , type SK 46 with 4 mm ² connection to the shell terminals Up to 12 poles = head ø 70 mm, starting from 13 poles = head ø 100 mm
Insulation:	Slipring column and insulator PA6 with glass-fiber parts
Insulation group:	C
Current values (at max. +30°C):	Standard 50 mA - 25 A at 24 V to 415 V~ With multi-layer coating (ML) 25 mA and > at 24 V and > With multi-layer coating and silver carbon brushes (ML + Ag) 5 mA and > at 6 V and >
Ambient temperature:	max. +50°C / -35°C At +50°C the max. permissible amp. load must be consequently reduced. For higher temperature values, please contact the manufacturer.
Corrosion protection:	Hot-galvanised steel parts, bearing housing and protection cover of plastic with glass-fiber reinforcement, weatherproof, shock and frost resistant.
Installation positions:	Vertical, hanging, horizontal with double bearing
Special:	Higher voltage up to 750 V~ arranged on locks, max. 9 poles, parallel connection of the rings for higher amp. load available.
Order example:	(Standard version) Installation slipring column open: SK 45-07 / 6 + PE 6 x 5 A + PE, 380 V Slipring column with housing: GSK 45-07/140/KL 6x15 A + PE, 220 V, vertical

SK 45-../.. and SK 46-../..

Slipring column open, technical data on page 10

Slipring column open, protection IP00 with connection box completely pre-wired.

Standard number of poles: 4, 5, 7, 12, 15, 18

Fixing: With 2 grub screws M5, DIN 914 in fixing flange.

Coupling for axis housing tube h9

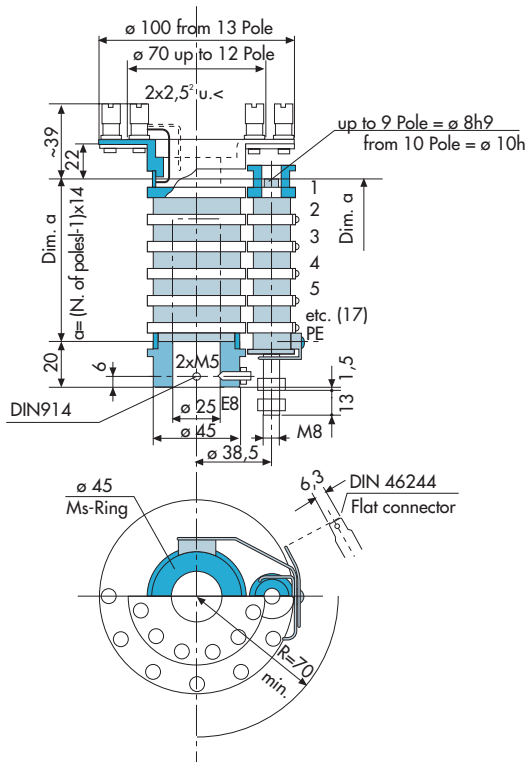
The axis housing tube should end according to the number of poles max. up to 4 rings underneath the connection box.

Slipring column up to 7 poles: insert axis housing tube only up to the PE-ring.

Axis above: well rounded inside and outside.

Items supplied: slipring column complete with screws, with brush gears, insulator, cable terminal and brush bolts.

Ring coating and brush gear version according to quotation.



Type	No. of poles		Dimensions a mm	Weight Kg
	Normal with PE	Special w/out PE		
SK 45-01	1	-	-	
SK 45-02	-	2	14	
SK 45-03	2+PE	3	28	
SK 45-04	3+PE	4	42	
SK 45-05	4+PE	5	56	
SK 45-06	5+PE	6	70	
SK 45-07	6+PE	7	84	
SK 45-08	7+PE	8	98	
SK 45-09	8+PE	9	112	
SK 45-10	9+PE	10	126	
SK 45-11	10+PE	11	140	
SK 45-12	11+PE	12	154	
SK 45-13	12+PE	13	168	
SK 45-14	13+PE	14	182	
SK 45-15	14+PE	15	196	
SK 45-16	15+PE	16	210	
SK 45-17	16+PE	17	224	
SK 45-18	17+PE	18	238	

Note: SK 46-.. max. up to 12 poles and GSK 46-..

GSK 45-../140/KL/.. and GSK 46

Slipring column with housing, techn. data page 10

Slipring column with housing, protection IP66^(*)

Standard number of poles: 4, 5, 7, 12, 18

Ball bearing support up to 13 poles with double bearing, sealed on both sides and additional V-ring sealing, bearing housing and protection cover of plastic, with glass-fiber reinforcement, weatherproof and frost resistant, reduced condensate formation.

The sealing for housing part and cover is placed in the labyrinth as

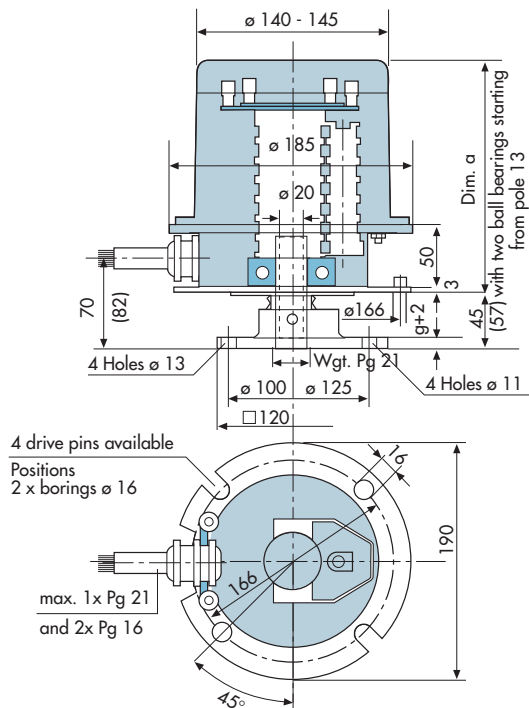
O-ring. The cover screws are located outside the housing.

Fixing flange of aluminium with 2 bolt circles.

Screw coupling: in the flange threaded Pg 21,

in the housing 1 x Pg 21, terminal range 11-20,5 mm

Special: in the housing max. 1 x Pg 21 and 2 x Pg 16 and <



Type	No. of poles		Dim. a (mm)		Weight Kg
	Normal w/ PE	Special w/out PE	Standard	with heating	
GSK 45-01/140/KL/SO	1	-	130	150	
GSK 45-02/140/KL/SO	-	2	130	190	
GSK 45-03/140/KL/..	2+PE	3	130	190	
GSK 45-04/140/KL/..	3+PE	4	130	190	
GSK 45-05/140/KL/..	4+PE	5	150	245	
GSK 45-06/140/KL/..	5+PE	6	190	245	
GSK 45-07/140/KL/..	6+PE	7	190	245	
GSK 45-08/140/KL/..	7+PE	8	190	245	
GSK 45-09/140/KL/..	8+PE	9	245	325	
GSK 45-10/140/KL/..	9+PE	10	245	325	
GSK 45-11/140/KL/..	10+PE	11	245	325	
GSK 45-12/140/KL/..	11+PE	12	245	325	
GSK 45-13/140/KL/..	12+PE	13	325	325	
GSK 45-14/140/KL/..	13+PE	14	325	325	
GSK 45-15/140/KL/..	14+PE	15	325	-	
GSK 45-16/140/KL/..	15+PE	16	325	-	
GSK 45-17/140/KL/..	16+PE	17	325	-	
GSK 45-18/140/KL/..	17+PE	18	325	-	

(*) only with cable gland (PG) screw coupling in axis and 1 conductor per PG (not included in the standard version).



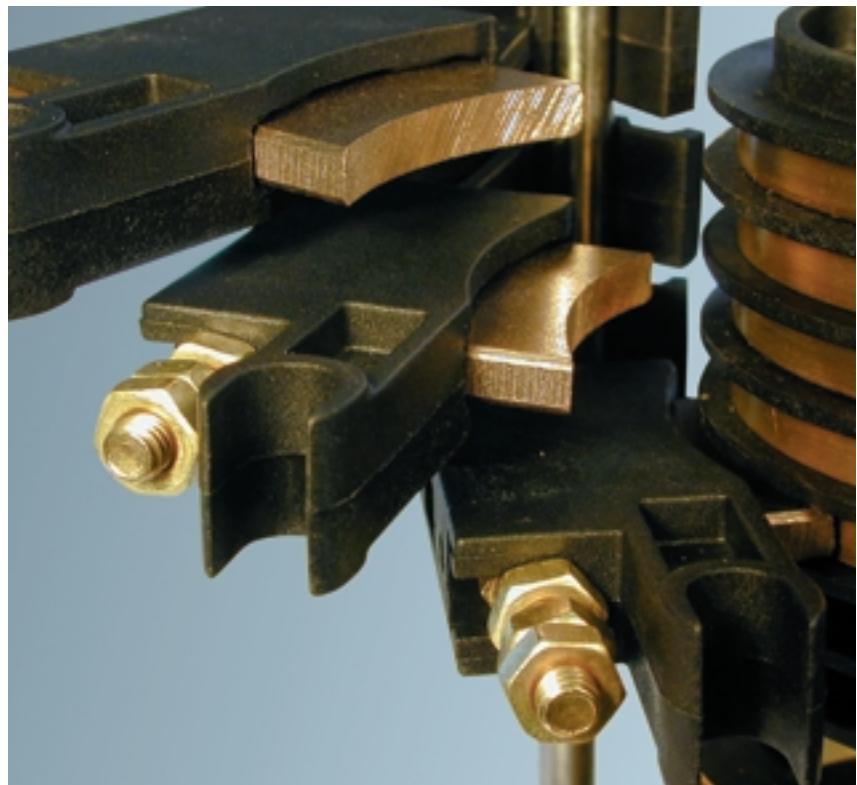
Technical Data

Current rating:	mA - 50 A, 100% ED
Voltage:	max. 500 V~, = (with locks up to 750 V~, max. 5 poles)
Revolutions per minute:	1-200 revs/min
Number of poles:	8 (standard incl. PE)
Pole pitch:	18 mm (on locks = 32 mm)
Slipring:	ø 45 mm, aterial: MS, solder terminal
Brush gear:	Industrial double support with moving bronze carbon brushes, interchangeable. Connection M4 Special version: silver coal brushes and specific carbon qualities for special applications.
Connection box:	Completely pre-wired with 6 mm ² Connection to shell terminals for extern. max. 6 mm ²
Insulation:	Slipring column: PA6 with glass-fiber parts Brush bolts: glass filament fabric tube Hgw
Insulation group:	C
Current value: (at max. +30°C)	Standard 50 mA - 50 A at 24 V and > With multi-layer coating (ML) 25 mA and > at 24 V and > With multi-layer coating and silver carbon brushes (ML + Ag) 5 mA and > at 6 V and >
Ambient temperature:	max. +50°C / -35°C At +50°C the max. permissible amp. load must be consequently reduced. For higher temperature values, please contact the manufacturer.
Corrosion protection:	Hot-galvanised steel parts. Bearing housing and protection cover of plastic with glass-fiber reinforcement, weatherproof, shock and frost resistant.
Installation positions:	Vertical, hanging, horizontal with double bearing
Special:	Higher voltage up to 750 V ~ arranged on locks
Order example:	(Standard version) Installation slipring column open: SK 47-04 / 3 + PE 3 x 35 A + PE, 415 V Slipring column with housing: GSK 47-04/140/KL 3x40 A + PE, 500 V, vertical



Technical Data

Current rating:	mA - 20 A (25A), 100% ED (parallel connections available)
Voltage:	500 V~,
Revolutions per minute:	1-200 revs/min (varying according to pole number and installation)
Number of poles:	24 with connection box
Pole pitch:	6mm
Slipring:	ø 50mm, material: MS with or without surface finishing, solder terminal
Brush gear:	Bow of high-quality plastic with glass-fiber reinforcement. Spring mounted bronze carbon brushes. Bow and coal brushes are interchangeable. Connection M4 Special version: silver carbon brushes and specific coal quality for special applications.
Connection box:	Completely pre-wired mit 2,5 mm ² Connection to shell terminals
Insulation:	Slipring column and bow for brush gear PA6 with glass-fiber parts
Insulation group:	C
Current values: (at max. +30°C)	Standard: 50 mA - 20A (25A) Multi-layer coating (ML) and silver carbon brushes: 5 mA and > at 6V and > Multi-layer coating (ML) + gold plating (Au) and silver carbon brushes (Ag): suitable for measuring current - signal - video and data transmission
Ambient temperature:	max. +50°C / -35°C At +50°C the max. permissible amp. load must be consequently reduced. For higher temperature values, please contact the manufacturer.
Corrosion protection:	Hot-galvanised steel parts or of VA-material 1.4301
Installation position:	Vertical, hanging, horizontal
Special:	Locks, divider plates and screen plates between the rings, ring combinations with type 58, special housing



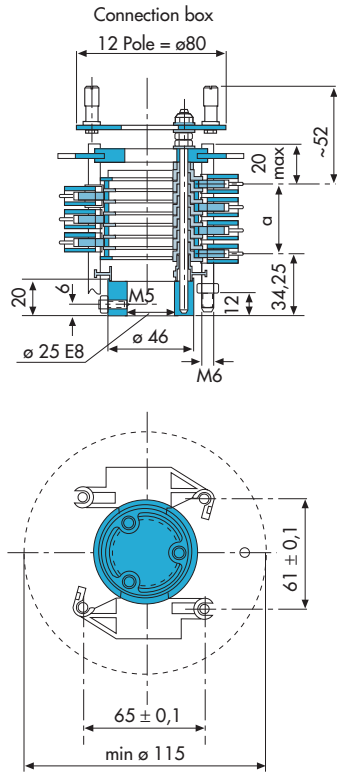
SK 50-../KL/..

Slipring column open, technical data on page 14

Slipring column open, protection IP00

From 18 poles up, with friction bearing guide with brush bolts above. Slipring column complete with screws and pre-wired on connection box.

Fixing: With 2 grub screws M5, DIN914 in the fixing flange. Coupling for axis housing tube h9, installation length flush with the slipring column.



Type	No. of poles incl. PE	Dim. a (mm)	Frict. bearing top	Weight kg
SK 50-03/KL/..	2+PE	12	-	
SK 50-04/KL/..	3+PE	18	-	
SK 50-05/KL/..	4+PE	24	-	
SK 50-06/KL/..	5+PE	30	-	
SK 50-07/KL/..	6+PE	36	-	
SK 50-08/KL/..	7+PE	42	-	
SK 50-09/KL/..	8+PE	48	-	
SK 50-10/KL/..	9+PE	54	-	
SK 50-11/KL/..	10+PE	60	-	
SK 50-12/KL/..	11+PE	66	-	
SK 50-13/KL/..	12+PE	72	-	
SK 50-14/KL/..	13+PE	78	-	
SK 50-15/KL/..	14+PE	84	-	
SK 50-16/KL/..	15+PE	90	-	
SK 50-17/KL/..	16+PE	96	-	
SK 50-18/KL/..	17+PE	102	1	
SK 50-19/KL/..	18+PE	108	1	
SK 50-20/KL/..	19+PE	114	1	
SK 50-21/KL/..	20+PE	120	1	
SK 50-22/KL/..	21+PE	126	1	
SK 50-23/KL/..	22+PE	132	1	
SK 50-24/KL/..	23+PE	138	1	

Larger number of poles on request

Note: the slipring column can be combined with type 58

GSK 50-../125/KL/..

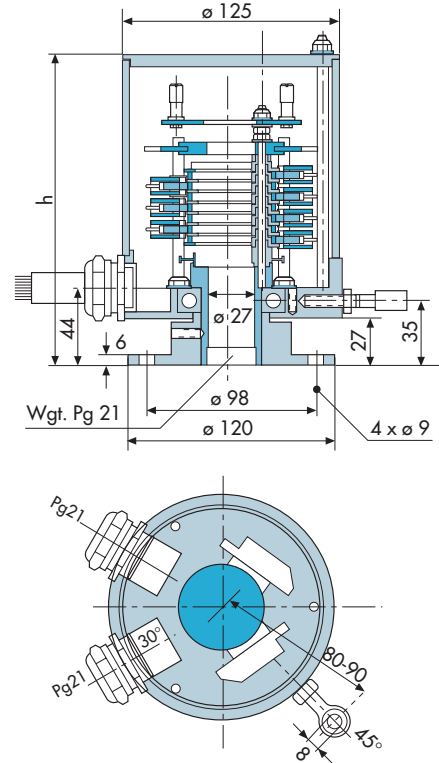
Slipring column with housing, techn. data page 14

Slipring column with housing, protection IP66^(*)

Ball bearing support sealed on both sides.

Bearing and cover of aluminium.

Protection of thick-walled plastic, weatherproof, shock and frost resistant. Bearing with vent hole. With vent screw in the cover on request.



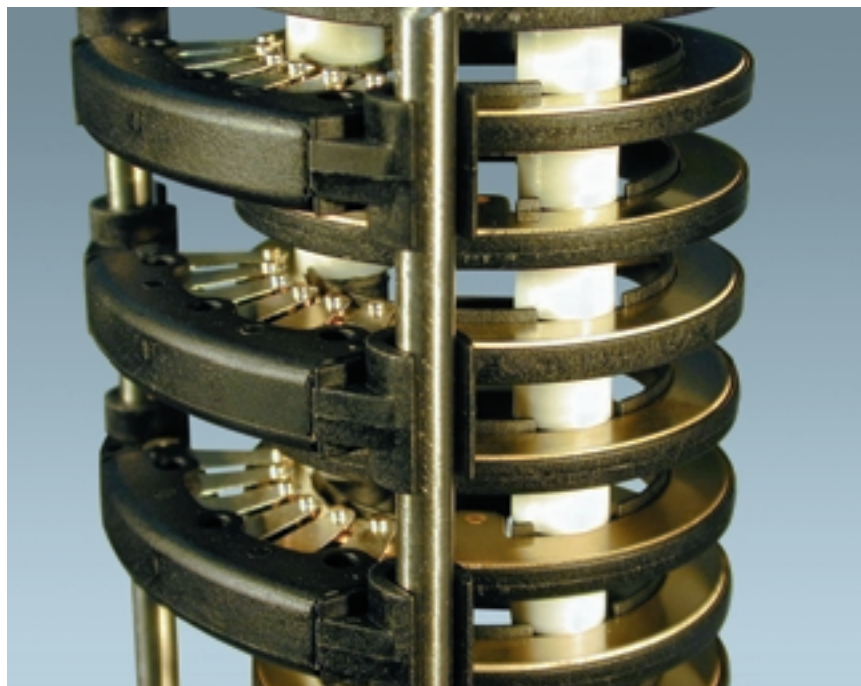
Type	No. of poles incl. PE	Dim. h (mm)	Weight kg
GSK 50-03/125/KL/..	2+PE	133	
GSK 50-04/125/KL/..	3+PE	139	
GSK 50-05/125/KL/..	4+PE	145	
GSK 50-06/125/KL/..	5+PE	151	
GSK 50-07/125/KL/..	6+PE	157	
GSK 50-08/125/KL/..	7+PE	163	
GSK 50-09/125/KL/..	8+PE	169	
GSK 50-10/125/KL/..	9+PE	175	
GSK 50-11/125/KL/..	10+PE	181	
GSK 50-12/125/KL/..	11+PE	187	
GSK 50-13/125/KL/..	12+PE	193	
GSK 50-14/125/KL/..	13+PE	199	
GSK 50-15/125/KL/..	14+PE	205	
GSK 50-16/125/KL/..	15+PE	211	
GSK 50-17/125/KL/..	16+PE	217	
GSK 50-18/125/KL/..	17+PE	223	
GSK 50-19/125/KL/..	18+PE	229	
GSK 50-20/125/KL/..	19+PE	235	
GSK 50-21/125/KL/..	20+PE	241	
GSK 50-22/125/KL/..	21+PE	247	
GSK 50-23/125/KL/..	22+PE	253	
GSK 50-24/125/KL/..	23+PE	259	

The slipring column can be combined with type 58

(*) only with cable gland (PG) screw coupling in axis and 1 conductor per PG (not included in the standard version).

Technical Data

Current rating:	mA - 16 A, 100% ED (parallel connections up to 60 A)
Voltage:	< 125 V / 380 V / 500 V ~
Revolutions per minute:	1-60 revs/min (varying according to the number of poles and installation position)
Number of poles:	12-24 with connection box, 40 (64) with direct connection.
Pole pitch:	8,8 / 10,5 / 13 mm for 2 poles (pole jump always 2 rings)
Slipring:	ø 58 mm as plane ring, material: MS with surface finishing, solder terminal
Brush gear:	Interchangeably mounted as double support. The contact plate has 6 singly arranged contact springs with one hard silver contact each. The contacts slide on staggered paths, brush gear connection and solder terminal.
Connection box:	Completely pre-wired with 1,5 mm ² Connection to shell terminals Version up to 12 poles: head ø 75 mm Version 13-24 poles: head ø 98 mm
Insulation:	Slipring column and brush gear of high-quality plastic with glass-fiber reinforcement
Insulation group:	C
Current values: (at max. +30°C)	Standard: 30 mA and > at 24 V and >, max. 16 A Multi-layer coating (ML) and Silver contacts: 1 mA and > at m V and > ML + gold + Siko + gold: suitable for measuring current - signal - video - and data transmission. Further technical data available on request.
Ambient temperature:	max. +50°C / -35°C At +50°C the max. permissible amp. load must be consequently reduced. For higher temperature values, please contact the manufacturer.
Corrosion protection:	Hot-galvanised steel parts or of VA-material 1.4301
Installation positions:	Vertical, hanging, horizontal (please specify)
Special:	e.g. higher current ratings, locks or divider plates and screen plates between the rings, etc.
Order example:	(standard version) Installation slipring column open: SK 58-12 / KL / GL / 380 / ML 11 + PE, connection box, 220 V, rings with multi-layer coating



Slipring column with housing, techn. data page 16

Slipring column with housing, protection IP66 ^(*).

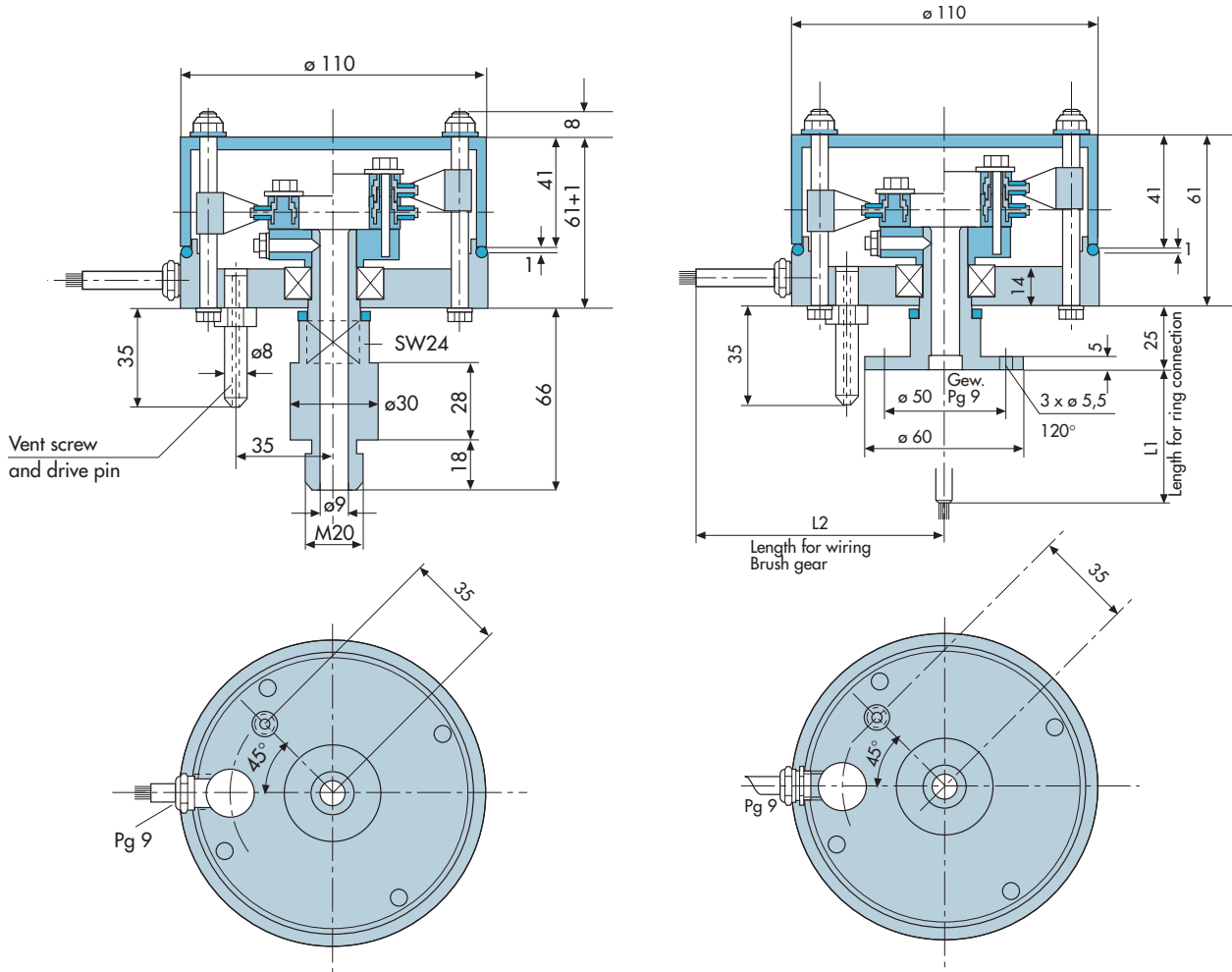
Ball bearing support sealed on both sides and additional V-ring sealing under the bearing. Bearing housing and protection cover of plastic, thick-walled, weatherproof, shock and frost resistant. Drive pin with vent hole.

Version with threaded pin M20 or fixing flange.

Ring connection: screws M3

Brush gear: solder terminal or screw terminal

With direct wiring according to quotation.



Type with axis section M20	No. of poles		Weight kg
	with PE	w/out PE	
GSK 58-02/110Po/M3/M20		2	
GSK 58-04/110Po/M3/M20	3+PE	4	

Type with fixing flange	No. of poles		Weight kg
	with PE	wi/out PE	
GSK 58-02/110Po/M3/F		2	
GSK 58-04/110Po/M3/F	3+PE	4	

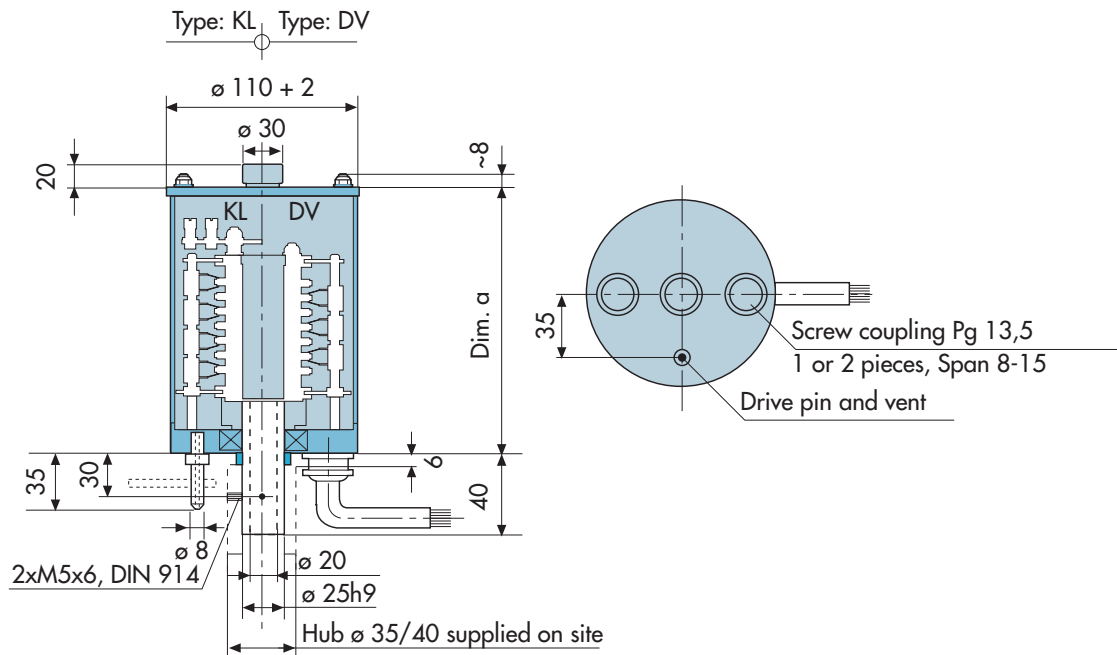
^(*) only with cable gland (PG) screw coupling in axis and 1 conductor (not included in the standard version)

Slipping column with housing, technical data on page 16

Slipping column with housing, protection IP66 ^(*).

Ball bearing support sealed on both sides with additional V-ring sealing mounted on the spacer ring. Bearing and cover of aluminium, Protection cover tube of thick-walled plastic, weatherproof and frost resistant. The drive pin is also fitted with a vent hole. The cover can be equipped with a further vent screw.

Fixing: The axis pin is mounted in a hollow axis with $\varnothing 25$ E8 boring. (outside $\varnothing 35-40$). Two nearly flush grub screws M5 x 6/8 hold the slipping column in position. Special version with fixing flange.



Version with connection box

Type	KL	No.poles incl. PE	Dim. a (mm)			Weight kg
			125V	380V	500V	
GSK 58-02/110/KL/..		2	103	103	103	
GSK 58-04/110/KL/..		4	112	114	116	
GSK 58-06/110/KL/..		6	121	124	129	
GSK 58-08/110/KL/..		8	129	135	142	
GSK 58-10/110/KL/..		10	138	145	155	
GSK 58-12/110/KL/..		12	147	155	168	

Note: special version KL and DV without PE:

Dimensions a = ... + 11 mm

Version with direct connection DV:

Axis housing tube inside $\varnothing 20$ mm, housing side 1 or 2 x Pg 13,5 and <

For connection version see quotation.

The ring connection should always be carried out on site.

Dimensions a = theoretical dimensions.

^(*) only with cable gland (PG) screw coupling in axis and 1 conductor per PG. (not included in the standard version).

Version with direct connection

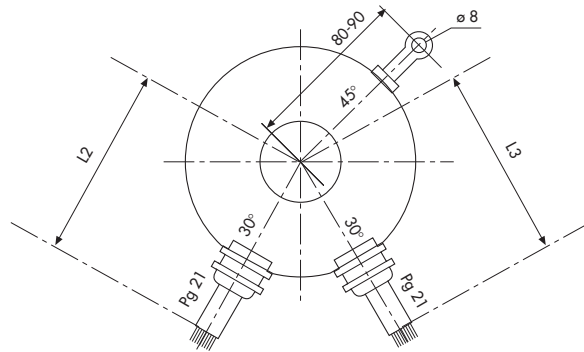
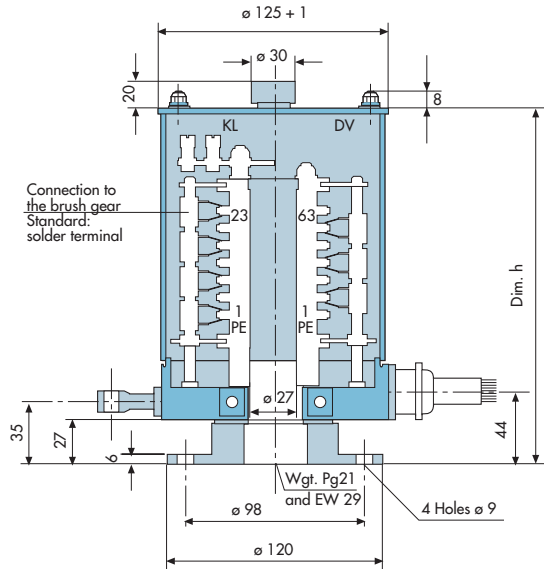
Type	DV	No.poles incl. PE	Dim. a (mm)			Weight kg
			125V	380V	500V	
GSK 58-02/110/DV/..		2	87	87	87	
GSK 58-04/110/DV/..		4	98	100	103	
GSK 58-06/110/DV/..		6	107	111	116	
GSK 58-08/110/DV/..		8	116	121	129	
GSK 58-10/110/DV/..		10	125	132	142	
GSK 58-12/110/DV/..		12	134	142	155	
GSK 58-14/110/DV/..		14	143	153	168	
GSK 58-16/110/DV/..		16	152	163	181	
GSK 58-18/110/DV/..		18	160	174	194	
GSK 58-20/110/DV/..		20	169	184	207	
GSK 58-22/110/DV/..		22	178	195	220	
GSK 58-24/110/DV/..		24	187	205	233	
GSK 58-26/110/DV/..		26	195	216	246	
GSK 58-28/110/DV/..		28	204	226	259	
GSK 58-30/110/DV/..		30	213	237	272	
GSK 58-32/110/DV/..		32	222	247	285	
GSK 58-34/110/DV/..		34	231	258	298	
GSK 58-36/110/DV/..		36	239	268	311	
GSK 58-38/110/DV/..		38	248	279	324	
GSK 58-40/110/DV/..		40	257	289	337	

Max. 40 poles

Slipring column with housing, techn. data page 16

Slipring column with housing, protection IP66^(*).

Deep-groove ball bearing sealed on both sides. Bearing and cover of aluminium, protection cover tube of thick-walled plastic, weatherproof, shock and frost resistant. Bearing with vent holes, additional vent screw in the cover on request. The following enhancements are available: higher current ratings through ring variants and parallel connection, locks, divider plates and additional screening, installation of potentiometers, encoders and angular encoders etc., special tube for rotary distributor 1/4, 3/8", special flange, etc..



With connection box

Type	KL	No. poles incl. PE	Dim. h (mm)			Weight kg
			125V	380V	500V	
GSK 58-04/125/KL/..		4	130	132	134	
GSK 58-06/125/KL/..		6	139	142	147	
GSK 58-08/125/KL/..		8	148	153	160	
GSK 58-10/125/KL/..		10	157	163	173	
GSK 58-12/125/KL/..		12	165	174	186	
GSK 58-14/125/KL/..		14	174	184	199	
GSK 58-16/125/KL/..		16	183	195	212	
GSK 58-18/125/KL/..		18	192	205	225	
GSK 58-20/125/KL/..		20	201	216	238	
GSK 58-22/125/KL/..		22	209	226	251	
GSK 58-24/125/KL/..		24	218	237	264	

Note: Special version KL and DV without PE:

Dimensions h = ... + 11 mm

Direct connection version according to quotation. The ring connection should always be carried out on site..

Note: the housing has max. max. 2 x Pg 21 - screw coupling. For several conductors, a $\phi 160$ mm housing should be used.

Dimensions h = theoretical dimensions.

For horizontal arrangement starting from 48 poles + intermediate support

Dimensions h + 13 mm

^(*) only with cable gland (PG) screw coupling in axis and 1 conductor per cable gland.
(not included in the standard version).

With direct connection

Type	DV	No. poles incl. PE	Dim. h (mm)			Weight kg
			125V	380V	500V	
GSK 58-04/125/DV/..		4	114	116	118	
GSK 58-06/125/DV/..		6	123	126	131	
GSK 58-08/125/DV/..		8	132	137	144	
GSK 58-10/125/DV/..		10	141	147	157	
GSK 58-12/125/DV/..		12	149	158	170	
GSK 58-14/125/DV/..		14	158	168	183	
GSK 58-16/125/DV/..		16	167	179	196	
GSK 58-18/125/DV/..		18	176	189	209	
GSK 58-20/125/DV/..		20	185	200	222	
GSK 58-22/125/DV/..		22	193	210	235	
GSK 58-24/125/DV/..		24	202	221	248	
GSK 58-26/125/DV/..		26	211	231	261	
GSK 58-28/125/DV/..		28	220	242	274	
GSK 58-30/125/DV/..		30	229	252	287	
GSK 58-32/125/DV/..		32	237	263	300	
GSK 58-34/125/DV/..		34	246	273	313	
GSK 58-36/125/DV/..		36	255	284	326	
GSK 58-38/125/DV/..		38	264	294	339	
GSK 58-40/125/DV/..		40	273	305	352	
GSK 58-42/125/DV/..		42	281	315	365	
GSK 58-44/125/DV/..		44	290	326	378	
GSK 58-46/125/DV/..		46	299	336	391	
GSK 58-48/125/DV/..		48	308	347	404	
GSK 58-50/125/DV/..		50	317	357	417	
GSK 58-52/125/DV/..		52	325	368	430	
GSK 58-54/125/DV/..		54	334	378	443	
GSK 58-56/125/DV/..		56	343	389	456	
GSK 58-58/125/DV/..		58	352	399	469	
GSK 58-60/125/DV/..		60	361	410	482	
GSK 58-62/125/DV/..		62	369	420	495	
GSK 58-64/125/DV/..		64	378	431	508	

Special: With various conductor cross-sections, use housing with $\phi 160$ mm.
Page 23/21

GSK 58-../160/DV/..

Slipping column with housing, technical data on page 16

Slipping column with housing, protection IP66 ^(*).

Due to the several variants available, this slipping column is provided with direct connection only. The desired connection with cross section and cable length is included in the respective quotations.

Construction: ball bearing support sealed on both sides + V-ring sealing. Hollow axis diameter = 40 ϕ mm

Bearing and cover of aluminium. The bearing housing has several lateral Pg-inlets Pg 21/16/13,5 and <, according to the customer's wishes. The protection cover tube is a thick-walled plastic, weatherproof, shock and frost resistant tube.

Several vent holes are located on the lower side of the housing. The cover can be fitted with an additional vent screw, if required. Standard version only with flat rings and several Pg-inlets in the housing, according to cross section of the conductors up to 64 poles.

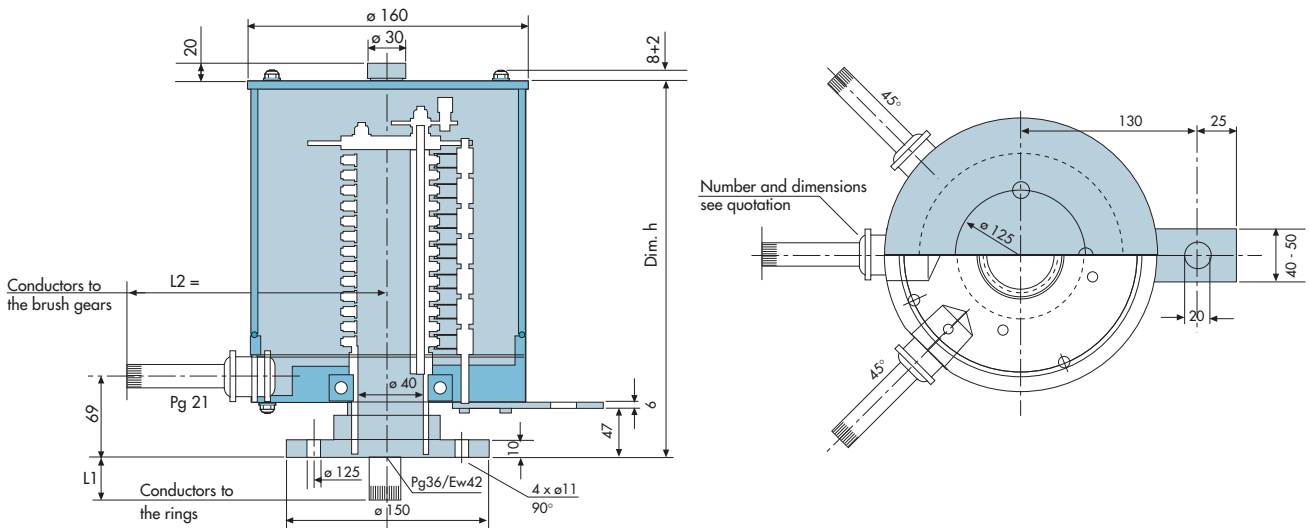
The slipping column can be equipped with different rings.

E.g.: 16 A / 20 A / 40 A / 60 A / 80 A and technical data.

For the relevant technical data, see page 22.

The following 2 tables on page 23 have been drawn up for max. 2 x 80 A + control rings bzw. 3 x 60 A + control rings.

In case of discrepancy, please contact the manufacturer.



With direct connection, version with plane rings only

Type	DV	No. poles incl. PE	Dim. h (mm)			Weight kg
			125V	380V	500V	
GSK 58-04/160/DV/..		4	139	140	143	
GSK 58-06/160/DV/..		6	148	151	156	
GSK 58-08/160/DV/..		8	156	162	169	
GSK 58-10/160/DV/..		10	165	172	182	
GSK 58-12/160/DV/..		12	174	183	195	
GSK 58-14/160/DV/..		14	183	193	208	
GSK 58-16/160/DV/..		16	192	204	221	
GSK 58-18/160/DV/..		18	200	214	234	
GSK 58-20/160/DV/..		20	209	225	247	
GSK 58-22/160/DV/..		22	218	235	260	
GSK 58-24/160/DV/..		24	227	246	273	
GSK 58-26/160/DV/..		26	236	256	286	
GSK 58-28/160/DV/..		28	244	267	299	
GSK 58-30/160/DV/..		30	253	277	312	
GSK 58-32/160/DV/..		32	262	288	325	
GSK 58-34/160/DV/..		34	271	298	338	

Type	DV	No. poles incl. PE	Dim. h (mm)			Weight kg
			125V	380V	500V	
GSK 58-36/160/DV/..		36	280	309	351	
GSK 58-38/160/DV/..		38	288	319	364	
GSK 58-40/160/DV/..		40	297	330	377	
GSK 58-42/160/DV/..		42	306	340	390	
GSK 58-44/160/DV/..		44	315	351	403	
GSK 58-46/160/DV/..		46	324	361	416	
GSK 58-48/160/DV/..		48	345	385	442	
GSK 58-50/160/DV/..		50	354	395	455	
GSK 58-52/160/DV/..		52	363	406	468	
GSK 58-54/160/DV/..		54	372	416	481	
GSK 58-56/160/DV/..		56	381	427	494	
GSK 58-58/160/DV/..		58	389	437	507	
GSK 58-60/160/DV/..		60	398	448	520	
GSK 58-62/160/DV/..		62	407	458	533	
GSK 58-64/160/DV/..		64	416	469	546	

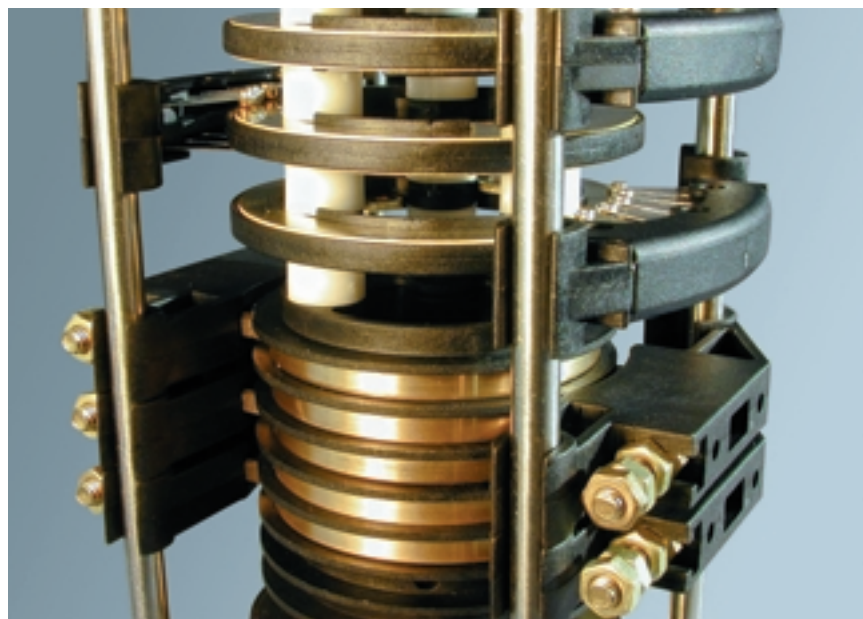
Higher pole numbers on request

^(*) only with cable gland (PG) screw coupling in axle and 1 conductor per PG (not included in the standard version).



Technical Data

Current rating:	mA - 16 A, 20 A, 40 A, 60 A, 80 A, 100% ED
Voltage:	< 125 V / 230 / 380 / 500 V~
Revolutions per minute:	1-60 revs/min (varying according to number of poles and installation position)
Number of poles:	2-4 (2x80A oder 4x40A), 52 and <> mA-16A with direct connection.
Pole pitch:	18 mm power rings, 8,8/10,5/13 mm for 2 poles plane rings
Slipring:	Power ring: \varnothing 58 mm, material: MS, connection M6
Flat ring:	\varnothing 58 mm, material: MS with surface finishing, solder terminal
Brush gear:	Industrial double support with 2 moving carbon brushes, 50A, interchangeable, connection M4 (80A and 60A for each 2 pieces parallel connection) Interchangeably mounted double support. The contact plate has 6 singly arranged contact springs with one hard silver contact each. The contacts slide on staggered paths. The brush gear connection is a solder terminal.
Insulation:	Power ring: POM and glass filament fabric tube Hgw, remaining slipring column and brush gear of high-quality plastic with glass fiber reinforcement.
Insulation group:	C
Current values:	Power ring: 80A max. Flat ring: Standard 30 mA and > at 24 V and >, max. 16 A (at max. +30°C) Multi-layer coating (ML) and silver contact: 1 mA and > at mV and > ML + gold + Siko + gold: suitable for measuring current - signal - video and data transmission. Further technical data available on request.
Ambient temperature:	max. +50°C / -35°C At +50°C the max. permissible amp. load must be consequently reduced. For higher temperature values, please contact the manufacturer.
Corrosion protection:	Hot-galvanised steel parts or of VA-material 1.4301 Aluminium parts with polyester coating on request.
Installation positions:	Vertical, hanging, horizontal (please specify)
Special e.g.:	Slipring variants, locks, divider and screen plates between the rings, special connection, installation of various electrical devices and heating, etc.





Technical Data

Current rating:	mA - 16 A, 100% ED (parallel connections up to 80A)
Voltage:	< 125 V / 380 V / 500 V~
Revolutions per minute:	1-60 revs/min (varying according to number of poles and installation position)
Number of poles:	32 with connection box, 60/80 with direct connection
Pole pitch:	8,8 / 10,5 / 13 mm for 2 poles (pole jump always 2 rings)
Slipring column:	ø 80 mm as plane ring, material: MS with surface finishing, solder terminal
Brush gear:	Interchangeably mounted as double support. The contact plate has 6 singly arranged contact springs with one hard silver contact each. The contacts slide on staggered paths. Brush gear connection as solder terminal.
Connection box:	Completely pre-wired with 1,5 mm ² , connection to shell terminals Standard max. 32 poles, head ø= 137 mm
Insulation:	Slipring column and brush gear of top-quality plastic with glass-fiber reinforcement.
Insulation group:	C
Current values: (at max. + 30°C)	Standard 30 mA - 16 A at 24 V and > Multi-layer coating (ML) and silver contacts: 1 mA and > at mV and > ML + gold + Siko + gold: suitable for measuring current - signal - video and data transmission. Further technical data available on request.
Ambient temperature:	max. +50°C / -35°C At +50°C the max. permissible amp. load must be consequently reduced. For higher temperature values, please contact the manufacturer.
Corrosion protection:	Hot-galvanised steel parts, or VA-material 1.4301
Installation positions:	Vertical, hanging, horizontal, please specify
Special:	e.g. higher current ratings, locks or divider and screen plates between the rings, etc.

Slipring column open, technical data on page 24

Slipring column open, protection IP00

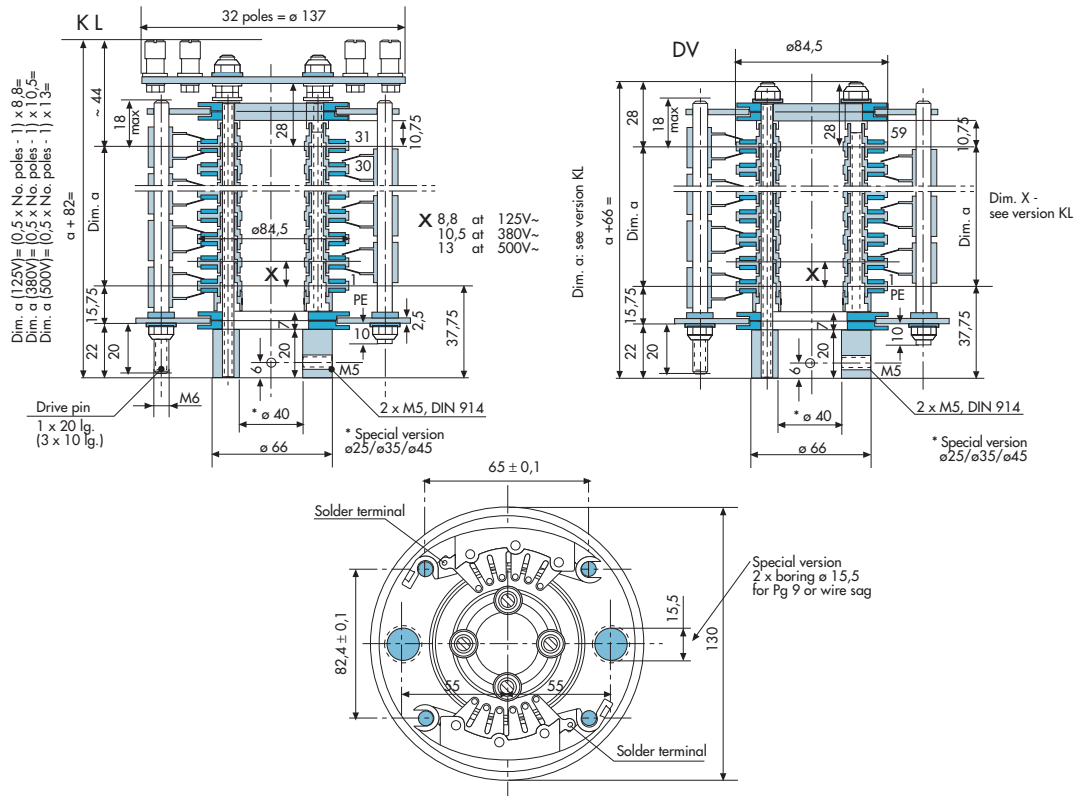
With friction bearing guide for brush bolts, placed on top and bottom, complete with screws.

MS-rings with additional surface finishing. Brush gear as double support for each pole with 6 singly spring-mounted silver contacts and staggered, solder terminal.

Items supplied: Slipring column complete with screws, with friction bearing guide, brush gears with solder terminal and 4 brush bolts. Version according to quotation. Fixing: same as slipring column type 58, see page 17.

KL = version with connection box

DV = version with direct connection



Type	KL	No.poles inkl. PE	Dim. a (mm)			Weight kg
			125V	380V	500V	
SK 80-02/KL/GL/..		2	-	-	-	
SK 80-04/KL/GL/..		4	9	11	13	
SK 80-06/KL/GL/..		6	18	21	26	
SK 80-08/KL/GL/..		8	26	32	39	
SK 80-10/KL/GL/..		10	35	42	52	
SK 80-12/KL/GL/..		12	44	53	65	
SK 80-14/KL/GL/..		14	53	63	78	
SK 80-16/KL/GL/..		16	62	74	91	
SK 80-18/KL/GL/..		18	70	84	104	
SK 80-20/KL/GL/..		20	79	95	117	
SK 80-22/KL/GL/..		22	88	105	130	
SK 80-24/KL/GL/..		24	97	116	143	
SK 80-26/KL/GL/..		26	106	126	156	
SK 80-28/KL/GL/..		28	114	137	169	
SK 80-30/KL/GL/..		30	123	147	182	
SK 80-32/KL/GL/..		32	132	158	195	

Standard version with PE

Dimensions a = max lengths and theoretical dimensions

Version with direct connection DV: max. 80 poles according to installation position and connection available.

Direct connection according to quotation.

The ring connection should always be carried out on site.

According to installation position, an intermediate support after 30-40 rings should be provided. For each intermediate support +13 mm must be added to the values indicated in the tables.

Type	DV	No.poles incl. PE	Dim. a (mm)			Weight kg
			125V	380V	500V	
SK 80-02/DV/GL/..		2	-	-	-	
SK 80-04/DV/GL/..		4	9	11	13	
SK 80-06/DV/GL/..		6	18	21	26	
SK 80-08/DV/GL/..		8	26	32	39	
SK 80-10/DV/GL/..		10	35	42	52	
SK 80-12/DV/GL/..		12	44	53	65	
SK 80-14/DV/GL/..		14	53	63	78	
SK 80-16/DV/GL/..		16	62	74	91	
SK 80-18/DV/GL/..		18	70	84	104	
SK 80-20/DV/GL/..		20	79	95	117	
SK 80-22/DV/GL/..		22	88	105	130	
SK 80-24/DV/GL/..		24	97	116	143	
SK 80-26/DV/GL/..		26	106	126	156	
SK 80-28/DV/GL/..		28	114	137	169	
SK 80-30/DV/GL/..		30	123	147	182	
SK 80-32/DV/GL/..		32	132	158	195	
SK 80-34/DV/GL/..		34	141	168	208	
SK 80-36/DV/GL/..		36	150	179	221	
SK 80-38/DV/GL/..		38	158	189	234	
SK 80-40/DV/GL/..		40	167	200	247	
SK 80-42/DV/GL/..		42	176	210	260	
SK 80-44/DV/GL/..		44	185	221	273	
SK 80-46/DV/GL/..		46	194	231	286	
SK 80-48/DV/GL/..		48	202	242	299	
SK 80-50/DV/GL/..		50	211	252	312	
SK 80-52/DV/GL/..		52	220	263	325	
SK 80-54/DV/GL/..		54	229	273	338	
SK 80-56/DV/GL/..		56	238	284	351	
SK 80-58/DV/GL/..		58	246	294	364	
SK 80-60/DV/GL/..		60	255	305	377	

GSK 80-../160/DV/..

Slipping column with housing, technical data page 24

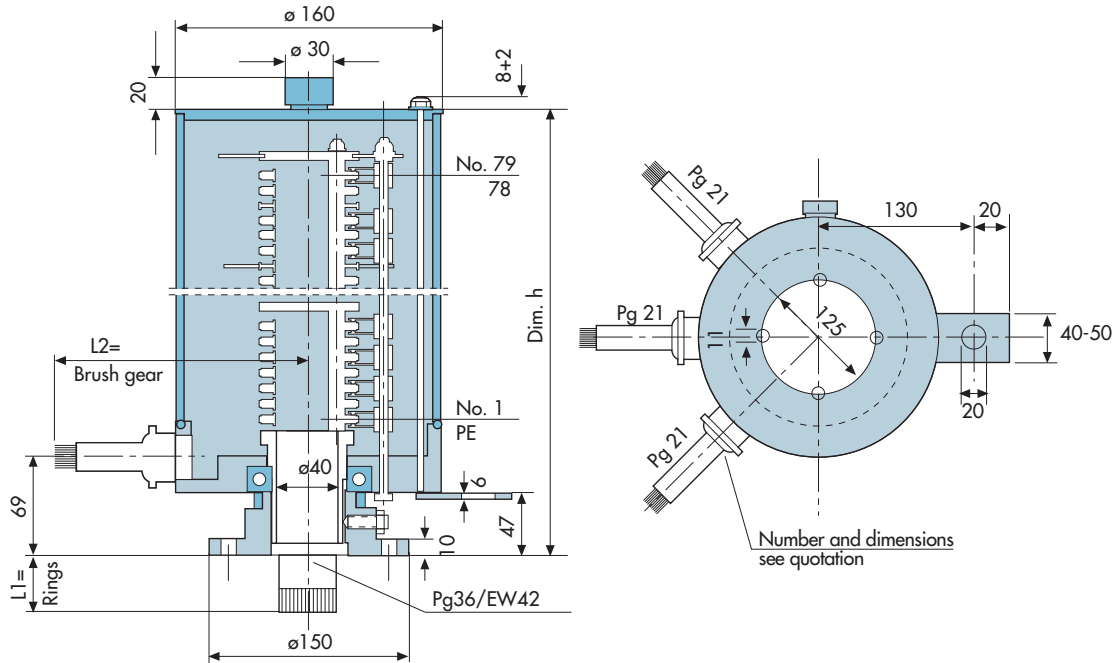
Slipping column with housing, protection IP66 (*)

This slipping column has a similar housing to type GSK58-oo/160/DV, illustrated on page 21.

The slipping column has larger rings $\varnothing 80$ mm and therefore a larger internal passage, thus making it suitable for larger number of poles.

Parallel connections of the rings, as well as an arrangement with different rings are allowed.

Table below - Version with plane rings only. Parallel connection is allowed up to 60A.



Type	DV	No. of poles incl. PE	Dim. h (mm)			Weight kg
			125V	380V	500V	
Version with PE		max. 16A				
GSK 80-04/160/DV..		4	147	149	151	
GSK 80-06/160/DV..		6	156	159	164	
GSK 80-08/160/DV..		8	164	170	177	
GSK 80-10/160/DV..		10	173	180	190	
GSK 80-12/160/DV..		12	182	191	203	
GSK 80-14/160/DV..		14	191	201	216	
GSK 80-16/160/DV..		16	200	212	229	
GSK 80-18/160/DV..		18	208	222	242	
GSK 80-20/160/DV..		20	217	233	255	
GSK 80-22/160/DV..		22	226	243	268	
GSK 80-24/160/DV..		24	235	254	281	
GSK 80-26/160/DV..		26	244	264	294	
GSK 80-28/160/DV..		28	252	275	307	
GSK 80-30/160/DV..		30	261	285	320	
GSK 80-32/160/DV..		32	270	296	333	
GSK 80-34/160/DV..		34	279	306	346	
GSK 80-36/160/DV..		36	288	317	359	
GSK 80-38/160/DV..		38	296	327	372	
GSK 80-40/160/DV..		40	305	338	385	

(*) only with cable gland (PG) screw coupling in axis and 1 conductor per PG (not included in the standard version)

Type	DV incl. PE	No. of poles max. 16A	Dim. h (mm)			Weight kg
			125V	380V	500V	
Version with PE						
GSK 80-42/160/DV..		42	314	348	398	
GSK 80-44/160/DV..		44	323	359	411	
GSK 80-46/160/DV..		46	332	369	424	
GSK 80-48/160/DV..		48	353	393	450	
GSK 80-50/160/DV..		50	362	404	463	
GSK 80-52/160/DV..		52	371	414	476	
GSK 80-54/160/DV..		54	380	424	489	
GSK 80-56/160/DV..		56	389	435	502	
GSK 80-58/160/DV..		58	397	445	515	
GSK 80-60/160/DV..		60	406	456	528	
GSK 80-62/160/DV..		62	415	466	541	
GSK 80-64/160/DV..		64	424	477	554	
GSK 80-66/160/DV..		66	433	487	567	
GSK 80-68/160/DV..		68	441	498	580	
GSK 80-70/160/DV..		70	450	508	593	
GSK 80-72/160/DV..		72	459	519	606	
GSK 80-74/160/DV..		74	468	529	619	
GSK 80-76/160/DV..		76	477	540	632	
GSK 80-78/160/DV..		78	485	550	645	
GSK 80-80/160/DV..		80	494	561	658	

Larger number of poles on request.

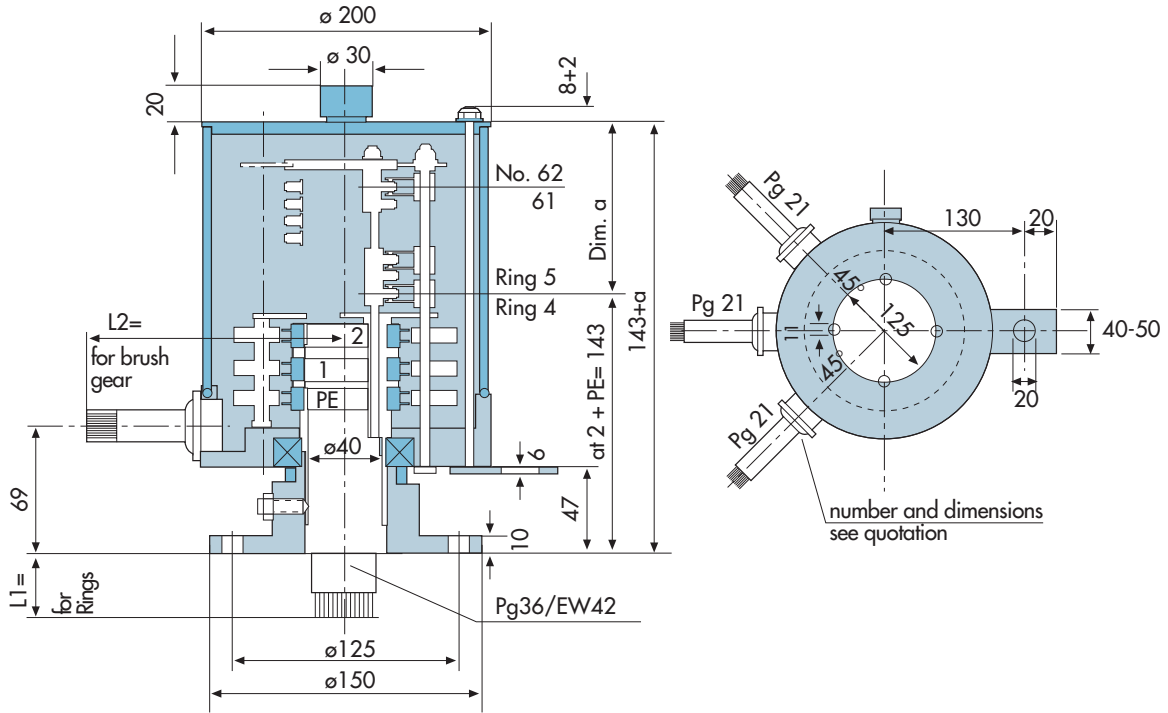
GSK 80-3-../200/DV/.. with various rings

Slipring column with housing, techn. data on page 24 and partly page 22

Slipring column with housing, protection IP66 (*)

Slipring \varnothing 80 mm, description similar to page 21 and 26.

Power rings max. 80A/60A depending on connection. Housing outside \varnothing 200 mm.



Type	DV	No. of poles		Dim. a (mm)			Wgt
		Rings		Rings 16A and <			
with max 3x60A		500V	...V	125V	380V	500V	kg
		60A	16A				
GSK 80-3-02/200/DV/..	2+PE	2	45	45	45		
GSK 80-3-04/200/DV/..	2+PE	4	54	55	58		
GSK 80-3-06/200/DV/..	2+PE	6	62	66	71		
GSK 80-3-08/200/DV/..	2+PE	8	71	76	84		
GSK 80-3-10/200/DV/..	2+PE	10	80	87	97		
GSK 80-3-12/200/DV/..	2+PE	12	89	97	110		
GSK 80-3-14/200/DV/..	2+PE	14	98	108	123		
GSK 80-3-16/200/DV/..	2+PE	16	106	118	136		
GSK 80-3-18/200/DV/..	2+PE	18	115	129	149		
GSK 80-3-20/200/DV/..	2+PE	20	124	139	162		
GSK 80-3-22/200/DV/..	2+PE	22	133	150	175		
GSK 80-3-24/200/DV/..	2+PE	24	142	160	188		
GSK 80-3-26/200/DV/..	2+PE	26	150	171	201		
GSK 80-3-28/200/DV/..	2+PE	28	159	181	214		
GSK 80-3-30/200/DV/..	2+PE	30	168	192	227		
GSK 80-3-32/200/DV/..	2+PE	32	177	202	240		
GSK 80-3-34/200/DV/..	2+PE	34	186	213	253		
GSK 80-3-36/200/DV/..	2+PE	36	195	223	266		
GSK 80-3-38/200/DV/..	2+PE	38	203	234	279		
GSK 80-3-40/200/DV/..	2+PE	40	212	244	292		

Type	DV	No. of poles		Dim. a (mm)			Wgt
		Rings		Rings 16A and <			
with max 3x60A		500V	...V	125V	380V	500V	kg
		60A	16A				
GSK 80-3-42/200/DV/..	2+PE	42	221	255	305		
GSK 80-3-44/200/DV/..	2+PE	44	230	265	318		
GSK 80-3-46/200/DV/..	2+PE	46	239	276	331		
GSK 80-3-48/200/DV/..	2+PE	48	260	299	357		
GSK 80-3-50/200/DV/..	2+PE	50	269	310	370		
GSK 80-3-52/200/DV/..	2+PE	52	278	320	383		
GSK 80-3-54/200/DV/..	2+PE	54	286	331	396		
GSK 80-3-56/200/DV/..	2+PE	56	295	341	409		
GSK 80-3-58/200/DV/..	2+PE	58	304	352	422		
GSK 80-3-60/200/DV/..	2+PE	60	313	362	435		
GSK 80-3-62/200/DV/..	2+PE	62	322	373	448		

Further variants and number of poles available on request.

Desired version according to quotation.

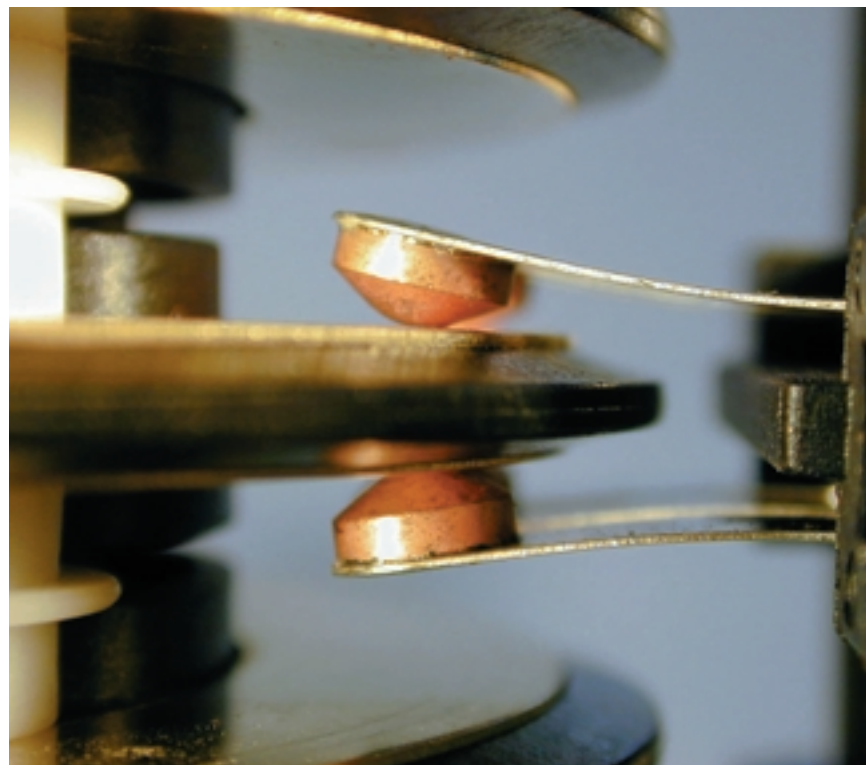
Max. number of poles varies according to conductor cross section.



Technical Data

Current rating:	mA - 20 A (*25A), 100% ED (parallel connection up to 80A)
Voltage:	max. 500 V~/660 V = (with locks up to 750 V~)
Revolutions per minute:	1-100 revs/min, varying according to number of poles and installation position
Number of poles:	44 with connection box, 2-80 with direct connection
Pole pitch:	14 mm for 2 poles (pole jump always 2 rings)
Slipring:	∅ 98 mm as plane ring, material: MS, according to current rating with or without surface finishing or M4, solder terminal
Brush gear:	Double support interchangeably mounted, with triple contact spring for each ring, sliding paths are staggered. Standard version with bronze carbon brushes, as an alternative with silver carbon brushes. Connection with flat connector 6,3 mmn. DIN 46428 for flat mounting bush (* M4 to be prepared)
Connection box:	Completely pre-wired with 2,5 mm ² , connection to shell terminals. Standard max. 44 poles, head ∅ 155 mm
Insulation:	Slipring column and brush gear of high-quality plastic with glass-fiber parts.
Insulation group:	C
Current values: (at max. +30°C)	Standard: 50 mA - 20A (25A) at 24 V and > Multi-layer coating (ML) and silver carbon brushes (Ag): 1 mA and > at 10m V and > Multi-layer coating (ML) + gold plating (Au) and silver carbon brushes (Ag): suitable for measuring current - signal - video and data transmission.
Ambient temperature:	max. +50°C / -35°C At +50°C the max. permissible amp. load must be consequently reduced. For higher temperature values, please contact the manufacturer.
Corrosion protection:	Hot-galvanised steel parts or VA-material 1.4301
Installation positions:	Vertical, hanging, horizontal, please contact the manufacturer
Special:	e.g. higher current ratings, locks or divider and screen plates between the rings, etc.

* 25A to be prepared



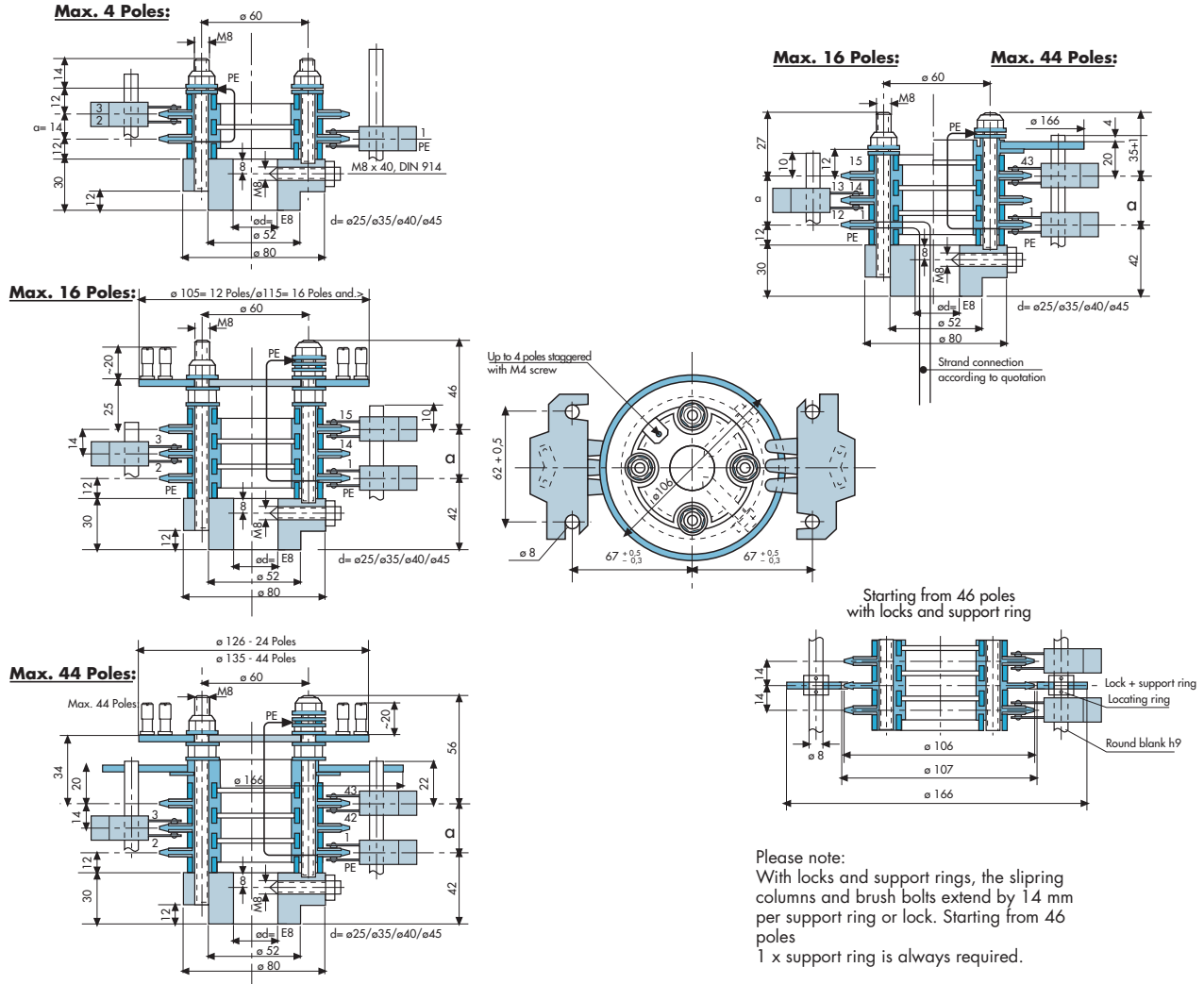
Slipring column open, technical data on page 28

Slipring column open, protection IP00,

Slipring column complete with screws. According to the number of poles, fitted with support washer on top or in the middle. The support washer is fixed in position through setting rings. Standard version. MS-rings and brush gear with bronze carbon brushes. According to current rating, rings with surface finishing and brush gear with silver carbon brushes. Instructions for assembly: the hollow axis mounted on site should end approx. 2 mm above the ESK-flange. All internal edges are rounded. Centre the grub screws M8 with the hole and secure with nuts.

Direct connection according to quotation. The ring connection should always be carried out on site.

Standard version.: starting from 4 poles incl. PE



With connection box = KL

Type	No. of poles	Ring of connection	Supp. rings top	Dim. a	Wgt.
KL				mm	kg
SK98-02/M4/..	2	M4	-	-	
SK98-04/M4/..	4	M4	-	14	
SK98-06/KL/..	6	KL	-	28	
↓	↓	KL	-	$a = \left(\frac{\text{Pole no.} - 1}{2}\right) \cdot 14$	
SK98-16/KL/..	16	KL	-	98	
SK98-18/KL/..	18	KL	1	112	
↓	↓	KL	1	$a = \left(\frac{\text{Pole no.} - 1}{2}\right) \cdot 14$	
SK98-44/KL/..	44	KL	1	294	

Items supplied: Slipring column complete with screws. Version according to quotation. With brush gears, without brush bolts. (blank, h9).

With direct connection = DV

Type	No. of poles	Ring of connection	Supp. rings top	Supp. rings middle	Dim. a	Wgt.
KL					mm	kg
SK98-02/DV/..	2	DV	-	-	0	
SK98-04/DV/..	4	DV	-	-	14	
↓	↓	DV	-	-	$a = \left(\frac{\text{Pole no.} - 1}{2}\right) \cdot 14$	
SK98-16/DV/..	16	DV	-	-	98	
SK98-18/DV/..	18	DV	1	-	112	
↓	↓	DV	1	-	$a = \left(\frac{\text{Pole no.} - 1}{2}\right) \cdot 14$	
SK98-44/DV/..	44	DV	1	-	294	
SK98-46/DV/..	46	DV	1	1	322	
↓	↓	DV	1	1	$a = \left(\frac{\text{Pole no.} - 1}{2}\right) \cdot 14$	
SK98-80/DV/..	80	DV	1	1	560	

Slipring column with housing, technical data page 28

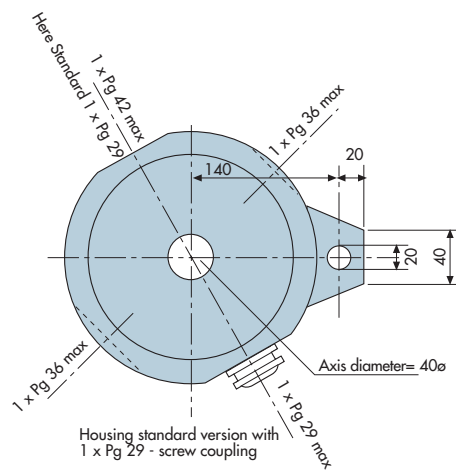
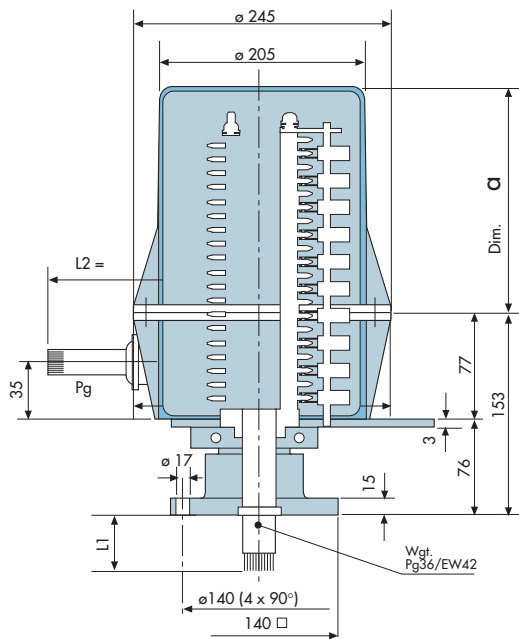
Slipring column with housing, protection IP66 (*)

Construction: housing and cover of high-quality plastic with glass-fiber reinforcement, thick-walled, weather proof, shock and frost resistant. Optimal corrosion protection and reduced condensate formation. Fixing flange of aluminium.

Ball bearing support sealed on both sides + additional V-ring sealing.

Starting from Dim. a = 215 with double bearing. Sealing for cover and housing with hollow O-ring.

The cover screws are placed outside the housing. Pg-inlets in the housing are located on the sides in various sizes and number. 3xPg36 and more e.g. Pg29/21/16/13,5 - see quotation.



Connection range:
Pg 21= 11-20,5 mm
Pg 29= 18-26 mm
Pg 36= 25-35 mm
Pg 42= 29-40 mm

With connection box= KL

Type	KL	No. of poles		Dim. a (mm)		Wgt. Kg
		Standard incl. PE	Special w/out PE	Standard	with heating	
GSK98-04/205/KL/..		3+PE	4	125	125	
GSK98-06/205/KL/..		5+PE	6	125	215	
GSK98-08/205/KL/..		7+PE	8	125	215	
GSK98-10/205/KL/..		9+PE	10	125	215	
GSK98-12/205/KL/..		11+PE	12	125	215	
GSK98-14/205/KL/..		13+PE	14	215	215	
GSK98-16/205/KL/..		15+PE	16	215	215	
GSK98-18/205/KL/..		17+PE	18	215	305	
GSK98-20/205/KL/..		19+PE	20	215	305	
GSK98-22/205/KL/..		21+PE	22	215	305	
GSK98-24/205/KL/..		23+PE	24	215	305	
GSK98-26/205/KL/..		25+PE	26	305	305	
GSK98-28/205/KL/..		27+PE	28	305	305	
GSK98-30/205/KL/..		29+PE	30	305	305	
GSK98-32/205/KL/..		31+PE	32	305	350	
GSK98-34/205/KL/..		33+PE	34	305	350	
GSK98-36/205/KL/..		35+PE	36	305	350	
GSK98-38/205/KL/..		37+PE	38	305	-	
GSK98-40/205/KL/..		39+PE	40	350	-	
GSK98-42/205/KL/..		41+PE	42	350	-	
GSK98-44/205/KL/..		43+PE	44	350	-	

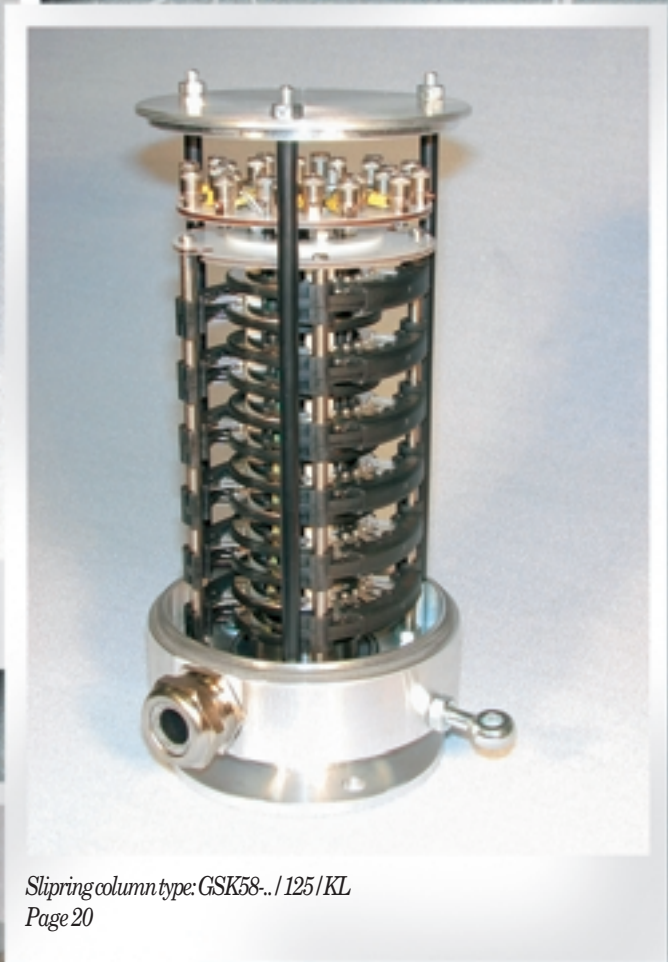
(*) only with cable gland (PG) screw coupling in axis and 1 conductor per PG. (not included in the standard version).

With direct connection = DV

Type	DV	No. of poles		Dim. a (mm)		Wgt. Kg
		Standard incl. PE	Special w/out PE	Standard	with heating	
GSK98-04/205/DV/..		3+PE	4	125	125	
GSK98-06/205/DV/..		5+PE	6	125	125	
GSK98-08/205/DV/..		7+PE	8	125	125	
GSK98-10/205/DV/..		9+PE	10	125	215	
GSK98-12/205/DV/..		11+PE	12	125	215	
GSK98-14/205/DV/..		13+PE	14	125	215	
GSK98-16/205/DV/..		15+PE	16	125	215	
GSK98-18/205/DV/..		17+PE	18	215	215	
GSK98-20/205/DV/..		19+PE	20	215	215	
GSK98-22/205/DV/..		21+PE	22	215	305	
GSK98-24/205/DV/..		23+PE	24	215	305	
GSK98-26/205/DV/..		25+PE	26	215	305	
GSK98-28/205/DV/..		27+PE	28	215	305	
GSK98-30/205/DV/..		29+PE	30	305	305	
GSK98-32/205/DV/..		31+PE	32	305	305	
GSK98-34/205/DV/..		33+PE	34	305	350	
GSK98-36/205/DV/..		35+PE	36	305	350	
GSK98-38/205/DV/..		37+PE	38	305	350	
GSK98-40/205/DV/..		39+PE	40	305	-	
GSK98-42/205/DV/..		41+PE	42	350	-	
GSK98-44/205/DV/..		43+PE	44	350	-	
GSK98-46/205/DV/..		45+PE	46	350	-	



*Slipring column type: SK58.. / KL / GL
Page 17*



*Slipring column type: GSK58.. / 125 / KL
Page 20*



*Slipring column Type: GSK58.. / 110 / DV
Page 19*



Technical Data

	SK02-.. (50A)	SK03-.. (90A)
Current rating:	mA - 50 A, 100% ED	mA - 90 A, 100% ED
Voltage:	max. 500 V~ /660V=	
Revolutions per minute:	1-200 revs/min (varying according to number of poles and installation position)	
Number of poles:	30	24
Pole pitch:	17 mm	20 mm
Slipring:	ø85 mm, material: MS, Connection M6 * 60A	ø85 mm, material: MS, Connection M8 100A
Brush gear:	Industrial double support with 2 moving coal brushes, interchangeable 50 A, Connection M5 ** Bronze/silver carbon brushes	
Connection box:	if requested completely pre-wired with 6 mm ² Connection M5 max. 12 poles	if requested completely pre-wired with 16 mm ² Connection M6 max. 4 poles
Insulation:	Slipring column: thermoplastic resin, brush bolts = glass filament fabric tube HGW 2375.4	
Insulation group:	C	C
Current values: (at max. +30°C)	Standard 50 mA - 50 A With multi-layer coating (ML) and silver carbon brushes (ML + Ag): 5 mA and > at 6 V and >	Standard 50 mA - 90 A
Ambient temperature:	max. +50°C / -35°C At +50°C the max. permissible amp. load must be consequently reduced. For higher temperature values, please contact the manufacturer.	
Corrosion protection:	Hot-galvanised steel parts, or VA-material 1.4301	
Installation positions:	Vertical, hanging, horizontal, please specify.	
Special:	* The 60A slipring can be additionally finished for mA values. Use with silver coal brushes.	

** *Note: The bronze coal brushes can also be supplied in different special quality.*

SK 02-../..

Slipring column open, technical data page 32

Protection IP00

Slipring columns are complete with screws. Starting from 8 poles, both brush bolts are kept at a distance by a connection bushing, starting from 15 poles with centering.

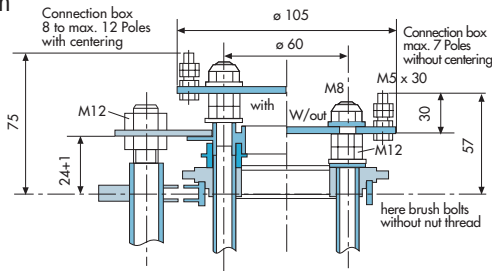
Instructions for assembly: the axis mounted on site should end approx. 2 mm above the ESK-flange. All connections for sliprings are staggered by 90°.

Center the grub screws M8, DIN 914 with the hole and secure with a thin Loctite film.

Standard version without connection box. If requested, with connection box, see technical data page 32.

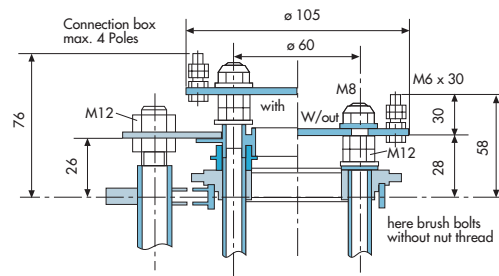
Standard version always with PE

Connection box

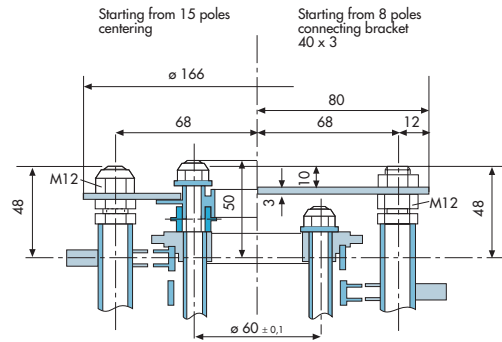
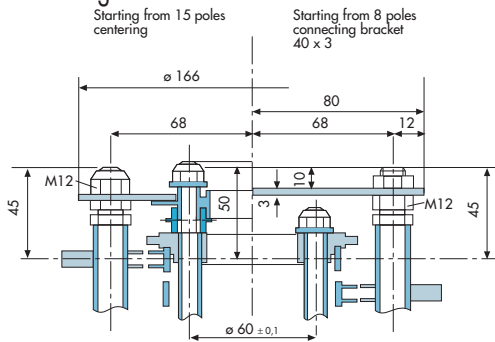


SK 03-../..

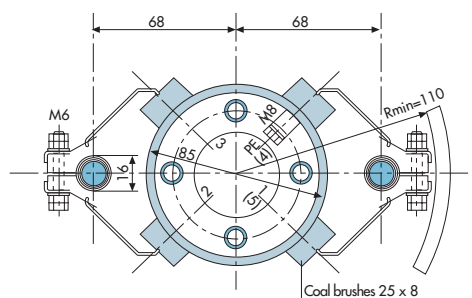
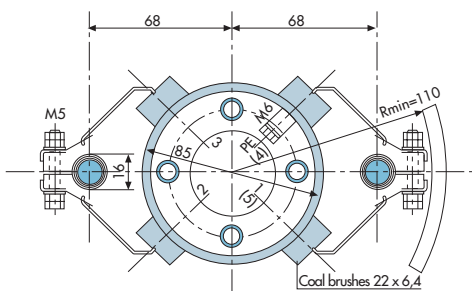
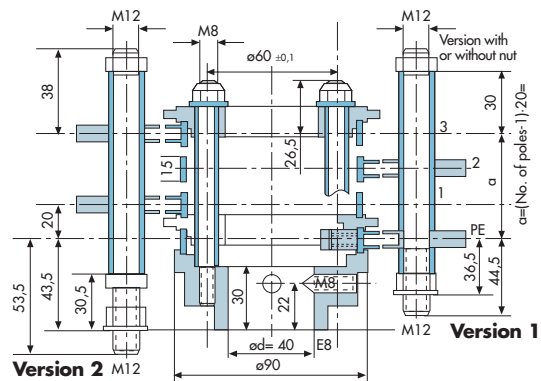
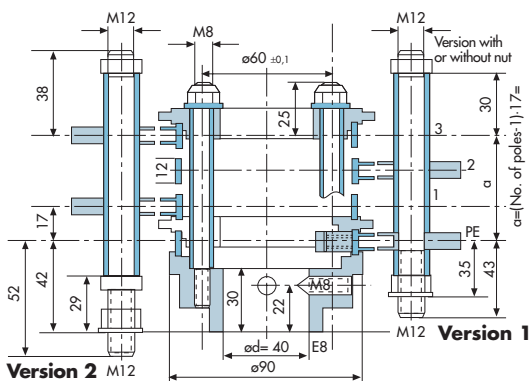
Slipring column open, technical data page 32



Centering and connection bushing



Assembly $d = 35\phi / 40\phi / 45\phi$ E8



GSK 02-../205/^{KL}_{DV}/..

Slipping column with housing

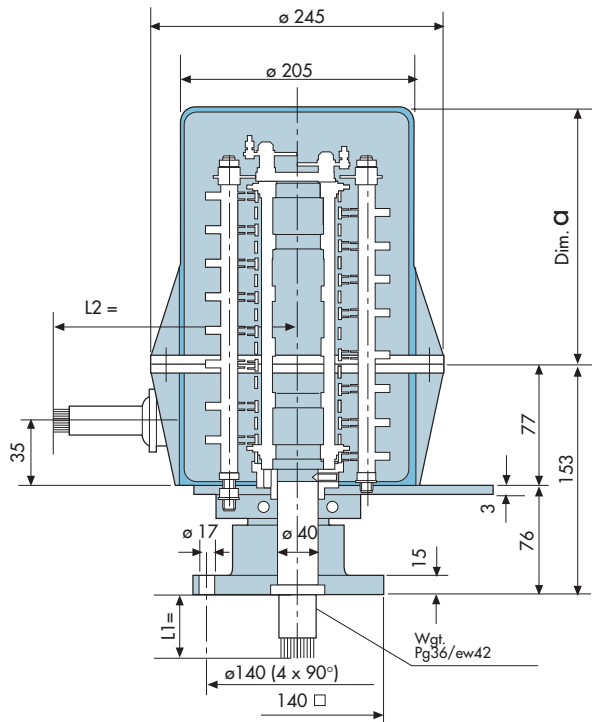
50A

Technical data see page 32.

The housing with bearing and protection cover is manufactured as described on page 30 for type GSK 98-00. The axis has inside \varnothing di = 40 mm. Version with direct connection according to quotation.

Wiring for connection box max. 12 poles.

6 mm², connection M5



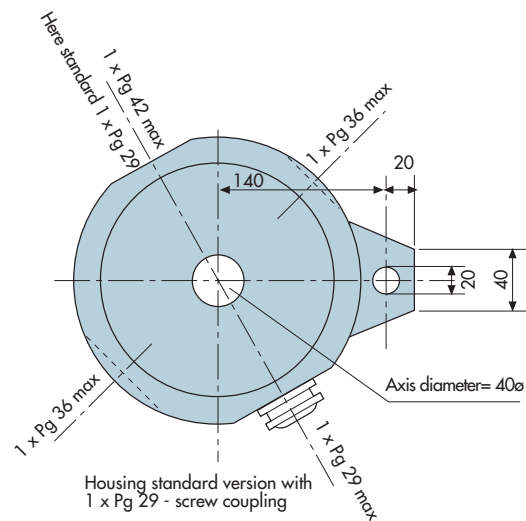
GSK 03-../205/^{KL}_{DV}/..

Slipping column with housing

90A

Wiring for connection box max. 4 poles

16 mm², connection M6



DV = Direct connection

KL = Connection box

Type 50A	No. of poles	Dim. a (mm)		Dim. a with DV and heating	Wgt. kg
		with DV	(6mm ²) with KL		
GSK02-03/205/..	2+PE	125	125	215	
GSK02-04/205/..	3+PE	125	125	215	
GSK02-05/205/..	4+PE	125	125	215	
GSK02-06/205/..	5+PE	125	215	215	
GSK02-07/205/..	6+PE	215	215	215	
GSK02-08/205/..	7+PE	215	215	305	
GSK02-09/205/..	8+PE	215	215	305	
GSK02-10/205/..	9+PE	215	305	305	
GSK02-11/205/..	10+PE	215	305	305	
GSK02-12/205/..	11+PE	305	305	305	
GSK02-13/205/..	12+PE	305	-	350	
GSK02-14/205/..	13+PE	305	-	350	
GSK02-15/205/..	14+PE	305	-	-	
GSK02-16/205/..	15+PE	305	-	-	
GSK02-17/205/..	16+PE	350	-	-	
GSK02-18/205/..	17+PE	350	-	-	
GSK02-19/205/..	18+PE	350	-	-	

Pre-wired connection box with 6 mm² / M5

Type 90A	No. of poles	Dim. a (mm)		Dim. a with DV and heating	Wgt. kg
		with DV	(16mm ²) with KL		
GSK03-03/205/..	2+PE	125	215	215	
GSK03-04/205/..	3+PE	125	215	215	
GSK03-05/205/..	4+PE	125	-	215	
GSK03-06/205/..	5+PE	215	-	215	
GSK03-07/205/..	6+PE	215	-	305	
GSK03-08/205/..	7+PE	215	-	305	
GSK03-09/205/..	8+PE	215	-	305	
GSK03-10/205/..	9+PE	305	-	305	
GSK03-11/205/..	10+PE	305	-	305	
GSK03-12/205/..	11+PE	305	-	350	
GSK03-13/205/..	12+PE	305	-	350	
GSK03-14/205/..	13+PE	305	-	350	
GSK03-15/205/..	14+PE	350	-	-	
GSK03-16/205/..	15+PE	350	-	-	

Axis di = 40ø / max. 10 strands 25 mm²
/ max. 16 strands 16 mm²

Pre-wired connection box with 16 mm² / M6

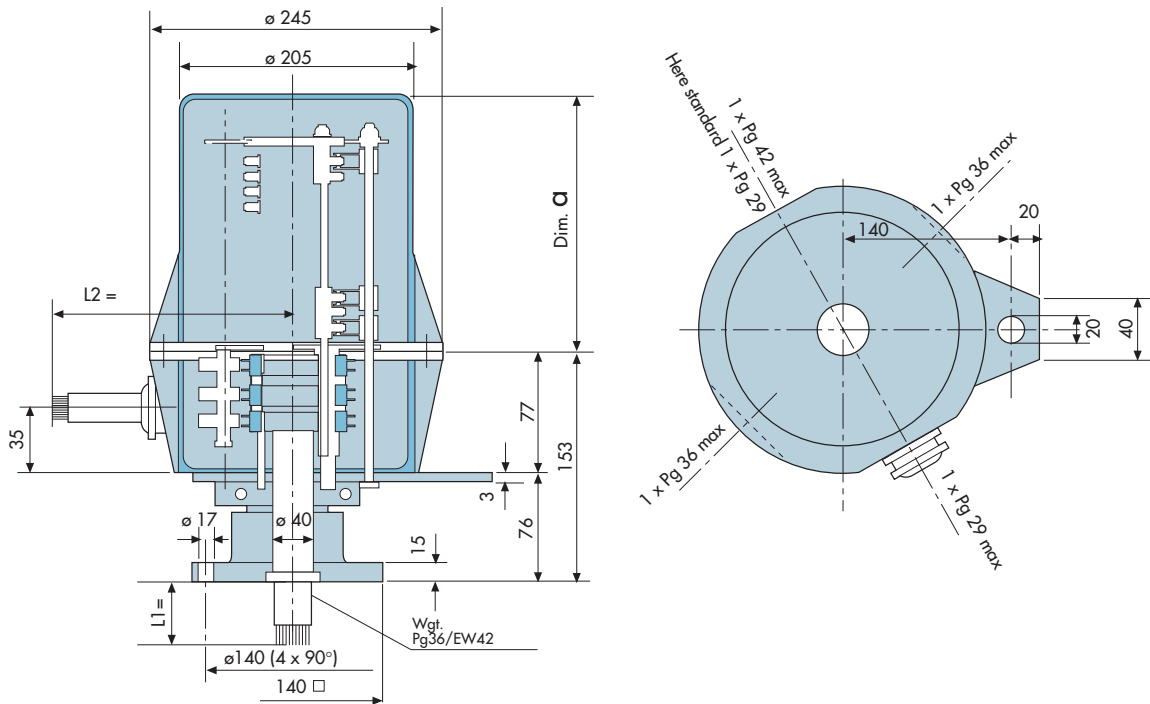
GSK 02../98../205/^{KL}/_{DV}/..

Slipping column with housing,

Protection IP66 ^(*). Technical data page 28, 32

Version as described on page 30 and 34. The slipping column consists of both ring variants type SK98 page 28 and 29 as well as SK02 page 32 and 33

Main current: 50Amp, control current: 20 Amp. , 500 V~
50 A: 3+PE or 4+PE + control current



dim. (mm)	With connection box 6/2,5mm ²				With direct connection				With connection box 6/2,5mm ²				With direct connection			
	Type GSK0204/..	No. of poles		Type GSK0204/..	No. of poles		Type GSK0205/..	No. of poles		Type GSK0205/..	No. of poles		Wgt.			
		0204 50A	98.. 20A		0204 50A	98.. 20A		0205 50A	98.. 20A		0205 50A	98.. 20A				
125	9802/205/KL/..	3+PE	2	9802/205/DV/..	3+PE	2	-				9802/205/DV/..	4+PE	2			
125	-			9804/205/DV/..	3+PE	4	-				-					
215	9804/205/KL/..	3+PE	4	9806/205/DV/..	3+PE	6	9802/205/KL/..	4+PE	2	9804/205/DV/..	4+PE	4				
215	9806/205/KL/..	3+PE	6	9808/205/DV/..	3+PE	8	9804/205/KL/..	4+PE	4	9806/205/DV/..	4+PE	6				
215	9808/205/KL/..	3+PE	8	9810/205/DV/..	3+PE	10	9806/205/KL/..	4+PE	6	9808/205/DV/..	4+PE	8				
215	9810/205/KL/..	3+PE	10	9812/205/DV/..	3+PE	12	9808/205/KL/..	4+PE	8	9810/205/DV/..	4+PE	10				
215	9812/205/KL/..	3+PE	12	9814/205/DV/..	3+PE	14	9810/205/KL/..	4+PE	10	9812/205/DV/..	4+PE	12				
215	9814/205/KL/..	3+PE	14	9816/205/DV/..	3+PE	16	9812/205/KL/..	4+PE	12	9814/205/DV/..	4+PE	14				
305	9816/205/KL/..	3+PE	16	9818/205/DV/..	3+PE	18	9814/205/KL/..	4+PE	14	9816/205/DV/..	4+PE	16				
305	9818/205/KL/..	3+PE	18	9820/205/DV/..	3+PE	20	9816/205/KL/..	4+PE	16	9818/205/DV/..	4+PE	18				
305	9820/205/KL/..	3+PE	20	9822/205/DV/..	3+PE	22	9818/205/KL/..	4+PE	18	9820/205/DV/..	4+PE	20				
305	9822/205/KL/..	3+PE	22	9824/205/DV/..	3+PE	24	9820/205/KL/..	4+PE	20	9822/205/DV/..	4+PE	22				
305	9824/205/KL/..	3+PE	24	9826/205/DV/..	3+PE	26	9822/205/KL/..	4+PE	22	9824/205/DV/..	4+PE	24				
305	9826/205/KL/..	3+PE	26	9828/205/DV/..	3+PE	28	9824/205/KL/..	4+PE	24	9826/205/DV/..	4+PE	26				
350	9828/205/KL/..	3+PE	28	9830/205/DV/..	3+PE	30	9826/205/KL/..	4+PE	26	9828/205/DV/..	4+PE	28				
350	9830/205/KL/..	3+PE	30	9832/205/DV/..	3+PE	32	9828/205/KL/..	4+PE	28	9830/205/DV/..	4+PE	30				
350	9832/205/KL/..	3+PE	32	9834/205/DV/..	3+PE	34	9830/205/KL/..	4+PE	30	9832/205/DV/..	4+PE	32				
350	9834/205/KL/..	3+PE	34	9836/205/DV/..	3+PE	36	-			9834/205/DV/..	4+PE	34				

The connection box is pre-wired with 6 mmd², connection M5 and with 2,5mm² for 20A

Direct connection according to quotation.

^(*) only with cable gland (PG) screw coupling in axis and 1 conductor per PG (not included in the standard version).

GSK 0304/98../205/^{KL}/_{DV}/..

Slipping column with housing, technical data on page 28 and 32

Protection IP66^(*).

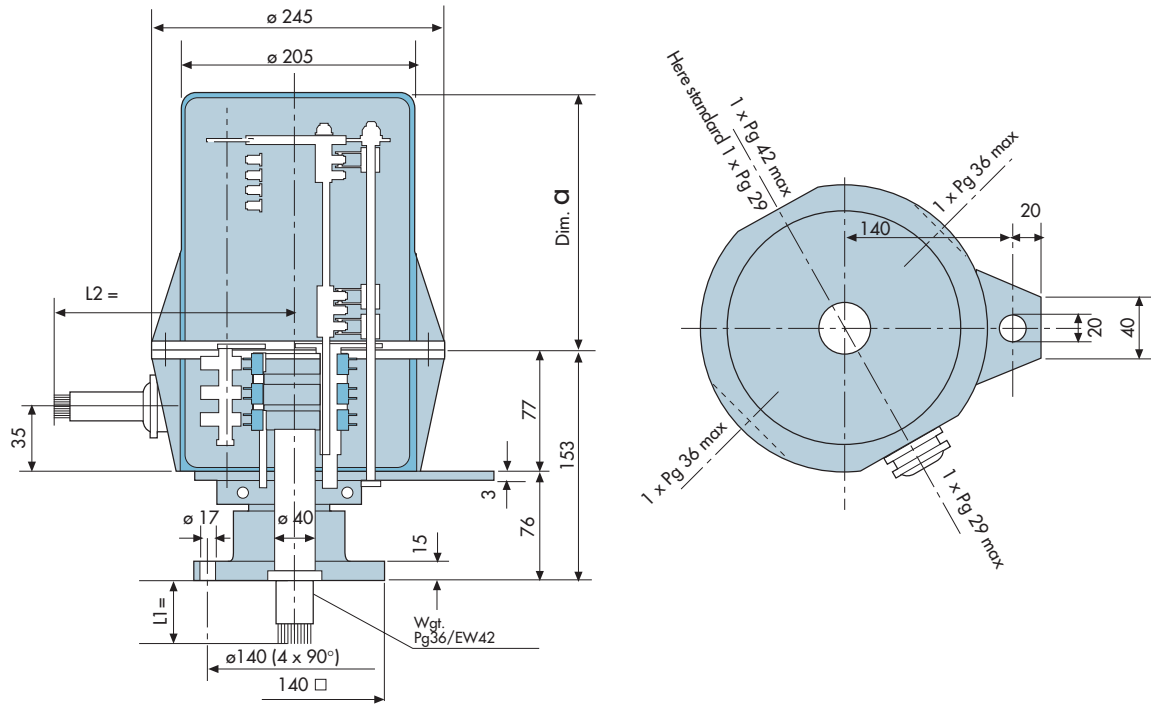
Version as described on page 30, 34 and 35. The slipping column consists of both ring variants type SK98 page 28 and 29, as well as SK03 page 32 and 33

Main current: 90Amp /3+PE, 500 V~

Control current: 20 Amp., 500 V~

The connection box is pre-wired with 16 mm², connection M6, and with 2,5mm² connection bush terminals.

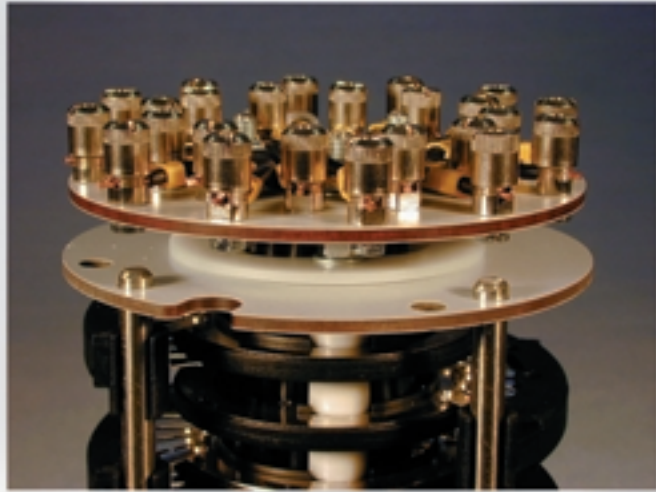
Version of the direct connection according to quotation.



Dim. a (mm)	With connection box		With direct connection		Wgt. kg
	Type	16mm ² No. of poles 0304 90A	2,5mm ² 98.. 20A	Type	
125	-	-	-	GSK0304/9802/205/DV/..	3+PE 2
215	GSK0304/9802/205/KL/..	3+PE	2	GSK0304/9804/205/DV/..	3+PE 4
215	GSK0304/9804/205/KL/..	3+PE	4	GSK0304/9806/205/DV/..	3+PE 6
215	GSK0304/9806/205/KL/..	3+PE	6	GSK0304/9808/205/DV/..	3+PE 8
215	GSK0304/9808/205/KL/..	3+PE	8	GSK0304/9810/205/DV/..	3+PE 10
215	GSK0304/9810/205/KL/..	3+PE	10	GSK0304/9812/205/DV/..	3+PE 12
305	GSK0304/9812/205/KL/..	3+PE	12	GSK0304/9814/205/DV/..	3+PE 14
305	GSK0304/9814/205/KL/..	3+PE	14	GSK0304/9816/205/DV/..	3+PE 16
305	GSK0304/9816/205/KL/..	3+PE	16	GSK0304/9818/205/DV/..	3+PE 18
305	GSK0304/9818/205/KL/..	3+PE	18	GSK0304/9820/205/DV/..	3+PE 20
305	GSK0304/9820/205/KL/..	3+PE	20	GSK0304/9822/205/DV/..	3+PE 22
305	GSK0304/9822/205/KL/..	3+PE	22	GSK0304/9824/205/DV/..	3+PE 24
305	GSK0304/9824/205/KL/..	3+PE	24	GSK0304/9826/205/DV/..	3+PE 26
350	GSK0304/9826/205/KL/..	3+PE	26	GSK0304/9828/205/DV/..	3+PE 28
350	GSK0304/9828/205/KL/..	3+PE	28	GSK0304/9830/205/DV/..	3+PE 30
350	GSK0304/9830/205/KL/..	3+PE	30	GSK0304/9832/205/DV/..	3+PE 32
350				GSK0304/9834/205/DV/..	3+PE 34

The strands or cable passage in the axis areas must be checked each time.

^(*) only with cable gland (PG) screw coupling in axis and 1 conductor per PG (not included in the standard version)



Connection box with friction bearing guide type SK58
Page 17



Detail: contact plate type SK58
Page 16



Slipping column with housing type: GSK58-../160/DV
Page 21

Slipping column with housing, technical data on page 28 and 29

Protection IP65;

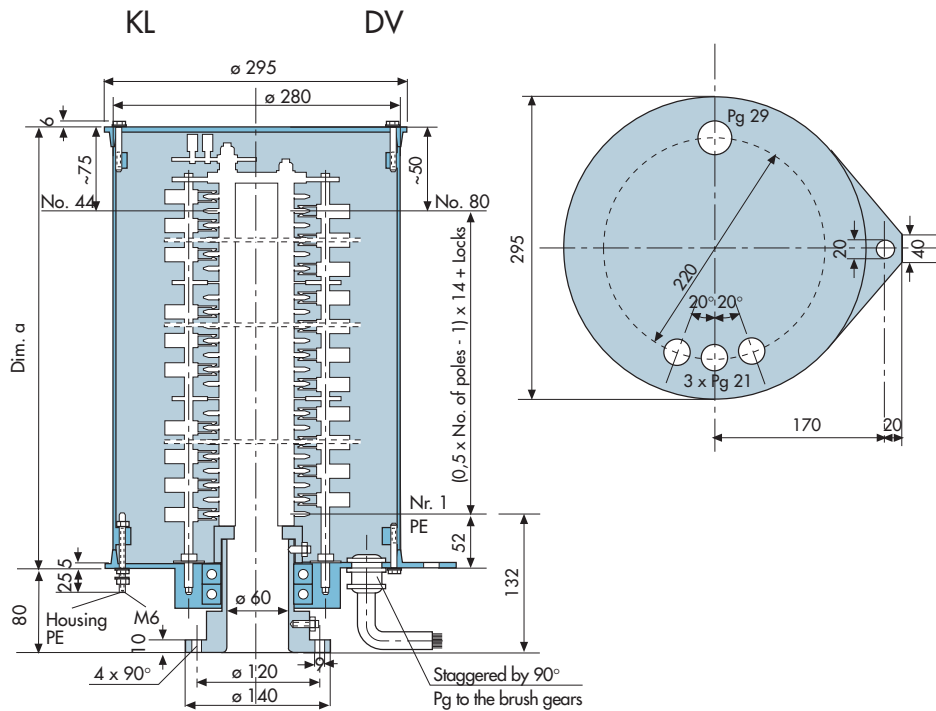
Construction: axis di = 60ø for cable or strand passage to the rings. Double ball bearing support sealed on both sides.

Aluminium bearing cover with housing plate with Pg-borings for cable feeding to the brush gear from the bottom through the housing plate 1xPg29, 3xPg 21.

Fixing flange of aluminium. Protection housing and cover of sheet metal with injection moulded sealing.

Housing with polyester coating. Steel parts are either hot-galvanised or coated.

Note: the fixing flange must be mounted on a fixing plate sealed on site.



With connection box							
Type	KL	no. poles	Dim. a mm	Type	KL	no. poles	Dim a mm Wgt. kg
GSK98-04/280/KL/..		3+PE	141	GSK98-28/280/KL/..		27+PE	309
GSK98-06/280/KL/..		5+PE	155	GSK98-30/280/KL/..		29+PE	323
GSK98-08/280/KL/..		7+PE	169	GSK98-32/280/KL/..		31+PE	337
GSK98-10/280/KL/..		9+PE	183	GSK98-34/280/KL/..		33+PE	351
GSK98-12/280/KL/..		11+PE	197	GSK98-36/280/KL/..		35+PE	365
GSK98-14/280/KL/..		13+PE	211	GSK98-38/280/KL/..		37+PE	379
GSK98-16/280/KL/..		15+PE	225	GSK98-40/280/KL/..		39+PE	393
GSK98-18/280/KL/..		17+PE	239	GSK98-42/280/KL/..		41+PE	393
GSK98-20/280/KL/..		19+PE	253	GSK98-44/280/KL/..		43+PE	421
GSK98-22/280/KL/..		21+PE	267				
GSK98-24/280/KL/..		23+PE	281				
GSK98-26/280/KL/..		25+PE	295				

Dim. a The dimensions "a" indicated in both tables are the lowest theoretical cover heights.

The standard cover dimensions „a" are:

305/445/570/670 mm

In case of departure from the standard dimensions, please contact the manufacturer.

With direct connection							
Type	DV	no. poles	Dim. a mm	Type	DV	no. poles	Dim a mm Wgt. kg
GSK98-04/280/DV/..		3+PE	120	GSK98-46/280/DV/..		45+PE	428
GSK98-06/280/DV/..		5+PE	134	GSK98-48/280/DV/..		47+PE	442
GSK98-08/280/DV/..		7+PE	148	GSK98-50/280/DV/..		49+PE	456
GSK98-10/280/DV/..		9+PE	162	GSK98-52/280/DV/..		51+PE	470
GSK98-12/280/DV/..		11+PE	176	GSK98-54/280/DV/..		53+PE	484
GSK98-14/280/DV/..		13+PE	190	GSK98-56/280/DV/..		55+PE	498
GSK98-16/280/DV/..		15+PE	204	GSK98-58/280/DV/..		57+PE	512
GSK98-18/280/DV/..		17+PE	218	GSK98-60/280/DV/..		59+PE	526
GSK98-20/280/DV/..		19+PE	232	GSK98-62/280/DV/..		61+PE	540
GSK98-22/280/DV/..		21+PE	246	GSK98-64/280/DV/..		63+PE	554
GSK98-24/280/DV/..		23+PE	260	GSK98-66/280/DV/..		65+PE	568
GSK98-26/280/DV/..		25+PE	274	GSK98-68/280/DV/..		67+PE	582
GSK98-28/280/DV/..		27+PE	288	GSK98-70/280/DV/..		69+PE	596
GSK98-30/280/DV/..		29+PE	302	GSK98-72/280/DV/..		71+PE	610
GSK98-32/280/DV/..		31+PE	316	GSK98-74/280/DV/..		73+PE	624
GSK98-34/280/DV/..		33+PE	330	GSK98-76/280/DV/..		75+PE	638
GSK98-36/280/DV/..		35+PE	344	GSK98-78/280/DV/..		77+PE	652
GSK98-38/280/DV/..		37+PE	358	GSK98-80/280/DV/..		79+PE	666
GSK98-40/280/DV/..		39+PE	372				
GSK98-42/280/DV/..		41+PE	386				
GSK98-44/280/DV/..		43+PE	400				

and > on request

max. 100 poles and > according to version.

Sliping column with housing, technical data page 28 and 32

Protection IP65;

Description of housing and cover part see page 38.

The sliping column consists of different rings or brush gears.

Depending on dimensions and if requested, locks, divider plates and intermediate supports may be provided.

The sliping column can be supplied with connection box or with direct connection, according to quotation.

Connection box: Type 98: max. 44 rings and 02/03 with direct connection

Type 02 and 98: max. 4/ 40 rings

Type 03 and 98: max. 4/ 32 rings

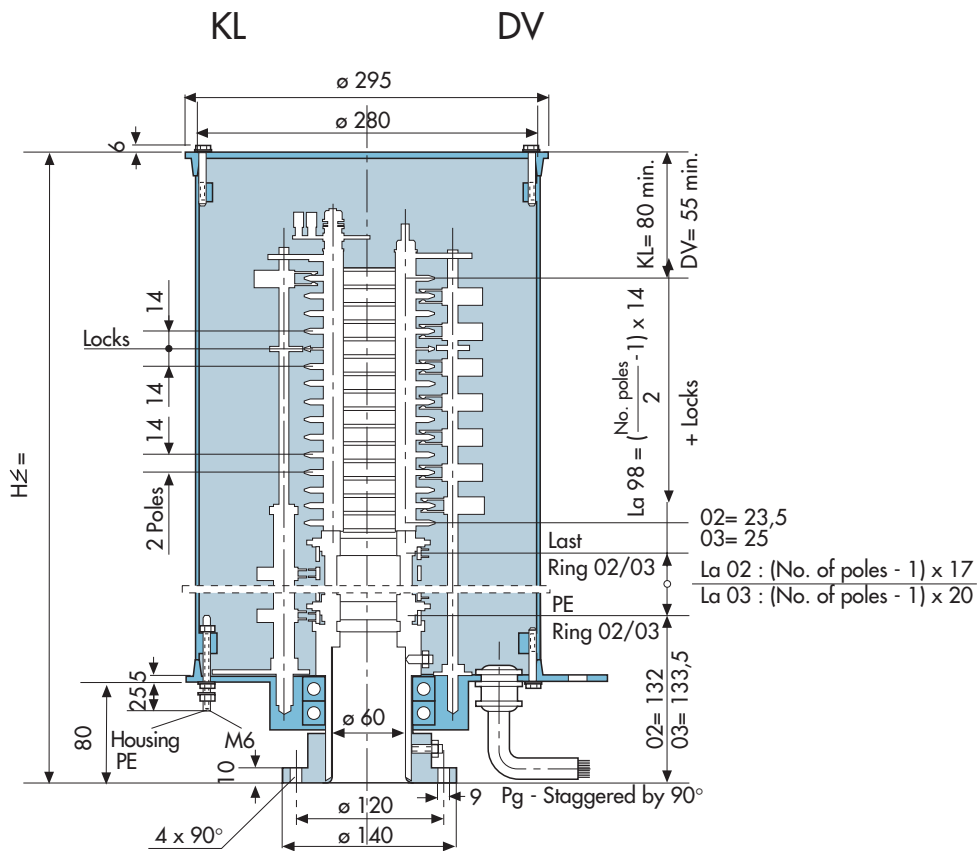
The ring column should always be supplied completely pre-wired or with connection box.

Standard: 02 : max. 50 A / 6 mm² (10mm²)

03 : max. 90 A / 16 mm²

98: max. 20 A / 2,5 mm² and <

98 : max. 20 A / 2,5 mm² and <



Type	Dim. La (mm)	Dim. La	Dim. La	locks +... mm *			Weight Basic column kg
	Type 02..	Type 03..	Type 98..	T. 02	T. 03	T. 98	
GSK02-../98-../..	= (Pole no. - 1) · 17		$\left(\frac{\text{Pole no.}}{2} - 1\right) \cdot 14$	17		14	ca.
GSK03-../98-../..		= (Pole no. - 1) · 20	$\left(\frac{\text{Pole no.}}{2} - 1\right) \cdot 14$		20	14	
Pole pitch	Type 02=17mm	Type 03=20mm	Type 98=14mm/2 rings				

Max. no. of poles according to quotations

* Locks position between different voltages etc.



Technical Data

Current rating:	mA - 16 A, 100% ED (parallel connection up to 60 A)
Voltage:	< 60 V / 240 V / 440 V ~
Revolutions per minute:	1-30 revs/min (varying according to number of poles and installation position)
Number of poles:	30 with connection box, 100 and > with direct connection
Pole pitch:	8,8 / 10,5 / 13 mm for 2 poles (pole jump always 2 rings)
Slipring:	∅ 145 mm as plane ring, material: MS with surface finishing, solder terminal
Brush gear:	Interchangeably mounted as double support. The contact plate has 6 singly arranged contact springs with one hard silver contact each. The contacts slide on staggered paths, brush gear terminal as solder terminal
Connection box:	Completely pre-wired with 1,5 mm ² , connection to shell terminals Standard max. 30 poles
Insulation:	Slipring column and brush gear of high-quality plastic with glass-fiber reinforcement.
Insulation group:	C
Current values: (at max. +30°C)	Standard: 30 mA - 16A at 24V and > Multi-layer coating (ML) and Silver contacts: 5 mA > and at m V and > ML + gold + Siko + gold: suitable for measuring current - signal - video and data transmission. Further technical data available on request.
Ambient temperature:	max. +50°C / -35°C At +50°C the max. permissible amp. load must be consequently reduced. For higher temperature values, please contact the manufacturer.
Corrosion protection:	Hot-galvanised steel parts, or VA-material 1.4301
Installation position:	Vertical, hanging, horizontal, please specify.
Special:	e.g. higher current ratings, locks, divider or screen plates between the rings

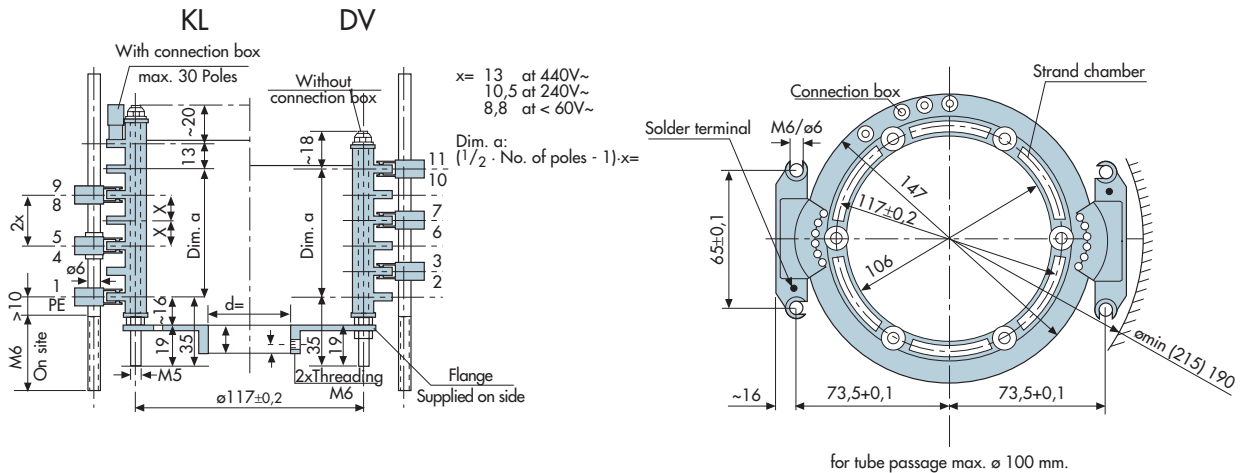
SK 145-58../KL/..

SK 145-58../DV/..

Slipping column open, technical data on page 40

Protection IP00;

Slipping column complete with screws. In the version with connection box up to 30 poles and with direct connection up to 80 poles with 1,5 mm², the internal wiring is provided through the strand chambers. The brush gears are staggered, solder terminal. On request, the slipping column can be supplied with fixing flange with boring di=... mm . From 48 poles upwards, the slipping column is fitted with an intermediate support. An additional centering disk can be provided above and underneath. Brush bolts are not included in the supply (with coupling h9, blank VA-material on site).



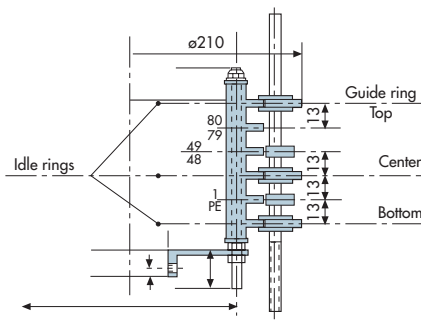
With connection box

Type	No.poles KL incl. PE	Dim. a (mm)			Wgt. kg
		<60V~	240V~	440V~	
SK145-5804/KL/..	4	9	11	13	
SK145-5806/KL/..	6	18	21	26	
SK145-5808/KL/..	8	26	32	39	
SK145-5810/KL/..	10	35	42	52	
SK145-5812/KL/..	12	44	53	65	
SK145-5814/KL/..	14	53	63	78	
SK145-5816/KL/..	16	62	74	91	
SK145-5818/KL/..	18	70	84	104	
SK145-5820/KL/..	20	79	95	117	
SK145-5822/KL/..	22	88	105	130	
SK145-5824/KL/..	24	97	116	143	
SK145-5826/KL/..	26	106	126	156	
SK145-5828/KL/..	28	114	137	169	
SK145-5830/KL/..	30	123	147	182	

Note: starting from 48 rings, an intermediate support for the column and the brush bolt is needed.

In the table 13 mm are considered. In addition, the slipping column can be fitted with further 1x above 1x bottom supporting rings, if required.

For the relevant arrangement see the drawing.

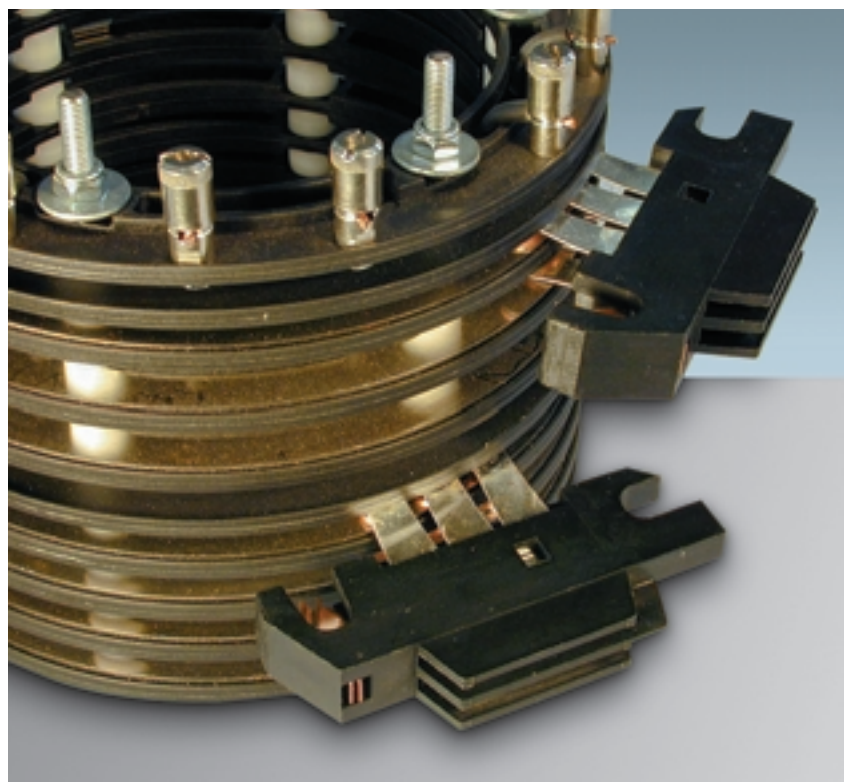


With direct connection

Type	No. poles DV incl. PE	Dim. a (mm)			Wgt. kg
		< 60V~	240V~	440V~	
SK145-5804/DV/..	4	9	11	13	
SK145-5806/DV/..	6	18	21	26	
SK145-5808/DV/..	8	26	32	39	
SK145-5810/DV/..	10	35	42	52	
SK145-5812/DV/..	12	44	53	65	
SK145-5814/DV/..	14	53	63	78	
SK145-5816/DV/..	16	62	74	91	
SK145-5818/DV/..	18	70	84	104	
SK145-5820/DV/..	20	79	95	117	
SK145-5822/DV/..	22	88	105	130	
SK145-5824/DV/..	24	97	116	143	
SK145-5826/DV/..	26	106	126	156	
SK145-5828/DV/..	28	114	137	169	
SK145-5830/DV/..	30	123	147	182	
SK145-5832/DV/..	32	132	158	195	
SK145-5834/DV/..	34	141	168	208	
SK145-5836/DV/..	36	150	179	221	
SK145-5838/DV/..	38	158	189	234	
SK145-5840/DV/..	40	167	200	247	
SK145-5842/DV/..	42	176	210	260	
SK145-5844/DV/..	44	185	221	273	
SK145-5846/DV/..	46	194	231	286	
SK145-5848/DV/..	48	215	255	312	
SK145-5850/DV/..	50	224	265	325	
SK145-5852/DV/..	52	233	276	338	
SK145-5854/DV/..	54	242	286	351	
SK145-5856/DV/..	56	251	297	364	
SK145-5858/DV/..	58	259	307	377	
SK145-5860/DV/..	60	268	318	390	
SK145-5862/DV/..	62	277	328	403	
SK145-5864/DV/..	64	286	339	416	
SK145-5866/DV/..	66	295	349	429	
SK145-5868/DV/..	68	303	360	442	
SK145-5870/DV/..	70	312	370	445	
SK145-5872/DV/..	72	321	381	468	
SK145-5874/DV/..	74	330	391	481	
SK145-5876/DV/..	76	339	402	494	
SK145-5878/DV/..	78	347	412	507	
SK145-5880/DV/..	80	356	423	520	

Technical Data

Current rating:	mA - 20 A, 100% ED (parallel connection up to <80A)
Voltage:	max. 125 V / 415 V ~
Revolutions per minute	1-40 revs/min (varying according to the number of poles and installation position)
Number of poles:	30 with connection box, 120 and > with direct connection
Pole pitch:	10,5/13 mm for 2 poles (pole jump always 2 rings)
Slipring:	∅ 145 mm as plane ring, material: MS with surface finishing, solder terminal
Brush gear:	Interchangeably mounted double support with triple contact spring for each ring, sliding paths are staggered. Standard version with bronze carbon brushes or alternatively with silver carbon brushes. Connection: flat connector 6,3 mm. DIN 46428 for flat mouting bush. (M4 to be prepared)
Connection box:	Completely pre-wired with 2,5 mm ² , connection to shell terminals. Standard max. 30 poles
Insulation:	Slipring column and brush gear of high-quality plastic with fiber-glass reinforcement.
Insulation group:	C
Current values: (at max. +30°C)	Standard: 50 mA - 20A (25A) at 24 V and > Multi-layer coating (ML) and silver carbon brushes (Ag): 5 mA and > at 1m V and > Multi-layer coating (ML) + gold-plating (Au) and silver carbon brushes (Ag): suitable for measuring current - signal - video and data transmission.
Ambient temperature:	max. +50°C / -35°C At +50°C the max. permissible amp. load must be consequently reduced. For higher temperature values, please contact the manufacturer.
Corrosion protectionz:	Hot-galvanised steel parts, or VA-material 1.4301
Installation position:	Vertical, hanging, horizontal, please contact the manufacturer.
Special:	e.g. higher current ratings, locks, divider or screen plates between the rings



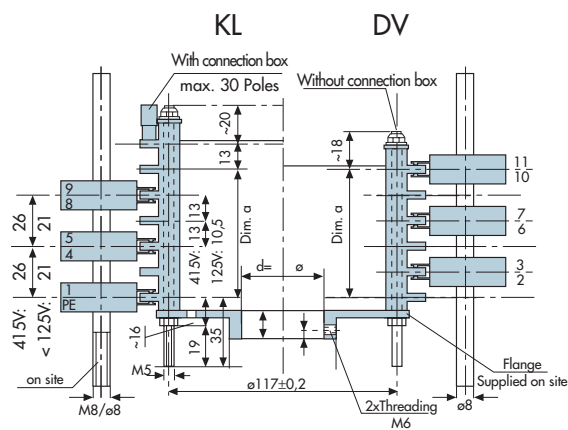
SK 145-98../KL/..

Slipping column open, technical data page 42

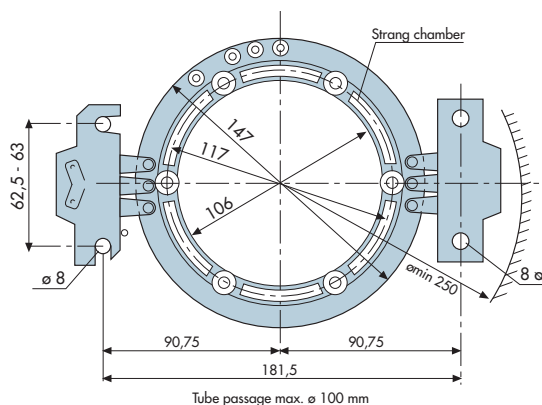
Protection IP00;

Wiring for connection box with strands 2,5 mm² and < up to approx. 60 poles. With 80-pole wiring, with 1,5mm² and <

For the description, see page 41.



SK 145-98../DV/..



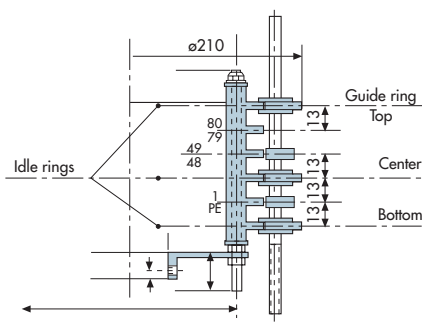
With connection box

Type	No.poles incl. PE	Dim. a (mm)		Dim for locks	Wgt kg
		<125V~	415V~		
SK145-9804/KL/..	4	11	13	13	
SK145-9806/KL/..	6	21	26	13	
SK145-9808/KL/..	8	32	39	13	
SK145-9810/KL/..	10	42	52	13	
SK145-9812/KL/..	12	53	65	13	
SK145-9814/KL/..	14	63	78	13	
SK145-9816/KL/..	16	74	91	13	
SK145-9818/KL/..	18	84	104	13	
SK145-9820/KL/..	20	95	117	13	
SK145-9822/KL/..	22	105	130	13	
SK145-9824/KL/..	24	116	143	13	
SK145-9826/KL/..	26	126	156	13	
SK145-9828/KL/..	28	137	169	13	
SK145-9830/KL/..	30	147	182	13	

Note: starting from 48 rings, an intermediate support for the column and the brush bolt is needed.

In the table 13 mm are considered. In addition, the slipping column can be fitted with further 1x above 1x bottom supporting rings, if required.

For the relevant arrangement see drawing.



With direct connection

Type	No.poles incl. PE	Dim a (mm)		Dim for locks	Wgt. kg
		<125V~	415V~		
SK145-9804/DV/..	4	11	13	13	
SK145-9806/DV/..	6	21	26	13	
SK145-9808/DV/..	8	32	39	13	
SK145-9810/DV/..	10	42	52	13	
SK145-9812/DV/..	12	53	65	13	
SK145-9814/DV/..	14	63	78	13	
SK145-9816/DV/..	16	74	91	13	
SK145-9818/DV/..	18	84	104	13	
SK145-9820/DV/..	20	95	117	13	
SK145-9822/DV/..	22	105	130	13	
SK145-9824/DV/..	24	116	143	13	
SK145-9826/DV/..	26	126	156	13	
SK145-9828/DV/..	28	137	169	13	
SK145-9830/DV/..	30	147	182	13	
SK145-9832/DV/..	32	158	195	13	
SK145-9834/DV/..	34	168	208	13	
SK145-9836/DV/..	36	179	221	13	
SK145-9838/DV/..	38	189	234	13	
SK145-9840/DV/..	40	200	247	13	
SK145-9842/DV/..	42	210	260	13	
SK145-9844/DV/..	44	221	273	13	
SK145-9846/DV/..	46	231	286	13	
SK145-9848/DV/..	48	255	312	13	
SK145-9850/DV/..	50	265	325	13	
SK145-9852/DV/..	52	276	338	13	
SK145-9854/DV/..	54	286	351	13	
SK145-9856/DV/..	56	297	364	13	
SK145-9858/DV/..	58	307	377	13	
SK145-9860/DV/..	60	318	390	13	
SK145-9862/DV/..	62	328	403	13	
SK145-9864/DV/..	64	339	416	13	
SK145-9866/DV/..	66	349	429	13	
SK145-9868/DV/..	68	360	442	13	
SK145-9870/DV/..	70	370	455	13	
SK145-9872/DV/..	72	381	468	13	
SK145-9874/DV/..	74	391	481	13	
SK145-9876/DV/..	76	402	494	13	
SK145-9878/DV/..	78	412	507	13	
SK145-9880/DV/..	80	423	520	13	

Slipping column with housing, technical data on page 40 and 42

Protection IP65 and >.

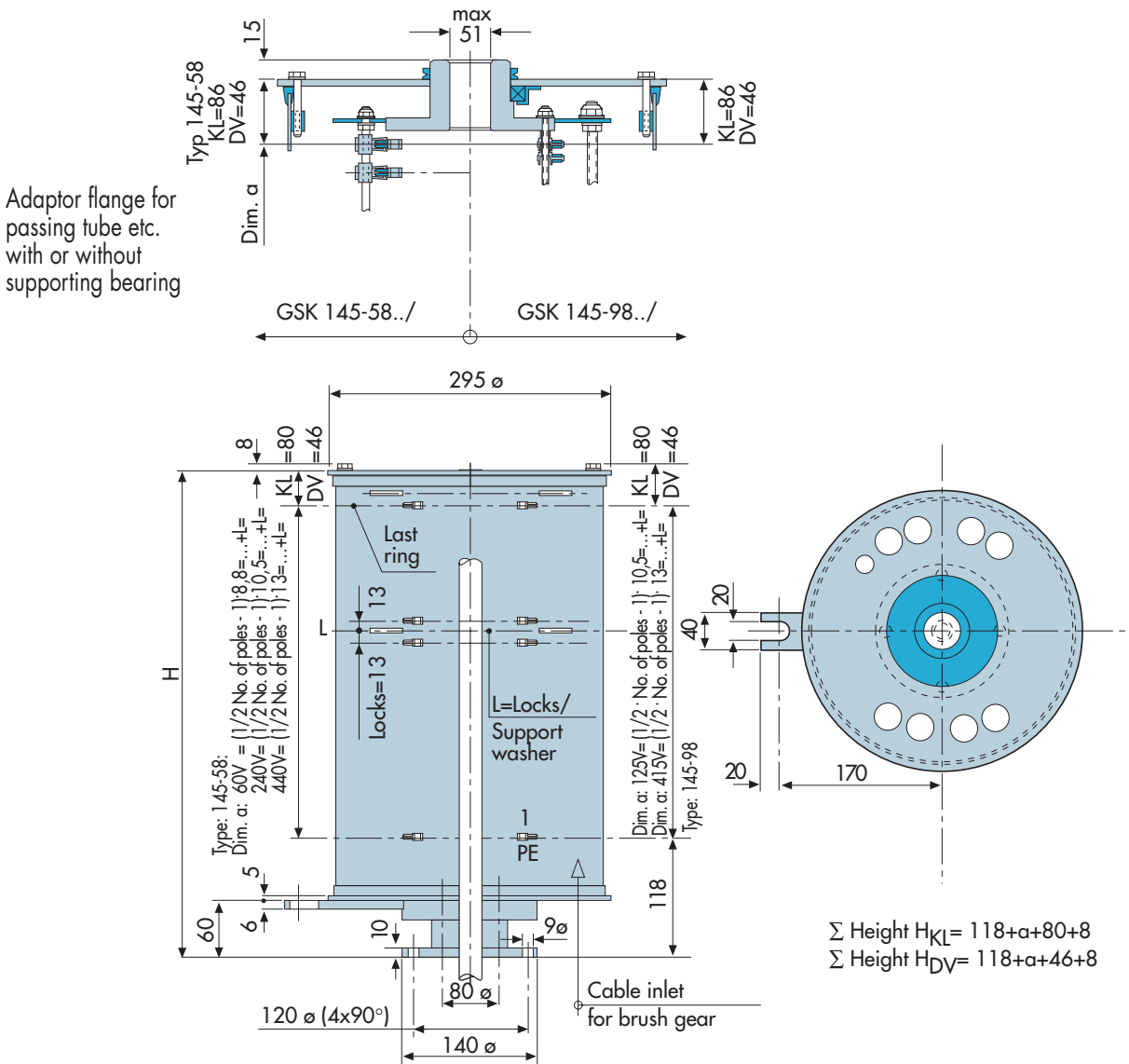
Construction: Double ball bearing support sealed on both sides. Aluminium bearing cover with housing plate.

The housing plate has with Pg-borings 8 x ø 23 for Pg 16 and 1 x ø 21 for Pg 13,5.

Fixing flange of aluminium. Protection housing and cover of sheet metal with injection moulded sealing.

Housing with polyester coating. Steel parts are hot-galvanised or coated.

The flange must be mounted on a sealed plate on site.



Technical data for rings etc. on page 40.

No. of poles: $KL = \max. 30 / DV = 100 / 120$ and >

The max. no of poles in the DV version depends on the installation and on the operating conditions. Detailed version according to quotation.

Current rating:

Standard 16A and <

Parallel connection: max. every 4 rings + 2x brush gears for each ring wiring for each ring 2,5/4 mm²

ca. 60/80 Amp.

Technical data for rings on page 42

No. of poles: $KL = \max. 30 / DV = 100 / 120$ and >

Current rating:

Standard 20A and <

Parallel connection: max. every 4 rings + 2x brush gears for each ring wiring for each ring 2,5/4 mm²

ca. 80/100 Amp.

Special versions

With adaptor flange, additional supporting bearing above, split cover, locks and divider plate between the rings, labyrinth sealing for adaptor flange and additional internal tube, fixing flange with sealing plate for conductor and strand passage, heating, etc.

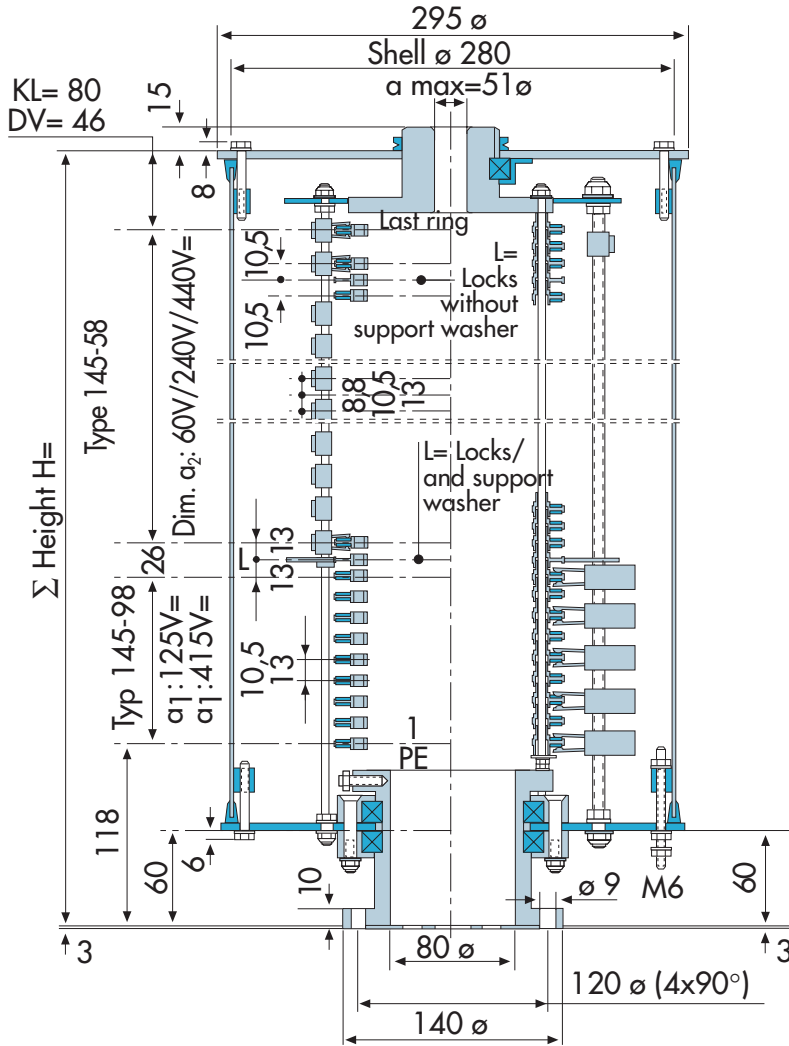
Slipping column with housing, technical data page 40 and 42

Protection IP65 and >

Description on page 44

No. of poles: with connection box max. 30 / With direct connection DV=100/120 and >
The max. number of poles "DV" depends on the installation and operating conditions. For version see quotation.

Current rating: Type 58 = mA - 16A
Type 98 = mA - 20A and parallel connection max every 4 rings + 2x brush gears for each ring 80/100A; wired with 2,5/4 mm² for each ring



Typ 145-98:

Dim. a₁: 125V=(1/2 No. of poles-1)·10,5+...+L=...+13=
Dim. a₁: 415V=(1/2 No. of poles-1)·13 =...+L=...+13=

Typ 145-58:

Dim. a₂: 60V=(1/2 No. of poles-1)·8,8 =...+L=...+10,5=
Dim. a₂: 240V=(1/2 No. of poles-1)·10,5 =...+L=...+10,5=
Dim. a₂: 440V=(1/2 No. of poles-1)·13 =...+L=...+10,5=

Σ Height

With connection box KL:

Σ Height H_{KL}= 118 + a₁ + 26 + a₂ + 80 + (8 or 15)

With direct connection DV:

Σ Height H_{DV}= 118 + a₁ + 26 + a₂ + 46 + (8 or 15)

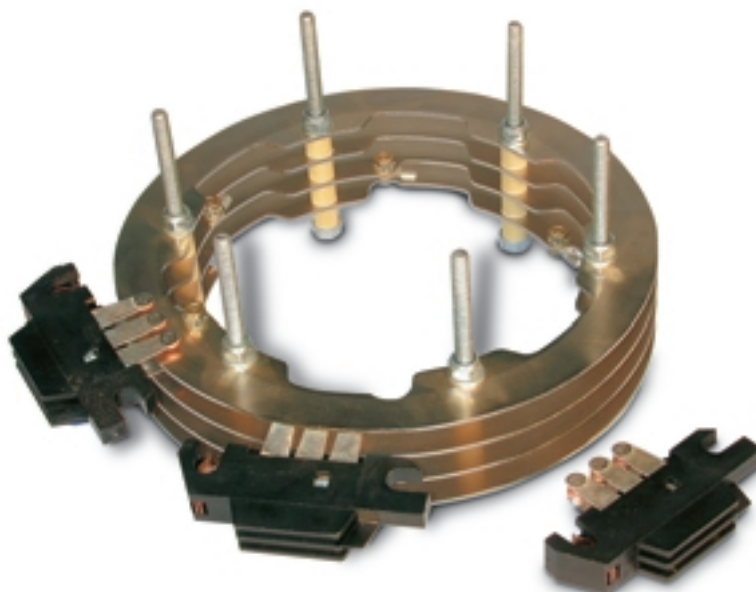
} - Please consider the number of locks L.

Special versions

With adaptor flange, additional supporting bearing above, split cover, locks and divider plate between the rings, labyrinth sealing for adaptor flange and additional internal tube, fixing flange with sealing plate for conductor and strand passage, heating, completely pre-wired etc.

Technical data

Current rating:	mA - 40 A, 100% ED (parallel connection up to 80A)
Voltage:	415 V / 500 V ~
Revolutions per minute:	1-40 revs/min (varying according to number of poles and installation position)
Number of poles	33 with connection box, 50 and > with direct connection
Pole pitch:	11,5/13,5 mm
Slipring:	∅ 190 mm as plane ring, material: MS with surface finishing according to current rating, connection M4
Brush gear:	Interchangeably mounted double support, with 3 contact springs per ring, staggered sliding paths. Standard version with bronze carbon brushes, alternatively with silver carbon brushes. Connection: flat connector 6,3 mm. DIN 46428 for flat mounting bush (M4 to be prepared)
Connection box:	Standard max. 33 poles Completely pre-wired with 2,5 mm ² /4 mm ² /6 mm ² according to performance. Connection to screw M5.
Insulation:	Slipring column with glass filament fabric or tube. Brush gear of high-quality plastic with glass-fiber reinforcement.
Insulation group:	C
Current values: (at max. +30°C)	Standard: 50 mA - 40A at 24 V and > Multi-layer coating (ML) and silver carbon brushes (Ag): 5 mA and > at mV and > Multi-layer coating (ML) + gold plating (Au) and silver carbon brushes (Ag): suitable for measuring current - signal - video and data transmission.
Ambient temperature:	max. +50°C / -35°C At +50°C the max. permissible amp. load must be consequently reduced. For higher temperature values, please contact the manufacturer.
Corrosion protection:	Hot-galvanised steel parts, or VA-material 1.4301
Installation positions:	Vertical, hanging, horizontal, please contact the manufacturer
Special:	e.g. higher current ratings, locks, divider or screen plates between the rings, supports, etc.



Sliping column open, technical data page 46

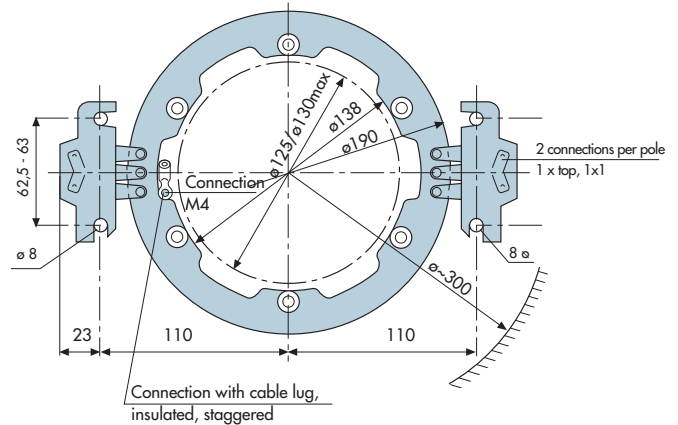
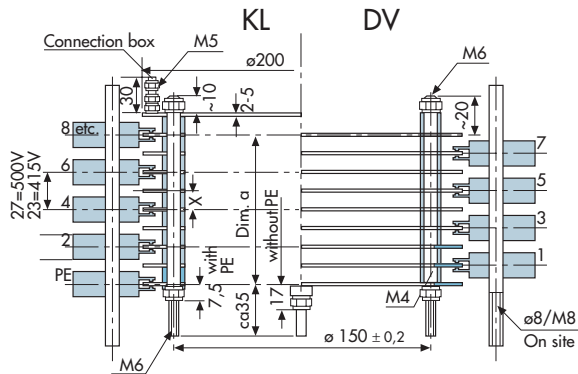
Protection IP00;

Sliping column complete with screws. The sliping column may be equipped with connection box or direct connection. The cross section for the connection should be adjusted to the amp. load.

25A-2,5 mm² / 32A - 4 mm² / 40 A - 6 mm². The brush gears are staggered. Both flat connectors of the double support must be pre-wired (M4 connection to be prepared)

With larger numbers of poles, the sliping column can be supplied, if requested, with longer screws for fixing on both sides (1x bottom and 1x top). The brush bolts must be fitted with screws on top and bottom on site.

Supplied without brush bolts (blank, h9)



$$x = \begin{matrix} 11,5 & \text{at } 415V \\ 13 & \text{at } 500V \end{matrix} / \text{Dim. } a = \begin{matrix} 11,5 \\ 13 \end{matrix} (\text{No. of poles} - 1) =$$

Type	No.poles incl. PE	Version		Dim. a (mm)		Wgt. kg
		KL	DV	<415V	500V	
SK190-9803/..	3	KL	DV	23	27	
SK190-9804/..	4	KL	DV	34,5	40,5	
SK190-9805/..	5	KL	DV	46	54	
SK190-9806/..	6	KL	DV	57,5	67,5	
SK190-9807/..	7	KL	DV	69	81	
SK190-9808/..	8	KL	DV	80,5	94,5	
SK190-9809/..	9	KL	DV	92	108	
SK190-9810/..	10	KL	DV	103,5	121,5	
SK190-9811/..	11	KL	DV	115	135	
SK190-9812/..	12	KL	DV	126,5	148,5	
SK190-9813/..	13	KL	DV	138	162	
SK190-9814/..	14	KL	DV	149,5	175,5	
SK190-9815/..	15	KL	DV	161	189	
SK190-9816/..	16	KL	DV	172,5	202,5	
SK190-9817/..	17	KL	DV	184	216	
SK190-9818/..	18	KL	DV	195,5	229,5	
SK190-9819/..	19	KL	DV	207	243	
SK190-9820/..	20	KL	DV	218,5	256,5	
SK190-9821/..	21	KL	DV	230	270	
SK190-9822/..	22	KL	DV	241,5	283,5	
SK190-9823/..	23	KL	DV	253	297	
SK190-9824/..	24	KL	DV	264,5	310,5	
SK190-9825/..	25	KL	DV	276	324	
SK190-9826/..	26	KL	DV	287,5	337,5	
SK190-9827/..	27	KL	DV	299	351	
SK190-9828/..	28	KL	DV	310,5	364,5	
SK190-9829/..	29	KL	DV	322	378	
SK190-9830/..	30	KL	DV	333,5	391,5	
SK190-9831/..	31	KL	DV	345	405	
SK190-9832/..	32	KL	DV	356,5	418,5	
SK190-9833/..	33	KL	DV	368	432	

Type	No.poles incl. PE	Version		Dim. a (mm)		Wgt. kg
		KL	DV	<415V	500V	
SK190-9834/..	34	-	DV	393	459	
SK190-9835/..	35	-	DV	404,5	472,5	
SK190-9836/..	36	-	DV	416	486	
SK190-9837/..	37	-	DV	427,5	499,5	
SK190-9838/..	38	-	DV	439	513	
SK190-9839/..	39	-	DV	450,5	526,5	
SK190-9840/..	40	-	DV	462	540	
SK190-9841/..	41	-	DV	473,5	553,5	
SK190-9842/..	42	-	DV	485	567	
SK190-9843/..	43	-	DV	496,5	580,5	
SK190-9844/..	44	-	DV	508	594	
SK190-9845/..	45	-	DV	519,5	607,5	
SK190-9846/..	46	-	DV	531	621	
SK190-9847/..	47	-	DV	542,5	634,5	
SK190-9848/..	48	-	DV	554	648	
SK190-9849/..	49	-	DV	565,5	661,5	
SK190-9850/..	50	-	DV	577	675	

>50 poles on request.
From 34 poles up with intermediate support.

KL = with connection box, M5 screw
DV = direct connection according to quotation
Dim. a = (No. of poles-1) x 11,5 = / 415 V
Dim. a = (No. of poles - 1) x 13,5=..... /500V
+ intermediate support = 13, 5mm



Technical data

Current rating:	mA - 40 A, 100% ED (parallel connections available)
Voltage:	500 V~, 660 V=
Revolutions per minute:	1-60 revs/min as slipring column (varying according to ϕ , number of poles and installation position)
Number of poles:	34 u >
Pole pitch:	18 mm
Slipring:	185 ϕ / 260 ϕ / 400 ϕ / 500 ϕ material: MS, with surface finishing on request, connection M6
Brush gear:	Industrial double support with 2 moving carbon brushes, interchangeable 50A, connection M5. Bronze coal brushes. On request, with silver carbon brushes, e.g. for mA-values.
Connection box:	ϕ 185: max. 33 poles, connection M5. Plate of glass filament fabric. ϕ 260: max. 30 poles, connection M5, material: polyester moulding compound ϕ 400: " " " ϕ 500: " " " All connection boxes are compl. pre-wired with strands 6 mm ² and <
Insulation:	Insulators with high-quality plastic with glass-fiber reinforcement. Brush bolts: glass filament fabric tube HGW 2375.4
Insulation group:	C
Current values: (at max. +30°C)	Standard 50 mA-40A at 24 V and > Multi-layer coating (ML) and silver carbon brushes (Ag). 5 mA and > at 6 V and > Multi-layer coating (ML) + gold-plating (Au) and silver carbon brushes (Ag): suitable for measuring current - signal - video and data transmission.
Ambient temperature:	max. +50°C / -35°C At +50°C the max. permissible amp.load must be consequently reduced. For higher temperature values, please contact the manufacturer.
Corrosion protection:	Hot-galvanised steel parts, or VA-material 1.4301
Installation position:	Vertical, hanging, horizontal, please contact the manufacturer
Special:	e.g. higher current ratings, locks or divider and screen plate between the rings, etc.



SK185-02../KL/DV/.. and SK260-.. and SK400-.. and SK500-..

Sliping column open, technical data page 48

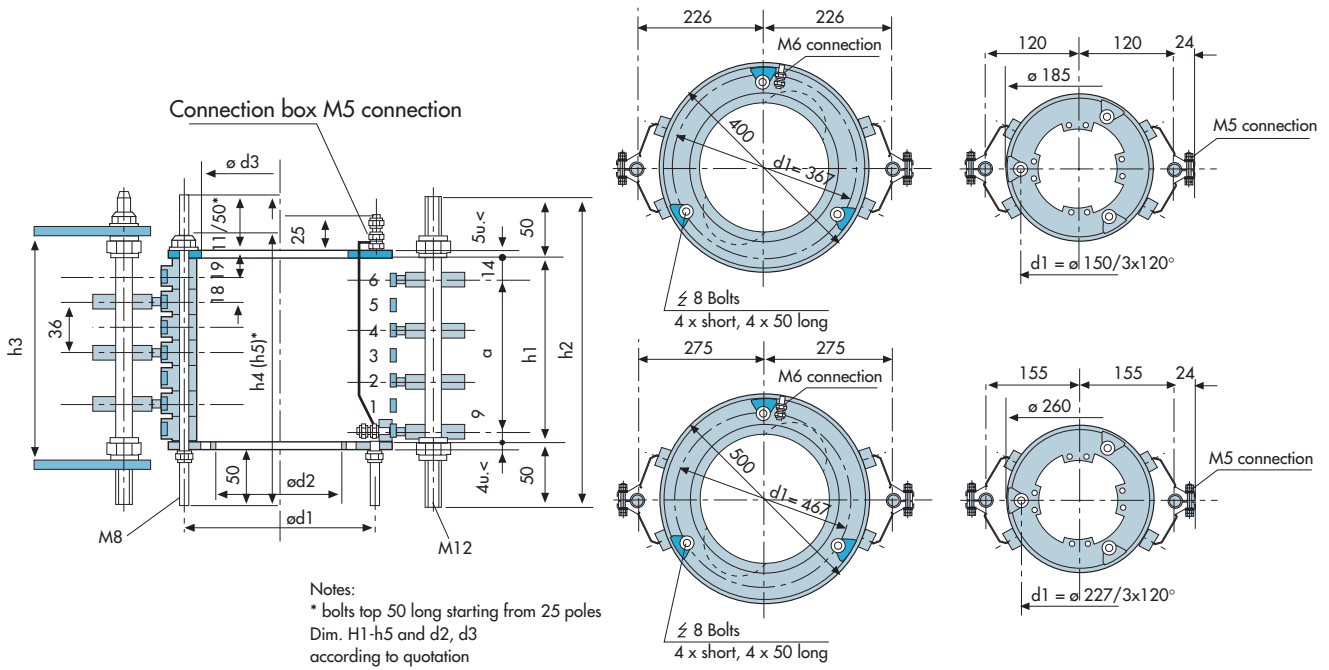
Protection IP00;

Sliping column complete with screws. The sliping column can be equipped with connection box or direct connection. The cross section for the connection should correspond to the amp. load $2,5/4/6 \text{ mm}^2$. The brush gears are staggered.

The brush bolts must be fitted with screws on top and bottom on site.

Starting from 25 poles, the sliping column should be fixed on site also on top.

Screw projection up to 24 poles should be reduced on site, if necessary.



Type (Example: SK260-0204/KL/..)				No. of poles PE	Version			Dim. SK mm	Weight kg			
SK185-	SK260-	SK400-	incl. SK500-		KL 185	DV 260-500	a		SK 185	SK 260	SK 400	500
SK185-0202/..	SK260-0202/..	SK400-0202/..	SK500-0202/..	2	KL	KL	DV	18				
SK185-0203/..	SK260-0203/..	SK400-0203/..	SK500-0203/..	3	KL	KL	DV	36				
SK185-0204/..	SK260-0204/..	SK400-0204/..	SK500-0204/..	4	KL	KL	DV	54				
SK185-0205/..	SK260-0205/..	SK400-0205/..	SK500-0205/..	5	KL	KL	DV	72				
SK185-0206/..	SK260-0206/..	SK400-0206/..	SK500-0206/..	6	KL	KL	DV	90				
SK185-0207/..	SK260-0207/..	SK400-0207/..	SK500-0207/..	7	KL	KL	DV	108				
SK185-0208/..	SK260-0208/..	SK400-0208/..	SK500-0208/..	8	KL	KL	DV	126				
SK185-0209/..	SK260-0209/..	SK400-0209/..	SK500-0209/..	9	KL	KL	DV	144				
SK185-0210/..	SK260-0210/..	SK400-0210/..	SK500-0210/..	10	KL	KL	DV	162				
SK185-0211/..	SK260-0211/..	SK400-0211/..	SK500-0211/..	11	KL	KL	DV	180				
SK185-0212/..	SK260-0212/..	SK400-0212/..	SK500-0212/..	12	KL	KL	DV	198				
SK185-0213/..	SK260-0213/..	SK400-0213/..	SK500-0213/..	13	KL	KL	DV	216				
SK185-0214/..	SK260-0214/..	SK400-0214/..	SK500-0214/..	14	KL	KL	DV	234				
SK185-0215/..	SK260-0215/..	SK400-0215/..	SK500-0215/..	15	KL	KL	DV	252				
SK185-0216/..	SK260-0216/..	SK400-0216/..	SK500-0216/..	16	KL	KL	DV	270				
SK185-0217/..	SK260-0217/..	SK400-0217/..	SK500-0217/..	17	KL	KL	DV	288				
SK185-0218/..	SK260-0218/..	SK400-0218/..	SK500-0218/..	18	KL	KL	DV	306				
SK185-0219/..	SK260-0219/..	SK400-0219/..	SK500-0219/..	19	KL	KL	DV	324				
SK185-0220/..	SK260-0220/..	SK400-0220/..	SK500-0220/..	20	KL	KL	DV	342				
SK185-0221/..	SK260-0221/..	SK400-0221/..	SK500-0221/..	21	KL	KL	DV	360				
SK185-0222/..	SK260-0222/..	SK400-0222/..	SK500-0222/..	22	KL	KL	DV	378				
SK185-0223/..	SK260-0223/..	SK400-0223/..	SK500-0223/..	23	KL	KL	DV	396				
SK185-0224/..	SK260-0224/..	SK400-0224/..	SK500-0224/..	24	KL	KL	DV	414				
SK185-0225/..	SK260-0225/..	SK400-0225/..	SK500-0225/..	25	KL	KL	DV	432				
SK185-0226/..	SK260-0226/..	SK400-0226/..	SK500-0226/..	26	KL	KL	DV	450				
SK185-0227/..	SK260-0227/..	SK400-0227/..	SK500-0227/..	27	KL	KL	DV	468				
SK185-0228/..	SK260-0228/..	SK400-0228/..	SK500-0228/..	28	KL	KL	DV	486				
SK185-0229/..	SK260-0229/..	SK400-0229/..	SK500-0229/..	29	KL	KL	DV	504				
SK185-0230/..	SK260-0230/..	SK400-0230/..	SK500-0230/..	30	KL	KL	DV	522				
SK185-0231/..	SK260-0231/..	SK400-0231/..	SK500-0231/..	31	KL	-	DV	540				
SK185-0232/..	SK260-0232/..	SK400-0232/..	SK500-0232/..	32	KL	-	DV	558				
SK185-0233/..	SK260-0233/..	SK400-0233/..	SK500-0233/..	33	KL	-	DV	576				
SK185-0234/..	SK260-0234/..	SK400-0234/..	SK500-0234/..	34	-	-	DV	594				

> 34 Poles: →

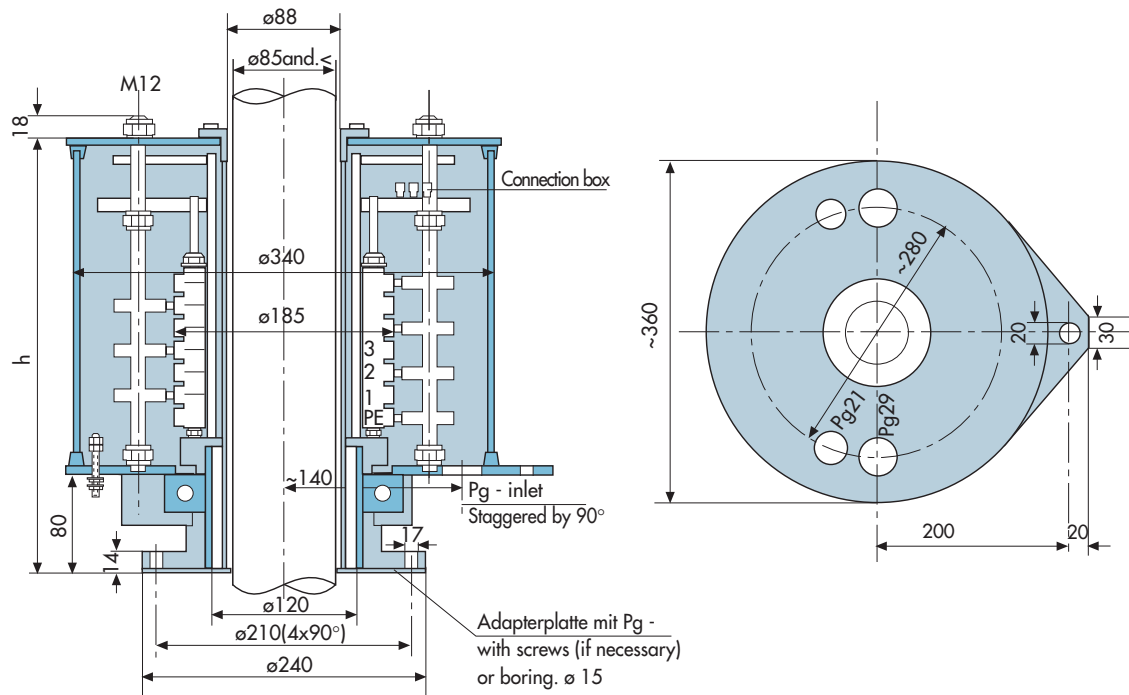
Dim. a = (Σ pole no. - 1) • 18=... mm

GSK185-./340/KL/R.85

Slipring column with housing, technical data on page 48

Protection IP54/55 and > with/without central tube.

Technical data for sliprings on page 48. MS-rings $\varnothing 185$ mm on connection box with 2,5/4/6 mm² pre-wired, connection M5. Bearing of aluminium with ball bearing, sealed on both sides. With or without central tube. Inside $\varnothing 96$ mm and cover overlapping $\varnothing 88$ mm. Lower housing plate with side Pg-inlets. 2 x Pg 29, 2 x Pg 21. According to tube passage, connection for rings with strands or conductors. Flange of aluminium, protection cover, bearing plate and housing cover of sheet metal with polyester coating and neoprene moulded seal. Screws and bolts are hot-galvanised or of VA-material 1.4301. Installation position: vertical, hanging, horizontal, on request.



Type	No. poles incl. PE	* Dim. h (mm)		Wgt. kg
		without heating	Standard height	
GSK185-04/340/KL/R.85	3+PE	249	330	
GSK185-05/340/KL/R.85	4+PE	267	330	
GSK185-06/340/KL/R.85	5+PE	285	330	
GSK185-07/340/KL/R.85	6+PE	303	330	
GSK185-08/340/KL/R.85	7+PE	321	330	
GSK185-09/340/KL/R.85	8+PE	339	450	
GSK185-10/340/KL/R.85	9+PE	357	450	
GSK185-11/340/KL/R.85	10+PE	375	450	
GSK185-12/340/KL/R.85	11+PE	393	450	
GSK185-13/340/KL/R.85	12+PE	411	450	
GSK185-14/340/KL/R.85	13+PE	429	450	
GSK185-15/340/KL/R.85	14+PE	447	450	
GSK185-16/340/KL/R.85	15+PE	465	610	
GSK185-17/340/KL/R.85	16+PE	483	610	
GSK185-18/340/KL/R.85	17+PE	501	610	
GSK185-19/340/KL/R.85	18+PE	519	610	

Type	No. poles incl. PE	*Dim. h (mm)		Wgt. kg
		without heating	standard height	
GSK185-20/340/KL/R.85	19+PE	537	610	
GSK185-21/340/KL/R.85	20+PE	555	610	
GSK185-22/340/KL/R.85	21+PE	573	610	
GSK185-23/340/KL/R.85	22+PE	591	610	
GSK185-24/340/KL/R.85	23+PE	609	610	
GSK185-25/340/KL/R.85	24+PE	627	770	
GSK185-26/340/KL/R.85	25+PE	645	770	
GSK185-27/340/KL/R.85	26+PE	663	770	
GSK185-28/340/KL/R.85	27+PE	681	770	
GSK185-29/340/KL/R.85	28+PE	699	770	
GSK185-30/340/KL/R.85	29+PE	717	770	
GSK185-31/340/KL/R.85	30+PE	735	770	
GSK185-32/340/KL/R.85	31+PE	753	770	
GSK185-33/340/KL/R.85	32+PE	770	770	

Version with plane rings see page 51

* Dim. h The dimensions indicated in the above tables „h” are the lowest theoretical values. The standard dimensions are: 330/450/610/770/mm

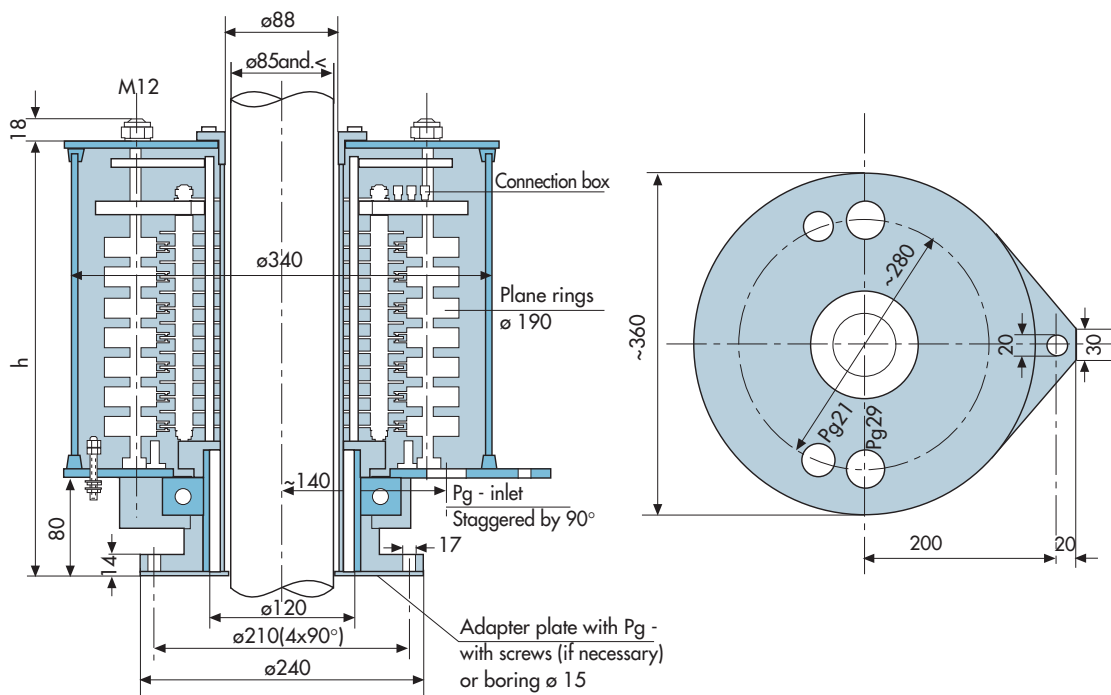
GSK190-../340/^{KL}/_{DV}/R.85

Slipring column with housing, technical data page 46 and 47

Protection IP54/55 and > with/without central tube.

Technical data of the rings on page 46. Description see page 50.

Note: A combination of type SK 185 and SK 190 rings is possible. Please ask the manufacturer.



Type	No.poles incl. PE	* Dim. h (mm)			Wgt. kg
		<415V	<500V	Std height	
GSK190-04/340/KL/R.85	3+PE	230	236	330	
GSK190-05/340/KL/R.85	4+PE	241	249	330	
GSK190-06/340/KL/R.85	5+PE	253	263	330	
GSK190-07/340/KL/R.85	6+PE	264	276	330	
GSK190-08/340/KL/R.85	7+PE	276	290	330	
GSK190-09/340/KL/R.85	8+PE	287	303	330	
GSK190-10/340/KL/R.85	9+PE	299	317	330	
GSK190-11/340/KL/R.85	10+PE	310	330	330	
GSK190-12/340/KL/R.85	11+PE	322	344	450	
GSK190-13/340/KL/R.85	12+PE	333	357	450	
GSK190-14/340/KL/R.85	13+PE	345	371	450	
GSK190-15/340/KL/R.85	14+PE	356	384	450	
GSK190-16/340/KL/R.85	15+PE	368	398	450	
GSK190-17/340/KL/R.85	16+PE	379	411	450	
GSK190-18/340/KL/R.85	17+PE	391	425	450	
GSK190-19/340/KL/R.85	18+PE	402	438	450	

* Dim. h see note on page 50.

Type	No.poles incl. PE	* Dim. h (mm)			Wgt. kg
		<415V	<500V	Std height	
GSK190-20/340/KL/R.85	19+PE	414	452	450	
GSK190-21/340/KL/R.85	20+PE	425	465	610	
GSK190-22/340/KL/R.85	21+PE	437	479	610	
GSK190-23/340/KL/R.85	22+PE	448	492	610	
GSK190-24/340/KL/R.85	23+PE	460	506	610	
GSK190-25/340/KL/R.85	24+PE	471	519	610	
GSK190-26/340/KL/R.85	25+PE	483	533	610	
GSK190-27/340/KL/R.85	26+PE	494	546	610	
GSK190-28/340/KL/R.85	27+PE	506	560	610	
GSK190-29/340/KL/R.85	28+PE	517	573	610	
GSK190-30/340/KL/R.85	29+PE	529	587	610	
GSK190-31/340/KL/R.85	30+PE	540	600	610	
GSK190-32/340/KL/R.85	31+PE	552	614	610	
GSK190-33/340/KL/R.85	32+PE	563	-	610	

With double connection box up to 66 poles or DV connection (height for 2nd connection box + ca. 40 mm)

Heights for locks or divider plate + 14 mm.

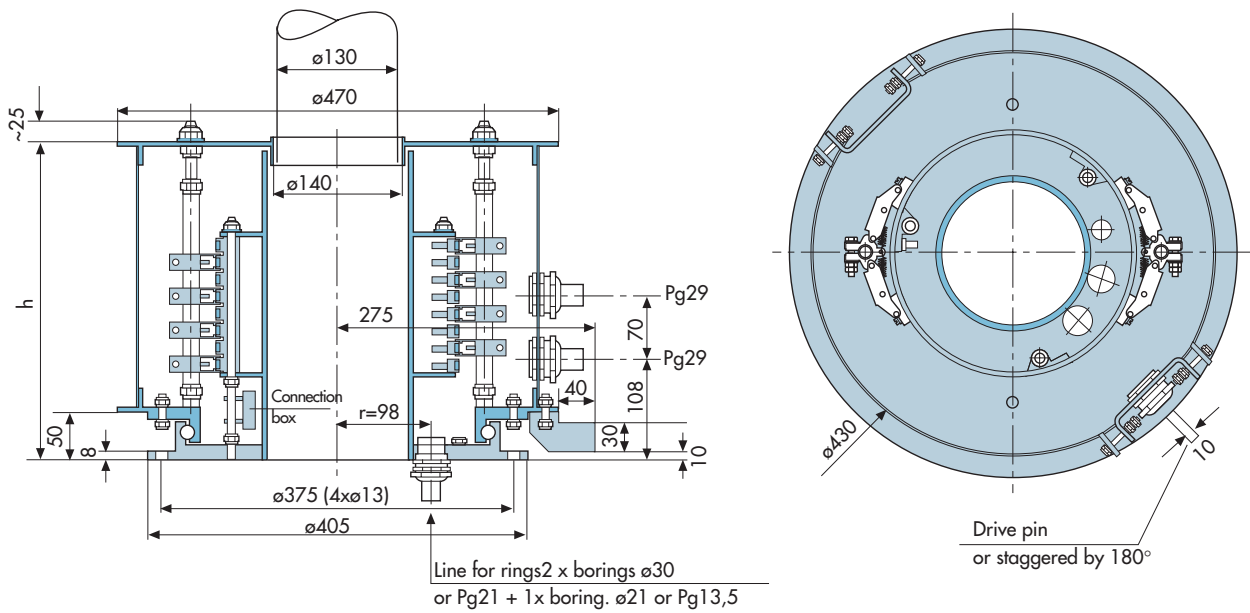
GSK260-../430/KL/R.130

Slipping column with housing, technical data page 48 and 49

Protection IP54/55 with central tube.

MS-slirings $\phi 260$ mm on connection box with 6 mm^2 and <pre-wired. Bearing support with ball rotary connection, additional lubrication available. With central tube inside $\phi 150$ and cover overlapping $\phi 140$ mm.

Cover divided in two and removable from the side. Housing with side Pg-inlets with allow easy assembly. Standard 2x for Pg 29, boring $\phi 37$ mm (max. for Pg 42 available). Additional inlets on request. Bedplate with 2 holes $\phi 30$ for cable inlet to the slipping connection box (on request, additional holes or Pg-threading).



Type	No. poles incl. PE	Dim. h (mm)		Wgt kg
		w/out heating	with heating	
GSK260-04/430/KL/R.130	3+PE	335	335	
GSK260-05/430/KL/R.130	4+PE	335	335	
GSK260-06/430/KL/R.130	5+PE	335	335	
GSK260-07/430/KL/R.130	6+PE	335	335	
GSK260-08/430/KL/R.130	7+PE	335	335	
GSK260-09/430/KL/R.130	8+PE	335	335	
GSK260-10/430/KL/R.130	9+PE	335	335	
GSK260-11/430/KL/R.130	10+PE	335	335	
GSK260-12/430/KL/R.130	11+PE	460	460	
GSK260-13/430/KL/R.130	12+PE	460	460	
GSK260-14/430/KL/R.130	13+PE	460	460	
GSK260-15/430/KL/R.130	14+PE	460	460	
GSK260-16/430/KL/R.130	15+PE	460	460	
GSK260-17/430/KL/R.130	16+PE	460	460	
GSK260-18/430/KL/R.130	17+PE	460	460	
GSK260-19/430/KL/R.130	18+PE	520	520	
GSK260-20/430/KL/R.130	19+PE	520	520	
GSK260-21/430/KL/R.130	20+PE	520	520	
GSK260-22/430/KL/R.130	21+PE	520	520	

Hot-galvanised housing + polyester coating RAL 6011.
Bolts, screws etc. either hot-galvanised or of VA-material 1.4301

Installation position: vertical

Larger number of poles on request (h= 585 mm)

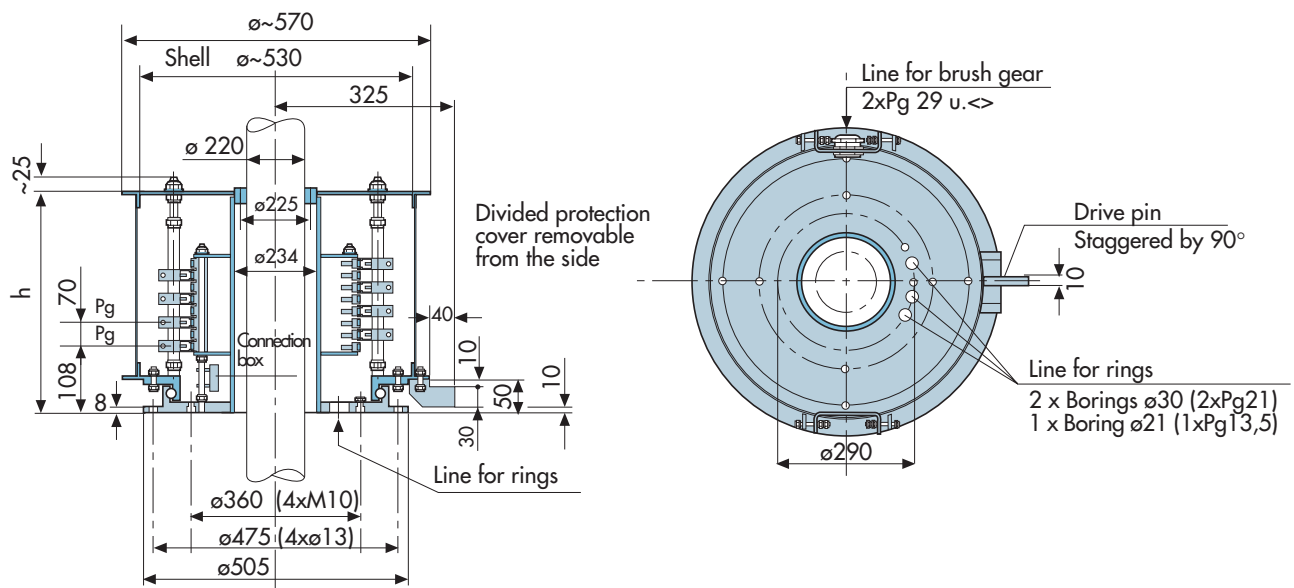
GSK400-../530/KL/R.220

Slipring column with housing, technical data on page 48 and 49

Protection IP54/55 with central tube.

MS-sliprings \varnothing 400 mm on connection box with 6 mm² and < pre-wired. Bearing support with ball rotary connection, additional lubrication available. With central tube inside \varnothing 234 and cover overlapping \varnothing 225 mm.

Haube divided in two and removable from the side. Housing with side Pg-inlets with allow easy assembly. Standard 2x for Pg 29, boring \varnothing 37 mm (max. for Pg 42 available). Additional inlets on request. Bedplate with 2 holes \varnothing 30 for cable inlet to the slipring connection box (on request, additional holes or Pg-threading).



Type	No. poles* incl. PE	Dim h (mm)		Wgt. kg
		w/out heating	with heating	
GSK400-04/530/KL/R.220	3+PE	335	335	
GSK400-05/530/KL/R.220	4+PE	335	335	
GSK400-06/530/KL/R.220	5+PE	335	335	
GSK400-07/530/KL/R.220	6+PE	335	335	
GSK400-08/530/KL/R.220	7+PE	335	335	
GSK400-09/530/KL/R.220	8+PE	335	335	
GSK400-10/530/KL/R.220	9+PE	335	335	
GSK400-11/530/KL/R.220	10+PE	335	335	
GSK400-12/530/KL/R.220	11+PE	460	460	
GSK400-13/530/KL/R.220	12+PE	460	460	
GSK400-14/530/KL/R.220	13+PE	460	460	
GSK400-15/530/KL/R.220	14+PE	460	460	
GSK400-16/530/KL/R.220	15+PE	460	460	
GSK400-17/530/KL/R.220	16+PE	460	460	
GSK400-18/530/KL/R.220	17+PE	460	460	
GSK400-19/530/KL/R.220	18+PE	520	520	
GSK400-20/530/KL/R.220	19+PE	520	520	
GSK400-21/530/KL/R.220	20+PE	520	520	
GSK400-22/530/KL/R.220	21+PE	520	520	

Hot-galvanised housing + polyester coating RAL 6011.
Bolts, screws etc. either hot-galvanised or of VA-material 1.4301

Installation position: vertical

Larger number of poles on request (h= 585 mm)

Technical Data

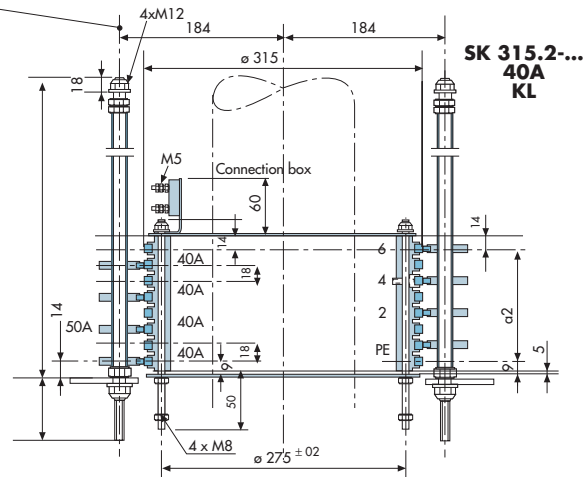
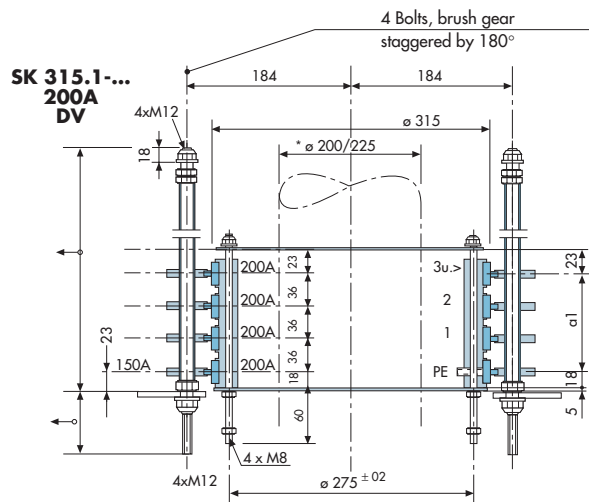


	SK315.2-..	SK315.1-..
Current rating:	mA - 40 A (50A), 100% ED	mA - 200 A (300A), 100% ED
Voltage:	500 V~, 660 V =	
Revolutions per minute:	1-60 revs/min as slirping column (varying according to number of poles and installation position)	
Number of poles:	36 and >	7 (12)
Pole pitch	At 40 A = 18 mm	At 200 A = 36 mm
Slirping:	ø 315 mm, Material: MS, on request with surface finishing Connection M6	ø 315 mm, Material: MS, Connection 2x M10
Brush gear:	Industrial double support with 2 moving carbon brushes, interchangeable. Bronze coal brushes 50A, Connection M5. On request with Silver carbon brushes (Ag) for mA-values or special qualities	Bronze carbon brushes 150A, Connect. M8 Two pieces per ring. Double support = 2 x 150 A
Connection box:	max. 30 poles Material: polyester moulding compound On request connection M5 (always 6-fold) with direct connection	
Insulation:	Insulators of high-quality plastic with glass-fiber reinforcement. Brush bolts: glass filament fabric tube HGW 2375.4	
Insulation group:	C	
Current values:	Standard 50 mA ÷ 40A	50 mA ÷ 200 A
(at max. +30°C)	at 24 V and > Multi-layer coating (ML) and silver carbon brushes (Ag). 5 mA and > at 6 V and > Multi-layer coating (ML) + gold plating (Au) and silver carbon brushes (Ag): suitable for measuring current - signal - video and data transmission.	
Ambient temperature:	max. +50°C / -35°C At +50°C the max. permissible amp.load must be consequently reduced. For higher temperature values, please contact the manufacturer.	
Corrosion protection:	Hot-galvanised steel parts or VA-Material 1.4301	
Installation positions:	Vertical, as slirping column: vertical, hanging, horizontal, please contact the manufacturer.	
Special:	Locks or divider and screen plate between the rings, etc.	

Schleifringkörper offen, techn. Daten Seite 54

Protection IP00;

Sliping column complete with screws. The sliping column can be supplied with connection box at 40A - or with direct connection - according to quotation and as requested. The cross section for the connection should correspond to the amp. load 2,5/4/6/10/2x16/2x25 mm². 200 A-rings have 2xM10 connections per ring, staggered by 180°. The brush gears are staggered. At 200A 2x150A double supports per ring are provided. The brush bolts must be fitted with screws on top and bottom on site. Starting from 24 poles, the sliping column should be fixed on top and bottom.



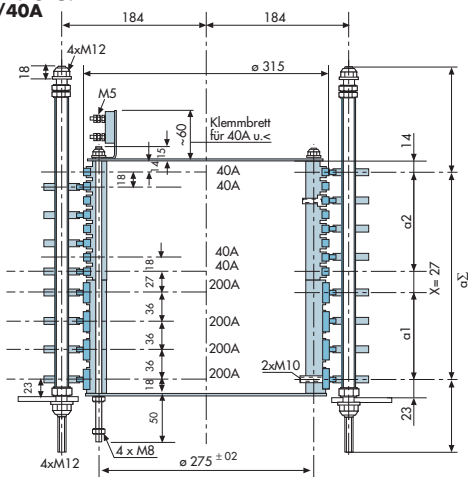
Type	DV	No. poles Incl. PE (mm)	Dim. a1 kg	Wgt.
SK315.1-01/DV	200A	1	-	
SK315.1-02/DV	200A	2	36	
SK315.1-03/DV	200A	3	72	
SK315.1-04/DV	200A	4	108	
SK315.1-05/DV	200A	5	144	
SK315.1-06/DV	200A	6	180	
SK315.1-07/DV	200A	7	216	
SK315.1-08/DV	200A	8	252	
SK315.1-09/DV	200A	9	288	
SK315.1-10/DV	200A	10	324	
SK315.1-11/DV	200A	11	360	
SK315.1-12/DV	200A	12	396	

Larger number of poles on request. * check max. tube ø.
 DV = Direct connection. See quotation.

Pole pitches at 200A: $a1 = (No. of poles - 1) \cdot 36 = \dots mm$
 At 40A: $a2 = (No. of poles - 1) \cdot 18 = \dots mm$

With different ring sizes: $a \Sigma = a1 + a2 + x = \dots mm$

SK 315.1 and 315.2
 200A/40A



Type	Version	No. poles	Dim a2 (mm)	Wgt. kg
SK315.2-01/DV	KL DV	1	-	
SK315.2-02/DV	KL DV	2	18	
SK315.2-03/DV	KL DV	3	36	
SK315.2-04/DV	KL DV	4	54	
SK315.2-05/DV	KL DV	5	72	
SK315.2-06/DV	KL DV	6	90	
SK315.2-07/DV	KL DV	7	108	
SK315.2-08/DV	KL DV	8	126	
SK315.2-09/DV	KL DV	9	144	
SK315.2-10/DV	KL DV	10	162	
SK315.2-11/DV	KL DV	11	180	
SK315.2-12/DV	KL DV	12	198	
SK315.2-13/DV	KL DV	13	216	
SK315.2-14/DV	KL DV	14	234	
SK315.2-15/DV	KL DV	15	252	
SK315.2-16/DV	KL DV	16	270	
SK315.2-17/DV	KL DV	17	288	
SK315.2-18/DV	KL DV	18	306	
SK315.2-19/DV	KL DV	19	324	
SK315.2-20/DV	KL DV	20	342	
SK315.2-21/DV	KL DV	21	360	
SK315.2-22/DV	KL DV	22	378	
SK315.2-23/DV	KL DV	23	396	
SK315.2-24/DV	KL DV	24	414	
SK315.2-25/DV	KL DV	25	432	
SK315.2-26/DV	KL DV	26	450	
SK315.2-27/DV	KL DV	27	468	
SK315.2-28/DV	KL DV	28	486	
SK315.2-29/DV	KL DV	29	504	
SK315.2-30/DV	KL DV	30	522	
SK315.2-31/DV	— DV	31	540	
SK315.2-32/DV	— DV	32	558	
SK315.2-33/DV	— DV	33	576	
SK315.2-34/DV	— DV	34	594	
SK315.2-35/DV	— DV	35	612	
SK315.2-36/DV	— DV	36	630	

>on request

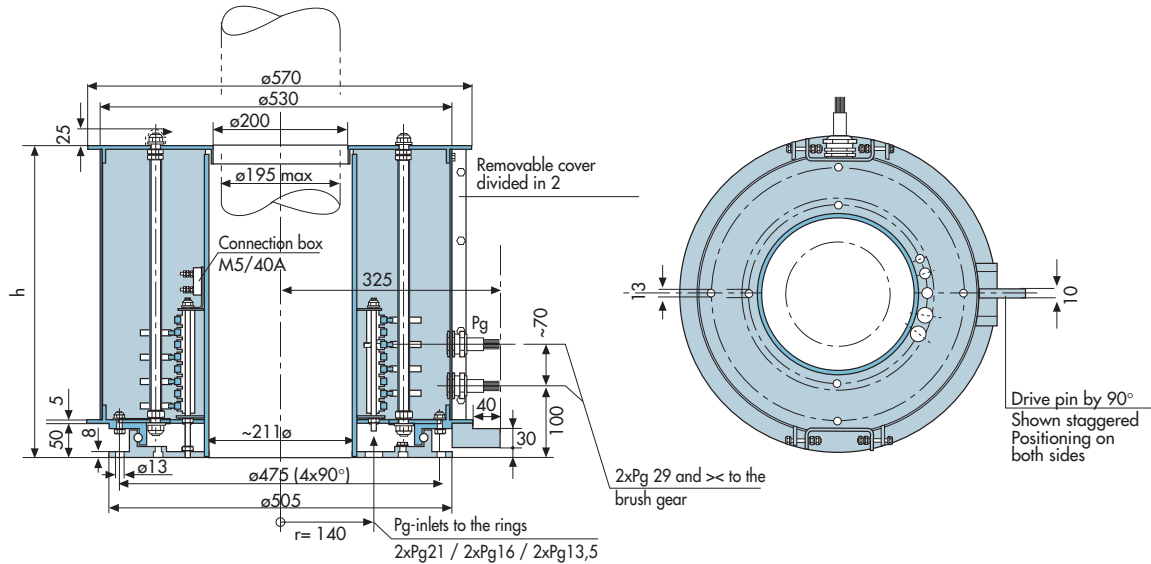
Slipring column with housing, technical data on page 54

Protection IP54/55 with central tube.

Technical data for sliprings etc. are found on page 54 and. 55. MS-sliprings \varnothing 315 mm. 40A-rings up to 30 poles pre-wired on connection box 2,5/4/6 mm². Bearing with ball rotary crown, additional lubrication. With central tube central \varnothing 211 mm and cover overlapping with opening \varnothing 200 mm. Cover divided in two and removable from the side. Fixed cover segment with Pg-inlets that allow easy assembly. Standard 2x Pg.29 = boring \varnothing 37 mm (max. Pg 42 allowed). Additional inlets on request. Bedplate with Pg-threading to the rings 2xPg21, 2xPg16, 1xPg13,5

Version 200A:

Version 40A:



Type	DV 200A	No. poles incl. PE	Dim. h (mm)		Wgt. kg
			w/out heating	with heating	
GSK315.1-03/530/DV/R.190		2+PE	335	335	
GSK315.1-04/530/DV/R.190		3+PE	335	335	
GSK315.1-05/530/DV/R.190		4+PE	335	335	
GSK315.1-06/530/DV/R.190		5+PE	460	460	
GSK315.1-07/530/DV/R.190		6+PE	460	460	
GSK315.1-08/530/DV/R.190		7+PE	460	460	

Larger number of poles on request.
The 200A-rings may be fitted with direct connection, if requested.
Connection for each ring 2 x M10.

Hot-galvanised housing+ polyester coating RAL 6011.
Bolts, screws etc. either hot-galvanised or VA-Material 1.4301

Installation position: vertical

Version with different rings 200A and 40A page 57.

Type	KL 40A	No.poles incl. PE	Dim. h (mm)			Wgt. kg
			KL w/out heating	KI with heating	DV w/out heating	
GSK315.2-03/530/KL/R.190		2+PE	335	335	335	
GSK315.2-04/530/KL/R.190		3+PE	335	335	335	
GSK315.2-05/530/KL/R.190		4+PE	335	335	335	
GSK315.2-06/530/KL/R.190		5+PE	335	335	335	
GSK315.2-07/530/KL/R.190		6+PE	335	335	335	
GSK315.2-08/530/KL/R.190		7+PE	335	335	335	
GSK315.2-09/530/KL/R.190		8+PE	335	335	335	
GSK315.2-10/530/KL/R.190		9+PE	335	335	335	
GSK315.2-11/530/KL/R.190		10+PE	460	460	335	
GSK315.2-12/530/KL/R.190		11+PE	460	460	335	
GSK315.2-13/530/KL/R.190		12+PE	460	460	460	
GSK315.2-14/530/KL/R.190		13+PE	460	460	460	
GSK315.2-15/530/KL/R.190		14+PE	460	460	460	
GSK315.2-16/530/KL/R.190		15+PE	460	460	460	
GSK315.2-17/530/KL/R.190		16+PE	585	585	460	
GSK315.2-18/530/KL/R.190		17+PE	585	585	460	
GSK315.2-19/530/KL/R.190		18+PE	585	585	460	
GSK315.2-20/530/KL/R.190		19+PE	585	585	585	
GSK315.2-21/530/KL/R.190		20+PE	585	585	585	
GSK315.2-22/530/KL/R.190		21+PE	585	585	585	
GSK315.2-23/530/KL/R.190		22+PE	585	585	585	
GSK315.2-24/530/KL/R.190		23+PE	585	585	585	
GSK315.2-25/530/KL/R.190		24+PE	700	700	585	
GSK315.2-26/530/KL/R.190		25+PE	700	700	585	
GSK315.2-27/530/KL/R.190		26+PE	700	700	700	
GSK315.2-28/530/KL/R.190		27+PE	700	700	700	
GSK315.2-29/530/KL/R.190		28+PE	700	700	700	
GSK315.2-30/530/KL/R.190		29+PE	700	700	700	

GSK315.1-./315.2-./530/^{KL}/_{DV}/R.190

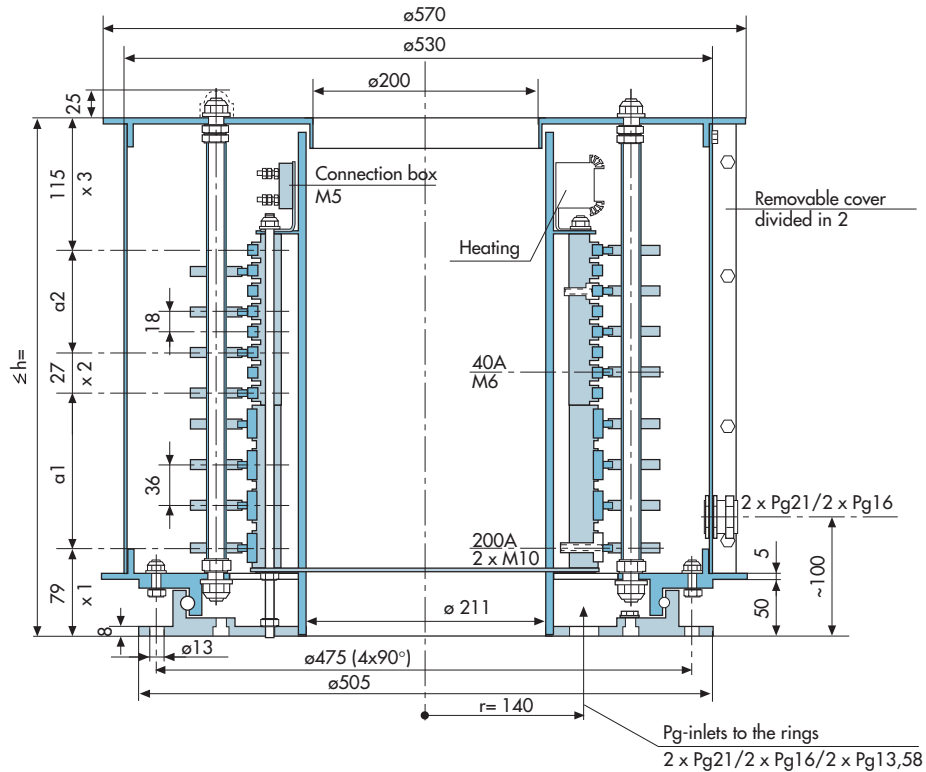
Slipring column with housing, technical data on page 54

Protection IP54/55 with central tube.

Technical data of the rings on page 54 and 55.

Construction description on page 56.

This slipring column is built with both sliprings 200A and 40A, according to the customer's request. The connection box wiring occurs only for the 40A range. The main current rings are provided as described on page 55, with direct connection if desired.



200A: $a1 = (\text{No. of poles} - 1) \cdot 36 =$

40A: $a2 = (\text{No. of poles} - 1) \cdot 18 =$

$\sum h = x1 + a1 + x2 + a2 + x3 = \dots \text{ mm}$

$\sum h = 79 + a1 + 27 + a2 + 115 = \dots \text{ mm}$

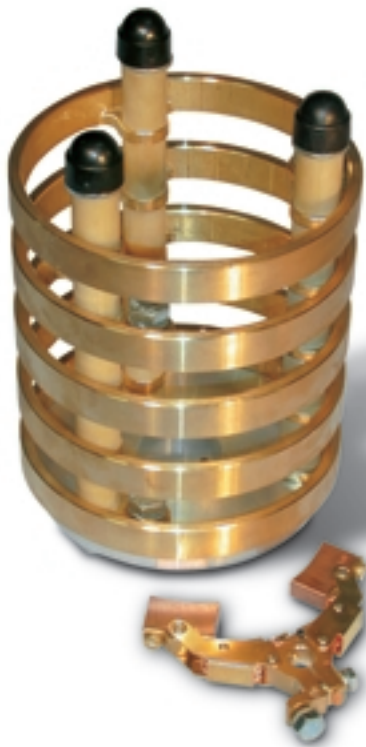
The actual slipring height depends on the desired ring combinations.

As standard heights:

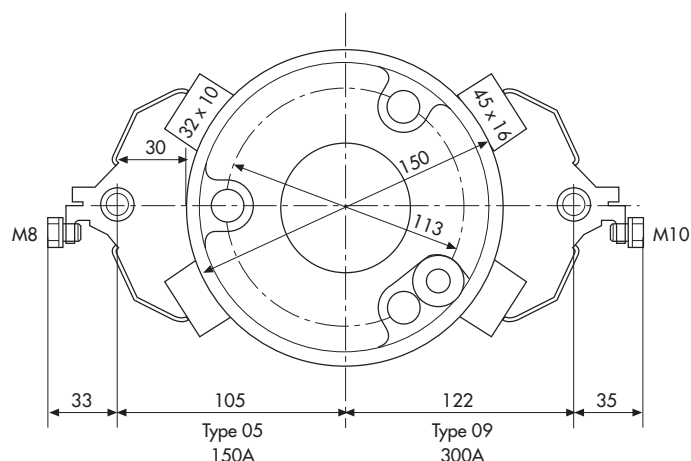
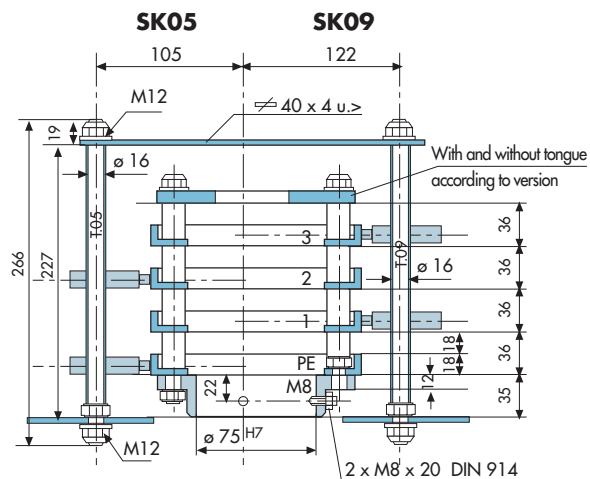
$h \sum$ applies: 335/460/585/700 mm.

Slipring column open, Protection IP00

Technical Data



	SK05-.. (150A)	SK09-.. (200A)
Current ratings:	max. 150A, 100% ED	max. 200A, 100% ED
Voltage:	max. 660 V~, 800 V	
Revolutions per minute:	1-100 revs/min. varying according to the installation	
Number of poles:	max. 12 depending on the conductor cross section	
Pole pitch:	36 mm	
Slipring:	ø150 mm, material: MS-die casting 200A, connection M10	
Brush gear:	Industrial double support with 2 moving carbon brushes, interchangeable. 150A, connection M8 300A, connection M10 Bronze carbon brushes 32x10 Bronze carbon brushes 45x16 On request, with special carbon brushes for specific operating conditions	
Connection box:	None On request, with direct connection according to quotation.	
Insulation:	Glass filament fabric tube HGW 2375.4	
Insulation group:	C	
Current values:	Standard: 50 mA - 150A	50 mA - 200A
Ambient temperature:	max. +50°C / -35°C At +50°C the max. permissible amp. load must be consequently reduced. For higher temperatures, please contact the manufacturer.	
Corrosion protection:	Hot-galvanised steel parts, or VA-material 1.4301	
Installation position:	Vertical, hanging, horizontal, please contact the manufacturer	
Special:	Parallel connection of the rings	



Slipring column with housing, technical data on page 58

Protection IP65;

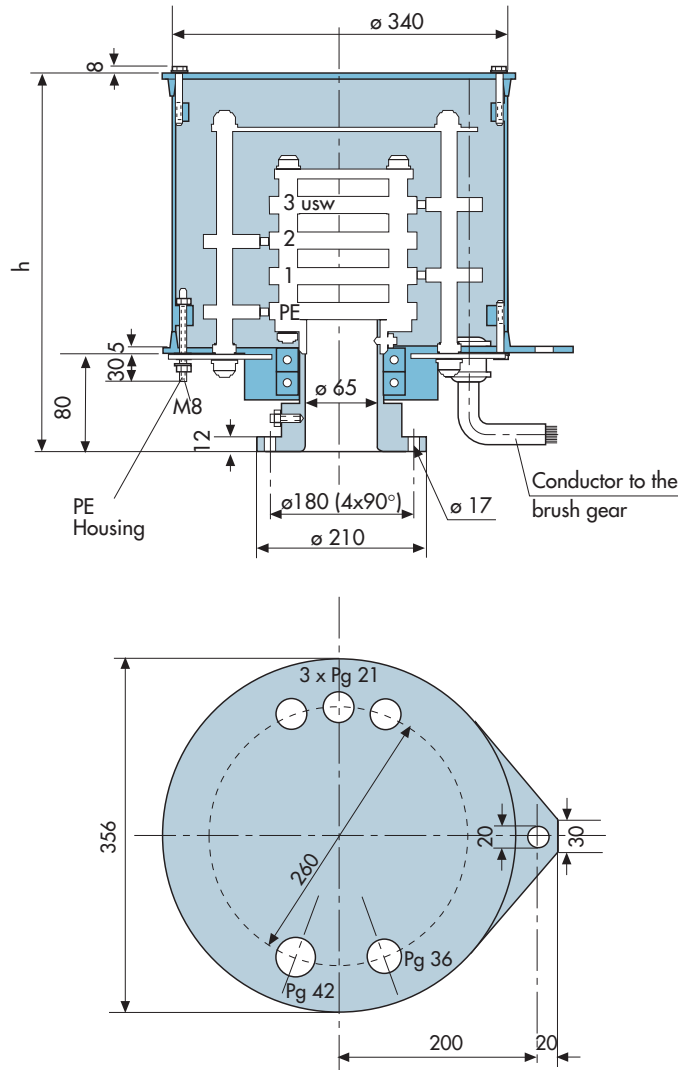
Double ball bearing support sealed on both sides, axis diameter $d_i = 65 \text{ } \phi$. Lower bearing plate with Pg-inlets to the brush gears. 1x hole $\phi 55$ f. Pg 42, 1x $\phi 48$ f. Pg 36, 3x $\phi 29$ f. Pg 21.

Flange and bearing part of aluminium, protection cover, bearing plate and housing cover of sheet metal with polyester coating and neoprene moulded seal. Screws and bolts are either hot-galvanised or of VA- Material 1.4301.

Special version: adaptor flange for additional tube passage, divided cover, hanging arrangement, parallel connection, pre-wiring, etc.

Version 150 A

Version 200A



Type	150A 660V~	No. of poles inkl. PE	Dim. h (mm)	Wgt. kg
GSK05-03/340/..		2+PE	330	
GSK05-04/340/..		3+PE	330	
GSK05-05/340/..		4+PE	450	
GSK05-06/340/..		5+PE	450	
GSK05-07/340/..		6+PE	450	
GSK05-				
GSK05-				

Larger number of poles on request.

Type	200A 660V~	No. of poles inkl. PE	Dim. h (mm)	Wgt. kg
GSK09-03/340/..		2+PE	330	
GSK09-04/340/..		3+PE	330	
GSK09-05/340/..		4+PE	450	
GSK09-06/340/..		5+PE	450	
GSK09-07/340/..		6+PE	450	
GSK09-				
GSK09-				

Larger number of poles on request

Slipping column with housing, technical data on pages 58, 32, 28

Protection IP65

Construction: for the description see page 59.

This slipping column is built with various ring variants according to the customer's needs. The desired structure is described in the quotation. The technical data for the rings etc. are found on pages 58, 32 and 28.

Table of the possible ring combinations:

Ring type	Amp. max.	Number* of rings	Techn. data page
09	200A	7	58
05	150A	7	58
03	90A	24	32
02	50A	30	32
98	20A	80	28

* The max. allowed number of poles of the single ring types on top of each other depends on the assembly of the requested version and on the connection type.

Type descriptions:

GSK05-../03../340/..

GSK05-../02../340/..

GSK05-../98../340/..

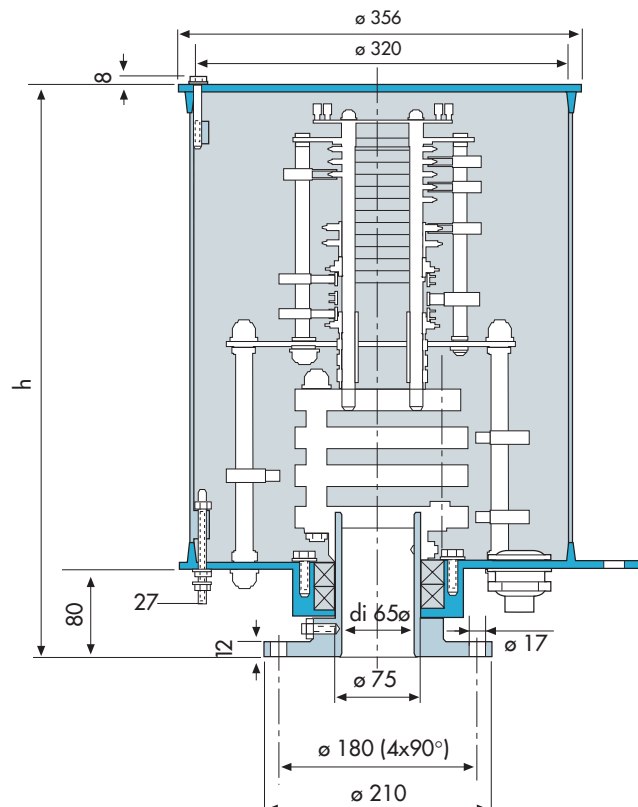
GSK05-../03../02../340/..

GSK05-../02../98../340/..

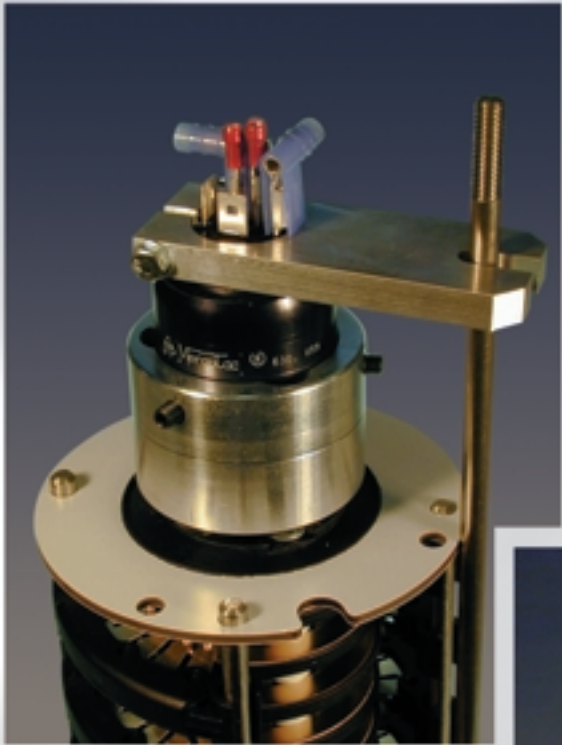
GSK05-../03../98../340/..

GSK05-../03../02../98../340/..

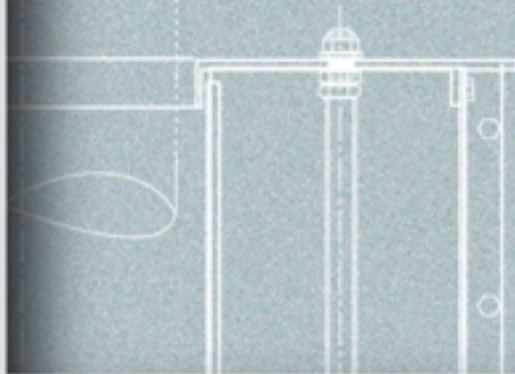
dto for
GSK09-..



For special versions and installation parts see page 71 etc. Please contact the manufacturer.



*Slipping column with housing type 58
with Mercotac*



dto with potentiometer



*Slipping column with housing type 58 with measuring instrument
(adjusted by the customer)*



Technical Data

Current ratings: mA - 100 A, 100% ED (Parallel connection max 250A)

Voltage: 660 V~, 800 V =

Revolutions per minute: 1-100 revs/min (varying according to no. of poles and installation position)

Type	No. of poles *	Slipring			Brush gear bronze coal brushes		Pole pitch mm	Voltage V ~
		Amp.	Size	Connect.	Amp.	Connection		
14.1	24	100A	ø110x14	M8	150A	M8	22	660V
14.2	24	100A	ø110x14	M8	90A	M6	22	660V
14.3	24	100A	ø110x14	M8	50A	M5	22	660V
14.4	24	60A	ø110x12	M6	50A	M5	20	660V
14.5	36 and >	25A	ø110x6,5	M4	50A	M5	13	660V

*for max. no. of poles allowed, see quotation.

Brush gear: Industrial double support with 2 moving carbon brushes, interchangeable. Standard: bronze carbon brushes, special: silver carbon brushes (50A).

Current values: With multi-layer coating (ML) and silver carbon brushes (Ag)
(at max. +30°C) 5 mA and > at 6 V and >

Connection box: on request

Type 14.1: Max. 5 poles, compl. pre-wired with 16/25 mm², connection M8
14.2: Max. 5 poles, compl. pre-wired with 16 mm², connection M8
14.3: Max. 7 poles, compl. pre-wired with 10 mm², connection M8
14.4: Max. 30 poles, compl. pre-wired with 6 mm² connection M5/M6
14.5: Max. 30 poles, compl. pre-wired with 2,5/4 mm², shell terminals

Insulation: Glass filament fabric tube HGW 2375.4

Insulation group: C

Ambient temperature: max. +50°C / -35°C

At +50°C the max. permissible amp. load must be consequently reduced.
For higher temperatures, please contact the manufacturer.

Corrosion protection: Hot-galvanised steel parts, or VA-material 1.4301

Installation position: Vertical, hanging, horizontal, please specify

Special: See page 71 etc.



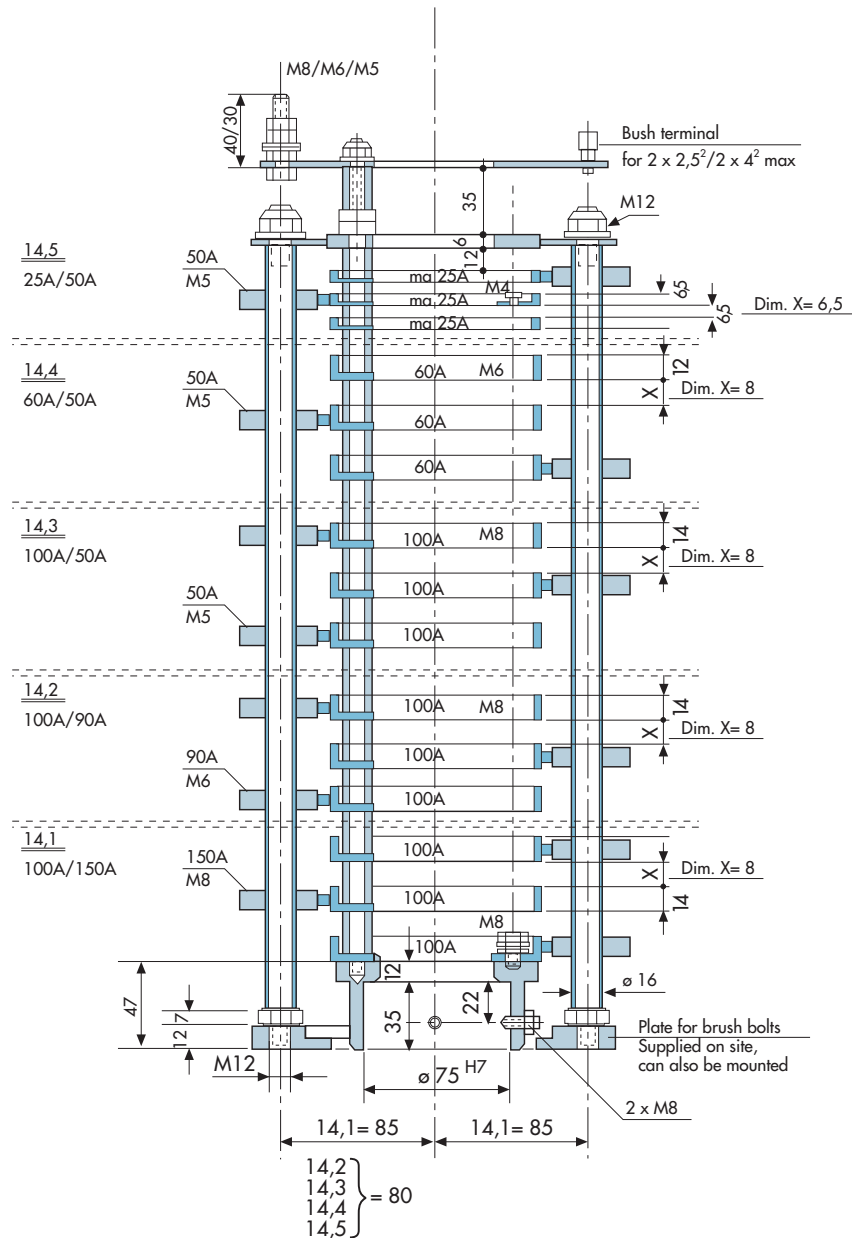
Slipping column open, technical data on page 62

Protection IP00;

Slipping column complete with screws. The slipping column may be supplied with connection box or with direct connection. Cross-section for the wiring connection according to quotation.

The brush gears are staggered. The brush bolts must be fitted with screws according to the number of poles 1x top and bottom on site. For the corresponding current load, 5 different variants can be selected.

The ring distance "x" may vary according to voltage.



Slipping column with housing, technical data on page 62

Protection IP65.

Bearing housing of aluminium with double ball bearings, sealed on both sides. Axis diameter = 60 ϕ mm. Lower bearing plate with various Pg-inlets to the brush gears.

Housing ϕ 280: 1 x Pg 29 and 3 x Pg 21

Housing ϕ 340: 1 x Pg 42, 1 x Pg 36 and 3 x Pg 21

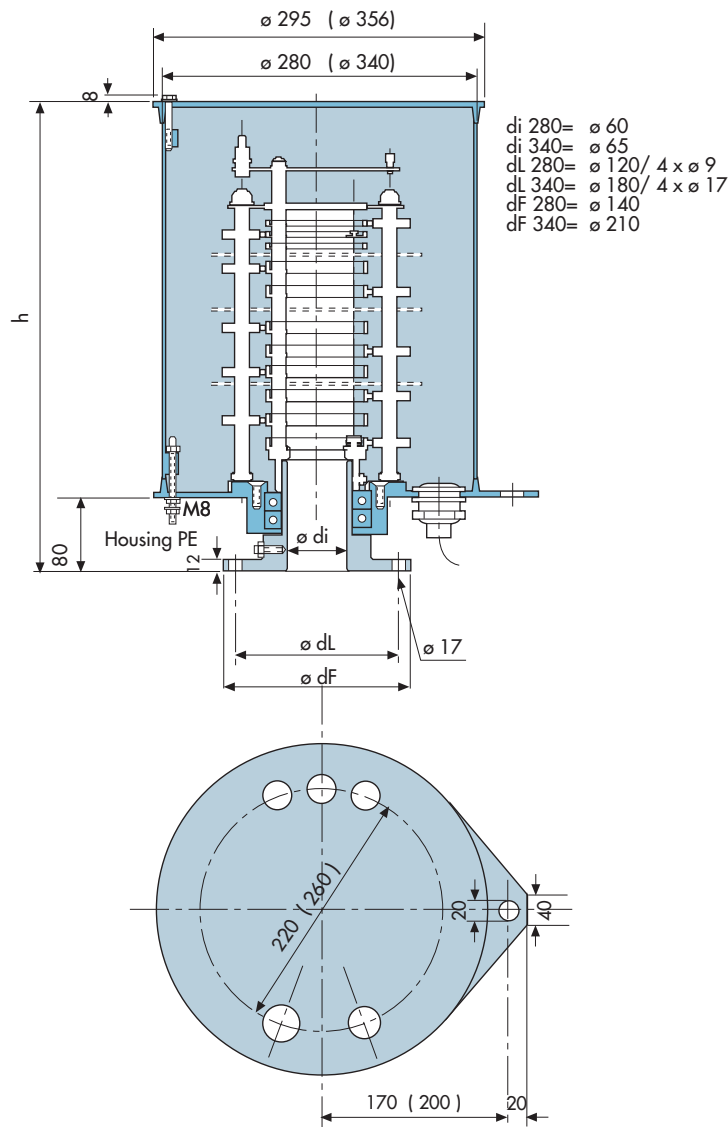
Rings on connection box (KL) are pre-wired or with direct connection. Cross-section and length according to quotation.

Protection cover bearing plate and housing cover of sheet metal with polyester coating and neoprene moulded seal.

Screws and bolts are either hot-galvanised or of VA-material 1.4301. Fixing flange of aluminium.

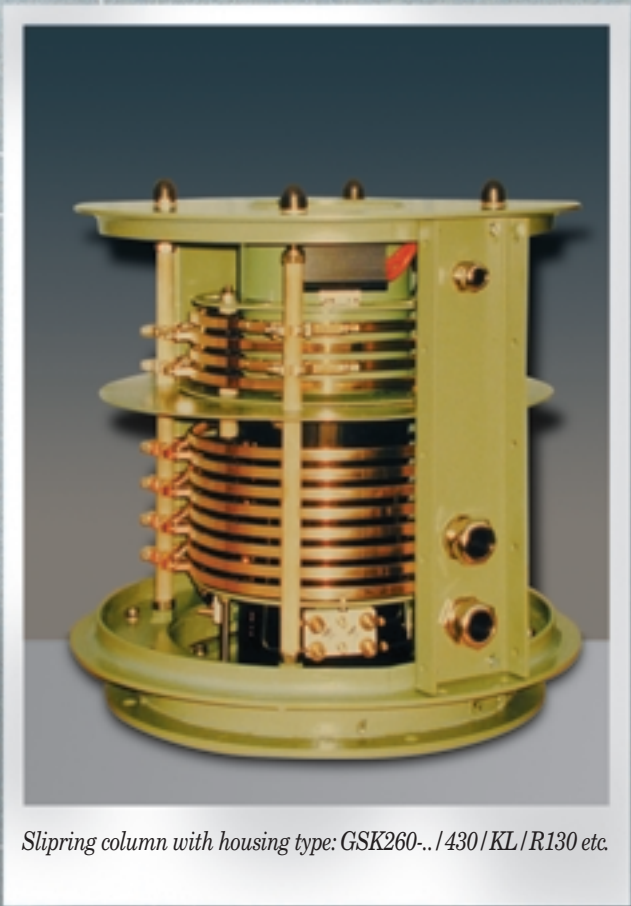
Special versions on request.

For technical data and ring combinations see page 62.

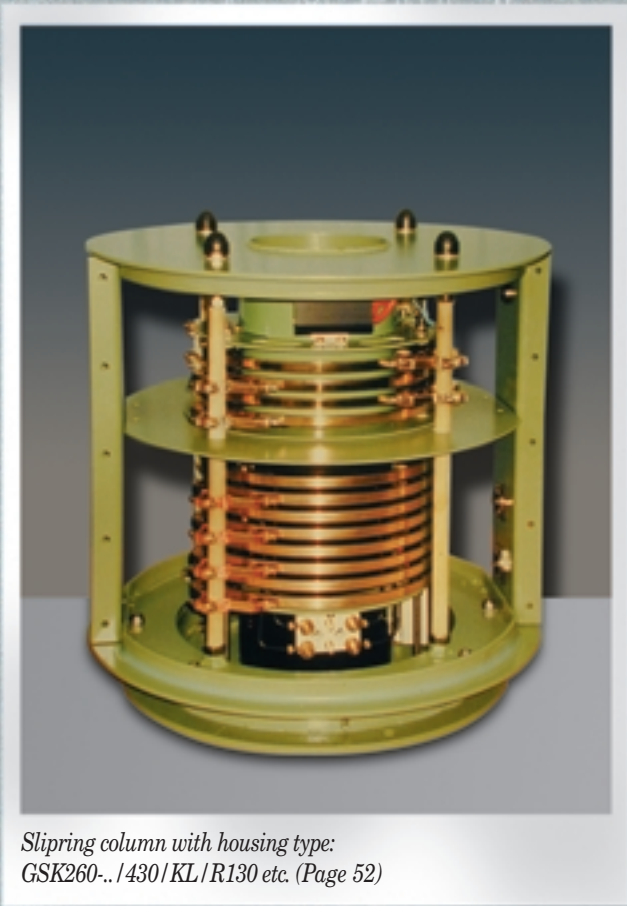


For the desired version, see quotation.

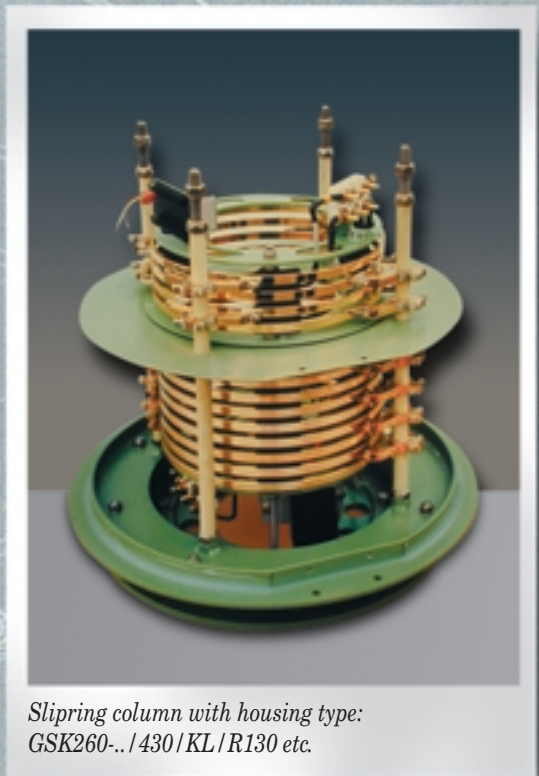
As a standard version, the slipping column may be provided with cover ϕ 340/320, axis d_i = 65 ϕ and Pg-inlets max. Pg 42 etc.



Slipring column with housing type: GSK260-../430/KL/R130 etc.



*Slipring column with housing type:
GSK260-../430/KL/R130 etc. (Page 52)*



*Slipring column with housing type:
GSK260-../430/KL/R130 etc.*

Technical Data

Current rating:	300 A, 100% FD (parallel connection available)
Voltage:	660 V~, 800 V = and >
Revolutions per minute:	1-60 revs/min (varying according to number of poles and installation position)
Number of poles:	7 and >
Pole pitch:	45 mm
Slipring:	ø 200 mm, material: casting bronze, connection M 12
Brush gear:	Industrial double bearing with 2 moving carbon brushes, interchangeable. Bronze carbon brushes 300 A, connection M 10 (Special carbon brush quality on request.)
Connection box:	none On request, with direct connection
Insulation:	Glass filament fabric tube HGW 2375.4
Insulation group:	C
Current value: (at max. 30° C)	Standard 50 mA - 300 A With parallel connection: max. 2 rings for each pole
Ambient temperature:	max. +50°C / -35°C At +50°C the max. permissible amp. load must be consequently reduced. For higher temperatures, please contact the manufacturer.
Corrosion protection:	Hot-galvanised steel parts, or of VA-material 1.4301 Housing with polyester coating.
Installation positions:	Vertical, hanging, horizontal, please contact the manufacturer.
Special:	Various installation parts, etc.



SK15-../..

Slipping column open, technical data on page 66

Protection IP00

Without connection box, with direct connection on request.

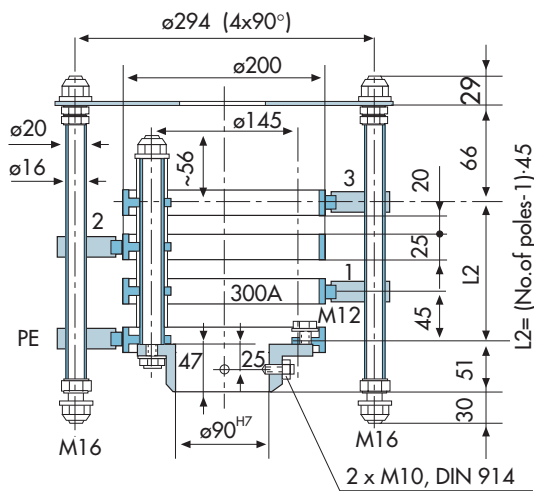
Fixing with 2 grub screws M10, DIN 914 + nut as

counternut in the fixing flange (Boring should be provided on site)

Coupling for axis housing tube h9. Fixing flange and housing tube above are flush.

The supply includes 2 insul. brush bolts.

The upper centre disk has four holes with $\phi 17$ mm.



GSK15-../400/DV/..

Slipping column with housing, technical data page 66

Protection IP65

Bearing housing of aluminium with double ball bearings, sealed on both sides. Axis = 80 ϕ mm

Lower bearing plate with various Pg-inlets to the brush gears. Holes for Pg-dimensions : 1 x Pg 42, 1 x Pg 36, 3 x Pg 21.

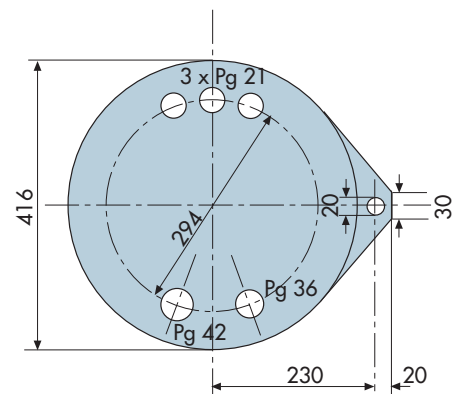
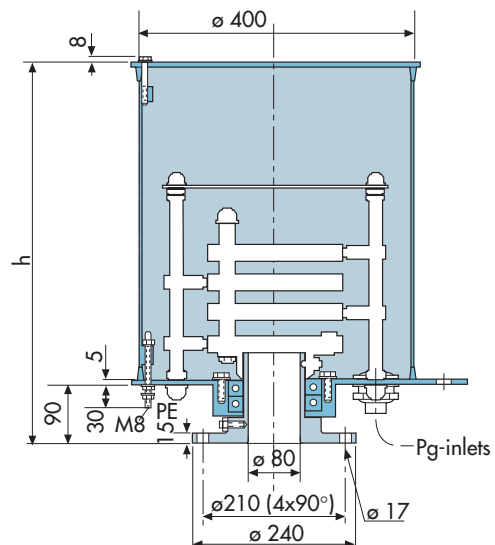
Rings may have direct connection DV, if desired.

Cross-section and length according to quotation..

Protection cover, bearing plate and housing cover of sheet metal with polyester coating and neoprene moulded seal. Screws and bolts are either hot-galvanised or of VA-material 1.4301

Fixing flange of aluminium

Special versions on request.



Type	No.poles incl. PE	Dim. a (mm)	Wgt. kg
SK15-03	2+PE	90	
SK15-04	3+PE	135	
SK15-05	4+PE	180	
SK15-06	5+PE	225	
SK15-07	6+PE	270	

Larger number of poles on request.

Items supplied:

Slipping column complete with screws, with brush gears

2 brush bolts with insulation. .

Type	No.poles incl. PE	Dim. h (mm)		Wgt. kg
		w/out heating	with heating	
GSK15-03/400/DV	2+PE	390	390	
GSK15-04/400/DV	3+PE	390	390	
GSK15-05/400/DV	4+PE	435	435	
GSK15-06/400/DV	5+PE	525	525	
GSK15-07/400/DV	6+PE	525	525	

Larger number of poles on request.

Sliping column with housing

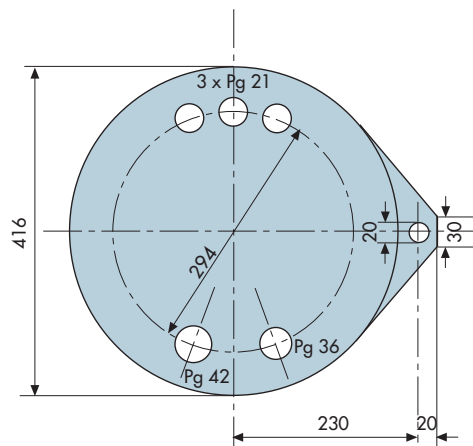
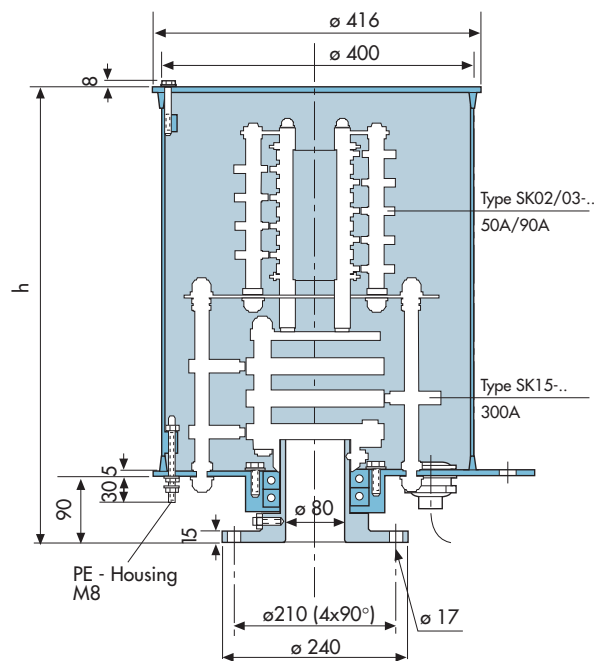
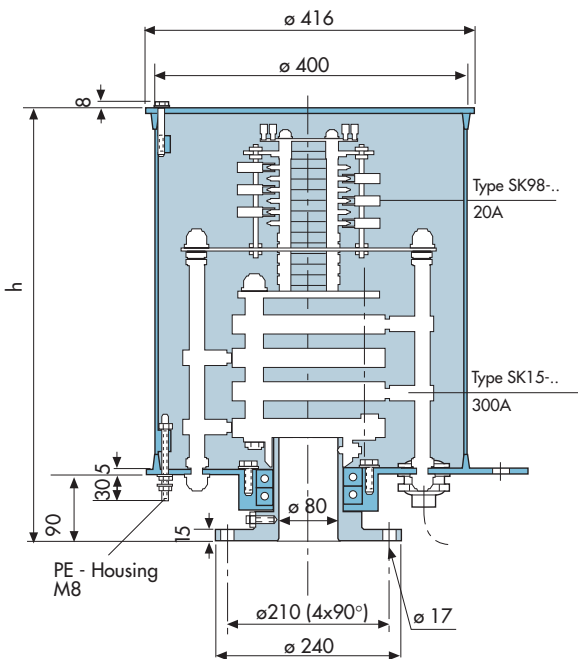
Description on page 67 -> Protection IP 65. Technical data on page 66

Ring combinations:

Type 15 = 300 A
with
Type 98 = 20 A (KL and DV)

Ring combinations:

Type 15 = 300 A
with
Type 03 = 90 A or Type 02 = 50 A



The max. number of poles of the single ring types allowed in the above-mentioned combination depends on the desired version. For this purpose, see our quotation.

Slipring column with housing

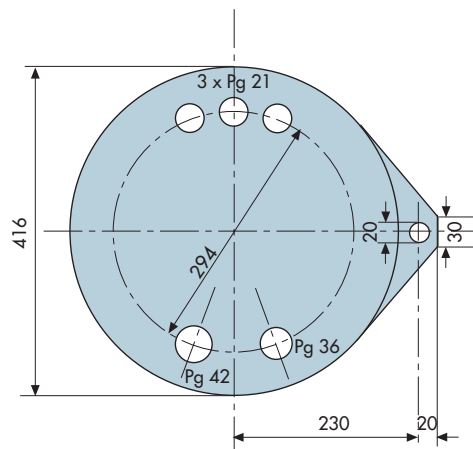
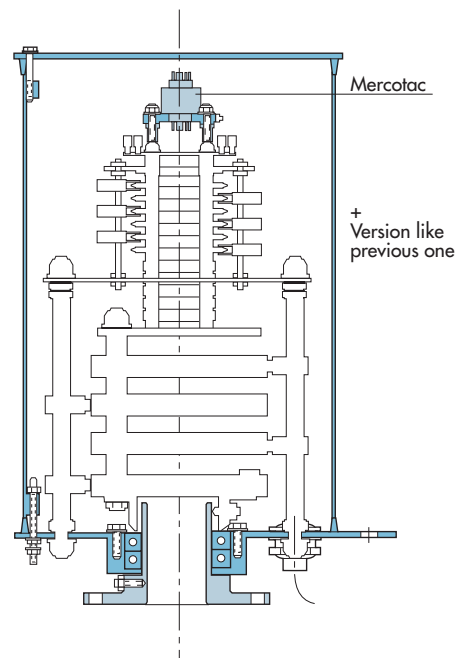
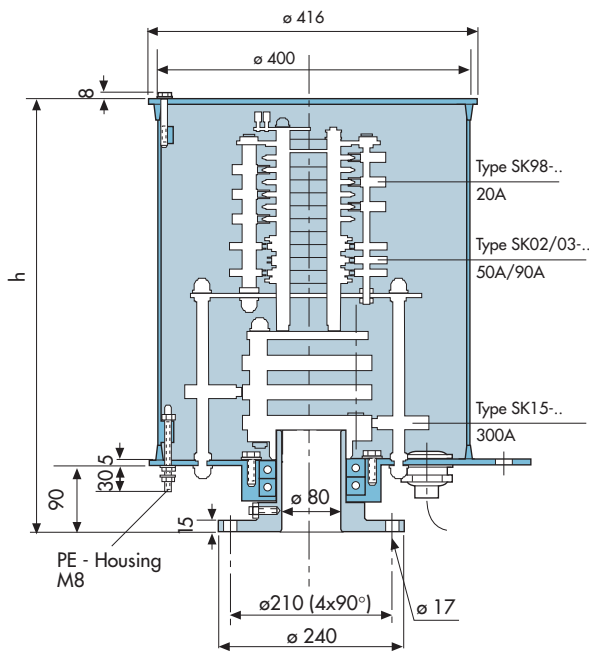
Slipring column with housing, protection. Technical data on page 66. Description on page 67

Ring combinations:

- Type 15 = 300 A
- with:
- Type 03 = 90 A (KL and DV)
- Type 02 = 50 A (KL and DV)
- Type 98 = 20 A (KL and DV)

Ring combinations:

- Type 15 = 300 A
- with
- above-mentioned types + Mercotac



The max. number of poles of the single ring types allowed in the above-mentioned combination depends on the desired version. For this purpose, see our quotation

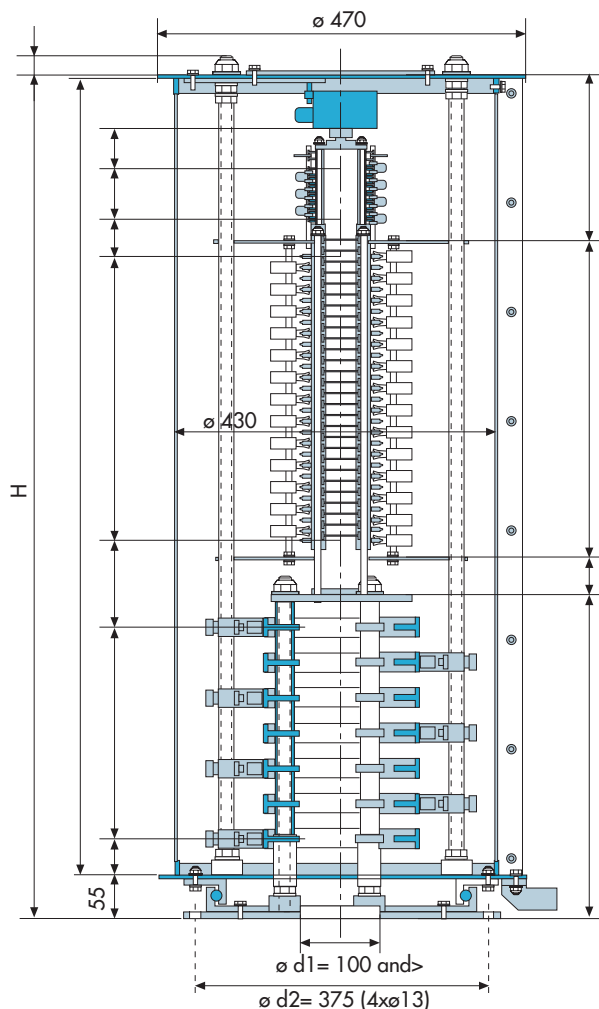
GSK15-.. /430/^{KL}/_{DV}/.. → Ring combinations according to quotation

Slipping column with housing

Protection IP 54/55

Support on ball rotary crown, additional lubrication available. Cover divided in two and removable from the side. Housing with side Pg-inlets, which allow easy assembly. The number of Pg-inlets depends on the quotation. Bedplate with boring $\varnothing 100$ and $>$ to access to the rings. Housing and cover with polyester coating. Screws and bolts are either hot-galvanised or of VA-material 1.4301.

Installation position: vertical



Main electric circuit with slippings type 15. There are multiple combination possibilities available on request.

Type	Amp. max	Number * of rings	Techn. data page...	KL or DV see quotation
15	300A	7	66	– DV
03	90A	24	32	KL / DV
02	50A	30	32	KL / DV
98	20A	80	28	KL / DV
80	16A	60	24	KL / DV
58	16A	40	16	KL / DV
145.58	16A	100	40	KL / DV
145.98	20A	100	42	KL / DV

+ Mercotac and various assembly parts.

* The max. number of poles of the single ring types allowed depends on the desired version and on the wiring connection.

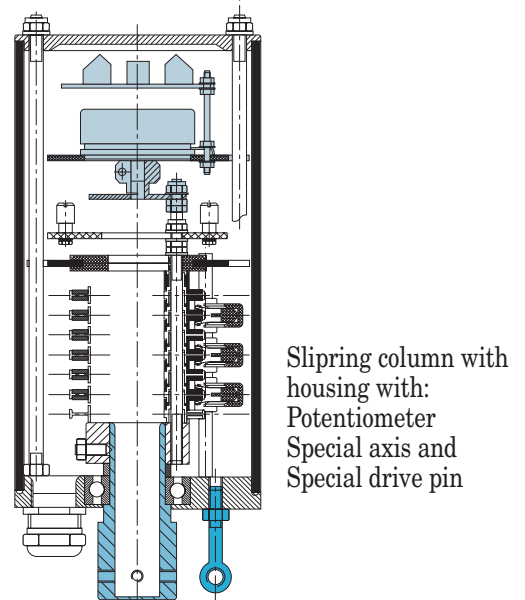
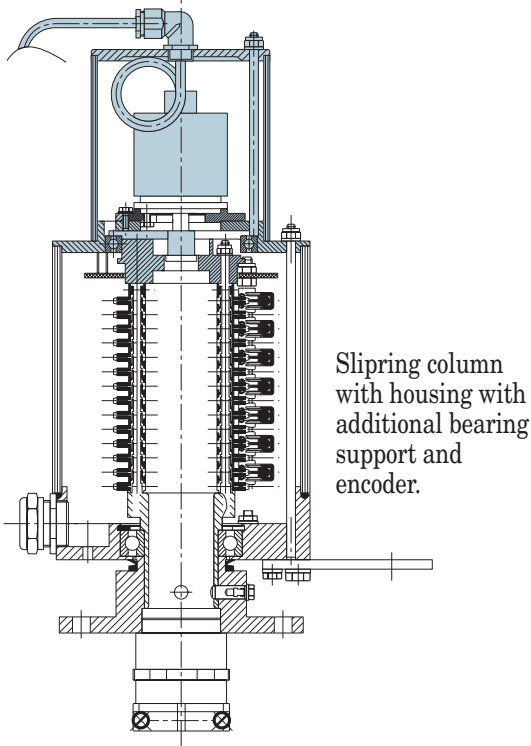
GSK.../../. = Assembly parts and special versions

Options

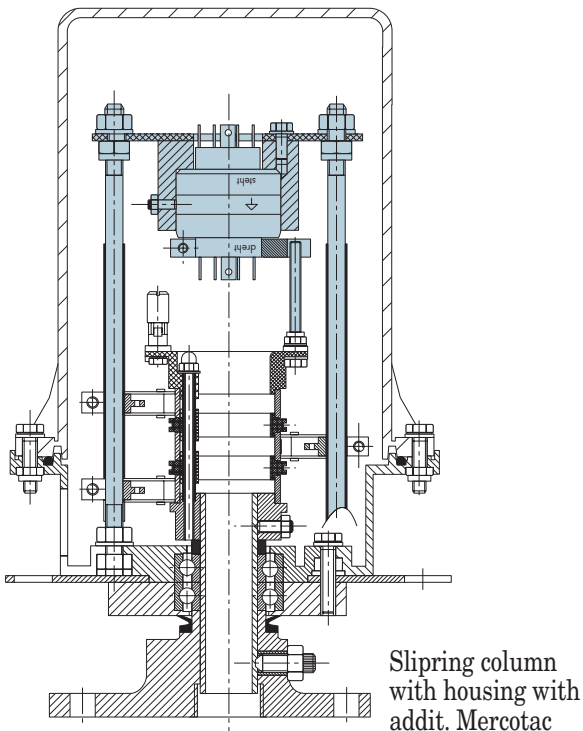
Various assembly parts and special versions can be provided or mounted on nearly all slipping columns, if desired.

Examples:

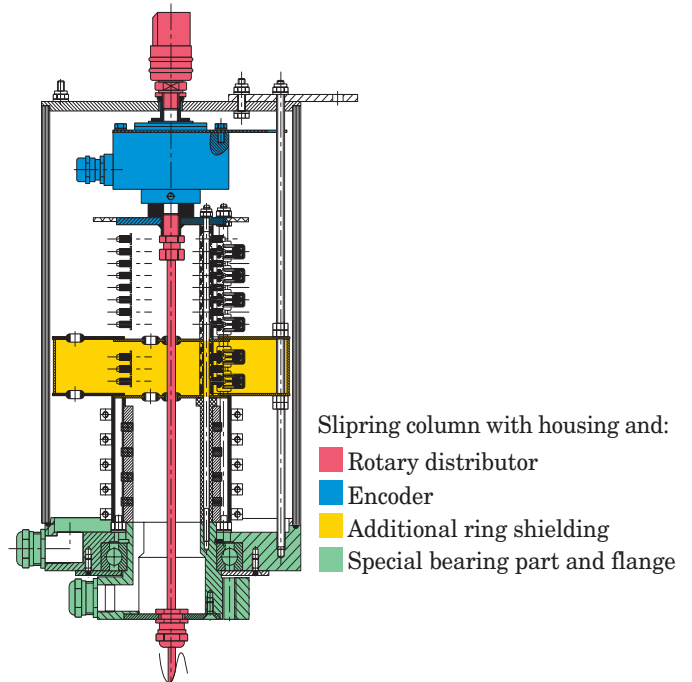
Installation of potentiometers, encoders, etc.



With additional Mercotac



Special version

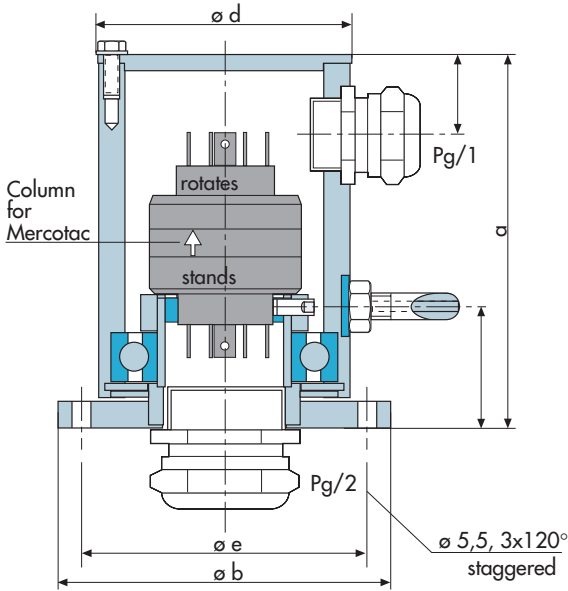


Measured value connectors with Mercotac

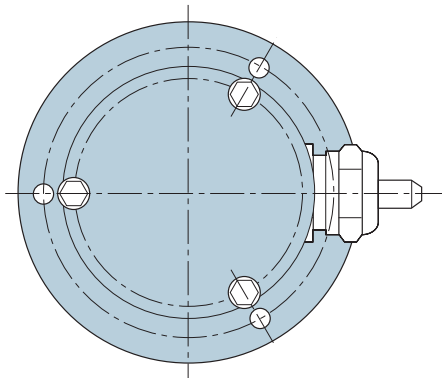
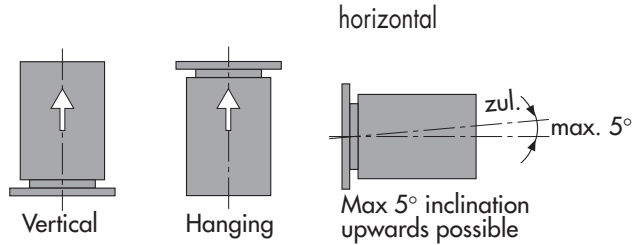
Mercotac mercury connected contacts ensure a trouble-free and wearproof transmission for signals and currents up to 30A. Thanks to their extremely low resistance values, these rotary connectors are particularly suited to the measured value transmission of:

thermoelements, instruments, antennas, static discharge, etc.

The Mercotac housing is made of rustproof material with specially applied sealing elements and protected to IP66.



Installation positions available:



Type	Dimensions						Wgt. kg
	a	bø	dø	eø	Pg/1	Pg/2	
GSK-M3.03	106	80	60	70	Pg9	Pg16	
GSK-M4.04	106	80	60	70	Pg9	Pg16	
GSK-M6.06	110	90	65	75	Pg16	Pg21	
GSK-M8.08	110	100	75	85	Pg16	Pg29	
GSK-M1250	110	90	65	75	Pg16	Pg21	

Name	GSK-M3.03	GSK-M4.04	GSK-M6.06	GSK-M8.08	GSK-M1250
Number of poles	3	4	6	8	1
Voltage AC/DC	0-500V	0-500V	0-500V	0-500V	als PE
Current values max. 240V AC	3x30A bzw (2x30A+PE)	2x30A+2x4A (1x30A+PE+2x4A)	4x30A+2x4A (3x30A+PE+2x4A)	6x30A+2x4A (5x30A+PE+2x4A)	250A
Power rating kW/240V AC	7,2 kW	7,2/1 kW	7,2/1 kW	7,2/1 kW	60 kW
Max. frequency MHz	100	100	100	100	200
Mercury contact resistance	< 1mΩ	< 1mΩ	< 1mΩ	< 1mΩ	< 1mΩ
Revolutions per minute v/min	1200	1200	300	200	1200
Temperature range +/- °C	+60°/-29°	+60°/-29°	+60°/-29°	+60°/-29°	+60°/-29°
Torque - inside part x 10 ⁻³ Nm	30	40	70	100	25
Insulation resistance	> 25MΩ	> 25MΩ	> 25MΩ	> 25MΩ	-
Connector size (mm)	3x6,3	2x6,3 2x2,8	4x6,3 2x2,8	6x6,3 2x2,8	M10x1,5

Other Cavotec Sliprings and connectors

The range of sliprings distributed by the Cavotec sales companies includes not only the slipring columns manufactured by Alfo and illustrated in this catalogue with range up to 300A, but also slipring columns manufactured by Specimas and Mercotac and Aurotac connectors.



Specimas slipring columns

Are renowned for their quality, innovative design and outstanding reliability. Thousands of Specimas slipring columns have been installed in the past 35 years all over the world and in all types of industrial environments. The specifically designed ring grooves with a number of double-contact brushes per ring with high thermal conductivity ensure a reliable energy transmission both rotating and stationary.



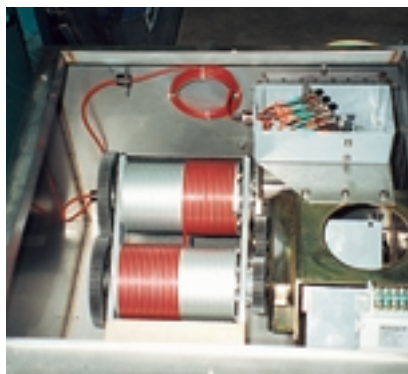
Mercotac connectors

Mercotac combines mercury with compatible metals to form highly reliable rotating transmission of electrical signals. For 1 to 8 channels with resistance $<1\Omega$, they are ideal for transmitting control signals and in applications where high revolutions per minute, low electrical noise and low resistance prohibit the use of conventional sliprings. Durable, compact, maintenance-free, ball bearing construction.



Aurotac connectors

Main features are: goldplated contact surfaces, small size and strong construction that stands up to a demanding environment. The reliable contacts can transfer extremely sensitive digital and analog signals, as well as RS/RF connections and up to 25A power. As well as being excellent for applications where there is no room for larger units, they can also be mounted as an extension on Specimas and Alfo slipring columns for transmitting highly sensitive data.



Fibre optic rotary accumulators

Specimas has developed a fibre optic rotary accumulator of heavy-duty design for rugged environment. The system can also be used as a stand-alone rotary accumulator. The signal transmission is uninterrupted, the only losses are due to the fibres and connectors themselves. This unit is supplied with a limited number of revolutions (40 or 80:1)

Our operations worldwide



The Specimas plant in Italy



Offices and plant of the Cavotec company in the USA



The Alfo Cavotec plant in Germany



Cavotec RMS in France

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