

## General Description

Switchgear housed in moulded plastic enclosures provide the basis for most industrial applications and the added benefits offered by the 'i-switch' range provide the user with a wealth of opportunities when selecting the correct item for a specific application. Sealing up to IP66 is a standard feature as is the ability to add a selection of auxiliary blocks providing additional contacts and a choice of Neutral assemblies.

With the 'i-switch' range comes an important safety feature which prevents the enclosure cover being removed when the device has been padlocked in the 'Off' position. When combined with the excellent on-load breaking capacity of the 'i-switch' family this feature ensures that the term 'Safety Switch' is fully satisfied.



## Safety Features

### Padlocking

All items 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



### Safety Interlock

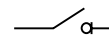
Screwed lid enclosures have always been open to abuse by having the lid removable when the isolator is 'Off' and padlocked. This would allow the switch shaft to be turned manually to the 'On' position, thus defeating the safety padlocking feature.

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



Watch a 3 minute video explaining the various safety features built-in to the design of the i-switch 'screwed lid' product family.

## Switch-Disconnectors (O-I)



### Catalogue Numbers

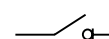
| Rating | Format     | Interior Switch product range | Cat. No.  | Enclosure Size |
|--------|------------|-------------------------------|-----------|----------------|
| 20A    | 6P         | GX20                          | SDP206    | A<br>(IP66)    |
|        | 6P+2EB Aux | GX20                          | SDP206EB  |                |
| 25A    | 2P         | CS25                          | SDP252    | A<br>(IP66)    |
|        | 3P         | CS25                          | SDP253    |                |
|        | 3P+NL      | CS25                          | SDP253NL  |                |
|        | 3P+N       | CS25                          | SDP253N   |                |
|        | 3P+2EB Aux | CS25                          | SDP253EB  |                |
| 32A    | 2P         | CS32                          | SDP322    | A<br>(IP66)    |
|        | 3P         | CS32                          | SDP323    |                |
|        | 3P+NL      | CS32                          | SDP323NL  |                |
|        | 3P+N       | CS32                          | SDP323N   |                |
|        | 3P+2EB Aux | CS32                          | SDP323EB  |                |
| 40A    | 2P         | CS40R                         | SDP402    | B<br>(IP66)    |
|        | 3P         | CS40R                         | SDP403    |                |
|        | 3P+NL      | CS40R                         | SDP403NL  |                |
|        | 3P+N       | CS40R                         | SDP403N   |                |
|        | 3P+2EB Aux | CS40R                         | SDP403EB  |                |
|        | 6P         | GX40                          | SDP406    |                |
| 63A    | 6P+2EB Aux | GX40                          | SDP406EB  | B<br>(IP66)    |
|        | 2P         | CS63                          | SDP632    |                |
|        | 3P         | CS63                          | SDP633    |                |
|        | 3P+NL      | CS63                          | SDP633NL  |                |
|        | 3P+N       | CS63                          | SDP633N   |                |
| 80A    | 3P+2EB Aux | CS63                          | SDP633EB  | C<br>(IP65)    |
|        | 2P         | CS80                          | SDP802    |                |
|        | 3P         | CS80                          | SDP803    |                |
|        | 3P+NL      | CS80                          | SDP803NL  |                |
|        | 3P+N       | CS80                          | SDP803N   |                |
| 100A   | 3P+2EB Aux | CS80                          | SDP803EB  | D<br>(IP65)    |
|        | 2P         | CS100                         | SDP1002   |                |
|        | 3P         | CS100                         | SDP1003   |                |
|        | 3P+NL      | CS100                         | SDP1003NL |                |
|        | 3P+N       | CS100                         | SDP1003N  |                |
|        | 3P+2EB Aux | CS100                         | SDP1003EB |                |

'N' = switched neutral (Early make, late break)

'NL' = Unswitched neutral

'EB' = Early break auxiliary contacts

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



### Catalogue Numbers

| Rating | Format | Interior Switch product range | Cat. No. | Enclosure Size |
|--------|--------|-------------------------------|----------|----------------|
| 20A    | 2P     | GX20                          | SCODP202 | A<br>(IP66)    |
|        | 3P     | GX20                          | SCODP203 |                |
|        | 4P     | GX20                          | SCODP204 |                |
| 40A    | 2P     | GX40                          | SCODP402 | B<br>(IP66)    |
|        | 3P     | GX40                          | SCODP403 |                |
|        | 4P     | GX40                          | SCODP404 |                |

## Design Features

### Enclosure

|              |                                                                                                                                                                                                                                     |                                                                                   |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Material     | 20A-63A PC/ABS<br>80A-100A PC                                                                                                                                                                                                       |  |
| Colour       | Enclosure - Grey RAL 7035                                                                                                                                                                                                           |                                                                                   |
| Entries      | <b>Size A Enclosure</b> - 2 x M20 knock-outs on top & bottom faces.<br><b>Size B Enclosure</b> - 2 x M20/25 knock-outs on top & bottom faces.<br>Back face - 2 x M20 knock-outs.<br><b>Size C &amp; D Enclosures</b> - Blank sides. |                                                                                   |
| Cover Screws | Stainless Steel (Captive)                                                                                                                                                                                                           |                                                                                   |
| Fixings      | Outside sealed cavity.                                                                                                                                                                                                              |                                                                                   |

### Switch-Disconnectors

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

### Changeover Switch-Disconnectors

|               |                                |
|---------------|--------------------------------|
| 2, 3 & 4 Pole | Type <b>GX</b> - base mounted. |
|---------------|--------------------------------|

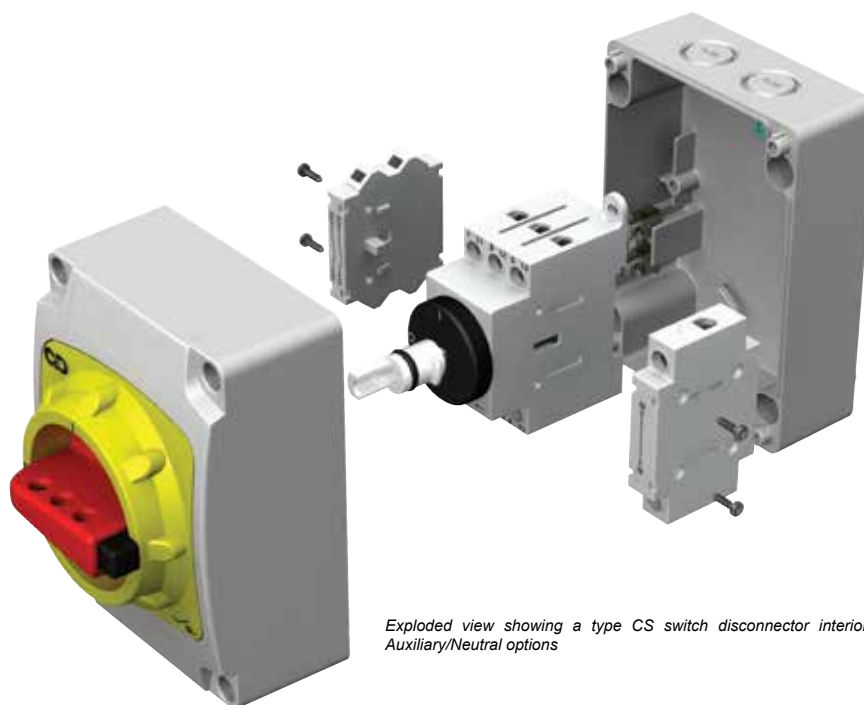
### Earthing

Earth terminals are provided in the base of the enclosures.

## 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   |



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

## General Description

The 'i-switch' die cast range provides the user with a product that will withstand a good deal of rough treatment. With sealing to IP66 these assemblies 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.



Size A & Size B enclosures as Switch-Disconnectors in both Red & Grey



20A Changeover Switch-Disconnecter in a size A enclosure

### Switch-Disconnectors (O-I)

### C/O Switch-Disconnectors (I-O-II)

#### Catalogue Numbers

| Rating | Format     | Interior Switch product range | Catalogue Nos. |            | Enclosure Size (IP66) |
|--------|------------|-------------------------------|----------------|------------|-----------------------|
|        |            |                               | Grey           | Red        |                       |
| 20A    | 6P         | GX20                          | SDDG206        | SDDR206    | A                     |
|        | 6P+2EB Aux | GX20                          | SDDG206EB      | SDDR206EB  |                       |
| 25A    | 2P         | CS25                          | SDDG252        | SDDR252    | A                     |
|        | 3P         | CS25                          | SDDG253        | SDDR253    |                       |
|        | 3P+NL      | CS25                          | SDDG253NL      | SDDR253NL  |                       |
|        | 3P+N       | CS25                          | SDDG253N       | SDDR253N   |                       |
|        | 3P+2EB Aux | CS25                          | SDDG253EB      | SDDR253EB  |                       |
| 32A    | 2P         | CS32                          | SDDG322        | SDDR322    | A                     |
|        | 3P         | CS32                          | SDDG323        | SDDR323    |                       |
|        | 3P+NL      | CS32                          | SDDG323NL      | SDDR323NL  |                       |
|        | 3P+N       | CS32                          | SDDG323N       | SDDR323N   |                       |
|        | 3P+2EB Aux | CS32                          | SDDG323EB      | SDDR323EB  |                       |
| 40A    | 2P         | CS40R                         | SDDG402X       | SDDR402X   | A                     |
|        | 3P         | CS40R                         | SDDG403X       | SDDR403X   |                       |
|        | 3P+NL      | CS40R                         | SDDG403NLX     | SDDR403NLX |                       |
|        | 3P+N       | CS40R                         | SDDG403NX      | SDDR403NX  |                       |
|        | 3P+2EB Aux | CS40R                         | SDDG403EBX     | SDDR403EBX |                       |
|        | 2P         | CS40R                         | SDDG402        | SDDR402    | B                     |
|        | 3P         | CS40R                         | SDDG403        | SDDR403    |                       |
|        | 3P+NL      | CS40R                         | SDDG403NL      | SDDR403NL  |                       |
|        | 3P+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    |                       |
|        | 3P+NL      | CS63                          | SDDG633NL      | SDDR633NL  |                       |
|        | 3P+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                     |
|        | 3P+NL      | CS80                          | SDDG803NL      | SDDR803NL  |                       |
|        | 3P+N       | CS80                          | SDDG803N       | SDDR803N   |                       |

'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

## 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    |
| 25A Neutral (Switched)                 | SSP25    |
| 32A & 40A Neutral (Switched)           | SSP40    |
| 63A Neutral (Switched)                 | SSP63    |
| 80A Neutral (Switched)                 | SSP80    |

## 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)

### Paint finish

Grey - RAL 7035

Red - RAL 3020.



### Entries

#### Size A 20A - 32A

Std Cat No. : 2xM20 on bottom face

Suffix X : 2xM25 on bottom face

Suffix Y : 2xM25 on bottom face & 2xM25 on top face

#### Size A 40A

Std Cat No. : 2xM25 on bottom face

Suffix X : 2xM25 on bottom face

Suffix Y : 2xM25 on bottom face & 2xM25 on top face

#### Size B 40A

Std Cat No. : 2xM25 + 1xM20 on bottom face

#### Size B 63A

Std Cat No. : 2xM25 + 1xM20 on bottom face

Suffix X : 2xM32 + 1xM16 on bottom face

Suffix Y : 2xM32 + 1xM16 on bottom face & 2xM32 on top face

#### Size B 80A

Std Cat No. : 2xM32 + 1xM20 on bottom face

Suffix X : 2xM32 + 1xM16 on bottom face

Suffix Y : 2xM32 + 1xM16 on bottom face & 2xM32 on top face

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 IP66 sealed area. Guide channels are provided to assist with the fixing screw location.



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



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

Die-Cast Aluminium

## Switch-Disconnectors

- |               |                                                                                                    |
|---------------|----------------------------------------------------------------------------------------------------|
| 2, 3 & 6 Pole | Type <b>CS</b> - base mounted.<br>(Accepts add-on Aux. blocks & Neutrals, see page 13 for ratings) |
| 6 Pole        | Type <b>GX</b> - base mounted.<br>(also available with 2 E/B Aux.)                                 |

## Changeover Switch-Disconnectors

- |               |                                |
|---------------|--------------------------------|
| 2, 3 & 4 Pole | Type <b>GX</b> - base mounted. |
|---------------|--------------------------------|

## ...products for the real world



Technical  
Data  
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Dims  
Page 37

### General Description

Craig & Derricott have been manufacturing flush mounting isolators for more than 70 years and in that time the design has been carefully modified to give features that installers and end users really need.

The assembly consists of a zinc plated back box (complete with knock-outs) and a stainless steel fascia plate which carries the isolating switch and lockable handle. The fascia plate now comes in an attractive brushed finish which resists the fingerprint effect associated with highly polished surfaces. Equally at home in kitchens, laboratories, food processing areas, hospitals and many other areas where an elegant, low projection isolation device is required.



### Design Features

#### Enclosure

Fascia plate      Stainless steel 304, thickness 1.2mm  
*Finish*      Brushed.



Back box      Sheet steel, thickness 1.4mm  
*Finish*      Galvanised

#### Entries

Knockouts in back box.

#### Sealing

Isolating switch to stainless steel fascia plate - IP66.

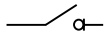
#### Fascia plate securing screws

Stainless steel (M5 x 25 with 'Allen Key' head).

#### Earthing

Separate earthing points on fascia plate and back box.

### Switch-Disconnectors (O-I)



#### Catalogue Numbers

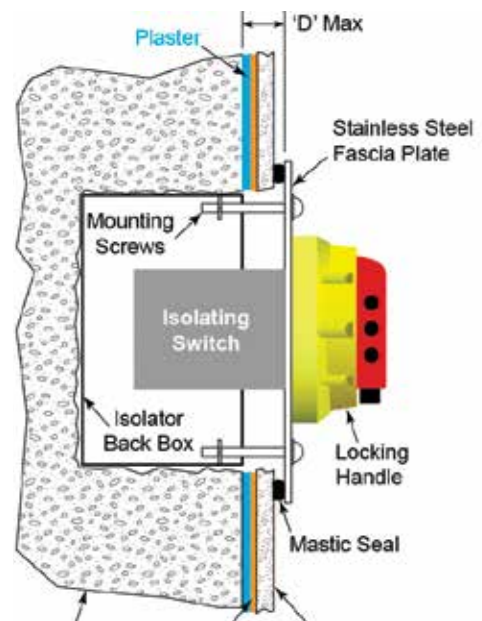
| Rating | Format | Interior Switch product range | Cat. No. | Enclosure Size |
|--------|--------|-------------------------------|----------|----------------|
| 20A    | 2P     | GX                            | SDFL202  | A              |
|        | 3P     |                               | SDFL203  |                |
|        | 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  |                |

### Installation

Whilst the joint between the isolating switch and the stainless steel fascia plate is factory sealed to IP66 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.



**Typical Installation**  
('D' max = 20mm with standard length mounting screws)



## General Description

Switchgear housed in mild steel enclosures provides the user with a robust and cost effective assembly along with the added features offered by the 'i-switch' range. Sealing to IP66 is a standard feature as is 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.

With the 'i-switch' range comes an important safety feature which prevents the enclosure cover being removed when the device has been padlocked in the 'Off' position. When combined with the excellent on-load breaking capacity of the 'i-switch' family this feature ensures that the term 'Safety Switch' is fully satisfied.



## Safety Features

All safety features are identical to the plastic moulded range - see page 3 for details.

## Design Features

### Enclosure

|               |                                                                                  |
|---------------|----------------------------------------------------------------------------------|
| Material      | Sheet steel, thickness 1.2mm                                                     |
| Paint finish  | Polyester Powder Coated.                                                         |
| Colour        | Enclosure - Grey RAL 7035                                                        |
| Entries       | <b>Size A Enclosure</b> - 2 x M20<br><b>Size B Enclosure</b> - 2 x M20 + 2 x M25 |
| Cover Screws  | Stainless Steel (Captive)                                                        |
| External Feet | Size A enclosure - Cat. No. <b>EFA</b><br>Size B enclosure - Cat. No. <b>EFB</b> |

### Switch-Disconnectors

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

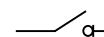
### Changeover Switch-Disconnectors

|               |                                |
|---------------|--------------------------------|
| 2, 3 & 4 Pole | Type <b>GX</b> - base mounted. |
|---------------|--------------------------------|

### Earthing

Earth continuity terminals are provided in the base and lid of each enclosure.

## Switch-Disconnectors (O-I)



### Catalogue Numbers

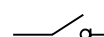
| Rating | Format     | Interior Switch product range | Cat. No.         | Enclosure Size (IP66) |
|--------|------------|-------------------------------|------------------|-----------------------|
| 20A    | 6P         | GX20                          | <b>SDMG206</b>   | A                     |
|        | 6P+2EB Aux | GX20                          | <b>SDMG206EB</b> |                       |
| 25A    | 2P         | CS25                          | <b>SDMG252</b>   | A                     |
|        | 3P         | CS25                          | <b>SDMG253</b>   |                       |
|        | 3P+NL      | CS25                          | <b>SDMG253NL</b> |                       |
|        | 3P+N       | CS25                          | <b>SDMG253N</b>  |                       |
|        | 3P+2EB Aux | CS25                          | <b>SDMG253EB</b> |                       |
| 32A    | 2P         | CS32                          | <b>SDMG322</b>   | A                     |
|        | 3P         | CS32                          | <b>SDMG323</b>   |                       |
|        | 3P+NL      | CS32                          | <b>SDMG323NL</b> |                       |
|        | 3P+N       | CS32                          | <b>SDMG323N</b>  |                       |
|        | 3P+2EB Aux | CS32                          | <b>SDMG323EB</b> |                       |
| 40A    | 2P         | CS40R                         | <b>SDMG402</b>   | B                     |
|        | 3P         | CS40R                         | <b>SDMG403</b>   |                       |
|        | 3P+NL      | CS40R                         | <b>SDMG403NL</b> |                       |
|        | 3P+N       | CS40R                         | <b>SDMG403N</b>  |                       |
|        | 3P+2EB Aux | CS40R                         | <b>SDMG403EB</b> |                       |
|        | 6P         | GX40                          | <b>SDMG406</b>   |                       |
| 63A    | 6P+2EB Aux | GX40                          | <b>SDMG406EB</b> | B                     |
|        | 2P         | CS63                          | <b>SDMG632</b>   |                       |
|        | 3P         | CS63                          | <b>SDMG633</b>   |                       |
|        | 3P+NL      | CS63                          | <b>SDMG633NL</b> |                       |
|        | 3P+N       | CS63                          | <b>SDMG633N</b>  |                       |
|        | 3P+2EB Aux | CS63                          | <b>SDMG633EB</b> |                       |

'N' = switched neutral (Early make, late break)

'NL' = Unswitched neutral

'EB' = Early break auxiliary contacts

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



### Catalogue Numbers

| Rating | Format | Interior Switch product range | Cat. No.         | Enclosure Size |
|--------|--------|-------------------------------|------------------|----------------|
| 20A    | 2P     | GX20                          | <b>SCODMG202</b> | A              |
|        | 3P     | GX20                          | <b>SCODMG203</b> |                |
|        | 4P     | GX20                          | <b>SCODMG204</b> |                |
| 40A    | 2P     | GX40                          | <b>SCODMG402</b> | B              |
|        | 3P     | GX40                          | <b>SCODMG403</b> |                |
|        | 4P     | GX40                          | <b>SCODMG404</b> |                |

## Accessories

Applicable to type 'CS' interiors only

| Description                            | Cat. No.       |
|----------------------------------------|----------------|
| Auxiliary Contact - 2 Early Break      | <b>SAUX2EB</b> |
| Auxiliary Contact - 1 N/O + 1 N/C      | <b>SAUXCO</b>  |
| 25A - 40A Compact Neutral (Unswitched) | <b>SNLC40</b>  |
| 63A Neutral (Unswitched)               | <b>SNL63</b>   |
| 25A Neutral (Switched)                 | <b>SSP25</b>   |
| 32A & 40A Neutral (Switched)           | <b>SSP40</b>   |
| 63A Neutral (Switched)                 | <b>SSP63</b>   |



## General Description

Switchgear housed in stainless steel enclosures provides the user with an assembly that can be installed in the harshest of environments. Outdoor in unprotected positions or indoor and subject to severe environmental conditions, the standard stainless steel i-switch range with a flush back surface offers the ideal solution. Sealing to IP66 is a standard feature as is 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.

With the 'i-switch' range comes an important safety feature which prevents the enclosure cover being removed when the device has been padlocked in the 'Off' position. When combined with the excellent on-load breaking capacity of the 'i-switch' family this feature ensures that the term 'Safety Switch' is fully satisfied.



## Safety Features

All safety features are identical to the plastic moulded range - see page 3 for details.

## Design Features

### Enclosure (Flush rear surface)

|               |                                                                                                        |
|---------------|--------------------------------------------------------------------------------------------------------|
| Material      | Stainless steel, Grade 304, thickness 1.2mm (Grade 316 to special order)                               |
| Finish        | Brushed - <br>Satin |
| Entries       | <b>Size A Enclosure</b> - 2 x M20<br><b>Size B Enclosure</b> - 2 x M20 + 2 x M25                       |
| Cover Screws  | Stainless Steel (Captive)                                                                              |
| External Feet | Size A enclosure - Cat. No. <b>EFA</b><br>Size B enclosure - Cat. No. <b>EFB</b>                       |

### Switch-Disconnectors

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

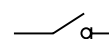
### Changeover Switch-Disconnectors

|               |                                |
|---------------|--------------------------------|
| 2, 3 & 4 Pole | Type <b>GX</b> - base mounted. |
|---------------|--------------------------------|

### Earthing

Earth continuity terminals are provided in the base and lid of each enclosure.

## Standard Switch-Disconnectors (O-I)



### Catalogue Numbers

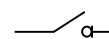
| Rating | Format     | Interior Switch product range | Cat. No.        | Enclosure Size (IP66) |
|--------|------------|-------------------------------|-----------------|-----------------------|
| 20A    | 6P         | GX20                          | <b>SDS206</b>   | A                     |
|     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

'N' = switched neutral (Early make, late break)

'NL' = Unswitched neutral

'EB' = Early break auxiliary contacts

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



### Catalogue Numbers

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

## Accessories

Applicable to type 'CS' interiors only - Please refer to the table on Page 4.



## General Description

Based upon Craig & Derricott's 'i-switch' range of isolation equipment, the specially designed stainless steel 'sloping roof' enclosure is 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.

With the 'i-switch' range comes an important safety feature which prevents the enclosure cover being removed when the device has been padlocked in the 'Off' position. When combined with the excellent on-load breaking capacity of the 'i-switch' family this feature ensures that the term '**Safety Switch**' is fully satisfied.

## Safety Features

All safety features are identical to the plastic moulded range - see page 3 for details.

## Design Features

### Enclosure (Flush rear surface)

|              |                                                                                                                                                                                                                                                            |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Material     | Stainless steel, Grade 316, thickness 1.2mm body, 1.5mm lid. (15° Slope)                                                                                                                                                                                   |
| Finish       | Brushed -                                                                                                                                                                 |
| Entries      | The enclosures are supplied as standard without entries. Optional pre-drilled bottom entries can be supplied as follows:-<br>Size A - 2xM20 (add M20 to cat No.)<br>Size B - 2xM25 (add M25 to cat No.)<br>e.g. <b>SDSSR322/M20</b> , <b>SDSSR403N/M25</b> |
| Cover Screws | Stainless Steel (Captive)                                                                                                                                                                                                                                  |

### Fixings

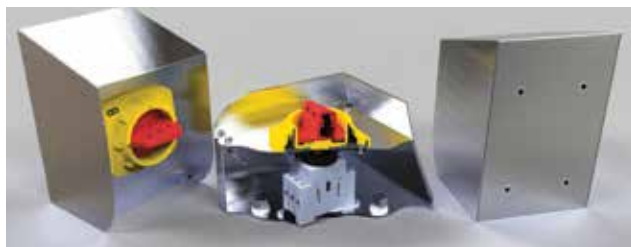
Universal fixings across the range.

### Switch-Disconnectors

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

### 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

Applicable to type 'CS' interiors only - Please refer to the table on Page 4.



## Sloping Roof Switch-Disconnectors (O-I)

### Catalogue Numbers

| Rating | Format     | Interior Switch product range | Cat. No.          | Encl. Size (IP66) |
|--------|------------|-------------------------------|-------------------|-------------------|
| 20A    | 6P         | GX20                          | <b>SDSSR206</b>   | A                 |
|        | 6P+2EB AUX | GX20                          | <b>SDSSR206EB</b> |                   |
| 25A    | 2P         | CS25                          | <b>SDSSR252</b>   | A                 |
|        | 3P         | CS25                          | <b>SDSSR253</b>   |                   |
|        | 3P+2EB AUX | CS25                          | <b>SDSSR253EB</b> |                   |
|        | 3P+N       | CS25                          | <b>SDSSR253N</b>  |                   |
| 32A    | 2P         | CS32                          | <b>SDSSR322</b>   | A                 |
|        | 3P         | CS32                          | <b>SDSSR323</b>   |                   |
|        | 3P+2EB AUX | CS32                          | <b>SDSSR323EB</b> |                   |
|        | 3P+N       | CS32                          | <b>SDSSR323N</b>  |                   |
| 40A    | 2P         | CS40R                         | <b>SDSSR402</b>   | B                 |
|        | 3P         | CS40R                         | <b>SDSSR403</b>   |                   |
|        | 3P+2EB AUX | CS40R                         | <b>SDSSR403EB</b> |                   |
|        | 3P+N       | CS40R                         | <b>SDSSR403N</b>  |                   |
|        | 6P         | GX40                          | <b>SDSSR406</b>   |                   |
|        | 6P+2EB AUX | GX40                          | <b>SDSSR406EB</b> |                   |
| 63A    | 2P         | CS63                          | <b>SDSSR632</b>   | B                 |
|        | 3P         | CS63                          | <b>SDSSR633</b>   |                   |
|        | 3P+2EB AUX | CS63                          | <b>SDSSR633EB</b> |                   |
|        | 3P+N       | CS63                          | <b>SDSSR633N</b>  |                   |
| 80A    | 2P         | CS80                          | <b>SDSSR802</b>   | B                 |
|        | 3P         | CS80                          | <b>SDSSR803</b>   |                   |
|        | 3P+2EB AUX | CS80                          | <b>SDSSR803EB</b> |                   |
|        | 3P+N       | CS80                          | <b>SDSSR803N</b>  |                   |

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



### General Description

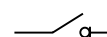
Supplied in 'hinged door' grey powder coated sheet steel enclosures, these IP41 sealed assemblies are suitable for most indoor industrial applications. Supplied as 'Switch-Disconnectors' or 'Fuse Combination Units' all items are supplied in generously sized enclosures which helps to avoid the need for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



### 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.

### Switch-Disconnectors (O-I)



#### Catalogue Numbers

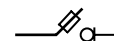
| Rating | Format  | Cat. No.      | Encl. Size |
|--------|---------|---------------|------------|
| 32A    | 3P+N    | SD41G00323N   | 1          |
|        | 3P+NL   | SD41G00323NL  | 1          |
| 63A    | 3P+N    | SD41G00633N   | 1          |
|        | 3P+NL   | SD41G00633NL  | 1          |
|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

'N' = switched neutral

'NL' = Unswitched neutral (100% rated 32A-200A, 50% rated 250A-1000A)

'EB' = Early break auxiliary contacts

### Fuse Combination Units (O-I)



#### Catalogue Numbers

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

Please note Fuse Combination Units are supplied unswitched neutral.



## General Description

In addition to the basic features of the IP41 enclosed range, the IP65 sealed family of products introduces:-

- IP65 Handle assemblies
- Sealed gland plates
- Up to 1000A Switch-Disconnectors
- Changeover Switch-Disconnectors
- Grey or Stainless steel enclosures (Red also available)

## 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. (Must be carried out by a competent person)
- 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.
- Castell Lock options available on request.
- Stainless steel enclosures for severe environments.
- Changeover Switch-Disconnectors in four pole format
- Enclosures finished Red (RAL 3020) are available to order, please contact our Sales team for details

Removable gland plates are fitted to the top & bottom faces and employ 'blind' fixings (Compact enclosures) that will maintain the IP sealing even if a gland plate fixing screw should be missed.



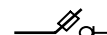
The internal arrangement of a typical Fuse Combination Unit



### Switch-Disconnectors\* (O-I)



### Fuse Combination Units\* (O-I)

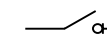


## Catalogue Numbers

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

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

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



| Rating | Format | Sheet steel (Grey) | 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

\* Items painted Red (RAL3020) are readily available. Please contact our Sales team for further details or a brochure.

Hinged Door IP65



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## General Description

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.

Offered in both Switch-Disconnecter & Fuse Combination Unit assemblies with a choice of sheet steel or stainless steel enclosures. All assemblies are sealed to IP65 for protection against harsh environments and are supplied with 2 C/O auxiliary blocks wired down to terminals (N/O contacts are Early Break when switching 'Off').



(Items shown with optional external mounting feet fitted).



Interior view showing flag indicator

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 Sulfur 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.

Add suffix 'T' to the beginning of any catalogue number for tin plate contacts e.g. **T**SDS00323N/F

## Design Features

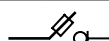
- Flag indication is operated by the main operating shaft ensuring 'positive contact indication'.
- Flag window - 4mm thick polycarbonate.
- Safety handle - when padlocked in the 'Off' position, the enclosure door cannot be opened. Capable of accepting up to three padlocks in the 'Off' position. (Max. hasp/shackle dia. 6.4mm).
- 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.
- 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 - 2mm 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 C/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)



| Catalogue Numbers |        |                    |                 |            |
|-------------------|--------|--------------------|-----------------|------------|
| Rating            | Format | Sheet steel (Grey) | Stainless Steel | Encl. Size |
| 32A               | 3P+N   | SDG00323N/F        | SDS00323N/F     | 1F         |
| 63A               | 3P+N   | SDG00633N/F        | SDS00633N/F     | 1F         |
| 100A              | 3P+N   | SDG01003N/F        | SDS01003N/F     | 2F         |
| 125A              | 3P+N   | SDG01253N/F        | SDS01253N/F     | 2F         |
| 200A              | 3P+N   | SDG02003N/F        | SDS02003N/F     | 4F         |
| 250A              | 3P+N   | SDG02503N/F        | SDS02503N/F     | 4F         |
| 400A              | 3P+N   | SDG04003N/F        | SDS04003N/F     | 5F         |

## Flagged Fuse Combination Units (O-I)



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

'N' = switched neutral

Add suffix 'T' to the beginning of any catalogue number for tin plate contacts e.g. **T**SDS00323N/F

Typical handle assembly showing the facility to accept up to three Ø6.4 shackle padlocks.



## External Fixing Feet (Four per set)

| Catalogue Numbers |               |
|-------------------|---------------|
| Enclosure Size    | Catalogue No. |
| 1F & 2F           | SEFL1/KIT     |
| 3F - 5F           | SEFL2/KIT     |



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## Accessories



For electrical ratings please refer to **Page 33**

## 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.

### Catalogue Numbers

For Switch-Disconnectors

| 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   | 3T630        |
| 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.)

### Catalogue Numbers - individual covers

For Switch-Disconnectors

| 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 |



### General Description

Craig and Derricott have been supplying isolation equipment for the Ventilation Industry for more than 15 years. The F400 Fire Rated product is designed specifically for installations where the supply must be maintained for **2 hours at 400°C**.

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, car parks 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. All enclosures come standard with padlocking in both 'Off' and 'On'.

The F300 Fire Rated product is designed for installations where the supply must be maintained for **60 min at 300°C**. Craig and Derricott's F300 products will withstand 300°C for 120 min.



F400 Fire Rated Range



F300 Fire Rated Range



\* Enclosure sizes from the Standard 'Hinged Door' range - see page 38.

All assemblies are supplied capable of being padlocked in the 'Off' & 'On' positions

'N' = Neutral  
'NL' = Neutral Link (100% rated 32A-200A, 50% rated 250A-630A)  
'EB' = Early break auxiliary contacts

### Catalogue Numbers

| Rating | Format     | Assembly Form                                     | Catalogue No.    | Temp. Class. | Encl. size |
|--------|------------|---------------------------------------------------|------------------|--------------|------------|
| 20A    | 2P         | Lid mounted in sheet steel enclosure              | FSDMR0202        | F400         | A          |
|        | 3P         |                                                   | FSDMR0203        |              |            |
|        | 3P+2EB Aux |                                                   | FSDMR0203EB      |              |            |
|        | 3P+N       |                                                   | FSDMR0203N       |              |            |
|        | 4P         |                                                   | FSDMR0204        |              |            |
|        | 6P         |                                                   | FSDMR0206        |              |            |
| 20A    | 2P         | Lid mounted in die-cast aluminium enclosure       | FSDDR0202        | F400         | E          |
|        | 3P         |                                                   | FSDDR0203        |              |            |
|        | 3P+2EB Aux |                                                   | FSDDR0203EB      |              |            |
|        | 3P+N       |                                                   | FSDDR0203N       |              | B          |
|        | 4P         |                                                   | FSDDR0204        |              |            |
|        | 6P         |                                                   | FSDDR0206        |              |            |
| 32A    | 2P         | Lid mounted in die-cast aluminium enclosure       | FSDDR0322        | F400         | B          |
|        | 3P         |                                                   | FSDDR0323        |              |            |
|        | 3P+2EB Aux |                                                   | FSDDR0323EB      |              |            |
|        | 3P+N       |                                                   | FSDDR0323N       |              |            |
|        | 4P         |                                                   | FSDDR0324        |              |            |
|        | 6P         |                                                   | FSDDR0326        |              |            |
| 63A    | 2P         | Base mounted in hinged door sheet steel enclosure | FSDMR0632        | F400         | C          |
|        | 3P         |                                                   | FSDMR0633        |              |            |
|        | 3P+2EB Aux |                                                   | FSDMR0633EB      |              |            |
|        | 3P+N       |                                                   | FSDMR0633N       |              |            |
|        | 4P         |                                                   | FSDMR0634        |              |            |
|        | 6P         |                                                   | FSDMR0636        |              |            |
| 125A   | 2P         | Base mounted in hinged door sheet steel enclosure | FSDMR0636EB      | F400         | D          |
|        | 3P         |                                                   | RS1BD11/HPHT     |              |            |
|        | 3P+2EB Aux |                                                   | RS1BT21/HPHT     |              |            |
|        | 3P+N       |                                                   | RS1BT31/2EB/HPHT |              |            |
|        | 4P         |                                                   | RS1BT21/HPHT/NL  |              |            |
|        | 6P         |                                                   | RS1BQ21/HPHT     |              |            |
| 160A   | 2P         | Base mounted in hinged door sheet steel enclosure | RS1BY31/HPHT     | F400         | D          |
|        | 3P         |                                                   | RS1BY41/2EB/HPHT |              |            |
|        | 3P+2EB Aux |                                                   | F3SDR01603       |              |            |
|        | 3P+NL      |                                                   | F3SDR01603NL     |              |            |
|        | 4P         |                                                   | F3SDR01604       |              |            |
|        | 6P         |                                                   | F3SDR01606       |              |            |
| 200A   | 2P         | Base mounted in hinged door sheet steel enclosure | F3SDR01606NL     | F300         | *5         |
|        | 3P         |                                                   | F3SDR02003       |              |            |
|        | 3P+NL      |                                                   | F3SDR02003NL     |              |            |
|        | 4P         |                                                   | F3SDR02004       |              |            |
|        | 6P         |                                                   | F3SDR02006       |              |            |
|        | 6P+NL      |                                                   | F3SDR02006NL     |              |            |
| 250A   | 2P         | Base mounted in hinged door sheet steel enclosure | F3SDR02503       | F300         | *5         |
|        | 3P         |                                                   | F3SDR02503NL     |              |            |
|        | 3P+NL      |                                                   | F3SDR02504       |              |            |
|        | 4P         |                                                   | F3SDR02506       |              |            |
|        | 6P         |                                                   | F3SDR02506NL     |              |            |
|        | 6P+NL      |                                                   | F3SDR02506NL     |              |            |
| 315A   | 2P         | Base mounted in hinged door sheet steel enclosure | F3SDR03153       | F300         | *6         |
|        | 3P         |                                                   | F3SDR03153NL     |              |            |
|        | 3P+NL      |                                                   | F3SDR03154       |              |            |
|        | 4P         |                                                   | F3SDR03156       |              |            |
|        | 6P         |                                                   | F3SDR03156NL     |              |            |
|        | 6P+NL      |                                                   | F3SDR04003       |              |            |
| 400A   | 2P         | Base mounted in hinged door sheet steel enclosure | F3SDR04003NL     | F300         | *6         |
|        | 3P         |                                                   | F3SDR04004       |              |            |
|        | 3P+NL      |                                                   | F3SDR04006       |              |            |
|        | 4P         |                                                   | F3SDR04006NL     |              |            |
|        | 6P         |                                                   | F3SDR06303       |              |            |
|        | 6P+NL      |                                                   | F3SDR06303NL     |              |            |
| 630A   | 2P         | Base mounted in hinged door sheet steel enclosure | F3SDR06304       | F300         | *8         |
|        | 3P         |                                                   | F3SDR06306       |              |            |
|        | 3P+NL      |                                                   | F3SDR06306NL     |              |            |
|        | 4P         |                                                   |                  |              |            |
|        | 6P         |                                                   |                  |              |            |
|        | 6P+NL      |                                                   |                  |              |            |

## Technical Specification

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

| Application                             | Sym.        | Unit            | Category          | 20A                                                                               | 32A                                                                               | 63A                                                                               | 125A                                                                              | 160A                                                                              | 200A                                                                                | 250A                                                                                | 315A                                                                                | 400A                                                                                | 630A                                                                                |
|-----------------------------------------|-------------|-----------------|-------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Rated thermal current                   | $I_{the}$   | A               |                   | 20                                                                                | 32                                                                                | 63                                                                                | 125                                                                               | 160                                                                               | 200                                                                                 | 250                                                                                 | 315                                                                                 | 400                                                                                 | 630                                                                                 |
| Rated insulation voltage                | $U_i$       | V               |                   | 690                                                                               | 690                                                                               | 690                                                                               | 690                                                                               | 1000                                                                              | 1000                                                                                | 1000                                                                                | 1000                                                                                | 1000                                                                                | 1000                                                                                |
| Rated impulse voltage                   | $U_{imp}$   | kV              |                   | 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                                                                             | 40/18.5                                                                           | 100/55                                                                            | 160/90                                                                            | 200/110                                                                             | 250/132                                                                             | 315/175                                                                             | 400/200                                                                             | 630/315                                                                             |
|                                         |             |                 | 690V - AC23A      | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 160/150                                                                           | 200/190                                                                             | 250/200                                                                             | 315/300                                                                             | 400/315                                                                             | 630/355                                                                             |
|                                         |             |                 | 690V - AC23B      | 20/9.5                                                                            | 20/9.5                                                                            | 20/9.5                                                                            | -                                                                                 | -                                                                                 | -                                                                                   | -                                                                                   | -                                                                                   | -                                                                                   | -                                                                                   |
|                                         |             |                 | 660V - AC23B      | -                                                                                 | -                                                                                 | -                                                                                 | 30/22                                                                             | -                                                                                 | -                                                                                   | -                                                                                   | -                                                                                   | -                                                                                   | -                                                                                   |
| Short circuit withstand<br>(1 sec)      | $I_{cw}$    | kA              | RMS value         | -                                                                                 | -                                                                                 | -                                                                                 | 1.5                                                                               | 8.0                                                                               | 8.0                                                                                 | 8.0                                                                                 | 17.0                                                                                | 17.0                                                                                | 17.0                                                                                |
| Conditional Short Circuit<br>Current    | Fuse<br>gG  | kA/<br>Fuse(A)  | 415V              | 50/32                                                                             | 50/32                                                                             | 50/63                                                                             | 50/200                                                                            | 50/160                                                                            | 50/200                                                                              | 50/250                                                                              | -                                                                                   | -                                                                                   | -                                                                                   |
|                                         |             |                 | 690V              | 40/32                                                                             | 40/32                                                                             | 40/63                                                                             | 50/63                                                                             | 50/160                                                                            | 50/200                                                                              | 50/250                                                                              | 50/315                                                                              | 50/400                                                                              | 100/630                                                                             |
| Recommended<br>connecting capacity      |             | -               | Terminal type     |  |  |  |  |  |  |  |  |  |  |
|                                         |             | mm <sup>2</sup> | Flexible cable    | ≤ 4.0                                                                             | 6                                                                                 | 16                                                                                | 50                                                                                | 95                                                                                | 95                                                                                  | 120                                                                                 | 2/150                                                                               | 2/150                                                                               | 2/185                                                                               |
|                                         |             | mm <sup>2</sup> | Rigid cable       | ≤ 4.0                                                                             | 10                                                                                | 25                                                                                | 50                                                                                | 95                                                                                | 95                                                                                  | 120                                                                                 | 2/150                                                                               | 2/150                                                                               | 2/185                                                                               |
|                                         |             | Nm              | Tightening torque | 1.2                                                                               | 1.2                                                                               | 3.0                                                                               | 12.0                                                                              | 8.0                                                                               | 8.0                                                                                 | 8.0                                                                                 | 17.0                                                                                | 17.0                                                                                | 21.0                                                                                |

## Specification

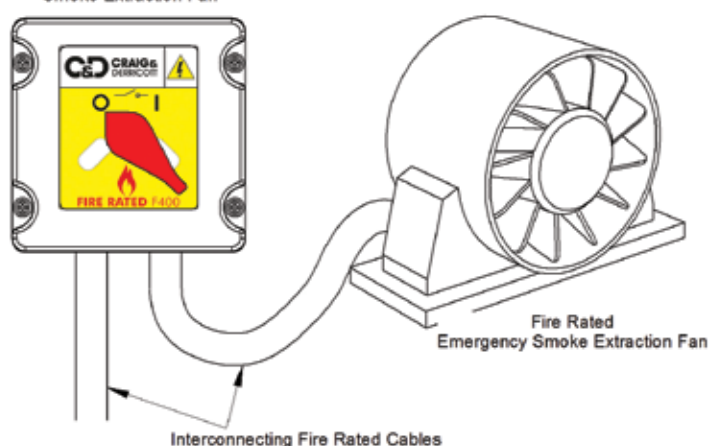
Within BS EN 12101-3: 2003 (Smoke and heat controls) there are several classes of duty which define a specific temperature gradient, upper temperature limit and time period.

**F300** 300°C for 60 min\*      **F400** 400°C for 120 min.

\*Craig and Derricott's F300 products will withstand 300°C for 120 min.

The specification calls for dynamic tests designed to check the performance of the complete ventilation system. The critical function of the associated isolator is required to maintain the essential supply for the duration of the test.

Local Isolator For Emergency  
Smoke Extraction Fan



High velocity extraction fans installed  
in an underground car park

**"Smoke kills more people than fire"**

A well known fact, and it's the job of the ventilation designer to ensure this doesn't happen - to do this effectively he will need continuous power.



## Background

London Underground Limited (LUL) 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\**.

The forensic report on the fire cited several instances of a 'flash over' effect caused by materials and paint finishes being ignitable. Exacerbating the conditions underground were toxic fumes given off by certain materials being excessively heated.

Although the new regulations dealt with all aspects of fire prevention such as the removal of wooden escalators, the installation of heat detectors, improved staff training etc, as far as actual equipment supplied for underground use, the overriding emphasis was on materials and paint finishes.

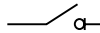
With this isolation range, the overall consideration has been to meet, and where possible exceed, the Section 12 requirements. This has been achieved by the careful selection of individual component materials and the use of only recognised and approved paint finishes.

*\* These regulations have been revoked and partly replaced with:- 'The Fire Precautions (Sub-surface Railway Stations) (England) Regulations 2009.*



## Stainless Steel Enclosures

Switch-Disconnectors (O-I)



| Catalogue Numbers |            |                               |                 |                |
|-------------------|------------|-------------------------------|-----------------|----------------|
| Rating            | Format     | Interior Switch product range | Catalogue Nos.  | Enclosure Size |
|                   |            |                               | Stainless steel |                |
| 25A               | 2P         | GN25                          | DS252LUL10      | C (IP65)       |
|                   | 3P         | GN25                          | DS253LUL10      |                |
|                   | 3P+2EB Aux | GN25                          | DS253EBLUL10    |                |
|                   | 4P         | GN25                          | DS254LUL10      |                |
|                   | 6P         | GN25                          | DS256LUL10      |                |
|                   | 6P+2EB Aux | GN25                          | DS256EBLUL10    |                |
| 40A               | 2P         | GN40                          | DS402LUL10      | D (IP65)       |
|                   | 3P         | GN40                          | DS403LUL10      |                |
|                   | 3P+2EB Aux | GN40                          | DS403EBLUL10    |                |
|                   | 4P         | GN40                          | DS404LUL10      |                |
|                   | 6P         | GN40                          | DS406LUL10      |                |
|                   | 6P+2EB Aux | GN40                          | DS406EBLUL10    |                |



## Technical Specification

| Rating | Rated Thermal Current $I_{th}$ | Rated operational Power $P_e$ | Max Cable Size                                         |
|--------|--------------------------------|-------------------------------|--------------------------------------------------------|
|        |                                | kW (380/400V - AC23A)         |                                                        |
| 25A    | 25A                            | 11.0                          | 2x4mm <sup>2</sup>                                     |
| 40A    | 40A                            | 15.0                          | Rigid: 10mm <sup>2</sup><br>Flexible: 6mm <sup>2</sup> |

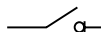
## Design Features

- Lid mounted switch interiors.
- Captive lid fixing screws with a security head.
- Enclosure material - 18 gauge stainless steel grade 304.
- Finish - Natural - Brushed (Non glare)
- Sealing to IP65.
- 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.



## Die-Cast Enclosures

### Switch-Disconnectors (O-I)



| Catalogue Numbers |            |                               |                |               |                |
|-------------------|------------|-------------------------------|----------------|---------------|----------------|
| Rating            | Format     | Interior Switch product range | Catalogue Nos. |               | Enclosure Size |
|                   |            |                               | Grey           | Red           |                |
| 25A               | 2P         | GN25                          | DCG252LUL10    | DCR252LUL10   | A<br>(IP65)    |
|                   | 3P         | GN25                          | DCG253LUL10    | DCR253LUL10   |                |
|                   | 3P+2EB Aux | GN25                          | DCG253EBLUL10  | DCR253EBLUL10 |                |
|                   | 4P         | GN25                          | DCG254LUL10    | DCR254LUL10   |                |
|                   | 6P         | GN25                          | DCG256LUL10    | DCR256LUL10   |                |
| 40A               | 6P+2EB Aux | GN25                          | DCG256EBLUL10  | DCR256EBLUL10 | B<br>(IP65)    |
|                   | 2P         | R32                           | DCG402LUL10    | DCR402LUL10   |                |
|                   | 3P         | R32                           | DCG403LUL10    | DCR403LUL10   |                |
|                   | 3P+2EB Aux | R32                           | DCG403EBLUL10  | DCR403EBLUL10 |                |
|                   | 4P         | R32                           | DCG404LUL10    | DCR404LUL10   |                |
|                   | 6P         | R32                           | DCG406LUL10    | DCR406LUL10   |                |
|                   | 6P+2EB Aux | R32                           | DCG406EBLUL10  | DCR406EBLUL10 |                |



## Design Features

## Spares

- Paint Finishes:-
  - LU 1-085 Compliant Paint Finish
  - Colour - Light Grey (RAL 7035)
  - Traffic Red (RAL3020)
- Captive lid fixing screws with a security head.
- Enclosure material - Aluminium (LM6)
- Sealing to IP65.
- Supplied with pre-finished 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.

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

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

## Technical Specification

| Rating | Rated Thermal Current $I_{th}$ | Rated operational Power $P_e$ | Max Cable Size                                                                                        |
|--------|--------------------------------|-------------------------------|-------------------------------------------------------------------------------------------------------|
|        |                                | kW (380/400V - AC23A)         |                                                                                                       |
| 25A    | 25A                            | 11.0                          | 2x4mm <sup>2</sup>                                                                                    |
| 40A    | 40A                            | 15.0                          | 10mm <sup>2</sup>  |

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



## Hinged Door Enclosures



Fuse Combination Unit  
all metal handle

### Design Features

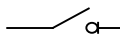
#### Switch-Disconnectors

- Ratings 40A - 400A (3P + switched N).
- Grey or Traffic Red LU 1-085 Compliant Paint Finish.
- All metal padlocking handle.
- Supplied lockable in both 'Off' & 'On'.
- Removable top & bottom gland plates.
- Optional Castell Lock.
- Sealing to IP65.

#### Fuse Combination Units

- Ratings 32A - 630A (3P + switched N).
- Grey or Traffic Red LU 1-085 Compliant Paint Finish.
- All metal padlocking handle.
- Supplied lockable in both 'Off' & 'On'.
- Removable top & bottom gland plates.
- Optional Castell Lock.
- Takes BS88 fuse links.
- Sealing to IP65.

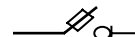
### Switch-Disconnectors (O-I)



#### Catalogue Numbers

| Rating | Catalogue Nos. |            | Enc. Size |
|--------|----------------|------------|-----------|
|        | Grey           | Red        |           |
| 40A    | DCG0403LUL     | DCR0403LUL | 1         |
| 63A    | DCG0633LUL     | DCR0633LUL | 1         |
| 80A    | DCG0803LUL     | DCR0803LUL | 2         |
| 100A   | DCG1003LUL     | DCR1003LUL | 2         |
| 125A   | DCG1253LUL     | DCR1253LUL | 2A        |
| 160A   | DCG1603LUL     | DCR1603LUL | 2A        |
| 200A   | DCG2003LUL     | DCR2003LUL | 3         |
| 250A   | DCG2503LUL     | DCR2503LUL | 3         |
| 315A   | DCG3153LUL     | DCR3153LUL | 4         |
| 400A   | DCG4003LUL     | DCR4003LUL | 4         |

### Fuse Combinations Units (O-I)



#### Catalogue Numbers

| Rating | Catalogue Nos.   |                  | Enc. Size |
|--------|------------------|------------------|-----------|
|        | Grey             | Red              |           |
| 32A    | SFDCG0323LUL     | SFDCR0323LUL     | 2         |
| 63A    | SFDCG0633LUL     | SFDCR0633LUL     | 2         |
| 100A   | SFDCG1003LUL     | SFDCR1003LUL     | 2         |
| 160A   | SFDCG1603LUL/COM | SFDCR1603LUL/COM | 2A        |
| 200A   | SFDCG2003LUL/COM | SFDCR2003LUL/COM | 2A        |
| 250A   | SFDCG2503LUL     | SFDCR2503LUL     | 3         |
| 315A   | SFDCG3153LUL     | SFDCR3153LUL     | 4         |
| 400A   | SFDCG4003LUL     | SFDCR4003LUL     | 4         |
| 630A   | SFDCG6303LUL     | -                | 5         |

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

## Technical Specification

Electrical ratings to BS EN 60947-3

### Switch-Disconnectors

| Rating | Rated Thermal Current $I_{th}$ | Rated operational Power $P_e$ |
|--------|--------------------------------|-------------------------------|
|        |                                | kW (400V - AC23A)             |
| 40A    | 40A                            | 18.5                          |
| 63A    | 63A                            | 25                            |
| 80A    | 80A                            | 40                            |
| 100A   | 100A                           | 40                            |
| 125A   | 125A                           | 63                            |
| 160A   | 160A                           | 80                            |
| 200A   | 200A                           | 100                           |
| 250A   | 250A                           | 132                           |
| 315A   | 315A                           | 160                           |
| 400A   | 400A                           | 220                           |

### Fuse Combination Units

| Rating | Rated Thermal Current $I_{th}$ | Rated operational Power $P_e$ |
|--------|--------------------------------|-------------------------------|
|        |                                | kW (400V - AC23A)             |
| 32A    | 32A                            | 15                            |
| 63A    | 63A                            | 30                            |
| 100A   | 100A                           | 51                            |
| 160A   | 160A                           | 80                            |
| 200A   | 200A                           | 100                           |
| 250A   | 250A                           | 312                           |
| 315A   | 315A                           | 160                           |
| 400A   | 400A                           | 220                           |
| 630A   | 630A                           | 355                           |



## Automatic Transfer Switches (ATS)

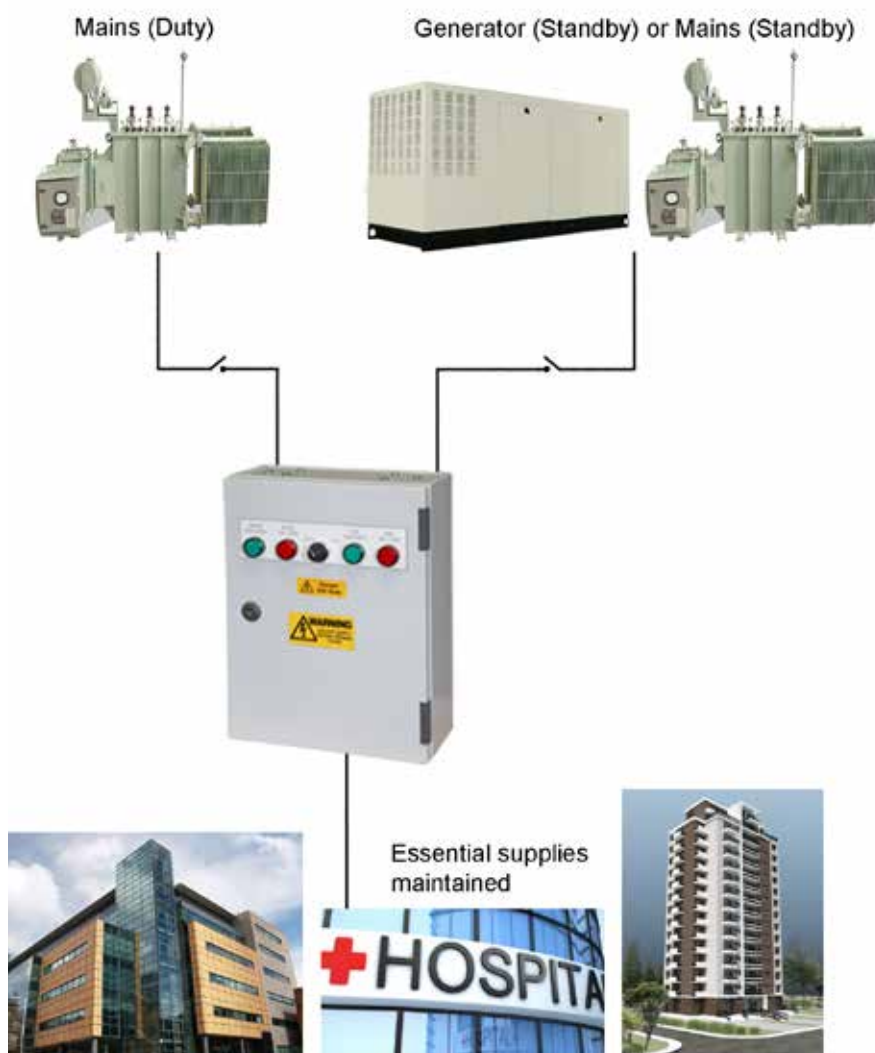
Automatic Transfer Switches (ATS) are installed wherever essential supplies have to be maintained. In primary applications such as high rise residential, public domains, life safety in a work place or to maintain vital supplies to a process; the fast and efficient transfer of power from multiple sources is automatically managed by the ATS unit. The "standby" source of power can either be from an embedded generator or from a standby supply, 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 and Derricott have designed the ATS units to be operational in a variety of installations such as hospitals, water and gas 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 ATS can be configured for a Mains (Duty) and Generator (Standby) or dual Mains applications.

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 interlocked contactors and provides all of the essential requirements to automatically transfer between supplies.

The mains/generator or standby configured units are provided with volt free common normally open, normally closed contacts for automatic generator start signal or for BMS, fire lift or indication purpose and a 230Vac aux supply. The units have configurable parameters for under-voltage and time delay requirements. Local door mounted indicators show the availability of the supplies and the status of the contactors.

A Deep Sea Control Module, with a self-seeking power supply is available as an alternative to the standard relay/timer configuration for controlling the automatic "transfer" from one power supply to another. See page 26 for more information.



### Technical Features

- Electro-mechanical interlocked 3/4 pole AC1 rated contactor.
- Volt free contacts available.
- Supply available / supply on load status indication.
- Adjustable Undervoltage and Time delay relays for setting individual supply parameters.
- Supplied with Supply Monitoring Relay to check for loss of supply, undervoltage and incorrect phase rotation.
- Changeover time of contactors 50m/s.
- Removable Top and Bottom Gland plates.
- Metal locks supplied with one key per enclosure.
- IP65 Mild Steel Enclosure (Stainless Steel optional).
- Paint finish – Polyester Powder Coat, Light Grey RAL 7035.
- Optional DSE330 control module available.
- Compliant to EN 60947-4-1 & EN 60947-6-1.

| Connections                          | Termination       | Protection              |
|--------------------------------------|-------------------|-------------------------|
| Input 1 (Mains Duty)                 | 1/3P+N+E Hardwire | 32 to 800A 4P Contactor |
| Input 2 (Generator or Mains Standby) | 1/3P+N+E Hardwire | 32 to 800A 4P Contactor |
| Outgoing (Load)                      | 1/3P+N+E Hardwire | N/A                     |
| Aux.                                 | 1/1P+N+E Hardwire | 20A 2 Pole MCB          |

### Catalogue Numbers

| Ratings | Format | Single Phase Mains/Generator Cat No. | Single Phase Mains/Mains Cat No. | Format | Three Phase Mains/Generator Cat No. | Three Phase Mains/Mains Cat No. | Encl. size |
|---------|--------|--------------------------------------|----------------------------------|--------|-------------------------------------|---------------------------------|------------|
| 32A     | 2P     | ATS0322B                             | ATS0322BM                        | 4P     | ATS0324B                            | ATS0324BM                       | A          |
| 45A     | 2P     | ATS0452B                             | ATS0452BM                        | 4P     | ATS0454B                            | ATS0454BM                       |            |
| 63A     | 2P     | ATS0632B                             | ATS0632BM                        | 4P     | ATS0634B                            | ATS0634BM                       | B          |
| 90A     | 2P     | ATS0902B                             | ATS0902BM                        | 4P     | ATS0904B                            | ATS0904BM                       |            |
| 100A    | 2P     | ATS1002B                             | ATS1002BM                        | 4P     | ATS1004B                            | ATS1004BM                       |            |
| 110A    | 2P     | ATS1102B                             | ATS1102BM                        | 4P     | ATS1104B                            | ATS1104BM                       |            |
| 125A    | 2P     | ATS1252B                             | ATS1252BM                        | 4P     | ATS1254B                            | ATS1254BM                       | C          |
| 160A    | 2P     | ATS1602B                             | ATS1602BM                        | 4P     | ATS1604B                            | ATS1604BM                       |            |
| 200A    | 2P     | ATS2002B                             | ATS2002BM                        | 4P     | ATS2004B                            | ATS2004BM                       | D          |
| 250A    | 2P     | ATS2502B                             | ATS2502BM                        | 4P     | ATS2504B                            | ATS2504BM                       |            |
| 275A    | 2P     | ATS2752B                             | ATS2752BM                        | 4P     | ATS2754B                            | ATS2754BM                       |            |
| 300A    | 2P     | ATS3002B                             | ATS3002BM                        | 4P     | ATS3004B                            | ATS3004BM                       |            |
| 350A    | 2P     | ATS3502B                             | ATS3502BM                        | 4P     | ATS3504B                            | ATS3504BM                       |            |
| 400A    | 2P     | ATS4002B                             | ATS4002BM                        | 4P     | ATS4004B                            | ATS4004BM                       |            |
| 450A    | 2P     | ATS4502B                             | ATS4502BM                        | 4P     | ATS4504B                            | ATS4504BM                       |            |
| 500A    | 2P     | ATS5002B                             | ATS5002BM                        | 4P     | ATS5004B                            | ATS5004BM                       |            |
| 550A    | 2P     | ATS5502B                             | ATS5502BM                        | 4P     | ATS5504B                            | ATS5504BM                       | E          |
| 600A    | 2P     | ATS6002B                             | ATS6002BM                        | 4P     | ATS6004B                            | ATS6004BM                       |            |
| 650A    | 2P     | ATS6502B                             | ATS6502BM                        | 4P     | ATS6504B                            | ATS6504BM                       |            |
| 700A    | 2P     | ATS7002B                             | ATS7002BM                        | 4P     | ATS7004B                            | ATS7004BM                       |            |
| 750A    | 2P     | ATS7502B                             | ATS7502BM                        | 4P     | ATS7504B                            | ATS7504BM                       |            |
| 800A    | 2P     | ATS8002B                             | ATS8002BM                        | 4P     | ATS8004B                            | ATS8004BM                       |            |

For DSE option, add suffix 'DSE' to catalogue number. E.g. ATS0322B/DSE

For Stainless Steel enclosure, add suffix 'SS' to catalogue number. E.g. ATS0322B/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.

A Deep Sea Control Module, with a self seeking power supply is available as alternative to the standard LED indicator panel for controlling the automatic changeover from one power source to another. See page 26 for more information.

## Technical Features

- Electro-mechanical interlocked 4 pole AC1 rated contactor.
- Volt free contacts common (N/O & N/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 50m/s.
- 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.

| Connections               | Termination       | Protection              |
|---------------------------|-------------------|-------------------------|
| Input 1 (Mains)           | 1/3P+N+E Hardwire | 32 to 800A 4P Contactor |
| Input 2 (Generator/Mains) | 1/3P+N+E Hardwire | 32 to 800A 4P Contactor |
| Outgoing (Load)           | 1/3P+N+E Hardwire | N/A                     |
| Aux.                      | 1/3P+N+E Hardwire | 20A 2 Pole MCB          |



Combination ATS with external door open

## Catalogue Numbers

| Rating | Format | Mains Generator Cat No. | Mains / Mains Cat No. | Encl. Size |
|--------|--------|-------------------------|-----------------------|------------|
| 32A    | 4P     | ATSSD0324B              | ATSSD0324BM           | 1A         |
| 45A    | 4P     | ATSSD0454B              | ATSSD0454BM           |            |
| 63A    | 4P     | ATSSD0634B              | ATSSD0634BM           |            |
| 90A    | 4P     | ATSSD0904B              | ATSSD0904BM           | 1B         |
| 100A   | 4P     | ATSSD1004B              | ATSSD1004BM           |            |
| 110A   | 4P     | ATSSD1104B              | ATSSD1104BM           |            |
| 125A   | 4P     | ATSSD1254B              | ATSSD1254BM           | 1C         |
| 160A   | 4P     | ATSSD1604B              | ATSSD1604BM           |            |
| 200A   | 4P     | ATSSD2004B              | ATSSD2004BM           |            |
| 250A   | 4P     | ATSSD2504B              | ATSSD2504BM           | 1D         |
| 275A   | 4P     | ATSSD2754B              | ATSSD2754BM           |            |
| 300A   | 4P     | ATSSD3004B              | ATSSD3004BM           |            |
| 350A   | 4P     | ATSSD3504B              | ATSSD3504BM           | 1E         |
| 400A   | 4P     | ATSSD4004B              | ATSSD4004BM           |            |
| 450A   | 4P     | ATSSD4504B              | ATSSD4504BM           |            |
| 500A   | 4P     | ATSSD5004B              | ATSSD5004BM           | 1F         |
| 550A   | 4P     | ATSSD5504B              | ATSSD5504BM           |            |
| 600A   | 4P     | ATSSD6004B              | ATSSD6004BM           |            |
| 650A   | 4P     | ATSSD6504B              | ATSSD6504BM           |            |
| 700A   | 4P     | ATSSD7004B              | ATSSD7004BM           |            |
| 750A   | 4P     | ATSSD7504B              | ATSSD7504BM           |            |
| 800A   | 4P     | ATSSD8004B              | ATSSD8004BM           |            |

For DSE option, add suffix 'DSE' to catalogue number. E.g. ATSSD0324B/DSE  
For Stainless Steel enclosure, add suffix 'SS' to catalogue number. E.g. ATSSD0324B/SS

Combination ATS units are also available as 2 Pole. Replace '4B' or '4BM' in the catalogue number with '2B' or '2BM' on your chosen unit. E.g. ATSSD0322BM



### LUL 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 26 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.
- All cabling is LSZH (Low Smoke Zero Halogen).
- IP2X terminal covers fitted (if applicable).
- Removable top and bottom gland plates.
- Changeover time of contactors 50m/s.
- 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 (2x isolators).
- Form 4 type 2 separation.



### Catalogue Numbers

| Rating | Standard LUL ATS  | Enc. Size | Combination LUL ATS | Enc. Size |
|--------|-------------------|-----------|---------------------|-----------|
| 32A    | ATS0324BMDSELULSS | A         | ATSSD0324BMDSELULSS | A         |
| 45A    | ATS0454BMDSELULSS |           | ATSSD0454BMDSELULSS |           |
| 63A    | ATS0634BMDSELULSS | B         | ATSSD0634BMDSELULSS | B         |
| 100A   | ATS1004BMDSELULSS |           | ATSSD1004BMDSELULSS |           |
| 160A   | ATS1604BMDSELULSS | C         | ATSSD1604BMDSELULSS | C         |
| 200A   | ATS2004BMDSELULSS |           | ATSSD2004BMDSELULSS |           |
| 400A   | ATS4004BMDSELULSS | D         | ATSSD4004BMDSELULSS | D         |

Both Standard LUL and Combination LUL ATS units are also available as 2 Pole. Replace '4BM' in the catalogue number with '2BM' on your chosen unit. E.g. ATS0322BMDSELULSS

## Automatic Transfer Switches (ATS) with Bypass

Craig and Derricott offer the option of ATS units with Single Line or Dual Line Bypass. Enclosed in a grey (RAL 7035) textured powder coated Zintec steel construction, sealing to IP65. Supplied with a termination compartment with internal polycarbonate/terminal protection shrouds and external panel key lockable door and top and bottom steel gland plates.

A Deep Sea Control Module, with a self seeking power supply is available as alternative to the standard LED indicator panel for controlling the automatic changeover from one power source to another. See page 26 for more information.

### Single Line Bypass (SL)

The unit provides the facility to “bypass” the Mains contactor within the ATS, by means of the manual sequential operation.

This allows the isolation of the Mains contactor, indicated by a door mounted light indicator.



### Dual Line Bypass (DL)

Used in critical installations this provides a “bypass” option on both supplies to the ATS by means of a manual sequential operation.

This allows the isolation of the Mains and Generator contactors, indicated by a door mounted light indicators.



## Catalogue Numbers

| ATS with Single Line Bypass Cat No. |                   |               |          |
|-------------------------------------|-------------------|---------------|----------|
| Rating                              | Mains / Generator | Mains / Mains | Enc.Size |
| 32A                                 | ATS0324B/SL       | ATS0324BM/SL  | A        |
| 45A                                 | ATS0454B/SL       | ATS0454BM/SL  |          |
| 100A                                | ATS1004B/SL       | ATS1004BM/SL  |          |
| 125A                                | ATS1254B/SL       | ATS1254BM/SL  | B        |
| 160A                                | ATS1604B/SL       | ATS1604BM/SL  |          |
| 250A                                | ATS2504B/SL       | ATS2504BM/SL  | C        |
| 400A                                | ATS4004B/SL       | ATS4004BM/SL  |          |

| ATS with Dual Line Bypass Cat No. |                   |               |          |
|-----------------------------------|-------------------|---------------|----------|
| Rating                            | Mains / Generator | Mains / Mains | Enc.Size |
| 32A                               | ATS0324B/DL       | ATS0324BM/DL  | A        |
| 45A                               | ATS0454B/DL       | ATS0454BM/DL  |          |
| 100A                              | ATS1004B/DL       | ATS1004BM/DL  |          |
| 125A                              | ATS1254B/DL       | ATS1254BM/DL  | B        |
| 160A                              | ATS1604B/DL       | ATS1604BM/DL  |          |
| 250A                              | ATS2504B/DL       | ATS2504BM/DL  | C        |
| 400A                              | ATS4004B/DL       | ATS4004BM/DL  |          |

For DSE option, add suffix 'DSE' to catalogue number. E.g. ATS0324B/SL/DSE

For Stainless Steel enclosure, add suffix 'SS' to catalogue number. E.g. ATS0324B/SL/SS

Bypass ATS units are also available as 2 Pole. Replace '4B' or '4BM' in the catalogue number with '2B' or '2BM' on your chosen unit. E.g. ATS0322BM/SL



## Accessories

Craig and Derricott offer a range of accessories available as additional features for any of our Automatic Transfer Switch Ranges.

Contact our sales team today to discuss your options in more detail.

External Fixing Feet

IP Protection Rainhood

Neutral Link for total circuit isolation  
(control circuit)



Terminal Block Option to Ease Cables  
(Standard termination onto contactors)

Earth Terminal Bar



## ATS with Deep Sea Control (DSE)

Our ATS with configurable DSE controller, is designed to interface with the control of the standby or generator alternative supply. The controller, with a DSE160 self-seeking power supply, monitors the incoming mains supply (single or three phase) for under voltage and frequency.

If the voltage falls out of the upper and lower pre determined limits, the module will either issue a start command to the generator control panel to initiate the transfer of supplies or switch over to standby mains supply. The controller continues to monitor the mains supply for a "return to mains" transfer. The mains return timer is set to allow the confirmation for a "stable" mains supply before the transfer back is carried out.

| DSE330<br>Standard ATS range                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | DSE331<br>Combination ATS range                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | DSE334<br>London Underground ATS range                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Features:</b> <ul style="list-style-type: none"> <li>Configurable inputs (2)</li> <li>Configurable outputs (6)</li> <li>Icon or english text display</li> <li>LED indicator</li> <li>Front panel/PC configuration</li> <li>Source 1/source 2 control</li> <li>Configurable timers</li> <li>Start inhibit</li> <li>Load inhibit</li> <li>Manual restore to S1</li> <li>Supports multiple topologies</li> <li>Automatic switch-over between supplies</li> <li>Rotary ATS configuration</li> <li>Single event scheduler</li> <li>Single-phase display</li> </ul>                                                                        | <b>Features:</b> <ul style="list-style-type: none"> <li>Configurable inputs (4)</li> <li>Configurable volt-free outputs (4)</li> <li>Configurable DC outputs (4)</li> <li>Check sync feature</li> <li>Icon and english text display</li> <li>LED indicator</li> <li>Front panel/PC configuration</li> <li>Remote monitoring</li> <li>Source 1/source 2 control</li> <li>Configurable timers</li> <li>Start inhibit</li> <li>Load inhibit</li> <li>Manual restore to S1</li> <li>Supports multiple topologies</li> <li>Automatic switch-over between supplies</li> <li>Rotary ATS configuration</li> <li>Single event scheduler</li> <li>3-phase display</li> </ul> | <b>Features:</b> <ul style="list-style-type: none"> <li>Volt-free relays</li> <li>Supports many topologies</li> <li>Automatic switch-over between supplies</li> <li>Check sync feature</li> <li>Real-time clock</li> <li>10 configurable inputs</li> <li>5 configurable outputs</li> <li>Event log (10)</li> <li>Configurable timers</li> <li>Automatic shutdown or warning when fault conditions are detected</li> <li>PC configuration</li> <li>Front panel configuration</li> <li>LED indicators</li> <li>Back-lit 4-line text LCD display</li> <li>External mains (utility) or genset failure inputs</li> <li>Auto start inhibit</li> <li>Load inhibit</li> <li>Manual restore to S1</li> <li>Optional current monitoring</li> </ul> |
| <b>DSE160 - Self-seeking power supply</b><br><br><p>The DSE160 Self-Seeking Power Supply has been designed for use with DSE3xx control modules.</p> <p>The DSE160 can be supplied from a mains (utility), generator or battery and provides a power supply output that gives DC power to the ATS controller.</p> <p>When the mains (utility) supply fails the DSE160 automatically switches to providing generator or battery power. Three red LEDs on the front of the unit show the operating status at all times.</p> <p>The DSE160 is available in 12 and 24 volt versions and provides comprehensive short circuit protection.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

Craig and Derricott offer the option to have Deep Sea Control Devices built into any of our Automatic Transfer Switch Ranges.

Contact our sales team today to discuss your options in more detail.

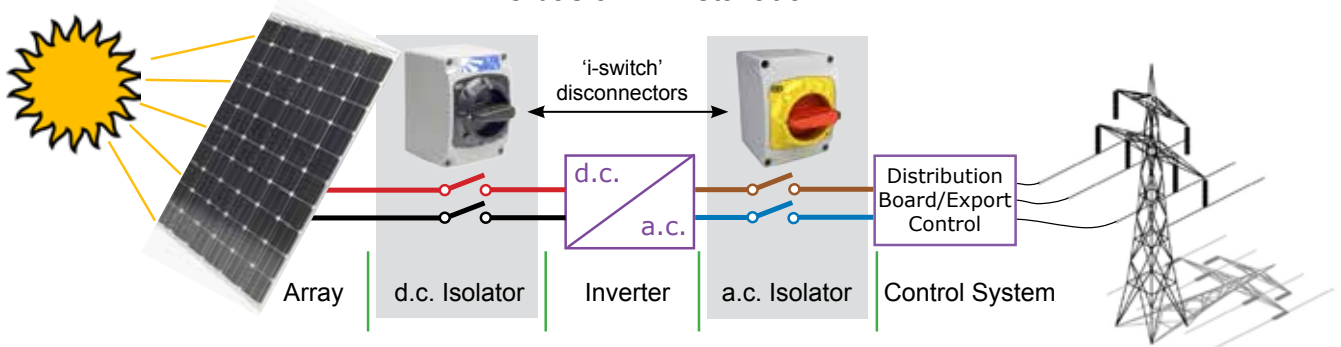


## General Description

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 and 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 Assembly Cat. No. | Interior Isolating Switch Cat. No. |                                   | Rated Operational Voltage d.c. |      |      |        |         |         | Connection Diag. | Enclosure Size |
|                            |                                    |                                   | 300/400V                       | 600V | 800V | 1,000V | 1,200V² | 1,500V² |                  |                |
| PVP162                     | SPV162                             | Rated Operational Current (DC21B) | 16A                            | 16A  | 16A  | 16A    | -       | -       | W                | A              |
| PVP164                     | SPV164                             |                                   | -                              | -    | -    | -      | 16A     | 16A     | Z                | B              |
| PVP252                     | SPV252                             |                                   | 25A                            | 25A  | 25A  | 16A    | -       | -       | W                | A              |
| PVP253                     | SPV253                             |                                   | -                              | -    | -    | 25A    | -       | -       | X                | A              |
| PVP254                     | SPV254                             |                                   | -                              | -    | -    | -      | 20A     | 16A     | Z                | B              |
| PVP322                     | SPV322                             |                                   | 32A                            | 32A  | -    | -      | -       | -       | W                | A              |
| PVP323                     | SPV323                             |                                   | -                              | -    | 32A  | 32A    | -       | -       | X                | A              |
| PVP324                     | SPV324                             |                                   | -                              | -    | -    | -      | 25A     | 20A     | Z                | B              |
| PVP402                     | SPV402                             |                                   | 40A                            | -    | -    | -      | -       | -       | W                | A              |
| PVP403                     | SPV403                             |                                   | -                              | 40A  | 40A  | -      | -       | -       | X                | A              |
| PVP404                     | SPV404                             |                                   | -                              | -    | -    | 40A    | 32A     | 25A     | Z                | B              |
| PVP1622¹                   | SPV1622¹                           | Rated Operational Current (DC21B) | 16A                            | 16A  | 16A  | 16A    | -       | -       | Y                | B              |
| PVP2522¹                   | SPV2522¹                           |                                   | 25A                            | 25A  | 25A  | 16A    | -       | -       | Y                | B              |
| PVP3222¹                   | SPV3222¹                           |                                   | 32A                            | 32A  | -    | -      | -       | -       | Y                | B              |
| PVP4022¹                   | SPV4022¹                           |                                   | 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  
(RAL 7035)



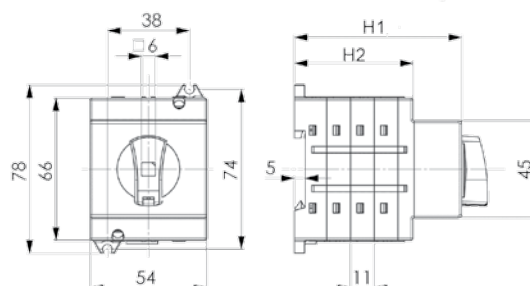
For those installing PV isolators in their own assemblies, the following components are available:-

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

## Isolating Switch Modules

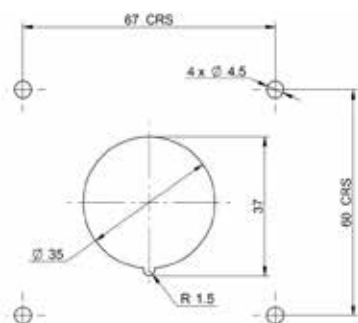
| Catalogue Numbers |                                      |                                       |      |    |
|-------------------|--------------------------------------|---------------------------------------|------|----|
| Cat No            | Max. enclosure depth with SSH8 shaft | Max. enclosure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

Typical assembly in a 32A 4 pole format. (See table for maximum height enclosure space when using 100mm & 200mm shafts).



## 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)

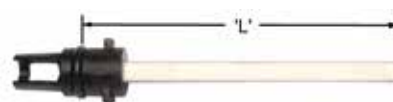


PVPH1 Fixings

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

## Operating Shafts

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



| Switch Rating       | Shaft Length 'L' | Catalogue No. |
|---------------------|------------------|---------------|
| 16A, 25A, 32A & 40A | 100mm            | SSH8          |
|                     | 200mm            | SSH19         |

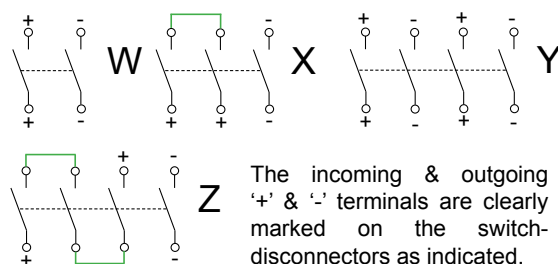
## Design Features

- Type tested to BS EN 60947-3
- Thermal rating ( $I_{th}$ ) Up to 40A
- Utilization Category DC21B
- Ambient temp. limits 55°C (Peak) max
- IP66 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 x 10mm <sup>2</sup> |
| Flex.             | 2 x 6mm <sup>2</sup>  |
| Tightening torque | 1.0Nm                 |

## Internal Switch Linking

Links supplied factory fitted



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

### General Description

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.

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. EXZ1SD<sup>B</sup>02530.

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.



### Catalogue Numbers

| Rating | Format | Handle Colour | Cat. No.     | Optional Brass Earthing Plate Cat. No. | Enclosure 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                               |                |

Aux - 1 N/O (Early break) & 1 N/C (Late make)

### Brass Earthing Plates

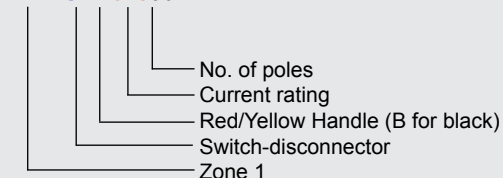
To enable armoured cables to be earth bonded within the insulated enclosure a selection of pre-drilled earthing plates are available for each enclosure size.

Optional Brass Earthing Plate shown right.

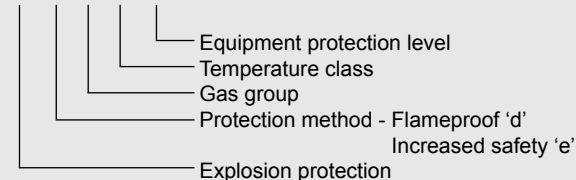


### Catalogue No. Key

EXZ1SDR02530



Ex d e IIC T6 Gb



### Equipment Marking

|      |       |                                                |
|------|-------|------------------------------------------------|
| 25A  | II2GD | Ex d e IIC T6 Gb Ex tb IIIC T80°C Db (Ta≤40°C) |
|      |       | Ex d e IIC T5 Gb Ex tb IIIC T95°C Db (Ta≤55°C) |
| 40A  | II2GD | Ex d e IIC T6 Gb Ex tb IIIC T80°C Db (Ta≤40°C) |
|      |       | Ex d e IIC T5 Gb Ex tb IIIC T95°C Db (Ta≤55°C) |
| 80A  | II2GD | Ex d e IIC T6 Gb Ex tb IIIC T80°C Db (Ta≤40°C) |
|      |       | Ex d e IIC T5 Gb Ex tb IIIC T95°C Db (Ta≤55°C) |
| 180A | II2GD | Ex d e IIC T5 Gb Ex tb IIIC T95°C Db (Ta≤40°C) |
|      |       | Ex d e IIC T4 Gb Ex tb IIC T130°C Db (Ta≤55°C) |

### Key to Marking

Specific marking for Explosion protection

II Equipment group  
2 Equipment category  
G Environment e.g. Gas



## Certification

All items have been approved with 'ATEX' (CML 15ATEX1197X) and 'IECEx' (IECEx CML 15.0093X) certificates 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'

## General Description

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

## Certifications and Approvals

- Certification Code  **Ex II 2 GD Ex d IIB**
-  **Ex tD A21 IP6X**
- Certification No. **ITS 09 ATEX 16433X, ITS 09 ATEX 16436U**
- Certification standard **EN 60079-0, EN 60079-1, EN 61241-0 & EN 61241-1**
- Operating temperature **-20°C to +40°C / +60°C (See temperature class below)**
- Ingress Protection **IP65**

## 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 Entries* | External Earth | Temperature Class |      |
|--------------------|-----------|---------------|----------------|-------------------|----------------|-------------------|------|
|                    |           |               |                |                   |                | 40°C              | 60°C |
| 16                 | 3P+N+2E/B | DGC0164EBZ1   | G21            | 3 x M20           | M6             | T6                | T5   |
| 25                 | 3P+N+2E/B | DGC0254EBZ1   | G21            | 4 x M20           | M6             | T6                | T5   |
| 20                 | 6P + 2E/B | DGC0206EBZ1   | G21            | 2 x M25 + 1 x M20 | M6             | T6                | T5   |
| 40                 | 3P+N+2E/B | DGC0404EBZ1   | G22            | 2 x M25 + 1 x M20 | M8             | T6                | T5   |
| 40                 | 6P + 2E/B | DGC0406EBZ1   | G22            | 2 x M25 + 1 x M20 | M8             | T6                | T5   |
| 63                 | 3P+N+2E/B | DGC0634EBZ1   | G22            | 2 x M25 + 1 x M20 | M8             | T6                | T5   |
| 80                 | 3P+N+2E/B | DGC0804EBZ1   | G24            | 3 x M32 + 1 x M20 | M8             | T6                | T6   |
| 100                | 3P+N+2E/B | DGC1004EBZ1   | G25            | 3 x M32 + 1 x M20 | M8             | T6                | T6   |
| 125                | 3P+N+2E/B | DGC1254EBZ1   | G25            | 3 x M40 + 1 x M20 | M8             | T6                | T6   |
| 160                | 3P+N+2E/B | DGC1604EBZ1   | G25            | 2 x M32 + 1 x M20 | M8             | T6                | T6   |
| 200                | 3P+N+2E/B | DGC2004EBZ1   | G28            | 3 x M50 + 1 x M20 | M10            | T6                | T6   |
| 250                | 3P+N+2E/B | DGC2504EBZ1   | G28            | 3 x M50 + 1 x M20 | M10            | T6                | T6   |

\* Other entry configurations available on request.

The items listed are standard products. If you require a bespoke arrangement, then please contact our technical sales staff who will be pleased to discuss your individual requirements.

## 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
- Textiles
- Cargo Handling
- Pharmaceuticals
- Powder Coating Plant
- Chemicals
- Woodworking
- 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 94/9/EC** ("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** Specification for degrees of protection provided by enclosures. (IP code)
- **BS EN 60947-3** Specification for low-voltage switchgear and control gear.
- **BS EN 60204-1** 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 Size |
|--------|-------------|--------------|----------------|
| 20A    | 6P+2 EB Aux | SDDG206EBZ22 | A              |
| 25A    | 3P+2 EB Aux | SDDG253EBZ22 | A              |
| 32A    | 3P+2 EB Aux | SDDG323EBZ22 | A              |
|        | 6P+2 EB Aux | SDDG326EBZ22 | B              |
| 40A    | 3P+2 EB Aux | SDDG403EBZ22 | B              |
|        | 6P+2 EB Aux | SDDG406EBZ22 | B              |
| 63A    | 3P+2 EB Aux | SDDG633EBZ22 | B              |
|        | 6P+2 EB Aux | SDMG636EBZ22 | D              |

Other ratings are available upon request.

### 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.



## Certification Details 20A - 63A

Die cast Aluminium / Sheet Steel  
Coding

II 3D  
tc IIIB T85°C Dc

Complies in part or in full with standards:-

BS EN 60079-0, BS EN 60079-31  
BS EN 60529, BS EN 60947-3, BS EN 60204-1



## General Description

To complement the F300 / F400 fire rated Switch-Disconnecter range described on page 15-16, Craig and Derricott have introduced the F200 Fire Rated isolator for installations where the supply must be maintained for **2 hours at 200°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, car parks 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 IP66

| Catalogue Numbers |            |                               |                              |              |            |
|-------------------|------------|-------------------------------|------------------------------|--------------|------------|
| Rating            | Format     | Interior Switch Product Range | Catalogue No. (Finished Red) | Temp. Class. | Encl. size |
| 20A               | 6P         | GX20                          | F2SDDR206                    | F200         | A          |
|                   | 6P+2EB Aux |                               | F2SDDR206EB                  |              |            |
| 25A               | 2P         | CS25                          | F2SDDR252                    | F200         | A          |
|                   | 3P         |                               | F2SDDR253                    |              |            |
|                   | 3P+2EB Aux |                               | F2SDDR253EB                  |              |            |
|                   | 3P+N       |                               | F2SDDR253N                   |              |            |
|                   | 3P+NL      |                               | F2SDDR253NL                  |              |            |
| 32A               | 2P         | CS32                          | F2SDDR322                    | F200         | A          |
|                   | 3P         |                               | F2SDDR323                    |              |            |
|                   | 3P+2EB Aux |                               | F2SDDR323EB                  |              |            |
|                   | 3P+N       |                               | F2SDDR323N                   |              |            |
|                   | 3P+NL      |                               | F2SDDR323NL                  |              |            |
| 40A               | 2P         | CS40R                         | F2SDDR402                    | F200         | A          |
|                   | 3P         |                               | F2SDDR403                    |              |            |
|                   | 3P+2EB Aux |                               | F2SDDR403EB                  |              |            |
|                   | 3P+N       |                               | F2SDDR403N                   |              |            |
|                   | 3P+NL      |                               | F2SDDR403NL                  |              |            |
|                   | 6P         | GX40                          | F2SDDR406                    | F200         | B          |
|                   | 6P+2EB Aux |                               | F2SDDR406EB                  |              |            |
|                   | 2P         |                               | F2SDDR402T                   |              |            |
|                   | 3P         |                               | F2SDDR403T                   |              |            |
|                   | 3P+2EB Aux |                               | F2SDDR403EBT                 |              |            |
|                   | 3P+N       |                               | F2SDDR403NT                  |              |            |
|                   | 3P+NL      |                               | F2SDDR403NLT                 |              |            |
| 63A               | 2P         | CS63                          | F2SDDR632                    | F200         | B          |
|                   | 3P         |                               | F2SDDR633                    |              |            |
|                   | 3P+2EB Aux |                               | F2SDDR633EB                  |              |            |
|                   | 3P+N       |                               | F2SDDR633N                   |              |            |
|                   | 3P+NL      |                               | F2SDDR633NL                  |              |            |
| 80A               | 3P         | CS80                          | F2SDDR803                    | F200         | B          |
|                   | 3P+N       |                               | F2SDDR803N                   |              |            |
|                   | 3P+NL      |                               | F2SDDR803NL                  |              |            |

Hinged door sheet steel enclosures - Sealing to IP65

| Catalogue Numbers |        |                               |                              |              |            |
|-------------------|--------|-------------------------------|------------------------------|--------------|------------|
| Rating            | Format | Interior Switch Product Range | Catalogue No. (Finished Red) | Temp. Class. | Encl. size |
| 63A               | 3P+N   | CS63                          | F2SDRC00633N                 | F200         | 1          |
|                   | 3P+NL  |                               | F2SDRC00633NL                |              | 2          |
|                   | 6P     |                               | F2SDRC00636                  |              | 2          |
| 80A               | 3P+N   | CS80                          | F2SDRC00803N                 | F200         | 1          |
|                   | 3P+NL  |                               | F2SDRC00803NL                |              | 2          |
|                   | 6P     |                               | F2SDRC00806                  |              | 2          |
| 100A              | 3P+N   | CS100                         | F2SDRC01003N                 | F200         | 3A         |
|                   | 3P+NL  |                               | F2SDRC01003NL                |              | 3A         |
| 125A              | 3P+N   | CS125                         | F2SDRC01253N                 | F200         | 4A         |
|                   | 3P+NL  |                               | F2SDRC01253NL                |              | 4A         |
| 160A              | 3P+N   | CS160                         | F2SDRC01603N                 | F200         | 4A         |
|                   | 3P+NL  |                               | F2SDRC01603NL                |              | 4A         |
| 200A              | 3P+N   | CS200                         | F2SDRC02003N                 | F200         | 5A         |
|                   | 3P+NL  |                               | F2SDRC02003NL                |              | 5A         |

'N' = Switched neutral (Early make, late break)

'NL' = Unswitched neutral

'EB' = 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 entries. 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. : 2xM25 + 1xM20 on bottom face

**Size B 80A**

Std Cat No. : 2xM32 + 1xM20 on bottom face

Part numbers can be suffixed X or Y for alternative conduit entry configurations. See page 6.



Technical  
Data  
Pages 33

Dims  
Page 37-38

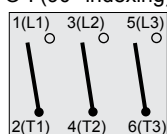
## Technical Specification - Fixed Lid

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

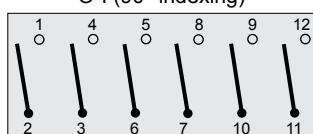
| Application                                                     | Sym.      | Unit            | Category          | Rating                                                                            |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------------------------------------|-----------|-----------------|-------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                                                 |           |                 |                   | 20A                                                                               | 25A                                                                               | 32A                                                                               | 32A                                                                                | 40A                                                                                 | 40A                                                                                 | 63A                                                                                 | 63A                                                                                 | 80A                                                                                 | 100A                                                                                |
| Switch product range                                            | -         | -               |                   | GX20                                                                              | CS25                                                                              | GX32                                                                              | CS32                                                                               | GX40                                                                                | CS40R                                                                               | GN63                                                                                | CS63                                                                                | CS80                                                                                | CS100                                                                               |
| Rated thermal current                                           | $I_{th}$  | A               |                   | 20                                                                                | 25                                                                                | 32                                                                                | 32                                                                                 | 40                                                                                  | 40                                                                                  | 63                                                                                  | 63                                                                                  | 80                                                                                  | 100                                                                                 |
| Rated insulation voltage                                        | $U_i$     | V               |                   | 690                                                                               | 690                                                                               | 690                                                                               | 690                                                                                | 690                                                                                 | 690                                                                                 | 690                                                                                 | 690                                                                                 | 690                                                                                 | 1000                                                                                |
| Rated impulse voltage                                           | $U_{imp}$ | 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)                      | $I_{cw}$  | 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     |  |  |  |  |  |  |  |  |  |  |
|                                                                 |           | mm <sup>2</sup> | Flexible cable    | 2.5 x 2                                                                           | 6                                                                                 | 6 x 2                                                                             | 6                                                                                  | 6 x 2                                                                               | 6                                                                                   | 10                                                                                  | 16                                                                                  | 16                                                                                  | 50                                                                                  |
|                                                                 |           | mm <sup>2</sup> | Rigid cable       | 2.5 x 2                                                                           | 10                                                                                | 10 x 2                                                                            | 10                                                                                 | 10 x 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

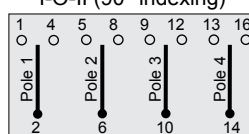
O-I (90° indexing)



O-I (90° indexing)



I-O-II (90° indexing)



### Auxiliary Contacts - Type A

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

| Application                      | Category | Sym.     | Unit            | Rating |
|----------------------------------|----------|----------|-----------------|--------|
| Rated insulation voltage         | -        | $U_i$    | V               | 690    |
| Rated thermal current            | -        | $I_{th}$ | A               | 10     |
| Rated operational current (AC15) | 110V     | $I_e$    | A               | 8      |
|                                  | 220-240V |          |                 | 8      |
|                                  | 380-400V |          |                 | 3      |
|                                  | 660-690V |          |                 | 1      |
| Max. conductor size              | -        | -        | mm <sup>2</sup> | 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          | $I_{th}$ |                | 10A                       | 10A                           |
| Rated insulation voltage | $U_i$    |                | 660V a.c. or d.c.         | 660V                          |
| Utilisation Category     | -        | AC15           | 3A@240V / 1.5A@480V       | 6A@120V / 4A@15V / 2A@660V    |
|                          |          | DC13           | 3A@240V / 1.5A@480V       | 1A@120V / 0.5@240V / 0.1@660V |
|                          |          | Pure Resistive | 10A                       | -                             |



## Technical Specification - Hinged Door

## Switch-Disconnectors

| Data supplied against tests to IEC/BS EN 60947-3     |           |      |                         | Rating (A)                                                                          |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                      |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
|------------------------------------------------------|-----------|------|-------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                                      |           |      |                         | 3P                                                                                  | 3P                                                                                  | 6P                                                                                  | 3P                                                                                  | 3P                                                                                  | 3P                                                                                  | 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                                | $I_{the}$ | 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                                | $U_{imp}$ | kV   |                         | 6                                                                                   | 6                                                                                   | 6                                                                                   | 6                                                                                   | 8                                                                                   | 8                                                                                   | 8                                                                                    | 8                                                                                     | 12                                                                                    | 12                                                                                    | 12                                                                                    | 12                                                                                    | 8                                                                                     |
| Rated operational current (AC)                       | $I_e$     | A    | 400V - AC21A            | 32                                                                                  | 63                                                                                  | 63                                                                                  | 80                                                                                  | 100                                                                                 | 125                                                                                 | 160                                                                                  | 200                                                                                   | 250*                                                                                  | 400*                                                                                  | 630*                                                                                  | 800*                                                                                  | 1000*                                                                                 |
|                                                      |           |      | 690V - 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                                                                                  |
|                                                      |           |      | 690V - AC23A            | 17                                                                                  | 33                                                                                  | 33                                                                                  | 33                                                                                  | -                                                                                   | -                                                                                   | -                                                                                    | -                                                                                     | 250                                                                                   | 350                                                                                   | 350                                                                                   | 350                                                                                   | -                                                                                     |
| Rated operational current (DC)<br>(/poles in series) | $I_e$     | 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                              | $P_e$     | kW   | 400/415V - AC23A        | 15                                                                                  | 25                                                                                  | 25                                                                                  | 30                                                                                  | 59                                                                                  | 63                                                                                  | 75                                                                                   | 75                                                                                    | 132                                                                                   | 200                                                                                   | 315                                                                                   | 355                                                                                   | 540                                                                                   |
|                                                      |           |      | 690V - AC23A            | 15                                                                                  | 30                                                                                  | 30                                                                                  | 30                                                                                  | 51                                                                                  | 55                                                                                  | 55                                                                                   | 55                                                                                    | 200                                                                                   | 315                                                                                   | 355                                                                                   | 355                                                                                   | -                                                                                     |
| Short circuit making capacity                        | $I_{cm}$  | 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)                       | $I_{cw}$  | 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                            | -         | -    | 415V - at 0.65 pf       | -                                                                                   | -                                                                                   | -                                                                                   | -                                                                                   | -                                                                                   | -                                                                                   | -                                                                                    | -                                                                                     | 1,000                                                                                 | 1,000                                                                                 | 500                                                                                   | 500                                                                                   | 500                                                                                   |
| Connecting capacity                                  |           |      | Terminal type           |  |  |  |  |  |  |  |  |  |  |  |  |  |
|                                                      |           |      | mm <sup>2</sup> Min/Max | 2.5/10                                                                              | 2.5/25                                                                              | 2.5/25                                                                              | 2.5/25                                                                              | -/70                                                                                | -/70                                                                                | -/70                                                                                 | -/95                                                                                  | 120                                                                                   | 2x150                                                                                 | 2x185                                                                                 | 2x240                                                                                 | 60x5                                                                                  |
|                                                      |           |      | mm Stud/Cu palm width   | -                                                                                   | -                                                                                   | -                                                                                   | -                                                                                   | -                                                                                   | -                                                                                   | -                                                                                    | -                                                                                     | 8x25                                                                                  | 10x30                                                                                 | 10x30                                                                                 | 12x40                                                                                 | 12x40                                                                                 |
|                                                      |           |      | Nm Tightening torque    | 1.2                                                                                 | 1.3                                                                                 | 1.3                                                                                 | 2                                                                                   | 2                                                                                   | 2                                                                                   | 2                                                                                    | 2                                                                                     | 12                                                                                    | 25                                                                                    | 25                                                                                    | 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)                                                                          |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                      |                                                                                       |                                                                                       |                                                                                       |                                                                                       |
|--------------------------------------------------|-----------|------|-------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                                  |           |      |                         | 32                                                                                  | 63                                                                                  | 100                                                                                 | 125                                                                                 | 160                                                                                 | 200                                                                                  | 250                                                                                   | 315                                                                                   | 400                                                                                   | 630                                                                                   |
| Application                                      | Sym       | Unit | Category                | 32                                                                                  | 63                                                                                  | 100                                                                                 | 125                                                                                 | 160                                                                                 | 200                                                                                  | 250                                                                                   | 315                                                                                   | 400                                                                                   | 630                                                                                   |
| Rated thermal current                            | $I_{the}$ | 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                            | $U_{imp}$ | kV   |                         | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                   | 12                                                                                    | 12                                                                                    | 12                                                                                    | 12                                                                                    |
| Rated operational current (AC)                   | $I_e$     | 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    | 415V, 0.35 pf           | 320                                                                                 | 630                                                                                 | 1,000                                                                               | 1,250                                                                               | 1,600                                                                               | 2,000                                                                                | 2,500                                                                                 | 3,150                                                                                 | 4,000                                                                                 | 6,300                                                                                 |
| Rated breaking capacity (AC23A)                  |           | A    | 415V, 0.35 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                        |           | -    | 415V - 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           |  |  |  |  |  |  |  |  |  |  |
|                                                  |           |      | mm <sup>2</sup> Min/Max | 16                                                                                  | 25                                                                                  | 95                                                                                  | 95                                                                                  | 120                                                                                 | 240                                                                                  | 240                                                                                   | 300                                                                                   | 300                                                                                   | 400                                                                                   |
|                                                  |           |      | mm Stud/Cu palm width   | -                                                                                   | -                                                                                   | 8x20                                                                                | 8x20                                                                                | 8x20                                                                                | 10x25                                                                                | 10x25                                                                                 | 10x25                                                                                 | 10x25                                                                                 | 12x50                                                                                 |
|                                                  |           |      | 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 BS EN 60947-3 |           |                 |                    | Rating (A)                                                                        |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|----------------------------------------------|-----------|-----------------|--------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Application                                  | Sym       | Unit            | Category           | 63                                                                                | 100                                                                               | 125                                                                               | 160                                                                                 | 200                                                                                 | 250                                                                                 | 400                                                                                 | 630                                                                                 |
| Rated thermal current                        | $I_{the}$ | 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                        | $U_{imp}$ | kV              |                    | 6                                                                                 | 6                                                                                 | 6                                                                                 | 6                                                                                   | 6                                                                                   | 12                                                                                  | 12                                                                                  | 12                                                                                  |
| Rated operational current                    | $I_e$     | A               | 415V - AC22A       | 63                                                                                | 100                                                                               | 125                                                                               | 160                                                                                 | 200                                                                                 | 250                                                                                 | 400                                                                                 | 630                                                                                 |
|                                              |           |                 | 415V - AC23A       | 63                                                                                | 100                                                                               | 125                                                                               | 160                                                                                 | 200                                                                                 | 250                                                                                 | 400                                                                                 | 630                                                                                 |
| Rated making capacity (AC23A)                |           | A               | 415V, 0.35 pf      | 630                                                                               | 630                                                                               | 1,250                                                                             | 1,600                                                                               | 2,000                                                                               | 2,500                                                                               | 4,000                                                                               | 6,300                                                                               |
| Rated breaking capacity (AC23A)              |           | A               | 415V, 0.35 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                    |           | -               | 415V - at 0.65 pf  | 2,500                                                                             | 1,500                                                                             | 1,000                                                                             | 1,000                                                                               | 1,000                                                                               | 1,000                                                                               | 1,000                                                                               | 500                                                                                 |
| Connecting capacity                          |           | -               | Terminal type      |  |  |  |  |  |  |  |  |
|                                              |           | mm <sup>2</sup> | Max                | 35                                                                                | 35                                                                                | 95                                                                                | 95                                                                                  | 95                                                                                  | 240                                                                                 | 300                                                                                 | 400                                                                                 |
|                                              |           | mm              | Stud/Cu palm width | 6x12                                                                              | 6x12                                                                              | 8x22                                                                              | 8x22                                                                                | 8x22                                                                                | 10x25                                                                               | 10x25                                                                               | 12x50                                                                               |
|                                              |           | Nm              | Tightening torque  | 3                                                                                 | 3                                                                                 | 10                                                                                | 10                                                                                  | 10                                                                                  | 30                                                                                  | 45                                                                                  | 50                                                                                  |

### Technical Specification



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

| Application              | Sym.      | Unit            | Category   | Main Contacts                                                                       |                                                                                     |                                                                                      |                                                                                       | Aux. Contacts |                                                                                       |
|--------------------------|-----------|-----------------|------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------|
|                          |           |                 |            | 25A                                                                                 | 40A                                                                                 | 80A                                                                                  | 180A                                                                                  | Category      | Aux.                                                                                  |
| Rated thermal current    | $I_{the}$ | A               |            | 25                                                                                  | 40                                                                                  | 80                                                                                   | 180                                                                                   |               | 10                                                                                    |
| Rated insulation voltage | $U_i$     | 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        |           | mm <sup>2</sup> | -          | 2x4                                                                                 | 2x10                                                                                | 2x25                                                                                 | 2x95                                                                                  |               | 2x1.5                                                                                 |
| Tightening Torque (Nm)   |           |                 | -          | 2.5                                                                                 | 2.5                                                                                 | 3.5                                                                                  | 8.5                                                                                   |               | 2.5                                                                                   |
| Terminal Type            | -         |                 |            |  |  |  |  |               |  |



## Technical Specification

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

| Application                                                     | Sym.      | Unit            | Category           | Rating (A)                                                                        |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
|-----------------------------------------------------------------|-----------|-----------------|--------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                                                 |           |                 |                    | 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                                           | $I_{the}$ | 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                                           | $U_{imp}$ | kV              |                    | 6.0                                                                               | 6.0                                                                               | 6.0                                                                               | 6.0                                                                               | 6.0                                                                               | 6.0                                                                                | 6.0                                                                                 | 8.0                                                                                 | 8.0                                                                                 | 12.0                                                                                | 12.0                                                                                |
| Rated operational power (3 phase AC)                            |           | kW              | 380/440V - AC23    | 7.5                                                                               | 7.5                                                                               | 11                                                                                | 15                                                                                | 18.5                                                                              | 25.0                                                                               | 30.0                                                                                | 37.0                                                                                | 45.0                                                                                | 45.0                                                                                | 132.0                                                                               |
|                                                                 |           |                 | 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 sec)                      | $I_{cw}$  | A               |                    | 400                                                                               | 250                                                                               | 500                                                                               | 600                                                                               | 800                                                                               | 1300                                                                               | 1400                                                                                | 2500                                                                                | 2500                                                                                | 5000                                                                                | 8000                                                                                |
| Max. fuse size for short circuit protection (gG characteristic) | $I_n$     | A               | 10kA               | 35                                                                                | 20                                                                                | 35                                                                                | 40                                                                                | 40                                                                                | 80                                                                                 | 80                                                                                  | -                                                                                   | -                                                                                   | -                                                                                   | -                                                                                   |
|                                                                 |           |                 | 25kA               | 32                                                                                | 16                                                                                | 32                                                                                | 32                                                                                | 35                                                                                | 63                                                                                 | 63                                                                                  | -                                                                                   | -                                                                                   | -                                                                                   | -                                                                                   |
|                                                                 |           |                 | 50kA               | 32                                                                                | -                                                                                 | 32                                                                                | 32                                                                                | -                                                                                 | 63                                                                                 | 63                                                                                  | -                                                                                   | -                                                                                   | -                                                                                   | -                                                                                   |
| Connecting capacity                                             |           | -               | Terminal type      |  |  |  |  |  |  |  |  |  |  |  |
|                                                                 |           | mm <sup>2</sup> | Flexible cable     | 6.0                                                                               | 2x2.5                                                                             | 6.0                                                                               | 6.0                                                                               | 2x6.0                                                                             | 16.0                                                                               | 16.0                                                                                | -                                                                                   | -                                                                                   | -                                                                                   | -                                                                                   |
|                                                                 |           | mm <sup>2</sup> | Rigid cable        | 10.0                                                                              | 2x2.5                                                                             | 10.0                                                                              | 10.0                                                                              | 2x10                                                                              | 25.0                                                                               | 25.0                                                                                | -                                                                                   | -                                                                                   | -                                                                                   | -                                                                                   |
|                                                                 |           | mm              | Stud Cu palm width | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                  | -                                                                                   | 8x20                                                                                | 8x20                                                                                | 8x20                                                                                | 10x30                                                                               |
|                                                                 |           | 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

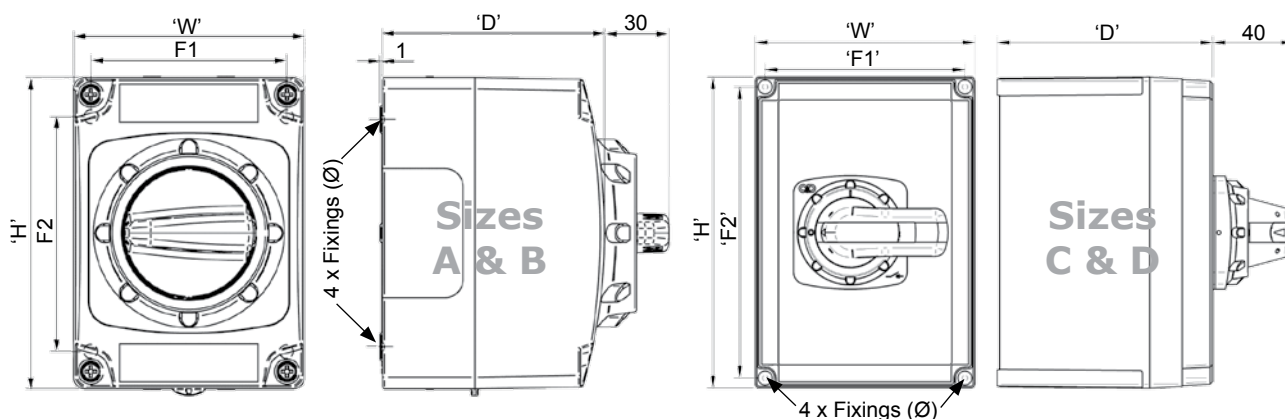
## Ex Zone 22

| Data supplied against tests to IEC/BS EN 60947-3                |           |                 |                   | Rating                                                                              |                                                                                     |                                                                                      |                                                                                       |                                                                                       |                                                                                       |
|-----------------------------------------------------------------|-----------|-----------------|-------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|                                                                 |           |                 |                   | 6P                                                                                  | 3P                                                                                  | 3P+6P                                                                                | 3P                                                                                    | 6P                                                                                    | 3P+6P                                                                                 |
| Application                                                     | Sym.      | Unit            | Category          | 20A                                                                                 | 25A                                                                                 | 32A                                                                                  | 40A                                                                                   | 40A                                                                                   | 63A                                                                                   |
| Rated thermal current                                           | $I_{the}$ | A               |                   | 20                                                                                  | 25                                                                                  | 32                                                                                   | 40                                                                                    | 40                                                                                    | 63                                                                                    |
| Rated insulation voltage                                        | $U_i$     | V               |                   | 690                                                                                 | 690                                                                                 | 690                                                                                  | 690                                                                                   | 690                                                                                   | 690                                                                                   |
| Rated impulse voltage                                           | $U_{imp}$ | 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                                                                                    |
|                                                                 |           |                 | 500V - AC23       | 7.5                                                                                 | 15                                                                                  | 15                                                                                   | 15                                                                                    | 15                                                                                    | 30                                                                                    |
|                                                                 |           |                 | 690V - AC23       | 7.5                                                                                 | 15                                                                                  | 15                                                                                   | 15                                                                                    | 15                                                                                    | 30                                                                                    |
| Rated short time withstand current (1 sec)                      | $I_{cw}$  | 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     |  |  |  |  |  |  |
|                                                                 |           | mm <sup>2</sup> | Flexible cable    | 2.5 x 2                                                                             | 6                                                                                   | 6                                                                                    | 6                                                                                     | 6                                                                                     | 16                                                                                    |
|                                                                 |           | mm <sup>2</sup> | Rigid cable       | 2.5 x 2                                                                             | 10                                                                                  | 10                                                                                   | 10                                                                                    | 10                                                                                    | 25                                                                                    |
|                                                                 |           | Nm              | Tightening torque | 1.0                                                                                 | 1.2                                                                                 | 1.2                                                                                  | 1.2                                                                                   | 1.2                                                                                   | 1.2                                                                                   |

\* Fuse in circuit -  $I_n$  (gG/gL) \*\* Fuse in circuit - 63A



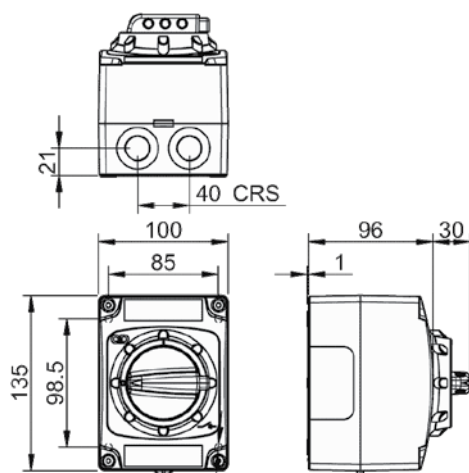
### Plastic Enclosed



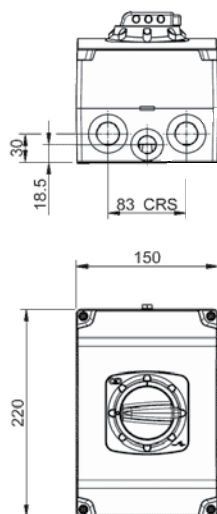
|        | Overall Dims. |     |     | Fixing details |       |     | Knockouts                |       |       |
|--------|---------------|-----|-----|----------------|-------|-----|--------------------------|-------|-------|
|        | H             | W   | D   | F1             | F2    | Ø   | Top                      | Btm   | Back  |
| Size A | 135           | 100 | 95  | 85             | 98.5  | 5.5 | 2xM20                    | 2xM20 | 2xM20 |
| Size B | 175           | 130 | 115 | 115            | 135   | 5.5 | 2x Combination M20 / M25 |       | 2xM20 |
| Size C | 255           | 180 | 125 | 163.5          | 238.5 | 4.5 | Plain sided              |       |       |
| Size D | 255           | 180 | 175 | 163.5          | 238.5 | 4.5 | Plain sided              |       |       |

### Die-Cast Enclosed

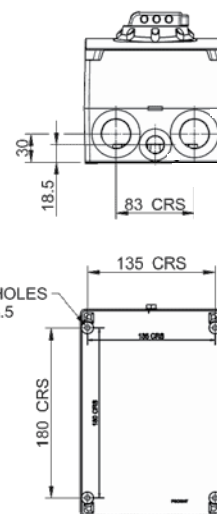
Size A



40A - 63A



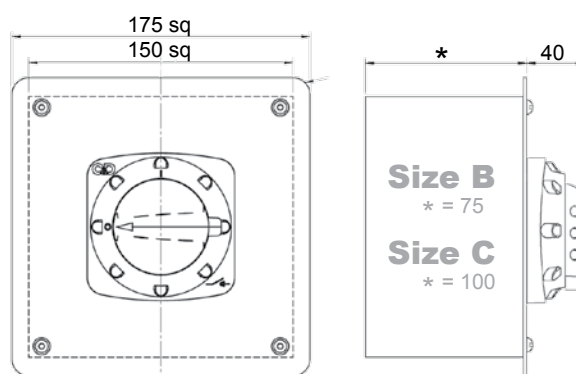
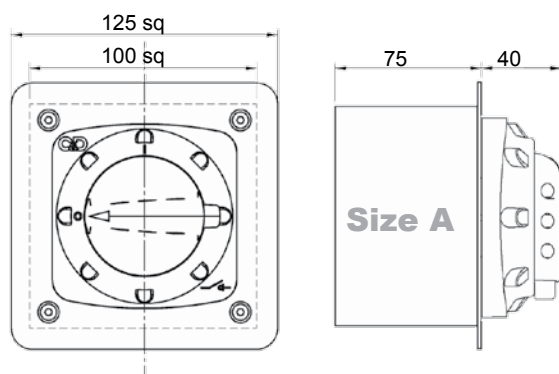
80A



Size B

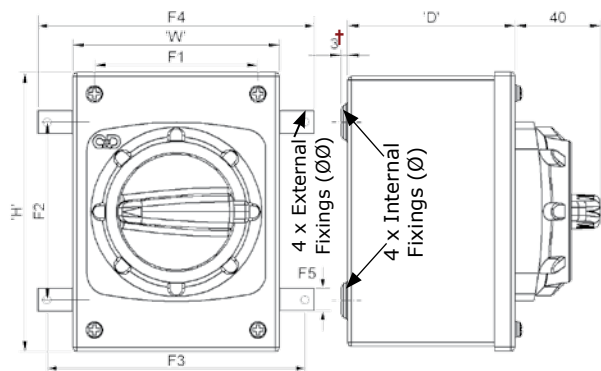
See page 6 for conduit entry configurations.

### Flush Mounting Stainless Steel



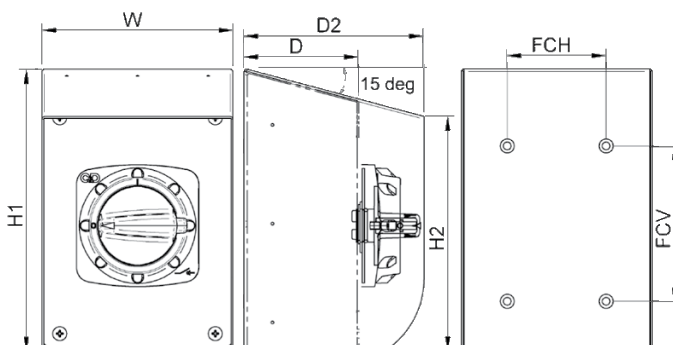
## Mild Steel & Stainless Steel Enclosed

## Sloping Roof Stainless Steel



† Stainless steel enclosures are supplied without 'raised dimples' to allow flush mounting.

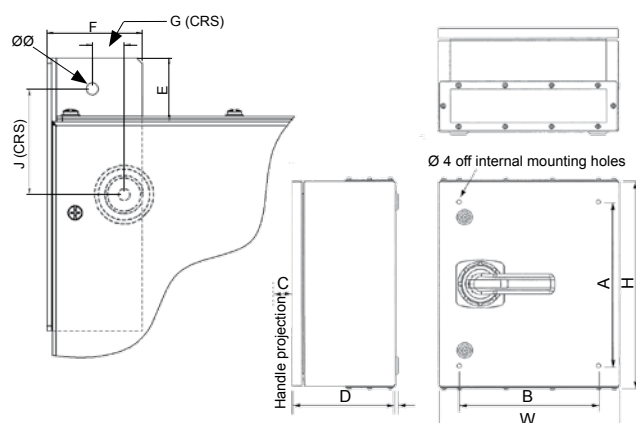
|        | Overall Dims. |     |     | Internal Fixings |     |     | External EFA/EFB Fixings |     |    |      |
|--------|---------------|-----|-----|------------------|-----|-----|--------------------------|-----|----|------|
|        | H             | W   | D   | F1               | F2  | Ø   | F3                       | F4  | F5 | ØØ   |
| 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 |



|        | Overall Dims. |     |     |     | Internal Fixings |     |     |
|--------|---------------|-----|-----|-----|------------------|-----|-----|
|        | H1            | H2  | W   | D2  | FCH              | FCV | Ø   |
| Size A | 200           | 165 | 135 | 80  | 127              | 70  | 110 |
| Size B | 240           | 200 | 185 | 100 | 147              | 90  | 130 |

## Hinged Door Sheet Steel

## Hinged Door Flagged



Sheet Steel Enclosure Sizes

| Dim | 1   | 2   | 3   | 3A  | 4   | 4A  | 5   | 5A  | 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   |
| Ø   | 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   |
| ØØ | 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

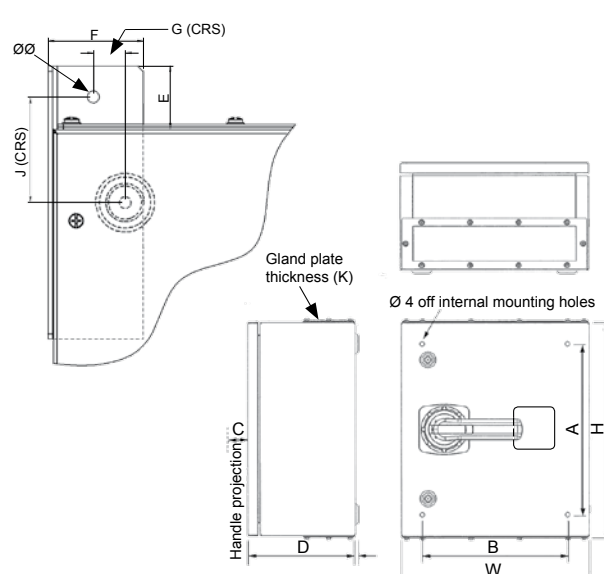
Cat No. SEFL1/KIT

Enclosure Sizes 3 - 7

Cat No. SEFL2/KIT

Enclosure Sizes 8 - 10

Cat No. SEFL3/KIT



Flagged Enclosure Sizes

| Dim | 1F  | 2F  | 3F  | 4F  | 5F  |
|-----|-----|-----|-----|-----|-----|
| 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 |
| Ø   | 6.5 | 6.5 | 6.5 | 6.5 | 6.5 |

External Feet

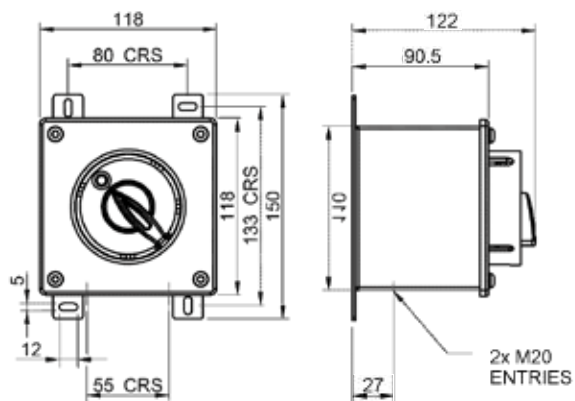
| Dim | 1F  | 2F  | 3F  | 4F  |
|-----|-----|-----|-----|-----|
| E   | 35  | 35  | 35  | 35  |
| F   | 53  | 58  | 58  | 58  |
| G   | 18  | 18  | 13  | 13  |
| J   | 58  | 58  | 58  | 58  |
| ØØ  | 6.5 | 6.5 | 8.5 | 8.5 |



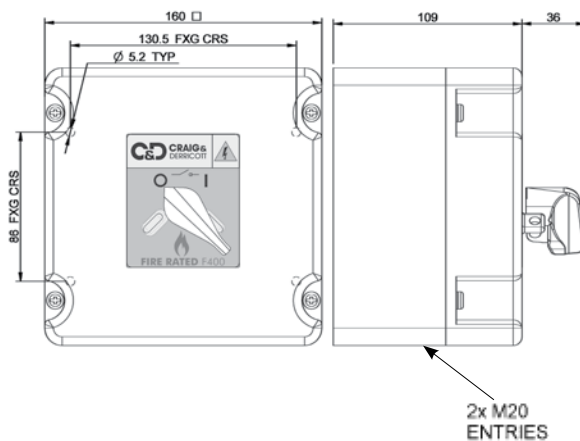
## Enclosed Isolators

Fire Rated F300 / F400 (High Temperature)

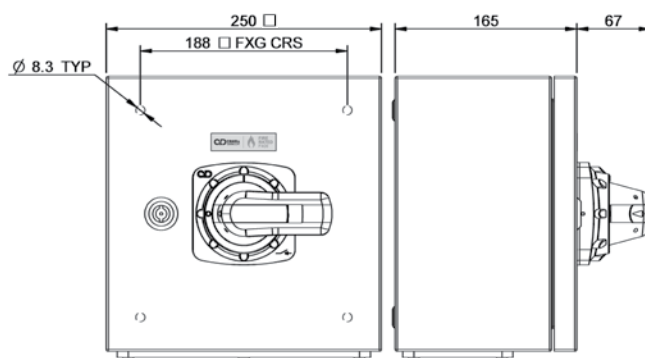
Size A



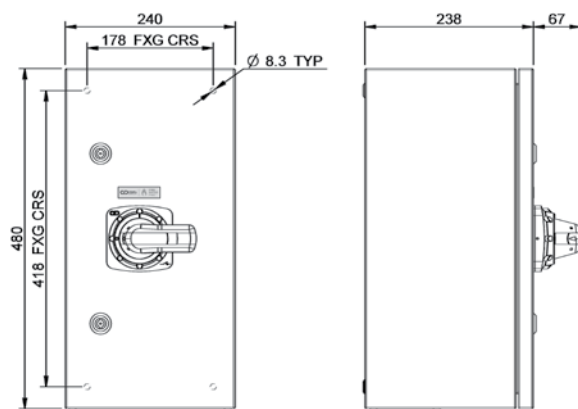
Size B



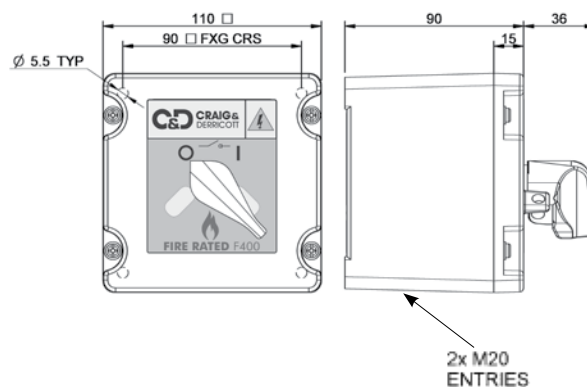
Size C



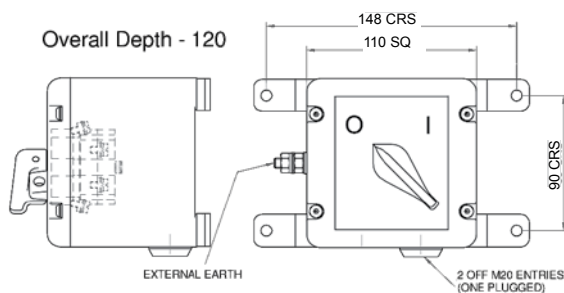
Size D



Size E

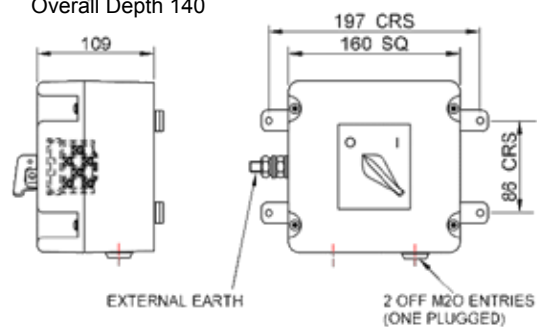


## LUL 'Section 12'

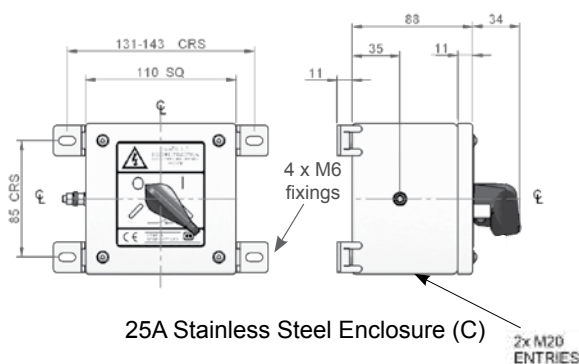


25A Die cast Aluminium Enclosure (A)

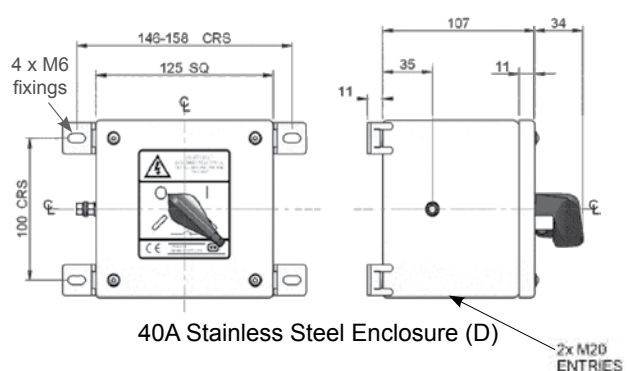
Overall Depth 140



40A Die cast Aluminium Enclosure (B)

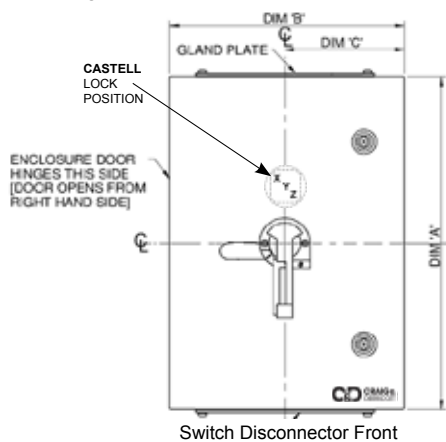


25A Stainless Steel Enclosure (C)

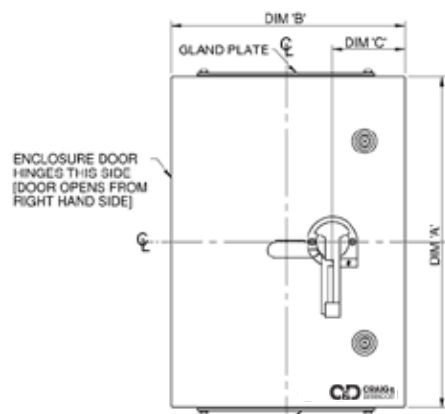
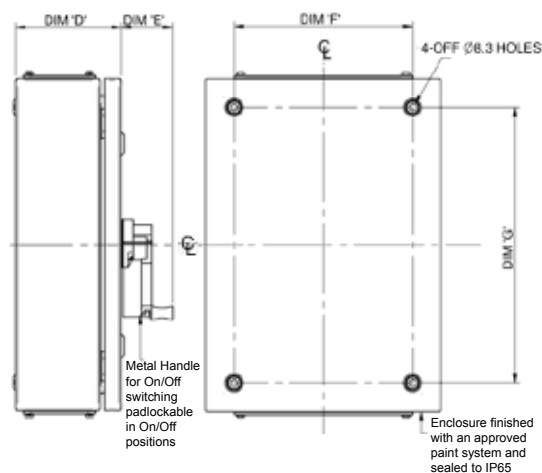


40A Stainless Steel Enclosure (D)

## Hinged Door Enclosure



Switch Disconnector Front



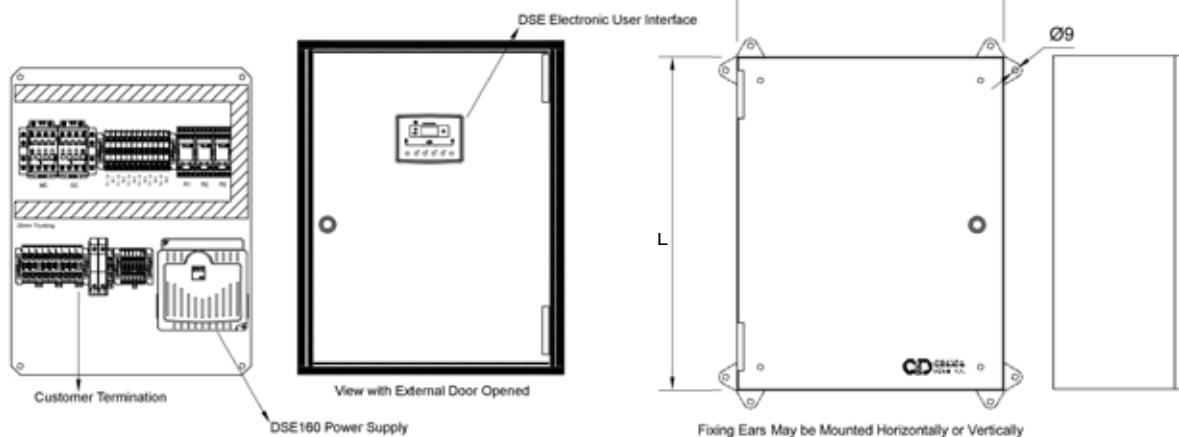
Fuse Combination Front

| Box Size | Dim A | Dim B | Dim C               |                  | Dim D | Dim E | Dim F | Dim G |
|----------|-------|-------|---------------------|------------------|-------|-------|-------|-------|
|          |       |       | 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   |



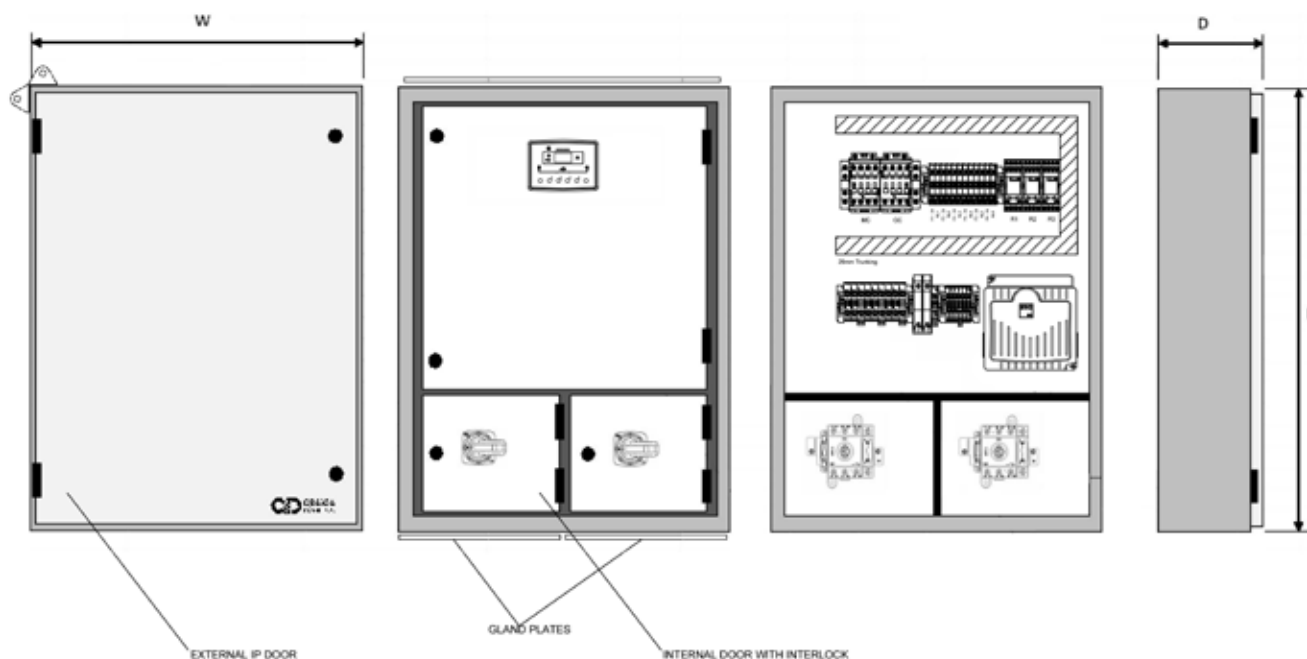
## LUL Standard Automatic Transfer Switches (ATS)

|        | Rating      | L    | W   | D   |
|--------|-------------|------|-----|-----|
| Size A | 32A / 45A   | 500  | 400 | 250 |
| Size B | 63A / 100A  | 700  | 500 | 250 |
| Size C | 160A / 200A | 800  | 600 | 250 |
| Size D | 400A        | 1000 | 800 | 300 |

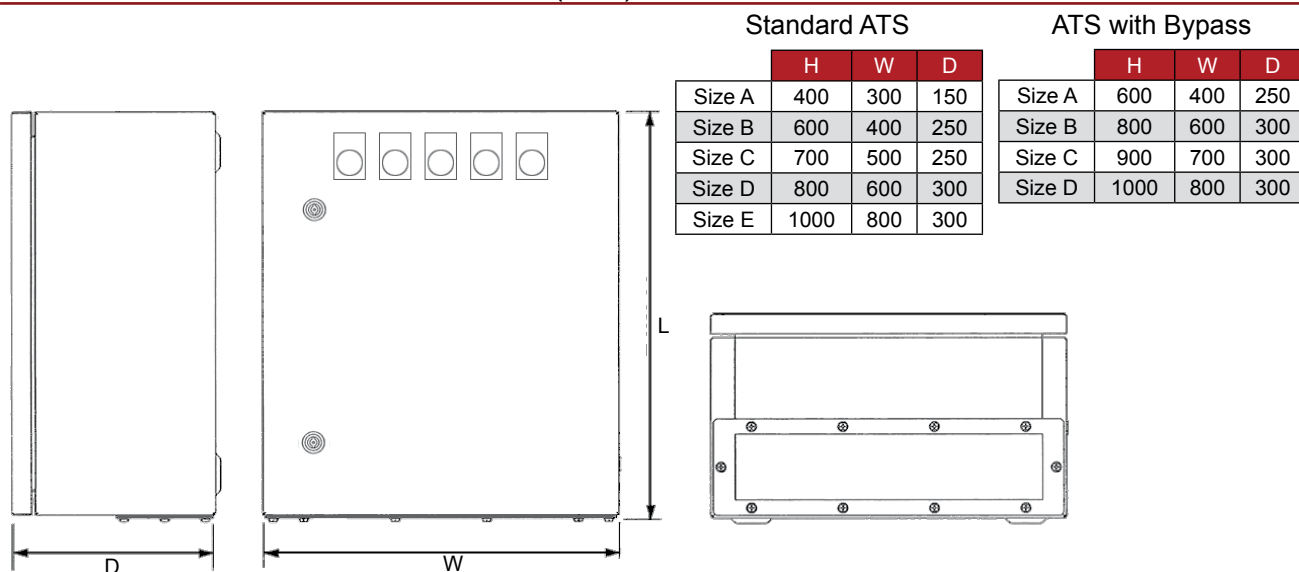


## LUL Combination Automatic Transfer Switches (ATS)

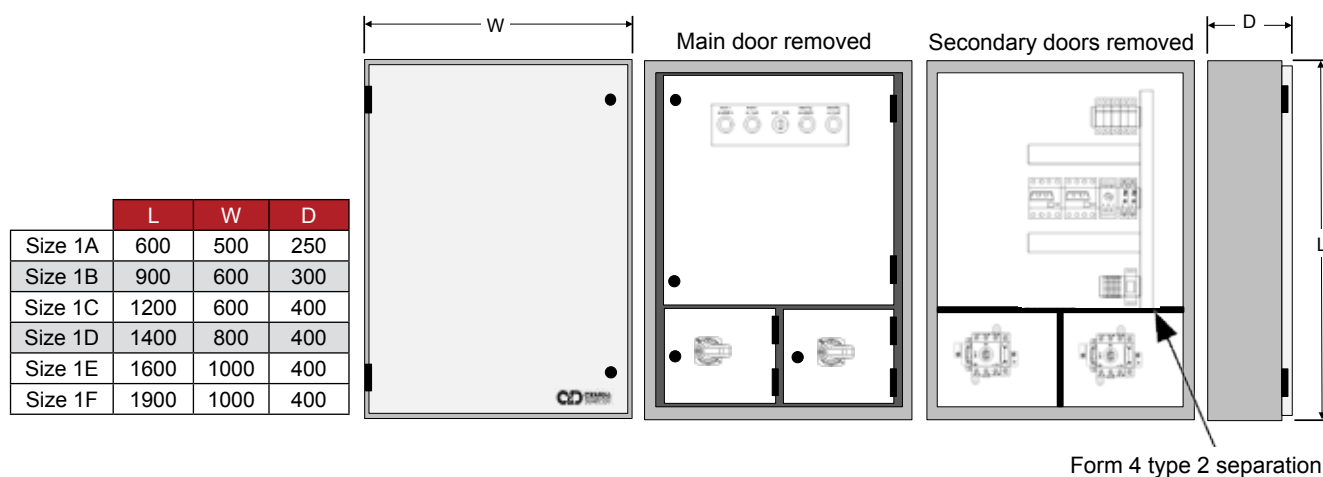
|        | Rating      | L    | W   | D   |
|--------|-------------|------|-----|-----|
| Size A | 32A / 45A   | 600  | 500 | 250 |
| Size B | 63A / 100A  | 900  | 650 | 300 |
| Size C | 160A / 200A | 1200 | 750 | 400 |
| Size D | 400A        | 1500 | 800 | 200 |



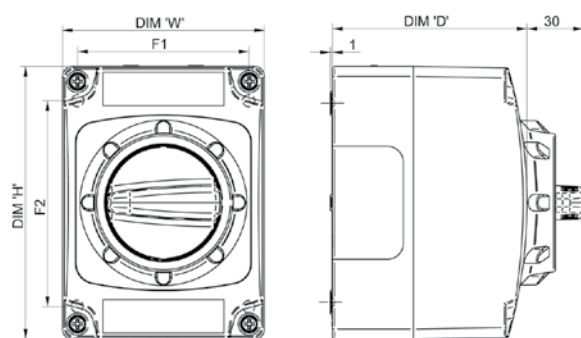
## Standard Automatic Transfer Switches (ATS)



## Combination Automatic Transfer Switches



## Photovoltaic (PV)

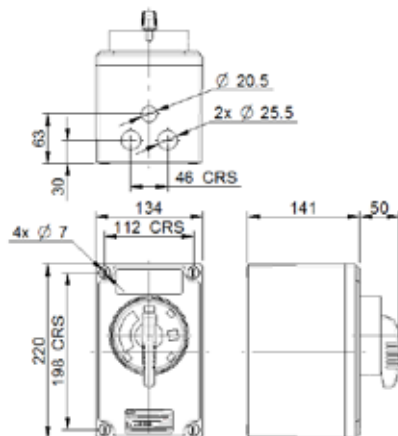


| Enclosure Sizes | Overall Dims |     |     | Fixing Details |      |     |
|-----------------|--------------|-----|-----|----------------|------|-----|
|                 | H            | W   | D   | F1             | F2   | Ø   |
| Size A          | 135          | 100 | 95  | 85             | 98.5 | 5.5 |
| Size B          | 175          | 130 | 115 | 115            | 135  | 5.5 |

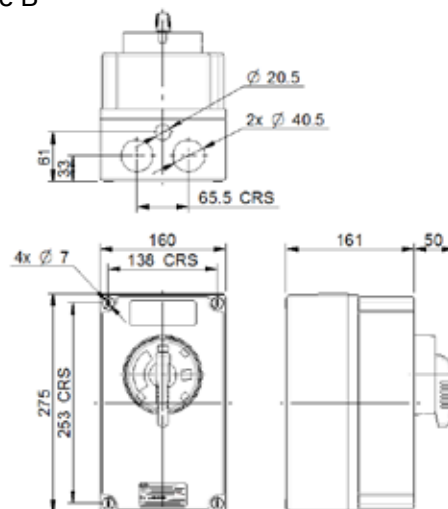


## EX Zone 1, 2, 21 & 22 Ex 'e'

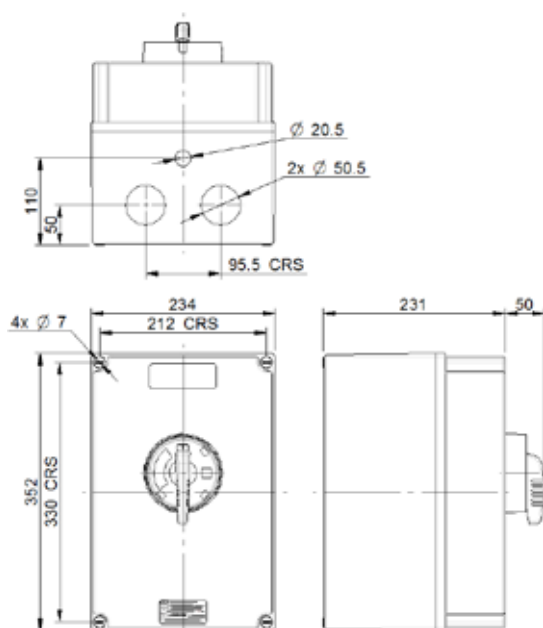
Enclosure A



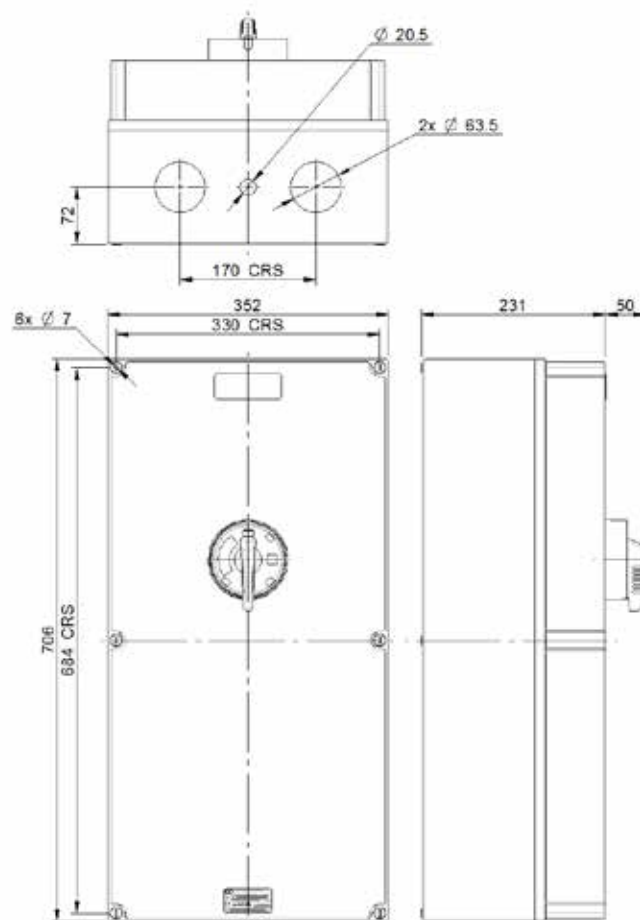
Enclosure B



Enclosure C

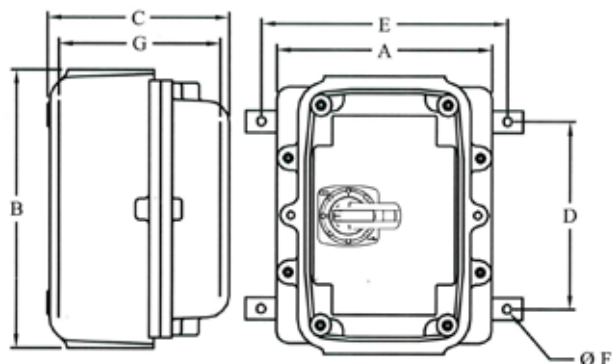


Enclosure D



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

Enclosures G21 - G28

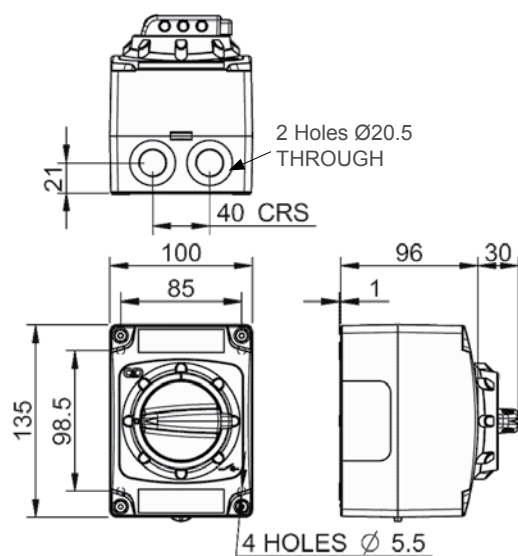


| Enclosure | Material | Dims |     |     |     |     |      |     | Weight (kg) |
|-----------|----------|------|-----|-----|-----|-----|------|-----|-------------|
|           |          | A    | B   | C   | D   | E   | F    | G   |             |
| G21       | Fe       | 180  | 155 | 145 | 130 | 195 | 7.0  | 100 | 9           |
| G22       | Fe       | 205  | 220 | 156 | 160 | 230 | 9.0  | 117 | 19          |
| G24       | Al       | 321  | 361 | 228 | 291 | 320 | 11.0 | 179 | 21          |
| G25       | Al       | 366  | 406 | 218 | 250 | 370 | 11.0 | 177 | 25          |
| G28       | Al       | 586  | 690 | 294 | 480 | 580 | 14.0 | 216 | 96          |

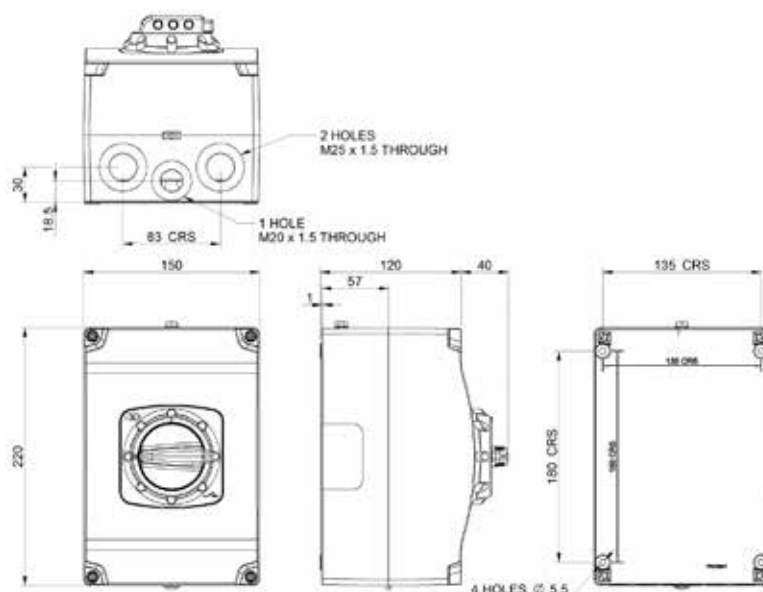
N.B. Enclosures can be close coupled at either end (To special order)

- A Enclosure Width
- B Enclosure Height
- C Enclosure Depth
- D Fixing Centre Height
- E Fixing Centre Width
- F Fixing Hole Diameter
- G Internal Depth from Base Plate

## EX Zone 22

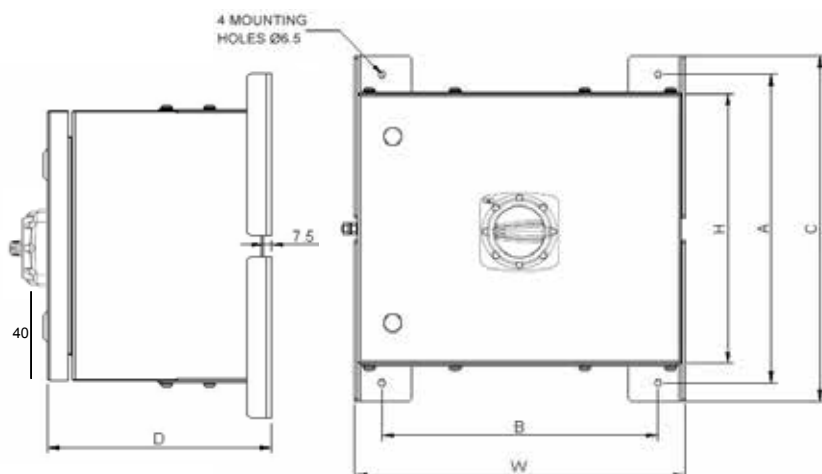


Enclosure A



Enclosure B

Enclosure C & D



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

