












CATALOGUE 2018.1



...delivering excellent customer service and high quality products...

	Fixed Lid Enclosed Switchgear	Moulded Plastic	2
		Die-Cast Aluminium	3
		Photovoltaic (PV)	4
		Stainless Steel	5
		Sheet Steel	8
		Accessories	9
		Technical Specification	10
		Dimensions	11
	Hinged Door Enclosed Switchgear	Sheet Steel	14
		Flagged	15
		Accessories	15
		Technical Specification	16
		Dimensions	18
	Fire Rated Switchgear	F200	20
		F300	21
		F400	22
		Technical Specification	24
		Dimensions	25
	Enclosed Switchgear for London Underground (LU)	Stainless Steel	29
		Die-Cast Aluminium	29
		Sheet Steel	30
		Technical Specification	31
		Dimensions	32
	Automatic Transfer Switches (ATS)	Standard ATS	34
		Combination ATS	35
Bypass ATS		36	
Combination Bypass ATS		37	
LU Standard ATS		38	
LU Combination ATS		39	
Motorised ATS		40	
Additional Features		41	
Deep Sea Control (DSE)		42	
Explosion Proof Switchgear	Exe Zone 1, 2, 21 & 22	44	
	Exd Zone 1, 2, 21 & 22	45	
	Zone 22	46	
	Technical Specification	47	
	Dimensions	48	

	Motor Controls		50
	Control Stations	Emergency Stop	52
		Emergency Power Off (EPO)	56
		Stop	59
		Start	61
		Start / Stop	62
		Explosion Proof	63
		Accessories	64
		Technical Specification	65
		Dimensions	66
	Rotary Switches		68
	Enclosed Safety Switches	GW Safety Switches	72
		LW Safety Switches	74
		Dimensions	75
	Panel Isolators	Compact Range	78
		Standard Range	79
		Fuse Combination Range	80
		Changeover Range	81
		Technical Specification	82
		Dimensions	83
	Push Button Components	16 Series	88
		22 Series	89
		32 Series	90
		ET Series	92
		MT Series	93
		A Series	95
	Footswitches		97
	Bespoke Products		98

Conditions of Use

The products listed in this publication should be installed by suitably qualified personnel in accordance with the requirements of all relevant legislation, regulations (including IEE Wiring Regulations) and the accepted industry practice. For further information, which may be required, about the use for which any specific product has been designed and tested, or about conditions of use, consultation with our technical department is advised.

In pursuance of our policy of continuing product improvement, the equipment described in this publication is subject to change without notification.



INTRODUCTION

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

Today our customers extend around the world and operate in a wide variety of markets and sectors including Railway, Construction, Ventilation (Fire rated), Explosion proof, Medical, Military, Panel Building and Power & Distribution.

Simply visit our website to find the contact details for your local Area Sales Manager who will be pleased to offer advice.

www.craigandderricott.com

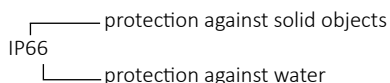


Technical Guidance for Product Selection

Ingress Protection

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

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



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

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

2nd Digit	Protection against water	
0	Not Protected	
1		Protected against dripping water.
4		Protected against splashed water from any direction.
5		Protected against water jets from any direction.
6		Protected against strong water jets from any direction.

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

Product Guide

Comparing to European standards (BS EN 60947-3) :-

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

Corrosive Environment

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

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

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

When the product is subject to chemical cleaning a stainless steel enclosure is recommended although the correct grade of stainless steel must be selected. If in doubt, please consult our technical department on sales@craigandderricott.com or +44(0)1543 375 541.

FIXED LID ENCLOSED SWITCHGEAR

Craig & Derricott has been at the forefront of switchgear design and manufacture for more than 70 years, and in that time the requirements of the installer & end user have always been paramount in the design concept. This attitude has culminated in the design of the 'i-switch' range where a wider choice of products has been offered to the customer, all of which are simple to install and provide the user with a product that is safe and effective in use.

The 'i-switch' range provides the user with a wide choice of products to safely disconnect an item of electrical equipment from the supply and are primarily designed to comply with the following minimum requirements:-

- Provide an effective clearance between the supply and the load appropriate to the voltage applied.
- Provide a means of locking in the 'Off' position. (Padlocking)
- Provide a true indication of the contact state.
- Provide a safe disconnection from the supply even under fault conditions.

All of Craig & Derricott's products meet, and often exceed, the above requirements making each one a product of choice in today's market.



Moulded Plastic Enclosed Switchgear

A range of moulded plastic enclosed isolation equipment with sealing up to IP66. All units have a padlockable handle which allow for the insertion of up to three padlocks in the 'Off' position thus preventing the isolator being switched to the 'On' position. The units have the ability to add a selection of auxiliary blocks providing additional contacts and a choice of Neutral assemblies. All units are interlocked in the ON position preventing the lid from being removed. Compliant to IEC / BS EN 60947-3.

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

'NL' = Unswitched neutral

'EB' = Early break auxiliary contacts

Add suffix '/10' to the Cat. No. for padlocking in the 'On' position e.g. EDP253/10

Note: 20A - 32A Switch-Disconnectors are also available in size A enclosure. Contact your local Area Sales Manager for more information.



Size A - D Enclosure

Size E Enclosure

Switch-Disconnectors (O-I)									
Image	Rating	Interior Switch	Format	Cat. No.	IP Rating	Encl. Size	Encl. Material	Encl. Colour	Cable Entries
	20A	GX20	6P	EDP206	IP66	E	PA / ABS	Light Grey RAL 7035	2 x M20 knock-outs top & bottom
			6P+2EB Aux	EDP206EB					
	25A	CS25	2P	EDP252	IP66	E	PA / ABS	Light Grey RAL 7035	2 x M20 knock-outs top & bottom
			3P	EDP253					
			3P+NL	EDP253NL					
			3P+N	EDP253N					
			3P+2EB Aux	EDP253EB					
	32A	CS32	2P	EDP322	IP66	E	PA / ABS	Light Grey RAL 7035	2 x M20 knock-outs top & bottom
			3P	EDP323					
			3P+NL	EDP323NL					
			3P+N	EDP323N					
			3P+2EB Aux	EDP323EB					
	40A	CS40R	2P	SDP402	IP65	B	PC / ABS	Light Grey RAL 7035	2 x M20/25 knock-outs top & bottom. Back face - 2 x M20 knock-outs
			3P	SDP403					
			3P+NL	SDP403NL					
			3P+N	SDP403N					
		3P+2EB Aux	SDP403EB						
		GX40	6P	SDP406					
	6P+2EB Aux		SDP406EB						
	63A	CS63	2P	SDP632	IP65	B	PC / ABS	Light Grey RAL 7035	2 x M20/25 knock-outs top & bottom. Back face - 2 x M20 knock-outs
			3P	SDP633					
			3P+NL	SDP633NL					
3P+N			SDP633N						
3P+2EB Aux			SDP633EB						
	80A	CS80	2P	SDP802	IP65	C	PA / PC	Light Grey RAL 7035	Blank sides
			3P	SDP803					
			3P+NL	SDP803NL					
			3P+N	SDP803N					
			3P+2EB Aux	SDP803EB					
	100A	CS100	2P	SDP1002	IP65	D	PA / PC	Light Grey RAL 7035	Blank sides
			3P	SDP1003					
			3P+NL	SDP1003NL					
			3P+N	SDP1003N					
			3P+2EB Aux	SDP1003EB					
Changeover Switch-Disconnectors (I-O-II)									
	20A	GX20	2P	SCODP202	IP66	A	PC / ABS	Light Grey RAL 7035	2 x M20 knock-outs top & bottom
			3P	SCODP203					
			4P	SCODP204					
	40A	GX40	2P	SCODP402	IP65	B	PC / ABS	Light Grey RAL 7035	2 x M20/25 knock-outs top & bottom. Back face - 2 x M20 knock-outs
			3P	SCODP403					
			4P	SCODP404					

Die-Cast Aluminium Enclosed Switchgear

A range of die-cast aluminium enclosed isolation equipment with sealing up to IP66 available in Light Grey (RAL 7035) or Traffic Red (RAL3020) powder coated finish. These units can be placed in environments where resistance to impacts, moisture and dust/dirt are a concern. All units have a padlockable handle which allows for the insertion of up to three padlocks in the 'Off' position thus preventing the isolator being switched to the 'On' position. All units are interlocked in the ON position preventing the lid from being removed. The option to add a selection of auxiliary blocks providing additional contacts and a choice of Neutral assemblies increases the flexibility of the product range. Compliant to IEC / BS EN 60947-3.

Enclosures finished Red (RAL 3020) are available to order, please contact our Sales team for details. Replace 'G' in the Cat. No. to 'R' e.g. SDDR253N

'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 Cat. No. E.g. SDDG402Y

Add suffix '/10' to the Cat. No. for padlocking in the 'On' position e.g. SDDG253/10



Switch-Disconnectors (O-I)									
Image	Rating	Interior Switch	Format	Cat. No.	IP Rating	Encl. Size	Encl. Material	Encl. Colour	Cable Entries
	20A	GX20	6P	SDDG206	IP66	A	Die cast aluminium alloy	Light Grey RAL 7035	2xM20 on bottom face
			6P+2EB Aux	SDDG206EB					
	25A	CS25	2P	SDDG252	IP66	A	Die cast aluminium alloy	Light Grey RAL 7035	2xM20 on bottom face
			3P	SDDG253					
			3P+NL	SDDG253NL					
			3P+N	SDDG253N					
			3P+2EB Aux	SDDG253EB					
	32A	CS32	2P	SDDG322	IP66	A	Die cast aluminium alloy	Light Grey RAL 7035	2xM20 on bottom face
			3P	SDDG323					
			3P+NL	SDDG323NL					
			3P+N	SDDG323N					
	40A	CS40R	2P	SDDG402X	IP66	A	Die cast aluminium alloy	Light Grey RAL 7035	2xM25 on bottom face
			3P	SDDG403X					
			3P+NL	SDDG403NLX					
			3P+N	SDDG403NX					
40A		GX40	2P	SDDG402	IP65	B	Die cast aluminium alloy	Light Grey RAL 7035	2xM25 + 1xM20 on bottom face
			3P	SDDG403					
			3P+NL	SDDG403NL					
			3P+N	SDDG403N					
			3P+2EB Aux	SDDG403EB					
			6P	SDDG406					
63A	CS63	2P	SDDG632	IP65	B	Die cast aluminium alloy	Light Grey RAL 7035	2xM25 + 1xM20 on bottom face	
		3P	SDDG633						
		3P+NL	SDDG633NL						
		3P+N	SDDG633N						
		3P+2EB Aux	SDDG633EB						
		6P	SDDG636						
		6P+2EB Aux	SDDG636EB						
80A	CS80	3P	SDDG803	IP65	B	Die cast aluminium alloy	Light Grey RAL 7035	2xM32 + 1xM20 on bottom face	
		3P+NL	SDDG803NL						
		3P+N	SDDG803N						
Changeover Switch-Disconnectors (I-O-II)									
	20A	GX20	2P	SCODDG202	IP66	A	Die cast aluminium alloy	Light Grey RAL 7035	2xM20 on bottom face
			3P	SCODDG203					
			4P	SCODDG204					
	40A	GX40	2P	SCODDG402	IP65	B	Die cast aluminium alloy	Light Grey RAL 7035	2xM25 + 1xM20 on bottom face
			3P	SCODDG403					
			4P	SCODDG404					

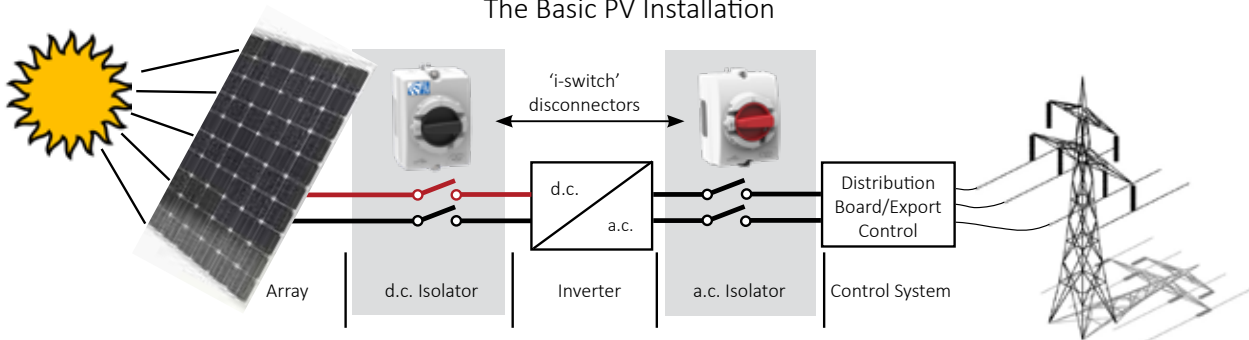
Photovoltaic (PV) Enclosed Switchgear

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

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

*1 Designed to isolate twin arrays

The Basic PV Installation



Switch-Disconnectors (O-I)

Image	Rating	Format	Cat. No.	Internal Switch	IP Rating	Encl. Size	Encl. Material	Encl. Colour
	16A	DC 2P	EPV162	SPV162	IP66	E	ABS	Light Grey RAL 7035
		DC 4P	PVP164	SPV164				
		Twin Array DC 2x 2P	PVP1622*1	SPV1622*1	IP65	B		
	25A	DC 2P	EPV252	SPV252	IP66	E	ABS	Light Grey RAL 7035
		DC 3P	EPV253	SPV253				
		DC 4P	PVP254	SPV254	IP65	B		
		Twin Array DC 2x 2P	PVP2522*1	SPV2522*1				
	32A	DC 2P	EPV322	SPV322	IP66	E	ABS	Light Grey RAL 7035
		DC 3P	EPV323	SPV323				
		DC 4P	PVP324	SPV324	IP65	B		
		Twin Array DC 2x 2P	PVP3222*1	SPV3222*1				
	40A	DC 2P	EPV402	SPV402	IP66	E	ABS	Light Grey RAL 7035
DC 3P		EPV403	SPV403					
DC 4P		PVP404	SPV404	IP65	B			
Twin Array DC 2x 2P		PVP4022*1	SPV4022*1					

Switch-Disconnectors (O-I)

Image	Rating	Format	Internal Switch Cat. No.	Max. enclosure depth with SSH8 shaft	Max. enclosure depth with SSH19 shaft	H1	H2
	16A	DC 2P	SPV162	148	248	50.5	28
		DC 4P	SPV164	170	270	72.5	50
		Twin Array DC 2x 2P	SPV1622*1	148	248	50.5	28
	25A	DC 2P	SPV252	159	259	61.5	39
		DC 3P	SPV253	170	270	72.5	50
		DC 4P	SPV254	148	248	50.5	28
		Twin Array DC 2x 2P	SPV2522*1	159	259	61.5	39
	32A	DC 2P	SPV322	170	270	72.5	50
		DC 3P	SPV323	148	248	50.5	28
		DC 4P	SPV324	159	259	61.5	39
		Twin Array DC 2x 2P	SPV3222*1	170	270	72.5	50
	40A	DC 2P	SPV402	170	270	72.5	50
		DC 3P	SPV403	170	270	72.5	50
		DC 4P	SPV404	170	270	72.5	50
		Twin Array DC 2x 2P	SPV4022*1	170	270	72.5	50

Stainless Steel Enclosed Switchgear

A range of isolation equipment housed in Grade 304 stainless steel enclosures sealing to IP66. All units have a padlockable handle which allow for the insertion of up to three padlocks in the 'Off' position thus preventing the isolator being switched to the 'On' position. All units are interlocked in the ON position preventing the lid from being removed.

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


Stainless Steel Grade 316 enclosures are available on request.

'N' = switched neutral (Early make, late break) | 'NL' = Unswitched neutral | 'EB' = Early break auxiliary contacts

Switch-Disconnectors (O-I)									
Image	Rating	Interior Switch	Format	Cat. No.	IP Rating	Encl. Size	Encl. Material	Encl. Colour	Cable Entries
	20A	GX20	6P	SDS206	IP66	A	Stainless Steel Grade 304	Brushed Satin Finish	2 x M20
			6P+2EB Aux	SDS206EB					
	25A	CS25	2P	SDS252	IP66	A	Stainless Steel Grade 304	Brushed Satin Finish	2 x M20
			3P	SDS253					
			3P+NL	SDS253NL					
			3P+N	SDS253N					
			3P+2EB Aux	SDS253EB					
	32A	CS32	2P	SDS322	IP66	A	Stainless Steel Grade 304	Brushed Satin Finish	2 x M20
			3P	SDS323					
			3P+NL	SDS323NL					
			3P+N	SDS323N					
			3P+2EB Aux	SDS323EB					
	40A	CS40R	2P	SDS402	IP66	B	Stainless Steel Grade 304	Brushed Satin Finish	2 x M20 + 2 x M25
			3P	SDS403					
			3P+NL	SDS403NL					
			3P+N	SDS403N					
			3P+2EB Aux	SDS403EB					
	GX40	6P	SDS406	IP66	B	Stainless Steel Grade 304	Brushed Satin Finish	2 x M20 + 2 x M25	
		6P+2EB Aux	SDS406EB						
	63A	CS63	2P	SDS632	IP66	B	Stainless Steel Grade 304	Brushed Satin Finish	2 x M20 + 2 x M25
			3P	SDS633					
			3P+NL	SDS633NL					
3P+N			SDS633N						
3P+2EB Aux			SDS633EB						
Changeover Switch-Disconnectors (I-O-II)									
	20A	GX20	2P	SCODS202	IP66	A	Stainless Steel Grade 304	Brushed Satin Finish	2 x M20
			3P	SCODS203					
			4P	SCODS204					
	40A	GX40	2P	SCODS402	IP66	B	Stainless Steel Grade 304	Brushed Satin Finish	2 x M20 + 2 x M25
			3P	SCODS403					
			4P	SCODS404					

Accessories

The external fixing feet listed below can be supplied on request.

Image	Description	Cat. No.
	External Fixing Feet for 20A- 32A	EFA
	External Fixing Feet for 40A- 63A	EFB



Stainless Steel Sloping Roof Enclosed Switchgear

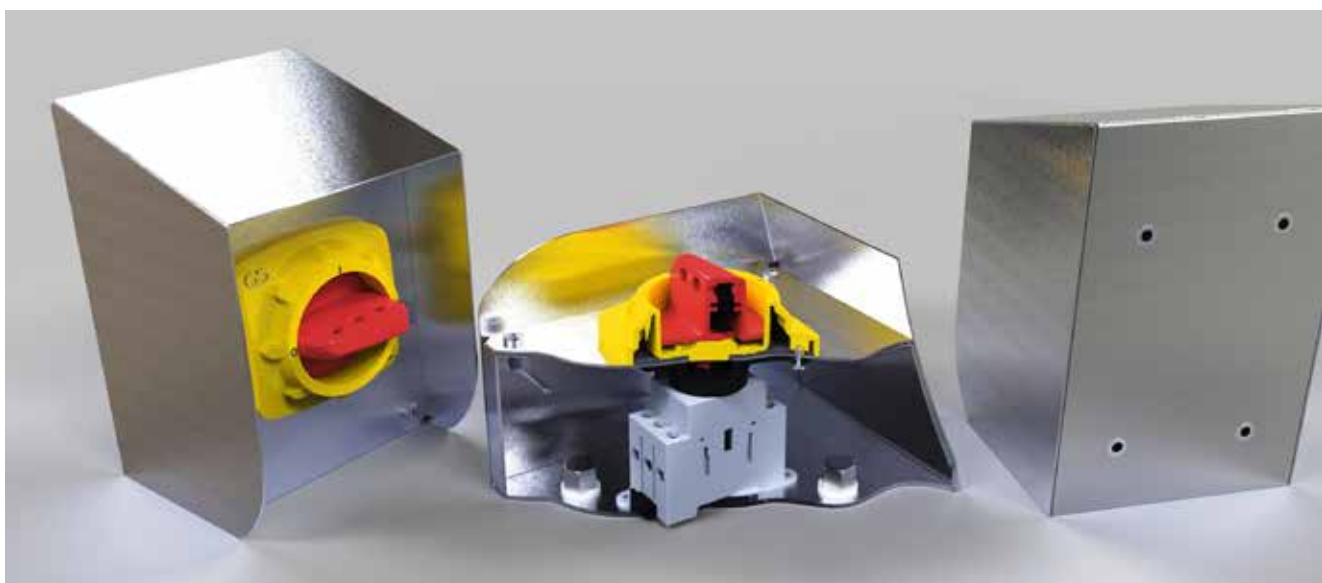
A range of isolation equipment housed in Grade 316 stainless steel enclosures, supplied with a specially designed stainless steel 'sloping roof'. These units are ideally suited for hygienic environments with their associated severe cleaning routines. The design has been created to minimise areas where dirt can accumulate and incorporates a flush rear surface and universal fixing that include IP66 sealings.

All units are supplied with a handle manufactured from a material suitable to withstand cleaning products containing sodium hydroxide. All units have a padlockable handle which allow for the insertion of up to three padlocks in the 'Off' position thus preventing the isolator being switched to the 'On' position. All units are interlocked in the ON position preventing the lid from being removed.

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

Optional pre-drilled bottom entries can be supplied. For 2xM20 in Size A Enclosures add suffix '/M20' to the Cat. No. e.g. SDSSR253/M20 | For 2xM25 in Size B Enclosures add suffix '/M25' to the Cat. No. e.g. SDSSR253/M25.

Switch-Disconnectors (O-I)											
Image	Rating	Interior Switch	Format	Cat. No.	IP Rating	Encl. Size	Encl. Material	Encl. Colour	Roof Angle	Cable Entries	
	20A	GX20	6P	SDSSR206	IP66	A	Stainless Steel Grade 316	Brushed Satin Finish	15° Slope	None	
			6P+2EB AUX	SDSSR206EB							
	25A	CS25	2P	SDSSR252	IP66	A	Stainless Steel Grade 316	Brushed Satin Finish	15° Slope	None	
			3P	SDSSR253							
			3P+2EB AUX	SDSSR253EB							
			3P+N	SDSSR253N							
32A	CS32	2P	SDSSR322	IP66	A	Stainless Steel Grade 316	Brushed Satin Finish	15° Slope	None		
		3P	SDSSR323								
		3P+2EB AUX	SDSSR323EB								
		3P+N	SDSSR323N								
	40A	CS40R	2P	SDSSR402	IP66	B	Stainless Steel Grade 316	Brushed Satin Finish	15° Slope	None	
			3P	SDSSR403							
			3P+2EB AUX	SDSSR403EB							
			3P+N	SDSSR403N							
		GX40	6P	SDSSR406							
			6P+2EB AUX	SDSSR406EB							
	63A	CS63	2P	SDSSR632	IP66	B	Stainless Steel Grade 316	Brushed Satin Finish	15° Slope	None	
			3P	SDSSR633							
			3P+2EB AUX	SDSSR633EB							
			3P+N	SDSSR633N							
80A	CS80	2P	SDSSR802	IP66	B	Stainless Steel Grade 316	Brushed Satin Finish	15° Slope	None		
		3P	SDSSR803								
		3P+2EB AUX	SDSSR803EB								
		3P+N	SDSSR803N								



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

Flush Mounting Enclosed Switchgear

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

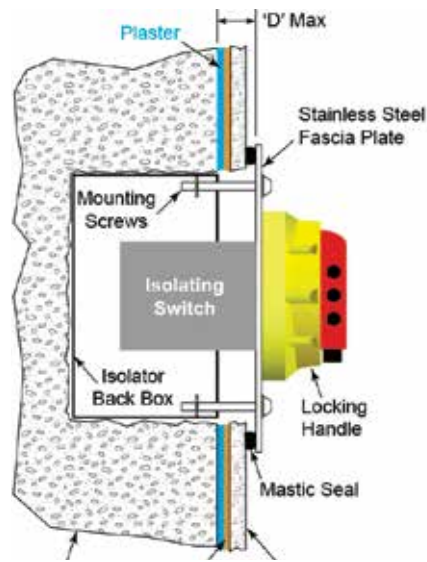
Installation

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

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

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

Switch-Disconnectors (O-I)									
Image	Rating	Interior Switch	Format	Cat. No.	IP Rating	Encl. Size	Fascia plate Material	Back Box Material	Cable Entries
	20A	GX20	2P	SDFL202	Isolating switch to stainless steel fascia plate IP65	A	Brushed Stainless Steel Grade 304	Galvanised Sheet Steel	Knockouts in back box
			3P	SDFL203					
			4P	SDFL204					
	32A	GX32	2P	SDFL322	Isolating switch to stainless steel fascia plate IP65	B	Brushed Stainless Steel Grade 304	Galvanised Sheet Steel	Knockouts in back box
			3P	SDFL323					
			4P	SDFL324					
	40A	GX40	2P	SDFL402	Isolating switch to stainless steel fascia plate IP65	B	Brushed Stainless Steel Grade 304	Galvanised Sheet Steel	Knockouts in back box
			3P	SDFL403					
			4P	SDFL404					
	63A	GN63	2P	SDFL632	Isolating switch to stainless steel fascia plate IP65	C	Brushed Stainless Steel Grade 304	Galvanised Sheet Steel	Knockouts in back box
			3P	SDFL633					
			4P	SDFL634					



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

Sheet Steel Enclosed Switchgear

A range of sheet steel enclosed isolation equipment sealing to IP66, providing the user with a robust and cost effective assembly. Each unit is supplied with a polyester powder coated finish in Light Grey (RAL 7035). External mounting feet in stainless steel are offered as an accessory sized to match each enclosure. Size A- Cat. No. EFA / Size B- Cat. No. EFB

All units have a padlockable handle which allow for the insertion of up to three padlocks in the 'Off' position thus preventing the isolator being switched to the 'On' position. All units are interlocked in the ON position preventing the lid from being removed. Standard shackle diameter Ø6.4


Earth continuity terminals are provided in the base and lid of each enclosure. A selection of auxiliary blocks can be provided as additional contacts as well as a choice of Neutral assemblies.

'N' = switched neutral (Early make, late break) | 'NL' = Unswitched neutral | 'EB' = Early break auxiliary contacts

Switch-Disconnectors (O-I)										
Image	Rating	Interior Switch	Format	Cat. No.	IP Rating	Encl. Size	Encl. Material	Encl. Colour	Cable Entries	
	20A	GX20	6P	SDMG206	IP66	A	Sheet Steel	Light Grey RAL 7035	2 x M20	
			6P+2EB Aux	SDMG206EB						
	25A	CS25	2P	SDMG252	IP66	A	Sheet Steel	Light Grey RAL 7035	2 x M20	
			3P	SDMG253						
			3P+NL	SDMG253NL						
			3P+N	SDMG253N						
			3P+2EB Aux	SDMG253EB						
	32A	CS32	2P	SDMG322	IP66	A	Sheet Steel	Light Grey RAL 7035	2 x M20	
			3P	SDMG323						
			3P+NL	SDMG323NL						
			3P+N	SDMG323N						
			3P+2EB Aux	SDMG323EB						
		40A	CS40R	2P	SDMG402	IP66	B	Sheet Steel	Light Grey RAL 7035	2 x M20 + 2 x M25
				3P	SDMG403					
				3P+NL	SDMG403NL					
3P+N				SDMG403N						
3P+2EB Aux				SDMG403EB						
GX40		6P	SDMG406	IP66	B	Sheet Steel	Light Grey RAL 7035	2 x M20 + 2 x M25		
		6P+2EB Aux	SDMG406EB							
63A		CS63	2P	SDMG632	IP66	B	Sheet Steel	Light Grey RAL 7035	2 x M20 + 2 x M25	
			3P	SDMG633						
			3P+NL	SDMG633NL						
	3P+N		SDMG633N							
	Changeover Switch-Disconnectors (I-O-II)									
	20A	GX20	2P	SCODMG202	IP66	A	Sheet Steel	Light Grey RAL 7035	2 x M20	
			3P	SCODMG203						
			4P	SCODMG204						
	40A	GX40	2P	SCODMG402	IP66	B	Sheet Steel	Light Grey RAL 7035	2 x M20 + 2 x M25	
			3P	SCODMG403						
			4P	SCODMG404						

Accessories

The external fixing feet listed below can be supplied on request.

Image	Description	Cat. No.
	External Fixing Feet for 20A- 32A	EFA
	External Fixing Feet for 40A- 63A	EFB

Accessories

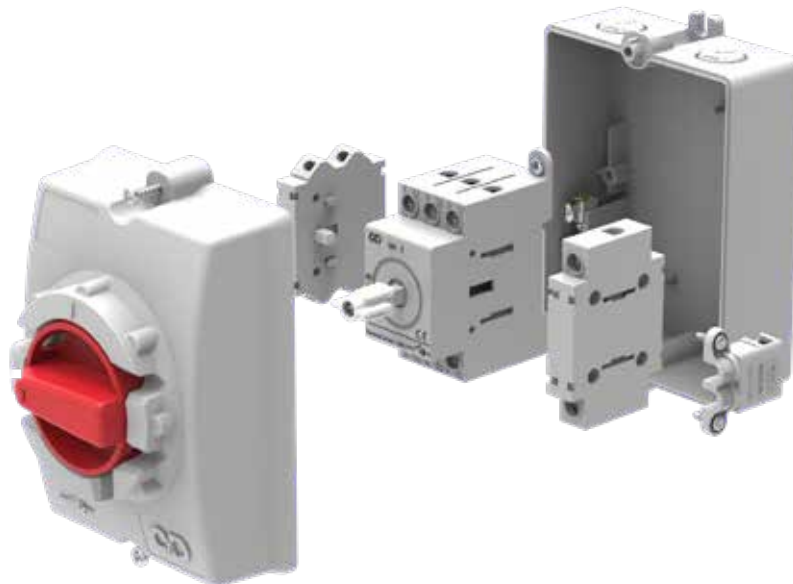
All of the accessories listed below can be retrofitted. One block can be fitted either side of the main assembly on all of the 3 pole Switch-Disconnecter interiors. Applicable to type 'CS' interiors only.

Image	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
	125A Neutral (Unswitched)	SNL125
	160A Neutral (Unswitched)	SNL160
	200A Neutral (Unswitched)	SNL200
	25A Neutral (Switched)	SSP25
	40A Neutral (Switched)	SSP40
	63A Neutral (Switched)	SSP63
	80A Neutral (Switched)	SSP80
	100A Neutral (Switched)	SSP100
	125A Neutral (Switched)	SSP125
	160A Neutral (Switched)	SSP160
	200A Neutral (Switched)	SSP200

Auxiliary Contact Block

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

Application	Sym.	Category	Type 'A'
Thermal current	I_{th}		10A
Rated insulation voltage	U_i		690V
Utilisation Category	-	AC15	8A@110V / 8A@240V / 3A@400V / 1A@690V
		DC13	-
		Pure Resistive	-
Max Cond.	mm ²		1.5
Tight Torque	Nm		0.6



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

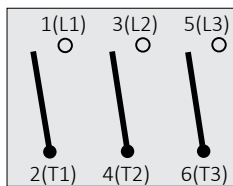
Technical Specification - Fixed Lid Enclosed Switchgear

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

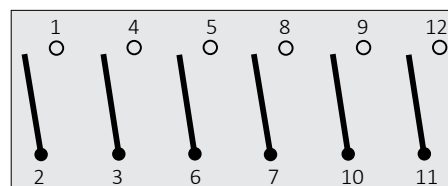
Application	Sym.	Unit	Category	20A	25A	32A	40A	63A	80A	100A			
Interior Switch	-	-		GX20	CS25	GX32	CS32	GX40	CS40R	GN63	CS63	CS80	CS100
Rated thermal current	I_{the}	A		20	25	32	32	40	40	63	63	80	100
Rated insulation voltage	U_i	V		690	690	690	690	690	690	690	690	690	1000
Rated impulse voltage	U_{imp}	kV		6	6	6	6	6	6	6	6	6	8
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 ²	Flexible cable	2.5x2	6	6 x 2	6	6 x 2	6	10	16	16	50
		mm ²	Rigid cable	2.5x2	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	5

Terminal Markings

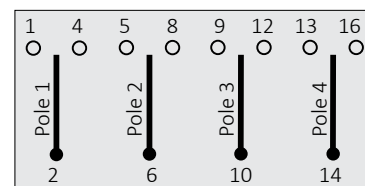
O-I (90° indexing)



O-I (90° indexing)



I-O-II (90° indexing)

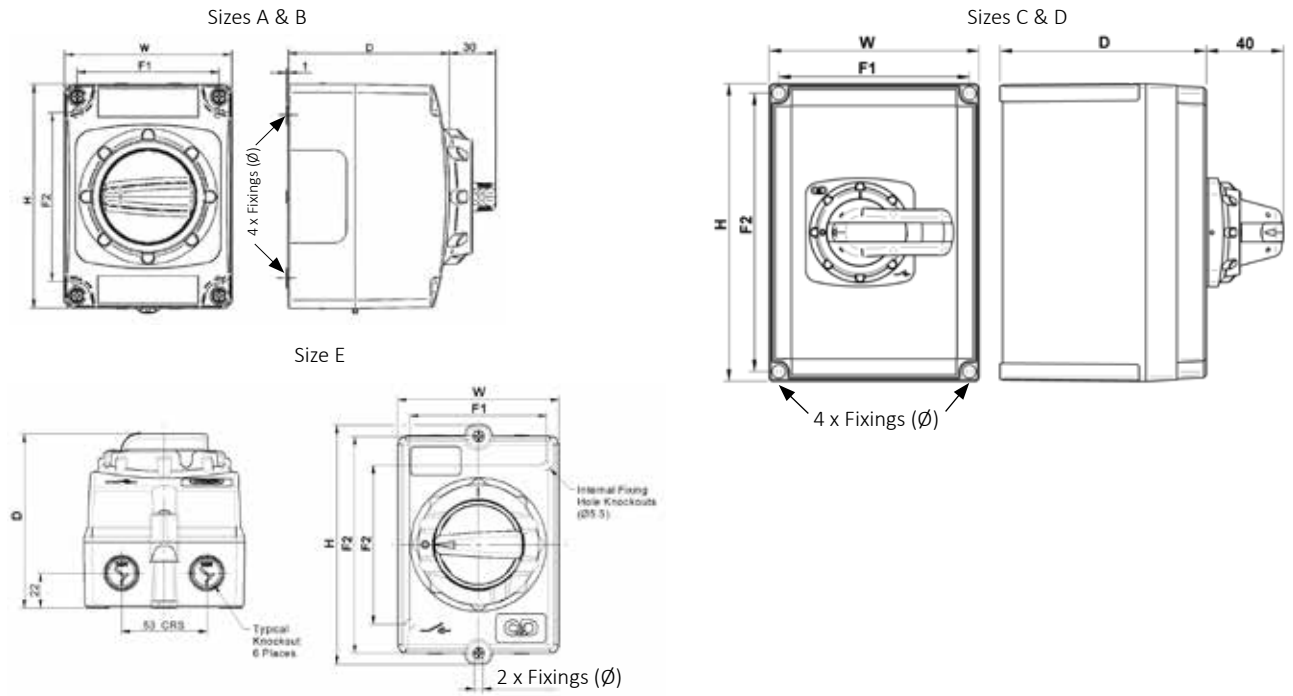


Technical Specification - Photovoltaic (PV)

For products on page 4. Data supplied against tests to IEC/BS EN 60947-3.

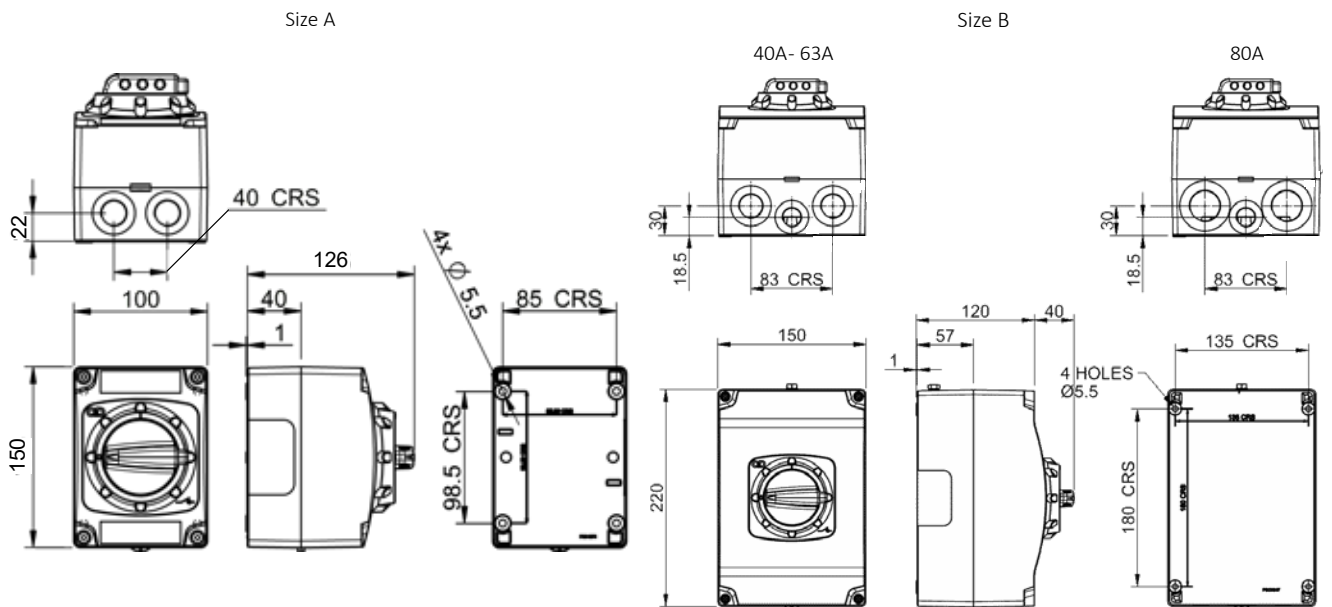
Cat. No.		Rated Operational Voltage d.c.					
		300/400V	600V	800V	1,000V	1,200V ²	1,500V ²
EPV162	Rated Operational Current (DC21B)	16A	16A	16A	16A	-	-
PVP164		-	-	-	-	16A	16A
EPV252		25A	25A	25A	16A	-	-
EPV253		-	-	-	25A	-	-
PVP254		-	-	-	-	20A	16A
EPV322		32A	32A	-	-	-	-
EPV323		-	-	32A	32A	-	-
PVP324		-	-	-	-	25A	20A
EPV402		40A	-	-	-	-	-
EPV403		-	40A	40A	-	-	-
PVP404		-	-	-	40A	32A	25A
PVP1622		Rated Operational Current (DC21B)	16A	16A	16A	16A	-
PVP2522	25A		25A	25A	16A	-	-
PVP3222	32A		32A	-	-	-	-
PVP4022	40A		-	-	-	-	-

Moulded Plastic Switchgear



Encl. Size	Overall Dims.			Fixing details			Knockouts		
	H	W	D	F1	F2	Ø	Top	Btm	Back
A	135	100	95	85	98.5	5.5	2x M20	2x M20	2x M20
B	175	130	115	115	135	5.5	2x Combination M20 / M25		2x M20
C	255	180	125	163.5	238.5	4.5	Plain sided		
D	255	180	175	163.5	238.5	4.5	Plain sided		
E	149	100	108.5	85	136.5 / 98.5	5.5	2x M20	2x M20	2x M20

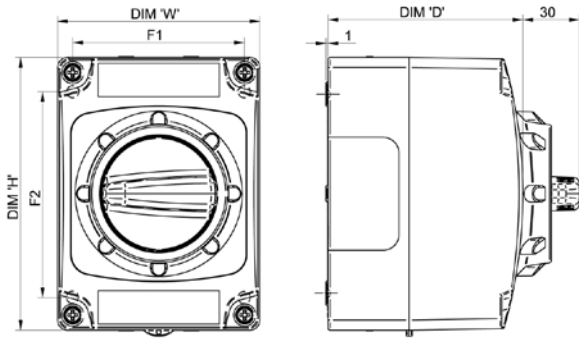
Die-Cast Aluminium Switchgear



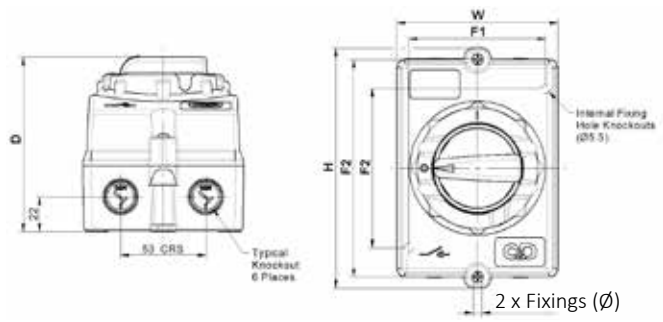
Rating	Cat. No.	Cable Entries	
		Enclosure A	Enclosure B
20A- 32A	Standard	2xM20 on bottom face	--
	Suffix X	2xM25 on bottom face	--
40A	Standard	2xM25 on bottom face	2xM25 + 1xM20 on bottom face
	Suffix X	2xM25 on bottom face	--
63A	Standard	--	2xM25 + 1xM20 on bottom face
	Suffix X	--	2xM32 + 1xM16 on bottom face
80A	Standard	--	2xM32 + 1xM20 on bottom face
	Suffix X	--	2xM32 + 1xM16 on bottom face

Photovoltaic (PV) Switchgear

Size B

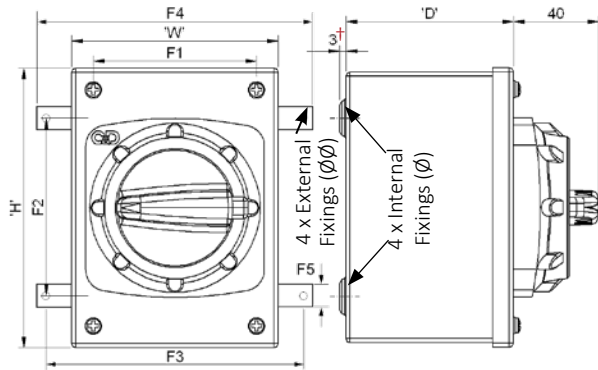


Size E



Encl. Size	Overall Dims.			Fixing details			Knockouts		
	H	W	D	F1	F2	Ø	Top	Btm	Back
B	175	130	115	115	135	5.5	2x Combination M20 / M25		2x M20
E	149	100	108.5	85	136.5 / 98.5	5.5	2x M20	2x M20	2x M20

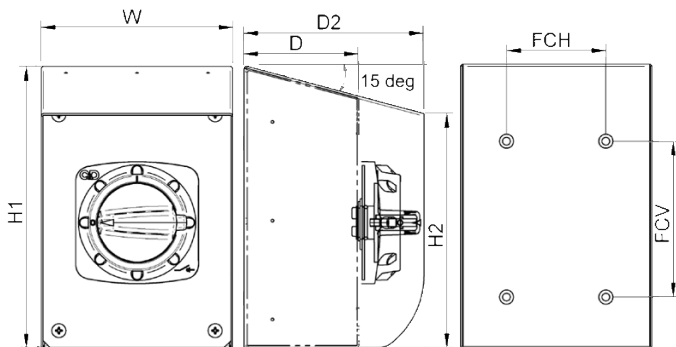
Sheet Steel & Stainless Steel Switchgear



Encl. Size	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

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

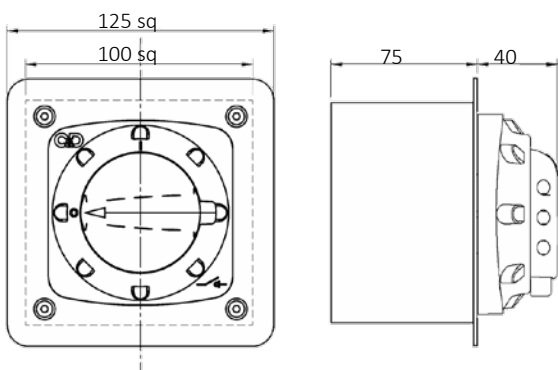
Stainless Steel Sloping Roof Switchgear



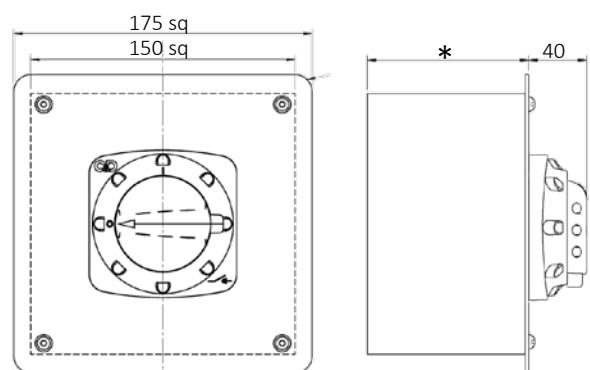
Encl. Size	Overall Dims.					Internal Fixings		
	H1	H2	W	D	D2	FCH	FCV	Ø
Size A	200	165	135	80	127	70	110	5.5
Size B	240	200	185	100	147	90	130	5.5

Flush Mounting Switchgear

Size A



Size B (* = 75) / Size C (* = 100)



HINGED DOOR ENCLOSED SWITCHGEAR

Supplied in 'hinged door' Light Grey (RAL 7035) powder coated sheet steel enclosures, this range of switchgear is suitable for most industrial applications.

Available as 'Switch-Disconnectors', 'Fuse Combination Units' and 'Changeover Switch-Disconnectors' all items are supplied in generously sized IP65 enclosures which helps to avoid the need for extension boxes. All units have a padlockable handle which allows for the insertion of up to three padlocks in the 'Off' position thus preventing the isolator being switched to the 'On' position. (Locking in 'On' position on request). The door interlock handle can be defeated to enable emergency opening or for testing purposes (100A and above)

Both red (RAL 3020) painted Sheet Steel and Stainless Steel (Grade 304 & 316) enclosures are available on request for the more severe environments. Contact us on +44 (0) 1543 375 541 for more information.






Sheet Steel Hinged Door Switch-Disconnectors

A range of 'hinged door' Light Grey (RAL 7035) powder coated sheet steel isolation equipment. Supplied in IP65 generously sized boxes which helps to avoid the need for extension boxes. All enclosures have the switches mounted on a removable galvanised chassis plate. All units are provided with removable top & bottom gland plates.

The range has a padlockable handle which allows for the insertion of up to three padlocks in the 'Off' position thus preventing the isolator being switched to the 'On' position. The door interlock handle can be defeated to enable emergency opening or for testing purposes (100A and above).

Both red (RAL 3020) painted Sheet Steel and Stainless Steel (Grade 304 & 316) enclosures are available on request for the more severe environments. Contact our sales team on 01543 375 541 for further information. Compliant to IEC / BS EN 60947-3.

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

Switch-Disconnectors (O-I)							
Image	Rating	Format	Cat. No.	IP Rating	Encl. Size	Encl. Material	Encl. Colour
	32A	3P+N	EDG00323N	IP65	1	Sheet Steel	Light Grey RAL 7035
		3P+NL	EDG00323NL				
	63A	3P+N	EDG00633N				
		3P+NL	EDG00633NL				
		6P	EDG00636				
	80A	6P+2EB Aux	EDG00636EB				
		3P+N	EDG00803N				
		3P+NL	EDG00803NL				
	100A	6P	EDG00806				
		3P+N	EDG01003N				
		3P+NL	EDG01003NL				
	125A	6P	EDG01006				
		3P+N	EDG01253N				
		3P+NL	EDG01253NL				
	160A	6P	EDG01256				
		3P+N	EDG01603N				
		3P+NL	EDG01603NL				
	200A	6P	EDG01606				
		3P+N	EDG02003N				
		3P+NL	EDG02003NL				
250A	3P+N	EDG02503N					
	3P+NL	EDG02503NL					
400A	3P+N	EDG04003N					
	3P+NL	EDG04003NL					
630A	3P+N	EDG06303N					
	3P+NL	EDG06303NL					
800A	3P+N	EDG08003N					
	3P+NL	EDG08003NL					
1000A	3P+N	EDG10003N					
	3P+NL	EDG10003NL					
Changeover Switch-Disconnectors (I-O-II)							
	63A	4P	ECODG00634	IP65	4	Sheet Steel	Light Grey RAL 7035
	100A	4P	ECODG01004				
	125A	4P	ECODG01254				
	160A	4P	ECODG01604				
	200A	4P	ECODG02004				
	250A	4P	ECODG02504				
	400A	4P	ECODG04004				
	630A	4P	ECODG06304				
Fuse Combination Units (O-I)							
	32A	3P+NL	EDFG00323NL	IP65	2	Sheet Steel	Light Grey RAL 7035
	63A	3P+NL	EDFG00633NL				
	100A	3P+NL	EDFG01003NL				
	125A	3P+NL	EDFG01253NL				
	160A	3P+NL	EDFG01603NL				
	200A	3P+NL	EDFG02003NL				
	250A	3P+NL	EDFG02503NL				
	315A	3P+NL	EDFG03153NL				
	400A	3P+NL	EDFG04003NL				
	630A	3P+NL	EDFG06303NL				

Sheet Steel Flagged Switchgear

The Flag Indicator is viewed through a 4mm thick polycarbonate window in the enclosure door providing the user with confirmation of the switch contact state. All assemblies are sealed to IP65 and are supplied with 2 C/O auxiliary blocks wired down to terminals. The range has a padlockable handle which allows for the insertion of up to three padlocks in the 'Off' position thus preventing the isolator being switched to the 'On' position. The door interlock handle can be defeated to enable emergency opening or for testing purposes. All assemblies are supplied with the switching element mounted on a removable internal 2mm galvanised steel chassis plate.

The standard range of Flag isolators are supplied with silver plated conductors but if the product is to be installed in an environment where there is a high amount of Hydrogen Sulfide and Sulphur dioxide we offer the option of Tin plated conductors in order to prevent the growth of Silver whiskers. Stainless Steel Grade 304 enclosures, Castell Lock options and EX Zone 22 versions are available on request. Contact your local Area Sales Manager for more information.

'N' = switched neutral | Add suffix 'T' to the beginning of any Cat. No. for tin plate contacts e.g. TSDS00323N/F

Switch-Disconnectors (O-I)							
Image	Rating	Format	Cat. No.	IP Rating	Encl. Size	Encl. Material	Encl. Colour
	32A	3P+N	SDG00323N/F	IP65	1F	Sheet Steel	Light Grey RAL 7035
	63A	3P+N	SDG00633N/F	IP65	1F	Sheet Steel	Light Grey RAL 7035
	100A	3P+N	SDG01003N/F	IP65	2F	Sheet Steel	Light Grey RAL 7035
	125A	3P+N	SDG01253N/F	IP65	2F	Sheet Steel	Light Grey RAL 7035
	200A	3P+N	SDG02003N/F	IP65	4F	Sheet Steel	Light Grey RAL 7035
	250A	3P+N	SDG02503N/F	IP65	4F	Sheet Steel	Light Grey RAL 7035
	400A	3P+N	SDG04003N/F	IP65	5F	Sheet Steel	Light Grey RAL 7035
Fuse Combination Units (O-I)							
	32A	3P+N	SDFG00323N/F	IP65	1F	Sheet Steel	Light Grey RAL 7035
	63A	3P+N	SDFG00633N/F	IP65	1F	Sheet Steel	Light Grey RAL 7035
	100A	3P+N	SDFG01003N/F	IP65	2F	Sheet Steel	Light Grey RAL 7035
	125A	3P+N	SDFG01253N/F	IP65	2F	Sheet Steel	Light Grey RAL 7035
	160A	3P+N	SDFG01603N/F	IP65	3F	Sheet Steel	Light Grey RAL 7035
	200A	3P+N	SDFG02003N/F	IP65	4F	Sheet Steel	Light Grey RAL 7035
	250A	3P+N	SDFG02503N/F	IP65	4F	Sheet Steel	Light Grey RAL 7035

Hinged Door Accessories (for pages 14-15)

Add-on auxiliary blocks are available for all hinged door products. 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'.














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 and 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.

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.)

Auxiliary Contacts		
Image	Description	Cat. No.
	Auxiliary Contact for 32A- 200A Switch-Disconnectors (Type A)	SAUXCO
	Auxiliary Contact for 63A- 160A Fuse Combination (Type B)	SAUXKITA
	Auxiliary Contact for 250A Switch-Disconnectors (Type C)	SAUXKITB
	Auxiliary Contact for 400A- 800A Switch-Disconnectors & 200A- 400A Fuse Combination (Type C)	SAUXKITC
	Auxiliary Contact for 1000A Switch-Disconnectors & 630A Fuse Combination Units (Type D)	SAUXKITD
Fuse Links		
	32A Fuse Link. BS Fuse format A2, A3. Fuse Fixing CRS (mm) 73 nom.	SFL32
	63A Fuse Link. BS Fuse format A2, A3. Fuse Fixing CRS (mm) 73 nom.	SFL63
	100A Fuse Link. BS Fuse format A4. Fuse Fixing CRS (mm) 94 nom.	SFL100
	125A Fuse Link. BS Fuse format A4. Fuse Fixing CRS (mm) 94 nom.	SFL125
	160A Fuse Link. BS Fuse format B1, B2. Fuse Fixing CRS (mm) 111 nom.	SFL160
	200A Fuse Link. BS Fuse format B1-B2. Fuse Fixing CRS (mm) 111 nom.	SFL200
	250A Fuse Link. BS Fuse format B1-B2. Fuse Fixing CRS (mm) 111 nom.	SFL250
	315A Fuse Link. BS Fuse format B1-B4. Fuse Fixing CRS (mm) 111 nom.	SFL315
	400A Fuse Link. BS Fuse format B1-B4. Fuse Fixing CRS (mm) 111 nom.	SFL400
630A Fuse Link. BS Fuse format C1-C3. Fuse Fixing CRS (mm) 133/184 nom.	SFL630	
Terminal Covers		
	Individual Spare Terminal Cover for 200A Switch-Disconnectors & Fuse Combination	STS1
	Individual Spare Terminal Cover for 250A- 400A Switch-Disconnectors & Fuse Combination	STS2
	Individual Spare Terminal Cover for 630A Fuse Combination	STS3
	Set of 4 Spare Terminal Cover for 630A Switch-Disconnectors	STS4






























Technical Specification - Hinged Door

Data supplied against tests to IEC/BS EN 60947-3. * All AC21, AC22 & AC23 tests carried out at 415V

Switch-Disconnectors (O-I)																
Application	Sym	Unit	Category	32	63		80	100	125	160	200	250	400	630	800	1000
				3P	3P	6P	3P	3P	3P	3P	3P	3P	3P	3P	3P	3P
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) (/ 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	400
			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 ² Min/Max	2.5 / 10	2.5 / 25	2.5 / 25	2.5 / 25	-/70	-/70	-/70	-/95	120	2 x 150	2 x 185	2 x 240	60 x 5
			mm Stud/Cu palm width	-	-	-	-	-	-	-	8 x 25	10 x 30	10 x 30	12 x 40	12 x 40	12 x 60
			Nm Tightening torque	1.2	1.2	1.2	1.2	5	5	5	6	35	35	50	50	50
Fuse Combination Units (O-I) (* Two poles in series)																
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			

Technical Specification - Hinged Door

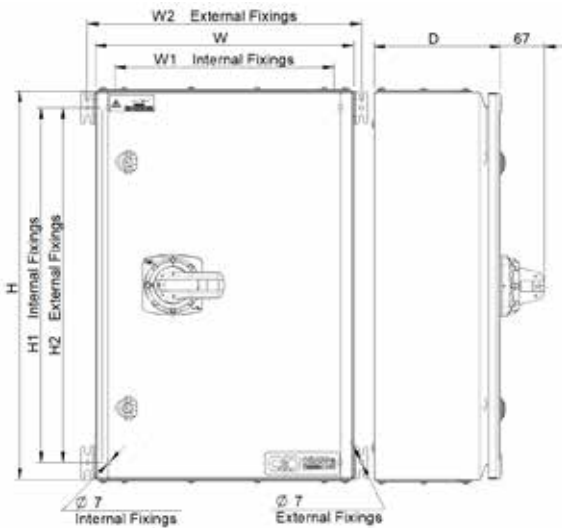
Data supplied against tests to IEC/BS EN 60947-3

Fuse Combination Units (O-I)													
Application	Sym	Unit	Category	32	63	100	125	160	200	250	315	400	630
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 ²	Min/Max	16	25	95	95	120	150	185	240	300	400
		mm	Stud/Cu palm width	-	-	8x20	8x20	8x20	10x25	10x25	10x25	10x25	12x50
		Nm	Tightening torque	2.5	2.5	9	12	16	35	35	35	35	50
Changeover Switch-Disconnectors (I-O-II)													
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		
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 ²	Max	35	35	95	95	95	240	300	400		
		mm	Stud/Cu palm width	6/12	6/12	8/22	8/22	8/22	10/25	10/25	12/50		
		Nm	Tightening torque	3	3	10	10	10	30	45	50		
Flagged Switch-Disconnectors (O-I)													
Application	Sym	Unit	Category	32	63	100	125	200	250	400			
Rated thermal current	I_{th}	A		32	63	115	125	200	270	500			
Rated insulation voltage	U_i	V		750	750	750	750	1000	1000	1000			
Rated impulse voltage	U_{imp}	kV		12	12	8	8	12	12	12			
Rated operational current	I_e	A	400V- AC23A	32	63	100*	125*	200*	250*	400*			
			220V- DC23A	-	-	100/3	125/3	200/2	250/2	400/2			
Rated operational power	P_e	kW	400/415V- AC23A	15	30	37	45	110	132	200			
Short circuit making capacity	I_{cm}	kA	Peak value	-	-	7	7	35	35	65			
Short circuit withstand (1sec)	I_{cw}	kA	rms value	-	-	5	5	8	8	17			
Min. mechanical endurance		-	Operations	25,000	25,000	20 x 10 ³	20 x 10 ³	16 x 10 ³	16 x 10 ³	10 x 10 ³			
Min. electrical endurance		-	415V- at 0.65 pf	1,500	1,500	5,000	5,000	1,000	1,000	1,000			
Connecting capacity		-	Terminal type										
		mm ²	Min/Max	16	25	-	-	-	-	-			
		mm	Stud/Cu palm width	-	-	8x25	8x25	8x25	10x30	10x40			
		Nm	Tightening torque	3.5	3.5	6	8	20	25	25			
Flagged Fuse Combination Units (O-I)													
Application	Sym	Unit	Category	32	63	100	125	160	200	250	315	400	
Rated thermal current	I_{the}	A		32	63	100	125	160	200	250	315	400	
Rated insulation voltage	U_i	V		750	750	750	750	750	750	750	750	750	
Rated impulse voltage	U_{imp}	kV		12	12	12	12	12	12	12	12	12	

*All AC21, AC22 & AC23 tests carried out at 415V.

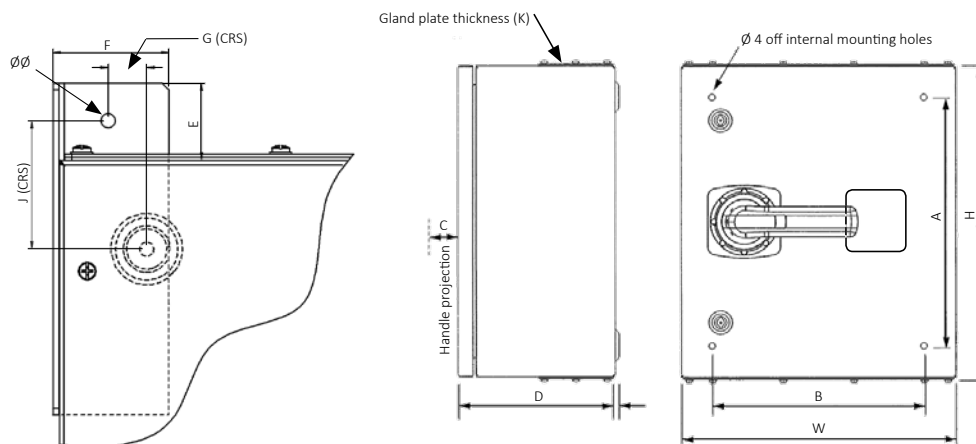
Flagged Fuse Combination Units (O-I)												
Application	Sym	Unit	Category	32	63	100	125	160	200	250	315	400
Rated operational current	I _e	A	415V- AC23A	32	63	100	125	160	200	250	315	400
			220V- DC23A	-	-	100	125	160	200	250	315	400
Rated making capacity (AC23A)		A	415V, 0.35 pf	320	630	1,000	1,250	1,600	2,000	2,500	3,150	4,000
Rated breaking capacity (AC23A)		A	415V, 0.35 pf	256	504	800	1,000	1,280	1,600	2,000	2,520	3,200
Rated Conditional (Fused) short circuit		KA	S/C current rms	80	80	80	80	80	80	80	80	80
		A	back-up fuse	32	63	100	125	160	200	250	315	400
Min. mechanical endurance		-	Operations	25,000	25,000	15,000	15,000	15,000	10,000	10,000	10,000	10,000
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
BS fuse format				A2	A2	A4	A4	B1, B2	B1, B2	B1, B2	B1, B4	B1, B4
Connecting capacity		-	Terminal type									
		mm ²	Min/Max	16	25	95	95	120	240	240	300	300
		mm	Stud/Cu palm width	-	-	8x20	8x20	8x20	10x25	10x25	10x25	10x25
		Nm	Tightening torque	2.5	2.5	9	12	16	25	30	35	45

Sheet Steel Hinged Door Switch-Disconnectors



Encl. Size	H	W	D	H1	H2	W1	W2
1	300	300	150	248	248	258	324
2	300	300	200	248	248	258	324
3	400	300	150	348	348	258	324
4	400	300	200	348	348	258	324
5	400	400	200	348	348	358	424
6	500	400	200	448	448	358	424
7	600	400	200	548	548	358	424
8	600	400	300	548	548	358	424
9	600	500	200	548	548	458	524
10	700	500	300	648	648	458	524
11	800	600	200	748	748	558	624
12	800	600	300	748	748	558	624
13	1000	600	300	948	948	558	624
14	1000	800	300	948	948	758	824

Sheet Steel Flagged Switchgear



Encl. Size	H	W	D	A	B	C	K	Ø	E	F	G	J	Ø Ø
1F	250	350	163	170	270	67	1.5	6.5	35	53	18	58	6.5
2F	400	350	163	320	270	67	1.5	6.5	35	58	18	58	6.5
3F	500	400	163	420	320	67	1.5	6.5	35	58	13	58	8.5
4F	600	450	220	520	370	67	2	6.5	35	58	13	58	8.5
5F	750	450	220	670	370	67	2	6.5					

FIRE RATED SWITCHGEAR

Craig & Derricott offer one of the most extensive range of Fire Rated Switchgear in the market.

Available 20A to 800A, this switchgear is used to maintain power to vital equipment such as smoke extraction / ventilation fans allowing the safe evacuation of businesses, car parks and public areas in the event of a fire. 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 BS EN 12101-3. Within BS EN 12101-3 (smoke and heat controls) there are different classes of duty which define a specific temperature gradient, upper temperature limit and time period.

- F400 products can withstand 400°C for 2 hours
- F300 products can withstand 300°C for 2 hours
- F200 products can withstand 200°C for 2 hours



F200 Fire Rated Switchgear

The F200 Fire Rated products range is designed for installations where the supply must be maintained for 2 hours at 200°C.

Ranging from 20A to 200A, these units are supplied in IP66/65 die-cast aluminium or IP65 sheet steel enclosures. All units come standard in a Traffic Red (RAL 3020) polyester powder coat finish, with padlocking in both 'Off' and 'On' positions.

'N' = switched neutral (Early make, late break) | 'NL' = Unswitched neutral | 'EB' = Early break auxiliary contacts
 'T' = Increased terminal capacity

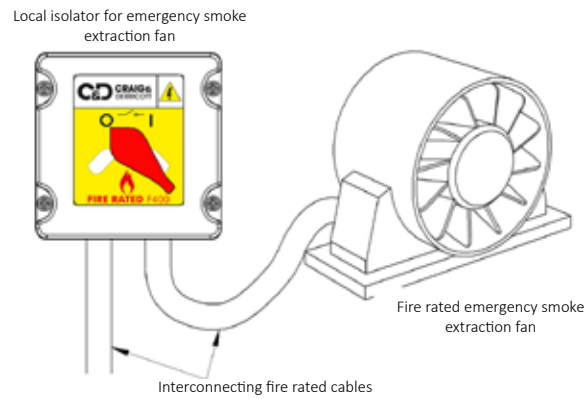


Image	Rating	Format	Switch Type	Cat. No.	IP Rating	Fire Rating	Encl. Size	Encl. Material
	20A	6P	GX20	F2SDDR206	IP66	F200	A	Die-Cast Aluminium
		6P+2EB Aux	GX20	F2SDDR206EB				
	25A	2P	CS25	F2SDDR252				
		3P	CS25	F2SDDR253				
		3P+2EB Aux	CS25	F2SDDR253EB				
		3P+N	CS25	F2SDDR253N				
		3P+NL	CS25	F2SDDR253NL				
	32A	2P	CS32	F2SDDR322				
		3P	CS32	F2SDDR323				
		3P+2EB Aux	CS32	F2SDDR323EB				
	40A	3P+N	CS32	F2SDDR323N				
		3P+NL	CS32	F2SDDR323NL				
		2P	CS40R	F2SDDR402				
		3P	CS40R	F2SDDR403				
		3P+2EB Aux	CS40R	F2SDDR403EB				
3P+N		CS40R	F2SDDR403N					
	40A	3P+NL	CS40R	F2SDDR403NL				
		6P	GX40	F2SDDR406				
		6P+2EB Aux	GX40	F2SDDR406EB				
		2P	CS40	F2SDDR402T				
		3P	CS40	F2SDDR403T				
		3P+2EB Aux	CS40	F2SDDR403EBT				
	63A	3P+N	CS40	F2SDDR403NT				
		3P+NL	CS40	F2SDDR403NLT				
		2P	CS63	F2SDDR632				
		3P	CS63	F2SDDR633				
80A	3P+2EB Aux	CS63	F2SDDR633EB					
	3P+N	CS63	F2SDDR633N					
	3P+NL	CS63	F2SDDR633NL					
80A	3P	CS80	F2SDDR803					
	3P+N	CS80	F2SDDR803N					
	63A	3P+NL	CS80	F2SDDR803NL	IP65	F200	B	Sheet Steel
		3P+N	CS63	F2SDRC00633N				
		3P+NL	CS63	F2SDRC00633NL				
	80A	6P	CS63	F2SDRC00636				
		3P+N	CS80	F2SDRC00803N				
		3P+NL	CS80	F2SDRC00803NL				
	100A	6P	CS80	F2SDRC00806				
		3P+N	CS100	F2SDRC01003N				
	125A	3P+NL	CS100	F2SDRC01003NL				
		3P+N	CS125	F2SDRC01253N				
	160A	3P+NL	CS125	F2SDRC01253NL				
		3P+N	CS160	F2SDRC01603N				
	200A	3P+NL	CS160	F2SDRC01603NL				
		3P+N	CS200	F2SDRC02003N				
			3P+NL	CS200			F2SDRC02003NL	
							2	
							1	
							2	
							3A	
							4A	
							5A	

F300 Fire Rated Switchgear

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

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

'N' = switched neutral (Early make, late break) | 'NL' = Unswitched neutral | 'EB' = Early break auxiliary contacts



Image	Rating	Format	Switch Mount	Cat. No.	IP Rating	Fire Rating	Encl. Size	Encl. Material			
	20A	2P	Lid mounted	F3SDR0202	IP65	F300	A	Sheet Steel			
		3P		F3SDR0203							
		3P+2E/B Aux		F3SDR0203EB							
		3P+NL		F3SDR0203N							
		4P		F3SDR0204							
		6P		F3SDR0206							
	6P+2E/B Aux	F3SDR0206EB									
25A	2P	F3SDR0252									
	3P	F3SDR0253									
	4P	F3SDR0254									
	20A	2P		F3DDR0202			IP65		F300	E	Die-Cast Aluminium
		3P		F3DDR0203							
		3P+2E/B Aux		F3DDR0203EB							
		3P+NL		F3DDR0203N							
		4P	F3DDR0204								
		6P	F3DDR0206								
	32A	6P+2E/B Aux	F3DDR0206EB								
		2P	F3DDR0322								
		3P	F3DDR0323								
		3P+2E/B Aux	F3DDR0323EB								
		3P+NL	F3DDR0323N								
		4P	F3DDR0324								
40A	6P	F3DDR0326									
	6P+2E/B Aux	F3DDR0326EB									
	2P	F3SDDR402									
	3P	F3SDDR403									
	63A	4P	F3SDDR404	IP65	F300	C	Sheet Steel				
		2P	F3SDR0632								
		3P	F3SDR0633								
		3P+2E/B Aux	F3SDR0633EB								
		3P+NL	F3SDR0633N								
		4P	F3SDR0634								
6P	F3SDR0636										
	80A	6P+2E/B Aux	F3SDR0636EB			Base mounted		IP65	F300	3A	Sheet Steel
		2P	F3SDR0802								
		3P	F3SDR0803								
		3P+2E/B Aux	F3SDR0803EB								
		3P+NL	F3SDR0803NL								
		4P	F3SDR0804								
	6P	F3SDR0806									
	125A	6P+2E/B Aux	F3SDR0806EB								
		2P	F3SDR01252								
		3P	F3SDR01253								
		3P+NL	F3SDR01253NL								
		3P+2E/B Aux	F3SDR01253EB								
4P		F3SDR01254									
6P	F3SDR01256										
6P+2E/B Aux	F3SDR01256EB										

Image	Rating	Format	Switch Mount	Cat. No.	IP Rating	Fire Rating	Encl. Size	Encl. Material			
	160A	3P	Base mounted	F3SDR01603	IP65	F300	5	Sheet Steel			
		3P+NL		F3SDR01603NL							
		4P		F3SDR01604							
		6P		F3SDR01606							
	200A	3P		F3SDR02003			5				
		3P+NL		F3SDR02003NL							
		4P		F3SDR02004			7				
		6P		F3SDR02006							
	250A	3P		F3SDR02503			5				
		3P+NL		F3SDR02503NL							
		4P		F3SDR02504			7				
		6P		F3SDR02506							
	315A	3P		F3SDR03153			IP65		F300	6	Sheet Steel
		3P+NL		F3SDR03153NL							
		4P		F3SDR03154							
		6P		F3SDR03156							
	400A	3P		F3SDR04003						6	
		3P+NL		F3SDR04003NL							
		4P		F3SDR04004						9	
		6P		F3SDR04006							
	630	3P		F3SDR06303						8	
		3P+NL		F3SDR06303NL							
		4P		F3SDR06304						9	
		6P		F3SDR06306							
800A	3P	F3SDR08003	8								
	3P+NL	F3SDR08003NL									
	4P	F3SDR08004	9								
	6P	F3SDR08006									

F400 Fire Rated Switchgear

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

The interior switches are constructed from a high temperature grade thermoset material, designed specifically for installations where the supply must be maintained for 2 hours at 400°C.

Stainless Steel Grade 316L enclosures are available on request for 63A- 630A. Replace 'R' with 'S' in the Cat. No.. E.g.F3SDS0633N.

'N' = switched neutral (Early make, late break) | 'NL' = Unswitched neutral | 'EB' = Early break auxiliary contacts





























Image	Rating	Format	Switch Mount	Cat. No.	IP Rating	Fire Rating	Encl. Size	Encl. Material
	20A	2P	Lid mounted	FSDMR0202	IP65	F400	A	Sheet Steel
		3P		FSDMR0203				
		3P+2E/B Aux		FSDMR0203EB				
		3P+NL		FSDMR0203N				
		4P		FSDMR0204				
		6P		FSDMR0206				
		6P+2E/B Aux		FSDMR0206EB				
		2P		FSDMR0252				
25A	3P	FSDMR0253						
	4P	FSDMR0254						
	2P	FSDDR0202		Die-Cast Aluminium				
	3P	FSDDR0203						
3P+2E/B Aux	FSDDR0203EB							
3P+NL	FSDDR0203N							
4P	FSDDR0204							
6P	FSDDR0206							
6P+2E/B Aux	FSDDR0206EB							

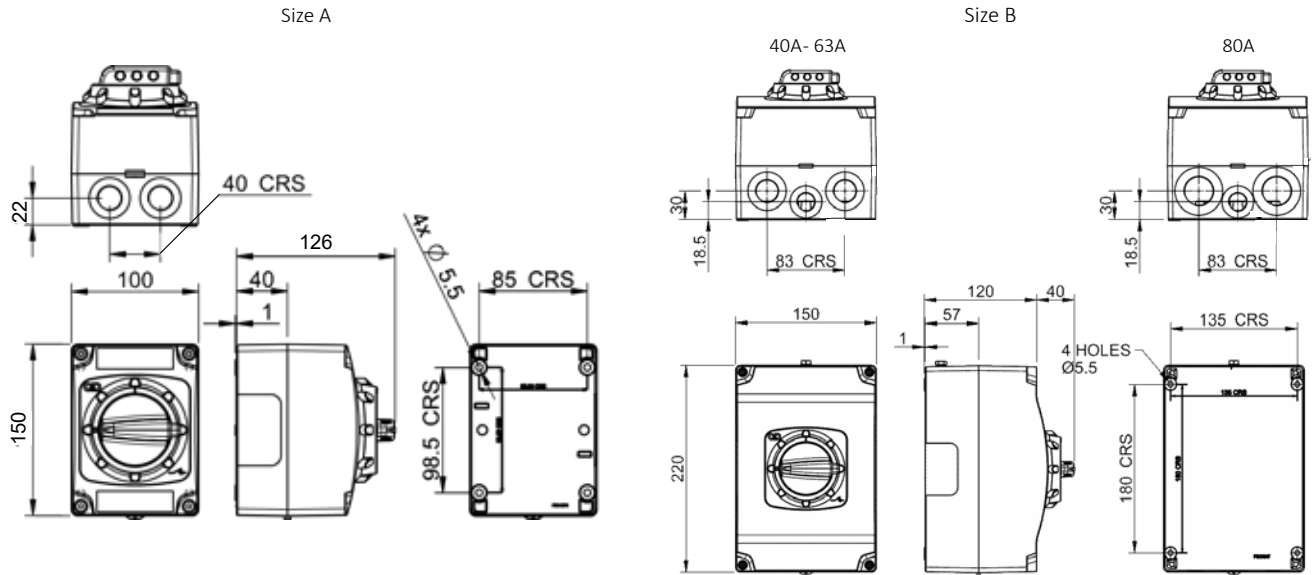
Image	Rating	Format	Switch Mount	Cat. No.	IP Rating	Fire Rating	Encl. Size	Encl. Material
	20A	6P	Lid mounted	FSDDR0206	IP65	F400	B	Die-Cast Aluminium
		6P+2E/B Aux		FSDDR0206EB				
	32A	2P		FSDDR0322				
		3P		FSDDR0323				
		3P+2E/B Aux		FSDDR0323EB				
		3P+NL		FSDDR0323N				
		4P		FSDDR0324				
		6P		FSDDR0326				
	40A	6P+2E/B Aux		FSDDR0326EB				
		2P		FSDDR0402				
3P		FSDDR0403						
	4P	FSDDR0404						
	63A	2P	Lid mounted	FSDMR0632	IP65	F400	C	Sheet Steel
		3P		FSDMR0633				
		3P+2E/B Aux		FSDMR0633EB				
3P+NL		FSDMR0633N						
4P		FSDMR0634						
6P		FSDMR0636						
6P+2E/B Aux		FSDMR0636EB						
	80A	2P	Base mounted	FSDMR0802	IP65	F400	3A	Sheet Steel
		3P		FSDMR0803				
		3P+2E/B Aux		FSDMR0803EB				
		3P+NL		FSDMR0803NL				
		4P		FSDMR0804				
		6P		FSDMR0806				
	125A	6P+2E/B Aux		FSDMR0806EB				
		2P		FSDMR01252				
		3P		FSDMR01253				
		3P+NL		FSDMR01253NL				
		3P+2E/B Aux		FSDMR01253EB				
		4P		FSDMR01254				
		6P		FSDMR01256				
		6P+2E/B Aux		FSDMR01256EB				
	160A	3P	FSDMR01603	IP65	F400	5	Sheet Steel	
		3P+NL	FSDMR01603NL					
		4P	FSDMR01604					
		6P	FSDMR01606					
	200A	3P	FSDMR02003					
		3P+NL	FSDMR02003NL					
		4P	FSDMR02004					
		6P	FSDMR02006					
	250A	3P	FSDMR02503					
		3P+NL	FSDMR02503NL					
		4P	FSDMR02504					
		6P	FSDMR02506					
315A	3P	FSDMR03153						
	3P+NL	FSDMR03153NL						
	4P	FSDMR03154						
	6P	FSDMR03156						
	400A	3P	FSDMR04003					
		3P+NL	FSDMR04003NL					
4P		FSDMR04004						
6P		FSDMR04006						
630A	3P	FSDMR06303						
	3P+NL	FSDMR06303NL						
	4P	FSDMR06304						
	6P	FSDMR06306						

Technical Specification - Fire Rated

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

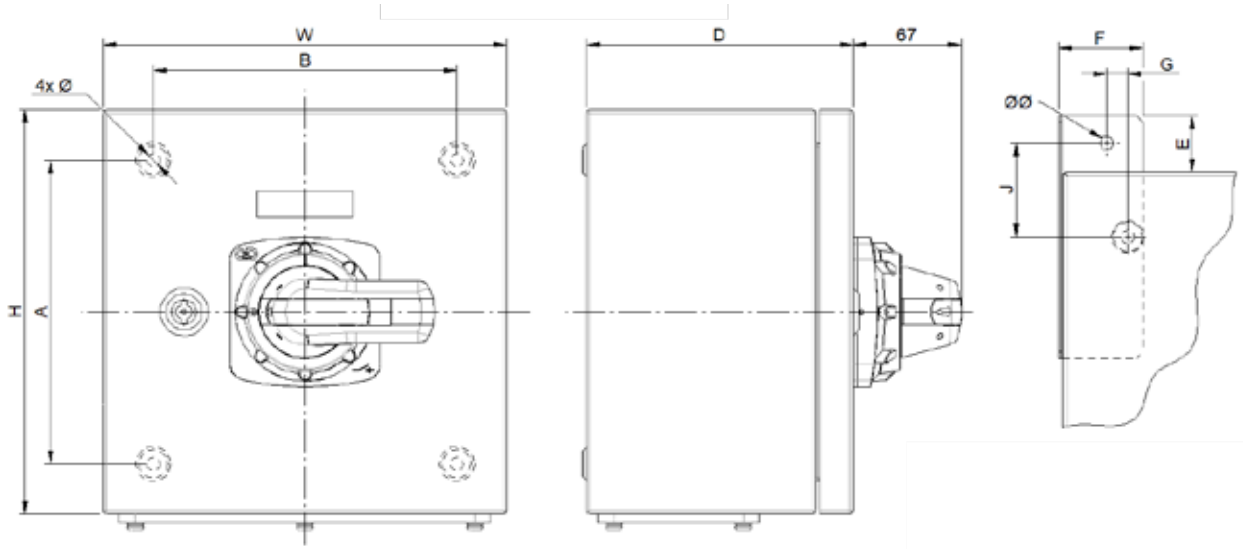
F200 - Switch-Disconnectors (O-I)																		
Application	Sym.	Unit	Category	20A	25A	32A	40A			63A	80A	100A	125A	160A	200A			
Switch product range	-	-		GX20	CS25	CS32	GX40	CS40	CS40R	CS63	CS80	CS100	CS125	CS160	CS200			
Rated thermal current	I_{the}	A		20	25	32	40	40	40	63	80	100	125	160	200			
Rated insulation voltage	U_i	V		690	690	690	690	690	690	690	690	1000	1000	1000	1000			
Rated impulse voltage	U_{imp}	kV		6	6	6	6	6	6	6	6	8	8	8	8			
Rated operational power (3 phase AC)		kW	380 / 440-AC23	7.5	11	15	18.5	18.5	15	25	30	59	63	75	75			
			690V- AC23	7.5	15	15	15	22	15	30	30	51	55	55	55			
Rated short time withstand current (1 sec)	I_{cw}	A		250	500	600	800	1100	600	1300	1400	2600	2800	3000	3000			
Max. fuse size for short circuit protection (gG Characteristic)		kA	10kA	20	35	35	40	80	40	80	80	160						
			25kA	16	32	35	35	80	32	63	63	160						
			50kA	-	32	32	-	80	32	63	63	160						
Recommended connecting capacity			- Terminal type															
			mm ² Flexible cable	2.5x2	6	6	6 x 2	16	6	16	16	16	50					
			mm ² Rigid cable	2.5x2	10	10	10 x 2	25	10	25	25	25	70					
			Nm Tightening torque	1.0	1.2	1.2	1.0	1.2	1.2	1.2	1.2	1.2	2	2	2	12		
F300 & F400 - Switch-Disconnectors (O-I)																		
Application	Sym.	Unit	Category	20A	25A	32A	40A	63A	80A	125A	160A	200A	250A	315A	400A	630A	800A	
Rated thermal current	I_{the}	A		20	25	32	40	63	80	125	160	200	250	315	400	630	720	
Rated insulation voltage	U_i	V		690	690	690	690	690	690	690	1000	1000	1000	1000	1000	1000	1000	
Rated impulse voltage	U_{imp}	kV		6.0	6.0	6.0	6.0	6.0	6.0	6.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	
Rated operational power (3 phase AC)	I_e / P_e	A/kW	415V-AC23A	20 /9.5	25 /11	32 /15	32 /15	40 /18.5	80 /40	100 /55	160 /90	200 /110	250 /132	315 /200	400 /200	630 /315	720 /355	
			690V-AC23A	-	-	-	-	-	-	-	160 /150	200 /190	250 /200	315 /315	350 /315	350 /355	350 /355	
			690V-AC23B	20 /9.5	20 /9.5	20 /9.5	-	20 /9.5	-	-	-	-	-	-	-	-	-	-
			660V-AC23B	-	-	-	-	-	30 /22	30 /22	-	-	-	-	-	-	-	-
Conditional Short Circuit Current	Fuse gG	kA / Fuse (A)	415V	50 /32	50 /32	50 /32	50 /32	50 /63	50 /150	50 /200	50 /160	50 /200	50 /250	-	-	-		
			690V	40 /32	40 /32	40 /32	40 /32	40 /63	50 /63	50 /63	50 /160	50 /200	50 /250	50 /315	50 /400	100 /630		
Short circuit withstand (1 sec)	I_{cw}	kA	RMS value	-	-	-	-	-	1.5	1.5	8.0	8.0	8.0	17.0	17.0	17.0	17.0	
Recommended connecting capacity			- Terminal type															
			mm ² Flexible cable	≤ 4.0	≤ 4.0	6	6	16	50	50	95	95	120	2 /150	2 /150	2 /185	2 /240	
			mm ² Rigid cable	≤ 4.0	≤ 4.0	10	10	25	35	50	95	95	120	2 /150	2 /150	2 /185	2 /240	
			Nm Tightening torque	1.2	1.2	1.2	1.2	3	12	12	35	35	35	35	35	35	50	50

F200 Fire Rated Switch-Disconnectors



Rating	Cat. No.	Cable Entries	
		Enclosure A	Enclosure B
20A- 32A	Standard	2xM20 on bottom face	--
	Suffix X	2xM25 on bottom face	--
40A	Standard	2xM25 on bottom face	2xM25 + 1xM20 on bottom face
	Suffix X	2xM25 on bottom face	--
63A	Standard	--	2xM25 + 1xM20 on bottom face
	Suffix X	--	2xM32 + 1xM16 on bottom face
80A	Standard	--	2xM32 + 1xM20 on bottom face
	Suffix X	--	2xM32 + 1xM16 on bottom face

Size 1-9



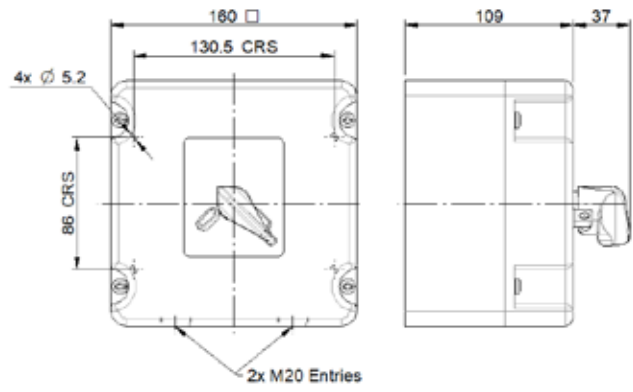
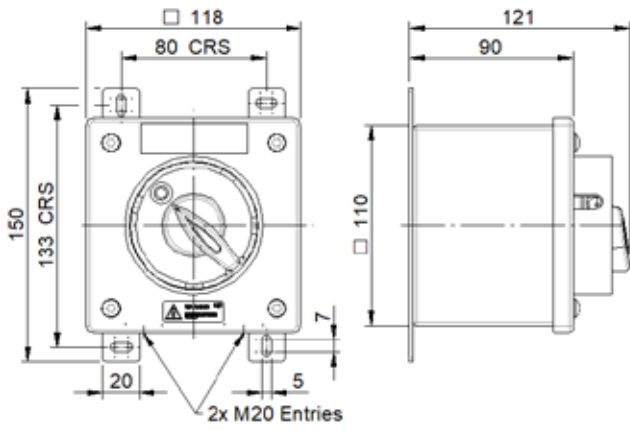
Encl. Size	H	W	D	A	B	C	Ø	E	F	G	J	Ø Ø
1	250	250	100	170	170	40	6.5	35	53	18	58	6.5
2	250	300	200	170	220	67	6.5	35	58	18	58	6.5
3A	350	300	175	270	220	67	8.5	35	58	13	58	8.5
4A	400	300	175	320	220	67	8.5	35	58	13	58	8.5
5	550	450	250	470	370	67	8.5	35	58	13	58	8.5
5A	550	400	175	470	320	67	8.5	35	58	13	58	8.5
6	750	450	275	670	370	67	8.5	35	58	13	58	8.5
7	750	600	300	670	520	67	8.5	35	58	13	58	8.5
8	900	600	300	820	520	67	10.5	35	58	13	58	10.5
9	900	600	400	820	520	67	10.5	35	58	13	58	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](#)

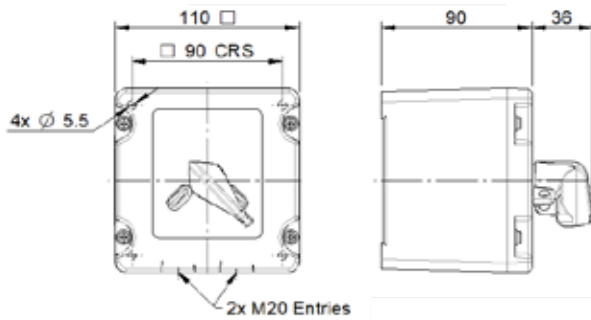
F300 Fire Rated Switch-Disconnectors

Size A

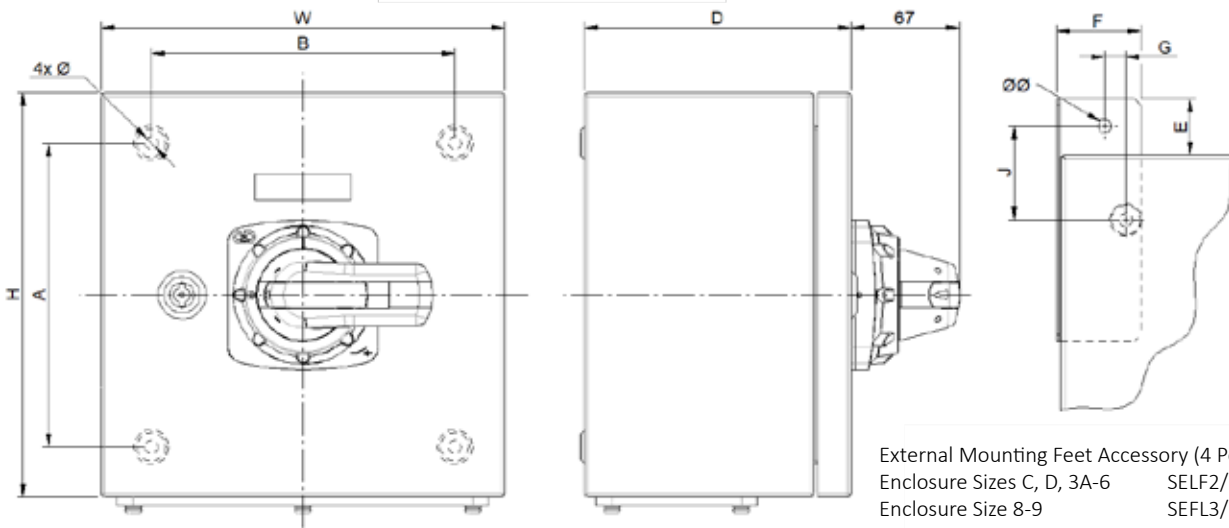
Size B



Size E



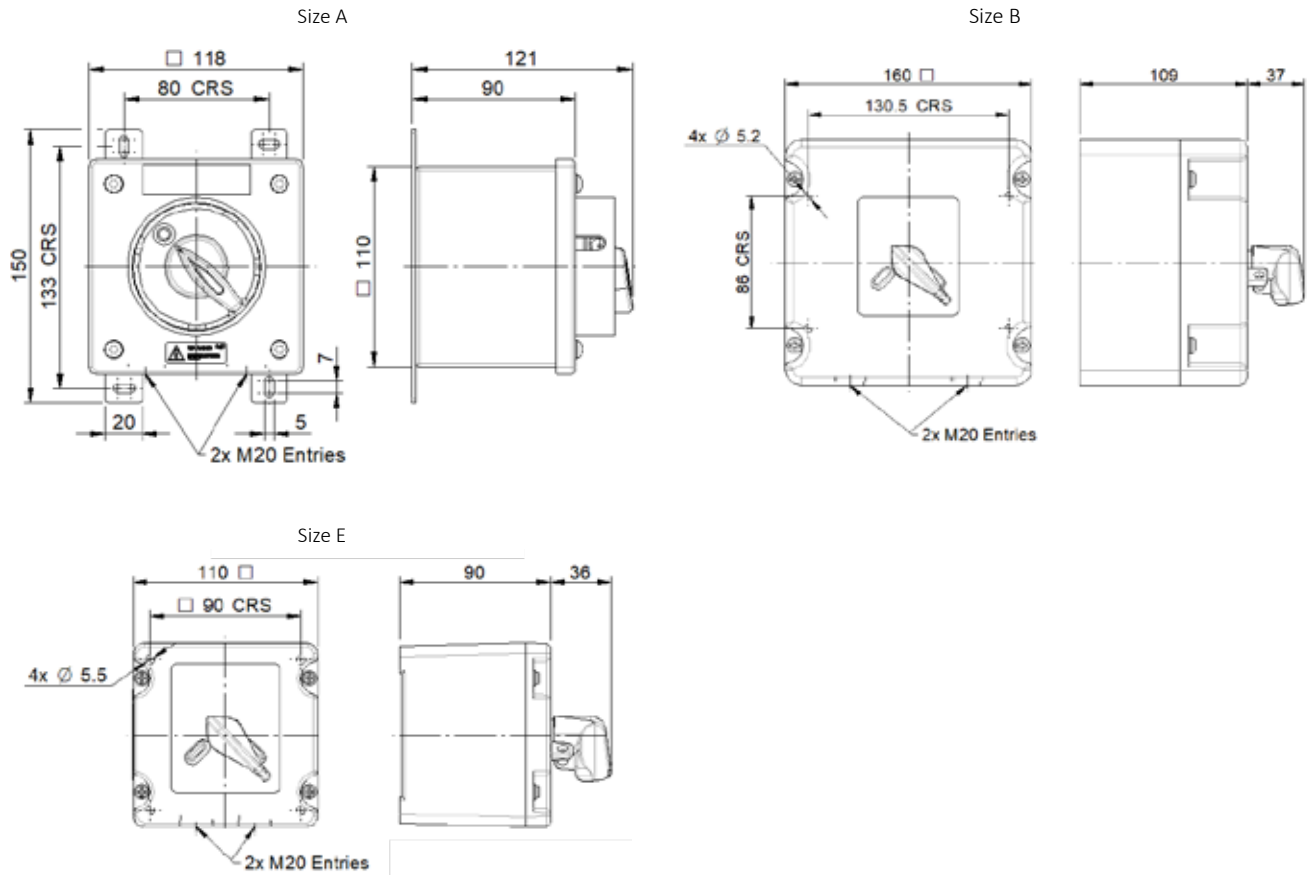
Hinged Door



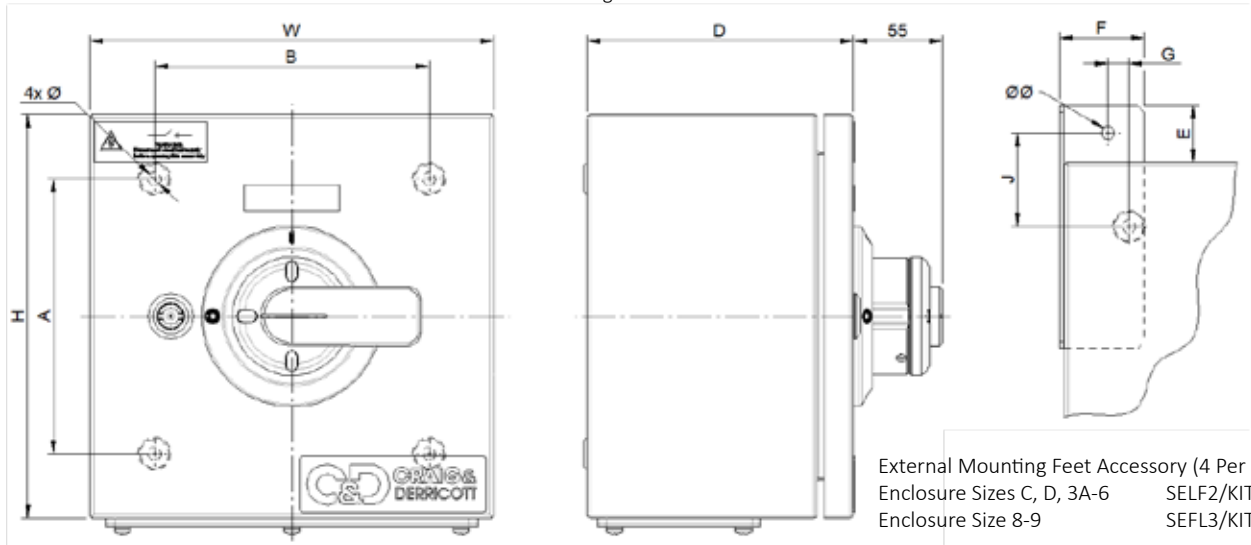
External Mounting Feet Accessory (4 Per Set)
 Enclosure Sizes C, D, 3A-6 SELF2/KIT
 Enclosure Size 8-9 SEFL3/KIT

Dimensions	Enclosure Size							
	C	3A	D	5	6	7	8	9
Height (H)	250	350	480	550	750	750	900	900
Width (W)	250	300	240	450	450	600	600	600
Depth (D)	165	175	238	250	275	300	300	400
Vertical Fixing CRS (A)	170	270	400	470	670	670	820	820
Horizontal Fixing CRS (B)	170	220	160	370	370	520	520	520
Fixing Hole Size (Ø)	8.5	8.5	8.5	8.5	8.5	8.5	10.5	10.5
Foot Projection (E)	35	35	35	35	35	35	35	35
Foot Width (F)	58	58	58	58	58	58	58	58
Hole Centres (G)	13	13	13	13	13	13	13	13
Hole Centres (J)	58	58	58	58	58	58	58	58
Fixing Hole Size (ØØ)	8.5	8.5	8.5	8.5	8.5	8.5	10.5	10.5

F400 Fire Rated Switch-Disconnectors



Hinged Door



External Mounting Feet Accessory (4 Per Set)
 Enclosure Sizes C, D, 3A-6 SELF2/KIT
 Enclosure Size 8-9 SEFL3/KIT

Dimensions	Enclosure Size							
	C	3A	D	5	6	7	8	9
Height (H)	250	350	480	550	750	750	900	900
Width (W)	250	300	240	450	450	600	600	600
Depth (D)	165	175	238	250	275	300	300	400
Vertical Fixing CRS (A)	170	270	400	470	670	670	820	820
Horizontal Fixing CRS (B)	170	220	160	370	370	520	520	520
Fixing Hole Size (Ø)	8.5	8.5	8.5	8.5	8.5	8.5	10.5	10.5
Foot Projection (E)	35	35	35	35	35	35	35	35
Foot Width (F)	58	58	58	58	58	58	58	58
Hole Centres (G)	13	13	13	13	13	13	13	13
Hole Centres (J)	58	58	58	58	58	58	58	58
Fixing Hole Size (ØØ)	8.5	8.5	8.5	8.5	8.5	8.5	10.5	10.5

ENCLOSED SWITCHGEAR FOR LU

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

With this London Underground (LU) 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.

This range of enclosed Switch Disconnectors have all been designed for the isolation and distribution of electrical supplies, for use on sub-surface and surface railway station installations. They meet the stringent requirements of LUL-TFL fire regulations and international low voltage switchgear standards.





Stainless Steel London Underground (LU) Switchgear

London Underground approved for use lid mounted switch-disconnectors designed to provide the user with an assembly that can be installed for indoor or outdoor use, in the harshest of environments.

Available in 25A & 40A ranging from 2P to 6P, these isolators are supplied in 18 gauge stainless steel Grade 304 enclosures in a natural brushed finish with mounting brackets for easy installation. Sealed to IP65, each unit is supplied with captive lid fixing screws with a security head and earthing points on both lid and base plus external earth stud. The cast lever handle is padlockable in both 'Off' and 'On' positions.

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.





Image	Rating	Interior Switch	Format	Cat. No.	IP Rating	Encl. Size	Encl. Material
	25A	GN25	2P	DS252LUL10	IP65	C	Stainless Steel Grade 304 in a natural brushed finish (Non Glare)
			3P	DS253LUL10	IP65		
			3P+2EB Aux	DS253EBLUL10	IP65		
			4P	DS254LUL10	IP65		
			6P	DS256LUL10	IP65		
			6P+2EB Aux	DS256EBLUL10	IP65		
	40A	GN40	2P	DS402LUL10	IP65	D	Stainless Steel Grade 304 in a natural brushed finish (Non Glare)
			3P	DS403LUL10	IP65		
			3P+2EB Aux	DS403EBLUL10	IP65		
			4P	DS404LUL10	IP65		
			6P	DS406LUL10	IP65		
			6P+2EB Aux	DS406EBLUL10	IP65		

Die-Cast Aluminium London Underground (LU) Switchgear

London Underground approved for use isolators available in 25A & 40A ranging from 2P to 6P. Designed in Die-Cast Aluminium (LM6) enclosures finished in LU S1085 Compliant Paint Finish. Available in either Light Grey (RAL 7035) or Traffic Red (RAL 3020).

Sealed to IP65, these switch-disconnectors are supplied with pre-finished steel mounting brackets for ease of installation. Each unit is supplied with captive lid fixing screws with a security head and earthing points on both lid and base plus external earth stud. The cast lever handle is padlockable in both 'Off' and 'On' positions.

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.

Image	Rating	Interior Switch	Format	Cat. No.	IP Rating	Encl. Size	Encl. Material	Encl. Colour
	25A	GN25	2P	DCG252LUL10	IP65	A	Die-Cast Aluminium (LM6)	LU S1085 Compliant Paint Finish: Light Grey (RAL 7035)
			3P	DCG253LUL10	IP65			
			3P+2EB Aux	DCG253EBLUL10	IP65			
			4P	DCG254LUL10	IP65			
			6P	DCG256LUL10	IP65			
			6P+2EB Aux	DCG256EBLUL10	IP65			
	25A	GN25	2P	DCR252LUL10	IP65	A	Die-Cast Aluminium (LM6)	LU S1085 Compliant Paint Finish: Traffic Red (RAL 3020)
			3P	DCR253LUL10	IP65			
			3P+2EB Aux	DCR253EBLUL10	IP65			
			4P	DCR254LUL10	IP65			
			6P	DCR256LUL10	IP65			
			6P+2EB Aux	DCR256EBLUL10	IP65			
	40A	R32	2P	DCG402LUL10	IP65	B	Die-Cast Aluminium (LM6)	LU S1085 Compliant Paint Finish: Light Grey (RAL 7035)
			3P	DCG403LUL10	IP65			
			3P+2EB Aux	DCG403EBLUL10	IP65			
			4P	DCG404LUL10	IP65			
			6P	DCG406LUL10	IP65			
			6P+2EB Aux	DCG406EBLUL10	IP65			
	40A	R32	2P	DCR402LUL10	IP65	B	Die-Cast Aluminium (LM6)	LU S1085 Compliant Paint Finish: Traffic Red (RAL 3020)
			3P	DCR403LUL10	IP65			
			3P+2EB Aux	DCR403EBLUL10	IP65			
			4P	DCR404LUL10	IP65			
			6P	DCR406LUL10	IP65			
			6P+2EB Aux	DCR406EBLUL10	IP65			

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

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

Sheet Steel London Underground (LU) Switchgear



Craig and Derricott's range of IP65 sheet steel hinged door are available as switch-disconnector assemblies in the range of 40A-800A and Fuse combination unit assemblies in the range of 32A- 630A.

Each unit is supplied as a three phase with switched neutral and is generously proportioned to allow simple cable connection, with removable gland plates on both top and bottom faces and a metal operating handle lockable in the Off and On position. Fuse combination unit assemblies are designed to accept 'bolted tag' BS 88 cartridge fuses.

The range comes standard with a LU S1085 compliant semi-gloss polyester powder coated finish in Light Grey (RAL 7035). This finish is UV resistant and offers paint protection suitable for outdoor applications but not coastal exposed or corrosive environments. Traffic Red (RAL 3020) enclosures are made to order and available on request.

All units are fitted with an IP65 aluminium red & yellow anodised handle which comes interlocked in the On position and is supplied standard as lockable in both the Off and On position. Each handle can accept up to 3 padlocks with a 6.3mm shackle with three different lengths available. An optional castell lock is available on request.


The switch-disconnector range is fire rated to F200, designed specifically for installations where the supply must be maintained for 120 mins at 200°C.

Switch-Disconnectors								
Image	Rating	Format	Light Grey Cat. No.	Traffic Red Cat. No.	IP Rating	Encl. Size	Encl. Material	Encl. Colour
	40A	3P+N	DCG00403N/LUL2	DCR00403N/LUL2	IP65	1	Sheet Steel	LU S1085 Compliant Paint Finish: Light Grey (RAL 7035)
	63A	3P+N	DCG00633N/LUL2	DCR00633N/LUL2		3		
	80A	3P+N	DCG00803N/LUL2	DCR00803N/LUL2		4		
	100A	3P+N	DCG01003N/LUL2	DCR01003N/LUL2		5		
	125A	3P+N	DCG01253N/LUL2	DCR01253N/LUL2		7		
	160A	3P+N	DCG01603N/LUL2	DCR01603N/LUL2		8		
	200A	3P+N	DCG02003N/LUL2	DCR02003N/LUL2		10		
	250A	3P+N	DCG02503N/LUL2	DCR02503N/LUL2				
	315A	3P+N	DCG03153N/LUL2	DCR03153N/LUL2				
	400A	3P+N	DCG04003N/LUL2	DCR04003N/LUL2				
	630A	3P+N	DCG06303N/LUL2	DCR06303N/LUL2				
	800A	3P+N	DCG08003N/LUL2	DCR08003N/LUL2				
Fuse Combination Units								
Image	Rating	Format	Light Grey Cat. No.	Traffic Red Cat. No.	IP Rating	Encl. Size	Encl. Material	Encl. Colour
	32A	3P+N	SFDCG00323N/LUL2	SFDCR00323N/LUL2	IP65	2	Sheet Steel	LU S1085 Compliant Paint Finish: Light Grey (RAL 7035)
	63A	3P+N	SFDCG00633N/LUL2	SFDCR00633N/LUL2		4		
	100A	3P+N	SFDCG01003N/LUL2	SFDCR01003N/LUL2		6		
	160A	3P+N	SFDCG01603N/LUL2	SFDCR01603N/LUL2		9		
	200A	3P+N	SFDCG02003N/LUL2	SFDCR02003N/LUL2		11		
	250A	3P+N	SFDCG02503N/LUL2	SFDCR02503N/LUL2				
	315A	3P+N	SFDCG03153N/LUL2	SFDCR03153N/LUL2				
	400A	3P+N	SFDCG04003N/LUL2	SFDCR04003N/LUL2				
	630A	3P+N	SFDCG06303N/LUL2	SFDCR06303N/LUL2				

For Castell lock option, add suffix '/CL' to the Cat. No. e.g. DCG00403N/LUL2/CL

Accessories - Auxiliary Contacts













Add-on auxiliary blocks are available for all hinged door products. 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'.

Auxiliary Contacts				
Image	Rating	Type	Range	Cat. No.
	32A- 160A	B	Fuse Combination	SAUXKITA
	40A- 200A	A	Switch-Disconnectors	SAUXCO
	200A- 400A	C	Fuse Combination	SAUXKITC
	250A	C	Switch-Disconnectors	SAUXKITB
	630A	B	Fuse Combination	SAUXKITD
	400A- 800A	C	Switch-Disconnectors	SAUXKITC

Technical Specification - London Underground Switchgear

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

Stainless Steel & Die-Cast Aluminium Switch-Disconnectors						
Application	Sym	Unit	Category	GN25	R32	GN40
Rated thermal current	I_{the}	A		25	40	40
Rated insulation voltage	U_i	V		690	690	690
Rated impulse voltage	U_{imp}	kV		6	6	6
Rated operational voltage		V		480	415	480
Rated operational power		kW	AC23A @ 380V/440V	11	15	18.5
Max fuse size for short circuit protection	I_n	(gG/gI)	25kA	25	40	40
			50kA	-	40	40
Mechanical life			Switching cycles	5×10^6	10^6	5×10^6
Terminal screw size				M3.5	M4	M4
Terminal capacity		2xmm ²	max r/f	4/4	6/6	10/6
				2xAWG	10/12	10/10
		2xmm ²	min r/f	0.5/0.5	1/1	1.5/1.5
				2xAWG	20/20	18/18

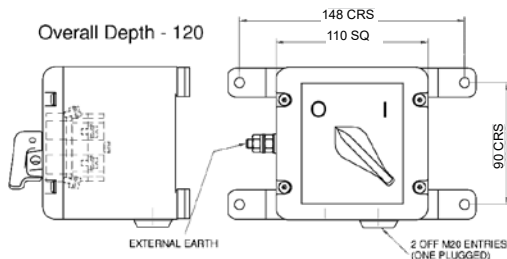
Sheet Steel Switch-Disconnectors															
Application	Sym	Unit	Category	40	63	80	100	125	160	200	250	315	400	630	800
Rated thermal current	I_{the}	A		40	63	80	100	125	160	200	250	315	400	630	720
Rated insulation voltage	U_i	V		690	690	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Rated impulse voltage	U_{imp}	kV		6	6	8	8	8	8	8	12	12	12	12	12
Rated operational current (AC)	I_e	A	400V- AC23A	35.1	48	56	100	112	128	128	250	315	400	630	720
Rated operational power	P_e	kW	400 / 415V- AC23A	8.5	25	30	59	63	75	75	132	160	200	315	355
Short circuit making capacity	I_{cm}	kA	Peak value	2.7	2.9	3.0	3.7	4.0	5.0	5.0	35	35	65	80	80
Short circuit withstand (1sec)	I_{cw}	kA	rms value	1.1	1.3	2	2.6	2.8	3.0	3.0	8	8	17	17	17
Min. mechanical endurance		-	Operations (10^3)	250	250	50	50	50	50	50	16	16	10	10	10
Min. electrical endurance		-	415V- at 0.65 pf	-	-	-	-	-	-	-	1,000	1,000	1,000	500	500
Connecting capacity		-	Terminal type												
		mm ²	Min/Max	2.5/25	2.5/25	-/70	-/70	-/70	-/95	-/95	120	2x150	2x150	2x185	2x240
		mm	Stud/Cu palm width	-	-	-	-	-	8x25	8x25	10x30	10x30	10x30	12x40	12x40
		Nm	Tightening torque	1.3	1.3	2	2	2	12	12	25	25	25	40	40

Sheet Steel Fuse Combination Units													
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 operational power @ 0.75pf	P_e	kW	400/415- AC23A	17.2	33.9	53.9	67.3	86.2	107.8	134.7	169.8	215.6	339.6

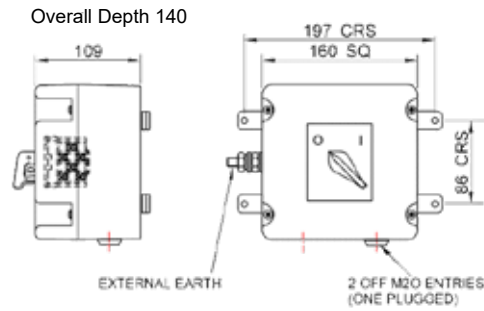
Sheet Steel Fuse Combination Units												
Application	Unit	Category	32	63	100	125	160	200	250	315	400	630
Rated making capacity (AC23A)	A	415V, 0.35 pf	320	630	1,000	1,250	1,600	2,000	2,500	3,150	4,000	6,300
Rated breaking capacity (AC23A)	A	415V, 0.35 pf	256	504	800	1,000	1,280	1,600	2,000	2,520	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 ²	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	2.5	2.5	9	12	16	25	30	35	45	50

LU Die-Cast Aluminium Switchgear

Size A

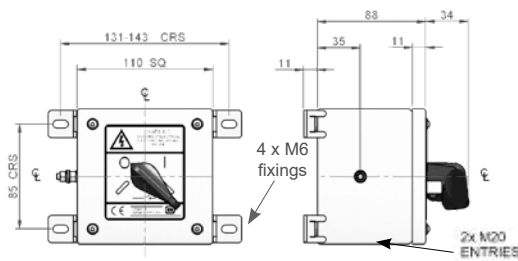


Size B

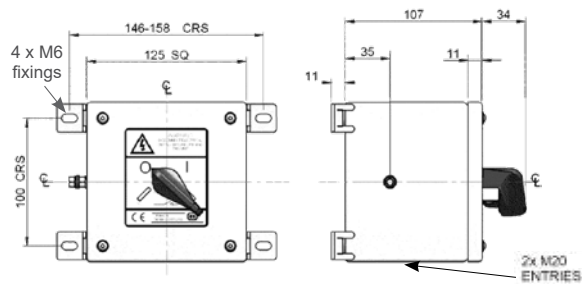


LU Stainless Steel Switchgear

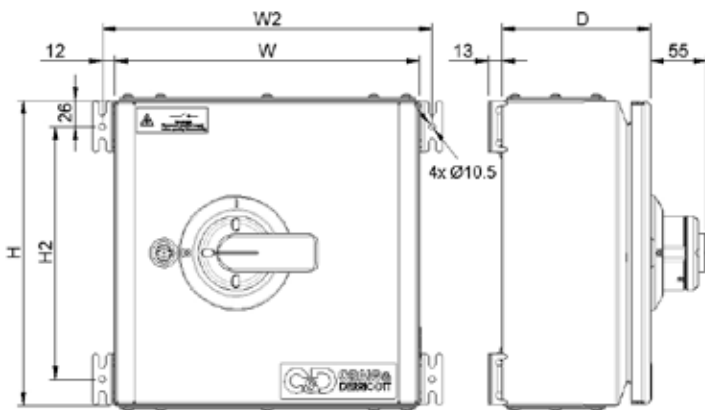
Size C



Size D



LU Sheet Steel Switchgear



Encl Size	Dimensions (mm)				
	H	W	D	H2	W2
1	300	300	150	248	324
2	400	400	200	348	324
3	400	300	150	348	324
4	500	400	200	448	424
5	600	400	200	548	424
6	600	600	300	548	424
7	600	500	200	548	524
8	800	600	200	748	624
9	800	600	300	748	624
10	1000	600	300	948	624
11	1000	800	300	948	624

AUTOMATIC TRANSFER SWITCHES

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

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

Craig & Derricott have designed the ATS units to be operational in a variety of installations such as hospitals, water distribution facilities, airports, banking computers, data centres, shopping centres, offices, apartments and railway- wherever there is a critical need for the automatic transfer of power from permanent mains/duty to an alternative generator/standby supply. Contact our sales team on +44 (0) 1543 375 541 for more information.



Standard Automatic Transfer Switches (ATS)

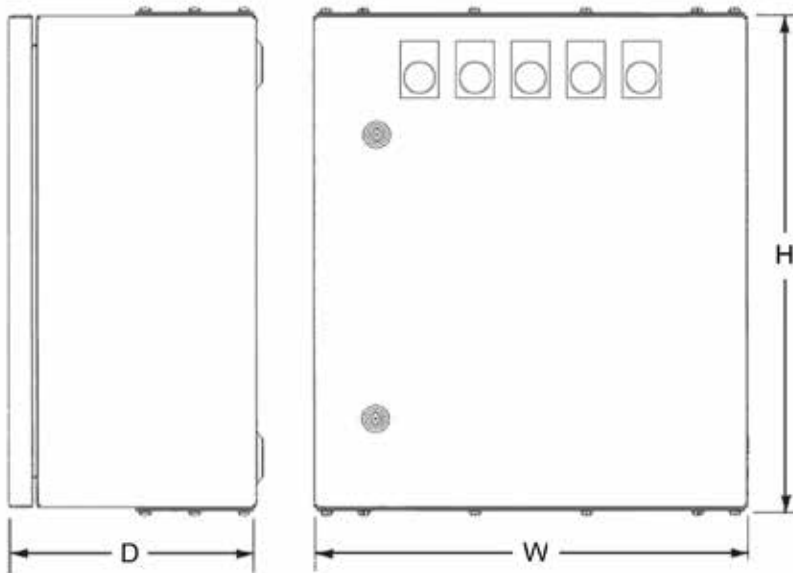
At the core of each system is a four pole changeover device. Rated 230V or 400V AC the 'Standard' range utilises electromechanical interlocked 4 pole AC1 rated contactors and provides all of the essential requirements for automatically providing a replacement power source.

Units are rated from 32A to 800A with a rated frequency of 50Hz. The Single or Three-phase ATS units allow automatic connection of a secondary electrical supply to a load upon failure of the primary supply. Volt-Free Status Relays are included within the ATS unit in order to connect to the BMS (building management system) installed within the building

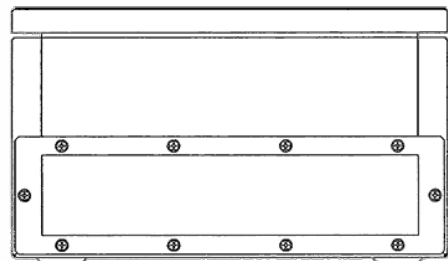
Supplied in IP65 sheet steel enclosure with a light grey (RAL 7035) paint finish, each enclosure comes standard with removable top and bottom gland plates. Each unit comes with a built-in adjustable generator start timer and timers for time delay between changeover (time adjustable from 50 ms). The main LED indicator lights show the status of the supplies. An Auto / test switch is provided within the LED Panel with a set of 2 keys.

Craig & Derricott can offer a wide range of additional features to every range, see page 41 for more information. Applied standards: BS EN / IEC 60947-4 & BS EN / IEC 60947-6-1. Utilization category AC31B.

Image	Rating	Single Phase Cat. No.	Three Phase Cat. No.	IP Rating	Encl. size	Encl. Material	Encl. Colour
	32A	ATS0322	ATS0324	IP65	A	Sheet Steel	Light Grey RAL 7035
	45A	ATS0452	ATS0454				
	63A	ATS0632	ATS0634		B		
	100A	ATS1002	ATS1004				
	125A	ATS1252	ATS1254		C		
	160A	ATS1602	ATS1604				
	200A	ATS2002	ATS2004				
	250A	ATS2502	ATS2504				
	300A	ATS3002	ATS3004				
	350A	ATS3502	ATS3504				
	400A	ATS4002	ATS4004		D		
	650A	ATS6502	ATS6504				
800A	ATS8002	ATS8004					



Encl. Size	H	W	D
A	400	300	150
B	600	400	250
C	800	600	300
D	1000	800	300



Combination Automatic Transfer Switches (ATS)- Form 4 Type 2

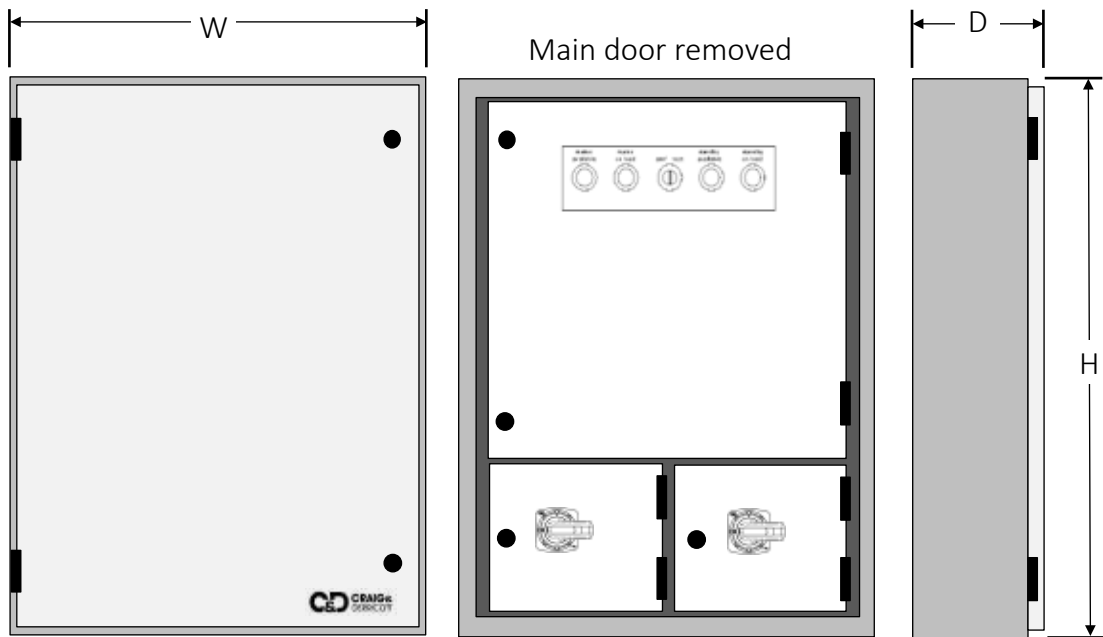
Rated 32A to 800A the 'Combination' range utilises electromechanical interlocked 4 pole AC1 rated contactors and provides all of the essential requirements for automatically switching to a replacement power source.

The Single or Three-phase ATS units allow automatic connection of a secondary electrical supply to a load upon failure of the primary and with two separate isolators built-in, provides the ability to isolate both supplies.

Supplied in IP65 sheet steel with light grey (RAL 7035) paint finish, each enclosure comes standard with removable top and bottom gland plates. Each unit comes with a built-in adjustable generator start timer and timers for time delay between changeover (time adjustable from 50 ms). The main LED indicator lights show the status of the supplies. An Auto / test switch is provided within the LED Panel with a set of 2 keys.

Craig & Derricott can offer a wide range of additional features to every range, see page 41 for more information. Applied standards: BS EN / IEC 60947-4 & BS EN / IEC 60947-6-1. Utilization category AC31B.

Image	Rating	Single Phase Cat. No.	Three Phase Cat. No.	IP Rating	Encl. size	Encl. Material	Encl. Colour
	32A	ATSSD0322	ATSSD0324	IP65	A	Sheet Steel	Light Grey RAL 7035
	45A	ATSSD0452	ATSSD0454				
	63A	ATSSD0632	ATSSD0634				
	100A	ATSSD1002	ATSSD1004				
	125A	ATSSD1252	ATSSD1254				
	160A	ATSSD1602	ATSSD1604				
	200A	ATSSD2002	ATSSD2004				
	250A	ATSSD2502	ATSSD2504				
	300A	ATSSD3002	ATSSD3004				
	350A	ATSSD3502	ATSSD3504				
	400A	ATSSD4002	ATSSD4004				
	650A	ATSSD6502	ATSSD6504				
	800A	ATSSD8002	ATSSD8004				



Encl. Size	H	W	D
A	600	550	250
B	900	700	300
C	1200	700	350
D	1400	800	400
E	1900	1000	400



Bypass Automatic Transfer Switches (ATS)

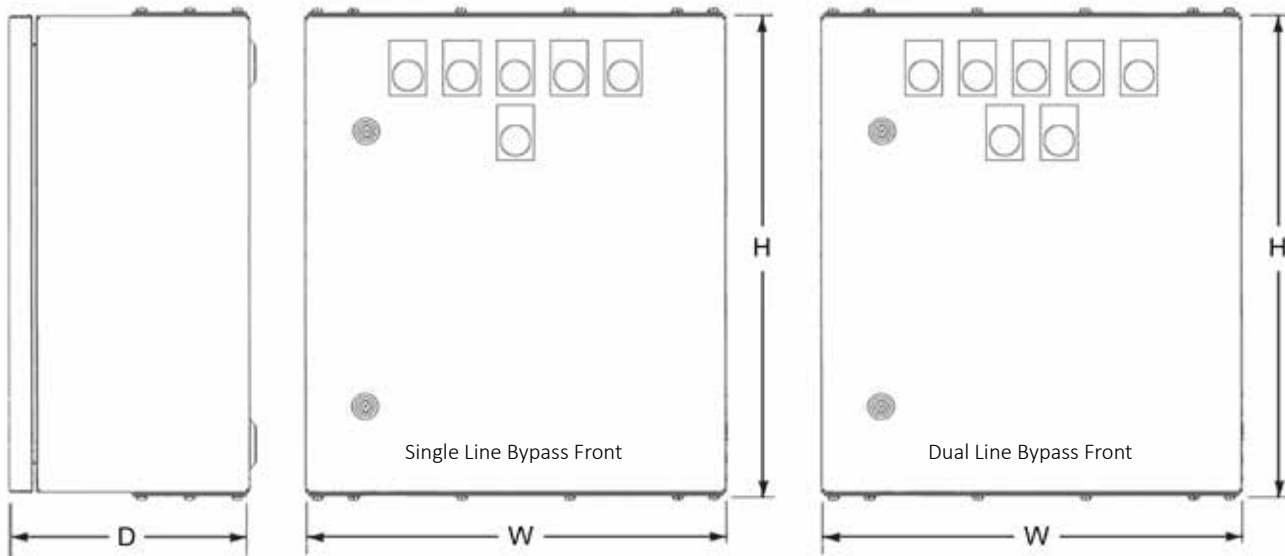
The Bypass Automatic Transfer Switch (ATS) units are available in current ratings from 32A to 400A in both Single and Three phase options. Provided with either Single or Dual Line Bypass, these units are supplied in mild steel IP65 painted enclosures (RAL 7035).

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

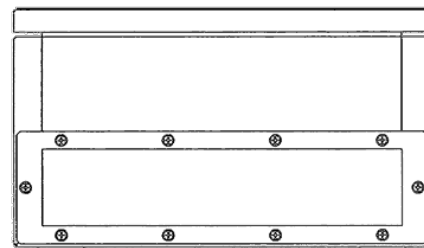
The Dual Line Bypass function isolates the ATS by bypassing the duty supply or the standby supply directly to the outgoing load, enabling essential maintenance in keeping with life safety recommendations in accordance with BS8519:2010. The key advantage is that both the duty supply or standby supply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

Craig & Derricott can offer a wide range of additional features to every range, see page 41 for more information. Applied standards: BS EN / IEC 60947-4 & BS EN / IEC 60947-6-1. Utilization category AC31B.

Single Line Bypass							
Image	Rating	Single Phase Cat. No.	Three Phase Cat. No.	IP Rating	Encl. size	Encl. Material	Encl. Colour
	32A	ATS0322SL	ATS0324SL	IP65	A	Sheet Steel	Light Grey RAL 7035
	45A	ATS0452SL	ATS0454SL				
	63A	ATS0632SL	ATS0634SL				
	100A	ATS1002SL	ATS1004SL				
	125A	ATS1252SL	ATS1254SL				
	160A	ATS1602SL	ATS1604SL				
	250A	ATS2502SL	ATS2504SL				
	400A	ATS4002SL	ATS4004SL				
Dual Line Bypass							
Image	Rating	Single Phase Cat. No.	Three Phase Cat. No.	IP Rating	Encl. size	Encl. Material	Encl. Colour
	32A	ATS0322DL	ATS0324DL	IP65	A	Sheet Steel	Light Grey RAL 7035
	45A	ATS0452DL	ATS0454DL				
	63A	ATS0632DL	ATS0634DL				
	100A	ATS1002DL	ATS1004DL				
	125A	ATS1252DL	ATS1254DL				
	160A	ATS1602DL	ATS1604DL				
	250A	ATS2502DL	ATS2504DL				
	400A	ATS4002DL	ATS4004DL				



Encl. Size	Single Line Bypass			Dual Line Bypass		
	H	W	D	H	W	D
A	600	400	250	800	600	300
B	800	600	300	1000	600	300
C	1000	800	300	1200	800	300
D	1200	800	300	1400	1000	300
E	1400	1000	300	1600	1000	400





Combination Bypass Automatic Transfer Switches (ATS)- Form 4 Type 2

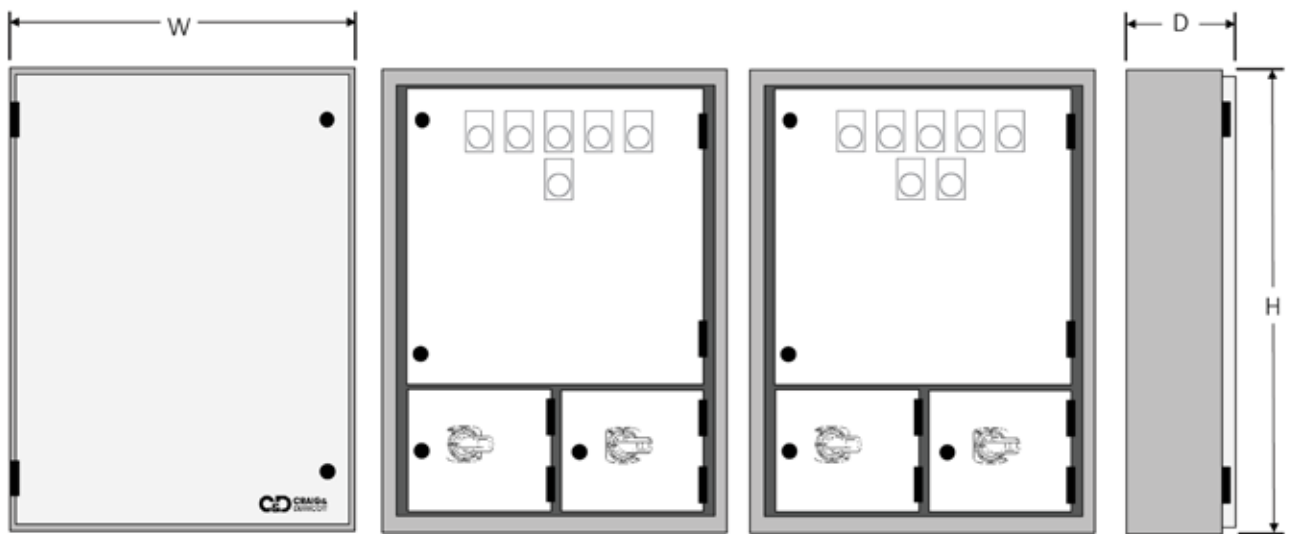
The Combination Bypass Automatic Transfer Switch (ATS) units are available in current ratings from 32A to 400A in both Single and Three phase options. Provided with either Single or Dual Line Bypass, these units are supplied in mild steel IP65 painted enclosures (RAL 7035). All units allow automatic connection of a secondary electrical supply to a load upon failure of the primary and with two separate isolators built-in, provides the ability to isolate both supplies.

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

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

Craig & Derricott can offer a wide range of additional features to every range, see page 41 for more information. Applied standards: BS EN / IEC 60947-4 & BS EN / IEC 60947-6-1. Utilization category AC31B.

Single Line Bypass							
Image	Rating	Single Phase Cat. No.	Three Phase Cat. No.	IP Rating	Encl. size	Encl. Material	Encl. Colour
	32A	ATSSD0322SL	ATSSD0324SL	IP65	A	Sheet Steel	Light Grey RAL 7035
	45A	ATSSD0452SL	ATSSD0454SL				
	63A	ATSSD0632SL	ATSSD0634SL				
	100A	ATSSD1002SL	ATSSD1004SL				
	125A	ATSSD1252SL	ATSSD1254SL				
	160A	ATSSD1602SL	ATSSD1604SL				
	250A	ATSSD2502SL	ATSSD2504SL				
	400A	ATSSD4002SL	ATSSD4004SL				
Dual Line Bypass							
Image	Rating	Single Phase Cat. No.	Three Phase Cat. No.	IP Rating	Encl. size	Encl. Material	Encl. Colour
	32A	ATSSD0322DL	ATSSD0324DL	IP65	A	Sheet Steel	Light Grey RAL 7035
	45A	ATSSD0452DL	ATSSD0454DL				
	63A	ATSSD0632DL	ATSSD0634DL				
	100A	ATSSD1002DL	ATSSD1004DL				
	125A	ATSSD1252DL	ATSSD1254DL				
	160A	ATSSD1602DL	ATSSD1604DL				
	250A	ATSSD2502DL	ATSSD2504DL				
	400A	ATSSD4002DL	ATSSD4004DL				



Encl. Size	H	W	D
A	600	550	250
B	900	700	300
C	1200	700	350
D	1400	800	400
E	1900	1000	400


London Underground (LU) Automatic Transfer Switches (ATS)

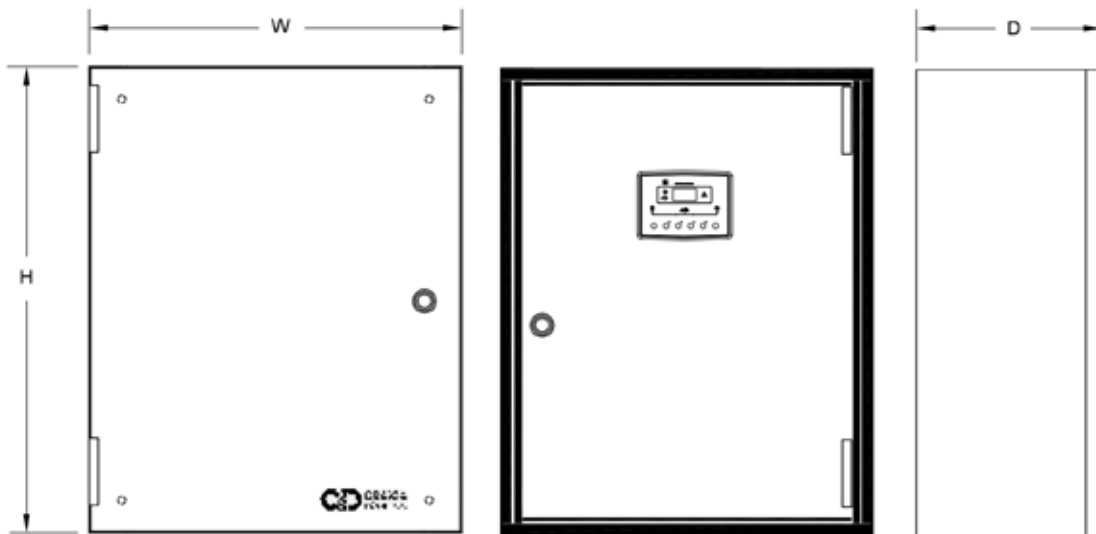
The London Underground Automatic Transfer Switch (ATS) Standard units are available in current ratings from 32A to 400A in both Single and Three phase options, the range provides all the necessary requirements for automatically switching from Mains (Duty) to Generator (Standby) or alternative Mains with local status indication and a supply monitoring relay.

Built in IP65 stainless steel grade 304 enclosures, all units are manufactured to LU S1085 fire safety performance of materials, with LSZH (Low Smoke Zero Halogen) cables and supplied with top & bottom gland plates and external fixing feet.

The Automatic Transfer Switches (ATS) are supplied with a DSE334 electronic controller and self-seeking power supply, providing a configurable controlled system where the customer can program using the electronic user interface or PC. The ATS supply available status indication and control panel are behind an overall lockable door.

Craig & Derricott can offer a wide range of additional features to every range, see page 41 for more information. Applied standards: BS EN / IEC 60947-4 & BS EN / IEC 60947-6-1. Utilization category AC31B.

Image	Rating	Single Phase Cat. No.	Three Phase Cat. No.	IP Rating	Encl. size	Encl. Material
	32A	ATS0322DSELULSS	ATS0324DSELULSS	IP65	A	Stainless Steel Grade 304
	45A	ATS0452DSELULSS	ATS0454DSELULSS		B	
	63A	ATS0632DSELULSS	ATS0634DSELULSS		C	
	100A	ATS1002DSELULSS	ATS1004DSELULSS		D	
	160A	ATS1602DSELULSS	ATS1604DSELULSS			
	200A	ATS2002DSELULSS	ATS2004DSELULSS			
	400A	ATS4002DSELULSS	ATS4004DSELULSS			



Encl. Size	H	W	D
A	600	400	250
B	700	500	250
C	800	600	300
D	1000	800	300

London Underground (LU) Automatic Transfer Switches (ATS)- Form 4 Type 2


The London Underground Automatic Transfer Switch (ATS) combination units are available in current ratings from 32A to 400A in both Single and Three phase options, 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.

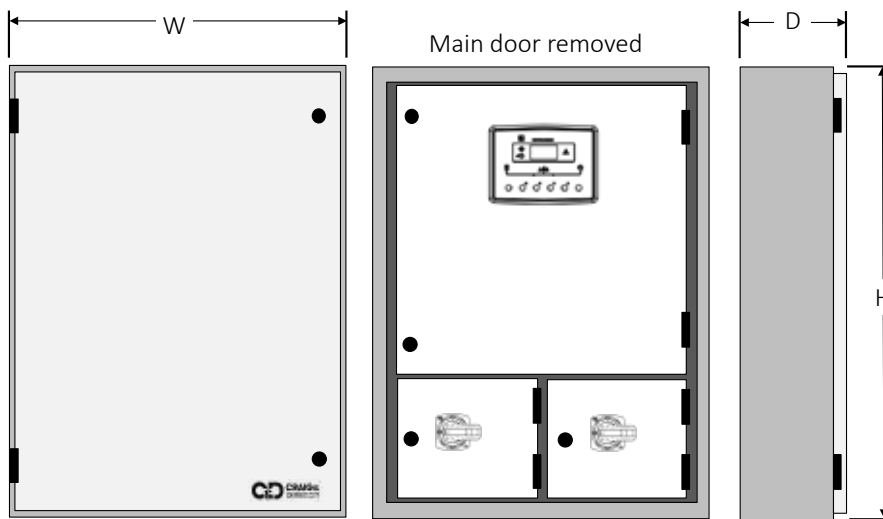
Built in IP65 stainless steel grade 304 enclosures, all units are manufactured to LU S1085 fire safety performance of materials, with LSZH (Low Smoke Zero Halogen) cables and supplied with top & bottom gland plates and external fixing feet.

With Form 4 Type 2 separation, all units are supplied with two integral isolation switches, fitted with door interlock rotary handles.

The Automatic Transfer Switches (ATS) are supplied with a DSE334 electronic controller and self-seeking power supply, providing a configurable controlled system where the customer can program using the electronic user interface or PC. The ATS supply available status indication, control panel and switch operating handles are behind an overall lockable door.

Craig & Derricott can offer a wide range of additional features to every range, see page 41 for more information. Applied standards: BS EN / IEC 60947-4 & BS EN / IEC 60947-6-1. Utilization category AC31B.

Image	Rating	Single Phase Cat. No.	Three Phase Cat. No.	IP Rating	Encl. size	Encl. Material
	32A	ATSSD0322DSELULSS	ATSSD0324DSELULSS	IP65	A	Stainless Steel Grade 304
	45A	ATSSD0452DSELULSS	ATSSD0454DSELULSS		B	
	63A	ATSSD0632DSELULSS	ATSSD0634DSELULSS		C	
	100A	ATSSD1002DSELULSS	ATSSD1004DSELULSS		D	
	160A	ATSSD1602DSELULSS	ATSSD1604DSELULSS			
	200A	ATSSD2002DSELULSS	ATSSD2004DSELULSS			
	400A	ATSSD4002DSELULSS	ATSSD4004DSELULSS			



Encl. Size	L	W	D
A	600	500	250
B	900	700	300
C	1200	700	350
D	1400	800	400

Motorised Switch Automatic Transfer Switches (ATS)

In addition to the standard contactor based units described within this catalogue, Craig & Derricott have developed and supplied various options of Motorised equipment that include Motorised Switches, Motorised MCCB's and various electronic controlled options to meet customer applications. These can be customised to add additional capability as required.

At the core of each standard system is a four pole changeover device. The motorised range of standard Automatic Transfer Switches can automatically connect one or several loads from one power source to another to ensure the normal power supply of the load circuit.

Standard Technical Features
Compactness- The transfer function is achieved via using the forward and backward rotation of the only one motor which allows for reducing the units height and room for installation.
Energy saving- The driving mechanism works in the mode of motor drive with less power consumption and noise.
Dual-interlock protection- The mechanical-electrical interlock duplex protection is used to prevent two power sources from being connected simultaneously to the load. The electrical interlock works in the breaker contact position mode for directly indicating the automatic transfer switch to perform the genuine electrical interlock so that the automatic transfer does not take place automatically.
Operation- both automatic and manual operation is available.
Setting delay- Transfer delay is adjustable in the range of 0s to 180s, prime power failure. Return delay is continuously adjustable within the range of 0s to 180s, prime power recovery.
Advanced and multi-purpose functions- The unit allows the user to set different transfer parameters through the visible display screen. The LED digital display interface for display and operation can be installed on the external panel for easy access.
Electronic Modules - Advanced modules can be installed on the front panel of the device that allow the user to manually control, lock and program the device.
Quick-acting source inversion solution- Units are supplied with two mechanically interlocking switches including an electronic control command module. This allows the unit to be automatic or manual system operated.
Complete unit- A complete unit supplied in the form of a fully assembled solution and tested according to standard IEC 60947-6-1.



Additional features such as single or dual line bypass, anti-condensation heaters or additional BMS compatibility can be added to each unit as per the customers requirements. Contact our sales team on +44(0)1543 375 541 or sales@craigandderricott.com for more information.

Additional Features

Craig & Derricott offer a wide range of additional features, some that are listed below. All of these features can be added to your chosen Automatic Transfer Switch units. Contact our sales team to discuss your requirements in further detail on +44(0)1543 375 541.

Description
A Deep Sea control module (DSE) is available as an alternative or in addition to the standard LED panel. This programmable device offers the user added advantages of a digital display, Modbus interfacing, additional control functions and easy programming of parameters. See page 42 for more information.
Other programmable control modules are available on request as an alternative to Deep Sea. All of these devices are user friendly for both set-up and maintenance. Like the DSE units, they allow the user to configure the inputs and outputs while being fully reliable for power monitoring. Contact our technical department for more information.
Grade 304 and Grade 316 Stainless Steel enclosures are available on request, as a replacement to the standard sheet steel. These enclosures would be recommended for units where they are being installed in harsher environments.
Additional Volt-Free Status Relays can be included within the ATS unit in order to connect to the BMS (building management system) installed within the building. BMS is a computer-based control system installed in buildings that controls and monitors the building's mechanical and electrical equipment such as ventilation, lighting, power systems, fire systems, and security systems
An Anti-Condensation heater and breather plug is used in enclosures where damage from condensation must be prevented, or where the temperature may not fall below a minimum value. The aluminium profile heater body design has a chimney effect and distributes the heat evenly.
A range of remote status indication panels are available to support the Standard and Single and Dual line ATS units. The indication panel shows the status of the ATS panel at the remote location. These are offered in a range of enclosures to suit the installation environment. A typical application would be for firefighting lift control where the indication panel would be installed in a reception or foyer of the building.
Single Line Bypass isolates the ATS by bypassing the incoming duty supply directly to the outgoing load, enabling essential maintenance in keeping with life safety recommendations in accordance with BS8519:2010. The key advantage is that the supply to the load is maintained whilst service and repairs can be carried out on the ATS unit. A separate LED indicator is provided to show when the unit is in the bypass mode.
Dual Line Bypass isolates the ATS by bypassing the duty supply or the standby supply directly to the outgoing load, enabling essential maintenance in keeping with life safety recommendations in accordance with BS 8519:2010. The key advantage is that both the duty supply or standby supply to the load can be maintained whilst service and repairs can be carried out on the ATS unit. Two separate LED indicators are provided to show when the unit is in duty bypass or standby bypass mode.
Fire rated Enclosures are available for high-rise residential applications, where life-safety is required. The 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 enclosure.



Deep Sea Control (DSE)

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

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

Other controllers are available on request Contact our sales team for further information.

Image	Cat. No.	Features	
	DSE330	<ul style="list-style-type: none"> Configurable inputs (2) Configurable outputs (6) Icon or English text display LED indicator Front panel/PC configuration Source 1/source 2 control Configurable timers Start inhibit 	<ul style="list-style-type: none"> Load inhibit Manual restore to S1 Supports multiple topologies Automatic switch-over between supplies Rotary ATS configuration Single event scheduler Single-phase display
	DSE331	<ul style="list-style-type: none"> Configurable inputs (4) Configurable volt-free outputs (4) Configurable DC outputs (4) Check sync feature Icon and English text display LED indicator Front panel/PC configuration Remote monitoring Source 1/source 2 control 	<ul style="list-style-type: none"> Configurable timers Start inhibit Load inhibit Manual restore to S1 Supports multiple topologies Automatic switch-over between supplies Rotary ATS configuration Single event scheduler 3-Phase display
	DSE334	<ul style="list-style-type: none"> Volt-free relays Supports many topologies Automatic switch-over between supplies Check sync feature Real-time clock 10 configurable inputs 5 configurable outputs Event log (10) Configurable timers Auto start inhibit Load inhibit 	<ul style="list-style-type: none"> Automatic shutdown or warning when fault conditions are detected PC configuration Front panel configuration LED indicators Back-lit 4-Line text LCD display External mains (utility) or genset failure inputs Manual restore to S1 Optional current monitoring
	DSE335	<ul style="list-style-type: none"> Configurable inputs (12) Configurable volt-free outputs (6) Configurable DC outputs (6) 4-Line back-lit LCD text display Five key menu navigation Front panel editing with PIN protection LED and LCD alarm indication Check sync feature Remote monitoring Source 1/Source 2 control Manual restore to S1 Supports multiple topologies Automatic switch-over between supplies Start inhibit Load inhibit Rotary ATS configuration Configurable timers and alarms 	<ul style="list-style-type: none"> Multiple date and time scheduler Power monitoring Load switching USB Connectivity Backed up real time clock Fully configurable via DSE Configuration Suite PC software Configurable display languages User selectable RS232 and RS485 communications Configurable Gencomm pages SMS messaging Additional display screens to help with modem diagnostics DSENet® expansion compatible Integral PLC editor
	DSE160	<p>The DSE160 Self-Seeking Power Supply has been designed for use with DSE3xx control modules. 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. The DSE160 is available in 12 and 24 volt versions and provides comprehensive short circuit protection.</p>	

EXPLOSION PROOF SWITCHGEAR

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



Explosion Proof - Zone 1, 2, 21 and 22 EXe

The 'EXZ1' range of enclosed switch-disconnectors are supplied in Exe 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 Cat. No. with a B e.g. EXZ1SDR02530.

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.

Optional Brass Earthing Plates are available on request 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.

Key to Marking


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

Image	Rating	Format	Cat. No.	Optional Brass Earthing Plate Cat. No.	IP Rating	Equipment Marking	Min & Max Temp.	Encl. Size
	25A	3P+Aux	EXZ1SDR02530	EXEP0253	IP65	25A II2GD  Ex d e IIC T6 Gb Ex tb IIIC T80°C Db	-40°C to +40°C	A
		4P+Aux	EXZ1SDR02540	EXEP0254	IP65	25A II2GD  Ex d e IIC T5 Gb Ex tb IIIC T95°C Db	-40°C to +55°C	
	40A	3P+Aux	EXZ1SDR04030	EXEP0403	IP65	40A II2GD  Ex d e IIC T6 Gb Ex tb IIIC T80°C Db	-40°C to +40°C	B
		4P+Aux	EXZ1SDR04040	EXEP0404	IP65	40A II2GD  Ex d e IIC T5 Gb Ex tb IIIC T95°C Db	-40°C to +55°C	
	80A	3P+Aux	EXZ1SDR08030	EXEP0803	IP65	80A II2GD  Ex d e IIC T6 Gb Ex tb IIIC T80°C Db	-40°C to +40°C	C
		4P+Aux	EXZ1SDR08040	EXEP0804	IP65	80A II2GD  Ex d e IIC T5 Gb Ex tb IIIC T95°C Db	-40°C to +55°C	
	180A	3P+Aux	EXZ1SDR18030	EXEP1803	IP65	180A II2GD  Ex d e IIC T5 Gb Ex tb IIIC T95°C Db	-40°C to +40°C	D
		4P+Aux	EXZ1SDR18040	EXEP1804	IP65	180A II2GD  Ex d e IIC T4 Gb Ex tb IIC T130°C Db	-40°C to +55°C	

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)



Explosion Proof - Zone 1, 2, 21 and 22 Exd

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

Construction



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

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

Image	Rating	Format	Cat. No.	IP Rating	External Earth	Supplied Bottom Entries*	Encl. Size	Encl. Material	Temperature Class	
									40°C	60°C
	16A	3P+N+2E/B	DGC0164EBZ1	IP65	M6	3 x M20	G21	Cast Iron	T6	T5
	25A	3P+N+2E/B	DGC0254EBZ1	IP65	M6	4 x M20				
	20A	6P + 2E/B	DGC0206EBZ1	IP65	M6	2 x M25 + 1 x M20				
	40A	3P+N+2E/B	DGC0404EBZ1	IP65	M8	2 x M25 + 1 x M20	G22			
		6P + 2E/B	DGC0406EBZ1	IP65						
	63A	3P+N+2E/B	DGC0634EBZ1	IP65	M8	2 x M25 + 1 x M20				
	80A	3P+N+2E/B	DGC0804EBZ1	IP65	M8	3 x M32 + 1 x M20	G24	Cast Aluminium	T6	T6
	100A	3P+N+2E/B	DGC1004EBZ1	IP65	M8	3 x M32 + 1 x M20	G25			
	125A	3P+N+2E/B	DGC1254EBZ1	IP65	M8	3 x M40 + 1 x M20				
	160A	3P+N+2E/B	DGC1604EBZ1	IP65	M8	2 x M32 + 1 x M20				
	200A	3P+N+2E/B	DGC2004EBZ1	IP65	M10	3 x M50 + 1 x M20	G28			
	250A	3P+N+2E/B	DGC2504EBZ1	IP65	M10	3 x M50 + 1 x M20				

* Other entry configurations available on request.

Certification 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

Explosion Proof - Zone 22

Craig & Derricott has been manufacturing enclosed switchgear for more than 70 years. Using high quality die cast aluminium and hinged door sheet steel enclosures the range covers 20A- 63A ratings. Other ratings are available on request.

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.

Explosion Proof - Zone 22- How it works.

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

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

Typical industries where such atmospheres may be generated:-

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

There are different degrees of protection against explosive dusts, and Zone 22 is defined as:-




"A place in which an explosive atmosphere, in the form of a cloud of combustible dust in air, is not likely to occur in normal operation but, if it does occur, will persist for a short period only."

Applicable Regulations / Specifications

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



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

- DSEAR Dangerous Substances and Explosive Atmospheres Regulations 2002.
- BS EN 60079-0 Explosive atmospheres- Part 0: Equipment- General requirements.
- BS EN 60079-31 Explosive atmospheres- Part 31: Equipment dust ignition protection by enclosure "t".
- BS EN 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.

Image	Rating	Format	Cat. No.	IP Rating	Supplied Bottom Entries	Encl. Size	Encl. Material
	20A	6P+2/EB	SDDG206EBZ22	IP65	1 x M20 top + 2 x M20 bottom	A22	Die-Cast Aluminium
	25A	3P+2/EB	SDDG253EBZ22	IP65	1 x M20 top + 2 x M20 bottom	A22	
	32A	3P+2/EB	SDDG323EBZ22	IP65	1 x M20 top + 2 x M20 bottom	A22	
6P+2/EB		SDDG326EBZ22	IP65	2 x M25 + 1 x M20 bottom	B22		
	40A	3P+2/EB	SDDG403EBZ22	IP65	2 x M25 + 1 x M20 bottom	B22	
		6P+2/EB	SDDG406EBZ22	IP65			
	63A	3P+2/EB	SDDG633EBZ22	IP65	2 x M25 + 1 x M20 bottom	B22	Sheet Steel
		3P+2/EB	SDMG633EBZ22	IP65	N/A	C22	
		6P+2/EB	SDMG636EBZ22	IP65	N/A	D22	

Certification and Approvals

Die cast Aluminium / Sheet Steel

- Certification Code  II 3D
- Certification standard  tc IIIB T85°C Dc
BS EN 60079-0, BS EN 60079-31, BS EN 60529, BS EN 60947-3, BS EN 60204-1

Technical Specification - Explosion Proof Switchgear

For products on pages 44 to 46. Data supplied against tests to IEC/BS EN 60947-3



Zone 1, 2, 21 and 22 EX 'e'														
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 ²	-	2x4	2x10	2x25	2x95		2x1.5					
Tightening Torque (Nm)			-	2.5	2.5	3.5	8.5		2.5					
Terminal Type	-													
Zone 1, 2, 21 and 22 EX 'd'														
Application	Sym.	Unit	Category	16A	20A	25A	40A	40A	63A	80A	100A	125A	160A	250A
Format	-	-	-	3P	6P	3P	3P	6P	3P	3P	3P	3P	3P	3P
Enclosure	-	-	-	G21	G21	G21	G22	G22	G22	G24	G25	G25	G25	G28
Rated thermal current	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 ²	Flexible cable	6.0	2x2.5	6.0	6.0	2x6.0	16.0	16.0	-	-	-	-
	-	mm ²	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
Zone 22														
Application	Sym.	Unit	Category	20A	25A	32A	40A	40A	63A					
Format	-	-	-	6P	3P	3P+6P	3P	6P	3P+6P					
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 ²	Flexible cable	2.5 x 2	6	6	6	6	16					
	-	mm ²	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					

MOTOR CONTROLS

The motor control range provides the user with a product that is robust and cost effective. Housed in weatherproof sheet steel enclosures, these assemblies can be placed in most industrial environments.

Manufactured to British standards BS EN 60947-Pt4-Sec 1, BS EN 60529-1992 and to IEC 947-4-1. All starters give degree of protection IP55 and are suitable for use up to an altitude of 2000 meters above sea level and for operation in ambient temperatures of -5° C to +40° C.

The Direct-On-Line and Star Delta Starters are available with or without integral triple pole isolator. The rotary mains isolator switch comes standard with a door interlocking red / yellow handle, pad-lockable in the "Off" position.



Enclosed Starters

Craig & Derricott range of enclosed starters consist of Direct Online (DOL) Starters, Reversing Direct Online Starters and Star Delta Starters. All three products ranges are supplied in surface mounting IP55 sheet steel enclosures with an epoxy powder coated paint finish in RAL 7035- Light Grey.



Direct Online Starters and Star Delta Starters are both provided with built-in Start / Stop Reset push buttons and are available with or without integral triple pole isolator. The rotary mains isolator switch comes standard with a door interlocking red / yellow handle, pad-lockable in the "Off" position. Reversing Direct Online Starters are provided with built-in Forward / Stop Reset / Reverse push buttons.

Overloads are supplied separately for each range. Manual reset thermal overloads available up to 43A and suitable for all of the enclosed starter range. Other sizes and features are available in our collection of Motor Controls.

Contact your local Area Sales Manager for more information.

Speed Controls

Craig & Derricott offer a range of range of 0.25kW to 22kW, single or three phase, enclosed internally mounted energy saving Speed Control inverter panels supplied ready to run.



Supplied with the latest Emotron VS inverters, this range of Speed Controls are provided in compact IP54 enclosures with ventilation fans & filters. Integral EMC filter & keypad/display are fitted as standard with built in short circuit, overload, voltage imbalance & earth fault detection. The internally mounted energy saving potentiometer and simple Start & Stop external Push buttons make it an easy product to use.

1. Pre-engineered enclosures & simple controls
2. Pre-programmed soft start and stop ramps
3. Set the speed and press start

REDUCE THE SPEED AND SAVE MONEY

Approximate Saving
 10% slower = 25% saving
 20% slower = 45% saving
 30% slower = 65% saving

Other sizes and features are available in our collection of Motor Controls.

Contact your local Area Sales Manager for more information.

CONTROL STATIONS

Craig & Derricott have been at the forefront of electrical control gear design and manufacture for more than 70 years. The i-push range has been designed and developed to incorporate safety, functionality and ease of installation incorporating suggestions from re-sellers and end-users. The 'i-push' range contains many unique features:-

- Heavy & Normal Duty actuators
- Pushbutton position indicators
- Security fixing lids
- Protective guards
- Ingress protection
- Flap covers
- Safety contact
- Bespoke assemblies



Emergency Stop

Emergency Stop stations are designed and installed primarily to provide machine operators with a means of shutting down in the event of a dangerous occurrence taking place.

Electrical machines often require Emergency Stops which are required to meet specific requirements and International standards (IEC/EN60204, BS EN ISO 13850, IEC 60947-5-1, IEC 60947-5-5). These standards were applied to the design, testing and installation of such devices offer by Craig & Derricott.









The following pages contain the following options:-

- Enclosure formats - PA / PC Plastic, Glass Filled Polyester, Die-cast Aluminium, Stainless Steel, Sheet Steel & Flush Mounting.
- 'Reset' Methods - Twist-to-Reset, Pull-to-Reset & Key Reset
- Protection Devices - Raised Shroud & Flap Cover

Image	Description	Cat. No.
	Actuator Emergency Stop, twist-to-reset Legend None Contacts 1N/C (EMSL-10A) Dims. D12 Material PC IP Rating IP66, IP67 & IP69K	EMSL/TNS/PS/NC
	Actuator Emergency Stop twist-to-reset Legend 'Emergency Stop' Circular yellow Contacts 1N/C (EMSL-10A) Dims. D12 Material PC IP Rating IP66, IP67 & IP69K	EMSL/T/PS/NC
	Actuator Emergency Stop key reset (supplied with 2 keys) Legend 'Emergency Stop' Circular yellow Contacts 1N/C (EMSL-10A) Dims. D12 Material PA IP Rating IP66, IP67 & IP69K	EMSL/K/PS/NC
	Actuator Emergency Stop twist-to-reset Guard Raised shroud Legend 'Emergency Stop' Circular yellow Contacts 1N/C (EMSL-10A) Dims. D12 Material PC IP Rating IP66, IP67 & IP69K	EMSL/TS/PS/NC
	Actuator Emergency Stop, twist-to-reset Legend 'Emergency Stop' Circular yellow Contacts 1N/C (MT-16A) Dims. 'D2' Material PC IP Rating IP65	EMS/T/P/NC
	Actuator Emergency Stop twist-to-reset Legend 'Emergency Stop' Circular yellow Guard Raised shroud Contacts 1N/C (MT-16A) Dims. 'D2' Material PC IP Rating IP65	EMS/TS/P/NC
	Actuator Emergency Stop key reset. (Supplied with 2 keys) Legend 'Emergency Stop' yellow anti-lock collar Contacts 1N/C (MT-16A) Dims. 'D2' Material PC IP Rating IP65	EMS/K/P/NC
	Actuator Emergency Stop key reset. (Supplied with 2 keys) Guard Raised shroud Legend 'Emergency Stop' Circular yellow Contacts 1N/C (MT-16A) Dims. 'D2' Material PC IP Rating IP65	EMS/KS/P/NC

Image	Description	Cat. No.
	<p>Actuator Emergency Stop, twist-to-reset</p> <p>Legend 'Emergency Stop' yellow printed collar</p> <p>Contacts 1N/C+1N/O (ET-10A)</p> <p>Dims. 'D0'</p> <p>Material Die-cast Aluminium</p> <p>IP Rating IP65</p>	EMS/T/MGS/CO
	<p>Actuator Emergency Stop twist-to-reset</p> <p>Legend 'Emergency Stop' yellow printed collar</p> <p>Contacts 1N/C (MT-16A)</p> <p>Dims. 'D5'</p> <p>Material Die-cast Aluminium</p> <p>IP Rating IP65</p>	EMS/T/MG/CO
	<p>Actuator Emergency Stop key reset (Supplied with 2 keys)</p> <p>Legend 'Emergency Stop' yellow printed collar</p> <p>Contacts 1N/C (MT-16A)</p> <p>Dims. 'D5'</p> <p>Material Die-cast Aluminium</p> <p>IP Rating IP65</p>	EMS/K/MG/NC
	<p>Actuator Emergency Stop twist-to-reset</p> <p>Guard Raised Shroud</p> <p>Legend 'Emergency Stop' circular yellow</p> <p>Contacts 1N/C (MT-16A)</p> <p>Dims. 'D5'</p> <p>Material Die-cast Aluminium</p> <p>IP Rating IP65</p>	EMS/TS/MG/NC
	<p>Actuator Emergency Stop key reset (Supplied with 2 keys)</p> <p>Guard Raised Shroud</p> <p>Legend 'Emergency Stop' circular yellow</p> <p>Contacts 1N/C (MT-16A)</p> <p>Dims. 'D5'</p> <p>Material Die-cast Aluminium</p> <p>IP Rating IP65</p>	EMS/KS/MG/NC
	<p>Actuator Emergency Stop Mushroom pull-to-reset</p> <p>Legend 'Emergency Stop' circular yellow</p> <p>Contacts 1N/C+1N/O (MT-16A)</p> <p>Dims. 'D5'</p> <p>Material Die-cast Aluminium</p> <p>IP Rating IP65</p>	EMSH/P/MG/CO
	<p>Actuator Emergency Stop Mushroom pull-to-reset</p> <p>Legend 'Emergency Stop' circular yellow</p> <p>Contacts 1N/C+1N/O (MT-16A)</p> <p>Dims. 'D5'</p> <p>Material Die-cast Aluminium</p> <p>IP Rating IP65</p>	EMSH/P/MR/CO
	<p>Actuator Emergency Stop Mushroom twist-to-reset</p> <p>Legend 'Emergency Stop' circular yellow</p> <p>Contacts 1N/C+1N/O (MT-16A)</p> <p>Dims. 'D5'</p> <p>Material Die-cast Aluminium</p> <p>IP Rating IP65</p>	EMSH/T/MG/CO
	<p>Actuator Emergency Stop Mushroom key reset (Supplied with 2 x DC800 keys)</p> <p>Legend 'Emergency Stop' circular yellow</p> <p>Contacts 1N/C+1N/O (MT-16A)</p> <p>Dims. 'D5'</p> <p>Material Die-cast Aluminium</p> <p>IP Rating IP65</p>	EMSH/K/MG/CO

Image	Description	Cat. No.
	<p>Actuator Emergency Stop Mushroom key reset (Supplied with 2 x DC800 keys)</p> <p>Legend 'Emergency Stop' circular yellow</p> <p>Contacts 1N/C+1N/O (MT-16A)</p> <p>Dims. 'D5'</p> <p>Material Die-cast Aluminium</p> <p>IP Rating IP65</p>	EMSH/K/MR/CO
	<p>Actuator Emergency Stop Mushroom pull-to-reset</p> <p>Guard Padlocking flap cover</p> <p>Legend 'Emergency Stop' printed flap cover</p> <p>Contacts 1N/C+1N/O (MT-16A)</p> <p>Dims. 'D5'</p> <p>Material Die-cast Aluminium</p> <p>IP Rating IP65</p>	EMSH/P/F1/MG/CO
	<p>Actuator Emergency Stop Mushroom pull-to-reset</p> <p>Guard Padlocking flap cover</p> <p>Legend 'Emergency Stop' printed flap cover</p> <p>Contacts 1N/C+1N/O (MT-16A)</p> <p>Dims. 'D5'</p> <p>Material Die-cast Aluminium</p> <p>IP Rating IP65</p>	EMSH/P/F1/MR/CO
	<p>Actuator Emergency Stop Mushroom twist-to-reset</p> <p>Legend 'Emergency Stop' circular yellow</p> <p>Contacts 1N/C+1N/O (MT-16A)</p> <p>Dims. 'D4'</p> <p>Material Glass Filled Polyester</p> <p>IP Rating IP65</p>	EMSH/T/GP/CO
	<p>Actuator Emergency Stop Mushroom pull-to-reset</p> <p>Legend 'Emergency Stop' circular yellow</p> <p>Contacts 1N/C+1N/O (MT-16A)</p> <p>Dims. 'D4'</p> <p>Material Glass Filled Polyester</p> <p>IP Rating IP65</p>	EMSH/P/GP/CO
	<p>Actuator Emergency Stop Mushroom key reset (Supplied with 2 x DC800 keys)</p> <p>Legend 'Emergency Stop' circular yellow</p> <p>Contacts 1N/C+1N/O (MT-16A)</p> <p>Dims. 'D4'</p> <p>Material Glass Filled Polyester</p> <p>IP Rating IP65</p>	EMSH/K/GP/CO
	<p>Actuator Emergency Stop Mushroom pull-to-reset</p> <p>Guard Padlocking flap cover</p> <p>Legend 'Emergency Stop' printed flap cover</p> <p>Contacts 1N/C+1N/O (MT-16A)</p> <p>Dims. 'D4'</p> <p>Material Glass Filled Polyester</p> <p>IP Rating IP65</p>	EMSH/P/F1/GP/CO
	<p>Actuator Emergency Stop twist-to-reset (Supplied with 2 keys)</p> <p>Legend 'Emergency Stop' printed yellow collar</p> <p>Contacts 1N/C (MT-16A)</p> <p>Dims. 'D9'</p> <p>Material Stainless Steel</p> <p>IP Rating IP65</p>	EMS/T/SS/NC
	<p>Actuator Emergency Stop key reset (Supplied with 2 keys)</p> <p>Legend 'Emergency Stop' printed yellow collar</p> <p>Contacts 1N/C (MT-16A)</p> <p>Dims. 'D9'</p> <p>Material Stainless Steel</p> <p>IP Rating IP65</p>	EMS/K/SS/NC

Image	Description	Cat. No.
	Actuator Emergency Stop, twist-to-reset Legend 'Emergency Stop' circular yellow Contacts 1N/C+safety contact (MTOSFE) Dims. 'D10' Material Stainless Steel IP Rating IP69K	EMS/T/SS/NC69
<p>EMS/T/SS/NC69 is sealed to withstand the forces associated with pressure washers. Tested to withstand a hose delivering water at a pressure between 80-100 bar at a temperature of 80°C.</p> <p>The combination of a stainless steel enclosure and sealing to IP69K make these items ideally suited to environments where strict hygiene cleaning routines are enforced. Supplied with external fixing feet for vertical or horizontal mounting.</p>		
	Actuator Emergency Stop twist-to-reset Legend 'Emergency Stop' yellow printed collar Contacts 1N/C+1N/O (ET-10A) Dims. 'D11' Material Stainless Steel IP Rating IP65*	EMS/T/F/CO
	Actuator Emergency Stop key reset (Supplied with 2 keys) Legend 'Emergency Stop' yellow printed collar Contacts 1N/C+1N/O (ET-10A) Dims. 'D11' Material Stainless Steel IP Rating IP65*	EMS/K/F/CO
	Actuator Emergency Stop Mushroom twist-to-reset. Legend 'Emergency Stop' circular yellow Contacts 1N/C+1N/O (MT-16A) Dims. 'D11' Material Stainless Steel IP Rating IP65*	EMSH/T/F/CO
	Actuator Emergency Stop Mushroom pull-to-reset Legend 'Emergency Stop' circular yellow Contacts 1N/C+1N/O (MT-16A) Dims. 'D11' Material Stainless Steel IP Rating IP65*	EMSH/P/F/CO
	Actuator Emergency Stop Mushroom key reset (Supplied with 2 x DC800 keys) Legend 'Emergency Stop' circular yellow Contacts 1N/C+1N/O (MT-16A) Dims. 'D11' Material Stainless Steel IP Rating IP65*	EMSH/K/F/CO
	Actuator Emergency Stop Mushroom pull-to-reset Guard Padlocking flap cover Legend 'Emergency Stop' pad printed flap cover Contacts 1N/C+1N/O (MT-16A) Dims. 'D11' Material Stainless Steel IP Rating IP65*	EMSH/P/F1/F/CO
	Actuator Emergency Stop Mushroom twist-to-reset Fitting Pattress box or trucking Contacts 2xN/C with 'faston' terminals (Monobloc-5A) Dims. 'D8' Material Sheet Steel IP Rating IP65	EMS/T/FS/NC

*As supplied there is an IP65 seal between the Pushbutton and the face plate. To maintain this seal when installing the complete assembly the onus is upon the installer to use a continuous bead of flexible sealant to provide an effective seal between the rear of the face plate and what may be an uneven mounting surface.

General Description

'Emergency Power Off' or 'EPO' control stations can be used where the safety requirements associated with Emergency Stops are not required.

Typical uses would include:-

- Computer suites
- School workshops
- Water treatment plants
- Service and maintenance

All items are housed in robust die-cast aluminium enclosures fitted with flap covers to prevent accidental operation.









Image	Description	Cat. No.
	Actuator Mushroom momentary action Guard Flap cover non-locking Legend 'Emergency Stop' printed flap cover Contacts 1N/C+1N/O (MT-16A) Dims. 'D5' Material Die-cast Aluminium IP Rating IP65	EPOH/M/F5/MG/CO
	Actuator Mushroom momentary action Guard Flap cover non-locking Legend 'Emergency Stop' printed flap cover Contacts 2N/C+2N/O (MT-16A) Dims. 'D5' Material Die-cast Aluminium IP Rating IP65	EPOH/M/F5/MG/2CO
	Actuator Mushroom momentary action Guard Flap cover non-locking Legend 'Emergency Stop' printed flap cover Contacts 3C/O (S1-10A) Dims. 'D6' Material Die-cast Aluminium IP Rating IP65	EPOH/M/F5/MGL/3CO
	Actuator Mushroom momentary action Guard Flap cover non-locking Legend 'Emergency Stop' printed flap cover Contacts 4C/O (S1-10A) Dims. 'D6' Material Die-cast Aluminium IP Rating IP65	EPOH/M/F5/MGL/4CO
	Actuator Mushroom, pull-to-reset Guard Flap cover non-locking Legend 'Emergency Stop' printed flap cover Contacts 1N/C+1N/O (MT-16A) Dims. 'D5' Material Die-cast Aluminium IP Rating IP65	EPOH/P/F5/MG/CO
	Actuator Mushroom, pull-to-reset Guard Flap cover non-locking Legend 'Emergency Stop' printed flap cover Contacts 2N/C+2N/O (MT-16A) Dims. 'D5' Material Die-cast Aluminium IP Rating IP65	EPOH/P/F5/MG/2CO
	Actuator Mushroom, pull-to-reset Guard Flap cover non-locking Legend 'Emergency Stop' printed flap cover Contacts 3C/O (S1-10A) Dims. 'D6' Material Die-cast Aluminium IP Rating IP65	EPOH/P/F5/MGL/3CO
	Actuator Mushroom, pull-to-reset Guard Flap cover non-locking Legend 'Emergency Stop' printed flap cover Contacts 4C/O (S1-10A) Dims. 'D6' Material Die-cast Aluminium IP Rating IP65	EPOH/P/F5/MGL/4CO

Image	Description	Cat. No.
	<p>Actuator Emergency Stop Mushroom key reset (Supplied with 2 x DC800 keys)</p> <p>Guard Flap cover non-locking</p> <p>Legend 'Emergency Stop' printed flap cover</p> <p>Contacts 1N/C+1N/O (MT-16A)</p> <p>Dims. 'D5'</p> <p>Material Die-cast Aluminium</p> <p>IP Rating IP65</p>	EPOH/K/F5/MG/CO
	<p>Actuator Emergency Stop Mushroom key reset (Supplied with 2 x DC800 keys)</p> <p>Guard Flap cover non-locking</p> <p>Legend 'Emergency Stop' printed flap cover</p> <p>Contacts 2N/C+2N/O (MT-16A)</p> <p>Dims. 'D5'</p> <p>Material Die-cast Aluminium</p> <p>IP Rating IP65</p>	EPOH/K/F5/MG/2CO
	<p>Actuator Emergency Stop Mushroom key reset (Supplied with 2 x DC800 keys)</p> <p>Guard Flap cover non-locking</p> <p>Legend 'Emergency Stop' printed flap cover</p> <p>Contacts 3C/O (S1-10A)</p> <p>Dims. 'D6'</p> <p>Material Die-cast Aluminium</p> <p>IP Rating IP65</p>	EPOH/K/F5/MGL/3CO
	<p>Actuator Emergency Stop Mushroom key reset (Supplied with 2 x DC800 keys)</p> <p>Guard Flap cover non-locking</p> <p>Legend 'Emergency Stop' printed flap cover</p> <p>Contacts 4C/O (S1-10A)</p> <p>Dims. 'D6'</p> <p>Material Die-cast Aluminium</p> <p>IP Rating IP65</p>	EPOH/K/F5/MGL/4CO
	<p>Actuator Emergency Stop twist-to-reset</p> <p>Guard Flap cover non-locking</p> <p>Legend 'Emergency Stop' printed flap cover</p> <p>Contacts 1N/C (MT-16A)</p> <p>Dims. 'D5'</p> <p>Material Die-cast Aluminium</p> <p>IP Rating IP65</p>	EPO/T/F5/MG/CO
	<p>Actuator Emergency Stop key-to-reset (Supplied with 2 keys)</p> <p>Guard Flap cover non-locking</p> <p>Legend 'Emergency Stop' printed flap cover</p> <p>Contacts 1N/C+1N/O (MT-16A)</p> <p>Dims. 'D5'</p> <p>Material Die-cast Aluminium</p> <p>IP Rating IP65</p>	EPO/K/F5/MG/CO
	<p>Actuator Emergency Stop twist-to-reset</p> <p>Guard Flap cover non-locking</p> <p>Legend 'Emergency Stop' printed flap cover</p> <p>Contacts 1N/C+1N/O (ET-10A)</p> <p>Dims. 'D0'</p> <p>Material Die-cast Aluminium</p> <p>IP Rating IP65</p>	EPO/T/F5/MGS/CO
	<p>Actuator Emergency Stop key-to-reset (Supplied with 2 keys)</p> <p>Guard Flap cover non-locking</p> <p>Legend 'Emergency Stop' printed flap cover</p> <p>Contacts 1N/C+1N/O (ET-10A)</p> <p>Dims. 'D0'</p> <p>Material Die-cast Aluminium</p> <p>IP Rating IP65</p>	EPO/K/F5/MGS/CO

General Description

'Emergency Stops' are often situated adjacent to the associated 'Start' button. In these assemblies the two functions are combined in a single enclosure.

All of the stayput 'Emergency Stop' buttons meet the latest safety requirements.

The flap cover option operates the stayput actuator when the cover is pressed. Padlocks can be inserted to prevent an unauthorised reset. Enclosures in polycarbonate and die-cast aluminium provide a choice dependent upon the environment.

Image	Description	Cat. No.
	Actuator a/ Start, momentary b/ Emergency Stop, twist-to-reset Legend a/ 'I' Start b/ 'Emergency Stop' Printed collar Contacts 1N/C+1N/O (MT-16A) Dims. 'D7' Material Die-cast Aluminium IP Rating IP65	ESS/GS/T/MG/NOC
	Actuator a/ Start, momentary b/ Emergency Stop, mushroom pull-to-reset Legend a/ 'Start' b/ 'Emergency Stop' Circular yellow Contacts 1N/C+1N/O (MT-16A) Dims. 'D7' Material Die-cast Aluminium IP Rating IP65	ESSH/GS/P/MG/CO
	Actuator a/ Start, momentary b/ Emergency Stop, pull-to-reset Guard Padlocking flap cover Legend a/ 'Start' b/ 'Emergency Stop' Printed flap cover Contacts 1N/C+1N/O (MT-16A) Dims. 'D7' Material Die-cast Aluminium IP Rating IP65	SSTH/GS/P/F1/MG/CO
	Actuator a/ Start, momentary b/ Emergency Stop, twist-to-reset Legend a/ 'I' Start b/ 'Emergency Stop' Printed collar Contacts 1N/C+1N/O (MT-16A) Dims. 'D3' Material Moulded Plastic IP Rating IP65	ESS/GS/T/P/NOC

General Description

Individual 'Stop' stations have been designed for use in many applications.






The range includes alternatives for both surface and flush mounting with options of flap covers which add an extra degree of security against inadvertent operation.

Image	Description	Cat. No.
	Actuator Full guard, momentary stop Legend 'Stop' Contacts 1N/C (MT-16A) Dims. 'D2' Material PC IP Rating IP65	STO/RS/P/NC
	Actuator Full guard, momentary stop Legend 'Stop' Contacts 1N/C (MT-16A) Dims. 'D5' Material Die-cast Aluminium IP Rating IP65	STO/RS/MG/NC
	Actuator Mushroom pull-to-reset Guard Flap cover non-locking Legend 'Stop' printed flap cover Contacts 1N/C+1N/O (MT-16A) Dims. 'D5' Material Die-cast Aluminium IP Rating IP65	STOH/P/F3/MG/CO
	Actuator Mushroom key reset (Supplied with 2x DC800 keys) Guard Flap cover non-locking Legend 'Stop' printed flap cover Contacts 1N/C+1N/O (MT-16A) Dims. 'D5' Material Die-cast Aluminium IP Rating IP65	STOH/K/F3/MG/CO
	Actuator Mushroom pull-to-reset Guard Flap cover non-locking Legend 'Stop' printed flap cover Contacts 1N/C+1N/O (MT-16A) Dims. 'D5' Material Die-cast Aluminium IP Rating IP65	STOH/P/F3/MR/CO
	Actuator Full guard, momentary stop Legend 'Stop' Contacts 1N/C+1N/O (MT-16A) Dims. 'D5' Material Die-cast Aluminium IP Rating IP65	STOH/RS/MG/CO
	Actuator Mushroom, momentary stop Legend 'Stop' Contacts 1N/C+1N/O (ET-10A) Dims. 'D5' Material Die-cast Aluminium IP Rating IP65	STOH/M/MG/CO
	Actuator Mushroom, momentary stop Guard Flap cover non-locking Legend 'Stop' printed flap cover Contacts 1N/C+1N/O (MT-16A) Dims. 'D5' Material Die-cast Aluminium IP Rating IP65	STOH/M/F3/MG/CO

Image	Description	Cat. No.
	Actuator Mushroom, momentary stop Guard Flap cover non-locking Legend 'Stop' printed flap cover Contacts 1N/C+1N/O (MT-16A) Dims. 'D4' Material Glass Filled Polyester IP Rating IP65	STO/M/F3/GP/CO
	Actuator Mushroom, pull-to-reset Guard Flap cover non-locking Legend 'Stop' printed flap cover Contacts 1N/C+1N/O (MT-16A) Dims. 'D4' Material Glass Filled Polyester IP Rating IP65	STO/P/F3/GP/CO
	Actuator Mushroom key reset (Supplied with 2x DC800 keys) Guard Flap cover non-locking Legend 'Stop' printed flap cover Contacts 1N/C+1N/O (MT-16A) Dims. 'D4' Material Glass Filled Polyester IP Rating IP65	STO/K/F3/GP/CO
	Actuator Full guard, momentary stop Legend 'Stop' Contacts 1N/C (MT-16A) Dims. 'D9' Material Stainless Steel IP Rating IP65	STO/RS/SS/NC
	Actuator Full guard, momentary stop Legend 'Stop' Contacts 1N/C+1N/O (ET-1A) Dims. 'D11' Material Stainless Steel IP Rating IP65	STO/RS/F/CO
	Actuator Mushroom, pull-to-reset Guard Flap cover non-locking Legend 'Stop' printed flap cover Contacts 1N/C+1N/O (MT-16A) Dims. 'D11' Material Stainless Steel IP Rating IP65	STO/P/F3/F/CO
	Actuator Mushroom, momentary stop Guard Flap cover non-locking Legend 'Stop' printed flap cover Contacts 1N/C+1N/O (MT-16A) Dims. 'D11' Material Stainless Steel IP Rating IP65	STO/M/F3/F/CO
	Actuator Mushroom key reset (Supplied with 2x DC800 keys) Guard Flap cover non-locking Legend 'Stop' printed flap cover Contacts 1N/C+1N/O (MT-16A) Dims. 'D11' Material Stainless Steel IP Rating IP65	STO/K/F3/F/CO

General Description







Individual 'Start' stations have been designed for use in many applications.

Image	Description	Cat. No.
	Actuator Full guard, momentary start Legend 'Start' Contacts 1N/O (MT-16A) Dims. 'D2' Material PC IP Rating IP65	STA/GS/P/NO
	Actuator Full guard, momentary start Legend 'Start' Contacts 1N/O (MT-16A) Dims. 'D5' Material Die-cast Aluminium IP Rating IP65	STA/GS/MG/NO
	Actuator Full guard, momentary start Legend 'Start' Contacts 1N/O (MT-16A) Dims. 'D5' Material Die-cast Aluminium IP Rating IP65	STAH/GS/MG/CO
	Actuator Full guard, momentary start Legend 'Start' Contacts 1N/O (MT-16A) Dims. 'D9' Material Stainless Steel IP Rating IP65	STA/GS/SS/NO
	Actuator Full guard, momentary start Legend 'Start' Contacts 1N/O (ET-10A) Dims. 'D11' Material Stainless Steel IP Rating IP65	STA/GS/F/NO

General Description

'Start/Stop' control stations are the most convenient way of providing simple local control for a variety of applications. When inserted into a control scheme they provide the local interface with which machinery can be easily be controlled.

The assembled stations are offered in various enclosure materials which are designed to match applications in terms of mechanical protection.

Image	Description	Cat. No.
	Actuator Full guard, momentary start / stop Legend 'O' & 'I' Contacts 'I' - 1N/O (MT-16A) 'O' - 1N/C (MT-16A) Dims. 'D2' Material PC IP Rating IP65	SST/GS/RS/P/NOC
	Actuator Full guard, momentary start / stop Legend 'O' & 'I' Contacts 'I' - 1N/O (MT-16A) 'O' - 1N/C (MT-16A) Dims. 'D5' Material Die-cast Aluminium IP Rating IP65	SST/GS/RS/MG/NOC
	Actuator a/ Full guard, momentary b/ Mushroom, pull-to-reset Guard Flap cover non-locking Legend a/ 'Start' b/ 'Stop' printed flap cover Contacts 'Start' - 1N/O (MT-16A) 'Stop' - 1N/C (MT-16A) Dims. 'D7' Material Die-cast Aluminium IP Rating IP65	SSTH/GS/P/F3/MG/CO
	Actuator Full guard, momentary start Legend 'Start' & 'Stop' Contacts 'Start' - 1N/O (MT-16A) 'Stop' - 1N/C (MT-16A) Dims. 'D7' Material Die-cast Aluminium IP Rating IP65	SSTH/GS/RS/MG/CO
	Actuator a/ Full guard, momentary b/ Mushroom, key reset (Supplied with 2x DC800 keys) Guard Flap cover non-locking Legend a/ 'Start' b/ 'Stop' printed flap cover Contacts 'Start' - 1N/O (MT-16A) 'Stop' - 1N/C (MT-16A) Dims. 'D7' Material Die-cast Aluminium IP Rating IP65	SSTH/GS/K/F3/MG/CO
	Actuator Full guard, momentary start Legend 'O' & 'I' Contacts 'I' - 1N/O (MT-16A) 'O' - 1N/C (MT-16A) Dims. 'D9' Material Stainless Steel IP Rating IP65	SST/GS/RS/SS/NOC

General Description

In the UK 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 primarily 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 associate such atmospheres as being gases, mists or vapours. However there are many industries where a non-conductive dust mixed with air in the right proportion can become potentially 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. All listed items shown here have been certified to the appropriate international standards for explosive atmospheres.




Certification data:

Ex II 3D, EX tD A22 IP65 T85°C

Complies in part or full with:


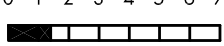



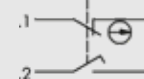

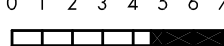


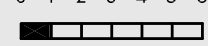

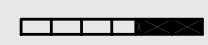
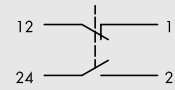

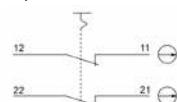
BS EN 50014, BS EN 50281-1-1, BS EN 60529, BS EN 60947-3, BS EN 60204-1

Image	Description	Cat. No.
	Actuator Full guard, momentary stop Legend 'Stop' Contacts 1N/C+1N/O (MT-16A) Dims. 'D2' Material Die-cast Aluminium IP Rating IP65 EX Zone 22	STOH/RS/MG/COZ
	Actuator Full guard, momentary start Legend 'Start' Contacts 1N/C+1N/O (MT-16A) Dims. 'D5' Material Die-cast Aluminium IP Rating IP65 EX Zone 22	STAH/GS/MG/COZ
	Actuator Full guard, momentary start / stop Legend 'Start' & 'Stop' Contacts 'Start'- 1N/O (MT-16A) 'Stop'- 1N/C (MT-16A) Dims. 'D7' Material Die-cast Aluminium IP Rating IP65 EX Zone 22	SSTH/GS/RS/MG/COZ
	Actuator Mushroom, twist-to-reset Legend 'Emergency Stop' circular yellow Contacts 1N/C+1N/O (MT-16A) Dims. 'D5' Material Die-cast Aluminium IP Rating IP65 EX Zone 22	EMSH/T/MG/COZ
	Actuator Mushroom, momentary stop Legend 'Stop' Contacts 1N/C+1N/O (MT-16A) Dims. 'D5' Material Die-cast Aluminium IP Rating IP65 EX Zone 22	STOH/M/MG/COZ
	Actuator a/ Start, momentary b/ Emergency stop, pull-to-reset. Legend a/ 'Start' b/ Circular yellow Contacts 'Start'- 1N/O (MT-16A) 'Em. Stop'- 1N/C (MT-16A) Dims. 'D7' Material Die-cast Aluminium IP Rating IP65 EX Zone 22	ESSH/GS/P/MG/COZ
	Actuator Full guard, momentary start / stop Legend 'Emergency Stop' circular yellow Contacts 1N/C+1N/O (MT-16A) Dims. 'D5' Material Die-cast Aluminium IP Rating IP65 EX Zone 22	EMSH/P/MG/COZ

Image	Description	Cat. No.
	Actuator a/ Start, momentary b/ Emergency stop, pull-to-reset. Guard Padlocking flap cover Legend a/ 'Start' b/ 'Emergency Stop' Printed flap cover Contacts 'Start'- 1N/O (MT-16A) 'Stop'- 1N/C (MT-16A) Dims. 'D7' Material Die-cast Aluminium IP Rating IP65 EX Zone 22	SSTH/GS/P/F1/MG/COZ
	Actuator Emergency stop, pull-to-reset. Guard Padlocking flap cover Legend 'Emergency Stop' Printed flap cover Contacts 1N/C+1N/O (MT-16A) Dims. 'D5' Material Die-cast Aluminium IP Rating IP65 EX Zone 22	EMSH/P/F1/MG/COZ
	Actuator Mushroom, key reset (Supplied with 2x DC800 keys) Legend 'Emergency Stop' circular yellow Contacts 1N/C+1N/O (MT-16A) Dims. 'D5' Material Die-cast Aluminium IP Rating IP65 EX Zone 22	EMSH/K/MG/COZ


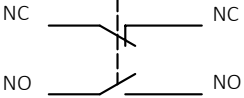


Accessories

Contact blocks are available to replace or extend the arrangements supplied as standard.

MT Series		
A 'clip-in' module which can be supplied in N/O, N/C & safety formats. The clip-in housing allows for a total of three blocks per actuator.		
Image	Description	Cat. No.
	Normally Closed (N/C) contact block. Momentary action. 0 1 2 3 4 5 6 7 .1/.2   .1 ——— .2	MTO
	'Safety Contact' for Emergency Stops. -3 -2 -1 0 1 2 3 4 5 6 7 .1/.2   .1 ——— .2	MTOSFE
	Normally Open (N/O) contact block. Momentary action. 0 1 2 3 4 5 6 7 .3/.4   .3 ——— .4	MTI
ET Series		
The 'ETR' block provides N/O + N/C contacts in one assembly.		
Image	Description	Cat. No.
	Contact Block, Momentary Action 1 N/O + 1 N/C 0 1 2 3 4 5 6 12/11   12 ——— 11 24/23   24 ——— 23	ETR
Monobloc Series		
The Monobloc assembly is designed for use in very restricted space. The contacts are assembled in the base of the actuator and cannot be supplied separately. To replace the contacts will require a new complete actuator.		
Image	Description	Cat. No.
	Contact Block, Momentary Action 2 N/C  12 ——— 11 22 ——— 21	FRVKOO

General Description

Contact blocks are available to replace or extend the arrangements supplied as standard.

S1 Series		
The S1 contact block is designed to be stacked in pairs side-by-side and then back-to-back making a total of four changeover blocks on one Heavy Duty actuator. Three or four blocks will require extended fixing screws (U42)		
Image	Description	Cat. No.
	Contact Block, Momentary Action C/O 	S1
	Assembly screw kit to enable 3 or 4 'S1' contacts to be mounted on a single Heavy Duty actuator.	U42
EMSL Series		
A 'clip-in' module which can be supplied in N/O and N/C format. Each contact block has screw termination and designed for Direct snap-on mounting to control station base. Maximum tightening torque for screw terminals: 1Nm.		
Image	Description	
	Base mounted normally closed contact block	EMSL/NC
	Base mounted normally open contact block	EMSL/NO

Technical Specification - Control Stations

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

Series		Utilisation Category	Rated Insulation Voltage (U_i)	Rated Operational Voltage (U_e)	Rated Operational Current (I_e)	Breaking Capacity	Continuous thermal current (I_{th})
MT Series	a.c	AC15 A600	600V	250V / 440V	3A / 1.6A	10Ie	16A
	d.c	DC13 Q600	600V	440V / 250V / 125V / 60V / 24V	0.12A / 0.2A / 0.4A / 1A / 2A	1.1Ie	16A
ET Series	a.c	AC15	400V	400V / 250V	3A / 5A	10Ie	10A
	d.c	DC13	400V	400V / 250V / 125V / 60V / 24V	0.12A / 0.2A / 0.4A / 1A / 2A	1.1Ie	10A
Monobloc Series	a.c	AC15 B300	250V	240V / 120V	5A	-	10A
S1 Series	a.c	AC15	660V	400V	5A	-	10A
EMSL Series	a.c	AC15	690V	600V / 500V / 480V / 400V / 240V / 120V / 48V / 24V / 12V	1.2A / 1.4A / 1.5A / 1.9A / 3A / 6A	10Ie	10A
	d.c	DC13	690V	600V / 500V / 440V / 250V / 125V / 48V / 24V / 12V	0.1A / 0.13A / 0.15A / 0.27A / 0.55A / 1.5A / 3A	1.1Ie	10A

Control Stations

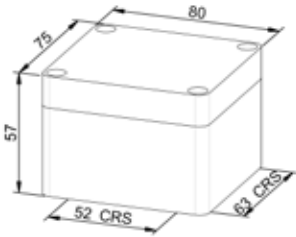
Dims as shown are for the enclosures only used in the various assemblies. Projections will vary depending upon the actuators incorporated in the design.

Normal Duty Actuators (ND)

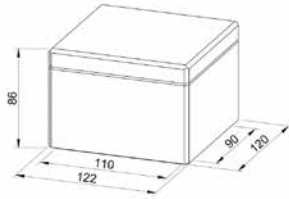
Emergency Stop (incl. guards)	42mm
Start/Stop	11mm

Heavy Duty Actuators (HD)

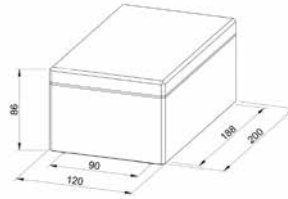
Mushroom (Twist or pull to reset)	43mm
Mushroom (Key reset)	51mm
Full guard (Start/Stop)	30mm
Flap Cover	66mm



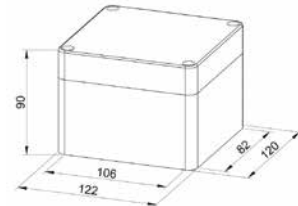
Enclosure D0
 Material Die-Cast Aluminium
 Colour Grey (RAL 7001)
 Entries Plain sides
 Fixings 2 x M4



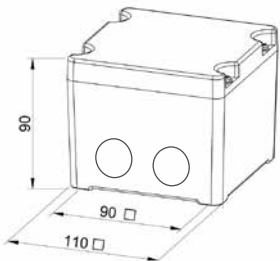
Enclosure D2
 Material Polycarbonate
 Colour Grey (RAL 7035)
 Entries Plain sides
 Fixings 2 x M4



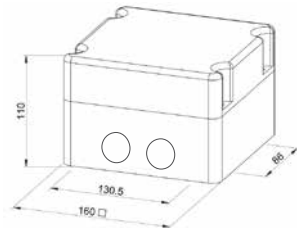
Enclosure D3
 Material Polycarbonate
 Colour Grey (RAL 7035)
 Entries Plain sides
 Fixings 4 x M4



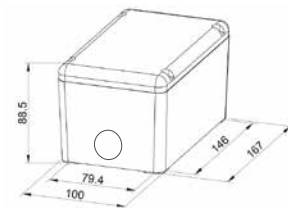
Enclosure D4
 Material Glass reinforced Polyester
 Colour Grey (RAL 7001)
 Entries Plain sides
 Fixings 4 x M5



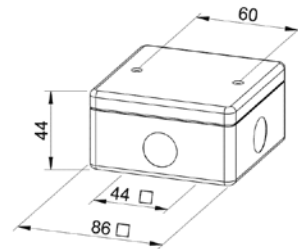
Enclosure D5
 Material Die-Cast Aluminium
 Colour Grey (RAL 7035)
 Red (RAL 3020)
 Entries 2 x M20
 Fixings 4 x M5



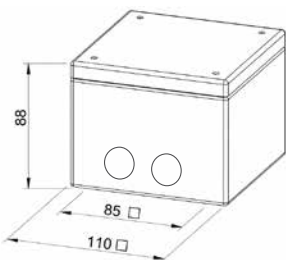
Enclosure D6
 Material Die-Cast Aluminium
 Colour Grey (RAL 7035)
 Entries Plain sides
 Entries 2 x M20
 Fixings 4 x M5



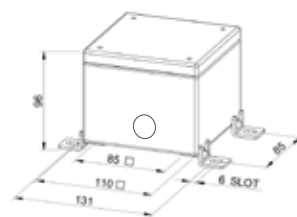
Enclosure D7
 Material Die-Cast Aluminium
 Colour Grey (RAL 7035)
 Entries 2 x M20
 Fixings 4 x M5



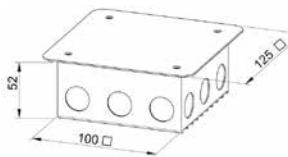
Enclosure D8
 Material Steel
 Colour Silver
 Entries 5 x M20 knockouts
 Fixings 4 off 5 x 10 slots



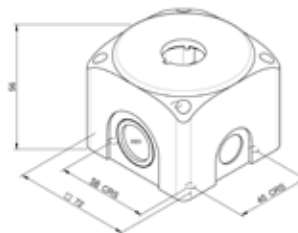
Enclosure D9
 Material Stainless Steel (Grade 304)
 Colour Brushed
 Entries 2 x M20
 Fixings 4 x M6



Enclosure D10
 Material Stainless Steel (Grade 304)
 Colour Brushed
 Entries 1 x M20
 Fixings 4 x M6



Enclosure D11
 Material Fascia Plate - Stainless Steel
 Back Box - Galvanised Steel
 Colour Fascia Plate - Brushed
 Entries 9 x M20 knockouts
 Fixings 4 x M5



Enclosure D12
 Material Polycarbonate
 Colour Yellow/Black
 Entries 2 x M20/M25/
 PG13.5/PG16
 2 x M16/PG11
 Fixings 4xM4

ROTARY SWITCHES

Hand operated Rotary Switches remain the most cost effective way of performing complex switching functions.





- They don't require any form of separate expensive power supply.
- Total freedom in the way contacts are made to open and close.
- The number of indexing positions can vary between 2 and 12.
- Contacts can be provided capable of switching low energy or high power; from a few milliamps up to 125A.
- A vast array of alternative operating handles can provide interlocking and other safety features.
- Early break, late break, make-before-break and fleeting contact conditions are available for use.

Full details on our range of selector switches, please visit our website www.craigandderricott.com to download a copy of our i-select range PDF.

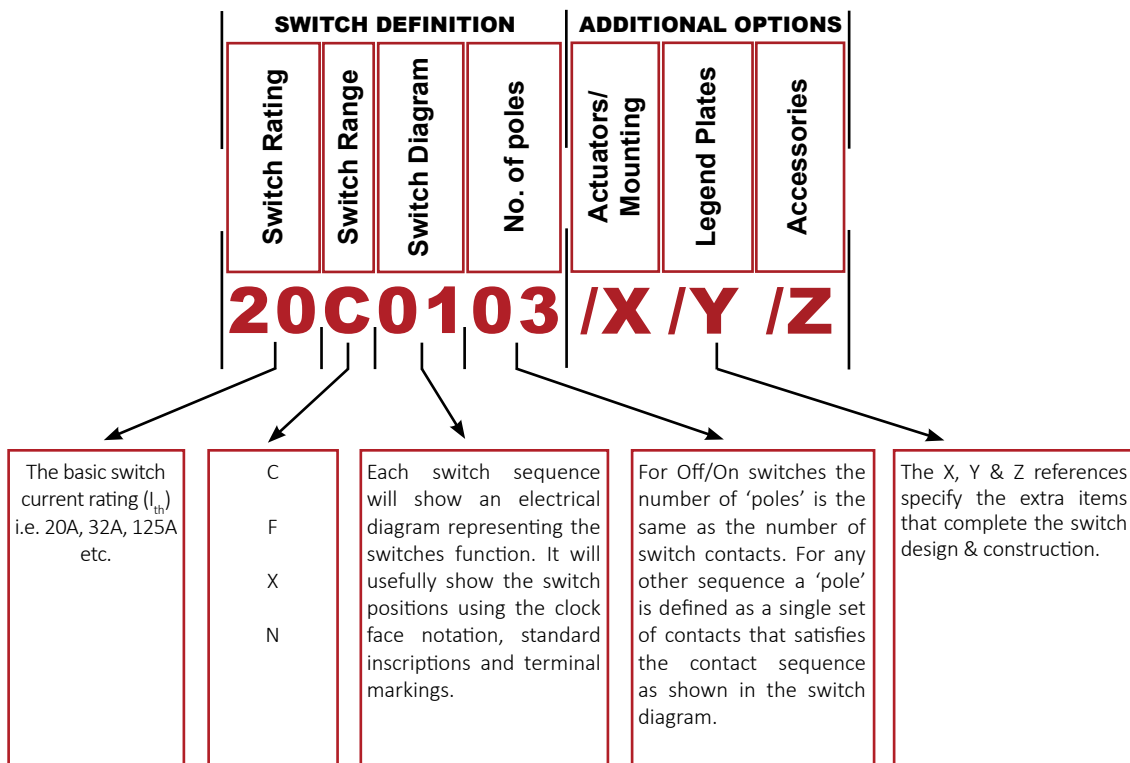


General Description

Craig & Derricott's selector switches are available in four different ranges, each of which has distinct design differences and ranges of accessories. This presents the user with a vast choice of options and the aim of the following pages is to help the user decide the best option for their precise application.

Image	Range	Ratings	Index Options	Terminal Type	Terminal Access	Temp. Range	Finger Protection
	C	20A	45°, 60° & 90°	Tunnel	Side	-25°C to +40°C	IP2X
	F	10A & 20A	30°, 45°, 60° & 90°	Clamp	Rear	-25°C to +55°C	IP2X
	X	16A, 20A, 32A & 40A	30°, 45°, 60° & 90°	Clamp	Rear	-25°C to +55°C	IP2X
	N	20A, 25A, 32A, 40A, 63A & 125A	30°, 45°, 60° & 90°	Clamp	Rear	-25°C to +55°C	IP2X

The below example represents a 20A rated 'C' switch, three pole, Off/On sequence requiring two switching sections, one holding two contact sets the other holding the remaining third pole.

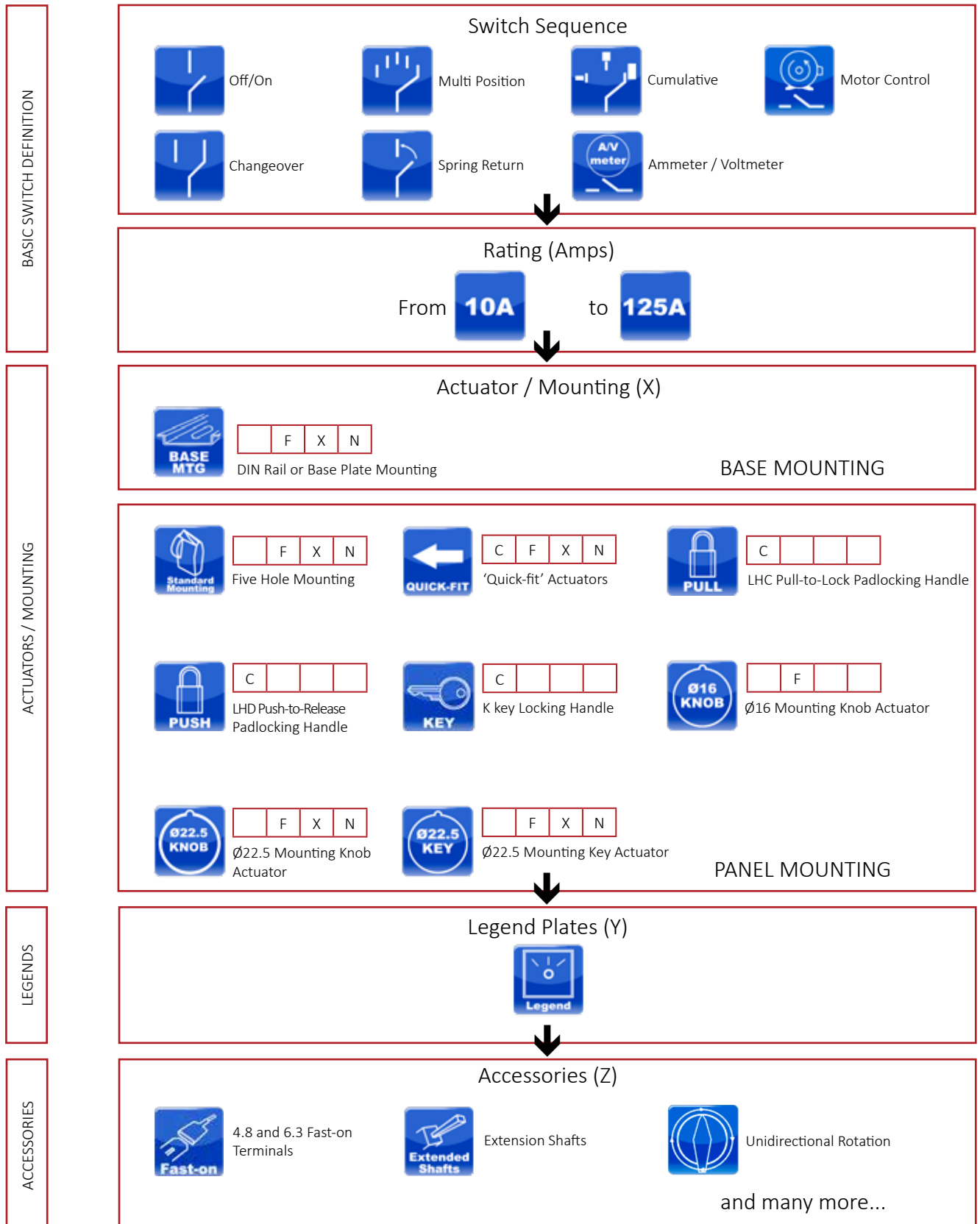


Hand operated Rotary Switches remain the most cost effective way of performing complex switching functions.

- They don't require any form of separate expensive power supply.
- Total freedom in the way contacts are made to open and close.
- The number of indexing positions can vary between 2 and 12.
- Contacts can be provided capable of switching low energy or high power; from a few milliamps up to 125A.
- A vast array of alternative operating handles can provide interlocking and other safety features.
- Rotary switches provide a positive indication of their switching position.
- Early break, late break, make-before-break and fleeting contact conditions are available for use.

...what are your requirements? Give us a call to discuss them now.

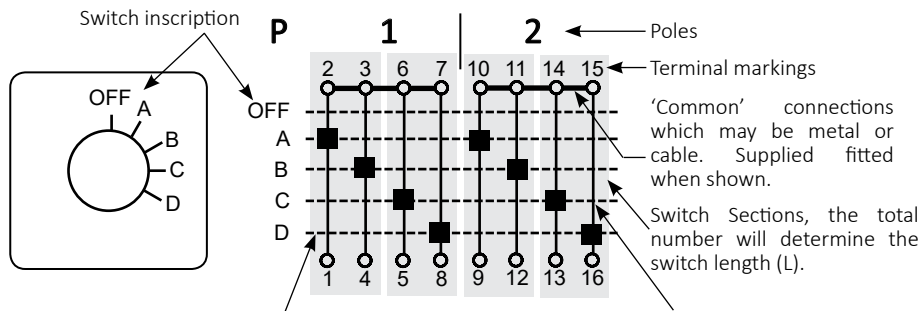
Guide to defining a selector switch



Full details on our range of selector switches, please visit our website www.craigandderricott.com to download a copy of our i-select range PDF.

Understanding Switch Diagrams

Each switch sequence shown on the following pages includes a Switch Diagram. This contains a lot of useful information for the user and installer and the following description is intended for those who may not be familiar with the layout.



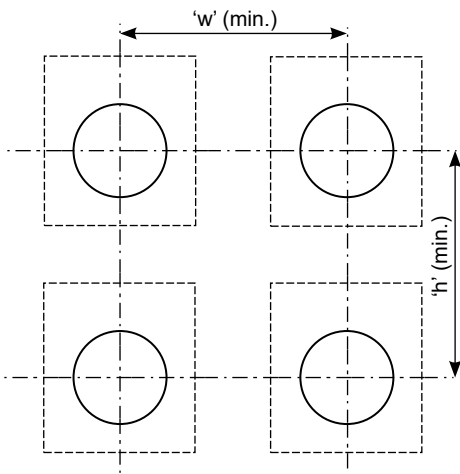
Each horizontal dotted line represents one of the switches 'stayput' positions. In this case a five position 30° indexing switch.

Each vertical solid line is a single electrical contact and the black square indicates in which position the contact is 'made'. In this case all contacts are open in the 'Off' position (no black squares) and the contact between terminals 1&2 is closed in position 'A' only. The remaining contacts follow the same principal.

Using this system you can indicate the full requirements for a special or 'bespoke' switch construction. Full details and a template which can be found on our website www.craigandderricott.com.

Fixing Matrix

In certain applications groups of rotary switches need to be fitted in the smallest space envelope possible. The tables shown take into account the legend plates that would normally be supplied with each switch.



The Dims shown are for guidance only. The spacing for each application will depend upon the product mix and the individual switch length/complexity.

Image	Range	Rating	Width (min.)	Height (min.)
	C	20A	80	70
	F	10A	32	45
		20A	50	65
	X	16A	50	65
		20A	50	65
		32A	67	85
		40A	67	85
	N	20A	65	65
		25A	65	65
		32A	85	85
		40A	85	85
		63A	85	85
		125A	115	115

ENCLOSED SAFETY SWITCHES

Enclosed safety (grabwire) switches are the equipment of choice to provide safety protection over long distances. Prior to the development of Grabwire switches, machinery such as conveyors had to be fitted with a number of separate Emergency Stops. Positioning the 'Stops' such that at least one could be reached from any point, was often difficult to fulfil.

Conveyors are the obvious application for such devices, but with the ability to take the protection wire around bends, and provide safety cover over both horizontal and vertical runs, the system lends itself to many different applications.

Reference standards:-

BS EN ISO 12100-1:2003 Pts. 1 & 2 | BS EN 418 | BS EN 60947-5-1 | BS EN 60529 | BS EN 60947-5-5 | BS EN 60204-1 | PD 5304.



GW Range

The 'GW' range, is a tensioned wire system which is designed to cover small to medium sized runs. (Up to 100m max. between pairs). A Grabwire switch assembly gives a continuous and uninterrupted safety provision over long distances.

Prior to the development of Grabwire switches, machinery such as conveyors had to be fitted with a number of separate Emergency Stops. Positioning the 'Stops' such that at least one could be reached from any point, was often difficult to fulfil. Conveyors are the obvious application for such devices, but with the ability to take the protection wire around bends, and provide safety cover over both horizontal and vertical runs, the system lends itself to many different applications.

The minimum requirements in this situation would be a Grabwire Switch at one end and an Anchor Box at the other.

The effective installation involves the fitting of Grabwire switches at both ends of the 'pull wire'. However, this does involve electrical cabling up to, and between, the switching units. The use of a non electrical 'Anchor Box' at one end removes the need to cable between the end assemblies.

The 'Anchor Box' effectively houses a long spring, which is compressed when the 'pull wire' is activated. At a fixed point during the compression, a latch is operated which locks the spring in the compressed or shortened state. When the 'pull wire' is released, it will be in a 'slack' condition, and the switching unit at the other end of the 'pull wire' senses the 'slack' condition and activates the 'Stop' signal. Although the 'Anchor Box' contains no electrical contacts, the latch needs manual resetting to restore the system.

Apart from the Grabwire switch, the only other item required in a simple set-up, is the connection kit. In the kit you will find all the parts necessary to install the system.








Image				
Cat. No.	GWN1	GWN2	GWN2/SS	GWDE
Description	Universal single ended	Universal single ended	Universal single ended	Universal double ended
Max. span between pairs (L) (or between switch & anchor box)	50m	100m	100m	2 x 100m
Encl. Material	Die-cast Aluminium (LM24)	Die-cast Aluminium (LM24)	Stainless Steel 1.6 mm Grade 316	Sheet Steel 1.6 mm
Finish	Textured Powder Coat RAL 3020	Textured Powder Coat RAL 3020	Polished	Textured Powder Coat RAL 3020
Ingress Protection	IP65	IP65	IP65	IP65
Rope Tensioner	Included	Included	Included	Included
Earthing	M4 Internal & External	M5 Internal & External	M5 Internal & External	M5 Internal & External
Electrical Contacts	2 N/C (Safety) + 1 N/O	2 N/C (Safety) + 2 N/O	2 N/C (Safety) + 2 N/O	2 x {2 N/C (Safety) + 2 N/O}
Electrical Rating:- Ith / Ui	10A/415V	10A/415V	16A/600V	16A/600V
AC21/22/23A to BS EN 60947-3	-	-	16A at 415V	16A at 415V
AC15 to BS EN 60947-5-1	5A at 415V	5A at 415V	5A at 415V	5A at 415V
Optional Indicator Lamp	✓	✓	-	-
Setting-up indicator	✓	✓	✓	✓
Hand reset knob	✓	✓	✓	✓
Universal (LH or RH) mounting	✓	✓	✓	✓

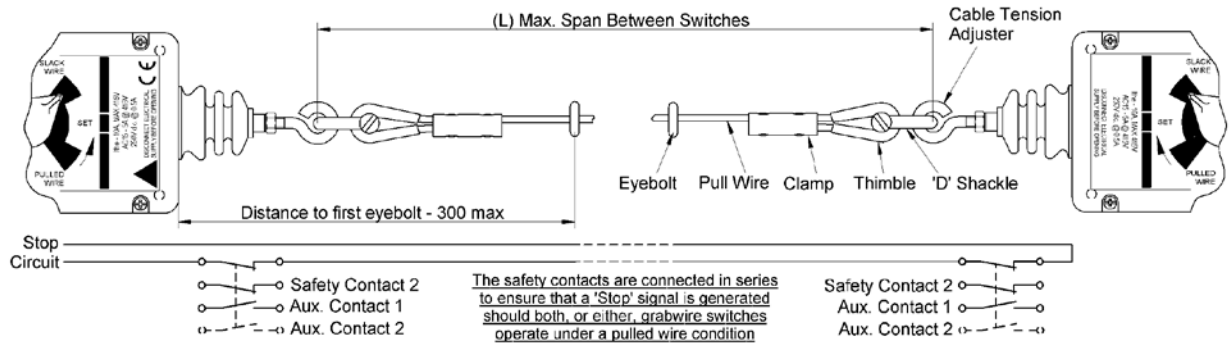
Image	Description	Cat. No.
	Each connection kit includes:- <ul style="list-style-type: none"> Multi strand steel catenary cable with red PVC covering* Stainless steel eyebolt supports. Sufficient to support the cable at 2M intervals. Supplied complete with two fixing nuts* 2 x Stainless steel thimbles 2 x Stainless steel 'D' shackles 2 x Stainless steel clamps 	Basic - GK00* Up to 5m - GK5 Up to 10m - GK10 Up to 20m - GK20 Up to 50m - GK50 Up to 75m - GK75 Up to 100m - GK100

Minimum Installation Requirements

When planning a grabwire installation, it is vital that the operators safety is always the primary objective. Plan the route of the 'pull wire' carefully to ensure maximum accessibility by the possible users. Ensure that supports can be placed at a maximum of 2m spacing. The placement of the grabwire switches need to be in reachable positions for setting-up, monitoring and resetting after an incident.

It is necessary to place the first eyebolt close to the switching body to ensure that if the wire is pulled at a very oblique angle, then the pull on the switch remains linear. Although corners/bends can be incorporated in the run, try to avoid too many. It may be necessary to install additional systems to ensure an effective installation. The ultimate objective must be to provide a free running 'pull wire' with the minimum of resistance to movement.

Measure each run and select a Grabwire switch whose max. span (L) is greater than the measured distance. If the total length is over 100m, then multiple installations will be necessary. If the length is excessive, then consider using the 'LW' system. Choose the Stainless Steel grabwire switch option if the working environment will be continuously wet or subject to systematic cleansing routines.



Accessories

To assist with the possible variations necessary when designing an installation, the following accessories are available.

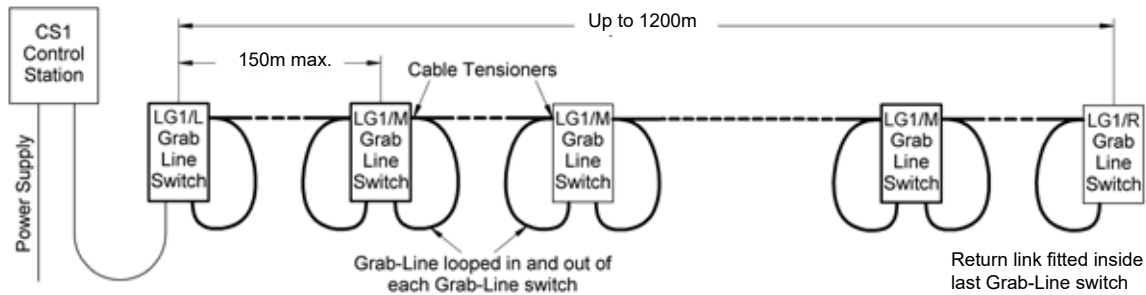
Image	Description	Cat. No.
	Non Switching Anchor Box with manual reset	GW/AB
	Indicator lamp, which when powered through one of the spare N/O contacts, will indicate which grabwire switch has been actuated. (Indicates on 'Pulled' or 'Slack Wire' conditions) Supplied complete with bulb. Other colours and supply voltages available to order. 24V (Amber) Annunicator Lamp 110V (Amber) Annunicator Lamp	GW024A GW110A
	Stranded steel 'pull wire' with red PVC covering. (Ø5 approx O/D) Sold per Metre. Pull Wire (As supplied in the connecting kits)	MR 0221
	Standard length 'eyebolt' for 'pull wire' support. Supplied complete with 2 x locking nuts. Material- Stainless steel, Size - M6, Overall length - 80, Thread length - 58 Standard M6 Eyebolt (As supplied in the connection kits)	GWA 0070
	Extended length 'eyebolt' for 'pull wire' support. Supplied complete with 2 x locking nuts. Material - Stainless steel, Size - M6, Overall length - 230, Thread length - 200 Extended M6 Eyebolt	GWC 0270
	Wrap around 'thimble' to terminate the 'pull wire'. Material - Stainless steel Termination 'thimble' (As supplied in the connection kits)	GWC 0163
	'D Shackle' to connect the 'pull wire' to the grabwire switches. Material- Stainless steel Connection 'D Shackle' (As supplied in the connection kits)	GWC 0166
	Cable clamp for securing the 'pull wire' back upon itself once passed around the 'thimble'. Tightening via 2 x Allen screws. Material - Stainless steel Cable clamp (As supplied in the connection kits)	GWC 0167
	Allen key for tightening 'Cable Clamp' above. Size- 2.5 A/F Allen Key (As supplied in the connection kits)	GWC 0189









LW Range

Designed specifically for long distance protection, where a tensioned wire installation (GW series) becomes expensive or impractical. The 'LW' range system incorporates the following safety features:-

- The trip switch interior to each grabwire assembly contains positive push-off contacts.
- The system will trip in the event of-
 - (a) a Grab-Line being pulled in any direction.
 - (b) a Grab-Line being broken or the Grab-Line circuit interrupted.
 - (c) a short circuit condition occurring in the Grab-Line circuit.
 - (d) a loss of power to the Control Station.
- Once tripped, the system requires manual resetting.
- Only a safe low voltage is applied to the Grab-Line circuit and Grab-Line switch assemblies.

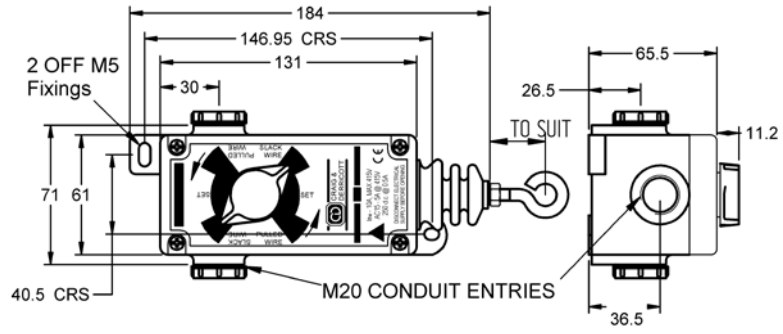
The system is ideal for heavy duty and exposed situations. The Control Station and Grab-Line switch assemblies are housed in substantial enclosures which are sealed to IP65. Stainless steel components are used where necessary to ensure reliability is maintained.



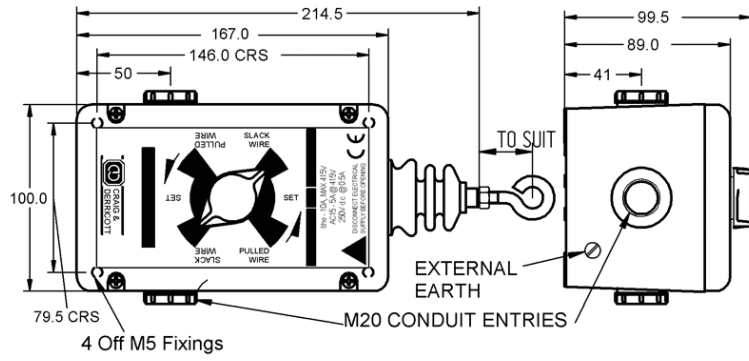
	Description	Cat. No.
	A control station assembly required for each installation. The sheet steel housed control station contains the following equipment: <ul style="list-style-type: none"> • On/Off switch • 'Supply On' Indicator Lamp (Blue) • 'Reset' Pushbutton • 'Reset System' Indicator Lamp (White) • 'System Tripped' indicator Lamp (Red) 	CS1
	LH Grab-Line switch housed in heavy duty die-cast aluminium enclosures. <ul style="list-style-type: none"> • Manual 'Reset/Condition Indicator' knob • 'Signal to Reset' pushbutton 	LG1/L
	RH Grab-Line switch housed in heavy duty die-cast aluminium enclosures. <ul style="list-style-type: none"> • Manual 'Reset/Condition Indicator' knob • 'Signal to Reset' pushbutton 	LG1/R
	Mid Grab-Line switch housed in heavy duty die-cast aluminium enclosures. <ul style="list-style-type: none"> • Manual 'Reset/Condition Indicator' knob • 'Signal to Reset' pushbutton 	LG1/M
	Grab-Line cable (75m). Thick outer sheath of red PVC. Flexible steel wire armour	GWC 0038A
	Grab-Line cable (100m). Thick outer sheath of red PVC. Flexible steel wire armour	GWC 0038B
	Grab-Line cable (125m). Thick outer sheath of red PVC. Flexible steel wire armour	GWC 0038C
	Grab-Line cable (150m). Thick outer sheath of red PVC. Flexible steel wire armour	GWC 0038D
	Stainless Steel Eyebolt with fixing nuts	GWA 0070
	Grab-Line Thimble	GWC 0031A
	Grab-Line Clamp	GWC 0032A
	Grab-Line 'D' shackle	GWC 0033A
	Cable gland	GWC 0039

GW Range

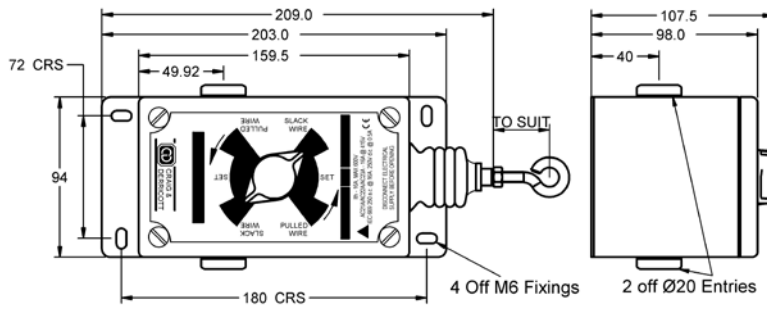
GWN1



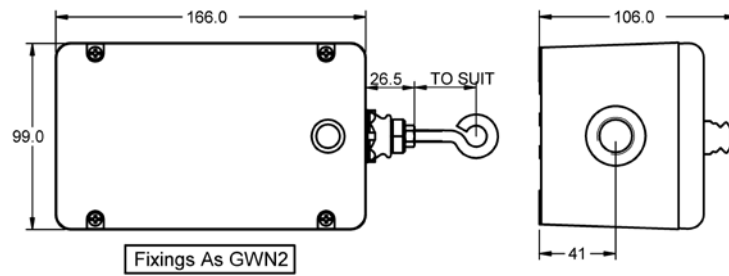
GWN2



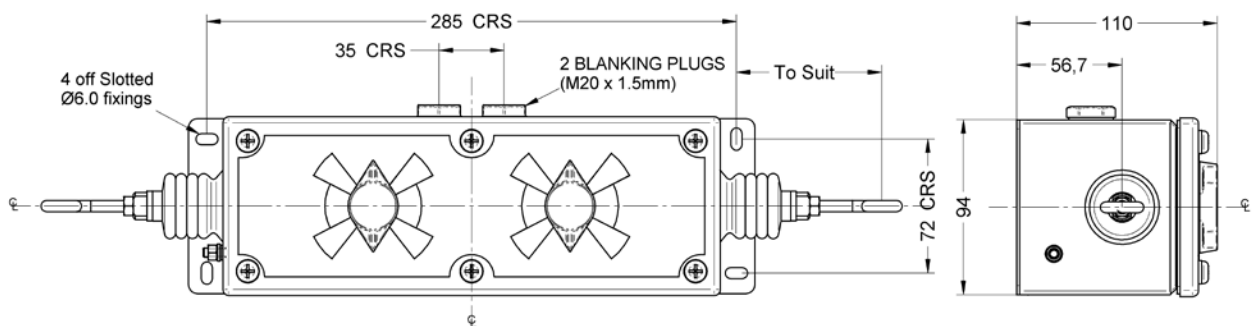
GWN2/SS



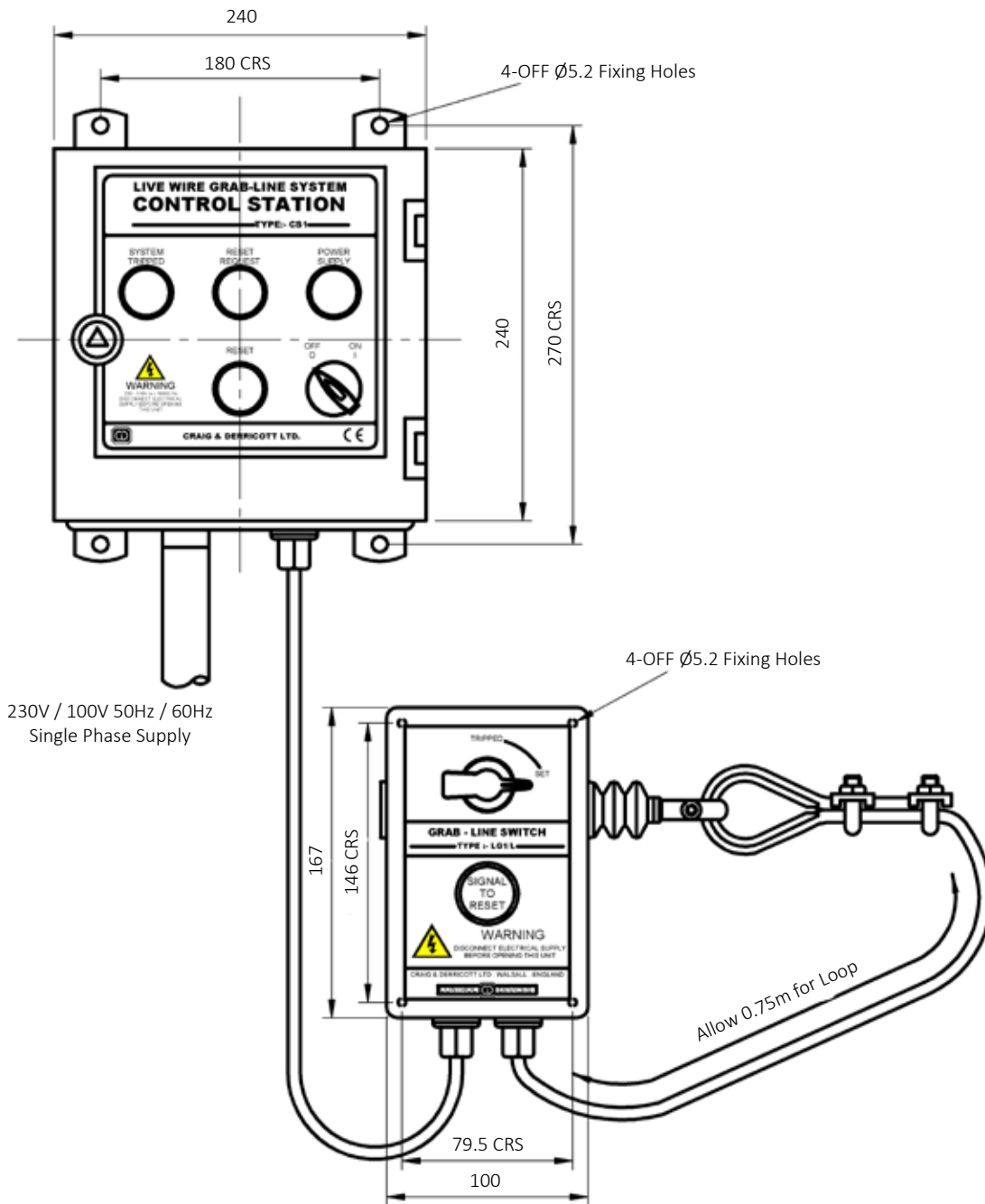
GW/AB Anchor Box



GWDE



LW Range

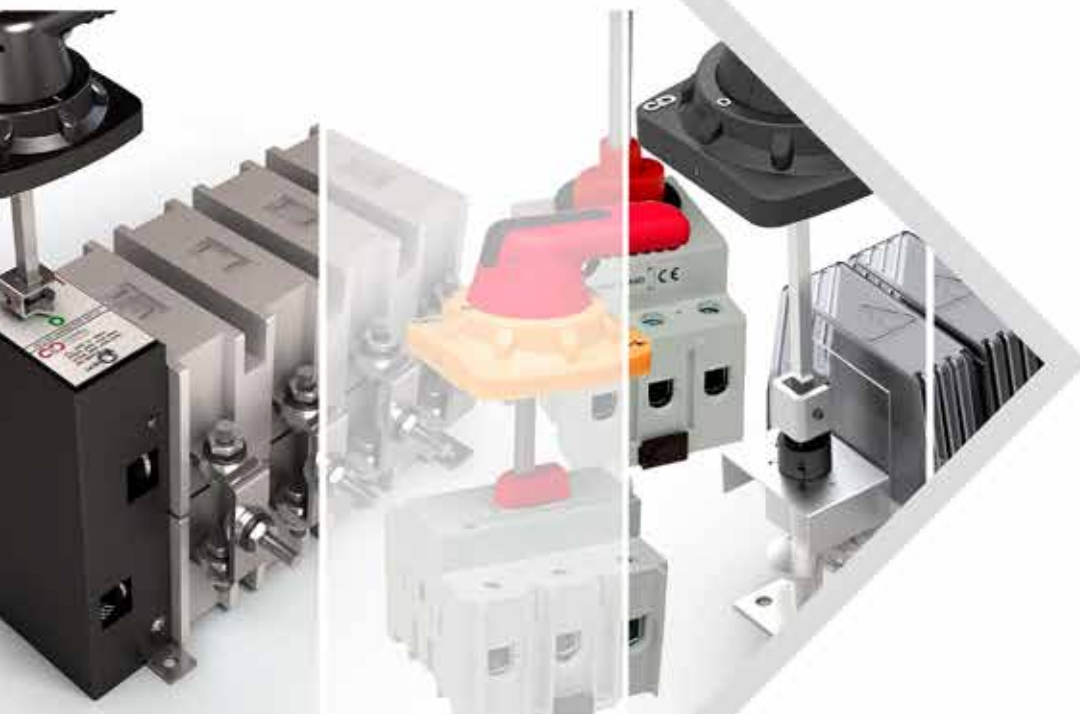


Application		
Input Voltage		110V (15W max.), 240V (15W max)
System Voltage		24V a.c. - 1/2 wave rectified
Control Circuit Relay	Contact Operation	Positively operated
	Rated Load	3A at 240V a.c. 3A (Resistive) at 24V d.c.
	Max. Switching Current	6A
	Max. Switching Voltage	250V a.c. & 24V d.c
	Minimum Permissible Load	5V d.c. - 10mA
	Mechanical / Electrical Life	10 x 10 ⁶ /10 x 10 ³
	Contact Resistance	100 mΩ
Power Protection Fuse		2A
Safety Circuit Fuse		200mA
Max. Grab-Line Circuit Resistance		50 Ohms
Pull Force To Operate		Approx 5kg.

Full documentation and installation instructions are supplied with each control station

PANEL ISOLATORS

Craig & Derricott has a range of products designed specifically for control panel and switchboard construction. Most panels require a means of electrical isolation and the i-switch range can offer variants in the range of 25A- 1250A. All handle assemblies employ safety features with an override facility for testing or emergency situations. A choice of shaft lengths, auxiliary contacts & shields provide the flexibility to suit most applications.



Compact Range

Craig & Derricott has ranges of compact control panel isolation equipment for panel mounting ranging from 25A to 200A. All come supplied with operating handle and a standard length shaft.


A compact range of Switch-Disconnectors with the capacity to add auxiliary and neutral block options to the basic load break switch block.

Features

- IP2X terminal protection.
- Door interlock handles with override facility
- DIN rail or base mounting.
- Add-on auxiliary/neutral blocks.

The Cat. No.s below include:

- On-load AC23A Switch-disconnector.
- 100mm standard length shaft assembly.
- IP65 minimum door interlock handle.(Black)
- Incoming terminal covers (A3 frame sizes only).

Image	Rating	Format	Cat. No.	Frame Size
	25A	3P	SD00253B	A0
		6P	SD00256B	A0-A0
	32A	3P	SD00323B	A0
	40A	3P	SD00403B	A0
		6P	SD00406B	A1-A1
	63A	3P	SD00633B	A1
		6P	SD00636B	A1-A1
	80A	3P	SD00803B	A1
	100A	3P	SDC01003B	A2
		6P	SDC01006B	A2-A2
	125A	3P	SDC01253B	A2
		6P	SDC01256B	A2-A2
	160A	3P	SDC01603B	A2
		6P	SDC01606B	A2-A2
200A	3P	SDC02003B	A3	

'B' = Black Handle. For Red Handle, replace B with R in the Cat. No.. i.e. SD00253R

Accessories

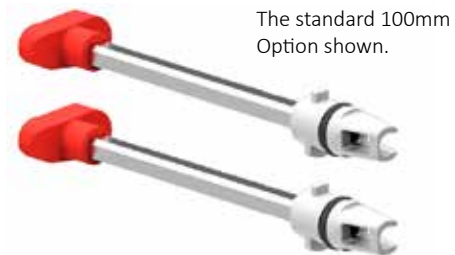
All of the accessories listed below can be retrofitted. One block can be fitted either side of the main assembly on all of the 3 pole Switch-Disconnecter interiors.

Image	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
	125A Neutral (Unswitched)	SNL125
	160A Neutral (Unswitched)	SNL160
	200A Neutral (Unswitched)	SNL200
	25A Neutral (Switched)	SSP25
	40A Neutral (Switched)	SSP40
	63A Neutral (Switched)	SSP63
	80A Neutral (Switched)	SSP80
	100A Neutral (Switched)	SSP100
	125A Neutral (Switched)	SSP125
	160A Neutral (Switched)	SSP160
	200A Neutral (Switched)	SSP200

Extended Shafts

Both the standard 100mm shaft and the longer version as shown below can easily be adjusted to suit specific panel depths.

Shaft length	Frame size	Shaft (mm ²)	Cat. No.
200mm	A0 & A1	6	SSH2
200mm	A2 & A3	8	SSH17



Standard Range


A robust range of load break switches to ensure simple installation in applications such as power distribution boards. The compact design also suits OEM's and stand alone enclosure installations. A range of accessories extends the versatility.

Features:-

- On-load AC23A ratings.
- Four frame sizes covering 100A- 1250A.
- Direct lug connections onto plated Copper palms.
- Windows for contact inspection
- Supplied as either 3 or 4 pole versions.
- IP65 sealing door interlocking handles.
- Internal locking feature.

The Cat. No.s below include:-

- On-load AC23A Switch-disconnector.
- 200mm standard length shaft assembly.
- IP65 door interlock handle.(Black).



Image	Rating	Format	Cat. No.	Frame Size
	100A	3P	SD01003B	B1
		4P	SD01004B	
	125A	3P	SD01253B	B1
		4P	SD01254B	
	160A	3P	SD01603B	B1
		4P	SD01604B	
	200A	3P	SD02003B	B2
		4P	SD02004B	
	250A	3P	SD02503B	B2
		4P	SD02504B	
	400A	3P	SD04003B	B3
		4P	SD04004B	
	630A	3P	SD06303B	B3
		4P	SD06304B	
	800A	3P	SD08003B	B3
		4P	SD08004B	
1000A	3P	SD10003B	B4	
	4P	SD10004B		
1250A	3P	SD12503B	B4	
	4P	SD12504B		

'B' = Black Handle. For Red Handle, replace B with R in the Cat. No.. i.e. SD01003R

Accessories

Add-on auxiliary contacts are available for the 100A- 1250A range and can be selected from the table below.

All auxiliary kits contain the necessary fixings and attachments to install the contact blocks which are supplied in 1 N/O + 1 N/C format. All N/O contacts are early break with respect to the main poles when switching from 'On' to 'Off'.

Image	Description	Cat. No.
	Auxiliary Contact-100A - 160A	SAUXKITA
	Auxiliary Contact- 1000A - 1250A	SAUXKITD
	Auxiliary Contact- 200A - 250A	SAUXKITB
	Auxiliary Contact- 400A - 800A	SAUXKITC

Handle assembly supplied with the 'B1' / 'B2' frame size (SDH2/BLK or SDH3/BLK).



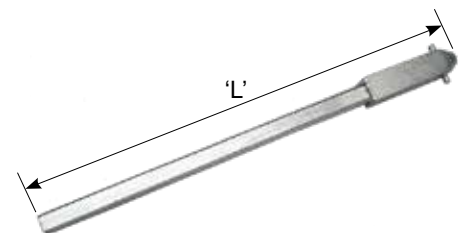
Handle assembly supplied with the 'B3' (SDH4/BLK) & 'B4' (SDH7/BLK) frame sizes.



Alternative Shafts

As an alternative to the standard 200mm shaft a 400mm option is available as indicated below. The shafts are manufactured from square section steel and zinc plated. The height setting is adjusted by passing the shaft through a bush in the switch mechanism and locking it in position using a 'cup point' grub screw.

Rating	Shaft length	Cat. No.
100A - 160A	400mm	SSH13
200A - 250A	400mm	SSH14
400A - 1250A	400mm	SSH15



Fuse Combination Range

A compact range of fuse combination units designed specifically for the panel builder market.

Features

- IP2X terminal protection.
- Suitable for std. IEC/BS EN 60269 (BS88) fuse links.
- Supplied as 3P&N or 3P&NL (Neutral Switched or Unswitched respectively).
- Add-on auxiliary/neutral blocks.

The Cat. No.s below include:-

- On-load AC23A fuse combination unit.
- 200mm standard length shaft and IP65 door interlocking handle.

Image	Rating	Format	Cat. No.	Frame Size
	32A	3P+N	SDF00323NB	D1
		3P+NL	SDF00323NLB	
	63A	3P+N	SDF00633NB	D1
		3P+NL	SDF00633NLB	
	100A	3P+N	SDF01003NB	D2
		3P+NL	SDF01003NLB	
	125A	3P+N	SDF01253NB	D2
		3P+NL	SDF01253NLB	
	160A	3P+N	SDF01603NB	D3
		3P+NL	SDF01603NLB	
	200A	3P+N	SDF02003NB	D4
		3P+NL	SDF02003NLB	
	250A	3P+N	SDF02503NB	D4
		3P+NL	SDF02503NLB	
	315A	3P+N	SDF03153NB	D5
		3P+NL	SDF03153NLB	
	400A	3P+N	SDF04003NB	D5
		3P+NL	SDF04003NLB	
630A	3P+N	SDF06303NB	D6	
	3P+NL	SDF06303NLB		

'B' = Black Handle. For Red Handle, replace B with R in the Cat. No.. i.e. SDF00253R

Accessories

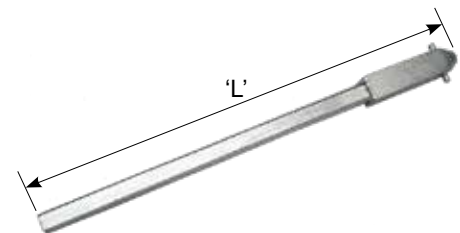
Auxiliary blocks and fuse links are available for all Fuse Combination Units. Please select from the tables below. All auxiliaries are supplied as 1 N/O+1 N/C pair. All N/O auxiliary contacts are early break with respect to the main poles when switching from 'On' to 'Off'. Fuse links can be fitted to 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.)

Image	Description	Fuse Fixing CRS (mm)	Cat. No.
	Auxiliary Contact - 32A - 160A		SAUXKITA
	Auxiliary Contact - 630A		SAUXKITD
	Auxiliary Contact - 200A - 400A		SAUXKITC
	32A fuse link for BS fuse format A2 - A3	73 nom.	SFL32
	63A fuse link for BS fuse format A2 - A3	73 nom.	SFL63
	100A fuse link for BS fuse format A4	94 nom.	SFL100
	125A fuse link for BS fuse format A4	94 nom.	SFL125
	160A fuse link for BS fuse format B1 - B2	111 nom.	SFL160
	200A fuse link for BS fuse format B1 - B2	111 nom.	SFL200
	250A fuse link for BS fuse format B1 - B2	111 nom.	SFL250
	315A fuse link for BS fuse format B1 - B4	111 nom.	SFL315
	400A fuse link for BS fuse format B1 - B4	111 nom.	SFL400
630A fuse link for BS fuse format C1 - C3	133 / 184 nom.	SFL630	

Alternative Shafts

As an alternative to the standard 200mm shaft a 400mm option is available as indicated below. The shafts are manufactured from square section steel and zinc plated. The height setting is adjusted by passing the shaft through a bush in the switch mechanism and locking it in position using two 'cup point' grub screw.

Rating	Shaft length	Cat. No.
32A - 160A	400mm	SSH13
200A - 630A	400mm	SSH15



Changeover Range


A compact range of load break Changeover Switches suitable for a wide range of applications.

Features

- Compact 'piggy-back' design.
- On-load AC23A ratings.
- Supplied as four pole format.
- Windows for visual contact inspection.

The Cat. No.s below include:-

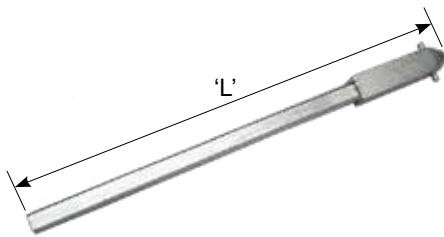
- On-load AC23A changeover four pole switch.
- 200mm standard length shaft assembly.
- IP65 door interlocking handle.

Image	Rating	Format	Cat. No.	Frame Size
	63A	4P	SCOD00634B	C1C
	100A	4P	SCOD01004B	C1C
	125A	4P	SCOD01254B	C2C
	160A	4P	SCOD01604B	C2C
	200A	4P	SCOD02004B	C2C
	250A	4P	SCOD02504B	C2
	400A	4P	SCOD04004B	C3
	630A	4P	SCOD06304B	C3

Alternative Shafts

As an alternative to the standard 200mm shaft a 400mm option is available as indicated below. The shafts are manufactured from square section steel and zinc plated. The height setting is adjusted by passing the shaft through a bush in the switch mechanism and locking it in position using a 'cup point' grub screw.

Rating	Shaft length	Cat. No.
63A- 100A	400mm	SSH14
125A- 200A	400mm	SSH18
250A- 630A	400mm	SSH15



Supplied Handles

Designed to compliment the handles used on our enclosed equipment, the door interlocked versions are capable of being locked with up to three individual padlocks (Ø6.4 max shackle dia). All handles are sealed to IP65 which will enable installations in a wide variety of environmental conditions.

If the contacts should weld due to a fault or an excessive current situation, an override facility is provided for the use of a competent person which will allow the enclosure lid to be opened.





















Handle assembly supplied with the 'C1C & C2C' frame size (PSA0515). Handle length 145mm.



Handle assembly supplied with the 'C2' & 'C3' frame size (SDH6/BLK). Handle length 220mm.

Technical Specification - Panel Isolators

Data supplied against tests to BS EN 60947-3. *All AC21, AC22 & AC23 tests carried out at 415V.

Compact Range													
Application	Sym	Unit	Category	25	32	40	63	80	100	125	160	200	
Rated thermal current	I_{th}	A		25	32	40	63	80	100	125	160	200	
Rated insulation voltage	U_i	V		690	690	690	690	690	1000	1000	1000	1000	
Rated impulse voltage	U_{imp}	kV		6	6	6	6	6	8	8	8	8	
Rated operational current (AC)	I_e	A	400V- AC21A	25	32	40	63	80	100	125	160	200	
			400V- AC22A	-	-	-	-	-	100	125	160	200	
			400V- AC23A	21	29	29	48	56	100	112	128	128	
Rated operational current (DC) (/poles in series)	I_e	A	Up to 48V- DC21A	25/1	32/1	40/1	63/1	80/1	-	-	-	-	
			220V- DC21A	25/3	32/3	40/3	63/4	80/4	-	-	-	-	
			Up to 48V- DC22A	-	-	-	-	-	-	-	-	-	-
			220V- DC22A	-	-	-	-	-	-	-	-	-	-
			Up to 48V- DC23A	-	-	-	-	-	-	-	-	-	-
			220V- DC23A	-	-	-	-	-	-	-	-	-	-
Rated operational power	P_e	kW	400/415V- AC23A	11	15	15	25	30	59	63	75	75	
Short circuit making capacity	I_{cm}	kA	Peak value	1.2	1.4	1.4	2.9	3.0	3.7	4.0	5.0	5.0	
Short circuit withstand (1sec)	I_{cw}	kA	rms value	0.5	0.6	0.6	1.3	1.4	2.6	2.8	3.0	3.0	
Min. mechanical endurance	-	-	Operations	250 x 10 ³	250 x 10 ³	250 x 10 ³	250 x 10 ³	250 x 10 ³	50 x 10 ³	50 x 10 ³	50 x 10 ³	50 x 10 ³	
Min. electrical endurance	-	-	415V- at 0.65 pf	-	-	-	-	-	-	-	-	-	
Connecting capacity	-	-	Terminal type										
	mm ²	Min/Max		2.5/6	2.5/10	2.5/10	2.5/25	2.5/25	10/70	10/70	10/70	-	
	mm	Stud/Cu palm width		-	-	-	-	-	-	-	-	8/20	
	Nm	Tightening torque		1.2	1.2	1.2	1.2	1.2	5	5	5	6	
Standard Range													
Application	Sym	Unit	Category	100	125	160	200	250	400	630	800	1000	1250
Rated thermal current	I_{th}	A		115	125	160	200	270	500	630	720	1000	1250
Rated insulation voltage	U_i	V		750	750	750	1000	1000	1000	1000	1000	1000	1000
Rated impulse voltage	U_{imp}	kV		8	8	8	12	12	12	12	12	8	8
Rated operational current (AC)	I_e	A	400V- AC21A	100*	125*	160*	200*	250*	400*	630*	800*	1000*	1250*
			400V- AC22A	100*	125*	160*	200*	250*	400*	630*	800*	1000*	1250*
			400V- AC23A	100*	125*	135*	200*	250*	400*	630*	720*	-	-
Rated operational current (DC) (/poles in series)	I_e	A	Up to 48V- DC21A	100/2	125/2	160/2	200/2	250/2	400/2	630/1	800/1	1000/1	1250/1
			220V- DC21A	100/3	125/3	160/3	200/2	250/2	400/2	630/2	800/2	1000/3	1250/3
			Up to 48V- DC22A	100/2	125/2	160/2	200/2	250/2	400/1	630/1	800/1	-	-
			220V- DC22A	100/3	125/3	160/3	200/2	250/2	400/2	630/2	800/2	-	-
			Up to 48V- DC23A	100/2	125/2	160/2	200/2	250/2	400/1	630/1	800/1	-	-
			220V- DC23A	100/3	125/3	160/3	200/2	250/2	400/2	630/2	630/2	-	-
Rated operational power	P_e	kW	400/415V- AC23A	37	45	75	110	132	200	315	355	400	400
Short circuit making capacity	I_{cm}	kA	Peak value	7	7	7	35	35	65	80	80	105	105
Short circuit withstand (1sec)	I_{cw}	kA	rms value	5	5	5	8	8	17	17	17	50	50
Min. mechanical endurance	-	-	Operations	20 x 10 ³	20 x 10 ³	20 x 10 ³	16 x 10 ³	16 x 10 ³	10 x 10 ³	10 x 10 ³	10 x 10 ³	6 x 10 ³	6 x 10 ³
Min. electrical endurance	-	-	415V- at 0.65 pf	5,000	5,000	1,000	1,000	1,000	1,000	500	500	500	500
Connecting capacity	-	-	Terminal type										
	mm ²	Min/Max		-	-	-	-	-	-	-	-	-	
	mm	Stud/Cu palm width		8x25	8x25	8x25	8x25	10x30	10x40	12x40	12x40	12x60	12/60
	Nm	Tightening torque		6	8	8	20	25	25	40	40	40	40

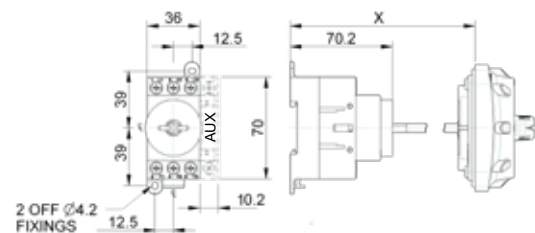
Technical Specification - Panel Isolators

Data supplied against tests to BS EN 60947-3. *Two Pole in series.

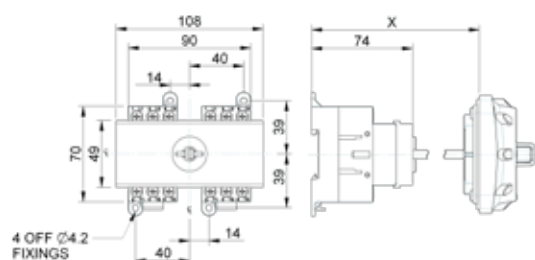
Fuse Combination Range													
Application	Sym	Unit	Category	32	63	100	125	160	200	250	315	400	630
Rated thermal current	I_{the}	A		32	63	100	125	160	200	250	315	400	630
Rated insulation voltage	U_i	V		750	750	750	750	750	750	750	750	750	750
Rated impulse voltage	U_{imp}	kV		12	12	12	12	12	12	12	12	12	12
Rated operational current	I_e	A	415V- AC23A	32	63	100	125	160	200	250	315	400	630
			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 ²	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		2.5	2.5	9	12	16	25	30	35	45	50
Changeover Range													
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		
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 ²	Max		35	35	95	95	95	240	300	400		
	mm	Stud/Cu palm width		6/12	6/12	8/22	8/22	8/22	10/25	10/25	12/50		
	Nm	Tightening torque		3	3	10	10	10	30	45	50		

Compact Range

A0 Size (25A- 40A) - x1 = n/a | x2= 105-180 | x3 = 105-280

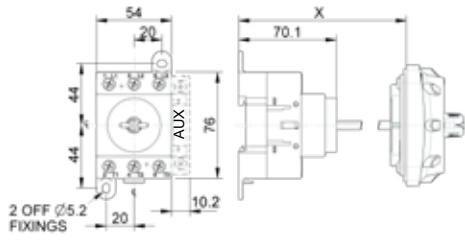


A0-A0 Size (6 pole 25A) - x1 = 98 | x2= 116-191 | x3 = 116-291

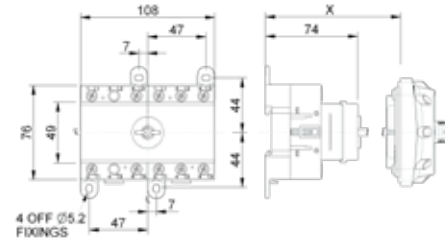


Compact Range

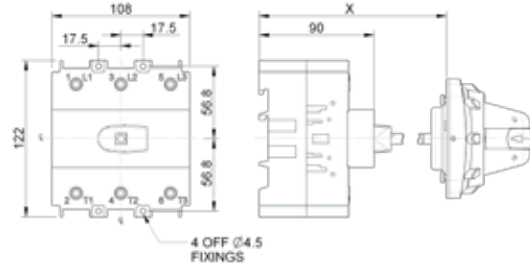
A1 Size (63A- 80A) - x1 = 98 | x2= 110-185 | x3 = 110-285



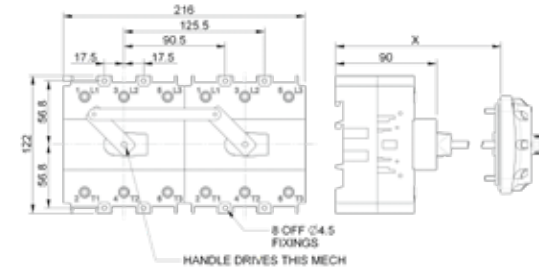
A1-A1 Size (6 pole 40A-80A) - x1 = 98 | x2= 116-191 | x3 = 116-291



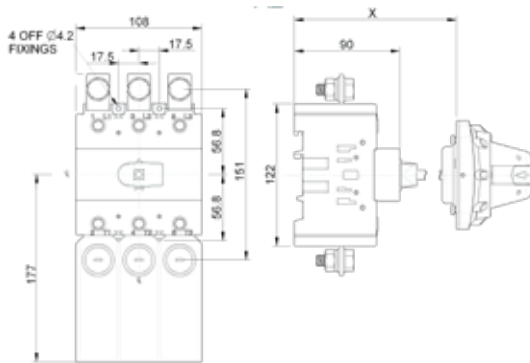
A2 Size (100A- 160A) - x1 = 121-166 | x2= n/a | x3 = 121-235



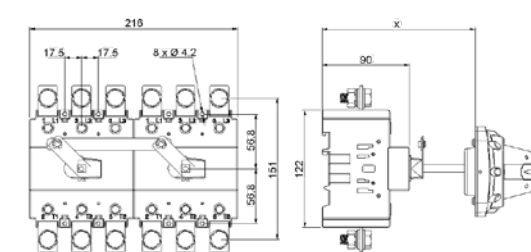
A2-A2 Size (6 pole 100A-160A) - x1 = 121-166 | x2= n/a | x3 = 121-235



A3 Size (200A) - x1 = 121-166 | x2= n/a | x3 = 121-235



A3 Size (6 pole 200A) - x1 = 121-166 | x2= n/a | x3 = 121-235

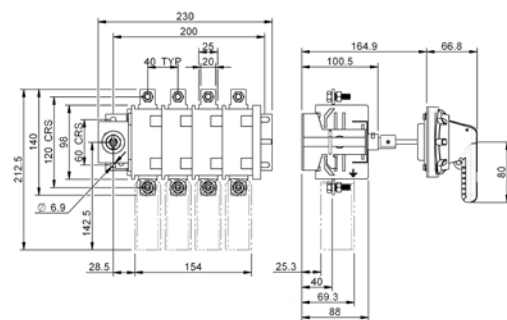


Compact Range

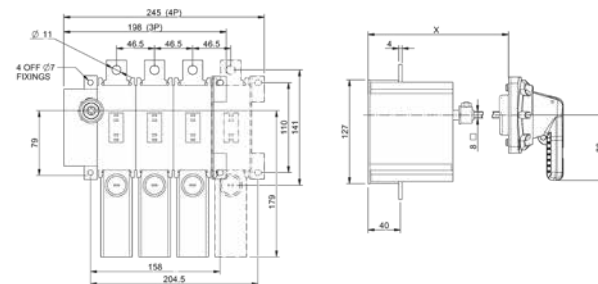
x1 = Min. & Max. (mm) (without extension shaft)
 x2 = Min. & Max. (mm) with 100mm shaft extension
 x3 = Min. & Max. (mm) with 200mm shaft extension

Standard Range

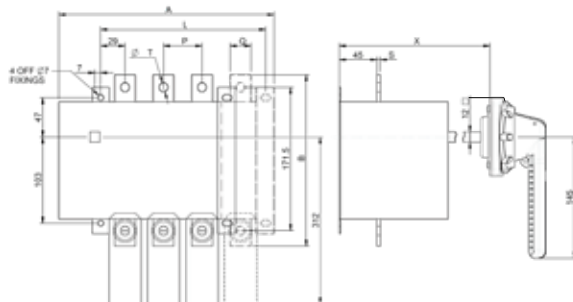
B1 Size (100A- 160A) - x3 = 156-251 | x4= 156-351



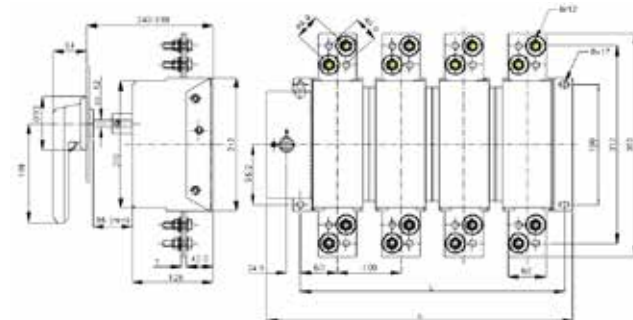
B2 Size (200A- 250A) - x3 = 158-254 | x4= 158-354



B3 Size (315A- 800A) - x3 = 163-257 | x4= 163-357



B4 Size (1000A-1250A)



Rating	A		B	L		P	Q	S	T
	3P	4P		3P	4P				
400A	211	257	205	151	197	46	25	4	11
600A	244	306	223	183	245	62	40	5	13.5
800A	260	330	223	199	269	70	40	5	13.5

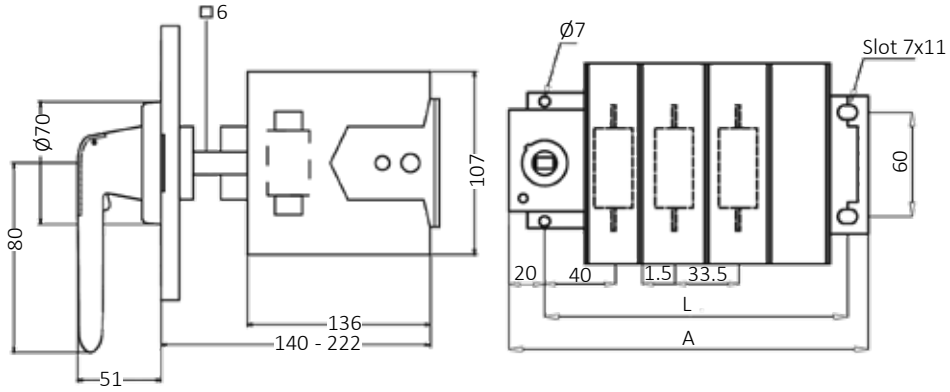
Rating	A		L		T
	3P	4P	3P	4P	
1000A	383	483	318	418	8
1250A	383	483	318	418	8

Standard Range

x3 = Min. & Max. (mm) with 200mm shaft extension
 x4 = Min. & Max. (mm) with 400mm shaft extension

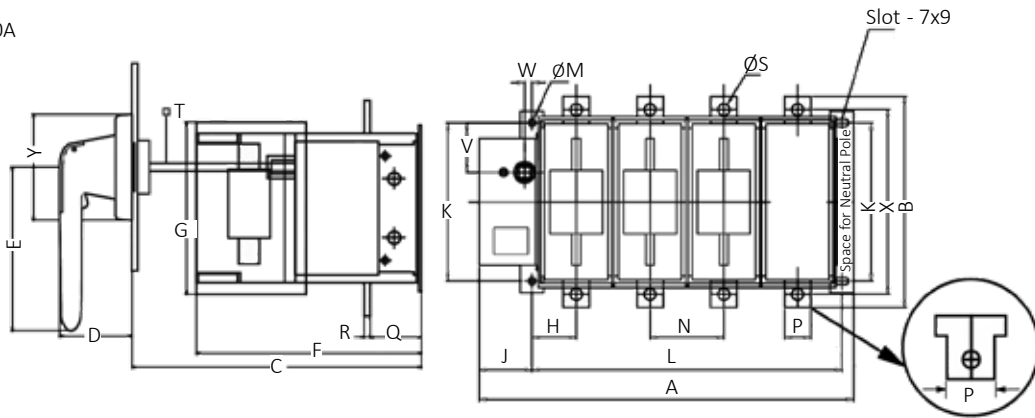
Fuse Combination Range

32A - 63A



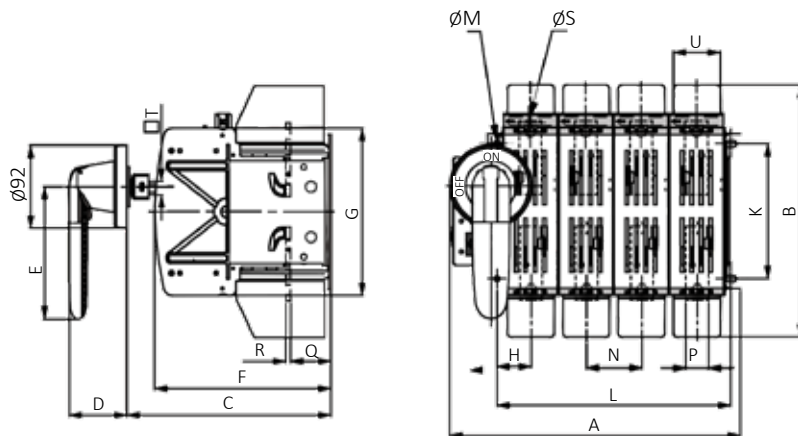
Format	A	L
3P+NL	168	138
3P+N	201	171
Frame Size D1		

100A - 160A



Rating (A)	A		B	C	D	E	F	G	H	J	K	L		M	N	P	Q	R	S	T	V	W	X	Y	Frame Size
	3P&NL	3P&N										3P&NL	3P&N												
100-125	190	230	142	135-225	67	80	134	98	44.5	20	60	160	195	7	40	20	40	2	9	6	30	0	122	93	D2
160	212	260	142	135-225	67	80	134	98	44.5	20	60	182	230	7	48	20	40	3	9	6	30	0	122	93	D3

200A - 630A



Rating (A)	A		B	C	D	E	F	G	H	K	L		M	N	P	Q	R	S	T	U	Frame Size
	3P&NL	3P&N									3P&NL	3P&N									
200-250	261	323	280	230-310	67	145	196	186	37	150	198	260	7	62	25	45	5	11	12	52	D4
315-400	285	355	280	230-310	67	145	196	186	37	150	222	292	7	70	25	45	5	11	12	52	D5
630	360	440	444	245-305	67	145	231	250	60	190	340	440	9	80	40	40	6	13	12	61	D6

PUSH BUTTON COMPONENTS

Craig & Derricott have a wealth of pushbutton and indicator components to suit a wide range of applications.

For many years the '32 Series' has been the byword for heavy duty applications and many manufacturers standardise on this range. Although well established Craig & Derricott are still developing products to compliment the range.

When more conventional products are required Craig & Derricott can offer several different ranges with a comprehensive list of features and variations behind each one.



All of the ranges are covered by one or more of the following international approvals:-

Germany



Denmark



Canada



Sweden



Netherlands



Det Norske Veritas



ENEC



Norway



USA



Finland



China



UL


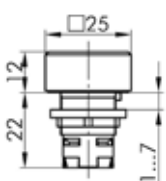

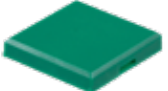

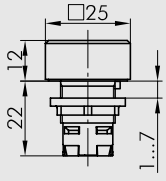
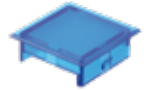



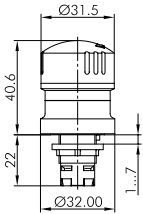

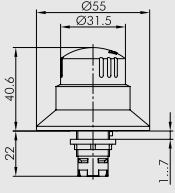

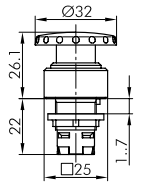

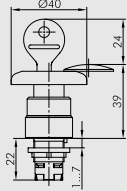


Europe



16 Series

The '16 Series' offers the user components with an attractive appearance and a small panel footprint. The square format allows simple alignment and the facility to butt components together to form very a compact multi-unit assembly. Although small in size, they are designed to withstand the rigours of normal industrial applications.

Image	Dims	Description	Cat. No.
		Pushbutton Actuator 25mm x 25mm Momentary action. Body Colour Black Charcoal (Contact block options AF, AT, AT2, ATL & ATL2) Requires flat colour cap & inscription plate	QXT QXTDG
		Flat Colour Caps Non transparent- no inscriptions WS - White, RT - Red, GN - Green, GB - Yellow, SW - Black, BL - Blue. (Add code letters to cat no e.g. T25FGRT)	T25FG...
		Flat Colour Caps Transparent- no inscriptions WS - White, RT - Red, GN - Green, GB - Yellow, SW - Black, BL - Blue, KL - Clear (Add code letters to cat no e.g. T25FRT)	T25F...
		Pilot Lamp 25mm x 25mm Colour Black Charcoal (Contact block options AL5) Requires flat lens & inscription plate	QXN QXNDG
		Pilot Lamp Lenses- Flat WS - Opal White, RT - Red, GN- Green, GB - Yellow, BL - Blue, KL - Clear (Add colour code to cat no e.g. KF25GB) For use with QXN..	KF25...
		Blank Inscription Plate	BSQXU
		Printed Inscription Plate Hundreds of standard printed images and text available, Speak to our sales department for details.	BSQX...
		Printed Inscription Plate Printed to customers own requirements. Suitable for QXT...	BSQXB
		Emergency Stop Actuator with Position Indicator Stayput twist-to-rest. Red button, yellow surround and green position indicator. (Contact block options AT & AT2) In accordance with EN 60068, EN ISO 13850, EN 60947-5-1 and EN 60947-5-5.	RXUV
		As the previous item but with anti-lock collar. Red actuator & yellow body, twist-to-reset action. (Contact block options AT & AT2)	RXBV
		Stop actuator 25mm x 25mm Red actuator, momentary action. Body Colour Black Charcoal (Contact block options AT & AT2)	QXS QXSDG
		Emergency Stop actuator 25mm x 25mm Red actuator, stayput key reset action. Body Colour Black Charcoal (Contact block options AT & AT2) Replacement key- ES3A	QXVSCH QXVSCHDG

22 Series

Wherever the design of a control panel requires robustness, long life and reliability, then the '22 Series' components meet the need. As well as looking elegant in their own right, they are often used as replacement items where other, less able components, have failed.

With a standard 22mm fixing, the range of actuators and contact block options lend themselves to a wide variety of applications- processing and manufacturing machines, shipbuilding, rail rolling stock, cranes & hoists, elevators and many other electromechanical applications.


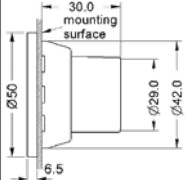

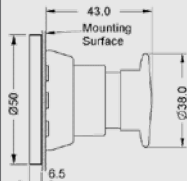

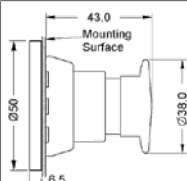

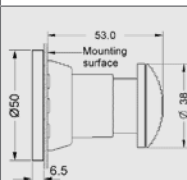

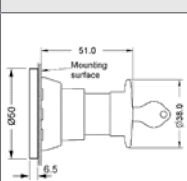

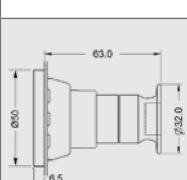
Manufactured using high quality materials the actuators are available in black, charcoal or chromed metallic front bezel.

Image	Dims	Description	Cat. No.
		Emergency Stop Actuator - IP65 with position indicator*. Stayput- twist-to-reset (In accordance with EN 60068, EN ISO 13850, EN 60947-5-1 and EN 60947-5-5) Use holder MHR_3 only	QRUV
		Emergency Stop Actuator for Hygiene and Pressure Washer Applications- IP69K No position indicator. Stayput- twist-to-reset (In accordance with EN 60068, EN ISO 13850, EN 60947-5-1 and EN 60947-5-5) Use holder MHR_3 only	QRUPV
		Emergency Stop Actuator - IP65 with position indicator* and yellow anti-lock collar. Stayput- Key reset (In accordance with EN 60068, EN ISO 13850, EN 60947-5-1 and EN 60947-5-5) Use holder MHR_3 only	QRBUVSE
		Pushbutton head with illuminated flat colour cap.- IP65. Momentary action. Transparent colour caps. RT- Red, GN- Green, GB- Yellow, KL- Clear, BL- Blue. (Add colour code to cat no e.g. DXRTCGB) Bezel Colour Satin chrome effect Grey Bright chrome effect Black	DXRTLC... DXRTLK... DXRTLTM... DXRTLS...
		Pushbutton head with flat colour cap (Non illuminated)- IP65. Spring return action. Colour cap- no inscription. WS- White, RT- Red, GN- Green, GB- Yellow, SW- Black, BL- Blue. (Add colour code to cat no e.g. DXRTCGB) Bezel Colour Satin chrome effect Grey Bright chrome effect Black	DXRTC... DXRTG... DXRTM... DXRTS...
		Pilot Lamp- IP65 supplied with a transparent domed lens. RT- Red, GN- Green, GB- Yellow, KL- Clear, BL- Blue. (Add colour code to cat no e.g. DXRNBL) Bezel Colour Satin chrome effect Grey Bright chrome effect Black	DXRNKC... DXRNKG... DXRNKM... DXRNKS...
		Blank Inscription Plate. Suitable for DXRTL.... range above.	BSKU
		Printed Inscription Plate. Hundreds of standard printed images and text available, Contact our sales for details. Suitable for DXRTL.... range above.	BSK....
		Printed Inscription Plate. Printed to customers own requirements. Suitable for DXRTL.... range above.	BSKB

32 Series

The '32 Series' has long been recognised as being the pinnacle of strength and reliability in control gear components. All actuator bodies and locking rings are produced in Aluminium, with a silver anodised finish. The range incorporates all of the options required in today's safety conscious world, and all of the various items bring with them the ultimate in reliability.

There are several options suitable for Emergency Stop use, and to match the quality of the tactile components, the '32 Series' includes contact blocks with a generous rating which meet the latest safety requirements.


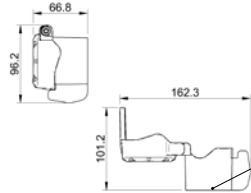

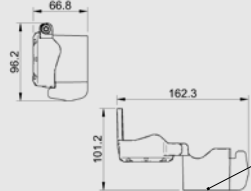

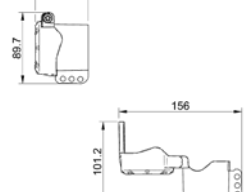

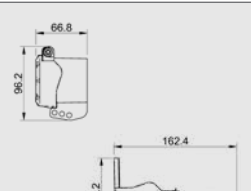

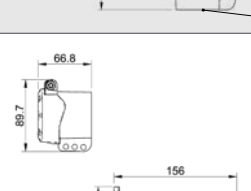

Image	Dims	Description	Cat. No.
		Full guard actuator- momentary. Moulded colour cap: Red Green Yellow Blue Black White	PR/SCH PG/SCH PY/SCH PZ/SCH PB/SCH PW/SCH
		Mushroom actuator Ø38- momentary. Moulded button. Actuator colour: Red Black Green Yellow Blue	PMR/SCH PMB/SCH PMG/SCH PMY/SCH PMZ/SCH
		Mushroom actuator Ø38 - stayput, pull-to-reset moulded button. Actuator colour: Red* Black Green Yellow Blue	PMRH/SCH PMBH/SCH PMGH/SCH PMYH/SCH PMZH/SCH
		Mushroom actuator Ø38- stayput, twist-to-reset. Moulded free to turn button with rear reset ring. Actuator colour: Red*	PMR-U59/SCH
		Mushroom actuator Ø38 - stayput, Key reset** die-cast button. Actuator colour: Red* Black	PMRA-U19 /SCH PMBA-U19 /SCH
		Mushroom actuator Ø32 - stayput, pull-to-reset die-cast button. Actuator colour: Red* (Designed specifically to work beneath flap covers to allow access for resetting)	PMARH- U51/ SCH

*Suitable for 'Emergency Stop' use.

** 2 x DC800 series keys are supplied with each actuator as standard. Differs are available to special order.

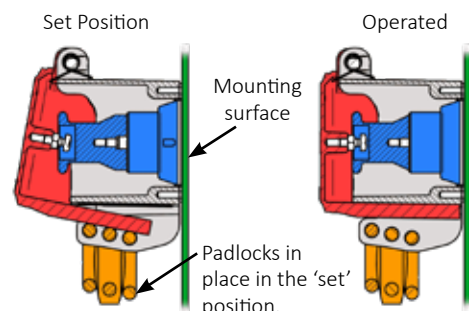
32 Series Accessories

The user can fit up to five 16A rated contact blocks on the back of an actuator, giving flexibility without rating constraints. The range incorporates many unique features and accessories, an example of which are the very popular die-cast flap covers. These are supplied in several variations to suit different levels of security and function. The '32 Series' offers the user flexibility with strength.

Image	Dims	Description	Cat. No.
		Non-lockable Die-Cast Aluminium Flap Cover. Grey body with Red flap. Used to prevent accidental operation of a pushbutton or similar devices. Spring loaded so the flap is kept closed. 4 off M3.5 fixings on $\varnothing 49$ PCD	U260-R
		Non-lockable Die-Cast Aluminium Flap Cover. Grey body with Red flap. Used to prevent accidental operation of a pushbutton or similar devices, cover is not spring loaded. 4 off M3.5 fixings on $\varnothing 49$ PCD	U270-R
		Padlockable Die-Cast Aluminium Flap Cover. Grey body with Red flap (Other colours available to special order). Used to prevent unauthorised access to the actuator. Holes in the flap cover body are available to place up to three padlocks which will lock the cover closed. The cover cannot be opened until the last padlock has been removed. 4 off M3.5 fixings on $\varnothing 49$ PCD	U280-R
		Padlockable Die-Cast Aluminium Flap Cover. Grey body with Red flap (Other colours available to special order). Used to prevent unauthorised resetting of stayput actuators. The flap is depressed to actuate the unit with the padlock(s) in position. The actuator remains in the operated position until access is allowed by removal of the padlock(s). 4 off M3.5 fixings on $\varnothing 49$ PCD	U290-R
		Padlockable Die-Cast Aluminium Flap Cover. Grey body with Red flap (Other colours available to special order). Used as a hold button. The cover is depressed to operate the pushbutton, and it is manually held down whilst the padlock(s) are inserted. The pushbutton remains depressed until the padlock(s) are removed. 4 off M3.5 fixings on $\varnothing 49$ PCD	U310-R
		Flap Cover Engraving 'STOP' 'EMERGENCY STOP' 'EMERGENCY TRIP' 'EMERGENCY POWER OFF' 'PRESS FIRMLY FOR EMERGENCY STOP' Example:- U290-R0001 Other engravings can be accommodated, please contact our sales to discuss your requirements.	-0001 -0002 -0010 -0016 -0129


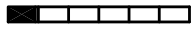

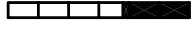
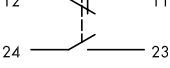

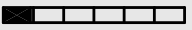

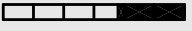
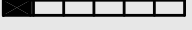

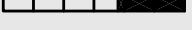
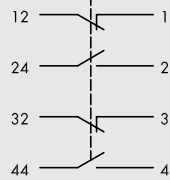


The U290 & U310 flaps are fitted with a set screw which depresses the actuator beneath the flap.



ET Series

For use with the '22' Series Actuators. The 'ET' Block provides N/O + N/C contacts in one assembly.

Image	Contact Details	Description	Cat. No.
	<p>0 1 2 3 4 5 6</p> <p>12/11  </p> <p>24/23 </p> <p></p>	Contact Block, Momentary 1 N/C + 1 N/O	ETR
	<p>0 1 2 3 4 5 6</p> <p>12/11  </p> <p>24/23 </p> <p>32/31  </p> <p>44/43 </p> <p></p>	Contact Block, Momentary 2 N/C + 2 N/O	ETR2

Other contact blocks are available within this range, please contact our Sales staff for further details.

Approvals



GHOST R

UkrSepro


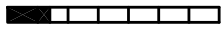

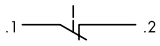


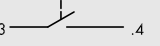


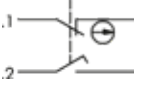






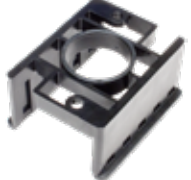
Technical Specification

Electrical Ratings- BS EN 60947-5-1

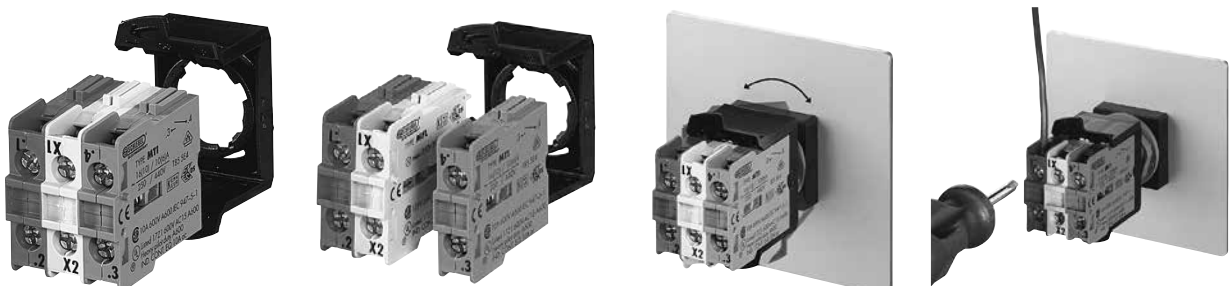
Application		
Storage Temperature	-50°C up to +70°C	
Operating Temperature	-30°C up to +70°C	For non-illuminated items
	-30°C up to +55°C	Using incandescent lamps
	-30°C up to +65°C	Using LED's
Operating Travel	6mm	
Connections	Screw connections for 2 x 2.5mm ² , finger protected.	
Lamp Type/Socket	Incandescent lamps, LED's / BA9s	
Contact Material	Silver-nickel alloy (Ag / Ni). Gold Plated Version available upon request.	
Mechanical Life	1 million operations	
Electrical Life	1 million cycles at rated load	
Min. Current / Voltage	1 mA / 5V (Under laboratory conditions)	
Contact Resistance (New State)	< 20mΩ	
Bounce Time	NC: < 10 mS / NO: < 10 mS	
Positive Opening N/C Contact	To EN 60947-5-1 appendix K	
Application	a.c.	d.c.
Utilisation Category	AC15	DC13
Rated Insulation Voltage (Ui)	400V	400V
Rated Operational Voltage (Ue)	400V / 250V	440V / 250V / 125V / 60V / 24V
Rated Operational Current (Ie)	3A / 5A	0.12A / 0.2A / 0.4A / 1A / 2A
Breaking Capacity	10 _{Ie}	1.1 _{Ie}
Continuous thermal current (Ith)	10A	10A
Application	Electrical Data- Pilot Lamp Bodies	
Lamp Socket	BA9s	
Lamp Voltage	Max. 250V (CSA max. 125V)	
Lamp Output	Max. 2W	
Definition	X1.. anode, X2.. cathode.	

MT Series

For use with the '22' and '32' Series Actuators. The '22 and 32 Series' components share common modules. All items are tested and approved to the latest international standards and offer excellent performance with extended life.

Image	Contact Details	Description	Cat. No.
	<p>0 1 2 3 4 5 6 7</p> <p>.1/.2  </p> <p></p>	Modular Contact Block, Momentary. 1 N/C	MTO
	<p>0 1 2 3 4 5 6 7</p> <p>.3/.4 </p> <p></p>	Modular Contact Block, Momentary. 1 N/O	MTI
	<p>-3 -2 -1 0 1 2 3 4 5 6 7</p> <p>.1/.2 </p> <p></p>	Modular Contact Block, Momentary, for Emergency Stop Actuators. 1 N/C safety contact switching off in an emergency and 1 N/C series contact that opens should the contact block become detached from the actuator.	MTOSFE
	<p>X1  X2</p>	Lamp Module BA9s Max. 250V 2W	ML
	<p>X1  X2</p>	Latching Module- BA9s When used as the centre element in the module holder, it provides a maintained unit with the adjacent momentary type modules. Max. 250V 2W	MFL
		Holder for 3 Modules. Bayonet fitting on actuator. For '22 Series' only	MHR_3
		Holder for 5 Modules. Bayonet fitting on actuator. N.B. Not suitable for Emergency Stop use For '22 Series' only	MHR_5
		Holder for 5 Modules. Screw fitting on actuator. For '32 Series' only	MHR-5C

Other contact blocks and accessories are available within this range, please contact our Sales staff for further details.





GHOST R



Technical Specification

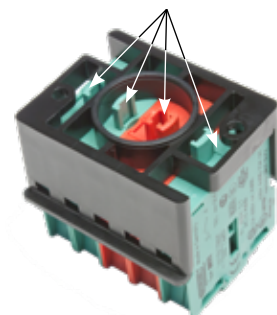
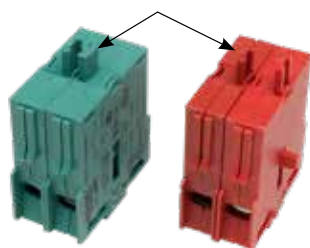
Electrical Ratings- BS EN 60947-5-1

Application		
Storage Temperature	-50°C up to +85°C	
Operating Temperature	-30°C up to +85°C	For non-illuminated items
	-30°C up to +55°C	Using incandescent lamps
	-30°C up to +65°C	Using LED's
Operating Travel	6mm	
Connections	screw connections for 2 x 2.5mm ² , IP2X.	
Lamp Type/Socket	incandescent lamps, LED's / BA9s	
Contact Material	silver-nickel alloy (Ag/Ni). Gold Plated Version available upon request.	
Mechanical Life	1 million operations	
Electrical Life	1 million cycles at rated load	
Min. Current / Voltage	1 mA / 5V (Under laboratory conditions)	
Contact Resistance (New State)	< 20mΩ	
Bounce Time	< 10 mS	
Positive Opening N/C Contact	to EN 60947-5-1 appendix K	
Application	a.c.	d.c.
Utilisation Category	AC15 A600	DC13 Q600
Rated Insulation Voltage (Ui)	600V	600V
Rated Operational Voltage (Ue)	250V/440V	440V / 250V /125V / 60V / 24V
Rated Operational Current (Ie)	3A/1.6A	0.12A / 0.2A / 0.4A / 1A / 2A
Breaking Capacity	10 _{Ie}	1.1 _{Ie}
Continuous thermal current (Ith)	16A	16A
Application		
Electrical Data- Pilot Lamp Bodies		
Lamp Socket	BA9s	
Lamp Voltage	Max. 250V (CSA max. 125V)	
Lamp Output	Max. 2W	
Definition	X1.. anode, X2.. cathode.	

1. Up to 5 blocks in any combination can be accommodated.

2. Blocks can be reversed to suit the positions in the holder

3. When fitting blocks in the holder it is important that the actuators are free to move - reverse blocks as necessary. Ensure that all the blocks are fitted correctly by pressing any actuator and checking that all the other actuators move in unison.



A Series

For use with '16' Series Actuators.


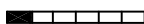
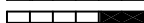
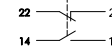
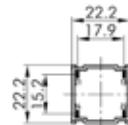
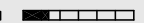


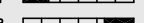
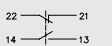
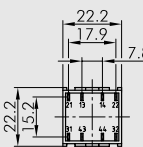

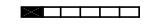
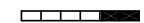
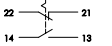
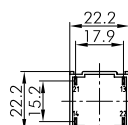


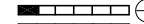
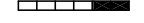
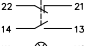
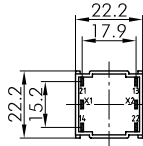
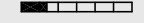
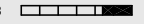
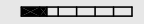
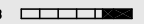
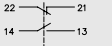
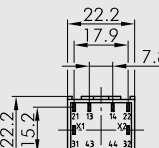






Image	Contact Details	Description	Cat. No.
	<p>AT</p> <p>0 1 2 3 4 5 6</p> <p>22/21  22 21</p> <p>14/13  14 13</p>  	Momentary action. 1 N/O + 1 N/C	AT
	<p>0 1 2 3 4 5 6</p> <p>22/21  22 21</p> <p>14/13  14 13</p> <p>32/31  32 31</p> <p>44/43  44 43</p>  	Momentary action. 2 N/O + 2 N/C	AT2
	<p>AF</p> <p>0 1 2 3 4 5 6</p> <p>22/21  22 21</p> <p>14/13  14 13</p>  	Maintained action. 1 N/O + 1 N/C	AF
		Lampholder. Faston terminals 2.8 x 0.8mm Lampholder T5,5K	AL5
	<p>0 1 2 3 4 5 6</p> <p>22/21  22 21</p> <p>14/13  14 13</p>  	Illuminated- Momentary. 1 N/C + 1 N/O	ATL
	<p>0 1 2 3 4 5 6</p> <p>22/21  22 21</p> <p>14/13  14 13</p> <p>32/31  32 31</p> <p>44/43  44 43</p>  	Illuminated- Momentary. 2 N/C + 2 N/O	ATL2
<p>'16 Series'</p> 		Incandescent Lamps- T5,5K fitting 6V / 1.2W (200mA) 12V / 1.2W (100mA) 24V / 1.2W (50mA) 30V / 1.2W (40mA) 36V / 1.2W (35mA) 48V / 1.2W (25mA) 60V / 1.2W (20mA)	T5,5K-6V T5,5K-12V T5,5K-24V T5,5K-30V T5,5K-36V T5,5K-48V T5,5K-60V
<p>'16 Series'</p> 		Ultra-Bright LED's- T5,5K fitting with integrated series resistor and single-wave rectifier. 24V AC/DC (7/14mA) Blue Green Red White Yellow	L5,5K24UB L5,5K24UG L5,5K24UR L5,5K24UW L5,5K24UY

Image	Contact Details	Description	Cat. No.
		Incandescent Lamps- BA9s fitting 6V / 1.8W (300mA) 12V / 2.0W (166mA) 24V / 2.0W (80mA) 48V / 2.0W (40mA) 60V / 1.2W (20mA) 110V-130V / 2.0W (18mA)	FZR9-6 FZR9-12 FZR9-24 FZR9-48 FZR9-60-1 FZR9-130
		Ultra-Bright LED's - BA9s fitting with integrated single-wave rectifier for 230V a.c., 3mA Blue Green Red White Yellow	LD9-230UB LD9-230UG LD9-230UR LD9-230UW LD9-230UY
		Tightening Tool '16 Series' '22 Series'	S16 S22
		Universal Lens Remover	USK

Other contact blocks are available within this range, please contact our Sales staff for further details.

Approvals



GHOST R



UkrSepro

NV

Technical Specification

Electrical Ratings- BS EN 60947-5-1

Application		
Storage Temperature	-50°C up to +85°C	
Operating Temperature	-30°C up to +70°C	For non-illuminated items
	-30°C up to +55°C	Using incandescent lamps
	-30°C up to +65°C	Using LED's
Protection Class	II	
Connections	Faston terminals 2.8 x 0.8mm	
Lamp Type/Socket	T5, 5K	
Contact Material	silver-nickel alloy (Ag/Ni). Gold Plated Version available upon request.	
Bounce Time	NC: < 10 mS / NO: < 10 mS	
Positive Opening N/C Contact	to EN 60947-5-1 appendix K	
Application	a.c.	d.c.
Utilisation Category	AC15 A300	DC13 Q300
Rated Insulation Voltage (Ui)	250V	300V
Rated Operational Voltage (Ue)	250V	250V / 125V / 60V / 24V
Rated Operational Current (Ie)	3A	0.2A / 0.4A / 1A / 2A
Breaking Capacity	10Ie	1.1Ie
Continuous thermal current (Ith)	6A	6A
Contact Resistance (New State)	< 20mΩ	
Application	Electrical Data- Pilot Lamp Bodies	
Lamp Socket	T5, 5K	
Lamp Voltage	Max. 60V	
Lamp Output	Max. 2W	
Definition	X1.. anode, X2.. cathode.	

FOOTSWITCHES

Linemaster has been at the forefront of footswitch design and manufacture since the 1950's and the range and quality of their products is second to none. From heavy to light duty, traditional to wireless, Linemaster foot controls are widely recognised as being some of the best in the world.

Linemaster can claim more than 550 catalogued products but it has the capacity to design and develop bespoke applications that makes the company so unique. By providing a 'third' hand, footswitches are indispensable across so many applications it's no wonder that Linemaster provide foot controls to some of the worlds largest OEM's.

Should you require any further information regarding Linemaster products please visit our website or give our sales staff a call.



Two examples of IR wireless footswitch assemblies

A cross section of typical industrial applications would be:-

- Adhesive Dispensers
- Abrasive Blasters
- Packaging Equipment
- Conveyors
- Material Handling
- Scissor lifts
- Communications Equipment
- Lighting
- Engine Brake
- Alarms/Security
- Emergency Vehicles (Siren)
- Degreasers
- Metal Working Machinery
- Electric Vehicles
- Farm Equipment
- Engraving Machinery
- Riveting Machines
- Soldering Machinery
- Welding Machines ...

BESPOKE PRODUCTS

Craig & Derricott offer a bespoke and special product service known as mi-switch, enabling customers to specify exact requirements which can be made to order.

Simply call our customer services team on +44 (0)1543 375 541 to discuss your requirements today.





Craig & Derricott Ltd
46 Hall Lane
Walsall Wood
Walsall
West Midlands
WS9 9DP

t: +44(0)1543 375541
e: sales@craigandderricott.com

www.craigandderricott.com

