

TERMINAL BOXES

ELECTRICAL ENCLOSURES

HAZARDOUS AREA ENCLOSURES

SPECIAL PURPOSE ENCLOSURES



ENCLOSURE SPECIALISTS FOR THE ELECTRONICS, INSTRUMENTATION,
MARINE, OIL, GAS AND PETRO-CHEMICAL INDUSTRIES



Introduction

Since the original ABTECH sheet steel enclosure was first manufactured in 1970, the company has maintained a programme of continuous expansion with the result that enclosures produced in mild steel, stainless steel, aluminium, glass reinforced polyester, polycarbonate, A.B.S. and cast iron are now manufactured by the company with wholly owned subsidiary companies, established in Germany and the U.S.A. and a network of distributors serving the rest of the World.

The company has, wherever possible, adopted the use of CNC machinery which enable enclosures to be manufactured to the highest quality at competitive prices.



Materials

Enclosures can be provided in either aluminium, cast-iron, glass-fibre reinforced polyester, polycarbonate, A.B.S., mild steel and stainless 316.

Environmental Protection

Varying degrees of protection as defined in BS EN 60529 are available. These include from IP 54 - dust-tight and splash-proof to IP 67 - submersible as standard and IP 68 - submersible to specific depths and for specified periods on special quotation.

Finishes

Many different types of protective finish are available including stove-enamel, two pack epoxy, Acrylic-textures or hot zinc spray galvanising, the latter being for use under hostile environmental conditions. Where the latter finishes are not considered adequate, we can recommend, as principal suppliers to the off-shore oil industry, the use of stainless steel 316.

Delivery

Considerable numbers of all the enclosures described in this brochure are available from stock.

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Approvals

Most of the enclosures contained in this catalogue are approved by one or more of the following authorities: SIRA, ITS, BASEEFA, UL (Underwriters Laboratory), CSA (Canadian Standards Authority), FM (Factory Mutual) and independently witness tested by Lloyds.

In addition, both the SX and BPG range have passed what may be described as the most rigorous test for ingress protection ever devised, the Shell-ERA deluge test. Details of this and other special enclosure requirements are available on request.



Abtech Entry Calculator

One of the most difficult and often time consuming steps in the selection of a suitable enclosure to meet your particular requirements is trying to decide if the enclosure you have chosen will accommodate all the cable entries you require.

At Abtech we have for many years been using an entry calculation programme which was specifically developed for our enclosures. We are now making this simple and easy to use programme available free of charge to any customers who feel this would be of use.

The programme can be used on any personal computer running Windows 95, 98 or 2000, is simple to use and includes a help menu, gridlines and guides to help with placement of entries and you can also choose to let the programme place the entries automatically. Once you are happy with the design of the entries you can print out a drawing and table giving co-ordinates of the hole positions.

The 'Free Entry Calculator CD' can be ordered by contacting the sales department or by accessing the web site and following the instructions therein.



Aluminium Enclosures

DIE-CAST



CE sira



Robust Enclosures for both Industrial and Ex Applications.

- IP67 to BS EN 60529 (IEC 529).
- Stainless Steel lid fixing screws.
- Withstand 130°C with Silicon gasket.
- Epoxy Polyester powder coated Grey RAL7001.
- Complete range of accessories available.
- ATEX Certified for use in Cat. 2/Zone 1 and Cat. 3/Zone 2 Areas.
- Available painted and unpainted.
- UL/CSA approved Type 4X.



| Type | Overall Dimensions mm | | | | |
|----------|-----------------------|---|-----|---|-----|
| | L | x | B | x | H |
| ZAG 1 | 50 | x | 45 | x | 30 |
| ZAG 2 | 58 | x | 64 | x | 36 |
| ZAG 3 | 98 | x | 64 | x | 36 |
| ZAG 4 | 150 | x | 64 | x | 36 |
| ZAG 5 | 75 | x | 80 | x | 57 |
| ZAG 6 | 125 | x | 80 | x | 57 |
| ZAG 7 | 175 | x | 80 | x | 57 |
| ZAG 8 | 250 | x | 80 | x | 54 |
| ZAG 9 | 122 | x | 120 | x | 80 |
| ZAG 9/9 | 122 | x | 120 | x | 90 |
| ZAG 10 | 220 | x | 120 | x | 80 |
| ZAG 10/9 | 220 | x | 120 | x | 90 |
| ZAG 11 | 160 | x | 160 | x | 90 |
| ZAG 12 | 260 | x | 160 | x | 90 |
| ZAG 13 | 360 | x | 160 | x | 90 |
| ZAG 14 | 560 | x | 160 | x | 90 |
| ZAG 15 | 200 | x | 230 | x | 110 |
| ZAG 16 | 330 | x | 230 | x | 110 |
| ZAG 17 | 330 | x | 230 | x | 180 |
| ZAG 18 | 401 | x | 231 | x | 110 |
| ZAG 19 | 420 | x | 240 | x | 210 |
| ZAG 20 | 600 | x | 230 | x | 110 |
| ZAG 21 | 360 | x | 120 | x | 80 |

Polyester Enclosures



CE sira

Fire Resistant, High Impact, GRP Enclosures for Industrial and Ex Applications.

- IP67 to BS EN 60529 (IEC 529).
- Stainless Steel lid fixing screws.
- Glass filled Polyester.
- Standard finish Grey RAL7001.
- Operation up to 130°C with Silicone gasket.
- Carbon loaded version available in Black.
- Fire rated to IEC 331 750°C for 3 Hours. also 950°C for 3 Hours.
- Shell/Era deluge tested.
- ATEX Certified for use in Cat. 2/Zone 1 and Cat. 3/Zone 2 Areas.
- UL/CSA approved Type 4X.



| Type | Overall Dimensions mm | | | | |
|---------|-----------------------|---|-----|---|-----|
| | L | x | B | x | H |
| BPG 1 | 80 | x | 75 | x | 55 |
| BPG 2 | 110 | x | 75 | x | 55 |
| BPG 3 | 160 | x | 75 | x | 55 |
| BPG 4 | 190 | x | 75 | x | 55 |
| BPG 4.5 | 190 | x | 75 | x | 75 |
| BPG 5 | 230 | x | 75 | x | 55 |
| BPG 6 | 122 | x | 120 | x | 90 |
| BPG 7 | 220 | x | 120 | x | 90 |
| BPG 8 | 160 | x | 160 | x | 90 |
| BPG 9 | 260 | x | 160 | x | 90 |
| BPG 10 | 360 | x | 160 | x | 90 |
| BPG 11 | 560 | x | 160 | x | 90 |
| BPG 12 | 255 | x | 250 | x | 120 |
| BPG 13 | 400 | x | 250 | x | 120 |
| BPG 14 | 600 | x | 250 | x | 120 |
| BPG 15 | 400 | x | 405 | x | 120 |

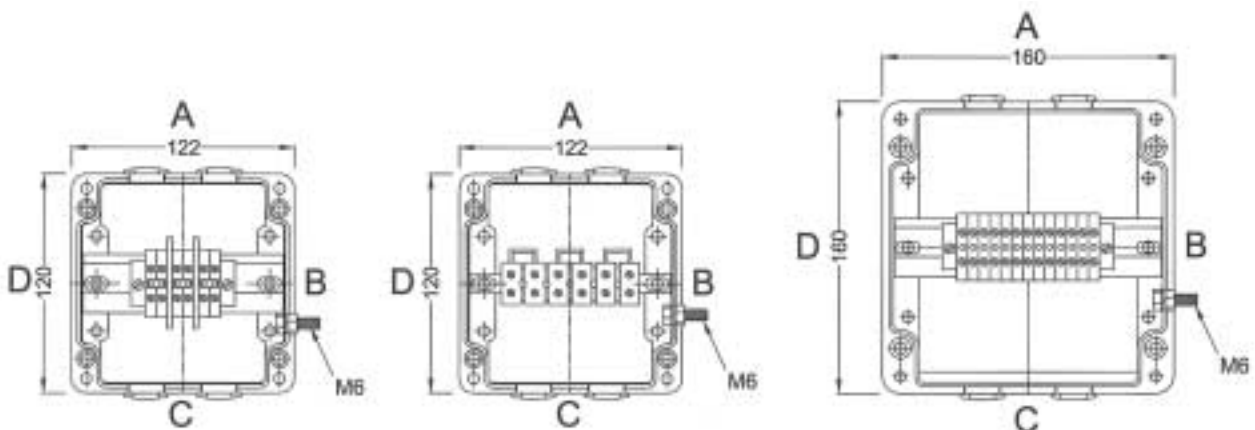
Pre Assembled EEx'e' Junction Boxes

Available form Stock for Immediate Delivery

- Glass Reinforced Polyester Junction Boxes (GRP)- IP67.
- 3 Types available:
 - BPGA120
 - BPGA125
 - BPGA160
- Boxes fitted with Terminals, Copper Earth Continuity Plate, 4 x M20 Entries and ready for Immediate use.
- EEx'e' Certified Blanking Plugs x 3
- Competetively Priced and Available for Next Day Delivery
- ATEX Certified for use in Cat. 2/Zone 1 and Cat. 3/Zone 2 Areas.
- Suitable for use in Ambient Temperature Range -65 °C to +40 °C.
- ERA/Shell Deluge Tested.



| Specification | BPGA 120 | BPGA 125 | BPGA 160 |
|-------------------------|------------------|------------------|------------------|
| Size (external) | 122 x 120 x 90mm | 122 x 120 x 90mm | 160 x 160 x 90mm |
| Enties | 4 x M20 (2A,2C) | 4 x M20 (2A, 2C) | 4 x M20 (2A, 2C) |
| EEx'e' Blanking Plugs | 3 | 3 | 3 |
| Terminals | 6 x SAK 2.5 | 1 x MK 6/6 | 13 x SAK 2.5 |
| Links | Linked in Pairs | -Linked in Pairs | - |
| Int/ext M6 Earth | Yes | Yes | Yes |
| Copper Earth Plate | Yes | Yes | Yes |
| Ingress Protection | IP66/67 | IP66/67 | IP66/67 |
| Shell ERA Deluge Tested | Yes | Yes | Yes |



PCS Control Station



| Type | Overall Dimensions mm | | | | |
|---|-----------------------|---|-----|---|----|
| | L | x | B | x | H |
| PCS 8 Used with 1 Control Device or Lamp | 160 | x | 160 | x | 90 |
| PCS 9 Used with up to 4 Control Devices or Lamps | 260 | x | 160 | x | 90 |

Control Devices:

- 2 Position selector switches.
- 3 Position selector switches.
- Emergency stop button.
- Push button: Red, Green, Yellow, White.
- Mushroom push button.
- Key switches.



Control Station in High Impact, Fire Resistant GRP Enclosures

- IP66/67 to BS EN 60529 (IEC 529).
- Available with 7 different types of control device or indicator lamps.
- Ready wired for end-user connection.
- Housing available in standard finish Grey RAL7001 and "Carbon Loaded" Black.
- Ex de certified for use in Zone 1 and 2 Areas.



Stainless/Mild Steel Enclosures



Robust High Specification Enclosures for the most Demanding Industrial Applications

- IP65 - IP68 to BS EN 60529 (IEC 529).
- Welded cage nuts - No lid fixing screws cross threads.
- Internal/External earthing stud.
- Available in 3 standards depths 140mm, 200 or 300mm deep.
- Heavy duty construction - Body 2mm.
- Gland plates/Mounting straps 3mm.
- Full customisation available.
- Any custom size up to 2000w x 2000d x 500d, EExe Certified.
- ATEX certified for use in Cat. 2/Zone 1 and Cat. 3/Zone 2 Areas.
- UL/CSA approved Type 4X.

| Type | Overall Dimensions mm | | | | |
|-----------|-----------------------|---|------|---|-----|
| | L | x | B | x | H |
| SX 45 | 114 | x | 114 | x | 51 |
| SX 64 | 102 | x | 152 | x | 63 |
| SX 66 | 152 | x | 152 | x | 102 |
| SX 0 .14 | 152 | x | 229 | x | 140 |
| SX 0,5.14 | 184 | x | 274 | x | 140 |
| SX 1 .14 | 234 | x | 324 | x | 140 |
| SX 1,5.14 | 306 | x | 306 | x | 140 |
| SX 2 .14 | 372 | x | 324 | x | 140 |
| SX 3 .14 | 372 | x | 448 | x | 140 |
| SX 4 .14 | 372 | x | 510 | x | 140 |
| SX 5 .14 | 510 | x | 510 | x | 140 |
| SX 6 .14 | 510 | x | 780 | x | 140 |
| SX 7 .14 | 650 | x | 950 | x | 140 |
| SX 8 .14 | 800 | x | 1250 | x | 140 |
| SX 0 .2 | 152 | x | 229 | x | 200 |
| SX 0,5 .2 | 184 | x | 274 | x | 200 |
| SX 1 .2 | 234 | x | 324 | x | 200 |
| SX 1,5 .2 | 306 | x | 306 | x | 200 |
| SX 2 .2 | 372 | x | 324 | x | 200 |
| SX 3 .2 | 372 | x | 448 | x | 200 |
| SX 4 .2 | 372 | x | 510 | x | 200 |
| SX 5 .2 | 510 | x | 510 | x | 200 |
| SX 6 .2 | 510 | x | 780 | x | 200 |
| SX 7 .2 | 650 | x | 950 | x | 200 |
| SX 8 .2 | 800 | x | 1250 | x | 200 |
| SX 6 .3 | 510 | x | 780 | x | 300 |
| SX 7 .3 | 650 | x | 950 | x | 300 |
| SX 8 .3 | 800 | x | 1250 | x | 300 |

MJB

- 8.3kV operating voltage (max).
- 240 sq mm cable capacity (max).
- IP66 standard rating.
- IP67 available.
- Minimum operating ambient -50°C.
- Maximum operating ambient +65°C.
- Power dissipation 50 Watts (max).
- Size from 510 x 510 x 200mm to 1250 x 800 x 300mm.
- Material 316L Stainless Steel (EN 1.4404).
- ATEX certified for use in Cat. 2/Zone 1 and Cat. 3/Zone 2 Areas.



DPJB

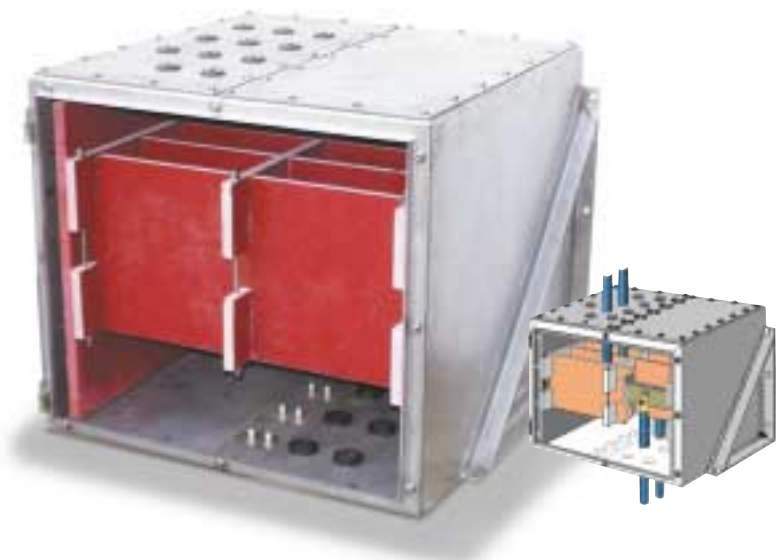
- 11kV Operating Voltage (max).
- 630 sq mm Cable Capacity (max).
- IP66 Standard Rating.
- IP67 Available.
- 1500A per Phase.
- 50kA for 1 Second Fault Rating.
- Phase Segregation Available.
- 3 Core and 4 Core Option.
- Cable Splitter Facility Option.
- Material 316L Stainless Steel (EN 1.4404).
- Baseefa Certified for use in Zone 1 and 2 Areas.
- Sizes from 950 x 650 x 200 mm to 1250 x 800 x 300 mm



BUS BAR BOX



- 11kV Operating Voltage (max).
- 630 sq mm Cable Capacity (max).
- Designed for Maximum Cabling Flexibility.
- 3000A Capacity.
- 80kA for 1 Second Fault Rating.
- 90kA for 0.1 Second Fault Rating
- Neutral Bus Bar Included.
- Complete Phase Segregation.
- Minimum Size 770 x 770 x 675mm High.
- Maximum Size 770 x 770 x 1250mm High.
- IP66 Standard.
- IP67 Available.
- Material 316L Stainless Steel (EN1.4404).
- ATEX Certified for use in Cat. 2/Zone 1 and Cat. 3/Zone 2 Areas.
- Custom Mounting Arrangement Available.



Polycarbonate/ABS Enclosures



Plastic Enclosures for Electronic, Instrumentation and Industrial Applications.

- Mounting position outside lid seal area.
- Practical and reliable.
- With or without quick release lid fixing.
- Standard finish RAL7035.
- Complete range of accessories available.
- Available with clear lid.
- IP65 to BS EN 60529 (IEC 529).
- UL/CSA approved Type 4X.



| Type | Overall Dimensions mm | | | | |
|-------|-----------------------|---|-----|---|-----|
| | L | x | B | x | H |
| ZP 1 | 52 | x | 50 | x | 35 |
| ZP 2 | 65 | x | 50 | x | 35 |
| ZP 3 | 82 | x | 80 | x | 55 |
| ZP 4 | 82 | x | 80 | x | 85 |
| ZP 5 | 120 | x | 80 | x | 55 |
| ZP 6 | 120 | x | 80 | x | 85 |
| ZP 7 | 160 | x | 80 | x | 55 |
| ZP 8 | 160 | x | 80 | x | 85 |
| ZP 9 | 122 | x | 120 | x | 55 |
| ZP 10 | 122 | x | 120 | x | 85 |
| ZP 11 | 200 | x | 120 | x | 75 |
| ZP 12 | 200 | x | 150 | x | 75 |
| ZP 13 | 240 | x | 120 | x | 100 |
| ZP 14 | 240 | x | 160 | x | 90 |
| ZP 15 | 250 | x | 160 | x | 90 |
| ZP 16 | 240 | x | 160 | x | 120 |
| ZP 17 | 300 | x | 230 | x | 85 |
| ZP 18 | 360 | x | 200 | x | 150 |
| ZP 19 | 300 | x | 230 | x | 110 |

GPS - Steel Enclosures



General Purpose Steel Enclosures.

- IP65 to BS EN 60529 (IEC 529).
- RAL7032 finish.
- Mounting plate (2mm thick galvanised mild steel) available and sold separately.
- IP66 version available.
- Complete range of accessories available.
- Custom sizes available to special order.

| Type | L | x | B | x | H | Mounting |
|-----------|------|---|------|---|-----|----------|
| | | | | | | Plate |
| GPS2315 | 200 | x | 300 | x | 150 | MP23 |
| GPS3315 | 300 | x | 300 | x | 150 | MP33 |
| GPS3320 | 300 | x | 300 | x | 200 | MP33 |
| GPS3415 | 300 | x | 400 | x | 150 | MP34 |
| GPS3420 | 300 | x | 400 | x | 200 | MP34 |
| GPS3520 | 300 | x | 500 | x | 200 | MP35 |
| GPS4315 | 400 | x | 300 | x | 150 | MP43 |
| GPS4420 | 400 | x | 400 | x | 200 | MP44 |
| GPS4520 | 400 | x | 500 | x | 200 | MP45 |
| GPS4620 | 400 | x | 600 | x | 200 | MP46 |
| GPS4630 | 400 | x | 600 | x | 300 | MP46 |
| GPS5520 | 500 | x | 500 | x | 200 | MP55 |
| GPS5720 | 500 | x | 700 | x | 200 | MP57 |
| GPS5730 | 500 | x | 700 | x | 300 | MP57 |
| GPS6420 | 600 | x | 400 | x | 200 | MP64 |
| GPS6620 | 600 | x | 600 | x | 200 | MP66 |
| GPS6630 | 600 | x | 600 | x | 300 | MP66 |
| GPS6820 | 600 | x | 800 | x | 200 | MP68 |
| GPS6830 | 600 | x | 800 | x | 300 | MP68 |
| GPS61020 | 600 | x | 1000 | x | 200 | MP610 |
| GPS61030 | 600 | x | 1000 | x | 300 | MP610 |
| GPS61230 | 600 | x | 1160 | x | 300 | MP612 |
| GPS8620 | 800 | x | 600 | x | 200 | MP86 |
| GPS81030 | 800 | x | 1000 | x | 300 | MP810 |
| GPS10630 | 1000 | x | 600 | x | 300 | MP106 |
| GPS101030 | 1000 | x | 1000 | x | 300 | MP1010 |

ADB Range

- Manufactured from 18 SWG Mild Steel.
- Available in Black enamel, hot dip galvanised or pre-coated galvanised sheet.
- With or without knockouts.
- Assembly service available for fitting terminals and other accessories.
- IP40 to BS EN 60529 (IEC 529) .
- Can be fitted with gaskets in order to achieve higher I.P. ratings.



| Type | Dimensions mm | | | Type | Dimensions mm | | |
|-------|---------------|-----|------|-------|---------------|-----|-----|
| | L | B | H | | L | B | H |
| ADB1 | 50 | 50 | 50 | ADB35 | 225 | 225 | 75 |
| ADB2 | 75 | 50 | 50 | ADB36 | 225 | 225 | 100 |
| ADB3 | 75 | 75 | 37.5 | ADB37 | 225 | 225 | 150 |
| ADB4 | 75 | 75 | 50 | ADB38 | 300 | 75 | 50 |
| ADB5 | 75 | 75 | 75 | ADB39 | 300 | 75 | 75 |
| ADB6 | 100 | 75 | 50 | ADB40 | 300 | 100 | 50 |
| ADB7 | 100 | 100 | 37.5 | ADB41 | 300 | 100 | 75 |
| ADB8 | 100 | 100 | 50 | ADB42 | 300 | 100 | 100 |
| ADB9 | 100 | 100 | 75 | ADB43 | 300 | 150 | 50 |
| ADB10 | 100 | 100 | 100 | ADB44 | 300 | 150 | 75 |
| ADB11 | 150 | 75 | 37.5 | ADB45 | 300 | 150 | 100 |
| ADB12 | 150 | 75 | 50 | ADB46 | 300 | 150 | 150 |
| ADB13 | 150 | 75 | 75 | ADB47 | 300 | 225 | 50 |
| ADB14 | 150 | 100 | 37.5 | ADB48 | 300 | 225 | 75 |
| ADB15 | 150 | 100 | 50 | ADB49 | 300 | 225 | 100 |
| ADB16 | 150 | 100 | 75 | ADB50 | 300 | 225 | 150 |
| ADB17 | 150 | 100 | 100 | ADB51 | 300 | 300 | 50 |
| ADB18 | 150 | 150 | 37.5 | ADB52 | 300 | 300 | 75 |
| ADB19 | 150 | 150 | 50 | ADB53 | 300 | 300 | 100 |
| ADB20 | 150 | 150 | 75 | ADB54 | 300 | 300 | 150 |
| ADB21 | 150 | 150 | 100 | ADB55 | 375 | 300 | 100 |
| ADB22 | 150 | 150 | 150 | ADB56 | 375 | 300 | 150 |
| ADB23 | 225 | 75 | 37.5 | ADB57 | 375 | 375 | 100 |
| ADB24 | 225 | 75 | 50 | ADB58 | 375 | 375 | 150 |
| ADB25 | 225 | 75 | 75 | ADB59 | 450 | 300 | 50 |
| ADB26 | 225 | 100 | 50 | ADB60 | 450 | 300 | 100 |
| ADB27 | 225 | 100 | 75 | ADB61 | 450 | 300 | 150 |
| ADB28 | 225 | 100 | 100 | ADB62 | 450 | 375 | 100 |
| ADB29 | 225 | 150 | 50 | ADB63 | 450 | 375 | 150 |
| ADB30 | 225 | 150 | 75 | ADB64 | 450 | 450 | 100 |
| ADB31 | 225 | 150 | 100 | ADB65 | 450 | 450 | 150 |
| ADB32 | 225 | 150 | 150 | ADB66 | 600 | 450 | 150 |
| ADB33 | 225 | 225 | 37.5 | ADB67 | 600 | 600 | 100 |
| ADB34 | 225 | 225 | 50 | ADB68 | 600 | 600 | 150 |

IP68 Enclosures

Abtech have been providing IP68 solutions for over twenty years utilising the SX range of enclosures to provide a lightweight and cost effective answer to customers requirements.

We can provide an enclosure to suit most applications up to 50 meters and continuous immersion. Third party certification can also be provided, giving you the customer, complete confidence in the enclosure.

Contact us with your requirements, giving details of equipment or components to be housed, depth of immersion and length of time to be immersed.

- IP68 to BS EN 60529 (IEC 529).
- Lightweight Construction.
- Ease of Access for Installation and Maintenance.
- Excellent Corrosion Resistance to suit the most onerous environments, (316 Grade Stainless Steel).



Abtech have many years experience in providing innovative solutions for power connections in hazardous areas for both low and high voltage applications and we have extended this approach to now provide a cost effective alternative to flameproof (EExd) panels for power distribution. We can now provide RCD/MCB, isolators, ammeters etc mounted in the famous Abtech SX enclosure in either EExde for zone 1 areas or EExnR for zone 2 areas.

This offers low cost, lower weight, easy installation and reduced maintenance over traditional flameproof enclosures.

This service is also available for non hazardous distribution requirements.



- IP66/67 to BS EN 60529 (IEC 529).
- Weight Advantage over Exd panels.
- Ease of installation and maintenance.
- Greater flexibility to meet customer requirements.
- Excellent corrosion resistance (316 Grade Stainless Steel).

Specialist Enclosures

Abtech already manufacture the largest EExe junction box in the world (2m x 2m x 0.5m) and have been called on by some of the largest companies in the world to provide specialist enclosures for unique applications. The Channel Tunnel, arguably one of the most difficult engineering projects of the last century, called on Abtech to provide over 12000 high specification junction boxes and escape lighting actuators (pictured right) for this prestigious project.

Abtech have also supplied enclosures for fire protection of essential circuits on many projects and can provide protection to IEC331 (750°C for 3 hours), 950°C for 3 hours and UL 1709 (1100°C for 20 mins).

Whatever your enclosure requirements, Abtech have the experience and flexibility to provide a cost effective solution.



With factories in the United Kingdom, Germany and the United States and a network of agents and distributors throughout the world we are always being asked to explain the various protection concepts and the relationship between IEC (European) and NEC (North American) standards. Using our own experience coupled with advice from various standards institutes we have produced a poster which we hope will help explain some of the intricacies of this subject.



| Symbol | Permitted Zone | ATEX Category | CENELEC Standard | IEC Standard |
|--------|----------------|---------------|------------------|--------------|
| Ex d | 1 & 2 | 2 & 3 | EN50018 | 79-1 |
| Ex nc | 2 | 3 | EN50021 | 79-1 |
| Ex q | 1 & 2 | 2 & 3 | EN50017 | 79-5 |
| Ex e | 1 & 2 | 2 & 3 | EN50018 | 79-7 |
| Ex nA | 2 | 3 | EN50021 | 79 |
| Ex i | 0, 1 & 2 | 1, 2 & 3 | EN50070 | 79-2 |
| Ex s | 1 & 2 | 2 & 3 | EN50070 | 79-2 |

IEC protection concepts, their associated standard and a brief explanation of the principle involved.

| CENELEC / IEC | ATEX | UL - NEC 500 |
|-----------------------|-----------------------|-----------------------|
| Zone 0 (Zone 20 dust) | Zone 1 (Zone 21 dust) | Zone 2 (Zone 22 dust) |
| Category 1 G | Category 2 G | Category 3 G |
| Category 1 D | Category 2 D | Category 3 D |
| Division 1 | Division 1 | Division 2 |

Visual explanation of both IEC and NEC area classification.



Explanation of the various different markings which can be found on both IEC and NEC equipment.

| Type | IPXXE |
|--------|-------|
| 1 | 11 |
| 2 | 11 |
| 3 | 54 |
| 3R | 14 |
| 3S | 54 |
| 4 & 4X | 66 |
| 5 | 52 |
| 6 | 67 |

4. Explanation of Nema Ratings, Ingress Protection Ratings and their relationship to each other.

Whilst we believe that this poster will help answer many of the questions you may have regarding the subject of hazardous area certification we will be only too pleased to advise further on this subject. Please telephone the sales desk or contact us by email.

European Offshore

| | |
|-------------------------------|--|
| AGIP | Tiffany |
| Amerada Hess | Rob Roy, Ivanhoe, Scott |
| Britoil/B.P. | Beatrice, Thistle, Clyde |
| British Gas | Morecambe Bay Phase 1 & 2, Morecambe Bay Onshore, Roughs Project, Armada |
| BP KGXX Expansion | Scotland |
| British Petroleum | ULA (Norway), South East Forties, Wytch Farm, Miller, Bruce, Andrew, Cleeton |
| Chevron | Alba |
| Channel Tunnel | UK/France |
| Conoco | Murchison, Hutton, Complete Southern Basin Development, Caister/Murdoch Development, Heidrun |
| Elf Elgin/Franklin | North Sea |
| ETAP | North Sea |
| Foster Wheeler Irish Refining | Ireland |
| Humber Refinery | UK |
| Hamilton | Esmond, Duncan, Ravenspurn North, Liverpool Bay Development |
| Numerous Water Authorities | UK |
| Mobil | Beryl, Beryl Refit |
| Norsk Hydro | Oseberg 2 |
| Occidental Petroleum | Claymore, Piper, Saltire |
| Shell | Tern, Eider, Sole Pit, Kittiwake, Gannet, Galleon, Pelican |
| Texaco | Captain |
| Total | North Alwyn, And, St. Fergus Terminal |

Major Projects Worldwide

| | |
|--------------|--|
| Abu Dhabi | ADNOC 545 Project, ADNOC Bab-Maqta- Taweelah Gas Pipeline Project, Adma Oppo, MODICS Project |
| Algeria | Sonatrach Project |
| Australia | North West Shelf Project |
| Saudi Arabia | Yanpet Expansin |
| Brunei | Shell |
| Canada | Hibernia Sable Saipem TE Terra Nova |
| China | Bohai Oil Phase 1 & 2 |
| Dubai | Dugas |
| India | ONGC ICP Project, ONGC ICW Project |
| Indonesia | Marathon Oil, Akap, Project, Conoco-Belida Project, |
| Iran | Khorasan Project |
| Malaysia | KVCM Angs A, Angs B |
| Iran | Mitsui Babcock Co-gen |
| Brazil | Petro Bras - Amethyst |
| Qatar | North Field Development Project |
| Saudi Arabia | Aramco GOSP 4 |
| Singapore | ACT-OG-32 Project, Total Bongkot Field Development Project I & II |
| Khazakstan | Tengiz |
| Thailand | Thai Petroleum - Thapp Line |

ENCLOSURE SPECIALISTS FOR THE ELECTRONICS, INSTRUMENTATION,
MARINE, OIL, GAS AND PETRO-CHEMICAL INDUSTRIES



ABTECH Ltd

Sanderson Street, Lower Don Valley, Sheffield S9 2UA, England.

Telephone: 0114 244 2424 Fax: 0114 243 4312

web: www.ab-tech.co.uk email: sales@ab-tech.co.uk

ABTECH Inc

1813 Rotary Drive

Humble, TX 77338

Tel: 281-548-3424

Email: sales@abtech-inc.com

Web: www.abtech-inc.com