## Enclosed Isolators

## ISO 9001:2015 British manufacturer Craig \& Derricott have been designing, manufacturing and supplying low voltage electrical control and switchgear for over 70 years.

Today our customers extend around the world and operate in a wide variety of markets and sectors including Railway, Construction, Ventilation (Fire rated), Explosion proof, Medical, Military, Panel Building and Power \& Distribution. Simply visit our website to find the contact details for your local Area Sales Manager who will be pleased to offer advice.


## Corrosive Environment

When choosing a switch disconnector enclosure, care must be taken to select the most suitable material taking into account the location, level of pollution, temperature, UV levels, vibration and humidity.

Typical enclosure materials include Aluminium, Powder painted Mild Steel or Stainless Steel.
Enclosures that are sealed to IP65 are commonly mistaken as being suitable for all outside environments. A powder painted mild steel or Aluminium enclosure will degrade and corrode under certain environmental conditions.

Installing enclosures in an external environment may also result in condensation forming on the inside of the enclosure, resembling water ingress. This is caused by a difference in temperature between inner and outer surfaces of the enclosure and the most common solution is to fit an anticondensation heater within the enclosure.

When the isolator is subject to chemical cleaning a stainless steel enclosure is recommended although the correct grade of stainless steel must be selected.

If in doubt, please consult our technical department on sales@craigandderricott.com or $+44(0) 1543375541$.

## Product Guide

Comparing todays 'Trade' descriptions to European standards:-

| BS EN 60947-3 Definition | 'Trade' Description | Technical Description |
| :---: | :---: | :---: |
| Switch-disconnector Sym. _- $\alpha$ | Isolator | A 'Disconnector' is a mechanical switch which in the 'Open' position, complies with requirements specified for the isolating function. A 'Disconnector' or 'Isolator' is an offload device and marked 'Isolate elsewhere before opening' they have an AC20/DC20 utilisation category. <br> A 'Switch' is a mechanical switching device capable of making, carrying and breaking current under normal circuit conditions, which may include specified operating overload conditions. They also carry, for a specified time, currents under specified abnormal circuit conditions, such as those of short circuit (i.e. Utilisation category AC23A duty). <br> A 'Switch-disconnector' meets both of these criteria and with a Red/Yellow padlockable handle may also be called a 'Safety Isolator'. |
| Changeover Switch-disconnector Sym. $\qquad$ | Changeover Switch | A 'Changeover' device is used to connect to one of two sources and in this isolation application will require a central 'Off' position. In all other respects it conforms to the 'Switch-disconnector' requirements. |
| Fuse Combination Unit Sym. $\xrightarrow{Q_{-}}$ | Fuse Switch | A 'Fuse Combination Unit' is a combination of a mechanical switching device with fuses in a composite assembly. |

## Ingress Protection

When choosing a control device, apart from the electrical performance, consideration must be given to the environmental conditions in which the device will be placed. The item may be subjected to dust or dirt or it may come in contact with varying degrees of moisture. Indoor conditions will vary considerably but items may well be placed outdoors where the full influence of rain, ice \& snow will be present. Protecting items to varying degrees is detailed in BS EN 60529:1992.

Employing a two digit code the standard defines protection against solid objects and separately protection against moisture i.e.
(protection against solid objects)
(protection against water)

The following extract defines the IP categories used within this document.

| 1st Digit | Protection against solid objects |  |
| :---: | :---: | :---: |
| 0 | Not Protected |  |
| 2 |  | Protected against solid objects greater than Ø12.5 |
| 4 |  | Protected against solid objects greater than Ø1.0 |
| 5 |  | Protected against dust allowing a degree of ingress that isn't harmful to the assembly. |
| 6 |  | No ingress of dust. |


| 2nd Digit | Protection against water |  |
| :---: | :---: | :---: |
| 0 | Not Protected |  |
| 1 |  | Protected against <br> dripping water. |
| 4 |  | Protected against <br> splashed water from any <br> direction. |
| 6 |  |  |
|  |  |  |

Please refer to BS EN 60529:1992 for full details.

## Enclosed Switchgear

## Moulded Plastic Switchgear

A range of moulded plastic enclosed rotary switchgear with sealing up to IP66. This range incorporates a mechanical interlock which when a padlock is inserted prevents the enclosure lid from being removed. The units have the ability to add a selection of auxiliary blocks providing additional contacts and a choice of Neutral assemblies. Compliant to IEC / BS EN 60947-3.

## Safety Features

## Padlocking

All units allow for the insertion of up to three padlocks in the 'Off' position thus preventing the isolator being switched to the 'On' position.

Standard shackle diameter Ø6.4


## Design Features

Enclosure

| Material | 20A-63A PC/ABS |
| :--- | :--- |
| Colour | 80A-100A PC |
| Entries | Enclosure - Grey RAL 7035 |
|  | Size A Enclosure $-2 \times$ M20 knock-outs on |
|  | top \& bottom faces. |
|  | Size B Enclosure $-2 \times$ M20/25 knock-outs |
|  | on top \& bottom faces. |
|  | Back face - $2 \times$ M20 knock-outs. |
|  | Size C \& D Enclosures - Blank sides. |
|  | Size E Enclosure - $2 \times$ M20 knock-outs on |
|  | top \& bottom faces. |
| Cover Screws | Stainless Steel (Captive) |
| Fixings | Outside sealed cavity. |
| IP Rating | Size A IP66 |
|  | Size B-D IP65 |
|  | Size E IP66 |

## Switch-Disconnectors

| $2 \& 3$ Pole | Type CS - base mounted. <br> (Accepts add-on Aux. blocks \& Neutrals) |
| :--- | :--- |
| 6 Pole | Type GX - base mounted. <br> (also available with 2 E/B Aux.) | Page 31

Changeover Switch-Disconnectors
2, 3 \& 4 Pole Type GX - base mounted.

## Earthing

Earth terminals are provided in the base of the enclosures.

## Enclosed Switchgear

Switch-Disconnectors (O-I)
___ Changeover Switch-Disconnectors (I-O-II) $\qquad$ -

Catalogue Numbers

| Rating | Format | Interior Switch product range | Cat. No. | Enclosure Size |
| :---: | :---: | :---: | :---: | :---: |
| 20A | 6P | GX20 | EDP206 | E |
|  | 6P+2EB Aux | GX20 | EDP206EB |  |
| 25A | 2P | CS25 | EDP252 | E |
|  | 3P | CS25 | EDP253 |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ | CS25 | EDP253NL |  |
|  | $3 \mathrm{P}+\mathrm{N}$ | CS25 | EDP253N |  |
|  | 3P+2EB Aux | CS25 | EDP253EB |  |
| 32A | 2 P | CS32 | EDP322 | E |
|  | 3P | CS32 | EDP323 |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ | CS32 | EDP323NL |  |
|  | $3 \mathrm{P}+\mathrm{N}$ | CS32 | EDP323N |  |
|  | 3P+2EB Aux | CS32 | EDP323EB |  |
| 40A | 2P | CS40R | SDP402 | B |
|  | 3P | CS40R | SDP403 |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ | CS40R | SDP403NL |  |
|  | $3 \mathrm{P}+\mathrm{N}$ | CS40R | SDP403N |  |
|  | $3 \mathrm{P}+2 \mathrm{~EB}$ Aux | CS40R | SDP403EB |  |
|  | 6P | GX40 | SDP406 |  |
|  | 6P+2EB Aux | GX40 | SDP406EB |  |
| 63A | 2 P | CS63 | SDP632 | B |
|  | 3P | CS63 | SDP633 |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ | CS63 | SDP633NL |  |
|  | $3 \mathrm{P}+\mathrm{N}$ | CS63 | SDP633N |  |
|  | $3 \mathrm{P}+2 \mathrm{~EB}$ Aux | CS63 | SDP633EB |  |
| 80A | 2P | CS80 | SDP802 | C |
|  | 3P | CS80 | SDP803 |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ | CS80 | SDP803NL |  |
|  | $3 \mathrm{P}+\mathrm{N}$ | CS80 | SDP803N |  |
|  | 3P+2EB Aux | CS80 | SDP803EB |  |
| 100A | 2P | CS100 | SDP1002 | D |
|  | 3P | CS100 | SDP1003 |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ | CS100 | SDP1003NL |  |
|  | $3 \mathrm{P}+\mathrm{N}$ | CS100 | SDP1003N |  |
|  | 3P+2EB Aux | CS100 | SDP1003EB |  |


| Rating | Format | Interior Switch <br> product range | Cat. No. | Enclosure <br> Size |
| :---: | :---: | :---: | :---: | :---: |
| 20A | 2 P | GX20 | SCODP202 | A |
|  | $3 P$ | GX20 | SCODP203 |  |
|  | 4 P | GX20 | SCODP204 |  |
| 40A | 2 P | GX40 | SCODP402 | B |
|  | $3 P$ | GX40 | SCODP403 |  |

## Accessories

Applicable to type 'CS' interiors only

| Description | Cat. No. |
| :--- | :---: |
| Auxiliary Contact - 2 Early Break | SAUX2EB |
| Auxiliary Contact - 1 N/O + 1 N/C | SAUXCO |
| 25A - 40A Compact Neutral (Unswitched) | SNLC40 |
| 63A Neutral (Unswitched) | SNL63 |
| 80A Neutral (Unswitched) | SNL80 |
| 100A Neutral (Unswitched) | SNL100 |
| 25A Neutral (Switched) | SSP25 |
| 32A \& 40A Neutral (Switched) | SSP40 |
| 63A Neutral (Switched) | SSP63 |
| 80A Neutral (Switched) | SSP80 |
| 100A Neutral (Switched) | SSP100 |

' N ' = switched neutral (Early make, late break)
' NL ' = Unswitched neutral
'EB' = Early break auxiliary contacts
Add suffix '/10' to the part number for padlocking in the 'On' position e.g. EDP253/10 Manager for more information.

Note: 20A - 32A are available in Size A enclosure. Contact your local Area Sales


Exploded view showing a type CS switch disconnector interior with Auxiliary/Neutral options

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## Enclosed Switchgear

## Die-Cast Aluminium Switchgear

A range of die-cast aluminium enclosed rotary switchgear with sealing up to IP66. These units can be placed in environments where resistance to impacts, moisture and dust/dirt are a concern. The option to add a selection of auxiliary blocks providing additional contacts and a choice of Neutral assemblies increases the flexibility of the product range. Compliant to IEC / BS EN 60947-3.


## Safety Features

Screwed lid enclosures have always been open to abuse by having the lid removable when the isolator is 'Off' and padlocked. This would allow the switch shaft to be turned manually to the 'On' position, thus defeating the safety padlocking feature.

The 'i-switch' range now incorporates a mechanical interlock which when a padlock is inserted prevents the enclosure lid from being removed.

## Enclosure

Material: Die cast aluminium alloy LM24 (BS1490)

## Entries

## Size A 20A-32A

Std Cat No. : 2 xM 20 on bottom face
Suffix $\mathrm{X} \quad: 2 \mathrm{xM} 25$ on bottom face

## Size A

40A
Std Cat No. : 2xM25 on bottom face
Suffix $X \quad: 2 x M 25$ on bottom face

## Size B 40A

Std Cat No. : $2 \mathrm{xM} 25+1 \times \mathrm{M} 20$ on bottom face

Paint finish: Grey - RAL 7035 / Red - RAL 3020.

## Size B <br> 63A

Std Cat No. : $2 \times \mathrm{M} 25+1 \times \mathrm{M} 20$ on bottom face
Suffix $X \quad: 2 x M 32+1 \times M 16$ on bottom face
Size B 80A
Std Cat No. : $2 \times \mathrm{M} 32+1 \times \mathrm{M} 20$ on bottom face
Suffix $X \quad: 2 x M 32+1 \times M 16$ on bottom face
IP Rating Size A IP66
Size B IP65

Maximum number of possible entries:- Size A - 4 (2 Top+2 Bottom) / Size B - 6 (3 Top+3 Bottom)
Cover Screws: Stainless Steel (Captive)
Earthing: Terminals are provided on both lid and base to allow full earth continuity to be maintained.
Mounting: All fixings are internal but outside of the IP sealed area. Guide channels are provided to assist with the fixing screw location.

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Switch－Disconnectors（O－I）
a－
$\mathrm{C} / \mathrm{O}$ Switch－Disconnectors（I－O－II）＿＿＿$\square$
Catalogue Numbers

| Rating | Format | Interior Switch product range | Catalogue Nos． |  | Enclosure Size |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Grey | Red |  |
| 20A | 6P | GX20 | SDDG206 | SDDR206 | A |
|  | 6P＋2EB Aux | GX20 | SDDG206EB | SDDR206EB |  |
| 25A | 2P | CS25 | SDDG252 | SDDR252 | A |
|  | 3P | CS25 | SDDG253 | SDDR253 |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ | CS25 | SDDG253NL | SDDR253NL |  |
|  | $3 \mathrm{P}+\mathrm{N}$ | CS25 | SDDG253N | SDDR253N |  |
|  | 3P＋2EB Aux | CS25 | SDDG253EB | SDDR253EB |  |
| 32A | 2 P | CS32 | SDDG322 | SDDR322 | A |
|  | 3P | CS32 | SDDG323 | SDDR323 |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ | CS32 | SDDG323NL | SDDR323NL |  |
|  | $3 \mathrm{P}+\mathrm{N}$ | CS32 | SDDG323N | SDDR323N |  |
|  | 3P＋2EB Aux | CS32 | SDDG323EB | SDDR323EB |  |
| 40A | 2 P | CS40R | SDDG402X | SDDR402X | A |
|  | 3P | CS40R | SDDG403X | SDDR403X |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ | CS40R | SDDG403NLX | SDDR403NLX |  |
|  | $3 \mathrm{P}+\mathrm{N}$ | CS40R | SDDG403NX | SDDR403NX |  |
|  | 3P＋2EB Aux | CS40R | SDDG403EBX | SDDR403EBX |  |
|  | 2P | CS40R | SDDG402 | SDDR402 | B |
|  | 3P | CS40R | SDDG403 | SDDR403 |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ | CS40R | SDDG403NL | SDDR403NL |  |
|  | $3 \mathrm{P}+\mathrm{N}$ | CS40R | SDDG403N | SDDR403N |  |
|  | 3P＋2EB Aux | CS40R | SDDG403EB | SDDR403EB |  |
|  | 6P | GX40 | SDDG406 | SDDR406 |  |
|  | 6P＋2EB Aux | GX40 | SDDG406EB | SDDR406EB |  |
| 63A | 2P | CS63 | SDDG632 | SDDR632 | B |
|  | 3P | CS63 | SDDG633 | SDDR633 |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ | CS63 | SDDG633NL | SDDR633NL |  |
|  | $3 \mathrm{P}+\mathrm{N}$ | CS63 | SDDG633N | SDDR633N |  |
|  | 3P＋2EB Aux | CS63 | SDDG633EB | SDDR633EB |  |
|  | 6P | CS63 | SDDG636 | SDDR636 |  |
|  | 6P＋2EB Aux | CS63 | SDDG636EB | SDDR636EB |  |
| 80A | 3P | CS80 | SDDG803 | SDDR803 | B |
|  | $3 \mathrm{P}+\mathrm{NL}$ | CS80 | SDDG803NL | SDDR803NL |  |
|  | $3 \mathrm{P}+\mathrm{N}$ | CS80 | SDDG803N | SDDR803N |  |


| Rating | Format | Interior Switch product range | Cat．No． | Enclosure Size |
| :---: | :---: | :---: | :---: | :---: |
| 20A | 2P | GX20 | SCODDG202 | A |
|  | 3P | GX20 | SCODDG203 |  |
|  | 4P | GX20 | SCODDG204 |  |
| 40A | 2 P | GX40 | SCODDG402 | B |
|  | 3P | GX40 | SCODDG403 |  |
|  | 4P | GX40 | SCODDG404 |  |

The size＇ B ＇enclosure is available with＇Start／Stop＇or ＇Start／Emergency Stop＇pushbuttons．

## Accessories

See page 4 for details．

[^0]

Exploded view of a die cast assembly showing the type
＇CS＇isolator interior．

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## Enclosed Switchgear

## Stainless Steel Switchgear

A range of switchgear housed in Grade 304 stainless steel enclosures sealing to IP66. As a standard feature the units have the ability to add a selection of auxiliary blocks providing additional contacts and a choice of Neutral assemblies. External mounting feet in stainless steel are offered as an accessory sized to match each enclosure. All units are supplied with a handle manufactured from a material suitable to withstand cleaning products containing sodium hydroxide.

## Standard Switch-Disconnectors (O-I)

Catalogue Numbers

| Rating | Format | Interior Switch product range | Cat. No. | Enclosure Size (IP66) |
| :---: | :---: | :---: | :---: | :---: |
| 20A | 6P | GX20 | SDS206 | A |
|  | 6P+2EB Aux | GX20 | SDS206EB |  |
| 25A | 2 P | CS25 | SDS252 | A |
|  | 3P | CS25 | SDS253 |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ | CS25 | SDS253NL |  |
|  | $3 \mathrm{P}+\mathrm{N}$ | CS25 | SDS253N |  |
|  | 3P+2EB Aux | CS25 | SDS253EB |  |
| 32A | 2P | CS32 | SDS322 | A |
|  | 3P | CS32 | SDS323 |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ | CS32 | SDS323NL |  |
|  | $3 \mathrm{P}+\mathrm{N}$ | CS32 | SDS323N |  |
|  | 3P+2EB Aux | CS32 | SDS323EB |  |
| 40A | 2P | CS40R | SDS402 | B |
|  | 3P | CS40R | SDS403 |  |
|  | 3P+NL | CS40R | SDS403NL |  |
|  | $3 \mathrm{P}+\mathrm{N}$ | CS40R | SDS403N |  |
|  | 3P+2EB Aux | CS40R | SDS403EB |  |
|  | 6P | GX40 | SDS406 |  |
|  | 6P+2EB Aux | GX40 | SDS406EB |  |
| 63A | 2 P | CS63 | SDS632 | B |
|  | 3P | CS63 | SDS633 |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ | CS63 | SDS633NL |  |
|  | $3 \mathrm{P}+\mathrm{N}$ | CS63 | SDS633N |  |
|  | 3P+2EB Aux | CS63 | SDS633EB |  |

[^1]

Safety Features
See page 3 for details.

## Design Features

## Enclosure

Material: Brushed Satin Stainless steel, Grade 304, thickness 1.2 mm (Grade 316 to special order).

Entries: Size A - $2 \times \mathrm{M} 20$ / Size B-2 x M20 + $2 \times \mathrm{M} 25$
Cover Screws: Stainless Steel (Captive)
External Feet: Size A - Cat. No. EFA / Size B - Cat. No. EFB
Earthing: Earth continuity terminals are provided in the base and lid of each enclosure.

Changeover Switch-Disconnectors (I-O-II) __ $a$ Catalogue Numbers

| Rating | Format | Interior Switch <br> product range | Cat. No. | Enclosure <br> Size |
| :---: | :---: | :---: | :---: | :---: |
| 20 A | 2 P | GX20 | SCODS202 | A |
|  | 3 P | GX20 | SCODS203 |  |
|  | 4 P | GX20 | SCODS204 |  |
| 40 A | 2 P | GX40 | SCODS402 | B |
|  | 3 P | GX40 | SCODS403 |  |
|  | 4 P | GX40 | SCODS404 |  |

## Accessories

See page 4 for details.

## Enclosed Switchgear

## Stainless Steel Sloping Roof Switchgear

A range of switchgear housed in Grade 304 stainless steel enclosures, supplied with a specially designed stainless steel 'sloping roof'. These units are ideally suited for hygienic environments with their associated severe cleaning routines. The design has been created to minimise areas where dirt can accumulate and incorporates a flush rear surface and universal fixing that include IP66 sealings. All units are supplied with a handle manufactured from a material suitable to withstand cleaning products containing sodium hydroxide.


| Switch-Disconnectors (O-I) |  |  |  | a- |
| :---: | :---: | :---: | :---: | :---: |
| Catalogue Numbers |  |  |  |  |
| Rating | Format | Interior Switch product range | Cat. No. | Encl. Size (IP66) |
| 20A | 6P | GX20 | SDSSR206 | A |
|  | 6P+2EB AUX | GX20 | SDSSR206EB |  |
| 25A | 2 P | CS25 | SDSSR252 | A |
|  | 3P | CS25 | SDSSR253 |  |
|  | 3P+2EB AUX | CS25 | SDSSR253EB |  |
|  | $3 \mathrm{P}+\mathrm{N}$ | CS25 | SDSSR253N |  |
| 32A | 2 P | CS32 | SDSSR322 | A |
|  | 3P | CS32 | SDSSR323 |  |
|  | 3P+2EB AUX | CS32 | SDSSR323EB |  |
|  | $3 \mathrm{P}+\mathrm{N}$ | CS32 | SDSSR323N |  |
| 40A | 2 P | CS40R | SDSSR402 | B |
|  | 3P | CS40R | SDSSR403 |  |
|  | 3P+2EB AUX | CS40R | SDSSR403EB |  |
|  | $3 \mathrm{P}+\mathrm{N}$ | CS40R | SDSSR403N |  |
|  | 6P | GX40 | SDSSR406 |  |
|  | 6P+2EB AUX | GX40 | SDSSR406EB |  |
| 63A | 2P | CS63 | SDSSR632 | B |
|  | 3P | CS63 | SDSSR633 |  |
|  | $3 P+2 E B A U X$ | CS63 | SDSSR633EB |  |
|  | $3 \mathrm{P}+\mathrm{N}$ | CS63 | SDSSR633N |  |
| 80A | 2P | CS80 | SDSSR802 | B |
|  | 3P | CS80 | SDSSR803 |  |
|  | 3P+2EB AUX | CS80 | SDSSR803EB |  |
|  | $3 \mathrm{P}+\mathrm{N}$ | CS80 | SDSSR803N |  |

'N' - switched neutral (Early make, late break) 'EB' = Early break auxiliary contacts

## Safety Features

See page 3 for details.

## Design Features

## Enclosure

Material: Brushed Satin Stainless steel, Grade 316, thickness 1.2 mm body, 1.5 mm lid. ( $15^{\circ}$ Slope)

Entries: The enclosures are supplied as standard without entries. Optional pre-drilled bottom entries can be supplied as follows:Size A - 2xM20 (add M20 to cat No.) Size B - 2xM25 (add M25 to cat No.) E.g. SDSSR322/M20, SDSSR403N/M25

Cover Screws: Stainless Steel (Captive)
Fixings: Universal fixings across the range.
Earthing: Earth continuity terminals are provided in the base and lid of each enclosure.


Section view showing the enclosures flush rear face with 'sealed' fixings that ensure the IP66 seal is maintained.

## Accessories

See page 4 for details.
Technical

## Sheet Steel Flush Mounting Switchgear

A range of flush mounting isolators ranging 20A to 63A, supplied with a sheet steel back box and stainless steels fascia plate sealed up to IP65. All units are supplied with a handle manufactured from a material suitable to withstand cleaning products containing sodium hydroxide. Suitable for installation in kitchens, laboratories, food processing areas, hospitals and many other area.


## Design Features

## Enclosure

Fascia plate: Brushed Stainless steel 304, thickness 1.2 mm
Back box: Galvanised Sheet steel, thickness 1.4mm
Entries: Knockouts in back box
Sealing: Isolating switch to stainless steel fascia plate IP65
Fascia plate securing screws: Stainless steel (M5 x 25 with 'Allen Key' head).

Earthing: Separate earthing points on fascia plate \& back box

| Switch-Disconnectors (O-I) |  |  |  | - $a$ |
| :---: | :---: | :---: | :---: | :---: |
| Catalogue Numbers |  |  |  |  |
| Rating | Format | Interior Switch product range | Cat. No. | $\begin{aligned} & \text { Enclosure } \\ & \text { Size } \end{aligned}$ |
| 20A | 2P | GX | SDFL202 | A |
|  | 3P |  | SDFL203 |  |
|  | 4P |  | SDFL204 |  |
| 32A | 2P | GX | SDFL322 | B |
|  | 3P |  | SDFL323 |  |
|  | 4P |  | SDFL324 |  |
| 40A | 2P | GX | SDFL402 | B |
|  | 3P |  | SDFL403 |  |
|  | 4P |  | SDFL404 |  |
| 63A | 2P | GN | SDFL632 | C |
|  | 3P |  | SDFL633 |  |
|  | 4P |  | SDFL634 |  |

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## Installation

Whilst the joint between the isolating switch and the stainless steel fascia plate is factory sealed to IP65 min, when installed, the fascia to mounting surface seal is the responsibility of the installer.

To maintain the sealing overall, an efficient bond must be made using some form of gasketing material. This is particularly vital on tiled surfaces where grout lines can channel moisture down the wall.

A continuous bead of moisture resistant mastic is a simple way of providing a seal, and can improve the appearance of the final assembly on an uneven surface.

'D' max $=20 \mathrm{~mm}$ with standard length mounting screws

## Enclosed Switchgear

## Sheet Steel Switchgear

A range of sheet steel enclosed switchgear sealing to IP66, providing the user with a robust and cost effective assembly. A selection of auxiliary blocks can be provided as additional contacts as well as a choice of Neutral assemblies. External mounting feet in stainless steel are offered as an accessory sized to match each enclosure.


## Enclosed Switchgear

## Sheet Steel IP41 Switchgear

Supplied in 'hinged door' grey powder coated sheet steel enclosures, these IP41 sealed assemblies are suitable for most indoor industrial applications. Supplied as 'Switch-Disconnectors' or 'Fuse Combination Units' all items are supplied in generously sized enclosures which helps to avoid the need for extension boxes.


Switch-Disconnectors (O-I)
Catalogue Numbers

| Rating | Format | Cat. No. | Encl. Size |
| :---: | :---: | :---: | :---: |
| 32A | $3 \mathrm{P}+\mathrm{N}$ | SD41G00323N | 1 |
|  | $3 \mathrm{P}+\mathrm{NL}$ | SD41G00323NL | 1 |
| 63A | $3 \mathrm{P}+\mathrm{N}$ | SD41G00633N | 1 |
|  | $3 \mathrm{P}+\mathrm{NL}$ | SD41G00633NL | 1 |
|  | $6 \mathrm{P}+2 \mathrm{E} / \mathrm{B}$ | SD41G00636EB | 2 |
| 80A | $3 \mathrm{P}+\mathrm{N}$ | SD41GC00803N | 1 |
|  | $3 \mathrm{P}+\mathrm{NL}$ | SD41GC00803NL | 1 |
| 100A | $3 \mathrm{P}+\mathrm{N}$ | SD41GC01003N | 3A |
|  | $3 \mathrm{P}+\mathrm{NL}$ | SD41GC01003NL | 3A |
| 125A | $3 \mathrm{P}+\mathrm{N}$ | SD41GC01253N | 4A |
|  | $3 \mathrm{P}+\mathrm{NL}$ | SD41GC01253NL | 4A |
| 160A | $3 \mathrm{P}+\mathrm{N}$ | SD41GC01603N | 4A |
|  | $3 \mathrm{P}+\mathrm{NL}$ | SD41GC01603NL | 4A |
| 200A | $3 \mathrm{P}+\mathrm{N}$ | SD41GC02003N | 5A |
|  | $3 \mathrm{P}+\mathrm{NL}$ | SD41GC02003NL | 5A |
| 250A | $3 \mathrm{P}+\mathrm{N}$ | SD41G02503N | 5 |
|  | $3 \mathrm{P}+\mathrm{NL}$ | SD41G02503NL | 5 |
| 400A | $3 \mathrm{P}+\mathrm{N}$ | SD41G04003N | 6 |
|  | $3 \mathrm{P}+\mathrm{NL}$ | SD41G04003NL | 6 |
| 630A | $3 \mathrm{P}+\mathrm{N}$ | SD41G06303N | 8 |
|  | $3 \mathrm{P}+\mathrm{NL}$ | SD41G06303NL | 8 |
| 800A | $3 \mathrm{P}+\mathrm{N}$ | SD41G08003N | 8 |
|  | $3 \mathrm{P}+\mathrm{NL}$ | SD41G08003NL | 8 |
| 1000A | $3 \mathrm{P}+\mathrm{N}$ | SD41G10003N | 10 |
|  | $3 \mathrm{P}+\mathrm{NL}$ | SD41G10003NL | 10 |

' N ' = switched neutral
'NL' = Unswitched neutral (100\% rated 32A-200A, 50\% rated 250A-1000A) 'EB' = Early break auxiliary contacts

## Design Features

- Safety handle - when padlocked in the 'Off' position, the enclosure door cannot be opened. Capable of accepting up to three padlocks in the 'Off' position. (Locking in 'On' position on request)
- Door interlock handle can be defeated to enable emergency opening or for testing purposes. (Must be carried out by a competent person)
- Removable gland plates on top \& bottom of enclosures 200A and above.
- Enclosure size 2 and above switches are mounted on a removable galvanised chassis plate.
- All Fuse Combination Units are supplied complete with a set of fully rated fuse links.
- Terminal covers are supplied for incoming terminals.
- Earth terminals fitted to door and gland plates.


## Fuse Combination Units (O-I)



Catalogue Numbers

| Rating | Format | Cat. No. | Enclosure <br> Size |
| :---: | :---: | :---: | :---: |
| 32 A | $3 \mathrm{P}+\mathrm{NL}$ | SDF41G00323N | 2 |
| 63 A | $3 \mathrm{P}+\mathrm{NL}$ | SDF41G00633N | 2 |
| 100 A | $3 \mathrm{P}+\mathrm{NL}$ | SDF41G01003N | 4 A |
| 125 A | $3 \mathrm{P}+\mathrm{NL}$ | SDF41G01253N | 4 |
| 160 A | $3 \mathrm{P}+\mathrm{NL}$ | SDF41G01603N | 4 |
| 200 A | $3 \mathrm{P}+\mathrm{NL}$ | SDF41G02003N | 5 |
| 250 A | $3 \mathrm{P}+\mathrm{NL}$ | SDF41G02503N | 5 |
| 315 A | $3 \mathrm{P}+\mathrm{NL}$ | SDF41G03153N | 6 |
| 400 A | $3 \mathrm{P}+\mathrm{NL}$ | SDF41G04003N | 6 |
| 630 A | $3 \mathrm{P}+\mathrm{NL}$ | SDF41G06303N | 8 |

Please note Fuse Combination Units are supplied unswitched neutral.

## Sheet Steel IP65 Switchgear

In addition to the basic features of the IP41 enclosed range, the IP65 sealed family of products introduces assemblies suitable for indoor and outdoor industrial installations. Supplied as 'Switch-Disconnectors', 'Fuse Combination Units' and 'Changeover SwitchDisconnectors' all items are supplied in generously sized enclosures with removable top and bottom gland plates. Stainless steel enclosures are available on request for the more severe environments.


## Design Features

- Safety handle - when padlocked in the 'Off' position, the enclosure door cannot be opened. Capable of accepting up to three padlocks in the 'Off' position. ('On' position on request).
- Door interlock handle can be defeated to enable emergency opening or for testing purposes.
- Removable gland plates on top \& bottom of all enclosures.
- Enclosure size 2 and above switches are mounted on a removable galvanised chassis plate.
- All Fuse Combination Units are supplied complete with a set of fully rated fuse links.
- Changeover Switch-Disconnectors in four pole format.
- Castell Lock options available on request.
- Enclosures finished Red (RAL 3020) are available to order, please contact our Sales team for details.

Switch-Disconnectors (O-I)


Fuse Combination Units (O-I)


Catalogue Numbers

| Rating | Format | Sheet steel | Stainless Steel | Encl. Size |
| :---: | :---: | :---: | :---: | :---: |
| 32A | $3 \mathrm{P}+\mathrm{N}$ | SDG00323N | SDS00323N | 1 |
|  | 3P+NL | SDG00323NL | SDS00323NL | 1 |
| 63A | $3 \mathrm{P}+\mathrm{N}$ | SDG00633N | SDS00633N | 1 |
|  | $3 \mathrm{P}+\mathrm{NL}$ | SDG00633NL | SDS00633NL | 1 |
|  | 6P+2E/B | SDG00636EB | SDS00636EB | 2 |
| 80A | $3 \mathrm{P}+\mathrm{N}$ | SDGC00803N | SDSC00803N | 1 |
|  | 3P+NL | SDGC00803NL | SDSC00803NL | 1 |
| 100A | $3 \mathrm{P}+\mathrm{N}$ | SDGC01003N | SDSC01003N | 3A |
|  | $3 \mathrm{P}+\mathrm{NL}$ | SDGC01003NL | SDSC01003NL | 3A |
| 125A | $3 \mathrm{P}+\mathrm{N}$ | SDGC01253N | SDSC01253N | 4A |
|  | 3P+NL | SDGC01253NL | SDSC01253NL | 4A |
| 160A | $3 \mathrm{P}+\mathrm{N}$ | SDGC01603N | SDSC01603N | 4A |
|  | $3 \mathrm{P}+\mathrm{NL}$ | SDGC01603NL | SDSC01603NL | 4A |
| 200A | $3 \mathrm{P}+\mathrm{N}$ | SDGC02003N | SDSC02003N | 5A |
|  | $3 \mathrm{P}+\mathrm{NL}$ | SDGC02003NL | SDSC02003NL | 5A |
| 250A | $3 \mathrm{P}+\mathrm{N}$ | SDG02503N | SDS02503N | 5 |
|  | 3P+NL | SDG02503NL | SDS02503NL | 5 |
| 400A | $3 \mathrm{P}+\mathrm{N}$ | SDG04003N | SDS04003N | 6 |
|  | $3 \mathrm{P}+\mathrm{NL}$ | SDG04003NL | SDS04003NL | 6 |
| 630A | $3 \mathrm{P}+\mathrm{N}$ | SDG06303N | SDS06303N | 8 |
|  | 3P+NL | SDG06303NL | SDS06303NL | 8 |
| 800A | $3 \mathrm{P}+\mathrm{N}$ | SDG08003N | SDS08003N | 8 |
|  | $3 \mathrm{P}+\mathrm{NL}$ | SDG08003NL | SDS08003NL | 8 |
| 1000A | $3 \mathrm{P}+\mathrm{N}$ | SDG10003N | SDS10003N | 10 |
|  | $3 \mathrm{P}+\mathrm{NL}$ | SDG10003NL | SDS10003NL | 10 |


| Rating | Format | Sheet steel | Stainless Steel | Encl. Size |
| :---: | :---: | :---: | :---: | :---: |
| 32A | $3 P+N L$ | SDFG00323N | SDFS00323N | 2 |
| 63A | $3 P+N L$ | SDFG00633N | SDFS00633N | 2 |
| 100A | $3 P+N L$ | SDFG01003N | SDFS01003N | 3 |
| 125A | $3 P+N L$ | SDFG01253N | SDFS01253N | 4 |
| 160A | $3 P+N L$ | SDFG01603N | SDFS01603N | 4 |
| 200A | $3 P+N L$ | SDFG02003N | SDFS02003N | 5 |
| $250 A$ | $3 P+N L$ | SDFG02503N | SDFS02503N | 5 |
| $315 A$ | $3 P+N L$ | SDFG03153N | SDFS03153N | 6 |
| $400 A$ | $3 P+N L$ | SDFG04003N | SDFS04003N | 6 |
| $630 A$ | $3 P+N L$ | SDFG06303N | SDFS06303N | 8 |

Changeover Switch Disconnectors (I-O-II)
a-

| Rating | Format | Sheet steel | Stainless Steel | Encl. Size |
| :---: | :---: | :---: | :---: | :---: |
| 63A | 4P C/O | SCODGC00634 | SCODSC00634 | 3 |
| 100A | 4P C/O | SCODGC01004 | SCODSC01004 | 3 |
| 125A | 4P C/O | SCODGC01254 | SCODSC01254 | 5 |
| 160A | 4P C/O | SCODGC01604 | SCODSC01604 | 5 |
| 200A | 4P C/O | SCODGC02004 | SCODSC02004 | 5 |
| 250A | 4P C/O | SCODG02504 | SCODS02504 | 7 |
| 400A | 4P C/O | SCODG04004 | SCODS04004 | 9 |
| 630A | 4P C/O | SCODG06304 | SCODS06304 | 9 |

N' = switched neutral
'NL' = Unswitched neutral
'EB' = Early break auxiliary contacts

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## Sheet Steel Flagged Switchgear

The provision of a Flag Indicator, driven by the main operating shaft, viewed through a window in the enclosure door provides the user with confirmation of the switch contact state. All assemblies are sealed to IP65 for protection against harsh environments and are supplied with $2 \mathrm{C} / \mathrm{O}$ auxiliary blocks wired down to terminals.

The standard range of Flag isolators are supplied with silver plated conductors but if the product is to be installed in an environment where there is a high amount of Hydrogen Sulfide and Sulphur dioxide we offer the option of Tin plated conductors in order to prevent the growth of Silver whiskers. The type of environments where this usually occurs, is in Chemical plants, Oil refineries, Paper and Pulp industries, Sewage - and Waste water plants.


## Design Features

- Flag indication is operated by the main operating shaft ensuring 'positive contact indication'.
- Flag window -4 mm thick polycarbonate.
- Safety handle - when padlocked in the 'Off' position, the enclosure door cannot be opened. Capable of accepting up to three padlocks in the 'Off' position. (Max. hasp/ shackle dia. 6.4 mm ).
- Door interlock handle can be defeated to enable emergency opening or for testing purposes. (Must be carried out by a competent person).
- Castell Lock options available on request.
- External stainless steel mounting feet optional.
- $\quad$ Sheet steel finish painted RAL 7035. Stainless steel brushed finish grade 304.
- All assemblies are supplied with the switching element mounted on a removable internal chassis plate. Material - 2 mm galvanised steel.
- All gland plate fixings are 'non invasive' i.e. leaving out a gland plate fixing does not compromise the enclosures IP65 sealing.
- All items are supplied with $2 \mathrm{C} / \mathrm{O}$ aux. blocks wired down to terminals (N/O contacts are Early Break when switching 'Off').
- EX Zone 22 versions of these products are available on request. Contact our sales team for more information.

Flagged Switch-Disconnectors (O-I) $\qquad$ Flagged Fuse Combination Units (O-I)
Catalogue Numbers

| Rating | Format | Sheet steel (Grey) | Stainless Steel | Encl. <br> Size |
| :---: | :---: | :---: | :---: | :---: |
| 32 A | $3 \mathrm{P}+\mathrm{N}$ | SDG $00323 \mathrm{~N} / \mathrm{F}$ | SDS00323N/F | 1 F |
| 63 A | $3 \mathrm{P}+\mathrm{N}$ | SDG00633N/F | SDS00633N/F | 1 F |
| 100 A | $3 \mathrm{P}+\mathrm{N}$ | SDG01003N/F | SDS01003N/F | 2 F |
| 125 A | $3 \mathrm{P}+\mathrm{N}$ | SDG01253N/F | SDS01253N/F | 2 F |
| 200 A | $3 \mathrm{P}+\mathrm{N}$ | SDG02003N/F | SDS02003N/F | 4 F |
| 250 A | $3 \mathrm{P}+\mathrm{N}$ | SDG02503N/F | SDS02503N/F | 4 F |
| 400 A | $3 \mathrm{P}+\mathrm{N}$ | SDG04003N/F | SDS04003N/F | 5 F |


| Rating | Format | Sheet steel (Grey) | Stainless Steel | Encl. <br> Size |
| :---: | :---: | :---: | :---: | :---: |
| 32A | $3 P+N$ | SDFG00323N/F | SDFS00323N/F | $1 F$ |
| 63 A | $3 \mathrm{P}+\mathrm{N}$ | SDFG00633N/F | SDFS00633N/F | 1 F |
| 100A | $3 P+N$ | SDFG01003N/F | SDFS01003N/F | $2 F$ |
| 125A | $3 P+N$ | SDFG01253N/F | SDFS01253N/F | $2 F$ |
| 160A | $3 P+N$ | SDFG01603N/F | SDFS01603N/F | $3 F$ |
| 200A | $3 P+N$ | SDFG02003N/F | SDFS02003N/F | $4 F$ |
| 250A | $3 P+N$ | SDFG02503N/F | SDFS02503N/F | $4 F$ |

[^2]
## Enclosed Switchgear



For electrical ratings please refer to Page 31.

## Auxiliary Contacts

Add-on auxiliary blocks are available for all hinged door products. Please select the blocks/kit from the tables below.

All auxiliaries are supplied as 1 N/O+1 N/C pair. All N/O auxiliary contacts are early break with respect to the main poles when switching from 'On’ to 'Off'.

For additional contacts or details regarding auxiliaries for Changeover Switch-Disconnectors please contact our sales team.
For Switch-Disconnectors
Catalogue Numbers

| Rating (A) | $63-200$ | 250 | $400-800$ | 1000 |
| :---: | :---: | :---: | :---: | :---: |
| Cat No | SAUXCO | SAUXKITB | SAUXKITC | SAUXKITD |
| Type | A | C | C | B |

For Fuse Combination Units

| Rating (A) | $32-160$ | $200-400$ | 630 |
| :---: | :---: | :---: | :---: |
| Cat No | SAUXKITA | SAUXKITC | SAUXKITD |
| Type | B | C | B |

## Fuse Links



All of the Fuse Combination Units are supplied fitted with a set of fully rated IEC/BS EN 60269 (BS88) fuse links. Replacements can be supplied as individual fuse links to the table below.

Fuse links can be fitted to a lower rating to suit a particular load: please refer to the rating table below to maintain the correct size/tag format (A2, A4, B1 etc.).

| Rating (A) | 32 | 63 | 100 | 125 | 160 | 200 | 250 | 315 | 400 | 630 |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| C\&D Cat. No. | SFL32 | SFL63 | SFL100 | SFL125 | SFL160 | SFL200 | SFL250 | SFL315 | SFL400 | SFL630 |
| Cooper Bussmann Cat. No. | AA032 | BA063 | CE0100 | DE0125 | DD160 | DD200 | ED250 | ED315 | ED400 | FF630 |
| Lawson Cat. No. | TIA32 | TIS63 | TCP100 | TFP125 | TF160 | TF200 | TKF250 | TKF315 | TMF400 | $3 T 630$ |
| BS fuse format | A2, A3 | A2, A3 | A4 | A4 | B1, B2 | B1-B2 | B1-B2 | B1-B4 | B1-B4 | C1-C3 |
| Fuse Fixing CRS (mm) | 73 nom. | 73 nom. | 94 nom. | 94 nom. | 111 nom. | 111 nom. | 111 nom. | 111 nom. | 111 nom. | 133/184 nom. |

Terminal Covers


Terminal protection is provided on all items for live incoming terminals; spare terminal covers are available for replacement or extending the protection to the outgoing terminals. (Not available for 800A \& 1000A switch-disconnectors.)

For Switch-Disconnectors
Catalogue Numbers - individual covers

| Isol Rating (A) | $63-160$ | 200 | $250-400$ | 630 |
| :---: | :---: | :---: | :---: | :---: |
| Cat No | Not reqd | STS1 | STS2 | STS4 |

For Fuse Combination Units

| Isol Rating (A) | $32-63$ | $100-160$ | $200-400$ | 630 |
| :---: | :---: | :---: | :---: | :---: |
| Cat No | Not reqd | STS1 | STS2 | STS3 |

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## London Underground (LU) Section 12 Equipment

Following the London Kings Cross fire of 1987, the resulting Fennell enquiry prompted the introduction of additional fire precautions for 'Sub-surface Railway Stations'. These additional requirements were introduced under section 12 of the Fire Precautions Act 1971, and since then have been known simply as Section 12 regs. These regulations have been revoked and partly replaced with:'The Fire Precautions (Sub-surface Railway Stations) (England) Regulations 2009.

With this isolation range, the overall consideration has been to meet, and where possible exceed, the Section 12 requirements. This has been achieved by the careful selection of individual component materials and the use of only recognised and approved paint finishes.

## Stainless Steel

London Underground approved for use lid mounted switch-disconnectors designed to prove the user with an assembly that can be installed for indoor or outdoor use, in the harshest of environments. Available in 25A \& 40A ranging from 2P to 6P, these isolators are supplied in 18 gauge stainless steel Grade 304 enclosures sealed to IP65.


## Design Features

- Natural finish - Brushed (Non glare)
- Captive lid fixing screws with a security head.
- Supplied with stainless steel mounting brackets
- Padlocking cast lever handle.
- Positive break contacts.
- Earthing points on both lid and base plus external earth stud.
- Padlocking in both 'Off' \& 'On'.
- Labels - Engraved traffolyte labels in various colours can be supplied attached to the side of the enclosure or supplied loose for fitting adjacent to the isolator.

| Switch-Disconnectors (O-I) |  |  |  | / ${ }^{-}$ |
| :---: | :---: | :---: | :---: | :---: |
| Catalogue Numbers |  |  |  |  |
| Rating | Format | Interior Switch productrange | Catalogue Nos. | $\begin{aligned} & \text { Enclosure } \\ & \text { Size } \end{aligned}$ |
|  |  |  | Stainless steel |  |
| 25A | 2P | GN25 | DS252LUL10 | C |
|  | 3P | GN25 | DS253LUL10 |  |
|  | 3P+2EB Aux | GN25 | DS253EBLUL10 |  |
|  | 4 P | GN25 | DS254LUL10 |  |
|  | 6 P | GN25 | DS256LUL10 |  |
|  | $6 \mathrm{P}+2 \mathrm{~EB}$ Aux | GN25 | DS256EBLUL10 |  |
| 40A | 2 P | GN40 | DS402LUL10 | D |
|  | 3P | GN40 | DS403LUL10 |  |
|  | $3 \mathrm{P}+2 \mathrm{~EB}$ Aux | GN40 | DS403EBLUL10 |  |
|  | 4P | GN40 | DS404LUL10 |  |
|  | 6 P | GN40 | DS406LUL10 |  |
|  | 6P+2EB Aux | GN40 | DS406EBLUL10 |  |

## Die-Cast Aluminium

London Underground approved for use isolators available in 25A \& 40A ranging from 2P to 6P. Designed in Die-Cast Aluminium (LM6) enclosures sealed to IP65, these switch-disconnectors are supplied with pre-finished steel mounting brackets for ease of installation.

- Positive break contacts.
- Earthing points on both lid and base plus external earth stud.
- Labels - Engraved traffolyte labels in various colours can be supplied attached to the side of the enclosure or supplied loose for fitting adjacent to the isolator.


## Design Features



- LU 1-085 Compliant Paint Finish: Light Grey (RAL7035) / Traffic Red (RAL3020)
- Captive lid fixing screws with a security head.
- Padlocking cast lever handle Padlocking in both 'Off' \& 'On'.

Switch-Disconnectors (O-I)
Catalogue Numbers

| Rating | Format | Interior Switch product range | Catalogue Nos. |  | Encl. Size |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Grey | Red |  |
| 25A | 2P | GN25 | DCG252LUL10 | DCR252LUL10 | A |
|  | 3P | GN25 | DCG253LUL10 | DCR253LUL10 |  |
|  | 3P+2EB Aux | GN25 | DCG253EBLUL10 | DCR253EBLUL10 |  |
|  | 4P | GN25 | DCG254LUL10 | DCR254LUL10 |  |
|  | 6P | GN25 | DCG256LUL10 | DCR256LUL10 |  |
|  | 6P+2EB Aux | GN25 | DCG256EBLUL10 | DCR256EBLUL10 |  |
| 40A | 2 P | R32 | DCG402LUL10 | DCR402LUL10 | B |
|  | 3P | R32 | DCG403LUL10 | DCR403LUL10 |  |
|  | 3P+2EB Aux | R32 | DCG403EBLUL10 | DCR403EBLUL10 |  |
|  | 4P | R32 | DCG404LUL10 | DCR404LUL10 |  |
|  | 6P | R32 | DCG406LUL10 | DCR406LUL10 |  |
|  | 6P+2EB Aux | R32 | DCG406EBLUL10 | DCR406EBLUL10 |  |


| Rating | Description | Catalogue No. |
| :---: | :--- | :--- |
| 25A | Set of 4 off <br> security lid fixing <br> screws | MR/SEC/FIX |
|  | Security <br> screwdriver bit | MR/SEC/ALLEN KEY <br> 40A of 4 off <br> security lid fixing <br> screws |
|  | Security <br> screwdriver bit | R40/SEC/FIX |

To order spare switch interiors, add suffix 'INT' to the part number i.e. DCG252LUL10INT

## Hinged Door Sheet Steel

London Underground approved for use switch-disconnectors and fuse combination units ranging from 32A-630A. Sealing up to IP65, these units are supplied in LU-1085 paint finished Sheet Steel enclosures with removable top \& bottom gland plates. Available in either Light Grey (RAL7035) or Traffic Red (RAL 3020).


## Design Features

## Switch-Disconnectors

- Ratings 40A - 400A
- $3 P+$ switched $N$
- All metal padlocking handle
- Supplied lockable in both 'Off' \& 'On'
- Optional Castell Lock


## Fuse Combination Units

- Ratings 32A-630A
- $3 P+$ switched $N$
- All metal padlocking handle
- Supplied lockable in both 'Off' \& 'On'
- Optional Castell Lock
- Takes BS88 fuse links

| Switch-Disconnectors (O-I) |  |  | - | Fuse Combinations Units (O-I) |  |  | $\otimes_{\mathrm{O}}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Catalogue Numbers |  |  |  |  |  |  |  |
| Rating | Catalogue Nos. |  | Enc.Size | Rating | Catalogue Nos. |  | $\begin{aligned} & \text { Enc. } \\ & \text { Size } \end{aligned}$ |
|  | Grey | Red |  |  | Grey | Red |  |
| 40A | DCG0403LUL | DCR0403LUL | 1 | 32A | SFDCG0323LUL | SFDCR0323LUL | 2 |
| 63A | DCG0633LUL | DCR0633LUL | 1 | 63A | SFDCG0633LUL | SFDCR0633LUL | 2 |
| 80A | DCG0803LUL | DCR0803LUL | 2 | 100A | SFDCG1003LUL | SFDCR1003LUL | 2 |
| 100A | DCG1003LUL | DCR1003LUL | 2 | 160A | SFDCG1603LUL/COM | SFDCR1603LUL/COM | 2A |
| 125A | DCG1253LUL | DCR1253LUL | 2A | 200A | SFDCG2003LUL/COM | SFDCR2003LUL/COM | 2 A |
| 160A | DCG1603LUL | DCR1603LUL | 2A | 250A | SFDCG2503LUL | SFDCR2503LUL | 3 |
| 200A | DCG2003LUL | DCR2003LUL | 3 | 315A | SFDCG3153LUL | SFDCR3153LUL | 4 |
| 250A | DCG2503LUL | DCR2503LUL | 3 | 400A | SFDCG4003LUL | SFDCR4003LUL | 4 |
| 315A | DCG3153LUL | DCR3153LUL | 4 | 630A | SFDCG6303LUL | - | 5 |
| 400A | DCG4003LUL | DCR4003LUL | 4 |  |  |  |  |

For Castell lock option, add suffix '/CL' to the catalogue number - e.g. DCG2003LUL/CL

## Enclosed Switchgear

## Fire Rated Switchgear

The use of this switchgear range is to maintain power to vital equipment such as smoke extraction / ventilation fans allowing the safe evacuation of businesses, carparks and public areas. These switch-disconnectors are installed near to the extraction fan for isolation purposes, and have been tested in conjunction with the fan equipment to meet the stringent thermal requirements of BSEN 12101-3.

## F300 Fire Rated

The F300 Fire Rated products range from 20A to 800A, supplied in IP65 die-cast aluminium or sheet steel enclosures with a Traffic Red (RAL 3020) powder coat finish. All enclosures come standard with padlocking in both 'Off' and 'On'. Some units are supplied with sacrificial plastic handles depending on the specification.

The interior switches are constructed from a high temperature grade thermoset material, designed specifically for installations where the supply must be maintained for 60 mins at $300^{\circ} \mathrm{C}$. Craig \& Derricott's F300 products will withstand $300^{\circ} \mathrm{C}$ for 120 min.


## Catalogue Numbers

| Rating | Format | Assembly Form | Catalogue No. | Encl. size |
| :---: | :---: | :---: | :---: | :---: |
| 20A | 2P | Lid mounted in sheet steel enclosure | F3SDR0202 | A |
|  | 3P |  | F3SDR0203 |  |
|  | 3P+2E/B Aux |  | F3SDR0203EB |  |
|  | 3P+NL |  | F3SDR0203N |  |
|  | 4P |  | F3SDR0204 |  |
|  | 6P |  | F3SDR0206 |  |
|  | 6P+2E/B Aux |  | F3SDR0206EB |  |
| 20A | 2P | Lid mounted in die-cast aluminium enclosure | F3DDR0202 | E |
|  | 3P |  | F3DDR0203 |  |
|  | 3P+2E/B Aux |  | F3DDR0203EB |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | F3DDR0203N |  |
|  | 4P |  | F3DDR0204 |  |
|  | 6P |  | F3DDR0206 | B |
|  | 6P+2E/B Aux |  | F3DDR0206EB |  |
| 32A | 2 P |  | F3DDR0322 | B |
|  | 3P |  | F3DDR0323 |  |
|  | 3P+2E/B Aux |  | F3DDR0323EB |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | F3DDR0323N |  |
|  | 4P |  | F3DDR0324 |  |
|  | 6P |  | F3DDR0326 |  |
|  | 6P+2E/B Aux |  | F3DDR0326EB |  |
| 63A | 2P | Base mounted in hinged door sheet steel enclosure | F3SDR0632 | C |
|  | 3P |  | F3SDR0633 |  |
|  | 3P+2E/B Aux |  | F3SDR0633EB |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | F3SDR0633N |  |
|  | 4P |  | F3SDR0634 |  |
|  | 6 P |  | F3SDR0636 |  |
|  | 6P+2E/B Aux |  | F3SDR0636EB |  |
| 80A | 2P |  | F3SDR0802 | 3A |
|  | 3P |  | F3SDR0803 |  |
|  | 3P+2E/B Aux |  | F3SDR0803EB |  |
|  | 3P+NL |  | F3SDR0803NL |  |
|  | 4 P |  | F3SDR0804 |  |
|  | 6 P |  | F3SDR0806 | D |
|  | 6P+2E/B Aux |  | F3SDR0806EB |  |


| Rating | Format | Assembly Form | Catalogue No. | Encl. size |
| :---: | :---: | :---: | :---: | :---: |
| 125A | 2P | Base mounted in hinged door sheet steel enclosure | F3SDR01252 | D |
|  | 3P |  | F3SDR01253 |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | F3SDR01253NL |  |
|  | 3P+2E/B Aux |  | F3SDR01253EB |  |
|  | 4P |  | F3SDR01254 |  |
|  | 6 P |  | F3SDR01256 |  |
|  | 6P+2E/B Aux |  | F3SDR01256EB |  |
| 160A | 3P |  | F3SDR01603 | 5 |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | F3SDR01603NL |  |
|  | 4 P |  | F3SDR01604 |  |
|  | 6 P |  | F3SDR01606 | 7 |
| 200A | 3P |  | F3SDR02003 |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | F3SDR02003NL | 5 |
|  | 4 P |  | F3SDR02004 |  |
|  | 6 P |  | F3SDR02006 | 7 |
| 250A | 3P |  | F3SDR02503 | 5 |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | F3SDR02503NL |  |
|  | 4 P |  | F3SDR02504 |  |
|  | 6 P |  | F3SDR02506 | 7 |
| 315A | 3 P |  | F3SDR03153 | 6 |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | F3SDR03153NL |  |
|  | 4 P |  | F3SDR03154 |  |
|  | 6 P |  | F3SDR03156 | 9 |
| 400A | 3P |  | F3SDR04003 | 6 |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | F3SDR04003NL |  |
|  | 4P |  | F3SDR04004 |  |
|  | 6 P |  | F3SDR04006 | 9 |
| 630 | 3P |  | F3SDR06303 | 8 |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | F3SDR06303NL |  |
|  | 4 P |  | F3SDR06304 |  |
|  | 6 P |  | F3SDR06306 | 9 |
| 800A | 3P |  | F3SDR08003 | 8 |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | F3SDR08003NL |  |
|  | 4 P |  | F3SDR08004 |  |
|  | 6 P |  | F3SDR08006 | 9 |

## Enclosed Switchgear

## F400 Fire Rated

The F400 Fire Rated products range from 20A to 630A, supplied in IP65 die-cast aluminium or sheet steel enclosures with a Traffic Red (RAL 3020) powder coat finish. Some units are supplied with sacrificial plastic handles depending on the specification. Units rated 63A and above are fitted with highly durable anodised aluminium metal handles. All enclosures come standard with padlocking in both 'Off' and 'On'.

The interior switches are constructed from a high temperature grade thermoset material, designed specifically for installations where the supply must be maintained for 2 hours at $400^{\circ} \mathrm{C}$.


## Catalogue Numbers

| Rating | Format | Assembly Form | Catalogue No. | Encl. size |
| :---: | :---: | :---: | :---: | :---: |
| 20A | 2P | Lid mounted in sheet steel enclosure | FSDMR0202 | A |
|  | 3 P |  | FSDMR0203 |  |
|  | 3P+2E/B Aux |  | FSDMR0203EB |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | FSDMR0203N |  |
|  | 4P |  | FSDMR0204 |  |
|  | 6 P |  | FSDMR0206 |  |
|  | 6P+2E/B Aux |  | FSDMR0206EB |  |
| 20A | 2 P | Lid mounted in die-cast aluminium enclosure | FSDDR0202 | E |
|  | 3P |  | FSDDR0203 |  |
|  | 3P+2E/B Aux |  | FSDDR0203EB |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | FSDDR0203N |  |
|  | 4P |  | FSDDR0204 |  |
|  | 6 P |  | FSDDR0206 | B |
|  | 6P+2E/B Aux |  | FSDDR0206EB |  |
| 32A | 2 P |  | FSDDR0322 | B |
|  | 3 P |  | FSDDR0323 |  |
|  | 3P+2E/B Aux |  | FSDDR0323EB |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | FSDDR0323N |  |
|  | 4P |  | FSDDR0324 |  |
|  | 6 P |  | FSDDR0326 |  |
|  | $6 \mathrm{P}+2 \mathrm{E} / \mathrm{B}$ Aux |  | FSDDR0326EB |  |
| 63A | 2P | Base mounted in hinged door sheet steel enclosure | FSDMR0632 | C |
|  | 3 P |  | FSDMR0633 |  |
|  | 3P+2E/B Aux |  | FSDMR0633EB |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | FSDMR0633N |  |
|  | 4P |  | FSDMR0634 |  |
|  | 6 P |  | FSDMR0636 |  |
|  | 6P+2E/B Aux |  | FSDMR0636EB |  |
| 80A | 2P |  | FSDMR0802 | 3A |
|  | 3 P |  | FSDMR0803 |  |
|  | 3P+2E/B Aux |  | FSDMR0803EB |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | FSDMR0803NL |  |
|  | 4 P |  | FSDMR0804 |  |
|  | 6 P |  | FSDMR0806 | D |
|  | 6P+2E/B Aux |  | FSDMR0806EB |  |


| Rating | Format | Assembly Form | Catalogue No. | Encl. size |
| :---: | :---: | :---: | :---: | :---: |
| 125A | 2 P | Base mounted in hinged door sheet steel enclosure | FSDMR01252 | D |
|  | 3P |  | FSDMR01253 |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | FSDMR01253NL |  |
|  | 3P+2E/B Aux |  | FSDMR01253EB |  |
|  | 4P |  | FSDMR01254 |  |
|  | 6 P |  | FSDMR01256 |  |
|  | $6 \mathrm{P}+2 \mathrm{E} / \mathrm{B}$ Aux |  | FSDMR01256EB |  |
| 160A | 3P |  | FSDMR01603 | 5 |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | FSDMR01603NL |  |
|  | 4P |  | FSDMR01604 |  |
|  | 6P |  | FSDMR01606 | 7 |
| 200A | 3P |  | FSDMR02003 | 5 |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | FSDMR02003NL |  |
|  | 4 P |  | FSDMR02004 |  |
|  | 6 P |  | FSDMR02006 | 7 |
| 250A | 3P |  | FSDMR02503 | 5 |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | FSDMR02503NL |  |
|  | 4 P |  | FSDMR02504 |  |
|  | 6 P |  | FSDMR02506 | 7 |
| 315A | 3P |  | FSDMR03153 | 6 |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | FSDMR03153NL |  |
|  | 4P |  | FSDMR03154 |  |
|  | 6P |  | FSDMR03156 | 9 |
| 400A | 3P |  | FSDMR04003 | 6 |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | FSDMR04003NL |  |
|  | 4P |  | FSDMR04004 |  |
|  | 6 P |  | FSDMR04006 | 9 |
| 630A | 3P |  | FSDMR06303 | 8 |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | FSDMR06303NL |  |
|  | 4P |  | FSDMR06304 |  |
|  | 6 P |  | FSDMR06306 | 9 |

Stainless Steel Grade 316 enclosures are available on request for 63A-630A. Replace ' $R$ ' with ' $S$ ' in the catalogue number. E.g. FSDMS0633EB

Dims
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## Enclosed Switchgear

## F200 Fire Rated

To complement the F300 / F400 fire rated Switch-disconnector range, Craig \& Derricott have introduced the F200 Fire Rated isolator for installations where the supply must be maintained for 2 hours at $200^{\circ} \mathrm{C}$.

The use of this product is to maintain power to vital equipment such as smoke extraction / ventilation fans allowing the safe evacuation of businesses, carparks and public areas. These units come standard in a red (RAL 3020) polyester powder coat finish, with padlocking in both 'Off' and 'On' position.


Die-cast aluminium enclosures - Sealing to IP65/IP66


Hinged door sheet steel enclosures - Sealing to IP65

## Catalogue Numbers

| Rating | Format | Interior Switch Product Range | Catalogue No. (Finished Red) | Encl. size |
| :---: | :---: | :---: | :---: | :---: |
| 20A | 6P | GX20 | F2SDDR206 | $\begin{gathered} \text { A } \\ \text { IP66 } \end{gathered}$ |
|  | 6P+2EB Aux |  | F2SDDR206EB |  |
| 25A | 2P | CS25 | F2SDDR252 | $\begin{gathered} \text { A } \\ \text { IP66 } \end{gathered}$ |
|  | 3P |  | F2SDDR253 |  |
|  | 3P+2EB Aux |  | F2SDDR253EB |  |
|  | $3 \mathrm{P}+\mathrm{N}$ |  | F2SDDR253N |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | F2SDDR253NL |  |
| 32A | 2P | CS32 | F2SDDR322 | $\begin{gathered} \text { A } \\ \text { IP66 } \end{gathered}$ |
|  | 3P |  | F2SDDR323 |  |
|  | 3P+2EB Aux |  | F2SDDR323EB |  |
|  | $3 \mathrm{P}+\mathrm{N}$ |  | F2SDDR323N |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | F2SDDR323NL |  |
| 40A | 2 P | CS40R | F2SDDR402 | $\begin{gathered} \text { A } \\ \text { IP66 } \end{gathered}$ |
|  | 3P |  | F2SDDR403 |  |
|  | 3P+2EB Aux |  | F2SDDR403EB |  |
|  | $3 \mathrm{P}+\mathrm{N}$ |  | F2SDDR403N |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | F2SDDR403NL |  |
|  | 6P | GX40 | F2SDDR406 | $\begin{gathered} \text { B } \\ \text { IP65 } \end{gathered}$ |
|  | 6P+2EB Aux |  | F2SDDR406EB |  |
|  | 2P | CS40 | F2SDDR402T |  |
|  | 3P |  | F2SDDR403T |  |
|  | 3P+2EB Aux |  | F2SDDR403EBT |  |
|  | $3 \mathrm{P}+\mathrm{N}$ |  | F2SDDR403NT |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | F2SDDR403NLT |  |
| 63A | 2 P | CS63 | F2SDDR632 | $\begin{gathered} \text { B } \\ \text { IP65 } \end{gathered}$ |
|  | 3P |  | F2SDDR633 |  |
|  | 3P+2EB Aux |  | F2SDDR633EB |  |
|  | 3P+N |  | F2SDDR633N |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | F2SDDR633NL |  |
| 80A | 3P | CS80 | F2SDDR803 | $\begin{gathered} \text { B } \\ \text { IP65 } \end{gathered}$ |
|  | $3 \mathrm{P}+\mathrm{N}$ |  | F2SDDR803N |  |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | F2SDDR803NL |  |


| Rating | Format | Interior Switch Product Range | Catalogue No. (Finished Red) | Encl. size |
| :---: | :---: | :---: | :---: | :---: |
| 63A | 3P+N | CS63 | F2SDRC00633N | 1 |
|  | 3P+NL |  | F2SDRC00633NL |  |
|  | 6P |  | F2SDRC00636 | 2 |
| 80A | 3P+N | CS80 | F2SDRC00803N | 1 |
|  | 3P+NL |  | F2SDRC00803NL |  |
|  | 6P |  | F2SDRC00806 | 2 |
| 100A | $3 \mathrm{P}+\mathrm{N}$ | CS100 | F2SDRC01003N | 3A |
|  | 3P+NL |  | F2SDRC01003NL |  |
| 125A | $3 \mathrm{P}+\mathrm{N}$ | CS125 | F2SDRC01253N | 4A |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | F2SDRC01253NL |  |
| 160A | $3 \mathrm{P}+\mathrm{N}$ | CS160 | F2SDRC01603N | 4A |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | F2SDRC01603NL |  |
| 200A | $3 \mathrm{P}+\mathrm{N}$ | CS200 | F2SDRC02003N | 5A |
|  | $3 \mathrm{P}+\mathrm{NL}$ |  | F2SDRC02003NL |  |

' N ' = Switched neutral (Early make, late break)
'NL' = Unswitched neutral
' $E B$ ' = Early break auxiliary contacts
' T ' = Increased terminal capacity
' $X$ ' = Bottom cable entries only. Add $X$ to catalogue no. i.e. F2SDDR206X ' $Y$ ' = Top and bottom cable entires. Add $Y$ to catalogue no. i.e. F2SDDR206Y

Entries
Size A 20A-32A
Std Cat No. : 2xM20 on bottom face

## Size A

40A
Std Cat No. : 2xM25 on bottom face

Size B 40A-63A
Std Cat No. : $2 \mathrm{xM} 25+1 \times \mathrm{M} 20$ on bottom face
Size B
80A
Std Cat No. : $2 \mathrm{xM} 32+1 \times \mathrm{M} 20$ on bottom face
Part numbers can be suffixed $X$ or $Y$ for alternative conduit entry configurations. See page 5.

## Enclosed Switchgear

## Automatic Transfer Switches (ATS)

Automatic Transfer Switches (ATS) are essential wherever substantial power has to be maintained. Whether it's to ensure people's safety in a work or public space, or to maintain essential supplies to a vital process, the fast and efficient transfer of power is automatically managed by the ATS system. The second source of power can either be from a generator or from an alternative/ stand-by source. Either of which can be accommodated in Craig \& Derricott's range of ATS systems.

Ratings from 32A to 800A, the ATS units can be mounted indoors or outdoors to any wall or framework. With both top and bottom gland plates, the ATS is a versatile solution for any electrical supply. Each unit has local status indicator lamps and an Auto/Test switch.

Craig \& Derricott have designed the ATS units to be operational in a variety of installations such as hospitals, water distribution facilities, airports, banking computers, data centres, shopping centres, offices, apartments and railway - wherever there is a critical need for the automatic transfer of power from permanent mains/duty to an alternative generator/standby supply.

The diagram below illustrates a typical arrangement of where the ATS is located.


For high-rise residential applications, where life-safety is required, the Standard ATS must be installed within a Fire Protected Room. If a Fire Protected Room is not available, then the ATS can be installed in a special certified enclosure. Contact our sales team for more information.

## Standard Automatic Transfer Switches (ATS)

At the core of each system is a four pole changeover device. The 'Standard' range utilises electromechanical contactors and provides all of the essential requirements for automatically providing a replacement power source. Facilities are provided to control the 'start-up' of standby generators manually and to set the undervoltage values and the required time delay. Main LED indicator lights show the status of the supplies.

Units are rated from 32A to 800A. The Single or Three-phase ATS units allow automatic connection of a secondary electrical supply to a load upon failure of the primary.

## Technical Features

- Electro-mechanical interlocked 4 pole AC1 rated contactor
- Applied standards: BS EN / IEC 60947-4 \& BS EN / IEC 60947-6-1
- Class of equipment PC
- Rated Voltage 230 V or 400 V ac
- Utilization category AC31B
- Rated frequency 50 Hz
- Volt-free changeover, x3 contacts for BMS systems Rated 250V 7A
- Supplies available indication
- Duty supply monitoring - under-voltage \& loss of phase
- Adjustable timers for time delay between changeover
- Adjustable generator start timer
- Changeover time adjustable from 50 ms
- Removable top and bottom gland plates
- Aux single phase supply - 20A fuse protected
- Auto / test switch supplied with 2 keys
- Enclosure - IP65 sheet steel with light grey RAL 7035 paint finish. Lockable, supplied with one key



## Catalogue Numbers

| Ratings | Format | Single Phase Cat No. | Format | Three Phase Cat No. | Encl. size |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 32A | 2P | ATS0322 | 4P | ATS0324 | A |
| 45A | 2P | ATS0452 | 4P | ATS0454 |  |
| 63A | 2 P | ATS0632 | 4P | ATS0634 | B |
| 90A | 2P | ATS0902 | 4P | ATS0904 |  |
| 100A | 2P | ATS1002 | 4P | ATS1004 |  |
| 110A | 2P | ATS1102 | 4P | ATS1104 |  |
| 125A | 2 P | ATS1252 | 4P | ATS1254 |  |
| 160A | 2P | ATS1602 | 4P | ATS1604 | C |
| 200A | 2P | ATS2002 | 4P | ATS2004 |  |
| 250A | 2P | ATS2502 | 4P | ATS2504 |  |
| 275A | 2P | ATS2752 | 4P | ATS2754 |  |
| 300A | 2P | ATS3002 | 4P | ATS3004 |  |
| 350A | 2 P | ATS3502 | 4P | ATS3504 |  |
| 400A | 2P | ATS4002 | 4P | ATS4004 |  |
| 450A | 2P | ATS4502 | 4P | ATS4504 |  |
| 500A | 2P | ATS5002 | 4P | ATS5004 |  |
| 550A | 2P | ATS5502 | 4P | ATS5504 |  |
| 600A | 2P | ATS6002 | 4P | ATS6004 |  |
| 650A | 2P | ATS6502 | 4P | ATS6504 | D |
| 700A | 2P | ATS7002 | 4P | ATS7004 |  |
| 750A | 2P | ATS7502 | 4P | ATS7504 |  |
| 800A | 2 P | ATS8002 | 4P | ATS8004 |  |

A Deep Sea control module (DSE) is available as an alternative or in addition to the standard LED panel. This programmable device offers the user added advantages of a digital display, Modbus interfacing, additional control functions and easy programming of parameters.

Contact see page 25 for more information.

For DSE option, add suffix '/DSE' to catalogue number. E.g. ATS0322/DSE

For Stainless Steel enclosure, add suffix '/SS' to catalogue number. E.g. ATS0322/SS

## Combination Automatic Transfer Switches (ATS)

The Combination ATS unit is supplied with two integral isolation switches. The ATS indicator / control panel and switch operating handle are behind an overall lockable door. The range provides all the essential requirements for automatically switching from Mains (Duty) to Generator (Standby) or alternative Mains with local LED status indication.

## Technical Features

- Electro-mechanical interlocked 4 pole AC1 rated contactor.
- Volt free contacts common ( $\mathrm{N} / \mathrm{O} \& \mathrm{~N} / \mathrm{C}$ ).
- Incoming supply adjustable Undervoltage and Time delay relays for setting individual supply parameters.
- Supplied with Mains Supply Monitoring Relay which checks for loss of supply, undervoltage and phase rotation.
- Changeover time of contactors 50 ms .
- Second external door included.
- IP65 Mild Steel Enclosure (Stainless Steel optional).
- Removable Top and Bottom Gland Plates.
- Metal locks supplied with one key per enclosure.
- Supply available status indication.
- Incoming isolation (2 x isolators).
- Form 4 type 2 separation.
- Terminal blocks for easy fit cable installation.
- Paint finish - Polyester Powder Coat, Light Grey RAL 7035.
- Optional DSE331 control module available.
- Compliant to EN 60947-4-1 , EN 60947-3 \& EN 60947-6-1.


## Catalogue Numbers

| Rating | Format | Single Phase Cat No, | Three Phase Cat No. | Encl. Size |
| :---: | :---: | :---: | :---: | :---: |
| 32A | 4P | ATSSD0322 | ATSSD0324 | 1A |
| 45A | 4P | ATSSD0452 | ATSSD0454 |  |
| 63A | 4P | ATSSD0632 | ATSSD0634 | 1B |
| 90A | 4 P | ATSSD0902 | ATSSD0904 |  |
| 100A | 4P | ATSSD1002 | ATSSD1004 |  |
| 110A | 4P | ATSSD1102 | ATSSD1104 |  |
| 125A | 4P | ATSSD1252 | ATSSD1254 |  |
| 160A | 4P | ATSSD1602 | ATSSD1604 | 1C |
| 200A | 4P | ATSSD2002 | ATSSD2004 |  |
| 250A | 4P | ATSSD2502 | ATSSD2504 |  |
| 275A | 4P | ATSSD2752 | ATSSD2754 | 1D |
| 300A | 4P | ATSSD3002 | ATSSD3004 |  |
| 350A | 4P | ATSSD3502 | ATSSD3504 |  |
| 400A | 4P | ATSSD4002 | ATSSD4004 |  |
| 450A | 4P | ATSSD4502 | ATSSD4504 | 1E |
| 500A | 4 P | ATSSD5002 | ATSSD5004 |  |
| 550A | 4P | ATSSD5502 | ATSSD5504 |  |
| 600A | 4P | ATSSD6002 | ATSSD6004 |  |
| 650A | 4P | ATSSD6502 | ATSSD6504 | 1F |
| 700A | 4P | ATSSD7002 | ATSSD7004 |  |
| 750A | 4 P | ATSSD7502 | ATSSD7504 |  |
| 800A | 4 P | ATSSD8002 | ATSSD8004 |  |

A Deep Sea control module (DSE) is available as an alternative or in addition to the standard LED panel. This programmable device offers the user added advantages of a digital display, Modbus interfacing, additional control functions and easy programming of parameters.

Contact see page 25 for more information.
For DSE option, add suffix '/DSE' to catalogue number. E.g. ATSSD0324/DSE

For Stainless Steel enclosure, add suffix '/SS' to catalogue number. E.g. ATSSD0324/SS

## Dims

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## Automatic Transfer Switches (ATS) with Bypass

Craig \& Derricott offer the option of ATS units with Single Line or Dual Line Bypass. Available in current ratings from 32A to 400A in both Single and Three phase options, the units are supplied in mild steel IP65 painted enclosures (RAL 7035).

Applied standards: BSEN / IEC 60947-4-1, BSEN / IEC 60947-6-1, BSEN / IEC 60947-3, BSEN / IEC 61439-2.

## Design Features

- 2 Position key switch for Auto and Test
- Adjustable under-voltage and Time delays
- 2 P and 4 P configurations
- Changeover time adjustable to 50 ms
- Removable Top and Bottom Gland plates
- Locks supplied with one key per enclosure
- Easy connectors for incoming and outgoing supplies
- IP2X internal panel
- $3 x$ Volt free changeover contacts (COM, N/O \& N/C)
- Supply availability/on load LED indication panel for visual representation of supply status


## Single Line Manual Bypass (SL)

The Single Line bypass function isolates the ATS by bypassing the incoming duty supply directly to the outgoing load, enabling essential maintenance in keeping with life safety recommendations in accordance with BS8519:2010. The key advantage is that the supply to the load is maintained whilst service and repairs can be carried out on the ATS unit. A separate LED indicator is provided to show when the unit is in the bypass mode.


- Mechanically and electronically interlocked 4 Pole AC1 rated contactors
- Auxiliary power supply for Generator battery charging or jacket water heater

Additional Options:

- DSE controller with facility for MODBUS interfacing
- Stainless Steel Enclosures
- Mimic panels
- Anti-condensation heaters


## Dual Line Manual Bypass (DL)

The Dual Line Bypass function isolates the ATS by bypassing the duty supply or the standby supply directly to the outgoing load, enabling essential maintenance in keeping with life safety recommendations in accordance with BS 8519:2010. The key advantage is that both the duty supply or standby supply to the load can be maintained whilst service and repairs can be carried out on the ATS unit. Two separate LED indicators are provided to show when the unit is in duty bypass or standby bypass mode.


## Catalogue Numbers

| Rating | Single Line Bypass |  | Dual Line Bypass |  | Encl. size |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2P Cat. No. | 4P Cat. No. | 2P Cat. No. | 4P Cat. No. |  |
| 32A | ATS0322SL | ATS0324SL | ATS0322DL | ATS0324DL | A |
| 45A | ATS0452SL | ATS0454SL | ATS0452DL | ATS0454DL |  |
| 63A | ATS0632SL | ATS0634SL | ATS0632DL | ATS0634DL |  |
| 100A | ATS1002SL | ATS1004SL | ATS1002DL | ATS1004DL | B |
| 125A | ATS1252SL | ATS1254SL | ATS1252DL | ATS1254DL |  |
| 160A | ATS1602SL | ATS1604SL | ATS1602DL | ATS1604DL | C |
| 250A | ATS2502SL | ATS2504SL | ATS2502DL | ATS2504DL | D |
| 400A | ATS4002SL | ATS4004SL | ATS4002DL | ATS4004DL | E |

A Deep Sea control module (DSE) is available as an alternative or in addition to the standard LED panel. This programmable device offers the user added advantages of a digital display, Modbus interfacing, additional control functions and easy programming of parameters. See page 25 for more information.

For DSE option, add suffix '/DSE' to catalogue number. E.g. ATS0324DLDSE

For Stainless Steel enclosure, add suffix '/SS' to catalogue number. E.g. ATS0324DLSS

## London Underground (LU) Automatic Transfer Switches (ATS)

The ATS units are supplied with two integral isolation switches. The ATS indicator / control panel and switch operating handle are behind an overall lockable door. Available in 32A to 400A ratings, the range provides all the necessary requirements for automatically switching from Mains (Duty) to Generator (Standby) or alternative Mains with local status indication and a supply monitoring relay.

Built in IP65 stainless steel enclosures, the ATS units are manufactured to LU 1-085 fire safety performance of materials, with LSZH (Low Smoke Zero Halogen) cables.

The Automatic Transfer Switches (ATS) are supplied with a DSE electronic controller and self-seeking power supply, providing a configurable controlled system where the customer can program using the electronic user interface or PC. See page 25 for more information.

## Design Features

## Standard LUL ATS

- Automatic supply transfer control.
- Electro-mechanical interlocked $3 / 4$ pole AC1 rated contactor.
- Compliant to EN 60947-4-1 \& EN 60947-6-1.
- All metal locks supplied with one key per enclosure.
- IP2X terminal covers fitted (if applicable).
- Removable top and bottom gland plates.
- Changeover time of contactors 50 ms .
- Supply available status indication.
- Dual supply voltage monitoring.
- IP65 Stainless Steel Enclosure.
- Second external door included.
- External fixing feet included.


## Combination LUL ATS

As well as all of the listed features of a Standard ATS, the combination ATS includes:

- Compliant to EN 60947-4-1, EN 60947-3 \& EN 60947-6-1.
- Both incoming isolators fitted with door interlock rotary handles.
- Terminal blocks for easy fit supply cable installation.
- All hinged doors are fitted with $1 / 4$ turn locks.
- Incoming cables at bottom and outgoing at top.
- Top and bottom earth bonded gland plates.
- Incoming Isolation ( 2 x isolators).
- Form 4 type 2 separation.

| Catalogue Numbers |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Rating | Standard LU ATS |  | Combination LU ATS |  | Enc.Size |
|  | Single Phase | Three Phase | Single Phase | Three Phase |  |
| 32A | ATS0322DSELULSS | ATS0324DSELULSS | ATSSD0322DSELULSS | ATSSD0324DSELULSS |  |
| 45A | ATS0452DSELULSS | ATS0454DSELULSS | ATSSD0452DSELULSS | ATSSD0454DSELULSS |  |
| 63A | ATS0632DSELULSS | ATS0634DSELULSS | ATSSD0632DSELULSS | ATSSD0634DSELULSS |  |
| 100A | ATS1002DSELULSS | ATS1004DSELULSS | ATSSD1002DSELULSS | ATSSD1004DSELULSS |  |
| 160A | ATS1602DSELULSS | ATS1604DSELULSS | ATSSD1602DSELULSS | ATSSD1604DSELULSS |  |
| 200A | ATS2002DSELULSS | ATS2004DSELULSS | ATSSD2002DSELULSS | ATSSD2004DSELULSS |  |
| 400A | ATS4002DSELULSS | ATS4004DSELULSS | ATSSD4002DSELULSS | ATSSD4004DSELULSS | D |

[^3]
## ATS with Deep Sea Control (DSE)

An advanced range of automatic transfer switch control modules and power supplies. All modules come with microprocessor control digital display and ofer easy configuration of parameters. The control modules are provided as an option on our standard and combination ranges. The London Underground ATS range is offered with either a DSE 334 or DSE 335 depending on the application requirements.

Craig \& Derricott offer the option to have Deep Sea Control Devices built into any of our Automatic Transfer Switch Ranges. Please see further details of the specific functions of each DSE controller below.

| $\begin{aligned} & \text { DSE330 } \\ & \text { Standard ATS } \\ & \text { range } \end{aligned}$ |  | Features: <br> - Configurable inputs (2) <br> - Configurable outputs (6) <br> - Icon or english text display <br> - LED indicator <br> - Front panel/PC configuration <br> - Source 1 /source 2 control <br> - Configurable timers <br> - Start inhibit | Load inhibit <br> Manual restore to S1 Supports multiple topologies Automatic switch-over between supplies <br> Rotary ATS configuration Single event scheduler Single-phase display |
| :---: | :---: | :---: | :---: |
| DSE331 Combination ATS range |  | Features: <br> - Configurable inputs (4) <br> - Configurable volt-free outputs (4) <br> - Configurable DC outputs (4) <br> - Check sync feature <br> - Icon and english text display <br> - LED indicator <br> - Front panel/PC configuration <br> - Remote monitoring <br> - Source 1 /source 2 control | Configurable timers <br> Start inhibit <br> Load inhibit <br> Manual restore to S 1 <br> Supports multiple topologies <br> Automatic switch-over between <br> supplies <br> Rotary ATS configuration <br> Single event scheduler <br> 3 -phase display |
| DSE334 <br> London Underground ATS range |  | Features: <br> - Volt-free relays <br> - Supports many topologies <br> - Automatic switch-over between supplies <br> - Check sync feature <br> - Real-time clock <br> - 10 configurable inputs <br> - 5 configurable outputs <br> - Event log (10) <br> - Configurable timers <br> - Auto start inhibit <br> - Load inhibit | Automatic shutdown or warning when fault conditions are detected PC configuration Front panel configuration LED indicators Back-lit 4-line text LCD display External mains (utility) or genset failure inputs Manual restore to S1 Optional current monitoring |
| DSE335 <br> London Underground ATS range | $\begin{aligned} & \therefore . \\ & 0 \quad 4 \\ & 0 \quad 0 \quad 0 \\ & 0 \quad 0 \quad 0 \quad 0 \end{aligned}$ | Features: <br> - Configurable inputs (12) <br> - Configurable volt-free outputs (6) <br> - Configurable DC outputs (6) <br> - 4-Line back-lit LCD text display <br> - Five key menu navigation <br> - Front panel editing with PIN protection <br> - LED and LCD alarm indication <br> - Check sync feature <br> - Remote monitoring <br> - Source 1 /Source 2 control <br> - Manual restore to S1 <br> - Supports multiple topologies <br> - Automatic switch-over between supplies <br> - Start inhibit <br> - Load inhibit | Rotary ATS configuration Configurable timers and alarms Multiple date and time scheduler Power monitoring Load switching USB Connectivity Backed up real time clock Fully configurable via DSE Configuration Suite PC software Configurable display languages User selectable RS232 and RS485 communications Configurable Gencomm pages SMS messaging Additional display screens to help with modem diagnostics DSENet® expansion compatible Integral PLC editor |
| DSE160 - Self-se <br> The DSE160 Self modules. The DS provides a power <br> When the mains generator or batte at all times. The D short circuit prote | power supply <br> king Power Supply has can be supplied from ly output that gives DC <br> ity) supply fails the D wer. Three red LEDs on 0 is available in 12 and | designed for use with DSE3xx control ains (utility), generator or battery and to the ATS controller. <br> automatically switches to providing ant of the unit show the operating status versions and provides comprehensive |  |

## Explosion Proof Switchgear

Craig \& Derricott has been associated with the design and manufacture of Ex products for more than 30 years. The current product range has been developed to meet the technical requirements of today's market and a great deal of the design consideration has been given to bringing a quality product to the market at a competitive price.

## Ex Zone 1, 2, 21 \& 22 Ex 'e'

The 'EXZ1' range of enclosed switch-disconnectors are supplied in Ex'e' enclosures manufactured from glass reinforced polyester sealing to IP65 ensuring the product will withstand being installed in the harshest of industrial environments.

The operating handles come standard in Red/Yellow and can be padlocked in the 'Off' position. All lids are mechanically interlocked with the isolating switch and are removable in the 'On' position only. If you would require a black handle instead please replace R in the catalogue number with a $B$ e.g. EXZ1SDB02530.

Available in ratings from 25A-180A the isolating switch interiors are supplied in either 3 or 4 pole formats complete with 1 N/O (Early break) \& 1 N/C (Late make) auxiliary contacts.


## Brass Earthing Plates

To enable armoured cables to be earth bonded within the insulated enclosure a selection of pre-drilled earthing plates are available for each enclosure size.

Optional Brass Earthing Plate shown above

Catalogue Numbers

| Rating | Format | Handle Colour | Cat. No. | Optional Brass Earthing Plate Cat. No. | Encl. Size |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 25A | 3P+Aux | Red/ Yellow | EXZ1SDR02530 | EXEP0253 | A |
|  | 4P+Aux | Red/ Yellow | EXZ1SDR02540 | EXEP0254 |  |
| 40A | 3P+Aux | Red/ Yellow | EXZ1SDR04030 | EXEP0403 | B |
|  | 4P+Aux | Red/ Yellow | EXZ1SDR04040 | EXEP0404 |  |
| 80A | 3P+Aux | Red/ Yellow | EXZ1SDR08030 | EXEP0803 | C |
|  | 4P+Aux | Red/ Yellow | EXZ1SDR08040 | EXEP0804 |  |
| 180A | 3P+Aux | Red/ Yellow | EXZ1SDR18030 | EXEP1803 | D |
|  | 4P+Aux | Red/ Yellow | EXZ1SDR18040 | EXEP1804 |  |

[^4]
## Equipment Marking

| 25A | II2GD | Ex de IIC T6 Gb Ex tb IIIC $780^{\circ} \mathrm{CDb}\left(\mathrm{Ta} 540^{\circ} \mathrm{C}\right)$ |
| :---: | :---: | :---: |
|  | (2) | Ex de IIC T 5 Gb Ex tb IIIC $795^{\circ} \mathrm{C} \mathrm{Db}$ ( $\mathrm{Ta} 555^{\circ} \mathrm{C}$ ) |
| 40A | II2GD | Exde IIC $\mathrm{T} 6 \mathrm{~Gb} \mathrm{Ex} \mathrm{tb} \mathrm{IIIC} \mathrm{T} 80^{\circ} \mathrm{C} \mathrm{Db}$ ( $\mathrm{Ta} 540^{\circ} \mathrm{C}$ ) |
|  | 9 | Ex de IIC T 5 Gb Ex tb IIIC $\mathrm{T} 95^{\circ} \mathrm{C} \mathrm{Db}\left(\mathrm{Ta} 555^{\circ} \mathrm{C}\right.$ ) |
| 80A | IGD | Exde IIC T 6 Gb Ex tb IIIC $\mathrm{T} 80^{\circ} \mathrm{CDb}$ ( $\mathrm{Ta} 540^{\circ} \mathrm{C}$ ) |
|  |  | Ex de IIC T 5 Gb Ex tb IIIC $795^{\circ} \mathrm{C} \mathrm{Db}$ ( $\mathrm{Ta} 555^{\circ} \mathrm{C}$ ) |
| 180A | II2GD | Ex de IIC T 5 Gb Ex tb IIIC $\mathrm{T} 95^{\circ} \mathrm{C} \mathrm{Db}$ ( $\mathrm{Ta} 540^{\circ} \mathrm{C}$ ) |
|  | (8) | Ex de lIIC T4 Gb Ex tb IIC T $130^{\circ} \mathrm{C} \mathrm{Db}$ |

## Key to Marking

Specific marking for
II Equipment group
Explosion protection
2 Equipment category
G Environment e.g. Gas

## Certification

All items have been approved with 'ATEX' (CML 15ATEX1197X) and 'IECEx' (IECEx CML 15.0093X) certicates for use in Zones 1, 2, 21 \& 22.

The equipment is designed and tested to comply with the following:-

- EN 60079-0 Electrical Atmospheres, Part 0 : Equipment - General requirements.
- EN 60079-1 Electrical Atmospheres, Part 1 : Equipment protection by flameproof enclosures 'd'.
- EN 60079-7 Electrical Atmospheres, Part 7 : Equipment protection by increased safety 'e'.
- EN 60947-1 Low-Voltage switch gear and controlgear - Part 1:general rules.
- EN 60947-3 Low-Voltage switch gear and controlgear - Part 3:switches, disconnectors, switch-disconnectors and fuse combination units.
- EN 60529 Degrees of protection provided by enclosures. (IP Code)


## Ex Zone 1, 2, 21 \& 22 Ex 'd'

A range of Switch-Disconnectors housed in IP65 heavy duty cast enclosures - ATEX certified for use in Cat II, Zones 1, 2, 21 \& 22 environments.

## Construction

High quality heavy duty cast enclosures are used throughout the range. (Cast Iron 16A-63A, Cast Aluminium 80A-250A). The enclosures are supplied with large cable entries which can be fitted with approved reducers to suit individual cable requirements. Specific entry requirements can be accommodated - please specify when ordering.

All load switching interiors are supplied as either 3P+N (switched neutral) or 6P and have AC23A ratings to BS EN 60947-3. Auxiliary contacts are available for applications such as SCADA packages. Finish - RAL 7035 Two pack grey epoxy coating over etching primer.


Typical small assembly


Example of a 100A assembly

## Catalogue Numbers

| Current Rating (A) | Format | Catalogue No. | Enclosure Ref. | Supplied Bottom Entries* | External Earth | Temperature Class |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | $40^{\circ} \mathrm{C}$ | $60^{\circ} \mathrm{C}$ |
| 16 | $3 P+N+2 E / B$ | DGC0164EBZ1 | G21 | $3 \times \mathrm{M} 20$ | M6 | T6 | T5 |
| 25 | $3 \mathrm{P}+\mathrm{N}+2 \mathrm{E} / \mathrm{B}$ | DGC0254EBZ1 | G21 | $4 \times \mathrm{M} 20$ | M6 | T6 | T5 |
| 20 | 6P + 2E/B | DGC0206EBZ1 | G21 | $2 \times \mathrm{M} 25+1 \times \mathrm{M} 20$ | M6 | T6 | T5 |
| 40 | $3 P+N+2 E / B$ | DGC0404EBZ1 | G22 | $2 \times \mathrm{M} 25+1 \times \mathrm{M} 20$ | M8 | T6 | T5 |
| 40 | $6 P+2 E / B$ | DGC0406EBZ1 | G22 | $2 \times \mathrm{M} 25+1 \times \mathrm{M} 20$ | M8 | T6 | T5 |
| 63 | $3 P+N+2 E / B$ | DGC0634EBZ1 | G22 | $2 \times \mathrm{M} 25+1 \times \mathrm{M} 20$ | M8 | T6 | T5 |
| 80 | $3 P+N+2 E / B$ | DGC0804EBZ1 | G24 | $3 \times \mathrm{M} 32+1 \times \mathrm{M} 20$ | M8 | T6 | T6 |
| 100 | $3 \mathrm{P}+\mathrm{N}+2 \mathrm{E} / \mathrm{B}$ | DGC1004EBZ1 | G25 | $3 \times \mathrm{M} 32+1 \times \mathrm{M} 20$ | M8 | T6 | T6 |
| 125 | $3 P+N+2 E / B$ | DGC1254EBZ1 | G25 | $3 \times \mathrm{M} 40+1 \times \mathrm{M} 20$ | M8 | T6 | T6 |
| 160 | $3 P+N+2 E / B$ | DGC1604EBZ1 | G25 | $2 \times \mathrm{M} 32+1 \times \mathrm{M} 20$ | M8 | T6 | T6 |
| 200 | $3 P+N+2 E / B$ | DGC2004EBZ1 | G28 | $3 \times \mathrm{M} 50+1 \times \mathrm{M} 20$ | M10 | T6 | T6 |
| 250 | $3 \mathrm{P}+\mathrm{N}+2 \mathrm{E} / \mathrm{B}$ | DGC2504EBZ1 | G28 | $3 \times \mathrm{M} 50+1 \times \mathrm{M} 20$ | M10 | T6 | T6 |

* Other entry configurations available on request.


## Certification and Approvals

- Certification Code
- Certification No.
- Certification standard
(9x) Ex II 2 GD Exd IIB
ITS 09 ATEX 16433X, ITS 09 ATEX $16436 U$ EN 60079-0, EN 60079-1, EN 61241-0 \& EN 61241-1


## EX Zone 22 - How safe is your workspace?

From July 2006 the onus was placed upon companies to ensure that all equipment within their organisations is suitable for the environment in which it is being used. This was aimed particularly at areas where there may be a possibility of a combustible atmosphere being present, even for short periods i.e. less than 10 hours/year.

People normally think of such atmospheres as being gases, mists or vapours, however there are various industries where a conductive or non-conductive dust mixed with air in the right proportion can become explosive. It is these areas where the Craig \& Derricott ATEX Group II (Zone 22) equipment can be used to help you comply with Health \& Safety regulations.

Typical industries where such atmospheres may be generated:-

- Grain Mills
- Powder Coating Plant
- Textiles
- Chemicals
- Cargo Handling
- Woodworking
- Pharmaceuticals
- Waste Processing

There are different degrees of protection against explosive dusts, and Zone 22 is defined as:-
"A place in which an explosive atmosphere, in the form of a cloud of combustible dust in air, is not likely to occur in normal operation but, if it does occur, will persist for a short period only."

## Applicable Regulations/Specifications

- Directive 2014/34/EU ("Manufacturers Directive") Sets out the route equipment manufacturers must take to get their products certified for use in hazardous environments.
- Directive 1999/92/EC ("Users Directive") Defines the classifications for protection zones, and the approach users must take to ensure that the correct equipment is matched to specific hazardous environments.

Both of the above are classed as 'ATEX' directives and are concerned solely with ensuring safety in the workplace.

- DSEAR Dangerous Substances and Explosive Atmospheres Regulations 2002.
- BS EN 60079-0 Explosive atmospheres - Part 0: Equipment - General requirements.
- BS EN 60079-31 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t".
- BS EN 61241-0 Electrical apparatus for use in the presence of combustible dust - General requirements.
- BS EN 61241-1 Electrical apparatus for use in the presence of combustible dust - Protection by enclosures 'tD'.
- BS EN 60529
- BS EN 60947-3
- BS EN 60204-1

Specification for degrees of protection provided by enclosures. (IP code)
Specification for low-voltage switchgear and control gear.
Safety of machinery. Electrical equipment of machines - General requirements.

## ATEX Switch-Disconnectors 20A - 63A

Craig \& Derricott has been manufacturing enclosed switchgear for more than 70 years. We have incorporated all of that experience in producing an outstanding product that has now been approved for use in explosive dust atmospheres.

Using high quality die cast aluminium and hinged door sheet steel enclosures the range covers 20A-63A ratings.
Catalogue Numbers

| Rating | Format | Cat. No. | Enclosure <br> Size |
| :---: | :---: | :---: | :---: |
|  | $6 \mathrm{P}+2$ EB Aux | SDDG206EBZ22 | A |
| 25 A | $3 \mathrm{P}+2$ EB Aux | SDDG253EBZ22 | A |
| 32 A | $3 \mathrm{P}+2$ EB Aux | SDDG323EBZ22 | A |
|  | $6 \mathrm{P}+2$ EB Aux | SDDG326EBZ22 | B |
| 40 A | $3 \mathrm{P}+2$ EB Aux | SDDG403EBZ22 | B |
|  | $6 \mathrm{P}+2$ EB Aux | SDDG406EBZ22 | B |
| 63 A | $3 \mathrm{P}+2$ EB Aux | SDDG633EBZ22 | B |
|  | $3 P+2$ EB Aux | SDMG633EBZ22 | C |
|  | $6 \mathrm{P}+2$ EB Aux | SDMG636EBZ22 | D |

Other ratings are available upon request.

## Certification Details 20A-63A

Die cast Aluminium / Sheet Steel

## Design \& Safety Features

- All items allow for the fitting of up to three padlocks in the 'Off' position.
- Units are inclusive of fixings outside of the enclosure seal area and an external earth point.


Coding

Complies in part or in full with standards:-

© y tc IIIB T85 ${ }^{\circ} \mathrm{C}$ Dc
BS EN 60079-0, BS EN 60079-31
BS EN 60529, BS EN 60947-3, BS EN 60204-1

Technical
Data
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## Enclosed Switchgear

## Photovoltaic (PV) Switchgear

Solar power is an environmentally friendly method of producing electricity and is achieved using Photovoltaic (PV) cells that capture sunlight and convert it to electricity. By combining cells into an array different voltages and current combinations can be achieved.

Once installed an array will continue to generate voltage and current and it is therefore essential to isolate the array in the event of a fault or for maintenance purposes. To enable this Craig \& Derricott have developed a range of DC switch-disconnectors to manage this specific application. See page 3 for AC isolating devices.

## The basic PV Installation



Select from the table below the suitable d.c. switch-disconnector to meet the required installation that is applicable to Rated Operational Voltage and Rated Operational Current rating.

## D.C. Isolators (Array side of inverter)

| Catalogue Numbers |  | Technical Specification |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Enclosed | nterior | Rated Operational Voltage d.c. |  |  |  |  |  |  |  |  |
| Assembly Cat. No. | Isolating Switch Cat. No. |  | 300/400V | 600 V | 800 V | 1,000V | 1,200V ${ }^{2}$ | 1,500V ${ }^{2}$ | Connection Diag. | $\begin{gathered} \text { Enclosure } \\ \text { Size } \end{gathered}$ |
| EPV162 | SPV162 | Rated Operational Current (DC21B) | 16A | 16A | 16A | 16A | - | - | W | E |
| PVP164 | SPV164 |  | - | - | - | - | 16A | 16A | z | B |
| EPV252 | SPV252 |  | 25A | 25A | 25A | 16A | - | - | W | E |
| EPV253 | SPV253 |  | - | - | - | 25A | - | - | X | E |
| PVP254 | SPV254 |  | - | - | - | - | 20A | 16A | Z | B |
| EPV322 | SPV322 |  | 32A | 32A | - | - | - | - | W | E |
| EPV323 | SPV323 |  | - | - | 32A | 32A | - | - | X | E |
| PVP324 | SPV324 |  | - | - | - | - | 25A | 20A | Z | B |
| EPV402 | SPV402 |  | 40A | - | - | - | - | - | W | E |
| EPV403 | SPV403 |  | - | 40A | 40A | - | - | - | X | E |
| PVP404 | SPV404 |  | - | - | - | 40A | 32A | 25A | z | B |
| PVP1622 ${ }^{1}$ | SPV1622 ${ }^{1}$ | Rated Operational Current (DC21B) | 16A | 16A | 16A | 16A | - | - | Y | B |
| PVP2522 ${ }^{1}$ | SPV2522 ${ }^{1}$ |  | 25A | 25A | 25A | 16A | - | - | Y | B |
| PVP3222 ${ }^{1}$ | SPV3222 ${ }^{1}$ |  | 32A | 32A | - | - | - | - | Y | B |
| PVP4022 ${ }^{1}$ | SPV4022 ${ }^{1}$ |  | 40A | - | - | - | - | - | Y | B |

1. Designed to isolate twin arrays
2. Pollution degree 2


Interior view showing a 32A
4 pole Isolating switch

All enclosures supplied with knockouts.
ABS/Polycarbonate Colour - Grey


## Enclosed Switchgear

For those installing PV isolators in their own assemblies, the following components are available:-

- On-load d.c. isolating switches
- Operating shaft kits
- IP65 Door interlocking handle assemblies


## Isolating Switch Modules

| Catalogue Numbers |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Cat No | Max. enclosure depth with SSH8 shaft | Max. enclosure depth with SSH19 shaft | H1 | H2 |
| SPV162 | 148 | 248 | 50.5 | 28 |
| SPV252 |  |  |  |  |
| SPV322 |  |  |  |  |
| SPV402 |  |  |  |  |
| SPV253 | 159 | 259 | 61.5 | 39 |
| SPV323 |  |  |  |  |
| SPV403 |  |  |  |  |
| SPV1622 | 170 | 270 | 72.5 | 50 |
| SPV2522 |  |  |  |  |
| SPV3222 |  |  |  |  |
| SPV4022 |  |  |  |  |
| SPV164 | 170 | 270 | 72.5 | 50 |
| SPV254 |  |  |  |  |
| SPV324 |  |  |  |  |
| SPV404 |  |  |  |  |

## Door Interlocking Handles

The door interlocked handle is of a stylish design and compact in size. Up to 3 padlocks can be fitted to lock the handle in the 'Off' position. (Ø6.4 max. shackle diameter)


PVPH1 Fixings

| Switch Rating | Sealing | Catalogue No. |
| :---: | :---: | :---: |
| 16A, 25A, 32A \& 40A | IP65 | PVPH1 |

## Design Features

- Type tested to BS EN 60947-3
- Thermal rating $\left(\mathrm{I}_{\text {th }}\right)$ Up to 40A
- Utilization Category DC21B
- Ambient temp. limits $55^{\circ} \mathrm{C}$ (Peak) max
- IP65 Ingress protection for all assemblies
- Operating handles will accept up to three padlocks in the 'Off' position.

Recommended shackle diameter is (1/4") Ø6.4mm

- Terminal capacity:-

| Cable type | Capacity (40A) |
| :--- | :---: |
| Rigid | $2 \times 10 \mathrm{~mm}^{2}$ |
| Flex. | $2 \times 6 \mathrm{~mm}^{2}$ |
| Tightening torque | 1.0 Nm |

Typical assembly in a 32A 4 pole format. (See table for maximum height enclosure space when using 100 mm \&


## Operating Shafts

Supplied in two lengths to suit varying enclosure depths, the shafts can easily be shortened and reassembled.


| Switch <br> Rating | Shaft Length 'L' | Catalogue No. |
| :---: | :---: | :---: |
| 16A, 25A, | 100 mm | SSH8 |
| $32 \mathrm{~A} \& 40 \mathrm{~A}$ | 200 mm | SSH19 |

## Internal Switch Linking

Links supplied factory fitted


7 The incoming \& outgoing 7 '+' \& '-' terminals are clearly marked on the switchdisconnectors as indicated.

##  <br> 

Dims
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## Enclosed Switchgear

## Technical Specification－Fixed Lid

| Data supplied against tests to IEC／BS EN 60947－3 |  |  |  | Rating |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Application | Sym． | Unit | Category | 20A | 25A | 32A |  | 40A |  | 63A |  | 80A | 100A |
| Switch product range | － | － |  | GX20 | CS25 | GX32 | CS32 | GX40 | CS40R | GN63 | CS63 | CS80 | CS100 |
| Rated thermal current | $\mathrm{I}_{\text {the }}$ | A |  | 20 | 25 | 32 | 32 | 40 | 40 | 63 | 63 | 80 | 100 |
| Rated insulation voltage | $\mathrm{U}_{\mathrm{i}}$ | V |  | 690 | 690 | 690 | 690 | 690 | 690 | 690 | 690 | 690 | 1000 |
| Rated impulse voltage | $\mathrm{U}_{\mathrm{imp}}$ | kV |  | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 6 | 8.0 |
| Rated operational power（3 phase AC） |  | kW | 380／440－AC23 | 7.5 | 11 | 15 | 15 | 18.5 | 15 | 30 | 25 | 30 | 59 |
|  |  |  | 500V－AC23 | 7.5 | 15 | 15 | 15 | 15 | 15 | 30 | 30 | 37 | 63 |
|  |  |  | 690V－AC23 | 7.5 | 15 | 15 | 15 | 15 | 15 | 30 | 30 | 30 | 51 |
| Rated short time withstand current（1 sec） | $\mathrm{I}_{\mathrm{cw}}$ | A |  | 250 | 500 | 800 | 600 | 800 | 600 | 1600 | 1300 | 1400 | 2600 |
| Max．fuse size for short circuit protection （gG Characteristic） |  | kA | 10kA | 20 | 35 | 35 | 35 | 40 | 40 | 63 | 80 | 80 | 160 |
|  |  |  | 25kA | 16 | 32 | 35 | 32 | 35 | 32 | 63 | 63 | 63 | 160 |
|  |  |  | 50kA | － | 32 | － | 32 | － | 32 | 63 | 63 | 63 | 160 |
| Recommended connecting capacity |  | － | Terminal type |  | 呂 |  | 啚 |  | 留 | 宽 | 号 | 楟 | 楟 |
|  |  | $\mathrm{mm}^{2}$ | Flexible cable | $2.5 \times 2$ | 6 | $6 \times 2$ | 6 | $6 \times 2$ | 6 | 10 | 16 | 16 | 50 |
|  |  | $\mathrm{mm}^{2}$ | Rigid cable | $2.5 \times 2$ | 10 | $10 \times 2$ | 10 | $10 \times 2$ | 10 | 16 | 25 | 25 | 70 |
|  |  | Nm | Tightening torque | 1.0 | 1.2 | 1.0 | 1.2 | 1.0 | 1.2 | 1.2 | 1.2 | 1.2 | 2 |

## Terminal Markings

| O－I（ $90^{\circ}$ indexing） | O－I（90 ${ }^{\circ}$ indexing） | I－O－II（90 ${ }^{\circ}$ indexing） |
| :---: | :---: | :---: |
|  |  |  |

## Auxiliary Contacts－Type A

Data supplied against tests to IEC／BS EN 60947－5－1

| Application | Category | Sym． | Unit | Rating |
| :---: | :---: | :---: | :---: | :---: |
| Rated insulation voltage | － | $\mathrm{U}_{\mathrm{i}}$ | V | 690 |
| Rated thermal current | － | $\mathrm{I}_{\text {th }}$ | A | 10 |
| Rated operational current（AC15） | 110 V | $l_{\text {e }}$ | A | 8 |
|  | 220－240V |  |  | 8 |
|  | 380－400V |  |  | 3 |
|  | 660－690V |  |  | 1 |
| Max．conductor size | － | － | mm ${ }^{2}$ | 1.5 |
| Tightening torque | － | － | Nm | 0.6 |

## Auxiliary Blocks－Type B \＆C

Data supplied against tests to IEC／BS EN 60947－5－1

|  | Sym． | Category | Auxiliary blocks type＇B＇ | Auxiliary blocks type＇C＇ |
| :--- | :---: | :---: | :---: | :---: |
| Thermal current | $\mathrm{I}_{\text {th }}$ |  | 10 A | 10 A |
| Rated insulation voltage | $\mathrm{U}_{\mathrm{i}}$ |  | 660 V a．c．or d．c． | 660 V |
| Utilisation Category |  | AC15 | $3 \mathrm{~A} @ 240 \mathrm{~V} / 1.5 \mathrm{~A} @ 480 \mathrm{~V}$ | $6 \mathrm{~A} @ 120 \mathrm{~V} / 4 \mathrm{~A} @ 15 \mathrm{~V} / 2 \mathrm{~A} @ 660 \mathrm{~V}$ |
|  |  | - | DC13 | $3 \mathrm{~A} @ 240 \mathrm{~V} / 1.5 \mathrm{~A} @ 480 \mathrm{~V}$ |
|  |  | Pure Resistive | 10 A | $1 \mathrm{~A} @ 120 \mathrm{~V} / 0.5 @ 240 \mathrm{~V} / 01 . @ 660 \mathrm{~V}$ |


| Data supplied against tests to IEC／BS EN 60947－3 |  |  |  | Rating（A） |  |  |  |  |  |  |  |  |  |  |  | $\mathrm{c}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | 3P | 3P | 6 P | 3P | 3 P | 3P | 3P | 3P | 3P | 3P | 3P | 3P |  |
| Application | Sym | Unit | Category | 32 | 63 | 63 | 80 | 100 | 125 | 160 | 200 | 250 | 400 | 630 | 800 | 1000 |
| Rated thermal current | $\mathrm{I}_{\text {the }}$ | A |  | 32 | 63 | 63 | 80 | 100 | 125 | 160 | 200 | 250 | 400 | 630 | 720 | 1000 |
| Rated insulation voltage | $U_{i}$ | V |  | 690 | 690 | 690 | 690 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Rated impulse voltage | $\mathrm{U}_{\text {imp }}$ | kV |  | 6 | 6 | 6 | 6 | 8 | 8 | 8 | 8 | 12 | 12 | 12 | 12 | 8 |
| Rated operational current（AC） | $I^{\prime}$ | A | 400V－AC21A | 32 | 63 | 63 | 80 | 100 | 125 | 160 | 200 | 250＊ | 400＊ | 630＊ | 800＊ | 1000＊ |
|  |  |  | 690 V －AC21A | 32 | 63 | 63 | 80 | 100 | 125 | 160 | 200 | 250 | 400 | 630 | 800 | 1000 |
|  |  |  | 400V－AC22A | － | － | － | － | 100 | 125 | 160 | 200 | 250＊ | 400＊ | 630＊ | 800＊ | 1000＊ |
|  |  |  | 690V－AC22A | － | － | － | － | 100 | 125 | 160 | 160 | 250 | 400 | 630 | 800 | － |
|  |  |  | 400V－AC23A | 29 | 48 | 48 | 56 | 100 | 112 | 128 | 128 | 250＊ | 400＊ | 630＊ | 720＊ | 1000 |
|  |  |  | 690 V －AC23A | 17 | 33 | 33 | 33 | － | － | － | － | 250 | 350 | 350 | 350 | － |
| Rated operational current（DC） （／poles in series） | $\mathrm{I}_{\text {e }}$ | A | Up to 48V－DC21A | 32／1 | 63／1 | 63／1 | 80／1 | － | － | － | － | 250／2 | 400／2 | 630／1 | 800／1 | 1000／1 |
|  |  |  | 220V－DC21A | 32／3 | 63／4 | 1／1 | 80／4 | － | － | － | － | 250／2 | 400／2 | 630／2 | 800／2 | 1000／3 |
|  |  |  | Up to 48V－DC22A | － | － | － | － | － | － | － | － | 250／2 | 400／1 | 630／1 | 800／1 | － |
|  |  |  | 220V－DC22A | － | － | － | － | － | － | － | － | 250／2 | 400／2 | 630／2 | 800／2 | － |
|  |  |  | Up to 48V－DC23A | － | － | － | － | － | － | － | － | 250／2 | 400／1 | 630／1 | 800／1 | － |
|  |  |  | 220V－DC23A | － | － | － | － | － | － | － | － | 250／2 | 400／2 | 630／2 | 630／2 | － |
| Rated operational power | $\mathrm{P}_{\mathrm{e}}$ | kW | 400／415V－AC23A | 15 | 25 | 25 | 30 | 59 | 63 | 75 | 75 | 132 | 200 | 315 | 355 | 400 |
|  |  |  | 690V－AC23A | 15 | 30 | 30 | 30 | 51 | 55 | 55 | 55 | 200 | 315 | 355 | 355 | － |
| Short circuit making capacity | $\mathrm{I}_{\mathrm{cm}}$ | kA | Peak value | 1.4 | 2.9 | 2.9 | 3.0 | 3.7 | 4.0 | 5.0 | 5.0 | 35 | 65 | 80 | 80 | 105 |
| Short circuit withstand（1sec） | $\mathrm{I}_{\mathrm{cw}}$ | kA | rms value | 0.6 | 1.3 | 1.3 | 1.4 | 2.6 | 2.8 | 3.0 | 3.0 | 8 | 17 | 17 | 17 | 50 |
| Min．mechanical endurance |  | － | Operations（ $10^{3}$ ） | 250 | 250 | 500 | 250 | 50 | 50 | 50 | 50 | 16 | 10 | 10 | 10 | 6 |
| Min．electrical endurance |  | － | 415 V －at 0.65 pf | － | － | － | － | － | － | － | － | 1，000 | 1，000 | 500 | 500 | 500 |
| Connecting capacity |  | － | Terminal type | 啚 | 岛 | $\begin{aligned} & \text { 啚 } \\ & \hline \end{aligned}$ | 啚 | 楟 | 咕 | 咢 | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |
|  |  | $\mathrm{mm}^{2}$ | Min／Max | 2．5／10 | 2．5／25 | 2．5／25 | 2．5／25 | －170 | －170 | －170 | －195 | 120 | 2x150 | 2x185 | 2x240 | $60 \times 5$ |
|  |  | mm | Stud／Cu palm width | － | － | － | － | － | － | － | $8 \times 25$ | 10x30 | 10x30 | 12x40 | $12 \times 40$ | 12x60 |
|  |  | Nm | Tightening torque | 1.2 | 1.3 | 1.3 | 2 | 2 | 2 | 2 | 12 | 25 | 25 | 40 | 40 | 40 |

＊All AC21，AC22 \＆AC23 tests carried out at 415V
Technical Specification－Hinged Door
Fuse Combination Units

| Data supplied against tests to IEC／BS EN 60947－3 |  |  |  | Rating（A） |  |  |  |  |  |  |  | $\mathbb{O}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Application | Sym | Unit | Category | 32 | 63 | 100 | 125 | 160 | 200 | 250 | 315 | 400 | 630 |
| Rated thermal current | $\mathrm{I}_{\text {the }}$ | A |  | 32 | 63 | 100 | 125 | 160 | 200 | 250 | 315 | 400 | 630 |
| Rated insulation voltage | $U_{i}$ | V |  | 750 | 750 | 750 | 750 | 750 | 750 | 750 | 750 | 750 | 750 |
| Rated impulse voltage | $\mathrm{U}_{\mathrm{imp}}$ | kV |  | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Rated operational current（AC） | $\mathrm{I}_{\text {e }}$ | A | 415V－AC23A | 32 | 63 | 100 | 125 | 160 | 200 | 250 | 315 | 400 | 630 |
| Rated operational current（DC）＊ |  |  | 220V－DC23A | － | － | 100 | 125 | 160 | 200 | 250 | 315 | 400 | 630 |
| Rated making capacity（AC23A） |  | A | $415 \mathrm{~V}, 0.35 \mathrm{pf}$ | 320 | 630 | 1，000 | 1，250 | 1，600 | 2，000 | 2，500 | 3，150 | 4，000 | 6，300 |
| Rated breaking capacity（AC23A） |  | A | $415 \mathrm{~V}, 0.35 \mathrm{pf}$ | 256 | 504 | 800 | 1，000 | 1，280 | 1，600 | 2，000 | 2，520 | 3，200 | 5，040 |
| Rated Conditional（Fused）short circuit |  | kA | S／C current rms | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
|  |  | A | back－up fuse | 32 | 63 | 100 | 125 | 160 | 200 | 250 | 315 | 400 | 630 |
| Min．mechanical endurance |  | － | Operations | 25，000 | 25，000 | 15，000 | 15，000 | 15，000 | 10，000 | 10，000 | 10，000 | 10，000 | 6，000 |
| Min．electrical endurance |  | － | 415 V －at 0.65 pf | 1，500 | 1，500 | 1，000 | 1，000 | 1，000 | 1，000 | 1，000 | 1，000 | 1，000 | 1，000 |
| BS fuse format |  |  |  | A2 | A2 | A4 | A4 | B1，B2 | B1，B2 | B1，B2 | B1，B4 | B1，B4 | C1，C3 |
| Connecting capacity |  | － | Terminal type | 楟 | 茴 | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | O－ | $\bigcirc$ |
|  |  | $\mathrm{mm}^{2}$ | Min／Max | 16 | 25 | 95 | 95 | 120 | 240 | 240 | 300 | 300 | 400 |
|  |  | mm | Stud／Cu palm width | － | － | $8 \times 20$ | $8 \times 20$ | $8 \times 20$ | 10x25 | 10x25 | 10x25 | 10x25 | $12 \times 50$ |
|  |  | Nm | Tightening torque | 3.5 | 5.5 | 9 | 12 | 16 | 25 | 30 | 35 | 45 | 50 |

＊Two poles in series

Technical Specification - Hinged Door
Changeover Switch-Disconnectors

| Data supplied against tests to |  | N 609 |  | Rating (A) |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Application | Sym | Unit | Category | 63 | 100 | 125 | 160 | 200 | 250 | 400 | 630 |
| Rated thermal current | $\mathrm{I}_{\text {the }}$ | A |  | 63 | 100 | 125 | 160 | 200 | 250 | 400 | 630 |
| Rated insulation voltage | $U_{i}$ | V |  | 750 | 750 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Rated impulse voltage | $\mathrm{U}_{\text {imp }}$ | kV |  | 6 | 6 | 6 | 6 | 6 | 12 | 12 | 12 |
| Rated operational current | $\mathrm{I}^{\text {e }}$ | A | 415V - AC22A | 63 | 100 | 125 | 160 | 200 | 250 | 400 | 630 |
| Rated making capacity (AC23A) |  | A | $415 \mathrm{~V}, 0.35 \mathrm{pf}$ | 630 | 630 | 1,250 | 1,600 | 2,000 | 2,500 | 4,000 | 6,300 |
| Rated breaking capacity (AC23A) |  | A | $415 \mathrm{~V}, 0.35 \mathrm{pf}$ | 504 | 504 | 1,000 | 1,280 | 1,600 | 2,000 | 3,200 | 5,040 |
| Short circuit current |  | kA | rms (with fuses) | 80 | 80 | 80 | 80 | 80 | 100 | 100 | 80 |
| Rated S/C making capacity |  | kA | Peak | 15 | 15 | 20 | 20 | 20 | 30 | 40 | 50 |
| Min. mechanical endurance |  | - | Operations | 20,000 | 20,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 | 10,000 |
| Min. electrical endurance |  | - | 415 V - at 0.65 pf | 2,500 | 1,500 | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 | 500 |
|  |  | - | Terminal type | 0 | O | 0 | 0 | (0) | O | O | $\bigcirc$ |
|  |  | $\mathrm{mm}^{2}$ | Max | 35 | 35 | 95 | 95 | 95 | 240 | 300 | 400 |
| Connecting capacity |  | mm | Stud/Cu palm width | 6/12 | 6/12 | 8/22 | 8/22 | 8/22 | 10/25 | 10/25 | 12/50 |
|  |  | Nm | Tightening torque | 3 | 3 | 10 | 10 | 10 | 30 | 45 | 50 |

## Fire Rated

Data supplied against tests to IEC/BS EN 60947-3

| Application | Sym. | Unit | Category | 20A | 32A | 63A | 80A | 125A | 160A | 200A | 250A | 400A | 630A | 800A |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Rated thermal current | $\mathrm{I}_{\text {the }}$ | A |  | 20 | 32 | 63 | 80 | 125 | 160 | 200 | 250 | 400 | 630 | 720 |
| Rated insulation voltage | $U_{i}$ | V |  | 690 | 690 | 690 | 690 | 690 | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Rated impulse voltage | $\mathrm{U}_{\mathrm{imp}}$ | kV |  | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 |
| Rated operational power <br> (3 phase AC) | $I_{e} / P_{e}$ | A/kW | 415V - AC23A | $20 / 9.5$ | $32 / 15$ | $\begin{aligned} & 40 / \\ & 18.5 \end{aligned}$ | $80 / 40$ | $\begin{gathered} 100 / \\ 55 \end{gathered}$ | $\begin{gathered} 160 / \\ 90 \end{gathered}$ | $\begin{gathered} 200 / \\ 110 \end{gathered}$ | $\begin{gathered} 250 / \\ 132 \end{gathered}$ | $\begin{gathered} 400 / \\ 200 \end{gathered}$ | $\begin{gathered} 630 / \\ 315 \end{gathered}$ | $\begin{gathered} 720 / \\ 355 \end{gathered}$ |
|  |  |  | 690V - AC23A | - | - | - | - | - | $\begin{gathered} 160 / \\ 150 \end{gathered}$ | $\begin{gathered} 200 / \\ 190 \end{gathered}$ | $\begin{gathered} 250 / \\ 200 \end{gathered}$ | $\begin{gathered} 350 / \\ 315 \end{gathered}$ | $\begin{gathered} 350 / \\ 355 \end{gathered}$ | $\begin{gathered} 350 / \\ 355 \end{gathered}$ |
|  |  |  | 690V - AC23B | $20 / 9.5$ | $20 / 9.5$ | $20 / 9.5$ | - | - | - | - | - | - | - | - |
|  |  |  | 660V - AC23B | - | - | - | $30 / 22$ | $30 / 22$ | - | - | - | - | - | - |
| Conditional Short Circuit Current | Fuse gG | kA / <br> Fuse <br> (A) | 415 V | $50 / 32$ | $50 / 32$ | $50 / 63$ | $\begin{aligned} & 50 / \\ & 150 \\ & \hline \end{aligned}$ | $\begin{aligned} & 50 / \\ & 200 \\ & \hline \end{aligned}$ | $\begin{aligned} & 50 / \\ & 160 \end{aligned}$ | $\begin{aligned} & 501 \\ & 200 \\ & \hline \end{aligned}$ | $\begin{aligned} & 50 / \\ & 250 \\ & \hline \end{aligned}$ | - | - |  |
|  |  |  | 690V | 40 / 32 | 40 / 32 | 40 / 63 | $50 / 63$ | $50 / 63$ | $\begin{aligned} & 50 / \\ & 160 \end{aligned}$ | $\begin{aligned} & 50 / \\ & 200 \end{aligned}$ | $\begin{aligned} & 50 / \\ & 250 \end{aligned}$ | $\begin{aligned} & 50 / \\ & 400 \end{aligned}$ | $\begin{gathered} 100 / \\ 630 \end{gathered}$ |  |
| Short circuit withstand (1 sec) | $\mathrm{I}_{\text {cw }}$ | kA | RMS value | - | - | - | 1.5 | 1.5 | 8.0 | 8.0 | 8.0 | 17.0 | 17.0 | 17.0 |
| Recommended connecting capacity |  | - | Terminal type | 品 | 啚 | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | 0 | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |
|  |  | $\mathrm{mm}^{2}$ | Flexible cable | $\leq 4.0$ | 6 | 16 | 50 | 50 | 95 | 95 | 120 | 2/150 | $2 / 185$ | $2 / 240$ |
|  |  | $\mathrm{mm}^{2}$ | Rigid cable | $\leq 4.0$ | 10 | 25 | 35 | 50 | 95 | 95 | 120 | $2 / 150$ | 2 / 185 | $2 / 240$ |
|  |  | Nm | Tightening torque | 1.2 | 1.2 | 3 | 12 | 12 | 25 | 25 | 25 | 25 | 40 | 40 |

## Enclosed Switchgear

Technical Specification
London Underground Stainless Steel

| Rating | Rated Thermal Current $\mathrm{I}_{\mathrm{th}}$ | Rated operational Power $\mathrm{P}_{\mathrm{e}}$ | Max Cable Size |
| :---: | :---: | :---: | :---: |
|  |  | $\mathrm{kW}(380 / 400 \mathrm{~V}-\mathrm{AC} 23 \mathrm{~A})$ |  |$\quad$| $2 \times 4 \mathrm{~mm}^{2}$ |
| :---: |
| 25 A |

Technical Specification
London Underground Die－Cast Aluminium

| Rating | Rated Thermal Current $\mathrm{I}_{\mathrm{th}}$ | Rated operational Power $\mathrm{P}_{\mathrm{e}}$ | Max Cable Size |
| :---: | :---: | :---: | :---: |
|  |  | $\mathrm{kW}(380 / 400 \mathrm{~V}-\mathrm{AC} 23 \mathrm{~A})$ |  |
| 25 A | 25 A | 11.0 | $2 \times 4 \mathrm{~mm}^{2}$ |
| 40 A | 40 A | 15.0 | $6 \mathrm{~mm}^{2} \bigcirc$ |

If you require further information on these products please contact our technical sales team．

## Technical Specification

London Underground Sheet Steel

Switch－Disconnectors

| Rating | Rated Thermal <br> Current $\mathrm{I}_{\text {th }}$ | Rated operational Power $\mathrm{P}_{\mathrm{e}}$ <br>  $\mathrm{kW}(400 \mathrm{~V}$－AC23A） |
| :---: | :---: | :---: |
|  | 40 A | 18.5 |
| 63 A | 63 A | 25 |
| 80 A | 80 A | 40 |
| 100 A | 100 A | 40 |
| 125 A | 125 A | 63 |
| 160 A | 160 A | 80 |
| 200 A | 200 A | 100 |
| 250 A | 250 A | 132 |
| 315 A | 315 A | 160 |
| 400 A | 400 A | 220 |

Fuse Combination Units

| Rating | Rated Thermal <br> Current $\mathrm{I}_{\mathrm{th}}$ | Rated operational Power $\mathrm{P}_{e}$ <br>  $\mathrm{~kW}(400 \mathrm{~V}$－AC23A） |
| :---: | :---: | :---: |

Technical Specification
Ex
Ex Zone 1，2， 21 \＆ 22 Ex＇e＇

| Application | Sym． | Unit | Category | Main Contacts |  |  |  | Aux．Contacts |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | 25A | 40A | 80A | 180A | Category | Aux． |
| Rated thermal current | $\mathrm{I}_{\text {the }}$ | A |  | 25 | 40 | 80 | 180 |  | 10 |
| Rated insulation voltage | $\mathrm{U}_{\mathrm{i}}$ | V |  | 690 | 690 | 690 | 690 |  | 690 |
| Rated current | － | A | AC3（230V） | 25 | 40 | 80 | 180 | AC15（250V） | 10 |
|  |  |  | AC3（400V） | 25 | 40 | 80 | 180 | AC15（400V） | 8 |
|  |  |  | AC3（500V） | 20 | 40 | 80 | 150 | DC13（24V） | 8 |
|  |  |  | AC3（690V） | 16 | 32 | 63 | 125 | DC13（250V） | 1 |
| Terminal Capacity |  | $\mathrm{mm}^{2}$ | － | 2x4 | 2×10 | 2x25 | 2x95 |  | 2x1．5 |
| Tightening Torque（Nm） |  |  | － | 2.5 | 2.5 | 3.5 | 8.5 |  | 2.5 |
| Terminal Type | － |  |  | 家 | 角 | 家 | 家 |  | 家 |


|  |  |  |  | Rating（A） |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Application | Sym． | Unit | Category | 16A | 20A | 25A | 40A | 40A | 63A | 80A | 100A | 125A | 160A | 250A |
| Format | － | － | － | 3P | 6P | 3P | 3P | 6P | 3P | 3P | 3P | 3P | 3P | 3P |
| Enclosure | － | － | － | G21 | G21 | G21 | G22 | G22 | G22 | G24 | G25 | G25 | G25 | G28 |
| Rated thermal current | $\mathrm{I}_{\text {the }}$ | A |  | 16 | 20 | 25 | 40 | 40 | 63 | 80 | 100 | 125 | 160 | 250 |
| Rated Insulation voltage | $U_{i}$ | V |  | 690 | 690 | 690 | 690 | 690 | 690 | 690 | 750 | 750 | 750 | 1000 |
| Rated impulse voltage | $\mathrm{U}_{\mathrm{imp}}$ | kV |  | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 8.0 | 8.0 | 12.0 | 12.0 |
|  |  |  | 380／440V－AC23 | 7.5 | 7.5 | 11 | 15 | 18.5 | 25.0 | 30.0 | 37.0 | 45.0 | 45.0 | 132.0 |
| power |  | kW | 500V－AC23 | 9.0 | 7.5 | 15 | 15.0 | 15 | 30.0 | 37.0 | － | － | － | － |
|  |  |  | 690V－AC23 | 9.0 | 7.5 | 15 | 15.0 | 15 | 30.0 | 30.0 | 37.0 | 45.0 | 45.0 | 200.0 |
| Rated short time withstand current（1 $\mathrm{sec})$ | $\mathrm{I}_{\mathrm{cw}}$ | A |  | 400 | 250 | 500 | 600 | 800 | 1300 | 1400 | 2500 | 2500 | 5000 | 8000 |
| Max．fuse size for |  |  | 10kA | 35 | 20 | 35 | 40 | 40 | 80 | 80 | － | － | － | － |
| short circuit protection | $I_{n}$ | A | 25kA | 32 | 16 | 32 | 32 | 35 | 63 | 63 | － | － | － | － |
|  |  |  | 50kA | 32 | － | 32 | 32 | － | 63 | 63 | － | － | － | － |
|  |  | － | Terminal type | 楟 | $\square$ | 楟 | $\square$ | 啚 | 啚 | 楟 | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | 0 |
|  |  | $\mathrm{mm}^{2}$ | Flexible cable | 6.0 | $2 \times 2.5$ | 6.0 | 6.0 | $2 \times 6.0$ | 16.0 | 16.0 | － | － | － | － |
| Connecting capacity |  | $\mathrm{mm}^{2}$ | Rigid cable | 10.0 | $2 \times 2.5$ | 10.0 | 10.0 | 2x10 | 25.0 | 25.0 | － | － | － | － |
|  |  | mm | Stud Cu palm width | － | － | － | － | － | － | － | $8 \times 20$ | $8 \times 20$ | $8 \times 20$ | $10 \times 30$ |
|  |  | Nm | Tightening torque | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 6.0 | 8.0 | 8.0 | 30－44 |

Technical Specification
Ex Zone 22

| Data supplied against tests to IEC／BS EN 60947－3 |  |  |  | Rating |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | 6P | 3P | $3 \mathrm{P}+6 \mathrm{P}$ | 3P | 6 P | $3 \mathrm{P}+6 \mathrm{P}$ |
| Application | Sym． | Unit | Category | 20A | 25A | 32A | 40A | 40A | 63A |
| Rated thermal current | $\mathrm{I}_{\text {the }}$ | A |  | 20 | 25 | 32 | 40 | 40 | 63 |
| Rated insulation voltage | $\mathrm{U}_{\mathrm{i}}$ | V |  | 690 | 690 | 690 | 690 | 690 | 690 |
| Rated impulse voltage | $\mathrm{U}_{\mathrm{imp}}$ | kV |  | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| Rated operational power （3 phase AC） |  | kW | 380／440V－AC23 | 7.5 | 11 | 15 | 15 | 15 | 25 |
|  |  |  | 500 V －AC23 | 7.5 | 15 | 15 | 15 | 15 | 30 |
|  |  |  | 690V－AC23 | 7.5 | 15 | 15 | 15 | 15 | 30 |
| Rated short time withstand current（1 sec） | $\mathrm{I}_{\text {cw }}$ | A |  | 250 | 500 | 600 | 600 | 600 | 1300 |
| Max．fuse size for short circuit protection（gG Characteristic） |  | kA | 10kA | 20 | 35 | 35 | 40 | 40 | 80 |
|  |  |  | 25kA | 16 | 32 | 32 | 32 | 32 | 63 |
|  |  |  | 50kA | － | 32 | 32 | 32 | 32 | 63 |
| Connecting capacity |  | － | Terminal type | 宽 | $\begin{aligned} & \text { 啚 } \\ & \hline \end{aligned}$ | 啚 | 呂 | 啚 | 啚 |
|  |  | $\mathrm{mm}^{2}$ | Flexible cable | $2.5 \times 2$ | 6 | 6 | 6 | 6 | 16 |
|  |  | $\mathrm{mm}^{2}$ | Rigid cable | $2.5 \times 2$ | 10 | 10 | 10 | 10 | 25 |
|  |  | Nm | Tightening torque | 1.0 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |

[^5]
## Enclosed Switchgear

## Moulded Plastic Switchgear

Sizes A \& B


Size E


| Enc <br> Size | Overall Dims. |  |  | Fixing details |  |  | Knockouts |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | H | W | D | F1 | F2 | $\varnothing$ | Top | Btm | Back |
| A | 135 | 100 | 95 | 85 | 98.5 | 5.5 | $\begin{gathered} \hline 2 x \\ \text { M20 } \end{gathered}$ | $\begin{gathered} 2 x \\ \text { M20 } \end{gathered}$ | $\begin{gathered} \hline 2 x \\ \text { M20 } \end{gathered}$ |
| B | 175 | 130 | 115 | 115 | 135 | 5.5 | Com | $\begin{aligned} & \text { nation } \\ & \text { M25 } \end{aligned}$ | $\begin{gathered} 2 \mathrm{x} \\ \mathrm{M} 20 \end{gathered}$ |
| C | 255 | 180 | 125 | 163.5 | 238.5 | 4.5 |  | ain sid |  |
| D | 255 | 180 | 175 | 163.5 | 238.5 | 4.5 |  | ain sid |  |
| E | 149 | 100 | 108.5 | 85 | 98.5 | 5.5 | $\begin{gathered} \hline 2 x \\ \text { M20 } \end{gathered}$ | $\begin{gathered} \hline 2 x \\ \mathrm{M} 20 \end{gathered}$ | $\begin{gathered} \hline 2 x \\ \text { M20 } \end{gathered}$ |

## Die-Cast Aluminium Switchgear

## Size A




Size B


See page 5 for conduit entry configurations.

## Enclosed Switchgear

Stainless Steel Flush Mounting Switchgear


Size A
Sheet Steel \& Stainless Steel Switchgear

$\dagger$ Stainless steel enclosures are supplied without 'raised dimples' to allow flush mounting.

|  | Overall Dims. |  |  | Internal Fixings |  |  |  | External EFA/EFB <br>  <br>  |  |  |  |  | H | W | D | F1 | F2 | $\varnothing$ | F3 | F4 | F5 | $\varnothing \varnothing$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Size A | 135 | 100 | 80 | 51 | 86 | 5.5 | 126 | 140 | 16 | 6.35 |  |  |  |  |  |  |  |  |  |  |  |  |
| Size B | 175 | 130 | 100 | 81 | 126 | 5.5 | 155 | 178 | 16 | 6.35 |  |  |  |  |  |  |  |  |  |  |  |  |



Size B (* $=75$ ) / Size C (* $=100$ )
Stainless Steel Sloping Roof Switchgear


## Photovoltaic (PV) Switchgear


Sizes B

| Encl. | Overall Dims |  |  | Fixing Details |  |  | Knockouts |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | H | W | D | F1 | F2 | $\varnothing$ | Top | Btm | Back |
| B | 175 | 130 | 115 | 115 | 135 | 5.5 | $2 x$ <br> Combination <br> M20 / M25 | $2 x$ <br> M20 |  |
| E | 149 | 100 | 108.5 | 85 | 98.5 | 5.5 | $2 x$ <br> M20 | $2 x$ <br> M20 | $2 x$ <br> M20 |

## Enclosed Switchgear

## Sheet Steel IP41 \& IP65 Switchgear



Sheet Steel Enclosure Sizes

| Dim | 1 | 2 | 3 | 3 A | 4 | 4 A | 5 | 5 A | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| H | 250 | 250 | 400 | 350 | 500 | 400 | 550 | 550 | 750 | 750 | 900 | 900 | 1000 |
| W | 250 | 300 | 350 | 300 | 350 | 300 | 450 | 400 | 450 | 600 | 600 | 600 | 750 |
| D | 100 | 200 | 200 | 175 | 200 | 175 | 250 | 175 | 275 | 300 | 300 | 400 | 300 |
| A | 170 | 170 | 320 | 270 | 420 | 320 | 470 | 470 | 670 | 670 | 820 | 820 | 920 |
| B | 170 | 220 | 270 | 220 | 270 | 220 | 370 | 320 | 370 | 520 | 520 | 520 | 670 |
| C | 40 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 |
| $\varnothing$ | 6.5 | 6.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 10.5 | 10.5 | 10.5 |

External Feet

| E | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 | 35 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| F | 53 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 |
| G | 18 | 18 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 |
| J | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 | 58 |
| $\varnothing \varnothing$ | 6.5 | 6.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 8.5 | 10.5 | 10.5 | 10.5 |

External Mounting Feet (Four per set)
Enclosure Sizes 1 \& 2
Enclosure Sizes 3-7
Cat No. SEFL1/KIT
Cat No. SEFL2/KIT
Enclosure Sizes 8-10 Cat No. SEFL3/KIT

## Sheet Steel Flagged Switchgear



Flagged Enclosure Sizes

| Dim | $1 F$ | $2 F$ | $3 F$ | $4 F$ | $5 F$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| H | 250 | 400 | 500 | 600 | 750 |
| W | 350 | 350 | 400 | 450 | 450 |
| D | 163 | 163 | 163 | 220 | 220 |
| A | 170 | 320 | 420 | 520 | 670 |
| B | 270 | 270 | 320 | 370 | 370 |
| C | 67 | 67 | 67 | 67 | 67 |
| K | 1.5 | 1.5 | 1.5 | 2.0 | 2.0 |
| $\varnothing$ | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 |

External Feet

| $\operatorname{Dim}$ | 1 F | 2 F | 3 F | 4 F |
| :---: | :---: | :---: | :---: | :---: |
| E | 35 | 35 | 35 | 35 |
| F | 53 | 58 | 58 | 58 |
| G | 18 | 18 | 13 | 13 |
| J | 58 | 58 | 58 | 58 |
| $\varnothing \varnothing$ | 6.5 | 6.5 | 8.5 | 8.5 |

## Enclosed Switchgear

## LU 'Section 12’ Switchgear



Hinged Door Enclosure




| Box Size | $\underset{\text { A }}{\text { Dim }}$ | $\underset{\mathrm{B}}{\operatorname{Dim}}$ | Dim C |  | $\underset{\mathrm{D}}{\operatorname{Dim}}$ | $\underset{\mathrm{E}}{\operatorname{Dim}}$ | $\underset{\mathrm{F}}{\operatorname{Dim}}$ | $\underset{\mathrm{G}}{\operatorname{Dim}}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Switch Disconnector | Fuse Combination |  |  |  |  |
| 1 | 270 | 285 | 124.5 | - | 130 | 64 | 215 | 200 |
| 2 | 410 | 290 | 145 | 91 | 190 | 64 | 220 | 340 |
| 2A | 550 | 300 | 150 | 91 | 190 | 80 | 230 | 480 |
| 3 | 630 | 460 | 230 | 110 | 330 | 80 | 390 | 560 |
| 4 | 760 | 550 | 275 | 140 | 380 | 80 | 480 | 690 |
| 5 | 900 | 580 | - | 115 | 390 | 80 | 510 | 830 |

## Enclosed Switchgear

## F300 \& F400 Fire Rated Switchgear

Size B


Size C


Size D



Size E


## Enclosed Switchgear

## Standard Automatic Transfer Switches



|  | $H$ | W | D |
| :---: | :---: | :---: | :---: |
| Size A | 400 | 300 | 150 |
| Size B | 600 | 400 | 250 |
| Size C | 800 | 600 | 300 |
| Size D | 1000 | 800 | 300 |

Combination Automatic Transfer Switches


Automatic Transfer Switches with Bypass



| Dual Line Bypass | H | W | D |
| :---: | :---: | :---: | :---: |
| A | 800 | 600 | 300 |
| B | 1000 | 600 | 300 |
| C | 1200 | 800 | 300 |
| D | 1400 | 1000 | 300 |
| E | 1600 | 1000 | 400 |

## Enclosed Switchgear

## LU Standard Automatic Transfer Switches

|  | Rating | L | W | D |
| :---: | :---: | :---: | :---: | :---: |
| Size A | 32 A / 45A | 600 | 400 | 250 |
| Size B | 63 A $/ 100 \mathrm{~A}$ | 700 | 500 | 250 |
| Size C | 160 A $/ 200 \mathrm{~A}$ | 800 | 600 | 300 |
| Size D | 400 A | 1000 | 800 | 300 |



LU Combination Automatic Transfer Switches


## Enclosure A



Enclosure C


Enclosure D


## EX Zone 1, 2, 21 \& 22 Ex 'd'



EX Zone 22


4 HOLES $\varnothing 5.5$
Enclosure A


Enclosure B

| Dim | H | W | D | A | B | C |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Size C | 250 | 256 | 108 | 286 | 206 | 320 |
| Size D | 250 | 306 | 208 | 286 | 256 | 320 |




[^0]:    ＇ N ＇＝switched neutral（Early make，late break）
    ＇NL＇＝Unswitched neutral
    ＇EB＇＝Early break auxiliary contacts
    ＇$X$＇＝Bottom cable entries only．For top and bottom cable entries，replace＇$X$＇with＇$Y$＇in
    the catalogue reference．I．e．SDDG402Y
    Add suffix＇／10＇to the part number for padlocking in the＇On＇position e．g．SDDG253／10

[^1]:    $\mathrm{N}^{\prime}$ = switched neutral (Early make, late break)
    'NL' = Unswitched neutral
    'EB'= Early break auxiliary contacts

[^2]:    ' N ' = switched neutral

[^3]:    Dims
    Page 42

[^4]:    Aux - 1 N/O (Early break) \& 1 N/C (Late make)

[^5]:    ＊Fuse in circuit－$I_{n}(g G / g L) \quad$＊＊Fuse in circuit－63A

