



# INDUSTRIAL SWITCHGEAR & CONTROL

Ensure the safety and reliability of your electrical systems with our range of industrial switchgear & motor control. Our products are designed to provide robust protection against overloads and short circuits, safeguarding your equipment and maintaining continuous operation.

**ACDC**  
—  **DYNAMICS**

THINK ELECTRICAL

# ELECTRIC MOTOR / PUMP PROTECTION RELAYS



TE01



TE02/TE03



## Pump and Motor Protection / Phase Angle Relays

### Specifications

Supply Voltage	230VAC ±20% Single phase 400VAC or 525VAC ±20% 3 phase 415VAC ±20% 3 phase (TE02/TE03)
Power Consumption	2VA
Calibration	Manual or Automatic (Model dependant)
Dry Trip Level	10% of calibrated phase angle / current 2s delay
Dry Restart Delay	15 minutes to 5 hours adjustable
Output Relay	SPDT 250VAC/10A
Voltage Trip Level	10% of calibrated voltage, 2 sec delay (TE02/TE03)
Current Trip Level	20% of calibrated current, 1 sec delay (TE02/TE03)
Rapid Start Cycle	3 per 15 minutes maximum (TE03 only)

### LED Status Indication TE02/TE03

Green	Amber	Red	Condition
ON	OFF	OFF	Normal Pumping
FLASH	OFF	OFF	Dry-timing or phase failure/reversal
OFF	ON	OFF	Supply Voltage Low/High
OFF	FLASH	OFF	Rapid Cycle
OFF	OFF	ON	Motor Overload or Phase Failure
ON	ON	ON	TE02/3 Uncalibrated
FLASH	FLASH	FLASH	TE02/3 Calibrating
OFF	OFF	OFF	Unable to Calibrate

### Selection Guide

Code	TE01*	TE02*	TE03*
11 Pin Plug In	•	•	•
Running dry- Under load blocked in/outlet	•	•	•
Overcurrent		Auto	Auto
Phase Failure / Reversal		•	•
Over / Under voltage		•	•
Star/Delta or Soft Start	•**	•	•
Locked Rotor		•	•
Shunt Required	•		
Rapid pump start protection			
Cut-out over 12 starts/hour			•
LED Status Indication			•
Calibration	Manual	Auto	Auto
Tank Control (float switch)			•

\*Add to Code: **230V** (230VAC), **400V** (400VAC), **415V** (415VAC), **525V** (525VAC) \*\*TE01/S version only

### Accessories

Code	Description
TE01 SHUNT R	Spare Red Shunt
TE01 SHUNT W	Spare White Shunt

## Current Transformer Selection Chart for TE Series

	230VAC				400VAC											
	TE01	PW155	PW205	PW255	TE02/03	PW155	PW205	PW305	PW405	PW405	DS-505	DS-755	DS-1005	DS-1005	DS-1055	
HP	0.36-1.1	1.5	2	3	0.5-1.5	2-7.5	10	15	20	25	30	40	50	60	75	
Kw	0.25-0.75	1.1	1.5	2.2	0.37-1.1	1.5-5.5	7.5	11	15	18.5	22	30	37	45	55	
Shunt	White				Red	White										

# ELECTRONIC MOTOR & OVERLOAD PROTECTION RELAYS



## Phase Angle Motor Protection Relays

Mainly used for borehole protection with liquid level control tank filling. DIN mount.

Code	Description	Max. Current Continuous
MP820/230VAC-SP	Single phase motor protection relay up to 1.1kW	* 15A
MP825/230VAC-SP	Single phase motor protection relay above 1.1kW	* 15A
MP830/230VAC-SP	Three phase motor protection relay up to 3.7kW	* 12A
MP830/400VAC-SP	Three phase motor protection relay up to 3.7kW	* 12A
MP830/525VAC-SP	Three phase motor protection relay up to 3.7kW	* 12A
MP835/230VAC-SP	Three phase motor protection relay up to 3.7kW	* 12A
MP835/400VAC-SP	Three phase motor protection relay up to 3.7kW	* 12A
MP835/525VAC-SP	Three phase motor protection relay up to 3.7kW	* 12A

\* For higher load current use 5 Amp CT to achieve accurate calibration

### Single Phase Features

- MP820:**
- Direct in-line current sensing of motor, up to 1.1kW
  - Auto calibration of over/under current and voltage
  - Start up delay (3 seconds standard)
  - Adjustable reset time 15 mins to 24 hrs
  - Latching on overload conditions
  - Liquid Level Control (50kΩ)
  - Reset Lock out, Max 3 reset attempts in 15 minutes
- MP825:** As for MP820 plus
- Latching of over and under load conditions
  - Manual adjustment of under load sensitivity (after auto calibration)

### Three Phase Features

- MP830:**
- Direct in-line current sensing of motor, up to 3.7kW
  - Auto calibration of over/under current and voltage
  - Start up delay (3 seconds standard)
  - Adjustable reset time 15 mins to 24 hrs
  - Latching of over load conditions
  - Liquid Level Control (50kΩ)
  - Reset Lock out, Max 3 reset attempts in 15 minutes
  - Phase sequence/phase failure detection
- MP835:** As for MP830 plus
- Latching of over and under load conditions
  - Manual adjustment of under load sensitivity (after auto calibration)

## ELECTRIC MOTOR / PUMP PROTECTION RELAYS

**Motor Scope Pump Protection Relay** - Protection of AC motors and their driven systems can be achieved by limiting the maximum and minimum consumed power. Built-in Bluetooth monitoring and control.



TRIO



Easy to use app with time setting for running and stopping of pumps. Motor status and faults can be seen via the app and downloaded.

Features	UNO	TRIO	NEW SUPRA R3	NEW SUPRA R3B	NEW SUPRA R3C
Description	1 Phase 230V 0.37-2.2kW	3 Phase 400V 0.37k-5.6kW	3 Phase 400V 5.6-37kW	3 Phase 525V 5.6-37kW	3 Phase Industrial ≤1000V
Running dry, Underload, Blocked inlet / outlet	•	•	•	•	•
Over Current	•	•	•	•	•
Phase failure Phase reversal	-	•	•	•	•
Phase Imbalance	-	•	•	•	•
Over / Under voltage	•	•	•	•	•
Star delta and Soft starter connection	-	•	•	•	•
Tank control (float / Pressure switch) 5VDC	•	•	•	•	•
Locked Rotor	•	•	•	•	•
CT250/1 Supplied with unit	-	-	•	•	•
Bluetooth NCS Toolbox App	•	•	•	•	•
WiFi + Modbus over WiFi Built-in	-	-	•	•	•

### Electronic Overload Protection Relays



CSMPA-60-T

Code	Current Range	OL	PL	LR	PU	PR	STL	UL	ALT	GF	Trip Type	Disp Type	Control Voltage
CSMPA-60-T 6A	0.5-6A	•	•	-	-	-	-	-	-	-	D	LED	230VAC
CSMPA-60-T 60A	5-60A	•	•	-	-	-	-	-	-	-	D	LED	230VAC
CSMPA-22-3S-5A0	0.3-1.5A	•	•	-	•	-	•	-	-	-	I	LED	230VAC
CSMPA-22-3S5A	1-5A*	•	•	-	•	-	•	-	-	-	I	LED	230VAC
CSMPA-40R 1-SA	0.3-1.5A	•	•	-	•	•	•	-	-	-	I	LED	230VAC
CSMPA-40R 5A	1-5A*	•	•	-	•	•	•	-	-	-	I	LED	230VAC
CSMPM-06-SZ	0.5-6A	•	•	•	•	•	•	•	•	•	I + D	LED	230VAC
CSMPM-60-SZ	5-60A	•	•	•	•	•	•	•	•	•	I + D	LED	230VAC

**Key:** OL: over current    PL: Phase Loss    LR: Locked Rotor    PU: Phase Unbalance    PR: Phase Reverse  
 STL: Stalling    UL: Under Current    ALT: Alert (60-110%)    GF: Ground Fault    I: Inverse Time  
 D: Definite Time    Ⓞ: Available    -: not available    LED: Red & Green    SSD: Seven Segment Display

### Accessories

Code	Description
CSMPM - 1.5M	1.5m ext cable for CSMPM - 06/60-SZ
CSMPM - 4M	4m ext cable for CSMPM - 06/60-SZ

### Ground Fault Core Balance Transformer

Code	Hole Ø
Z-CT D30	30mm
Z-CT D50	50mm
Z-CT D65	65mm
Z-CT D80	80mm

\*NOTES: CSMPA22 - models with current range 1 - 5A can be used up to 600A with suitable ratios CTs having 5A secondary, class 1 accuracy.



CSMPM-06-SZ

# ELECTRONIC MOTOR PROTECTION RELAYS



**Typical Applications:**  
Pump Motors, Compressor Motors

## LA-Series Motor Protection Relay

Current Range	Code Standard
1-10A	LA-010
5-50A	LA-050
10-100A	LA-100
25-250A	LA-250

**Features** - See Selection Chart for full list

The **LA** motor protection relay provides superior thermal overload and phase unbalance protection in applications that would traditionally have used thermal bi-metal relays. The integral three phase current transformer module block with 22mm primary apertures facilitates straight through conductor routing from the main contactor to the electric motor in the range of 1 to 250A



**Typical Applications:**  
Pump Motors, Compressor Motors  
MCC Applications

## KA-Series Motor Protection Relay

Current Range	Code KA	CT's Required
0.1-1A	KA-001	-
0.5-5A	KA-005	-
1-10A	KA-010	-
2.5-25A	KA-025	-
5-50A	KA-050	-
10-100A	KA-100	100:5
20-200A	KA-200	200:5

**Features** - See Selection Chart for full list

The **KA** relays provide a single unit solution in pumping applications that traditionally would have used a combination of thermal overload, undercurrent and restart timers. The unit provides overload, underload, single-phasing, unbalanced current, overvoltage, undervoltage and phase rotation protection.



**KD-FLED**



**KD-RDU420**

**Typical Applications:**  
Conveyor, Compressor, Crusher,  
Fan & Pump Motor Protection

## KD-Series Motor Protection Relay - Supply Volts 110/230VAC

Current Range	Code KD	CT's Required
0.5-5A	KD-005	-
1-10A	KD-010	-
2.5-25A	KD-025	-
5-50A	KD-050	-
10-100A	KD-100	100:5 Class 1 2.5VA
25-200A	KD-200	200:5 Class 1 2.5VA
40-400A	KD-400	400:5 Class 1 2.5VA

### Accessories

Code	Description
<b>KD-RDU420</b>	Door mount Parametization unit to set <b>KD</b> parameters and display values and faults. Provides IR link to MMI or Laptop.
<b>KD-FLED</b>	KD-FLED Remote display
<b>CAB0100</b>	RJ11-RJ11: Cable for connecting <b>KD-FLED/KD-RDU420</b> to relay
<b>CAB0101</b>	RJ11-RS232: Cable for connection between relay and computer
<b>CAB0016</b>	USB to serial converter

**Features** - See Selection Chart for full list

A comprehensive low voltage Electronic Motor Protection relay. These relays boast a wide range of user-selectable protection features. Easy to setup via a man-to-machine interface computer with free setup software, the user-selectable settings are a pleasure to work with. Thermal overload, earth insulation lockout, earth leakage and short-circuit protection, along with frequency and power factor measurement, are just some features which, combined with the 2000 event records and 60 last fault records, make this a worldclass product. For Protection Relay with built-in Field Bus Communication, see **KG** pg 5



# ELECTRONIC MOTOR PROTECTION RELAYS



MA-250-PM (MA-Relay)



MA-RDU-1



MA-RDU216

**Typical Applications:**  
Buffalo feeder, Shuttle Cars  
Conveyers, MCC Applications

## MA-Series Electronic Motor Protection Relays

Current Range	Code	Code c/w Coms
0.5-5A	MA-005	MA-005-*
1-10A	MA-010	MA-010-*
5-50A	MA-050	MA-050-*
10-100A	MA-100	MA-100-*
25-250A	MA-250	MA-250-*

For larger currents, use MA-005 with 3 x 5A CL1 CTs

\* Add protocol to code (PM) profibus , (MM) Modbus

### Accessories

Code	Description
MA-CAB1	Lap top cable 1m
MA-CD	CD Front End Software
MA-RDU216	Supplied with 1.5m cable and security dongle
MA-RDU-1	Door mount Fault indicator c/w1.5m cable

**Features** - See Selection Chart for full list

Used as either a standalone Electronic Motor Protection Relay or as part of an automation network process communicating to a PLC.

Thermal curves (Class 3 to 35), to IEC 60255-8, 2 x PTC 100 inputs, earth leakage, earth fault and short-circuit protection, load loss protection, over and undervoltage protection and voltage symmetry are all features available through the range 5 to 250A. The integrated C.T. block also includes the earth leakage core balance C.T.



FPR0409



FPR0401/2



BTX0005



FPR0404/5/6

**Typical Applications:**  
All Motor Driven Applications  
that require PLC Integrated  
Motor Control

## New Code Motor Protection Relay - Smart IED

Code	Current Range
FPR0650	New Code MK2 With Profibus Communication
FPR0651	New Code MK2 With Modbus Communication
FPR0436	New Code MK2 With Modbus TCP/Profinet

### Accessories

Code	Description
FPR0401	CT module 30-300A , 110-550V converter
FPR0402	CT module 10-100A , 110-550V converter
FPR0404	CT module 0.5 - 5A , 110-550V converter
FPR0405	CT module 2.5-25A, 110-550V converter
FPR0406	CT module 5-50A ,110-550V converter
FPR0407	Memory module for external settings
FPR0408	Cable from CT module to relay , 1m
FPR0409	New Elec cable from CT module to relay , 300mm
BTX0004	Core Balance CT 43mm
BTX0001	Core Balance CT 60mm
BTX0002	Core Balance CT 100mm

**Features** - See Selection Chart for full list

Micro-controller based precision instrument for three-phase induction motor protection with advanced control logic features as well as multiple motor starter control circuit configurations. The current transformers, including the core balance current transformers are external.

### Automation Features

- Timers
- Real Time Clock
- Start Control Logic
- Logic Function Blocks
- 7 Field Inputs
- Motor Parameter Calculator
- 4 Programmable Outputs
- 3 Phase Recorder
- Multiple Comms Protocols
- On Board Simulator for Training / Commissioning

### Management Features

- Power Factor Measurement
- Power Consumption Measurement
- 35 Last Fault Records
- Statistical Data
- 1400 Event Records

## ELECTRONIC MOTOR PROTECTION RELAYS



**Typical Applications:**  
Feeder Protection, Motor Protection  
with advanced reporting,  
Underground applications

### KG-Series Electronic Motor Protection Relay - Supply Volts 110/230VAC

Current Range	Code (Modbus & Bluetooth)	CT's Required
0.5-5A	<b>KG-005</b>	Internal
1-10A	<b>KG-010</b>	Internal
2.5-25A	<b>KG-025</b>	Internal
5-50A	<b>KG-050</b>	Internal
10-100A	<b>KG-100</b>	100:5 Class 1 2.5VA

**Features** - See Selection Chart for full feature list

The **KG** relay is a Power Quality Monitoring and Protection Relay with individual configurable trip settings from 2nd to 31st harmonic levels as well as separate % THD on both Voltage and current levels.

The **KG** can be configured as a low Voltage 3 phase Feeder or Motor Protection Relay with integral starter protection and control logic. A Smartphone Application for Bluetooth LE enables communication through closed flameproof steel enclosures from 10 meters enabling monitoring and configuration. Housed in a ruggedized enclosure for high vibration applications, with integral Modbus-RTU configured as multidrop configuration using dual RJ11 sockets with patch cables to assist with quick field connection without crimping tools or specialized skillset requirements.

Communication Type	Usage
Modbus-RTU	NewElec frontend on Windows™
	SCADA communication variable baud rate (19200bps default)
	Modbus-RTU enabled HMI's
Bluetooth LE	NewElec Android app for Android OS smartphones and tablets
	Modbus-RTU protocol in Bluetooth LE for SCADA systems

### NewElec Protection Relay Selection Chart

Features	LA	KA	KD	MA	New Code	KG	Features	KD	MA	New Code	KG
Overloading Protection	✓	✓	✓	✓	✓	✓	Earth Fault	✓	✓	✓	✓
Thermal Memory	✓	✓	✓	✓	✓	✓	Earth Insulation Lockout	✓		✓	✓
Locked Rotor on Start Protection	✓	✓	✓	✓	✓	✓	Fault & Event Records	✓	✓	✓	✓
Unbalance Load Protection	✓	✓	✓	✓	✓	✓	Integrated Starter Logic			✓	✓
Phase Loss Protection	✓	✓	✓	✓	✓	✓	Field Inputs		✓	✓	✓
Latched LED Trip Indication	✓	✓	✓	✓	✓	✓	Programmable Output Contact	✓	✓	✓	✓
Overload Auto Reset Function	✓	✓	✓	✓	✓	✓	Uploadable Event and Fault Records	✓	✓	✓	✓
Earth Leakage Protection			✓	✓	✓	✓	Multi Protocol Field Bus Communications		✓	✓	✓
Short Circuit Protection			✓	✓	✓	✓	Profibus DP (DPV0)		✓		✓
Locked Rotor while Running (Jam)			✓	✓	✓	✓	Profibus DP (DPV1)			✓	✓
Load Loss (Dry Run) Protection		✓	✓	✓	✓	✓	Modbus		✓	✓	✓
4 to 20 mA Output Loop for Motor Load					✓	✓	Canbus		✓	✓	
Phase Rotation Protection		✓	✓	✓	✓	✓	Rapid reconfiguration memory module			✓	✓
MCCB / Contactor Coordinated Tripping			✓	✓	✓	✓	RTD PTC		✓	✓	
Overvoltage Protection		✓	✓	✓	✓	✓	RTD PT 100			✓	
Undervoltage Protection		✓	✓	✓	✓	✓	RTD PT 1000			✓	
Voltage Phase Symmetry		✓	✓	✓	✓	✓	Expandable I/O Module			✓	✓
Restart Timer for Load Loss			✓	✓	✓	✓	Door Mounted MMI	✓	✓	✓	
Starts Per Hour			✓		✓	✓	Harmonic Trip and analyse				✓
Power Factor Measurement			✓		✓	✓	Breaker failure protection				✓
Real Power Used					✓	✓	Reset logic				✓
Apparent Power Used			✓		✓	✓	Bluetooth Configuration				✓

## BOREHOLE PUMP CONTROLS



BETR3-055

### Economy Borehole Control Panel IP43 - Size: 275 x 300 x 150mm

Weatherproof steel enclosed control panels with 3 conduit entries, On-off switch, Pump protection relay with provision for float switch, CT where required, Incoming isolator, Surge protection & contactor. For features of the different protection relays, see pg 1 & 2

Motor 230V	FLC	UNO	TE03	TE03 + Ammeter
≤ 0.75kW	≤ 6A	BEUN1-015	-	-
1.1kW	8.8A	BEUN1-015	BETE1-011	BETE1A-011
1.5kW	11.8A	BEUN1-015	BETE1-015	BETE1A-015
2.2kW	17A	BEUN1-022	BETE1-022	BETE1A-022

Motor 400V	FLC	TRIO	SUPRA	TE03	TE03 + Ammeter
≤ 4.0kW	9A	BETR3-055	-	BETE3-040	BETE3A-040
≤ 5.5kW	13.2A	BETR3-055	-	BETE3-055	BETE3A-055
7.5kW	17.8A	-	BESU3-075	BETE3-075	BETE3A-075

### DOL Borehole Pump Control Panel with Motorscope Relay IP54

Fitted in IP54 steel or polycarbonate / ABS enclosure with Door-interlocked isolator, Surge protection, Contactor, Motorscope relay with protection fuses and CT. Door fitted with "POWER" on and "RUN" LED pilot-lights, Hand/Off/Auto selector switch and viewing window for Motorscope LED array. Provision for remote float switch. For features of the different protection relays, see pg 2



TRIO-SP5.6



TRIO-SP5.6/P

Pump kW	Code		Enclosure Type	400V Size (H x W x D)	525V Size (H x W x D)
	400VAC	525VAC*			
0.37 - 5.6	TRIO-SP5.6/P	-	Plastic	400 x 300 x 180	-
0.37 - 5.6	TRIO-SP5.6*	SUPRA-5-SP11	Steel	400 x 300 x 200	500 x 400 x 200
7.5 - 11	SUPRA-SP11*	SUPRA-5-SP11		400 x 300 x 200	500 x 400 x 200
15	SUPRA-SP15*	SUPRA-5-SP15		400 x 300 x 200	500 x 400 x 200
18.5	SUPRA-SP18*	SUPRA-5-SP22		500 x 400 x 200	600 x 400 x 260
22	SUPRA-SP22*	SUPRA-5-SP22		500 x 400 x 200	600 x 400 x 260
30	SUPRA-SP30*	SUPRA-5-SP30		500 x 400 x 200	600 x 400 x 260
37	SUPRA-SP37*	SUPRA-5-SP37		500 x 400 x 200	600 x 400 x 260
45	SUPRA-SP45*	SUPRA-5-SP45		600 x 400 x 260	600 x 400 x 260
55	SUPRA-SP55*	SUPRA-5-SP55		700 x 500 x 260	600 x 400 x 260
75	SUPRA-SP75*	SUPRA-5-SP75		700 x 500 x 260	700 x 500 x 260
90	-	SUPRA-5-SP90	-	-	700 x 500 x 260

\* Add -PSL to code for pressure switch lock-out facility. \* 525VAC Versions - 110V Control

### Compact Borehole DOL Starter with Motorscope Protection

With Contactor for motors up to 5.6kW @ 400V. Protection features: Event memory, dry run, locked rotor, overload, phase failure/reversal/imbalance, over/under voltage, auto calibration for easy commissioning and LED array for full status indication. Housed in compact IP56 polycarbonate enclosure. Connection for float switch.



TRIO PANEL

Code	Description	Size (H x W x D)
TRIO PANEL	Pump controller for 400V 3Ph Motors 0.37 - 5.6kW	240 x 190 x 90mm

## COMPRESSOR STARTERS



AS15

### Star-Delta Starters IP56

with on-off selector switch and provision for pressure switch connection. 415V Coils fitted.

Code	Motor kW @ 400V	Enclosure	Size (H x W x D)
AS7.5	7.5kW	Plastic	300 x 220 x 180mm
AS11	11kW	Plastic	300 x 220 x 180mm
AS15	15kW	Plastic	380 x 300 x 180mm



# BOREHOLE PUMP CONTROLS



## DOL Borehole Pump Control Panels with TE03 Pump Protection Relay

**Protection Features:** Dry run, locked rotor, overload, phase failure/reverse/imbalance, over/under voltage, LED Status indication through window. Auto calibration for ease of commissioning.

**General Features:** Supplied with an Isolator, Contactor or Soft Starter, CT (where required), Lightning Arrestors, TE03 protection relay, "Power On" and "Pump Run" LED indication lights.

**Control Options:** Standard: Hand / Off / Auto Selector Switch / Float Switch  
 LL: Hand / Off / Auto Selector Switch / Liquid Level Relay  
 U: Hand / Off / Auto Selector / 24-hour Timer

For optional extras, see below.



Pump kW	Polycarbonate Enclosure IP54			Metal Enclosure IP54		
	Float Switch*	With Liquid Level*	With Time Switch	Float Switch*	With Liquid Level*	With Time Switch

### Single Phase 230VAC DOL

0.75kW	B00S/IS/P U	B00S/IS/LL/P U	B00S/IS/U/P U	B00S/IS/S U	B00S/IS/LL/S U	B00S/IS/U/S U
1.1kW	B09S/IS/P U	B09S/IS/LL/P U	B09S/IS/U/P U	B09S/IS/S U	B09S/IS/LL/S U	B09S/IS/U/S U
1.5kW	B12S/IS/P U	B12S/IS/LL/P U	B12S/IS/U/P U	B12S/IS/S U	B12S/IS/LL/S U	B12S/IS/U/S U
2.2kW	B18S/IS/P U	B18S/IS/LL/P U	B18S/IS/U/P U	B18S/IS/S U	B18S/IS/LL/S U	B18S/IS/U/S U

### Three Phase 400VAC DOL

4kW	B09T/IS/P N	B09T/IS/LL/P N	B09T/IS/U/P N	B09T/IS/S N	B09T/IS/LL/S N	B09T/IS/U/S N
5.5kW	B12T/IS/P N	B12T/IS/LL/P N	B12T/IS/U/P N	B12T/IS/S N	B12T/IS/LL/S N	B12T/IS/U/S N
7.5kW	B18T/IS/P N	B18T/IS/LL/P N	B18T/IS/U/P N	B18T/IS/S N	B18T/IS/LL/S N	B18T/IS/U/S N
11kW	B25T/IS/P N	B25T/IS/LL/P N	B25T/IS/U/P N	B25T/IS/S N	B25T/IS/LL/S N	B25T/IS/U/S N
15kW	B32T/IS/P N	B32T/IS/LL/P N	B32T/IS/U/P N	B32T/IS/S N	B32T/IS/LL/S N	B32T/IS/U/S N
18.5kW	B40T/IS/P N	B40T/IS/LL/P N	B40T/IS/U/P N	B40T/IS/S N	B40T/IS/LL/S N	B40T/IS/U/S N
22kW	B50T/IS/P N	B50T/IS/LL/P N	B50T/IS/U/P N	B50T/IS/S N	B50T/IS/LL/S N	B50T/IS/U/S N
30kW	B65T/IS/P N	B65T/IS/LL/P N	B65T/IS/U/P N	B65T/IS/S N	B65T/IS/LL/S N	B65T/IS/U/S N

### Three Phase 400VAC Aucom EMX4e Soft Starter

5.5kW	BS05T/IS/P N	BS05T/IS/LL/P N	BS05T/IS/U/P N	BS05T/IS/S N	BS05T/IS/LL/S N	BS05T/IS/U/S N
7.5kW	BS07T/IS/P N	BS07T/IS/LL/P N	BS07T/IS/U/P N	BS07T/IS/S N	BS07T/IS/LL/S N	BS07T/IS/U/S N
11kW	BS11T/IS/P N	BS11T/IS/LL/P N	BS11T/IS/U/P N	BS11T/IS/S N	BS11T/IS/LL/S N	BS11T/IS/U/S N
15kW	BS15T/IS/P N	BS15T/IS/LL/P N	BS15T/IS/U/P N	BS15T/IS/S N	BS15T/IS/LL/S N	BS15T/IS/U/S N
18.5kW	BS18T/IS/P N	BS18T/IS/LL/P N	BS18T/IS/U/P N	BS18T/IS/S N	BS18T/IS/LL/S N	BS18T/IS/U/S N
22kW	BS22T/IS/P N	BS22T/IS/LL/P N	BS22T/IS/U/P N	BS22T/IS/S N	BS22T/IS/LL/S N	BS22T/IS/U/S N
30kW	BS30T/IS/P N	BS30T/IS/LL/P N	BS30T/IS/U/P N	BS30T/IS/S N	BS30T/IS/LL/S N	BS30T/IS/U/S N

### Optional Extras for Borehole Pump Controls

Code	Description
EFS01	Ammeter Selector Switch up to 18.5kW
EFS02	Ammeter Selector Switch 22kW+
EFS03	Voltmeter 72 x 72, c/w Fuses - IP45
EFS04	Voltmeter Selector Switch
EFS05	Running Hour Meter 48 x 48
EFS19	Ammeter 72 x 72 - IP45 up to 18,5kW
EFS20	Ammeter 72 x 72 - IP45 22kW+

\* Order Float Switch or Probes separately. See page 2.1 & 2.2 (ACDC Main Catalogue)

**Note:** When requesting a price or when ordering a starter with optional extra, please order optional extra as a separate line. Order example: 1) Borehole pump control 3 phase 5.5KW with isolator and liquid level control in a steel enclosure with running hour meter as optional extra.

Item 1: B12T/IS/LL/S N | Item 2: EFS05

Large sizes and wireless solutions available including GSM.

Contact our Panel Workshop

### Compact Borehole DOL Starter with TE03 Protection

With Contactor for motors up to 5.6kW @ 400V and 2.2kW @ 230V. Protection features: Dry run, locked rotor, overload, phase failure/reversal/imbalance, over/under voltage, auto calibration for easy commissioning and LED array for full status indication. Housed in compact IP56 polycarbonate enclosure with glands and on/off switch. Connection for float switch.

Standard - 190x140x70mm size

With Power Factor Corrector - 240x190x90mm size

Code	Rated Voltage	Motor Rating	Code	Rated Voltage	Motor Rating
TE05M	230V	Up to 0.75kW	TE05MC-03	230V	0.37kW
TE05M-1	230V	1.1-2.2kW	TE05MC-05	230V	0.55kW
TE05Q	400V	4kW	TE05MC-07	230V	0.75kW
TE05Q-1	400V	5.6kW	TE05MC-11	230V	1.1kW
TE05N	415V	4kW	TE05MC-15	230V	1.5kW
TE05N-1	415V	5.6kW	TE05MC-22	230V	2.2kW



TE05



## DOL STARTERS

### Economy DOL Starters - 3ph



### Economy DOL Starters - 1ph



For 230V Single Phase motors, 240V Coil fitted, with Pre-Wired T1-L2 Link

3 Phase kW AC3		Overload Range	DOL Starter IP65	DOL Starters with isolator IP65	DOL Starters with ammeter IP54	1 Phase kW AC3 230VAC	Overload Current Range Fitted	DOL Starter IP65 230V - 1PH
400V	525V							
0.37kW	0.37kW	0.63 - 1A	LE1-D123N305	ILE1-D123N305	ALE1-D123N305	0.37kW	2.5 - 4A	LE1-D121U308
0.55kW	0.55 - 0.75kW	1 - 1.6A	LE1-D123N306	ILE1-D123N306	ALE1-D123N306	0.55kW	4-6A	LE1-D121U310
0.75 - 1.1kW	1.1 - 1.5kW	1.6 - 2.5A	LE1-D123N307	ILE1-D123N307	ALE1-D123N307	0.75kW	4-6A	LE1-D121U310
1.5kW	2.2kW	2.5 - 4A	LE1-D123N308	ILE1-D123N308	ALE1-D123N308	1.1kW	7-10A	LE1-D121U314
2.2kW	3kW	4 - 6A	LE1-D123N310	ILE1-D123N310	ALE1-D123N310	1.5kW	9-13A	LE1-D121U316
3kW	4kW	5.5 - 8A	LE1-D123N312	ILE1-D123N312	ALE1-D123N312	2.2kW	12-18A	LE1-D181U321
4kW	5.5kW	7 - 10A	LE1-D123N314	ILE1-D123N314	ALE1-D123N314	3.0kW	17-25A	LE1-D251U322
5.5kW	7.5kW	9 - 13A	LE1-D123N316	ILE1-D123N316	ALE1-D123N316	<p><b>New wide range coil voltages</b>                      Select voltage code when ordering</p> <p><b>U</b> 240V (170-280V)  <b>N</b> 415V (352-465V)  <b>SF</b> 550V (465-605V)</p> <p>Ideal for agricultural applications to avoid nuisance dropout due to voltage fluctuations.  <b>LE1</b> in plastic enclosure  <b>BE1</b> in metal enclosure</p>		
7.5kW	11kW	12 - 18A	LE1-D183N321	ILE1-D183N321	ALE1-D183N321			
11kW	15kW	17 - 25A	LE1-D253N322	ILE1-D253N322	ALE1-D253N322			
15kW	18.5kW	23 - 32A	BE1-T3235N353	-	-			
18.5kW	22kW	30 - 40A	BE1-T4035N355	-	-			
22kW	30kW	37 - 50A	BE1-T5036N357	-	-			
30kW	37kW	48 - 65A	BE1-T6535N361	-	-			
37kW	45kW	63 - 80A	BE1-T8035N363	-	-			
45kW	55kW	80 - 93A	BE1-T9535N363	-	-			

### DOL Starters without Overload



Code	400V	525V
LE1-D123*	5.5kW	7.5kW
LE1-D183*	7.5kW	11kW
LE1-D253*	11kW	15kW
LE1-D323*	15kW	18.5kW

Coil Voltage:  
 \*SF 550V (465-605V)  
 \*U 240V (170-280V)  
 \*N 415V (352-465V)



LE1-D32



BE1-T40

### Accessories

Code	Description	Size (mm) H x W x D
LE1-D12	Enclosure c/w push buttons up to 7.5kW	165 x 88 x 139
LE1-D18	Enclosure c/w push buttons for 11kW	165 x 88 x 139
LE1-D25	Enclosure c/w push buttons for 15kW	185 x 96 x 157
LE1-D32	Enclosure c/w push buttons for 18.5kW	200 x 110 x 144
BE1-T40	Steel Enclosure c/w push buttons for 18-24kW	265 x 190 x 176
LA9-D09906	Start switch - Up to 7.5kW	-
LE1-DSBG	Green Start Button	-
LE1-DSBR	Red Stop Button	-

## DOL STARTERS & DOL REVERSING STARTERS

**DOL Starters** - Optional extras: Isolator, Ammeter and choice of **IP45** Steel Enclosure or **IP45** Polycarbonate Enclosure. Starters can be customised by adding items from the **Optional Extras** table below.

For Standard Enclosure sizes, check datasheet on ACDC website



Steel Enclosed shown with isolator & ammeter

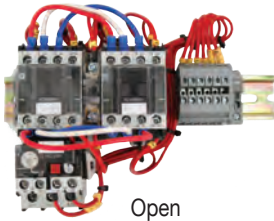
Code	Motor kW @ 400V	Motor kW @ 550V	Overload Range	With Circuit Breaker	With Isolator	With Ammeter	Enclosure Material	Coil Voltage
ELC009A	0.37kW	0.75kW	1-1.6A	/CB	/IS	/AM	/P or /S	B = 24V BT* = 24V E = 48V F = 110V FT* = 110V U = 240V UT* = 240V N = 415V SF = 550V
ELC009B	0.55-0.75kW	1.5kW	1.6-2.5A	/CB	/IS	/AM	/P or /S	
ELC009C	1.1-1.5kW	2.5kW	2.5-4A	/CB	/IS	/AM	/P or /S	
ELC009D	2.2kW	3kW	4-6A	/CB	/IS	/AM	/P or /S	
ELC009E	3.0kW	4kW	5.5-8A	/CB	/IS	/AM	/P or /S	
ELC009	4kW	5.5kW	7-10A	/CB	/IS	/AM	/S or /P	
ELC012	5.5kW	7.5kW	9-13A	/CB	/IS	/AM	/S or /P	
ELC018	7.5kW	11kW	12-18A	/CB	/IS	/AM	/S or /P	
ELC025	11kW	15kW	17-25A	/CB	/IS	/AM	/S or /P	
ELC032	15kW	18.5kW	23-32A	/CB	/IS	/AM	/S or /P	
ELC040	18.5kW	22kW	30-40A	/CB	/IS	/AM	/S	B = 24V F = 110V FT* = 110V P = 230V PT* = 230V V = 400V SF = 550V
ELC050	22kW	30kW	37-50A	/CB	/IS	/AM	/S	
ELC065	30kW	37kW	48-65A	/CB	/IS	/AM	/S	
ELC080	37kW	45kW	63-80A	/CB	/IS	/AM	/S	
ELC095	45kW	55kW	80-93A	/CB	/IS	/AM	/S	
ELC115	55kW	75kW	100-160A	/CB	/IS	/AM	/S	
ELC150	75kW	90kW	100-160A	/CB	/IS	/AM	/S	
ELC185	90kW	110kW	125-200A	/CB	/IS	/AM	/S	
ELC225	110kW	132kW	160-250A	/CB	/IS	/AM	/S	
ELC265	132kW	160kW	200-315	/CB	/IS	/AM	/S	
ELC330	160kW	220kW	250-400A	/CB	/IS	/AM	/S	
ELC400	220kW	275kW	315-500A	/CB	/IS	/AM	/S	

\* Starter c/w Control Transformer. To specify Control Transformer primary voltage add: 4 (400V), 5 (550V).

**Note:** When requesting a price or when ordering a starter with optional extra from list below, please order optional extra as a separate line. Order example:

- 1) 4kW, 400V, with Isolator, Ammeter, Hour Meter, Phase Failure monitor, Steel enclosure, 240V coil.
- Item 1: **ELC009/IS/AM/S U**
- Item 2: **EFS05**
- Item 3: **EFS18**

**DOL Reversing Starters** - Complete with mechanical and electrical interlocks and thermal overload relay. Steel Enclosure **IP65** or Polycarbonate Enclosure **IP56**. Enclosed starters can be customised by adding items from **Optional Extras** table below.



Open



Plastic Enclosed

Open Starter	Enclosed Starter	Motor kW @ 400VAC	Motor kW @ 550VAC	Overload Range	Standard Options		Enclosure Material	Coil Voltage
					Isolator	Ammeter		
RC009A	ERC009A	0.37kW	0.55kW	1-1.6A	/IS	/AM	/P	B = 24V BT* = 24V F = 110V FT* = 110V U = 240V UT* = 240V N = 415V SF = 550V
RC009B	ERC009B	0.55-0.75kW	1.5kW	1.6-2.5A	/IS	/AM	/P	
RC009C	ERC009C	1.1-1.5kW	2.2kW	2.5-4A	/IS	/AM	/P	
RC009D	ERC009D	2.2kW	3kW	4-6A	/IS	/AM	/P	
RC009E	ERC009E	3kW	4kW	5.5-8A	/IS	/AM	/P	
RC009	ERC009	4kW	5.5kW	7-10A	/IS	/AM	/P	
RC012	ERC012	5.5kW	7.5kW	9-13A	/IS	/AM	/P	
RC018	ERC018	7.5kW	11kW	12-18A	/IS	/AM	/P	
RC025	ERC025	11kW	15kW	17-25A	/IS	/AM	/S	
RC032	ERC032	15kW	18.5kW	23-32A	/IS	/AM	/S	
RC40	ERC40	18.5kW	22kW	30-40A	/IS	/AM	/S	B = 24V F = 110V FT* = 110V U = 240V UT* = 240V N = 415V SF = 550V
RC50	ERC50	22kW	30kW	37-50A	/IS	/AM	/S	
RC65	ERC65	30kW	37kW	48-65A	/IS	/AM	/S	
RC80	ERC80	37kW	45kW	63-80A	/IS	/AM	/S	

\* Starter c/w Control Transformer. To specify Control Transformer primary voltage add: 4 (400V), 5 (550V).

\*Add optional brand: **D** - DEHN, **S** - SALTEK

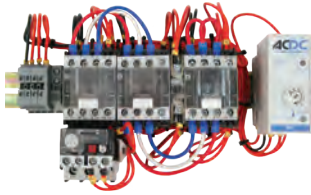
**Note:** The selection of optional extras may impact on the enclosure size. For accurate quotation please contact our panel shop.

**Optional Extras** - for Enclosed DOL Starters **ELC** Series & Reversing Starters **ERC** Series

Code	Description	Code	Description
EFS01	Ammeter selector switch Up to 18.5kW	EFS11*	Surge Protection - 3-phase+N, 40kA
EFS02	Ammeter selector switch 22kW+	EFS12	Emergency Stop
EFS03	Voltmeter 72x72, c/w fuses ( <b>IP45</b> )	EFS13	Man/Off/Auto selector
EFS04	Voltmeter selector switch	EFS14	Man/Off/Auto sel + 24VAC field circuit
EFS05	Running Hour Meter 48x48	EFS15	Pilot light - Run - Green
EFS07	Surge Protection - 3-phase, 5kA	EFS16	Pilot Light - Trip - Amber
EFS08	Surge Protection - 3-phase+N, 5kA	EFS17	Pilot Light - Power On - Red
EFS10*	Surge Protection - 3-phase, 40kA	EFS18	Phase Failure Relay

## STAR-DELTA STARTERS

**Star-Delta Starters** - Complete with mechanical and electrical interlocks, thermal overload relay and electronic timer. Steel enclosure **IP45** or Polycarbonate Enclosure **IP45**. Enclosed starters can be customised by adding items from the **Optional Extras** table shown below. Control fuses fitted on enclosed starters  $\geq 5.5$  kW.



Open Type



EDC-Type - Plastic Enclosed



EDC-Type - Steel Enclosed

Open Starter	Enclosed Starter	Motor kW @400VAC	Motor kW @550VAC	Overload Range	Standard Options			Encl. Material*	Coil Voltage
					Circuit Breaker	Isolator	Ammeter		
DC009A	EDC009A	4kW	5.5kW	4-6A	/CB	/IS	/AM	/P or /S	B = 24V
DC009B	EDC009B	5.5kW	7.5kW	5.5-8A	/CB	/IS	/AM	/P or /S	BT* = 24V
DC009	EDC009	7.5kW	11kW	7-10A	/CB	/IS	/AM	/P or /S	F = 110V
DC012	EDC012	11kW	15kW	9-13A	/CB	/IS	/AM	/P or /S	F = 110V
DC018	EDC018	15kW	18.5kW	12-18A	/CB	/IS	/AM	/P or /S	F = 110V
DC025	EDC025	18.5kW	22kW	17-25A	/CB	/IS	/AM	/P or /S	FT* = 110V
DC032	EDC032	22kW	30kW	23-32A	/CB	/IS	/AM	/P or /S	U = 240V
DC038	EDC038	30kW	37kW	28-36A	/CB	/IS	/AM	/P or /S	U = 240V
DC040A	EDC040A	37kW	45kW	37-50A	/CB	/IS	/AM	/S	UT* = 240V
DC050	EDC050	45kW	55kW	37-50A	/CB	/IS	/AM	/S	N = 415V
DC065	EDC065	55kW	75kW	48-65	/CB	-	/AM	/S	N = 415V
DC080	EDC080	75kW	90kW	63-80A	/CB	/IS	/AM	/S	SF = 550V
DC095	EDC095	90kW	110kW	80-93A	/CB	/IS	/AM	/S	SF = 550V
DC115	EDC115	110kW	132kW	100-160A	/CB	-	/AM	/S	B = 24V
DC150	EDC150	132kW	160kW	100-160A	/CB	/IS	/AM	/S	BT* = 24V
DC185	EDC185	160kW	200kW	125-200A	/CB	/IS	/AM	/S	F = 110V
DC225	EDC225	220kW	250kW	160-250A	/CB	/IS	/AM	/S	FT* = 110V
DC265	EDC265	250kW	315kW	200-315A	/CB	/IS	/AM	/S	P = 230V
DC330	EDC330	315kW	400kW	250-400A	/CB	-	/AM	/S	PT* = 230V
DC400	EDC400	375kW	450kW	315-500A	/CB	/IS	/AM	/S	V = 400V
									SF = 550V

\* Change /P (Plastic) or /S (Steel) if required. Enclosed Dimensions shown are for standard option.

\* Starter c/w Control Transformer. To specify Control Transformer primary voltage add: 4 (400V), 5 (550V).

**Note:** The selection of optional extras may impact the enclosure size. For accurate quotation contact our panel shop.

**Note:** When requesting a price or when ordering a starter with optional extras, order the optional extra as a separate line.

Order example: 1) 4kW, 400V, with Isolator, Ammeter, Hour Meter, Phase Failure monitor, Steel enclosure, 240V coil.

Item 1: **EDC009/IS/AM/S U** Item 2: **EFS05** Item 3: **EFS18**

For Standard Enclosure Size visit the ACDC website.

WITH PFC



**Note:** Star-Delta starters with power factor correction are only available in ventilated steel enclosures. Compensation is calculated for 4 pole motors only, to meet or exceed 0.95 PF.

### Star-Delta with Static Power Factor Correction (PFC) IP42

Complete with isolator, ammeter, mechanical and electrical interlocks, thermal overload relay, 2 x electronic timers, cooling fans, HRC control fuses, capacitor switching contactor and 3PH capacitor. Starters can be customised by adding items from the **Optional Extras** table shown below.

Code	Motor Kw @400VAC	Overload Range	Compensation @400V	Coil Voltage	Standard Encl. Size L x W x H
EDCP018	15kW	12 - 18A	4 kVAr	F = 110V	800 x 600 x 320
EDCP025	18.5kW	17 - 25A	6 kVAr		800 x 600 x 320
EDCP032	22kW	23 - 32A	8,5 kVAr		800 x 600 x 320
EDCP038	30kW	28 - 36A	10,5 kVAr	U = 240V	800 x 600 x 320
EDCP040A	37kW	37 - 50A	13 kVAr		800 x 600 x 320
EDCP050	45kW	37 - 50A	13 kVAr		800 x 600 x 320
EDCP065	55kW	48 - 65A	17 kVAr	N = 415V	800 x 600 x 320
EDCP080	75kW	63 - 80A	22 kVAr		800 x 600 x 320
EDCP095	90kW	80 - 93A	26 kVAr		1000 x 800 x 320
EDCP115	110kW	100 - 160A	29 kVAr	F = 110V P = 230V V = 400V	1200 x 800 x 320
EDCP150	132kW	100 - 160A	32 kVAr		1200 x 800 x 320

### Optional Extras - for Enclosed Starters

Code	Description	Code	Description
EFS01	Ammeter selector switch Up to 18.5kW	EFS11*	Surge Protection - 3-phase+N, 40kA
EFS02	Ammeter selector switch 22kW+	EFS12	Emergency Stop Pushbutton
EFS03	Voltmeter 72x72, c/w fuses (IP45)	EFS13	Man/Off/Auto selector
EFS04	Voltmeter selector switch	EFS14	Man/Off/Auto sel + 24VAC field circuit
EFS05	Running Hour Meter 48x48	EFS15	LED Pilot Light - Run - Green
EFS07	Surge Protection - 3-phase, 5kA	EFS16	LED Pilot Light - Trip - Amber
EFS08	Surge Protection - 3-phase + N, 5kA	EFS17	LED Pilot Light - Power On - Red
EFS10*	Surge Protection - 3-phase, 40kA	EFS18	Phase Failure Relay SPR3

\*Add optional brand: **D** - DEHN, **S** - SALTEK

**Note:** The selection of optional extras may impact on the enclosure size. For accurate quotation please contact our panel shop.



## VACUUM CONTACTORS

### Vacuum Contactors - 3P



Code	Rated Current	Rated Voltage	Rated Making Capacity	Rated Breaking Capacity	Auxiliary Contacts	Mechanical Life	Electrical Life	Pick-Up Power (W)	Hold Power (W)
CKJ11-160/1.5-*	160A	1.5kV	1600A	1280A	3NO/1NC	1 000 000	60 000	265W	30W
CKJ11-250/1.5-*	250A	1.5kV	2500A	2000A	3NO/1NC	1 000 000	60 000	265W	30W
CKJ11-400/1.5-*	400A	1.5kV	4000A	3200A	4NO/1NC	1 000 000	60 000	342W	38W
CKJ11-630/3.6-*	630A	3.6kV	6300A	5000A	4NO/2NC	1 000 000	60 000	400W	45W

\*Add Control Voltage to code: **110V, 230V, 400V** - All sizes supplied with auxiliary contacts

## 2 POLE CONTACTORS

### 2 Pole Contactors - Suitable for air conditioners



TCDP

Code	Rating A (AC1)	No. of Poles	Terminals
TCDP202-*	20A	2 N/O	Screw/PushOn
TCDP302-*	30A	2 N/O	Screw/PushOn
TCDP402-*	40A	2 N/O	Screw/PushOn

\*Add coil voltage: **B** = 24VAC, **F** = 110VAC, **M** = 240VAC, **Q** = 400VAC

### Heavy Duty Relay

G7LB-2A*	25A	2 N/O	Clamp
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\*Add coil voltage: **B** = 24VAC, **F** = 110VAC, **M** = 230VAC



G7LB-2A

## MINI CONTACTORS



Code	Auxiliary Contacts	Max ratings for application of 3-phase motors - AC3		Max ratings for application on resistive heating loads - AC1
FDC-K0910*	N/O	9A@400V	4kW@400V	20A@400V
FDC-K0901*	N/C	9A@400V	4kW@400V	20A@400V

\*Add coil voltage: **B** = 24VAC, **F** = 110VAC, **M** = 230VAC, **Q** = 400VAC

**Spare Coil Code FDC-D2\*** \*Add voltage: **B** = 24VAC, **F** = 110VAC, **M** = 230VAC, **Q** = 400VAC

## MOTOR START PUSH BUTTONS

### Direct Motor Starters for Three Phase Motors

Rated Volts: 550VAC  
Cable Entry: 20mm  
**IP42**



**IP42**



Code	SP-315	SP-330	SY-315	SY-330
Rated Current	15A	30A	15A	30A
Rated Power	0-2.2kW	0-3.7kW	0-2.2kW	0-3.7kW
Mounting	Surface	Surface	Flush	Flush
Material	Steel	Steel	Steel	Steel

### Single Phase

### Three Phase



Code	SDZ-6A	SDZ-6B	SDZ-6E	SDZ-08B	SDZ08-8
Rated Current	15A	15A	15A	15A	12A (AC-3)
Rated Power	2.2kW (AC-3)	2.2kW (AC-3)	2.2kW (AC-3)	2.2kW (AC-3)	3PH 400VAC
Cutout Size	50 x 23mm	50 x 23mm	46 x 22mm	Surface Mount	Surface Mount

• Power Failure Protection

• Under Voltage Protection



**NEW**

# MANUAL MOTOR STARTERS

Standard:  
IEC/EN 60947-2  
IEC60947-4-1  
For dimensions, check the  
datasheet on our ACDC website

## CS2 Motor Protection Circuit Breaker - Rated Voltage: 690VAC



CS2-32 Rotary



CS2-32 Push Button



CS2-80P

Code Rotary	Code Push Buttons	Rated Current	Ultimate Breaking Capacity Icu		Short-Circuit Breaking Capacity Ics		Rated Motor Power	
			@ 415 VAC	@ 690 VAC	@ 415 VAC	@ 690 VAC	@ 415 VAC	@ 690 VAC
CS2-3201R	CS2-3201P	0,1-0,16A	100kA	100kA	100kA	100kA	-	-
CS2-3202R	CS2-3202P	0,16-0,25A	100kA	100kA	100kA	100kA	0,06kW	-
CS2-3203R	CS2-3203P	0,25-0,4A	100kA	100kA	100kA	100kA	0,09kW	-
CS2-3204R	CS2-3204P	0,4-0,63A	100kA	100kA	100kA	100kA	0,18kW	0,37kW
CS2-3205R	CS2-3205P	0,63-1A	100kA	100kA	100kA	100kA	0,37kW	0,55kW
CS2-3206R	CS2-3206P	1-1,6A	100kA	100kA	100kA	100kA	0,55kW	1,1kW
CS2-3207R	CS2-3207P	1,6-2,5A	100kA	3kA	100kA	2,25kA	0,75kW	1,5kW
CS2-3208R	CS2-3208P	2,5-4A	100kA	3kA	100kA	2,25kA	1,5kW	2,2kW
CS2-3210R	CS2-3210P	4-6,3A	100kA	3kA	100kA	2,25kA	2,2kW	4kW
CS2-3214R	CS2-3214P	6,3-10A	100kA	3kA	100kA	2,25kA	4kW	7,5kW
CS2-3216R	CS2-3216P	9-14A	15kA	3kA	7,5kA	2,25kA	5,5kW	11kW
CS2-3220R	CS2-3220P	13-18A	15kA	3kA	7,5kA	2,25kA	7,5kW	15kW
CS2-3221R	CS2-3221P	17-23A	15kA	3kA	6kA	2,25kA	9kW	18,5kW
CS2-3222R	CS2-3222P	20-25A	15kA	3kA	6kA	2,25kA	11kW	15kW
CS2-3232R	CS2-3232P	24-32A	10kA	3kA	5kA	2,25kA	15kW	22kW
-	CS2-8025P	16-25A	15kA	2kA	7,5kA	2kA	11kW	18,5kW
-	CS2-8040P	25-40A	15kA	2kA	7,5kA	2kA	18,5kW	30kW
-	CS2-8063P	40-63A	15kA	2kA	7,5kA	2kA	30kW	45kW
-	CS2-8080P	56-80A	15kA	2kA	7,5kA	2kA	37kW	55kW

### Accessories



CS2-UV CS2-SH CS2-FA



CS2-AN CS2-AU



CS2-AE



CS2-MC

Code	Description	Frame Size
<b>Undervoltage Trip (UVT) - Operating range : 35-70% of rated voltage</b>		
CS2-UV110	Rated voltage: 110-115VAC 50HZ	CS2-32
CS2-UV220	Rated voltage: 220-240VAC 50HZ	CS2-32
CS2-UV415	Rated voltage: 415VAC 50HZ	CS2-32
<b>Shunt Trip - Operating range : 70-110% of rated voltage</b>		
CS2-SH110	Rated voltage: 110-115VAC 50HZ	CS2-32
CS2-SH220	Rated voltage: 220-240VAC 50HZ	CS2-32
CS2-SH415	Rated voltage: 415VAC 50HZ	CS2-32
<b>Alarm + Auxiliary Contact</b>		
CS2-FA0110	Aux: 1NC (6A) Alarm: 1NO(2.5A)	CS2-32
CS2-FA0101	Aux: 1NC (6A) Alarm: 1NC(2.5A)	CS2-32
CS2-FA1010	Aux: 1NO (6A) Alarm: 1NO(2.5A)	CS2-32
CS2-FA1001	Aux: 1NO (6A) Alarm: 1NC(2.5A)	CS2-32
<b>Auxiliary contacts</b>		
CS2-AE20	Front mount 2NO(2.5A)	CS2-32
CS2-AE11	Front mount 1NO+1NC(2.5A)	CS2-32
CS2-AN20	Side mount 2NO(2.5A)	CS2-32
CS2-AN11	Side mount 1NO+1NC(2.5A)	CS2-32
CS2-AU20	Side mount 2NO(6A)	CS2-80
CS2-AU11	Side mount 1NO+1NC(6A)	CS2-80
<b>Enclosure</b>		
CS2-MC	Surface mounting enclosure <b>IP55</b>	

# MOTOR PROTECTION CIRCUIT BREAKER MPCB

## Motor Protection Circuit Breaker - 32A Frame - High Breaking Capacity



Code	Rated Operational Current $I_n$ [A]	Thermal Release Adjustment Range [A]	Magnetic Release Operating Current [A]	400/415V		3-phase [kW] (50/60Hz)			
				$I_{cu}$ [kA]	$I_{cs}$ [kA]	230V	400V	500V	690V
TCMS-32H 0.16	0.16	0.1-0.16	2.1	100	100	-	0.02	-	-
TCMS-32H 0.25	0.25	0.16-0.25	3.3	100	100	0.03	0.06	-	-
TCMS-32H 0.4	0.4	0.25-0.4	5.2	100	100	0.06	0.09	-	-
TCMS-32H 0.63	0.63	0.4-0.63	8.2	100	100	0.09	0.12	0.25	0.25
TCMS-32H 1	1	0.63-1.0	13	100	100	0.12	0.25	0.37	0.55
TCMS-32H 1.6	1.6	1.0-1.6	20.8	100	100	0.25	0.55	0.55/0.75	1.1
TCMS-32H 2.5	2.5	1.6-2.5	32.5	100	100	0.37	0.75	1.1	1.5
TCMS-32H 4	4	2.5-4.0	52	100	100	0.75	1.5	1.5/2.2	3
TCMS-32H 6	6	4-6	78	100	100	1.5	2.2	3	4
TCMS-32H 8	8	5-8	104	100	100	1.5	3	3.7	5.5
TCMS-32H 10	10	6-10	130	100	100	3	4	4/5.5	7.5
TCMS-32H 13	13	9-13	169	100	100	3	5.5	7.5	11
TCMS-32H 17	17	11-17	221	50	38	4	7.5	11	11
TCMS-32H 22	22	14-22	286	50	38	4	7.5	11	15
TCMS-32H 26	26	18-26	338	50	38	5.5	11	15	18.5
TCMS-32H 32	32	22-32	416	50	38	7.5	15	18.5	22

## Motor Protection Circuit Breaker - 63A Frame - High Breaking Capacity

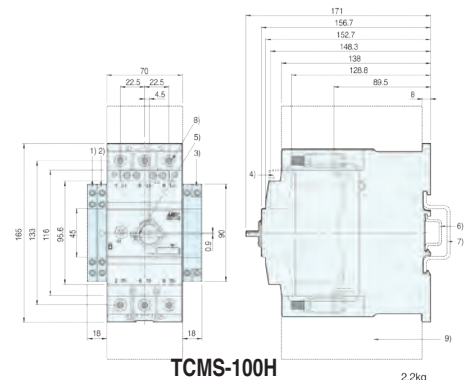
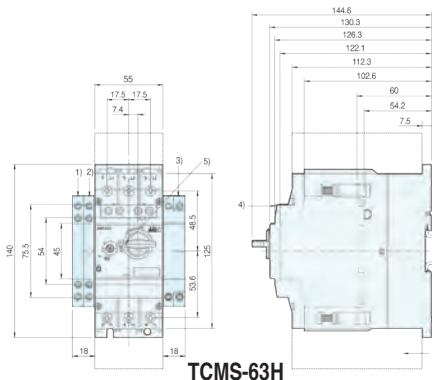
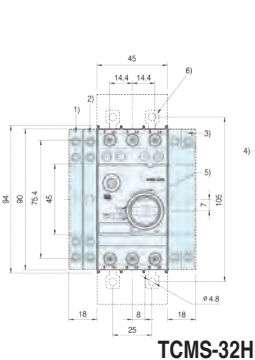


Code	Rated Operational Current $I_n$ [A]	Thermal Release Adjustment Range [A]	Magnetic Release Operating Current [A]	400/415V		3-phase [kW] (50/60Hz)			
				$I_{cu}$ [kA]	$I_{cs}$ [kA]	230V	400V	500V	690V
TCMS-63H 32	32	22-32	416	50	50	7.5	15	18.5	22
TCMS-63H 40	40	28-40	520	50	50	7.5	18.5	22	30
TCMS-63H 50	50	34-50	650	50	50	11	22	30	45
TCMS-63H 63	63	45-63	819	50	50	15	30	37	55

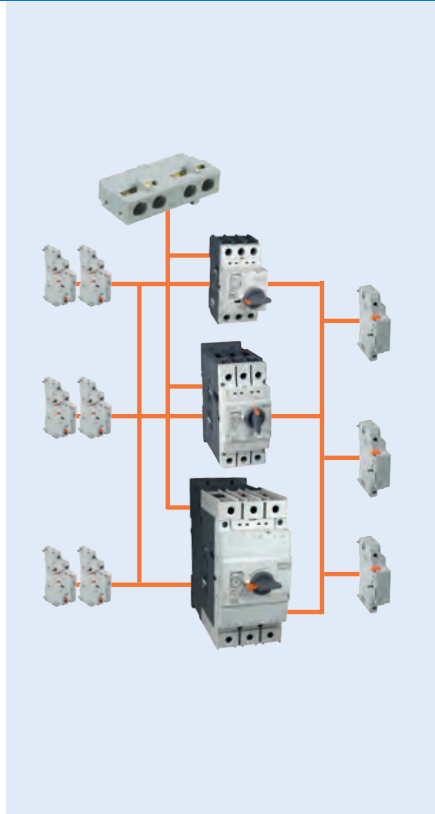
## Motor Protection Circuit Breaker - 100A Frame - High Breaking Capacity



Code	Rated Operational Current $I_n$ [A]	Thermal Release Adjustment Range [A]	Magnetic Release Operating Current [A]	400/415V		3-phase [kW] (50/60Hz)			
				$I_{cu}$ [kA]	$I_{cs}$ [kA]	230V	400V	500V	690V
TCMS-100H 63	63	45-63	819	100	50	15	30	37	55
TCMS-100H 75	75	55-75	975	100	50	22	37	45	63
TCMS-100H 90	90	70-90	1170	100	50	30	45	55	75
TCMS-100H 100	100	80-100	1300	100	50	30	45	63	90



# MOTOR PROTECTION CIRCUIT BREAKER MPCB



### Accessories

Code	Description
------	-------------

#### Auxiliary Contacts

- TFX Front mounting Auxiliary contacts - One module per MPCB
- TLX Left side mounting Auxiliary contacts - One module per MPCB
- TLX modules can be stacked on top of TLA and TLAM alarm contacts

TFX-11	Aux Switch for MPCB front mounting - 1NO1NC
TFX-20	Aux Switch for MPCB front mounting - 2NO
TFX-02	Aux Switch for MPCB front mounting - 2NC
TLX-11	Aux Switch for MPCB left side mounting - 1NO1NC
TLX-20	Aux Switch for MPCB left side mounting - 2NO
TLX-02	Aux Switch for MPCB left side mounting - 2NC

#### Alarm Contacts

- Alarm contacts must be installed first when being used with TLX module
- TLA and TLAM modules cannot be stacked together
- Refer to diagram on left for maximum configuration

TLA-11*	Trip Alarm Switch for MPCB left side mounting - 1NO1NC
TLA-20*	Trip Alarm Switch for MPCB left side mounting - 2NO
TLA-02*	Trip Alarm Switch for MPCB left side mounting - 2NC
TLAM-11	Magnetic Trip Alarm Switch for MPCB left side mounting - 1NO1NC
TLAM-20	Magnetic Trip Alarm Switch for MPCB left side mounting - 2NO
TLAM-02	Magnetic Trip Alarm Switch for MPCB left side mounting - 2NC

\* Add -63 to code for 63/100A frame

#### Shunt Release

- Right side mounting
- One right side mounting module per MPCB

TRS-24V	24V ~ 28V 50Hz
TRS-110V	110V ~ 127V 50Hz
TRS-230V	220V ~ 230V 50Hz
TRS-400V	415V ~ 440V 50Hz

#### Undervoltage Release

- Right side mounting
- One right side mounting module per MPCB

TRU-24V	24V ~ 28V 50Hz
TRU-110V	110V ~ 127V 50Hz
TRU-230V	220V ~ 230V 50Hz
TRU-400V	415V ~ 440V 50Hz

#### Undervoltage Release with Auxiliary

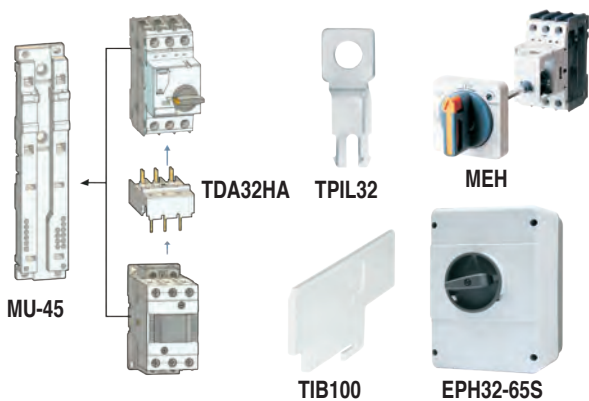
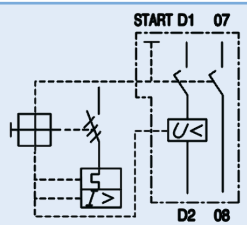
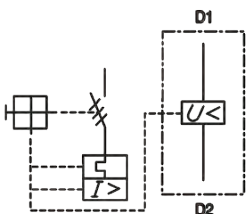
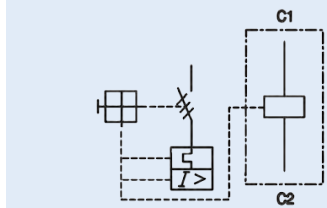
- Right side mounting
- Includes 2 NO Aux
- One right side mounting module per MPCB

TRUX-24V	24V ~ 28V 50Hz
TRUX-110V	110V ~ 127V 50Hz
TRUX-230V	220V ~ 230V 50Hz
TRUX-400V	415V ~ 440V 50Hz

#### Mounting Accessories

TIB100	Insulation barrier for TCMS-100
EPH32-65S	IP65 enclosure to accommodate TCMS-32
TDA32HA*	Direct adaptor used to connect TCMS-32 directly with a mini contactor
TPIL32	Mounting lug for TCMS-32
MU45*	Mounting unit to connect TCMS-32 with a mini contactor
MEH32-115	Pad-lockable vari-depth rotary handle for use with TCMS-32
MEH63-115	Pad-lockable vari-depth rotary handle for use with TCMS-63
MEH100-115	Pad-lockable vari-depth rotary handle for use with TCMS-100

\*Items used for Type 2 co-ordination (See Chart in Technical Section).



# AC CONTACTORS & OVERLOADS

## 3 & 4 Pole Contactors AC Coil with Front Dust Cover



All ratings are for ambient temperature upto 40°C and 2000m above sea level.

D09-D95 supplied with wide range coils



Code* 1N/O Aux	TC1-	D0910	D1210	D1810	D2210	D2510	D3210	D3810	D40	D50	D65	D80	D95
Code* 1N/C Aux	TC1-	D0901	D1201	D1801	D2201	D2501	D3201	D3801	1NO+1NC	1NO+1NC	1NO+1NC	1NO+1NC	1NO+1NC
Code* 4 Pole Contactors	TC1-	D09004	D12004	D18004	-	D25004	-	-	D40004	D50004	D65004	D80004	D95004
Code* 4 Pole 2NO/2NC	TC1-	D09008	D12008	-	-	D25008	-	-	D40008	D50008	D65008	D80008	D95008
Rated operating voltage	AC	690V	690V	690V	690V	690V	690V	690V	690V	690V	690V	690V	690V
AC1 Duty Resistive Load		25A	25A	32A	32A	40A	50A	50A	60A	80A	80A	125A	125A
AC3 Duty Current rating	400V	9A	12A	18A	22A	25A	32A	38A	40A	50A	65A	80A	95A
AC3 Duty Power rating	400V	4kW	5.5kW	7.5kW	11kW	11kW	15kW	18.5kW	18.5kW	22kW	30kW	37kW	45kW
	550V	5.5kW	7.5kW	11kW	12.5kW	15kW	18.5kW	18.5kW	22kW	30kW	37kW	45kW	55kW
	1000V	-	-	-	-	-	-	-	-	-	-	-	-
AC4 Duty 200K ops	400V	2.2kW	3.7kW	4kW	4.5kW	5.5kW	7.5kW	7.5kW	9kW	11kW	11kW	15kW	15kW
Star-Delta Power rating	400V	7.5kW	11kW	15kW	15kW	18.5kW	22kW	30kW	37kW	45kW	55kW	75kW	90kW
	550V	7.5kW	11kW	18.5kW	18.5kW	22kW	37kW	37kW	45kW	55kW	75kW	90kW	110kW
Generator Set	400V	17kVA	17kVA	22kVA	22kVA	27kVA	34kVA	38kVA	42kVA	55kVA	55kVA	85kVA	85kVA
Electrical life (million ops)	AC3	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Power Dissipation/Pole	AC1	1.56W	1.56W	2.5W	2.5W	3.2W	5W	5W	5.4W	9.6W	6.4W	12.5W	12.5W
Coil Consumption Inrush/sealed	50Hz	60/7VA				90/7.5VA			200/20VA				
Cable Size required for AC 1 Duty	50/60Hz	4mm <sup>2</sup>	4mm <sup>2</sup>	6mm <sup>2</sup>	6mm <sup>2</sup>	10mm <sup>2</sup>	10mm <sup>2</sup>	10mm <sup>2</sup>	16mm <sup>2</sup>	25mm <sup>2</sup>	25mm <sup>2</sup>	35mm <sup>2</sup>	35mm <sup>2</sup>
	Size H x W x D - 3 Pole	mm	74 x 45 x 80				84 x 56 x 93			127 x 75 x 114			127 x 85 x 125
Mounting Rail	DIN	35mm				35mm			35/70mm			35/70mm	

### Spare Coils

Code	TX1-D2*	TX1-D4*	TX1-D6*
Coil Voltages*			
J = 12V 50/60Hz (10.2-13.2V)			
B = 24V 50/60Hz (20.4-26.4V)			
E = 48V 50/60Hz (41-53V)			
F = 110V 50/60Hz (77-121V)			
U = 240V 50Hz (170-280V)			
<b>N = 415V 50Hz (352-465V) S = 500V 50Hz (425-550V) SF = 550V 50Hz (467-605V)</b>			

### Thermal Overload Relays



Code	Range	kW@400V	Code	Range	Code	Range	kW@400V	
TR2-D09303	0.25 - 0.40A	0.06-0.9kW*	TR2-D25322 (11kW@400V)	17 - 25A	TR2-D40353	23 - 32A	15kW	
TR2-D09304	0.40 - 0.63A	0.12-0.18kW*			TR2-D40355	30 - 40A	18.5kW	
TR2-D09305	0.63 - 1.00A	0.25-0.37kW*			TR2-D65357	37 - 50A	22kW	
TR2-D09306	1.00 - 1.60A	0.55kW			TR2-D65359	48 - 65A	25 - 30kW	
TR2-D09307	1.60 - 2.50A	0.75-1.1kW			TR2-D65361	55 - 70A	30 - 37kW	
TR2-D09308	2.50 - 4.00A	1.5kW			TR2-D80363	63 - 80A	37kW	
TR2-D09310	4.00 - 6.00A	2.2kW			TR2-D95365	80 - 93A	45kW	
TR2-D09312	5.50 - 8.00A	3.0kW						
TR2-D09314	7.00 - 10.00A	4.0kW						
TR2-D12316	9.00 - 13.00A	5.5kW						
TR2-D18321	12.00 - 18.00A	7.5kW						

\* Check Motor Rating Plate First

MOTOR CONTROL & MOTORS



# 1000V CONTACTORS & OVERLOADS

World class accreditation  
UL508-17<sup>th</sup> edition  
CSA22.2 No.14-95  
CB Certification



**LC1-FDP...**

115A	150A	185A	225A	265A	330A	400A	500A	630A	780A*
Use same auxiliaries as TC1 contactors. Each contactor accepts up to 2 add-on units. Refer to page 3									
1154A	1504A	1854A	2254A	2654A	3304A	4004A	5004A	6304A	7804A*
-	-	-	-	-	-	-	-	-	-
1000V	1000V	1000V	1000V	1000V	1000V	1000V	1000V	1000V	1000V
200A	250A	275A	315A	350A	400A	500A	700A	1000A	1600A
115A	150A	185A	225A	265A	330A	400A	500A	630A	780A
55kW	75kW	90kW	110kW	132kW	160kW	200kW	250kW	335kW	400kW
75kW	90kW	110kW	129kW	160kW	200kW	257kW	355kW	400kW	450kW
65kW	75kW	100kW	100kW	147kW	160kW	185kW	335kW	450kW	450kW
18.5kW	22kW	40kW	45kW	55kW	63kW	75kW	80kW	100kW	110kW
110kW	132kW	160kW	200kW	250kW	315kW	375kW	-	-	-
132kW	160kW	220kW	250kW	315kW	375kW	425kW	-	-	-
135kVA	165kVA	185kVA	225kVA	240kVA	280kVA	350kVA	475kVA	680kVA	1100kVA
2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	1.2	0.8
18W	25W	26W	-	39W	-	70W	88W	120W	250W
550/45VA	550/45VA	805/55VA	805/55VA	1200/95VA	700/10VA	1075/15VA	1100/18VA	1650/22VA	2100/50VA
50mm <sup>2</sup>	70mm <sup>2</sup>	95mm <sup>2</sup>	Flexibar 24 x 4mm	Flexibar 24 x 4mm	Flexibar 24 x 4mm	Flexibar 24 x 5mm	Flexibar 24 x 5mm	Flexibar 24 x 10mm	Flexibar 50 x 5mm
162 x 164 x 173		174 x 169 x 185	197 x 169 x 185	203 x 202 x 207	206 x 206 x 223	206 x 213 x 226	238 x 233 x 238	304 x 309 x 260	434 x 702 x 250

Chassis Mounted

\* 2 x Coils - Coils to be Ordered Separately

**AC Coils**

Code	LX1-FF*	LX1-FG*	LX1-FH2*	LX1-FJ*	LX1-FK*	LX1-FL*	LX1-FX*
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**Coil Voltages\***

- B = 24V 50Hz (20.4-26.4V)
- E = 48V 50Hz (41-53V)
- F = 110V 50Hz (77-121V)
- P = 230V 50Hz (195-253V)
- V = 400V 50Hz (340-440V)
- S = 500V 50Hz (425-550V)
- SF = 550V 50Hz (467-605V)



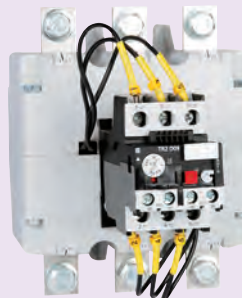
LX1 Coil

**Overload Base Plate**

DIN or Screw Mount



Code	To Fit Overload Sizes
TA7-D0964	From TR2-D09301 To TR2-D25322
TA7-D3264	From TR2-D32353 To TR2-D32355
TA7-D4064	From TR2-D40353 To TR2-D95365



**Thermal Overload Relays**

Internal CT's, Separate Mounting, 1000V Rated

Code	Range	Motor@400V
LR1-F(M)105	65 - 105A	37 - 55kW
LR1-F160	100 - 160A	75 - 90kW
LR1-F200	125 - 200A	90 - 110kW
LR1-F250	160 - 250A	110 - 132kW
LR1-F315	200 - 315A	132 - 160kW
LR1-F400	250 - 400A	160 - 220kW
LR1-F500	315 - 500A	200 - 250kW
LR1-F630	400 - 630A	250 - 375kW



**Electronic Overload Relays**

Internal CT's, Separate Mounting, 1000V Rated

Code	Range	Motor@400V
LR9-F5367	60-100A	90 - 110kW
LR9-F5369	90-150A	110 - 132kW
LR9-F5371	132-220A	132 - 160kW
LR9-F7375	200-330A	160 - 220kW
LR9-F7379	300-500A	200 - 250kW
LR9-F7381	380-630A	250 - 375kW

For more electronic overloads, see pages 1-5

## CONTACTORS & CONTROL RELAYS

### 3 Pole Contactors DC Coils

**D09-D80**  
supplied with coil



Code* 1N/O Aux	TP1-	D0910*	D1210*	D1810*	D2510*	D3210*	D4011*	D5011*	D6511*	D8011*
Code* 1N/C Aux	TP1-	D0901*	D1201*	D1801*	D2501*	D3201*	1NO+1NC	1NO+1NC	1NO+1NC	1NO+1NC
AC3 Rated Power @ 400V		4kW	5.5kW	7.5kW	11kW	15kW	18.5kW	22kW	30kW	37kW
Coil Consumption		9W	9W	9W	11W	11W	22W	22W	22W	22W
Mechanical Life (million ops)		30	30	30	25	25	20	20	20	20
Dimensions H x W x D mm		74 x 45 x 115			84 x 56 x 130		127 x 75 x 168		127 x 85 x 181	

### Spare Coils

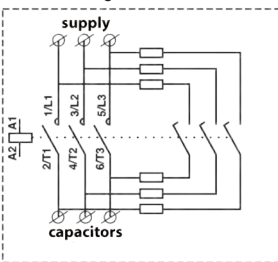


Code	TX4-D2*	TX4-D4*	LX4-D40*	LX4-D80*
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\* Voltage DC JD = 12VDC BD = 24VDC ED = 48VDC FD = 110VDC MD = 220VDC

### Contactors for 3 Phase PF Correction Capacitors

Internal diagram of Contactor



Conforms to AC6b  
IEC 60947-4-1

**D12K-D75K**  
supplied with coil



Code* 1N/O + 1N/C	TC1-	D12K11*	D16K11*	D20K11*	D25K11*	D33K12*	D40K12*	D60K12*	D75K12*
Code* 2N/C	TC1-	D12K02*	D16K02*	D20K02*	D25K02*	1NO+2NC	1NO+2NC	1NO+2NC	1NO+2NC
Rated operating voltage		690V	690V	690V	690V	690V	690V	690V	690V
Capacitor switching	400V	12.5kVAr	16.7kVAr	20kVAr	25kVAr	33.3kVAr	40kVAr	60kVAr	75kVAr

\* Add Coil Voltage F = 110V 50/60Hz U = 240V 50Hz N = 415V 50Hz

### Reversing Contactors (Wide range of AC coils)

### AC Control Relays

### DC Control Relays




Code	AC3 400V	Aux Contacts	Code	Contacts	Code	Contacts
TC2-D0901*	4kW	1N.C.	TCA2-DN22*	2N.O. + 2N.C.	TCA3-DN22*	2N.O. + 2N.C.
TC2-D1201*	5.5kW	1N.C.	TCA2-DN31*	3N.O. + 1N.C.	TCA3-DN31*	3N.O. + 1N.C.
TC2-D1801*	7.5kW	1N.C.	TCA2-DN40*	4N.O.	TCA3-DN40*	4N.O.
TC2-D2501*	11kW	1N.C.	Uc = 12-600V Ith = 10A Max ops per sec = 3 Mechanical life: 50Hz coil 20m ops 50/60Hz coil 30m ops		Uc = 12-600V Ith = 10A Max ops per sec = 3 Mechanical life: DC coil 30m ops	
TC2-D3201*	15kW	1N.C.				
TC2-D4011*	18.5kW	1N.O. + 1N.C.				
TC2-D5011*	22kW	1N.O. + 1N.C.				
TC2-D6511*	30kW	1N.O. + 1N.C.				
TC2-D8011*	37kW	1N.O. + 1N.C.				
TC2-D9511*	45kW	1N.O. + 1N.C.				

\* Coil Voltage AC J = 12V 50Hz (9-32A only) B = 24V 50/60Hz E = 48V 50/60Hz F = 110V 50/60Hz U = 240V 50Hz N = 415V 50Hz SF = 550V 50Hz V = 400V 50Hz P = 230V 50Hz S = 500V 50Hz


\* Coil Voltage DC JD = 12VDC BD = 24VDC ED = 48VDC FD = 110VDC MD = 220VDC

## ACCESSORIES




**Auxiliaries - Top Mount**  
Fits directly onto all T & F range contactors & TCA2 Relays

Code	Description
TA1-DN11	1N.O. + 1N.C.
TA1-DN02	2N.C.
TA1-DN20	2N.O.
TA1-DN22	2N.O. + 2N.C.
TA1-DN13	1N.O. + 3N.C.
TA1-DN31	3N.O. + 1N.C.
TA1-DN40	4N.O.
TA1-DN04	4N.C.




**Auxiliaries - Side Mount**  
T Range Contactors from 9Amp to 38Amp frame sizes and TCA2 and TCA3 Relays only

Code	Description
TA8-DN11	1N.O. + 1N.C.
TA8-DN20	2N.O.




**Horizontal Mechanical Interlocks**  
T Range only

Code	For use with Contactors
CA9-D10	TC1-D09 to D38 c/w 2N.C.
TA9-D09978	TC1-D09 to D38 & TCA2
TA9-D50978	TC1-D40 to D65
TA9-D80978	TC1-D80 to D95



**Coil Suppressor**


Code	For use with Contactors
TA9-AMOV980E	D09 to D95 24-48VAC/DC
TA9-AMOV980U	D09 to D95 110-240VAC/DC
TA9-RC980N	D09 to D95 380-440VAC



**Pneumatic Timers**  
Fits directly onto all T & F Range Contactors & TCA2 Relays


Code	Description
TA2-DT2	Delay On 0-30sec
TA2-DT4	0-180sec
TA3-DR2	Delay Off 0-30sec
TA3-DR4	0-180sec
TA2-DS2	S/Delta 1-30sec*

\*With 40ms pause between Star opening & Delta closing.



**Mechanical Latching Block**  
Fitted with 230VAC release coil

Code	For use with Contactors
LA6-DK01 P	D09 to D32 contactors and TCA2 relays



**Rev/S-D Power Kits - Set of 6**

Code	For use with Contactors
TA9-D1269	TC1-D09 to D12
TA9-D1869	TC1-D18 & D22
TA9-D2569	TC1-D25
TA9-D3269	TC1-D32 & D38
TA9-D6569	TC1-D40 to D65
TA9-D8069	TC1-D80 to D95

### F Range Accessories

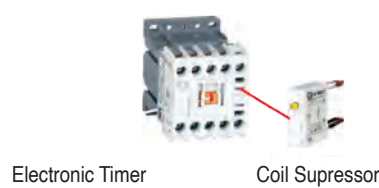


Set of 6

F Range Contactor Size	Reversing/Star-Delta Busbar Kits	Star Point Bridge	Horizontal Mechanical Interlocks	Vertical Mechanical Interlocks	Contact Kits (No. of Poles)	ARC Chambers (No. of Poles)
115A	LA9-F115CL	LA9-F115SP	LA9-FF970	LA9-FF971	LA5-FF431-F115(3)	LA5-FDP11550(3)
150A	LA9-F150CL	LA9-F185SP	LA9-FF970	LA9-FF971	LA5-FF431-F150(3)	LA5-FDP15050(3)
185A	LA9-F185CL	LA9-F185SP	LA9-FG970	LA9-FG971	LA5-FG431-F185(3)	LA5-FDP18550(3)
225A	LA9-F225CL	LA9-F400SP	LA9-FG970	LA9-FG971	LA5-FG431-F225(3)	LA5-FDP22550(3)
265A	LA9-F265CL	LA9-F400SP	LA9-FJ970	LA9-FH971	LA5-FH431-F265(3)	LA5-FDP26550(3)
330A	LA9-F400CL	LA9-F400SP	LA9-FJ970	LA9-FH971	LA5-F400803-F330(3)	LA5-FDP33050(3)
400A	LA9-F400CL	LA9-F400SP	LA9-FJ970	LA9-FJ971	LA5-F400803-F400(3)	LA5-FDP40050(3)
500A	LA9-F500CL	LA9-F500SP	LA9-FJ970	LA9-FK971	LA5-F500803-F500(3)	LA5-FDP50050(3)
630A	LA9-F630CL	LA9-F630SP	LA9-FL970	LA9-FL971	LA5-F630803-F630(3)	LA5-FDP63050(3)
780A	-	-	-	LA9-FX970	LA5-F780801-F780(1)	LA5-FDP78050(1)



# MINI 3-POLE CONTACTORS & OVERLOAD RELAYS



Current AC3@415V	6A	9A	12A	16A
Code* 1N/O Aux	TC1-M0610*	TC1-M0910*	TC1-M1210*	TC1-M1610*
Code* 1N/C Aux	TC1-M0601*	TC1-M0901*	TC1-M1201*	TC1-M1601*
Rated operating voltage	690VAC	690VAC	690VAC	690VAC
AC1 Duty Resistive Load	20A	20A	20A	20A
AC3 Duty Current rating	6A@380/440V	9A@380/440V	12A@380/440V	16A@380/440V
AC3 Duty Power rating	2.2kW@380/440V	4kW@380/440V	5.5kW@380/440V	7.5kW@380/440V
AC3 Duty Power rating	3kW@500/550V	3.7kW@500/550V	4kW@500/550V	5.5kW@500/550V
Coil Consumption Inrush/sealed	32/6VA	32/6VA	32/6VA	32/6VA
Mechanical life (million ops)	12	12	12	12
Electrical life (million ops)	1	1	1	1
Size H x W x D	58 x 45 x 57mm	58 x 45 x 57mm	58 x 45 x 57mm	58 x 45 x 57mm
Mounting Rail	DIN / Chassis	DIN / Chassis	DIN / Chassis	DIN / Chassis

\*Add coil voltage to code: **B** = 24VAC **E** = 48VAC **F** = 110VAC **M** = 220VAC **N** = 415VAC



Aux & Coil Terminals Extended through overload  
Ambient compensated -5°C to 40°C

### Thermal Overload Relay for use with mini contactors - c/w 1NO+1NC Auxiliary Contacts

Code	Relay Range	KW @400V	Code	Relay Range	KW @400V
TR2-M0.14A	0.10-0.16A	-	TR2-M3.3A	2.5-4A	1.5kW
TR2-M0.21A	0.16-0.25A	-	TR2-M5A	4-6A	2.2kW
TR2-M0.33A	0.25-0.4A	0.06-0.9kW*	TR2-M6.5A	5-8A	3.kW
TR2-M0.52A	0.4-0.63A	0.12-0.15kW*	TR2-M7.5A	6-9A	4kW
TR2-M0.82A	0.63-1A	0.25kW-0.37kW*	TR2-M8.5A	7-10A	4.0kW
TR2-M1.3A	1-1.6A	0.55kW	TR2-M11A	9-13A	5.5kW
TR2-M2.1A	1.6-2.5A	0.75-1.1kW	TR2-M14A	12-16A	7.5kW

\* Check Motor Rating Plate First

Automatic/Manual reset site selectable

### Auxiliaries Top And Side Mount - lth = 10A



Code	Contact Configuration	Mounting	Code	Contact Configuration	Mounting
TA1-M20	2NO	Front	TA1-M22	2NO + 2NC	Front
TA1-M11	1NO + 1NC	Front	TA1-M13	1NO + 3NC	Front
TA1-M02	2NC	Front	TA1-M04	4NC	Front
TA1-M40	4NO	Front	TA8-M01	1NC	Side
TA1-M31	3NO + 1NC	Front	TA8-M10	1NO	Side

### Accessories



Code	Description
TA9-M978	Mechanical Interlock for TC1-M06-M16 for horizontal mounting
TA9-M980-1	Coil Suppressor for 24-48VAC coils
TA9-M980-2	Coil Suppressor for 60-127VAC coils
TA9-M980-3	Coil Suppressor for 200-240VAC coils

### AC Mini Control Relay - lth = 20AUc = 690VAC



Code	Contact Configuration
TCA2-M22*	2NO + 2NC
TCA2-M31*	3NO + 1NC
TCA2-M40*	4NO
TCA2-M13*	1NO + 3NC
TCA2-M04*	4NC

\*Add coil voltage to code: **B** = 24VAC **E** = 48VAC **F** = 110VAC **M** = 220VAC **N** = 415VAC



# WINBREAK FIXED MCCB

- IEC 60947-2 Certified I Positive Isolation
- Trip Free Mechanism
- Standard Packaging includes phase barriers for line side and hardware
- Cascading and Discrimination available
- Type one and Type two co-ordination available
- Ui: 750V, Uimp: 8kV



CSC2N3



CSC3H3



CSC4H4



CSC5H3



CSC6S4



ASW-6A



AXWC-T



UVTC



DHC100



DHCK100



EHC100



TCS13



CSET1033C

### Dimensions: (W x H x D) 3P

- Frame 1: 75 x 130 x 60mm
- Frame 2: 90 x 155 x 60mm
- Frame 3: 105 x 165 x 60mm
- Frame 4: 140 x 257 x 109mm
- Frame 5: 210 x 280 x 109mm
- Frame 6: 220 x 400 x 105mm

### Fixed Thermal & Magnetic Moulded Case Circuit Breakers

Code 3 Pole	Code 4 Pole	Breaking Capacity Icu@415VAC	*Rated Current (A)	Frame
Fixed Overload - Fixed short circuit - Ics=100%Icu				
CSC1S3*	CSC1S4*	18kA	15,20,30,40,50 60,75,100	1
CSC2N3*	CSC2N4*			
CSC4N3*	CSC4N4*	26kA	150,175,200,250	3
CSC3S3*	CSC3S4*	37kA	15,20,30,40,50,60 75,100,125	2
CSC4S3*	CSC4S4*			
CSC5N3*	CSC5N4*			
CSC6N3*	CSC6N4*			
CSC3H3*	CSC3H4*		50kA	15,20,30,40,50,60, 75,100,125,
CSC4H3*	CSC4H4*			
CSC5S3*	CSC5S4*			
CSC5H3*	CSC5H4*			
CSC6S3*	CSC6S4*	65kA	300,350,400♦	4
CSC7S3*	CSC7S4*	65kA Ics = 50% Icu	1000♦	6
CSC8S3*	CSC8S4*		1200♦	
CSC5L3*	CSC5L4*	85kA	300,350,400♦	4
CSC6L3*	CSC6L4*			
CSC7L3*	CSC7L4*	85kA Ics = 50% Icu	1000♦	6
CSC8L3*	CSC8L4*		1200♦	

\* Add Amps to Code. ♦ Spreader Bar Included

### Auxiliary & Alarm Switches

Frame	Auxiliary Switches (AX)		Alarm Switches (AL)	
	Left	Right	Left	Right
1, 2, 3	AXWC-R	AXWC-T	ALWC-R	ALWC-T
4, 5	ASW-6A	ASW-6A	ALSW-6A	ALSW-6A
6	ASW-7A	ASW-7A	ALSW-7A	ALSW-7A

### Shunt & Under Voltage Trips (See the Short Form Catalogue for Maximum Configurations)

Frame	Shunt Trip (SHT)	Under Voltage Trip (UVT)
1, 2, 3	STC-24VAC/DC	UVTC-24VAC/DC
	STC-48VAC/DC	UVTC-48VAC/DC
	STC-100-130VAC/DC	UVTC-100-110VAC/DC
	STC-200-250VAC/DC	UVTC-200-220VAC/DC
	STC-380-450VAC	UVTC-380-400VAC
4, 5	STC-440-550VAC	UVTC-440-480VAC
	ST-6A-24-48VAC/DC	UVT-6A-100-125VAC
	ST-6A-100-220VDC	UVT-6A-100-110VDC
	ST-6A-100-240VAC	UVT-6A-200-240VAC
6	ST-6A-380-550VAC	UVT-6A-380-400VAC
	ST-7A-200-220VAC	UVT-7A-200-220VAC

### Rotary Operating Handles - Padlockable

Frame	Direct Rotary Handle	Direct Rotary Handle with Key Lock	Extended Rotary Handle + Shaft
1	DHC100	DHCK100	EHC100 (470mm)
2	DHC125	DHCK125	EHC125 (470mm)
3	DHC250	DHCK250	EHC250 (470mm)
4	N70S	-	E70U (304mm)
5	-	-	E80U (304mm)

### Terminal Covers - For Line & Load

Frame	3P Code	4P Code
1	TCS13	TCS14
2	TCS23	TCS24
3	TCS33	TCS34

### Extension Bars - Supplied in half sets of 3 or 4

Frame	Code 3P	Code 4P	Current Rating (A)
1, 2	CSET1033	CSET1044	Up to 60A
1, 2	CSET1033C	CSET1044C	Up to 125A
3	CSET2533	CSET2544	Up to 250A
4	CSET8033	CSET8044	Up to 800A

## WINBREAK1 ADJUSTABLE MCCBs

- Conforms to IEC60947-2 | Suitable for Isolation
- Range 16A-400A 3 & 4 Pole
- Breaking capacity: 25kA 35/36kA 50kA
- Trip Free mechanism
- Neutral with 100% rated current | Bounce free contact structure
- Wide range of internal & external accessories
- Standard packing includes insulating phase barrier for line side and hardware
- Cascading and Discrimination available
- Type one and Type two co-ordination available
- Ui: 750V Uimp: 8kV



CSE1M125ATM3P-100A



CSE1M125ATM4P-100A



CSE2S250ATM3P-250A



CSE3S400ATM3P-320A

### Dimensions: (W x H x D)

- Frame 1: 3P - 92 x 150 x 81mm  
 4P - 123 x 150 x 81mm  
 Frame 2: 3P - 108 x 166 x 81mm  
 4P - 143 x 166 x 81mm  
 Frame 3: 3P - 150 x 260 x 110mm  
 4P - 198 x 260 x 110mm

### Adjustable Thermal Magnetic Moulded Case Circuit Breakers

Code 3 Pole	Code 4 Pole	Breaking Capacity Icu@415VAC	Rated Current (A)	Frame
Adjustable Overload: 80 - 100% - Adjustable Short Circuit: 5-10In, Ics = 100% Icu				
CSE1M125ATM3P-63A	CSE1M125ATM4P-63A	25KA	63 (50-63)	1
CSE1M125ATM3P-80A	CSE1M125ATM4P-80A		80 (64-80)	1
CSE1M125ATM3P-100A	CSE1M125ATM4P-100A		100 (80-100)	1
CSE1M125ATM3P-125A	CSE1M125ATM4P-125A		125 (100-125)	1
CSE2M250ATM3P-160A	CSE2M250ATM4P-160A		160 (128-160)	2
CSE2M250ATM3P-200A	CSE2M250ATM4P-200A		200 (160-200)	2
CSE2M250ATM3P-250A	CSE2M250ATM4P-250A		250 (200-250)	2
CSE3M400ATM3P-320A	CSE3M400ATM4P-320A		320 (256-320)	3
CSE3M400ATM3P-350A	CSE3M400ATM4P-350A		350 (280-350)	3
CSE3M400ATM3P-400A	CSE3M400ATM4P-400A	400 (320-400)	3	
CSE1N125ATM3P-63A	CSE1N125ATM4P-63A	35KA	63 (50-63)	1
CSE1N125ATM3P-80A	CSE1N125ATM4P-80A		80 (64-80)	1
CSE1N125ATM3P-100A	CSE1N125ATM4P-100A		100 (80-100)	1
CSE1N125ATM3P-125A	CSE1N125ATM4P-125A		125 (100-125)	1
CSE2N250ATM3P-160A	CSE2N250ATM4P-160A		160 (128-160)	2
CSE2N250ATM3P-200A	CSE2N250ATM4P-200A		200 (160-200)	2
CSE2N250ATM3P-250A	CSE2N250ATM4P-250A	250 (200-250)	2	
CSE3N400ATM3P-320A	CSE3N400ATM4P-320A	36KA	320 (256-320)	3
CSE3N400ATM3P-350A	CSE3N400ATM4P-350A		350 (280-350)	3
CSE3N400ATM3P-400A	CSE3N400ATM4P-400A		400 (320-400)	3
CSE3S400ATM3P-320A	CSE3S400ATM4P-320A	50KA	320 (256-320)	3
CSE3S400ATM3P-350A	CSE3S400ATM4P-350A		350 (280-350)	3
CSE3S400ATM3P-400A	CSE3S400ATM4P-400A		400 (320-400)	3
Adjustable Overload 80 - 100% - Adjustable Short Circuit 5-10In, Ics = 50% Icu				
CSE1S125FMU3P-16A	CSE1S125FMU4P-16A	50KA	16 (13-16)	1
CSE1S125FMU3P-20A	CSE1S125FMU4P-20A		20 (16-20)	1
CSE1S125FMU3P-25A	CSE1S125FMU4P-25A		25 (20-25)	1
CSE1S125FMU3P-32A	CSE1S125FMU4P-32A		32 (26-32)	1
CSE1S125FMU3P-40A	CSE1S125FMU4P-40A		40 (32-40)	1
CSE1S125FMU3P-50A	CSE1S125FMU4P-50A		50 (40-50)	1
CSE1S125ATM3P-63A	CSE1S125ATM4P-63A		63 (50-63)	1
CSE1S125ATM3P-80A	CSE1S125ATM4P-80A		80 (64-80)	1
CSE1S125ATM3P-100A	CSE1S125ATM4P-100A		100 (80-100)	1
CSE1S125ATM3P-125A	CSE1S125ATM4P-125A		125 (100-125)	1

# WINBREAK1 ADJUSTABLE MCCBs & ACCESSORIES

- IEC60947-2 Certified • Suitable for Isolation
- Adjustable over current  $I_r = 0.4 - 1$  times  $I_n$
- Adjustable short circuit 2 - 12 times  $I_r$
- Built-in groundfault protection 20 - 100% of  $I_n$
- Adjustable neutral overload protection: 50 - 100% of  $I_n$
- Adjustable current imbalance protection available: 30-70% of  $I_r$
- Provision of thermal memory: On/Off
- Communication: RS485 Modbus Protocol
- View last trip information I LCD: Display
- $U_i$ : 750V,  $U_{imp}$ : 8kV

### Dimensions: (W x H x D)

- Frame 1: 3P - 92 x 150 x 81mm  
4P - 123 x 150 x 81mm
- Frame 2: 3P - 108 x 166 x 81mm  
4P - 143 x 166 x 81mm



3 Pole - 100A



4 Pole - 40A



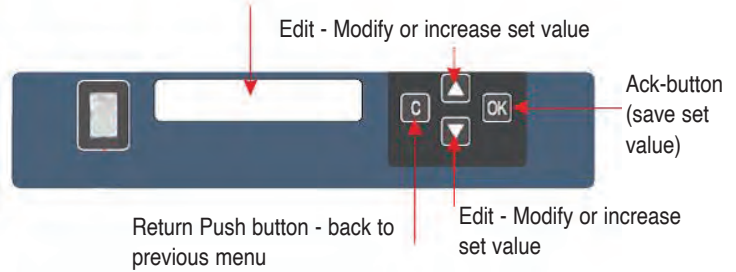
4 Pole - 63A

### Adjustable Electronic - Microprocessor Release MCCBs

Code 3 Pole	Code 4 Pole	Breaking Capacity Icu @ 415VAC	Rated Current (A)	Size (Frame)
CSE1N125ETM3P-40A	CSE1N125ETM4P-40A	35KA	16 - 40	1
CSE1N125ETM3P-63A	CSE1N125ETM4P-63A		25 - 63	1
CSE1N125ETM3P-100A	CSE1N125ETM4P-100A		40 - 100	1
CSE1N125ETM3P-125A	CSE1N125ETM4P-125A		50 - 125	1
CSE2N250ETM3P-160A	CSE2N250ETM4P-160A		63 - 160	2
CSE2N250ETM3P-200A	CSE2N250ETM4P-200A		80 - 200	2
CSE2N250ETM3P-250A	CSE2N250ETM4P-250A		100 - 250	2

Adjustable Overload 40-100% - Adjustable Short Circuit 2-12I<sub>r</sub> - ICS = 100% ICU

Liquid Crystal Display



### Auxiliary & Alarm Switches

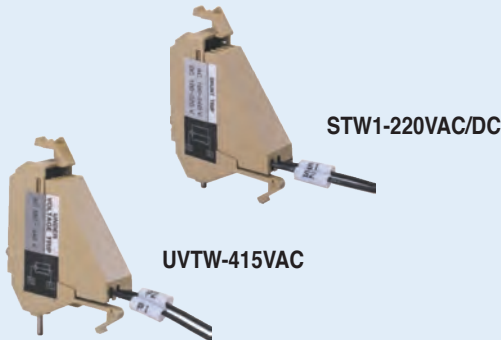
Frame	Auxiliary Switches		Alarm Switches	
	Left	Right	Left	Right
1, 2	AXW1-L	AXW1-R	ALW1-L	ALW1-R
3	AXW1-3L	AXW1-3R	ALW1-3L	ALW1-3R



AXW1-3L



ALW1-R



STW1-220VAC/DC

UVTW-415VAC

### Shunt & Under Voltage Trips

Frame	Shunt Trip (STW)	Under Voltage Trip
1, 2	STW1-24VDC	UVTW1-24VDC
	STW1-48VDC	UVTW1-48VDC
	STW1-110VDC	UVTW1-110VDC
	STW1-220VAC/DC	UVTW1-220VAC/DC
	STW1-415VAC	UVTW1-415VAC
3	STW1-3-24VDC	-
	STW1-3-48VDC	-
	STW1-3-110VDC	UVTW1-3-110VAC
	STW1-3-220VAC/DC	UVTW1-3-220VAC/DC
	STW1-3-415VAC	UVTW1-3-415VAC



EHW1-250

### Panel Mount Rotary Operating Handles - Padlockable

Frame	Code c/w Shaft	Code Key Lock
1 (150mm Shaft)	EHW1-125	EXTKLWB1-125AF-T1
2 (150mm Shaft)	EHW1-250	EXTKLWB1-250AF-T1
3 (200mm Shaft)	EHW1-400	EXTKLWB1-400AF-T1

### Extention Bars

Frame	Code 3 Pole	Code 4 Pole	Current Rating (A)
1	CSET1033	CSET1044	Up to 63A
1	CSET1033C	CSET1044C	Up to 125A
2	CSET2533	CSET2544	Up to 250A
3	CSETETW14033	CSETETW14044	Up to 400A



CSET2533



## 6KA CIRCUIT BREAKERS

Rated voltage: 240/415VAC  
 Thermal Magnetic Release  
 Rated Insulation Voltage Ui: 660V  
 Rated Impulse Voltage Uimp: 4kV  
 Integrated Lable Holder  
 Accepts Pin / Fork Busbar  
 Electrical and Mechanical life:  
     <32A - 30 000 operations  
     >32A - 10 000 operations  
 Energy limiting class: ELC3  
 Terminal Capacity: 35mm<sup>2</sup>  
 Ambient working Temperature:  
 -25°C to 55°C  
**60VDC capacity for 1P, 110VDC for 2P**  
 DIN Modules: 1M = 17,5mm



CSMBS1C1X



CSMBS2C1X



CSMBS3C1X

### 6kA C-Curve Miniature Din Rail Circuit Breakers IP20 IEC60947-2 / VC8036

Amps	1 Pole Code 1M Wide	1P+N Code 2M Wide	2 Pole Code 2M Wide	3 Pole Code 3M Wide	4 Pole Code 4M Wide
1A	CSMBS1K1X	CSMBS1K1NX	CSMBS2K1X	CSMBS3K1X	CSMBS4K1X
2A	CSMBS1K2X	CSMBS1K2NX	CSMBS2K2X	CSMBS3K2X	CSMBS4K2X
3A	CSMBS1K3X	CSMBS1K3NX	CSMBS2K3X	CSMBS3K3X	CSMBS4K3X
4A	CSMBS1K4X	CSMBS1K4NX	CSMBS2K4X	CSMBS3K4X	CSMBS4K4X
5A	CSMBS1K5X	CSMBS1K5NX	CSMBS2K5X	CSMBS3K5X	CSMBS4K5X
6A	CSMBS1K6X	CSMBS1K6NX	CSMBS2K6X	CSMBS3K6X	CSMBS4K6X
10A	CSMBS1K10X	CSMBS1K10NX	CSMBS2K10X	CSMBS3K10X	CSMBS4K10X
16A	CSMBS1K16X	CSMBS1K16NX	CSMBS2K16X	CSMBS3K16X	CSMBS4K16X
20A	CSMBS1K20X	CSMBS1K20NX	CSMBS2K20X	CSMBS3K20X	CSMBS4K20X
25A	CSMBS1K25X	CSMBS1K25NX	CSMBS2K25X	CSMBS3K25X	CSMBS4K25X
32A	CSMBS1K32X	CSMBS1K32NX	CSMBS2K32X	CSMBS3K32X	CSMBS4K32X
40A	CSMBS1K40X	CSMBS1K40NX	CSMBS2K40X	CSMBS3K40X	CSMBS4K40X
50A	CSMBS1K50X	CSMBS1K50NX	CSMBS2K50X	CSMBS3K50X	CSMBS4K50X
63A	CSMBS1K63X	CSMBS1K63NX	CSMBS2K63X	CSMBS3K63X	CSMBS4K63X

### 6kA D-Curve Miniature Din Rail Circuit Breakers IP20 IEC60947-2 / VC8036

Amps	1 Pole Code 1M Wide	1P+N Code 2M Wide	2 Pole Code 2M Wide	3 Pole Code 3M Wide	4 Pole Code 4M Wide
6A	CSMBS1D6X	CSMBS1D6NX	CSMBS2D6X	CSMBS3D6X	CSMBS4D6X
10A	CSMBS1D10X	CSMBS1D10NX	CSMBS2D10X	CSMBS3D10X	CSMBS4D10X
16A	CSMBS1D16X	CSMBS1D16NX	CSMBS2D16X	CSMBS3D16X	CSMBS4D16X
20A	CSMBS1D20X	CSMBS1D20NX	CSMBS2D20X	CSMBS3D20X	CSMBS4D20X
25A	CSMBS1D25X	CSMBS1D25NX	CSMBS2D25X	CSMBS3D25X	CSMBS4D25X
32A	CSMBS1D32X	CSMBS1D32NX	CSMBS2D32X	CSMBS3D32X	CSMBS4D32X
40A	CSMBS1D40X	CSMBS1D40NX	CSMBS2D40X	CSMBS3D40X	CSMBS4D40X
50A	CSMBS1D50X	CSMBS1D50NX	CSMBS2D50X	CSMBS3D50X	CSMBS4D50X
63A	CSMBS1D63X	CSMBS1D63NX	CSMBS2D63X	CSMBS3D63X	CSMBS4D63X

### 6kA Residual Current Circuit Breakers (Earth Leakage Relays) Without Overload VC8035

Amps	2 Pole Code 2M Wide <b>240V</b>	Leakage Current	Amps	4 Pole Code 4M Wide <b>415V</b>	Leakage Current
25A	CSRB2P25A30	30mA	25A	CSRB4P25A30	30mA
32A	CSRB2P32A30	30mA	32A	CSRB4P32A30	30mA
40A	CSRB2P40A30	30mA	40A	CSRB4P40A30	30mA
63A	CSRB2P63A30	30mA	63A	CSRB4P63A30	30mA
80A	CSRB2P80A30	30mA	80A	CSRB4P80A30	30mA
100A	CSRB2P100A30	30mA	100A	CSRB4P100A30	30mA
25A	CSRB2P25A300	300mA	25A	CSRB4P25A300	300mA
32A	CSRB2P32A300	300mA	32A	CSRB4P32A300	300mA
40A	CSRB2P40A300	300mA	40A	CSRB4P40A300	300mA
63A	CSRB2P63A300	300mA	63A	CSRB4P63A300	300mA
80A	CSRB2P80A300	300mA	80A	CSRB4P80A300	300mA
100A	CSRB2P100A300	300mA	100A	CSRB4P100A300	300mA

Tripping Characteristic: AC  
 Rated Voltage: 240V-2P / 415V-4P  
 Rated Insulation Voltage: 660V  
 Rated Impulse Voltage: 6kV  
 Terminal Capacity: 25mm<sup>2</sup>  
 Mechanical / Electrical Life:  
 20000/10000 Operations



CSRB2P25A300



CSRB4P40A100



# 10KA CIRCUIT BREAKERS

Rated voltage: 240/415VAC  
 Thermal Magnetic Release  
 Rated Insulation Voltage Ui: 660V  
 Rated Impulse Voltage Uimp: 4kV  
 Integrated Label Holder  
 Accepts Pin / Fork Busbar  
 Electrical and Mechanical life:  
 <32A - 30 000 operations  
 >32A - 10 000 operations  
 Energy limiting class: ELC3  
 Terminal Capacity: 35mm<sup>2</sup>  
 Ambient working Temperature:  
 -25°C to 55°C  
**60VDC capacity for 1P, 110VDC for 2P**  
 DIN Modules: 1M = 17,5mm



CSMBS1C6



CSMS1C10N



CSMBS3C10

Tripping Characteristic: AC  
 Rated Voltage: 240V-2P / 415V-4P  
 Rated Insulation Voltage: 660V  
 Rated Impulse Voltage: 6kV  
 Terminal Capacity: 25mm<sup>2</sup>  
 Mechanical / Electrical Life:  
 20000/10000 Operations



CSR2P40A100



CSRN4P40A100

## 10kA C-Curve Miniature Din Rail Circuit Breakers IP20, IEC 60947-2 / VC8036

Amps	1 Pole Code 1M Wide	1P+N Code 2M Wide	2 Pole Code 2M Wide	3 Pole Code 3M Wide	4 Pole Code 4M Wide
1A	CSMBS1K1	CSMBS1K1N	CSMBS2K1	CSMBS3K1	CSMBS4K1
2A	CSMBS1K2	CSMBS1K2N	CSMBS2K2	CSMBS3K2	CSMBS4K2
3A	CSMBS1K3	CSMBS1K3N	CSMBS2K3	CSMBS3K3	CSMBS4K3
4A	CSMBS1K4	CSMBS1K4N	CSMBS2K4	CSMBS3K4	CSMBS4K4
5A	CSMBS1K5	CSMBS1K5N	CSMBS2K5	CSMBS3K5	CSMBS4K5
6A	CSMBS1K6	CSMBS1K6N	CSMBS2K6	CSMBS3K6	CSMBS4K6
10A	CSMBS1K10	CSMBS1K10N	CSMBS2K10	CSMBS3K10	CSMBS4K10
16A	CSMBS1K16	CSMBS1K16N	CSMBS2K16	CSMBS3K16	CSMBS4K16
20A	CSMBS1K20	CSMBS1K20N	CSMBS2K20	CSMBS3K20	CSMBS4K20
25A	CSMBS1K25	CSMBS1K25N	CSMBS2K25	CSMBS3K25	CSMBS4K25
32A	CSMBS1K32	CSMBS1K32N	CSMBS2K32	CSMBS3K32	CSMBS4K32
40A	CSMBS1K40	CSMBS1K40N	CSMBS2K40	CSMBS3K40	CSMBS4K40
50A	CSMBS1K50	CSMBS1K50N	CSMBS2K50	CSMBS3K50	CSMBS4K50
63A	CSMBS1K63	CSMBS1K63N	CSMBS2K63	CSMBS3K63	CSMBS4K63

## 10kA C-Curve Miniature Din Rail Circuit Breakers IP20, IEC 60947-2 / VC8036

Amps	1 Pole Code 1,5M Wide	1P+N Code 3M Wide	2 Pole Code 3M Wide	3 Pole Code 4,5M Wide	4 Pole Code 6M Wide
80A	CSMBS1H80	CSMBS1H80N	CSMBS2H80	CSMBS3H80	CSMBS4H80
100A	CSMBS1H100	CSMBS1H100N	CSMBS2H100	CSMBS3H100	CSMBS4H100

## 10kA D-Curve Miniature Din Rail Circuit Breakers IP20, IEC 60947-2 / VC8036

Amps	1 Pole Code 1M Wide	1P+N Code 2M Wide	2 Pole Code 2M Wide	3 Pole Code 3M Wide	4 Pole Code 4M Wide
6A	CSMBS1D6	CSMBS1D6N	CSMBS2D6	CSMBS3D6	CSMBS4D6
10A	CSMBS1D10	CSMBS1D10N	CSMBS2D10	CSMBS3D10	CSMBS4D10
16A	CSMBS1D16	CSMBS1D16N	CSMBS2D16	CSMBS3D16	CSMBS4D16
20A	CSMBS1D20	CSMBS1D20N	CSMBS2D20	CSMBS3D20	CSMBS4D20
25A	CSMBS1D25	CSMBS1D25N	CSMBS2D25	CSMBS3D25	CSMBS4D25
32A	CSMBS1D32	CSMBS1D32N	CSMBS2D32	CSMBS3D32	CSMBS4D32
40A	CSMBS1D40	CSMBS1D40N	CSMBS2D40	CSMBS3D40	CSMBS4D40
50A	CSMBS1D50	CSMBS1D50N	CSMBS2D50	CSMBS3D50	CSMBS4D50
63A	CSMBS1D63	CSMBS1D63N	CSMBS2D63	CSMBS3D63	CSMBS4D63

## 10kA D-Curve Miniature Din Rail Circuit Breakers IP20, IEC 60947-2 / VC8036

Amps	1 Pole Code 1,5M Wide	1P+N Code 3M Wide	2 Pole Code 3M Wide	3 Pole Code 4,5M Wide	4 Pole Code 6M Wide
80A	CSMBS1D80	CSMBS1D80N	CSMBS2D80	CSMBS3D80	CSMBS4D80
100A	CSMBS1D100	CSMBS1D100N	CSMBS2D100	CSMBS3D100	CSMBS4D100

## 10kA Residual Current Circuit Breakers (Earth Leakage Relays) Without Overload VC8035

Amps	2 Pole Code 2M Wide 240V	Leakage Current	Amps	4 Pole Code 4M Wide 415V	Leakage Current
25A	CSR2P25A30-10KA	30mA	25A	CSR4P25A30-10KA	30mA
32A	CSR2P32A30-10KA	30mA	32A	CSR4P32A30-10KA	30mA
40A	CSR2P40A30-10KA	30mA	40A	CSR4P40A30-10KA	30mA
63A	CSR2P63A30-10KA	30mA	63A	CSR4P63A30-10KA	30mA
80A	CSR2P80A30-10KA	30mA	80A	CSR4P80A30-10KA	30mA
100A	CSR2P100A30-10KA	30mA	100A	CSR4P100A30-10KA	30mA
25A	CSR2P25A300-10KA	300mA	25A	CSR4P25A300-10KA	300mA
32A	CSR2P32A300-10KA	300mA	32A	CSR4P32A300-10KA	300mA
40A	CSR2P40A300-10KA	300mA	40A	CSR4P40A300-10KA	300mA
63A	CSR2P63A300-10KA	300mA	63A	CSR4P63A300-10KA	300mA
80A	CSR2P80A300-10KA	300mA	80A	CSR4P80A300-10KA	300mA
100A	CSR2P100A300-10KA	300mA	100A	CSR4P100A300-10KA	300mA

**NEW**

## 10KA CIRCUIT BREAKERS



Easy conversion of a 2/4P Breaker to an Earth Leakage with overload protection suitable for use with 10kA C&S MCBS.

### Add On Residual Current Devices (RCBO)

2 Pole	4 Pole	Type	Current(In)	Leakage Current
CSRCBO2PC32A30MA-10KA	CSRCBO4PC32A30MA-10KA	AC	32A	30mA
CSRCBO2PC32A100MA-10KA	CSRCBO4PC32A100MA-10KA			100mA
CSRCBO2PC32A300MA-10KA	CSRCBO4PC32A300MA-10KA			300mA
CSRCBO2PC63A30MA-10KA	CSRCBO4PC63A30MA-10KA	AC	63A	30mA
CSRCBO2PC63A100MA-10KA	CSRCBO4PC63A100MA-10KA			100mA
CSRCBO2PC63A300MA-10KA	CSRCBO4PC63A300MA-10KA			300mA

## DC BREAKERS

### Rated Voltage 12-220VDC over one pole

Rated Insulation Voltage 660V

Ambient Working Temperature: -5°C - 55°C

Terminal Capacity: 35mm<sup>2</sup>

Rated Impulse Voltage Uimp: 4kV

Mechanical / Electrical Life:

1000 Operations



CSMBS2DC32

### 10kA DC Miniature DIN Rail Circuit Breakers IP20

Amps	1 Pole Code	2 Pole
	1M Wide 12-220VDC	2M Wide 12-220VDC
0.5A	CSMBS1DC0.5	CSMBS2DC0.5
1A	CSMBS1DC1	CSMBS2DC1
2A	CSMBS1DC2	CSMBS2DC2
3A	CSMBS1DC3	CSMBS2DC3
4A	CSMBS1DC4	CSMBS2DC4
5A	CSMBS1DC5	CSMBS2DC5
6A	CSMBS1DC6	CSMBS2DC6
10A	CSMBS1DC10	CSMBS2DC10
16A	CSMBS1DC16	CSMBS2DC16
20A	CSMBS1DC20	CSMBS2DC20
25A	CSMBS1DC25	CSMBS2DC25
32A	CSMBS1DC32	CSMBS2DC32
40A	CSMBS1DC40	CSMBS2DC40
50A	CSMBS1DC50	CSMBS2DC50
63A	CSMBS1DC63	CSMBS2DC63

## ISOLATORS

Rated insulation voltage Ui: 660V

Rated Impulse Voltage Uimp: 6kV

Electrical & Mechanical life: <32A - 30 000 operations  
>32A - 10 000

Terminal Capacity: 35mm<sup>2</sup>

Integrated Label Holder

Accepts Pin / Fork Busbar



CSMB2ISO25

CSMB4ISO63

Amps	1 Pole Code	2 Pole Code	3 Pole Code	4 Pole Code
	1M Wide	2M Wide	3M Wide	4M Wide
25A	CSMBS1ISO25	CSMBS2ISO25	CSMBS3ISO25	CSMBS4ISO25
40A	CSMBS1ISO40	CSMBS2ISO40	CSMBS3ISO40	CSMBS4ISO40
63A	CSMBS1ISO63	CSMBS2ISO63	CSMBS3ISO63	CSMBS4ISO63
80A	CSMBS1ISO80	CSMBS2ISO80	CSMBS3ISO80	CSMBS4ISO80
100A	CSMBS1ISO100	CSMBS2ISO100	CSMBS3ISO100	CSMBS4ISO100
125A	CSMBS1ISO125	CSMBS2ISO125	CSMBS3ISO125	CSMBS4ISO125

## ACCESSORIES FOR 6 & 10kA MCB



CSMBS012SF

CSMBAXSF

CSMALSFW2

Code	Type	Voltage	Amps	Width
CSMBAXSF	Auxilliary Contact Left Side 1NO or 1NC	-	6A	½M
CSMBAXSF2	Auxilliary Contact Left Side 2NO or 2NC	-	6A	½M
CSMALSFW2	Alarm Contact Left Side	-	1A	½M
CSMBS012SF	Shunt Trip Right Side	12VDC	-	1M
CSMBS024SF	Shunt Trip Right Side	24VDC	-	1M
CSMBS048SF	Shunt Trip Right Side	48VDC	-	1M
CSMBS110SF	Shunt Trip Right Side	110VAC	-	1M
CSMBS220SF	Shunt Trip Right Side	220VAC	-	1M

## MODULAR CHANGEOVER SWITCHES

Rated Insulation Voltage  $U_i$ : 660V  
 Rated Impulse Voltage  $U_{imp}$ : 4kV  
 Mechanical / Electrical Life:  
 15000/10000 Operations  
 Terminal Capacity: 16mm<sup>2</sup>  
 Front Operating with 3 Positions: 1, 0, 2  
 Double Break Contacts  
 Compact Design



CSCOS2P25A

Amps	2 Pole Code 2M Wide	4 Pole Code 4M Wide
25A	CSCOS2P25A	CSCOS4P25A
40A	CSCOS2P40A	CSCOS4P40A
63A	CSCOS2P63A	CSCOS4P63A

**CO1CB**

### Modular Changeover Switches

Code	Amps AC22	No. of Poles	Width
SF2P-*	25, 40A	2P	2m
SF2P-*	63, 100, 125A	2P	4m
SF3P-*	25, 40A	3P	3m
SF3P-*	63, 100, 125A	3P	6m
SF4P-*	25, 40A	4P	4m
SF4P-*	63, 100, 125A	4P	8m

\*Add amps to code: 25A, 40A, 63A, 100A, 125A



SF2P-25A/40A

SF3P-25A/40A

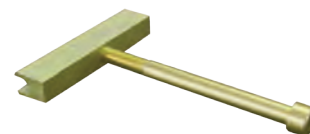
SF4P-25A/40A



SF2P-63A/100A/125A

SF3P-63A/100A/125A

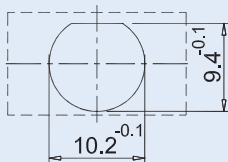
SF4P-63A/100A/125A



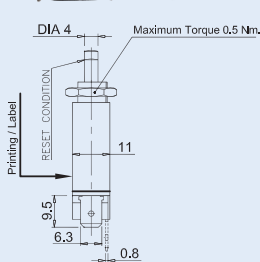
Code	Description
SFP-OH	Operating Handle for 63-125A

## THERMAL CIRCUIT BREAKERS FOR EQUIPMENT

**NEW**

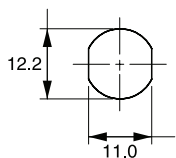


Mounting Hole

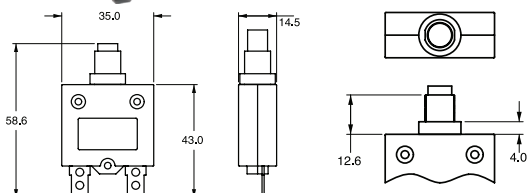


### Manual Push to Reset Thermal Circuit Breakers

Code	Amps (In)	Derating Factor	
NTR11-4A	4A	5°C	In x 1.13
NTR11-5A	5A	0°C	In x 1.11
NTR11-6A	6A	10°C	In x 1.04
NTR11-7A	7A	20°C	In x 1
NTR11-8A	8A	30°C	In x 0.95
NTR11-10A	10A	40°C	In x 0.89
NTR11-12A	12A	50°C	In x 0.83
NTR11-15A	15A	60°C	In x 0.77



Mounting Hole



### Manual Push to Reset Thermal Circuit Breakers

Code	Amps (In)	Derating Factor	
A-0709U 4A	4A	0°C	In x 1.5
A-0709U 5A	5A	10°C	In x 1.3
A-0709U 6A	6A	15°C	In x 1.2
A-0709U 7A	7A	20°C	In x 1.1
A-0709U 8A	8A	25°C	In x 1
A-0709U 10A	10A	35°C	In x 0.85
A-0709U 12A	12A	40°C	In x 0.8
A-0709U 15A	15A	60°C	In x 0.6

125-250VAC/32VDC rated. 2,5kA@32VDC

Calibration of rated current @ 25°C:100%, Continuous

150%, Trip within 60 mins

200%, Trip within 40 secs



# SMART COMMERCIAL ELECTRICAL DISTRIBUTION SYSTEM

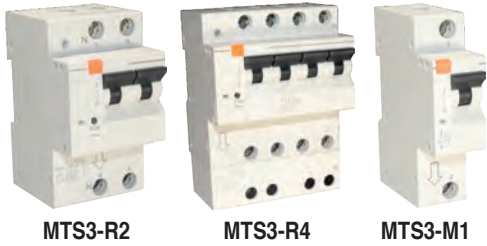


MATIS Smart App



ACDC Smart

NOTE: Chose the communication module that suits the APP of your choice



MTS3-R2

MTS3-R4

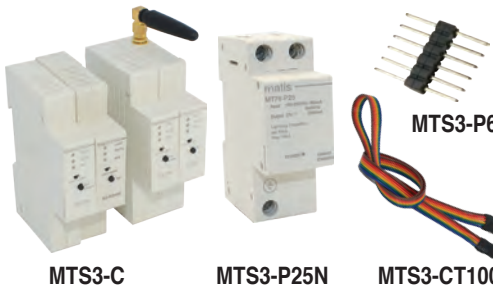
MTS3-M1



MTS3-M2

MTS3-M3

MTS3-M4



MTS3-C

MTS3-P25N

MTS3-CT100

## MTS3 - Smart Miniature Circuit Breakers

- Smart power management for home or commercial properties via app or software platform
- Real-time consumption information, alarms and safety information
- Historical consumption data for up to 12 months (consumption, voltage and current fluctuations, load fluctuations)
- Over & Under voltage, and over temperature alarms and protection
- Arc Fault Alarm built-in

## 6kA Earth Leakage Relay With Overload Protection RCBO - 30mA, AC Type, C-Curve

Amps	2 Pole Code 3M Wide	4 Pole Code 5M Wide
32A	MTS3-R2AC30C32	MTS3-R4AC30C32
63A	MTS3-R2AC30C63	MTS3-R4AC30C63
80A	MTS3-R2AC30C80	MTS3-R4AC30C80

## 6kA Motorized Miniature Circuit Breaker C Curve (Din Modules 1M = 17.5mm)

Amps	1 Pole Code 1.5M Wide	2 Pole Code 2.5M Wide	3 Pole Code 4M Wide	4 Pole Code 5M Wide
20A	MTS3-M1C20	MTS3-M2C20	-	-
32A	MTS3-M1C32	MTS3-M2C32	MTS3-M3C32	MTS3-M4C32
63A	MTS3-M1C63	MTS3-M2C63	MTS3-M3C63	MTS3-M4C63
80A	-	MTS3-M2C80	MTS3-M3C80	MTS3-M4C80

## Communication Modules - Supports up to 32 devices (RCBO & MCB)

Code	Description
MTS3-CWF	Ethernet Gateway, WIFI or Wired Networks
MTS3-CRS	RS485 Serial Communication Gateway
MTS3-CG2	GPRS-2G Cellular Communication Gateway

## Accessories

Code	Description
MTS3-P6	6-Pin Connector for Adjacent Devices
MTS3-CT100	6-Pin Connection Cable for Separated Devices 100mm
MTS3-CT200	6-Pin Connection Cable for Separated Devices 200mm

## Power Supply Module c/w Surge Protection

Code	Input	Output Voltage	Output Current	In	I <sub>max</sub>	Display
MTS3-P25N	100-260VAC	12VDC	2,5A	10kA	15kA	N
MTS3-P25D	100-260VAC	12VDC	2,5A	10kA	15kA	Y

Class II Surge Protection. Can power up to 10 devices (RCBO & MCB)

## Smart Auto-Reclosed Moulded Case RCBO - with Leakage Protection, 50-800mA Adjustable



MTM5-EL250

MTM5-EL630

Code	Poles	Breaking Capacity I <sub>cu</sub>	Rated Current	Dimensions H x W x D (mm)
MTM5-EL125	3P + N	50kA	50-125A Adjustable	150 x 122 x 123
MTM5-EL250	3P + N	50kA	100-250A Adjustable	165 x 142 x 136
MTM5-EL400	3P + N	65kA	200-400A Adjustable	257 x 192 x 180
MTM5-EL630	3P + N	65kA	315-630A Adjustable	336 x 198 x 180

## Communication Modules - Supports up to 32 devices (RCBO & MCB)

Code	Description
MTS3-T30	WIFI and GPRS 4G Communication Gateway
MTS3-CEL	RS485 Serial Communication Gateway

## Smart Metering MCCB - with Leakage Current Protection, 30-1000mA Adjustable



MT88M

MT88C

1 Pole Code	Poles	Breaking Capacity I <sub>cu</sub>	Rated Current	Dimensions H x W x D (mm)
MT88M-LM125	3P+N	35kA	63-125A Adjustable	240 x 142 x 138
MT88M-LM250	3P+N	35kA	100-250A Adjustable	240 x 142 x 138
MT88M-LM400	3P+N	50kA	200-400A Adjustable	336 x 198 x 180
MT88M-LM630	3P+N	50kA	400-630A Adjustable	336 x 198 x 180

## Communication Modules

Code	Description
MT88C-4G	GPRS 4G, RS485 Serial & RJ45 Ethernet Communication Gateways
MT88C-4GG	GPRS 4G, RS485 Serial, RJ45 Ethernet & GPS Communication Gateways



## DIN MODULAR CONTACTORS



NCH8-20



TM2P-40A



TM4P-40A

DIN Contactors - Coil Voltage 230VAC

Code	Amps AC1	No. of Poles	Width
NCH8-20	12A	2P N/O	1m
TM2P-*A	25A, 40A, 63A	2P N/O	2m
TM3P-*A	25A, 40A, 63A	3P N/O	3m
TM4P-*A	25A, 40A, 63A	4P N/O	3m
TM4P-25A/22	25A	2 N/O + 2 N/C	3m
TM4P-40A/22	40A	2 N/O + 2 N/C	3m
TM4P-63A/22	63A	2 N/O + 2 N/C	3m

\*Add amps to code: 25, 40, 63

## READY BOARDS



RB-1

RB-2/RB-2A

### Ready Board RB-1

- 3 x 15A switched socket outlets
- 1 x 63A DP earth leakage
- 2 x 20A SP CB for socket outlets

### Ready Board RB-2/2A

- 3 x 15A switched socket outlets
- 1 x 40 / 63A DP earth leakage
- 1 x 10A SP CB for lights
- 2 x 20A SP CB for socket outlets

Code	Size - H x W x D	Description
RB-1	330 x 245 x 90	No Bulkhead with 63A DP earth leakage
RB-2	455 x 245 x 90	With Bulkhead no lamp with 40A DP earth leakage
RB-2A	455 x 245 x 90	With Bulkhead no lamp with 63A DP earth leakage
RB-2B	455 x 245 x 90	RB-2A with 2 x 16A SA sockets + 1 x 16A N-Type socket

NEW



### Modular Ready Board - PC Nylon Housing

Code	Size - H x W x D	Description
GPRB-2	375 x 255 x 100mm	Ready Board Includes: 1 x 40A DP Earth Leakage 2 x 16A SA Switched Socket Outlets 2 x N-Type Switched Socket Outlets 2 x 20A SP CB for Sockets & Light 1 x Bulkhead with B22 Lampholder (no Lamp)

## DIN PRE-ASSEMBLED DISTRIBUTION BOARDS

White Pre-assembled Distribution Boards - Populated with 4.5kA AC/DC Breakers



Surface Type



Flush Type

Surface	Pre-Wired		12 Way Pre-Wired		12 Way Pre Assembled	
	8 Way DB SRB-3	12 Way DB SRB-3/12	Code	SRB-4	Code	SRB-5
Flush	Pre-Wired		12 Way Pre-Wired		12 Way Pre Assembled	
	8 Way DB FRB-3	12 Way DB FRB-3/12	Code	FRB-4	Code	FRB-5
	1 x 63A DP MCB (Mains)		1 x 63A DP MCB (Mains)		1 x 63A DP MCB (Mains)	
	1 x 63A ELU 30mA		1 x 63A ELU 30mA		1 x 63A ELU 30mA	
	1 x 32A SP MCB (Stove)		1 x 32A SP MCB (Stove)		1 x 32A SP MCB (Stove)	
	1 x 16A SP MCB (Geyser)		1 x 16A SP MCB (Geyser)		1 x 16A SP MCB (Geyser)	
	1 x 10A SP MCB (Lights)		2 x 10A SP MCB (Lights)		2 x 10A SP MCB (Lights)	
	1 x 20A SP MCB (Plugs)		3 x 20A SP MCB (Plugs)		3 x 20A SP MCB (Plugs)	

### Surface Type

- Adjustable steel tray
- 20mm and 25mm knock outs
- Smokey, transparent lid
- 2 x Neutral bars, fitted,
- 1 x Earth bar

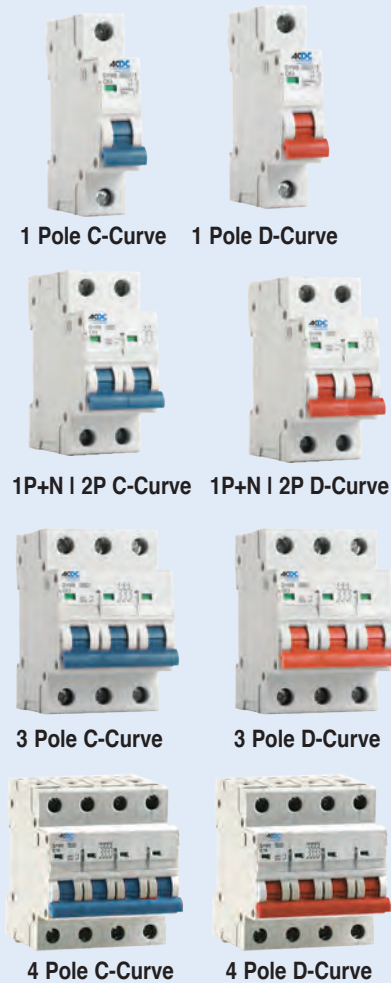
### Flush Type

- 20mm and 25mm knock outs
- Smokey, transparent lid
- 2 x Neutral bars, fitted,
- 1 x Earth bar

## DIN MINIATURE CIRCUIT BREAKERS

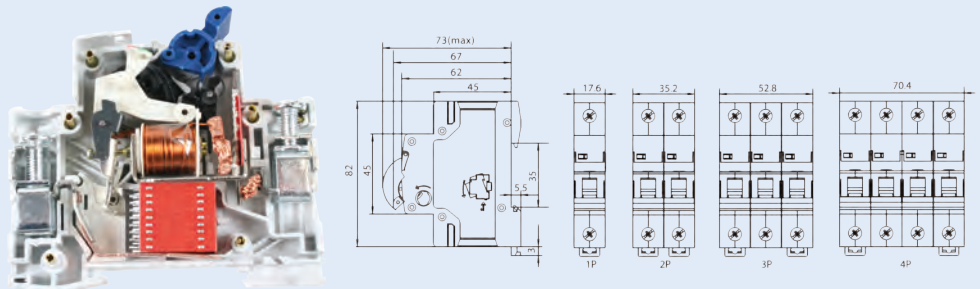
### C & D Curve 4,5kA Circuit Breakers

DIN Modules 1M = 17.5mm - IEC 60947-2 / VC8036

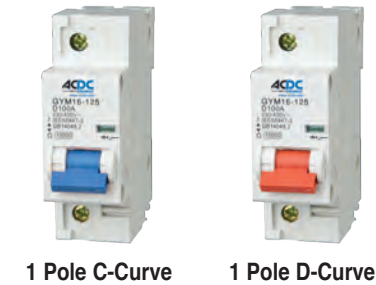


Amps	1 Pole Code 1M wide	1 P+N Code 2M wide	2 Pole Code 2M wide	3 Pole Code 3M wide	4 Pole Code 4M wide
1A	GYM8-1-1*	-	GYM8-2-1*	GYM8-3-1*	-
2A	GYM8-1-2*	-	GYM8-2-2*	GYM8-3-2*	GYM8-4-2*
3A	GYM8-1-3*	-	GYM8-2-3*	GYM8-3-3*	-
4A	GYM8-1-4*	-	GYM8-2-4*	GYM8-3-4*	-
6A	GYM8-1-6*	GYM8-1N-6*	GYM8-2-6*	GYM8-3-6*	GYM8-4-6*
10A	GYM8-1-10*	GYM8-1N-10*	GYM8-2-10*	GYM8-3-10*	GYM8-4-10*
16A	GYM8-1-16*	GYM8-1N-16*	GYM8-2-16*	GYM8-3-16*	GYM8-4-16*
20A	GYM8-1-20*	GYM8-1N-20*	GYM8-2-20*	GYM8-3-20*	GYM8-4-20*
25A	GYM8-1-25*	GYM8-1N-25*	GYM8-2-25*	GYM8-3-25*	GYM8-4-25*
32A	GYM8-1-32*	GYM8-1N-32*	GYM8-2-32*	GYM8-3-32*	GYM8-4-32*
40A	GYM8-1-40*	GYM8-1N-40*	GYM8-2-40*	GYM8-3-40*	GYM8-4-40*
50A	GYM8-1-50*	GYM8-1N-50*	GYM8-2-50*	GYM8-3-50*	GYM8-4-50*
63A	GYM8-1-63*	GYM8-1N-63*	GYM8-2-63*	GYM8-3-63*	GYM8-4-63*

\*Add curve to code: **C** (C-Curve) or **D** (D-Curve)



### C & D Curve 10kA Circuit Breakers - IEC 60947-2 / VC8036



Amps	1 Pole Code 1.5M	1 P+N Code 3M	2 Pole Code 3M	3 Pole Code 4.5M	4 Pole Code 6M
80A	GYM16-1-80*	GYM16-1N-80*	GYM16-2-80*	GYM16-3-80*	GYM16-4-80*
100A	GYM16-1-100*	GYM16-1N-100*	GYM16-2-100*	GYM16-3-100*	GYM16-4-100*
125A	GYM16-1-125*	GYM16-1N-125*	GYM16-2-125*	GYM16-3-125*	GYM16-4-125*

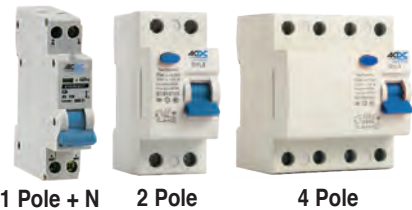
\*Add curve to code: **C** (C-Curve) or **D** (D-Curve)

### Isolators - IEC 60947-3



Amps	1 Pole Code 1M wide	2 Pole Code 2M wide	3 Pole Code 3M wide	4 Pole Code 4M wide
32A	GYH8-1-32	GYH8-2-32	GYH8-3-32	GYH8-4-32
63A	GYH8-1-63	GYH8-2-63	GYH8-3-63	GYH8-4-63
100A	GYH8-1-100	GYH8-2-100	GYH8-3-100	GYH8-4-100
125A	GYH8-1-125	GYH8-2-125	GYH8-3-125	GYH8-4-125

### Earth Leakage Relays - 30mA VC8035



No Overload Protection			With Overload Protection		
Amps	2 Pole Code 2M Wide	4 Pole Code 4M Wide	Amps	2P + N Code 1M Wide	2 Pole Code 2M Wide
25A	GYL8-2-25	GYL8-4-25	25A	-	GYR-8NM2-25
32A	GYL8-2-32	-	32A	GYL8-1-32*	-
40A	GYL8-2-40	GYL8-4-40	40A	-	GYR-8NM2-40
63A	GYL8-2-63	GYL8-4-63	63A	-	GYR-8NM2-63

\*Add 10mA for 10mA option

## DIN MINIATURE CIRCUIT BREAKERS



### Modular Accessories

Code	Type	Voltage	Amps	Width
GY-AU8	Auxiliary Contact 1NO+1NC (1C/O)	-	6A	½m
GY-AL8	Alarm Contact 1NO+1NC (1C/O)	-	1A	½m
GY-SH8	Shunt Trip Left Side	110-220VAC/DC	-	1m
GY-UV8	Undervoltage Relay Left Side	230VAC	-	1m
GY-PL1/2- *	1/2 Module Pilot light	230VAC	-	½m
NSL- *	DIN Rail Pilot Light	230VAC	-	1m

GY-PL1/2 - \*Add colour to code: ● R (Red), ● GN (Green), ● Y (Yellow), ●●● RGY (Red, Green, Yellow)

NSL - \*Add colour to code: ○ W (White), ● R (Red), ● GN (Green), ● BL (Blue),

● Y (Yellow), ●●● RGY (Red, Green, Yellow)

### DIN MCB Accessories



Code	End Caps	Description	Carton Qty
------	----------	-------------	------------

#### Busbars – Spade Terminals

AS-25-SN	-	Busbar terminal for wire sizes up to 25mm <sup>2</sup>	-
S1L-1000/16	-	Insulated busbar 1 phase 63Amps, 1000mm, 56 poles	50
S2L-1000/16	EK-B-2+3	Insulated busbar 2 phase 63Amps, 1000mm, 56 poles	20
S3L-1000/16	EK-B-2+3	Insulated busbar 3 phase 63Amps, 1000mm, 56 poles	20
CK-SAM	-	Conversion Kit from DIN Breakers to 13mm mini rail	-
SP-FBD1M	-	1 x Module Rail Mount Dummy Dark Grey	-
SP-FBD1M-WH	-	1 x Module Rail Mount Dummy White	-
CK-SAM-R	-	1m Conversion rail DIN to 13mm mini rail - c/w Blanking Strip	-

Code	Description
------	-------------

#### Busbars – Fork Terminals

EK-B-2+3	Insulated end cap for 2 & 3 pole busbars
G1L-1000/16	Fork busbar 1 phase 63Amps, 1000mm, 56 poles.
G2L-1000/16	Fork busbar 2 phase 63Amps, 1000mm, 56 poles.
G3L-1000/16	Fork busbar 3 phase 63Amps, 1000mm, 56 poles.

**NEW**

## SMART CIRCUIT BREAKER AUTO RECLOSER



### Wifi Smart Circuit Breaker Recloser Device

Operating mechanism with remote control function, which realizes remote ON/OFF of the associated device (MCB) by App.

Code	Motor Voltage	Use with Breaker	Contact Input	DIN Width	Motor Control/Static Power
MT53-GYM8-2P	230VAC	1P / 2P	1NO	1 Module	20VA/1VA
MT53-GYM8-4P	230VAC	3P / 4P	1NO	1 Module	20VA/1VA

#### Basic Features

- Manual mode: Disengages motor for manual operation
- Auto mode: When a circuit breaker trips, the device will attempt to reclose the circuit. In case of a persistent fault, the device will go into a fault mode after 3 unsuccessful attempts to reclose the circuit.
- Safety lockout integrated into the device
- Suitable for use with ACDC GYM8 MCB

#### In App Features

- Remote ON/OFF control of MCB
- Indication of status Open/Close
- Events records • Show mode of Operation
- Schedule operations
- Operation Life: above 10000 times
- Wifi Connection and status indication



Note: Please see page 29 for GYM8\* circuit breaker full range





# 13MM MINIATURE CIRCUIT BREAKERS (MCBs) 4.5kA



1P C Curve    1P+N C Curve    3P D Curve



2P D Curve    4P C Curve



6kA C Curve ≥ 63A    6kA D Curve ≥ 63A



6kA 4P C Curve ≥ 63A

SA Range 1M = 13mm IEC60947 / VC8036

Amps	1 Pole Code 1M wide	1 P+N Code 2M wide	2 Pole Code 2M wide	3 Pole Code 3M wide	3 P+N Code 4M wide	4 Pole Code 4M wide
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### 4.5kA Circuit Breakers C Curve

1A	SA1-1	-	-	-	-	-
2A	SA1-2	-	-	-	-	-
5A	SA1-5*	SA1N-5*	SA2-5*	SA3-5*	SA3N-5	SA4-5
10A	SA1-10*	SA1N-10*	SA2-10*	SA3-10*	SA3N-10	SA4-10
15A	SA1-15*	SA1N-15*	SA2-15*	SA3-15*	SA3N-15	SA4-15
20A	SA1-20*	SA1N-20*	SA2-20*	SA3-20*	SA3N-20	SA4-20
25A	SA1-25*	SA1N-25*	SA2-25*	SA3-25*	SA3N-25	SA4-25
32A	SA1-32*	SA1N-32*	SA2-32*	SA3-32*	SA3N-32	SA4-32
40A	SA1-40*	SA1N-40*	SA2-40*	SA3-40*	SA3N-40	SA4-40
50A	SA1-50*	SA1N-50*	SA2-50*	SA3-50*	SA3N-50	SA4-50
63A	SA1-63*	SA1N-63*	SA2-63*	SA3-63*	-	SA4-63

### 6kA Circuit Breakers C Curve

5A	SA61-5*	-	SA62-5*	SA63-5*	-	-
10A	SA61-10*	-	SA62-10*	SA63-10*	-	-
15A	SA61-15*	-	SA62-15*	SA63-15*	-	-
20A	SA61-20*	-	SA62-20*	SA63-20*	-	-
25A	SA61-25*	-	SA62-25*	SA63-25*	-	-
32A	SA61-32*	-	SA62-32*	SA63-32*	-	-
45A	SA61-40*	-	SA62-40*	SA63-40*	-	-
50A	SA61-50*	-	SA62-50*	SA63-50*	-	-

Amps	1 Pole Code 2M wide	-	2 Pole Code 4M wide	3 Pole Code 6M wide	-	4 Pole Code 8M wide
63A	SA61-63*	-	SA62-63*	SA63-63*	-	SA64-63
80A	SA61-80*	-	SA62-80*	SA63-80*	-	SA64-80
100A	SA61-100*	-	SA62-100*	SA63-100*	-	SA64-100
125A	SA61-125*	-	SA62-125*	SA63-125*	-	SA64-125

\* For D Curve Breakers, Add -D to code, e.g. SA1-10-D

### Isolators



Amps	1M wide	-	2M wide	3M wide	-	4M wide
25A	SAS1-25	-	SAS2-25	SAS3-25	-	SAS4-25
40A	SAS1-40	-	SAS2-40	SAS3-40	-	SAS4-40
63A	SAS1-63	-	SAS2-63	SAS3-63	-	SAS4-63

### Earth Leakage Relays - RCDs 30mA



Amps	No Overload Protection				With Overload			
	2 Pole Code		Width	4 Pole Code	Width	Amps	2 Pole Code	Width
Type AC	Type A							
25A	SAE2-25	-	2M	SAE4-25	4M	25A	SAE2L-25	2M
40A	SAE2-40	-	2M	SAE4-40	4M	32A	SAE2L-32	2M
63A	-	SAE2A-63	2M	SAE4-63	4M	63A	SAE2L-63	2M



## 13MM MINIATURE CIRCUIT BREAKERS (MCBs) 4.5kA



### Surge Protection Device

Code	Class	No. of poles	I <sub>max</sub> 8/20	In 8/20	Up	U <sub>c</sub>	U <sub>n</sub>	Width
SASP-5KA	2	1	10kA	5kA	1200V	275V	230V	1M
SASP-15KA	2	1	30kA	15kA	1200V	275V	230V	1M



### Time Switch

Code	Description
SAT-30A	<ul style="list-style-type: none"> <li>• 24hrs/7days 8 On + 8 Off Programs</li> <li>• 3M Width (39mm)</li> </ul>

- Switching Capacity: 30A
- 15 Days Reserve



SAM-RAIL



SAM-BLANK-WH



SAM-B1C



SAM-NB



SAM-B1

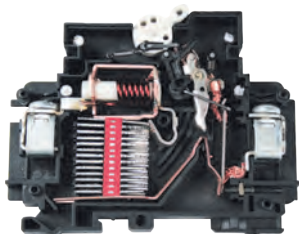


SAM-B3C

### 13mm Mini C/B Accessories

Code	Description
SAM-RAIL	Mini Rail for circuit breakers 77 Way/1m
SAM-B1C	Copper busbar for 13mm mini rail breakers 750mm long 1 Pole black insulated
SAM-B1	Copper busbar for 13mm mini rail breakers 750mm long 1 Pole non-insulated
SAM-B2C	Copper busbar for 13mm Mini Rail Breakers 750mm long 2 Pole black insulated
SAM-B3C	Copper busbar for 13mm mini rail breakers 750mm long 3 Pole black insulated
SAM-BLANK-WH	4½ way 13mm mini rail blanks, white
SAM-BLANK-BK	4½ Way 13mm mini rail blanks, black
SAM-NB	Neutral bar clip-in to rail Accommodates 16mm <sup>2</sup> x 1, 7mm <sup>2</sup> x 7

Arc chute has 13 splitter plates to increase safety and extend contact life



Dual rail mounting: Mini Rail or DIN Rail

Thermal magnetic tripping mechanism provides accurate tripping at lower currents and protects against loose connection on the load terminals



MCB



Isolator



Earth Leakage



Flush Mount



Surface Mount

## 13MM PRE-WIRED DISTRIBUTION BOARDS

### Flush Type



- Adjustable steel tray
- 20mm & 25mm knock outs
- Smokey, transparent lid
- 2x Neutral bars, fitted
- 1x Earth bar

### White Pre-Assembled Distribution Boards - Populated with 13mm MCBs

	8 Way		11 Way	
	Pre-Wired	Pre-Assembled	Pre-Wired	Pre-Assembled
Surface	SRBSAM-3	SRBSAM-5	SRBSAM-4	SRBSAM-6
Flush	FRBSAM-3	FRBSAM-5	FRBSAM-4	FRBSAM-6
	1x 63A 1P+N MCB (Mains)		1x 63A 1P+N MCB (Mains)	
	1x 32A SP MCB (Stove)		1x 32A SP MCB (Stove)	
	1x 16A SP MCB (Geyser)		1x 16A SP MCB (Geyser)	
	1x 63A ELU 30mA		1x 63A ELU 30mA	
	1x 10A SP MCB (Lights)		2x 10A SP MCB (Lights)	
	1x 20A SP MCB (Plugs)		3x 20A SP MCB (Plugs)	
	<b>Supplied in 11-way enclosure.</b>			

### Surface Type



- 20mm & 25mm knock outs
- Smokey, transparent lid
- 2x Neutral bars, fitted
- 1x Earth bar

## DC FUSES & FUSE HOLDERS

Photovoltaic Fuses - 10 x 38mm - gPV		Photovoltaic Fuses - 14 x 51mm - gPV		Photovoltaic Fuses - 10 x 85mm - gPV		Photovoltaic Fuses - 14 x 85mm - gPV	
Rated Voltage: 1000V Breaking Capacity: 20kA		Rated Voltage: 1000V Breaking Capacity: 20kA		Rated Voltage: 1500V Breaking Capacity: 20kA		Rated Voltage: 1500VDC Breaking Capacity: 20kA	
Code	Rated Current	Code	Rated Current	Code	Rated Current	Code	Rated Current
30F1PV	1A	30F10PV	10A	30F15PV-L	15A	F1085GPV-2	2A
30F2PV	2A	30F12PV	12A	30F20PV-L	20A	F1085GPV-4	4A
30F3PV	3A	30F15PV	15A	30F25PV-L	25A	F1085GPV-10	10A
30F4PV	4A	30F20PV	20A	30F32PV-L	32A	F1085GPV-16	16A
30F5PV	5A	30F25PV	25A	30F40PV-L	40A	F1085GPV-20	20A
30F6PV	6A	30F30PV	30A	30F50PV-L	50A	F1085GPV-30	30A
30F8PV	8A						
10 x 38mm DIN Fuse Base - 1000VDC		14 x 51mm DIN Fuse Base - 1000VDC		10 x 85mm DIN Fuse Base - 1500VDC		10/14 x 85mm DIN Fuse Base - 1500VDC	
Code	Ratings	Code	Ratings	Code	Ratings	Code	Ratings
SRD-30	1000VDC, 30A	SRD-63	1000VDC, 50A	SRD-32L	1500VDC, 30A	CFPV63L	1500VDC, 50A

NH Photovoltaic Fuses - gPV			1000VDC NH Fuse Bases	
  Rated Voltage: 1000V Breaking Capacity: 50kA (Size 1) 30kA (Size 2XL)			  Code: NH1PVB, NH2XLB Ratings: Size 1 (1000VDC, 250A), Size 2XL (1000V, 400A)	
Code	Rated Current	DIN Fuse Size		
NH1GVP-32	32A	1		
NH1GVP-40	40A	1		
NH1GVP-50	50A	1		
NH1GVP-63	63A	1		
NH1GVP-80	80A	1		
NH1GVP-100	100A	1		
NH1GVP-125	125A	1		
NH1GVP-160	160A	1		
NH2XLGVP-200A	200A	2XL		
NH2XLGVP-250A	250A	2XL		
NH2XLGVP-315A	315A	2XL		
NH2XLGVP-350A	350A	2XL		
NH2XLGVP-400A	400A	2XL		

## 1000VDC FUSEHOLDERS



### Fuse Holders for DC Applications

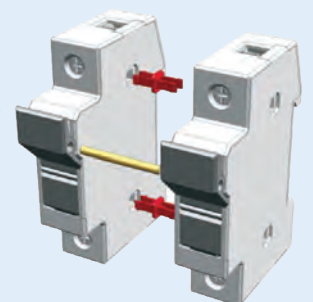
Code	Thermal Rating	Fuse Size	Poles	Width
211PV	20A	10 x 38	1 Pole	18mm
221PV	50A	14 x 51	1 Pole	27mm

### Accessories

Code	Description
21KE	Multipole assembly kits

**According To**  
 • IEC 60947-1  
 • IEC 60947-3

**Characteristics**  
 • 1000VDC - DC-20B  
 • Mounting 35mm DIN rail  
 • High temperature resistant plastics  
 • Elevated insulation characteristics



For multipole fuse holders use multipole assembly kits - 21KE

## FUSE DISCONNECTORS FOR CYLINDRICAL FUSES

Din Rail Mounting  
Rated Operational  
Voltage: 400/690VAC  
Utilisation Category :  
AC-22B



Fuse size	10x38		14x51		22x58	
Type	Basic	c/w LED	Basic	c/w LED	Basic	c/w LED
1 Pole Code	DN56110-1P	DN56130-1P	DN56115-1P	DN56135-1P	DN56120-1P	DN56140-1P
2 Pole Code	DN56112-2P	DN56132-2P	DN56117-2P	DN56137-2P	DN56122-2P	DN56141-2P
3 Pole Code	DN56113-3P	DN56133-3P	DN56118-3P	DN56138-3P	DN56123-3P	DN56143-3P
4 Pole Code	DN56125-4P	-	DN56134-4P	-	DN56139-4P	-
Neutral Link	1038.N	1038.N	1451.N	1451.N	2258.N	2258.N
Rated Current	32A		63A		125A	
Terminal capacity	0.75-25mm <sup>2</sup>		1.5-35mm <sup>2</sup>		4-50mm <sup>2</sup>	

### Fuse Holders

Rated Voltage:  
690VAC

**Gwe**



Fuse Size (mm)	10 x 38		14 x 51		22 x 58	
1 Pole Code	G-211		G-221		G-231	
2 Pole Code	G-212		G-222		G-232	
3 Pole Code	G-213		G-223		G-233	
3 P+N Code (c/w neutral link)	G-213N		G-223N		G-233N	



### Multipole Assembly Kit for Gave Fuse Holders

Code	Description
21KE	Assembly kit for fuse holder (10x38) (14x5)
23KE	Assembly kit for fuse holder (22x58)

**NEW**

## FUSE DISCONNECTORS FOR NH FUSES



Rated Current	Fuse size	1 Pole Code	2 Pole Code	3 Pole Code	3 Pole Busbar Mount
160A	00	DNH10-160/1P	DNH10-160/2P	DNH1-160/30G	DNH1-160/31G
250A	0/1	DNH10-250/1P	DNH10-250/2P	DNH1-250/30G	DNH1-250/31G
400A	2	-	-	DNH1-400/30G	DNH1-400/31G
630A	3	-	-	DNH1-630/30G	DNH1-630/31G
Rated Voltage Operational Voltage		400/690VAC 440VDC	400/690VAC 440VDC	380/660VAC	380/660VAC



### Base Mounted Horizontal NH Fuse Switch

Code	Poles	Fuse Size	Rated Current	Rated Voltage
DNH9-160/1P	1 Pole	00	160A	400VAC
DNH9-160/2P	2 Pole	00	160A	400VAC
WS-01FBJH-1P	1 Pole	1	250A	400VAC
WS-01FBJH-2P	2 Pole	1	250A	400VAC
WS-01FBJH-3P	3 Pole	1	250A	400VAC

DNH9-160

WS-01FBJH-1P



# BUSBAR DISTRIBUTION SYSTEM

## Busbar Power Distribution Systems for use in Panels

- Electrical Components are mounted directly onto the busbars
- No Drilling Required
- Fast & Easy Installation
- Easily Expandable
- Space Saving Design

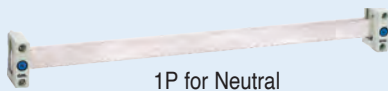
## Application Examples



4P 60mm Assembly with End Caps  
2 x DN52357 + DN53131 + Busbar



3P 60mm Assembly with End Caps  
2 x DN52500/5 + DN53573 + Busbar



1P for Neutral  
2 x DN52601 + Busbar



DN52356



DN52001 + DN53230

## Tin plated Copper Busbar

Code	Busbar Size	Length	Cross Section	Current
DN51618	12 x 5	2400mm	60mm <sup>2</sup>	200A
DN51381	12 x 5	790mm	60mm <sup>2</sup>	200A
DN51382	12 x 5	590mm	60mm <sup>2</sup>	200A
DN51620	20 x 5	2400mm	100mm <sup>2</sup>	320A
DN51383	20 x 5	790mm	100mm <sup>2</sup>	320A
DN51384	20 x 5	590mm	100mm <sup>2</sup>	320A
DN51622	30 x 5	2400mm	150mm <sup>2</sup>	450A
DN51387	30 x 5	790mm	150mm <sup>2</sup>	450A
DN51388	30 x 5	590mm	150mm <sup>2</sup>	450A
DN51624	20 x 10	2400mm	200mm <sup>2</sup>	520A
DN51391	20 x 10	790mm	200mm <sup>2</sup>	520A
DN51392	20 x 10	590mm	200mm <sup>2</sup>	520A
DN51625	30 x 10	2400mm	300mm <sup>2</sup>	630A
DN51393	30 x 10	790mm	300mm <sup>2</sup>	630A
DN51394	30 x 10	590mm	300mm <sup>2</sup>	630A

## Busbar Supports

Support Code	End Cover Code	Busbar Spacing	Poles	Busbar Size (mm)
DN52001	DN53230	185mm	3P	30 x 5
DN52230	DN53230	185mm	3P	30 x 10
DN52500	DN53573	60mm	3P	12 / 20 / 30 x 10
DN52005	DN53573	60mm	3P	12 / 20 / 30 x 5
DN52356	-	60mm	2P	12 / 20 / 30 x 5 / 10
DN52601	-	-	1P	12 / 20 / 30 x 5 / 10
DN52357	DN53131	60mm	4P	12 / 20 / 30 x 5 / 10

## Multi-Pole In/Output Connection Modules - Cable / Busbar to Busbar System Connection

Support Code	Busbar Spacing	Poles	Max Current	Busbar Size (mm)	Terminal Capacity
DN54563	60mm	3P	80A	12 / 20 / 30 x 5 / 10	1.6-16mm <sup>2</sup>
DN54240	60mm	3P	300A	12 / 20 / 30 x 5 / 10	6-50mm <sup>2</sup>
DN54243	60mm	3P	440A	12 / 20 / 30 x 5 / 10	35-120mm (Max)
DN54753	60mm	3P	630A	20 / 30 x 5 / 10	Laminated Busbar 30 x 20mm <sup>2</sup>
DN54199	60mm	3P	460A	20 / 30 x 5 / 10	95-185mm <sup>2</sup>
DN54754	60mm	3P	560A	20 / 30 x 5 / 10	120-300mm <sup>2</sup>
DN54147	60mm	4P	560A	20 / 30 x 5 / 10	120-300mm <sup>2</sup>
DN54162	60mm	4P	630A	20 / 30 x 5 / 10	Laminated Busbar 20-32 x 3-15mm
DN54185	185mm	3P	400A	12 / 20 / 30 x 5 / 10	120-240mm <sup>2</sup>
DN54186	185mm	3P	630A	12 / 20 / 30 x 5 / 10	150-300mm <sup>2</sup>



DN54240



DN54243



DN54263



DN54753  
DN54199  
DN54754



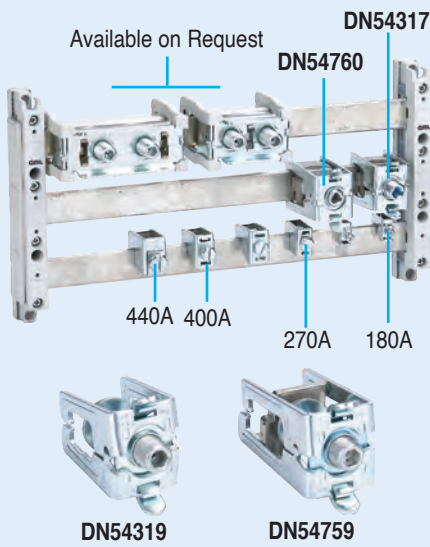
DN54147  
DN54162



DN54185  
DN54186

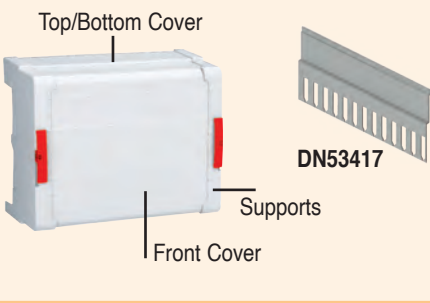


**BUSBAR DISTRIBUTION SYSTEM**



**Universal 1Pole busbar connectors - Connection of In/Output Cables/Busbars to busbars**

Code	Current	Connect to Busbar	Terminal Capacity
DN54284	180A	12 / 20 / 30 x 5mm	1.5-16mm <sup>2</sup>
DN54285	270A	12 / 20 / 30 x 5mm	4-35mm <sup>2</sup>
DN54287	400A	12 / 20 / 30 x 5mm	16-70mm <sup>2</sup>
DN54068	440A	12 / 20 / 30 x 5mm	16-120mm <sup>2</sup>
DN54289	180A	12 / 20 / 30 x 10mm	1.5-16mm <sup>2</sup>
DN54290	270A	12 / 20 / 30 x 10mm	4-35mm <sup>2</sup>
DN54292	400A	12 / 20 / 30 x 10mm	16-70mm <sup>2</sup>
DN54203	440A	12 / 20 / 30 x 10mm	16-120mm <sup>2</sup>
DN54317	500A	20 / 30 x 5 / 10mm	95-185mm <sup>2</sup>
DN54760	600A	20 / 30 x 5 / 10mm	120-300mm <sup>2</sup>
DN54319	750A	20 / 30 x 5 / 10mm	30 x 20mm <sup>2</sup> (Max) Busbar
DN54759	800A	20 / 30 x 5 / 10mm	30 x 20mm <sup>2</sup> (Max) Busbar




**System Covers - For 60mm System**

Code	Poles	Description
DN53136	3	Left & Right Support
DN53137	4	Left & Right Support
DN53555	-	1100mm Top/Bottom Cover Solid
DN53417	-	1100mm Top/Bottom Cover Slotted
DN53554	3	1100mm Front Cover
DN53599	4	1100mm FrontCover

**Clip-on Covers - For Individual Busbars**

Code	Busbar Size (mm)
DN53244	12-30 x 5
DN53245	12-30 x 10



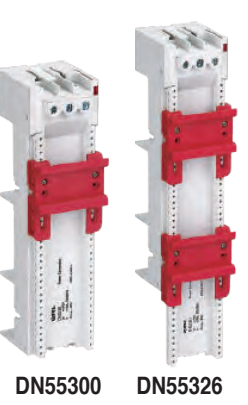
DN53245



**Busbar Mount Base Plates for Moulded Case Circuit Breakers - 60mm System**

Base Code	Connecting Busbar*	Tembreak Frame Size	Rated Current	Poles
DN55177*	DN28000	160A TB Lite	16-160A	3P
DN55037*	DN28001	160/250A TB2 / 250A TB Lite	200-250A	3P
DN55023*	DN28002 (400A), DN28003 (580A)	400/630A TB2	250A - 580A	3P

\*Flexible busbar connector to be ordered separately. Order 3pcs. Breakers available in the ACDC Main Catalogue



**Busbar Mount Base Plates for Miniature Circuit Breakers and Switchgear - 60mm System**

Code	Current	DIN Rails	Dimensions W x L
DN55300	80A	1	54 x 200mm
DN55325	80A	2	54 x 200mm
DN55301	80A	1	54 x 260mm
DN55326	80A	2	54 x 260mm
DN55310	80A	1	81 x 200mm
DN55335	80A	2	81 x 200mm
DN55313	80A	1	81 x 260mm
DN55338	80A	2	81 x 260mm



**Busbar Mounted 10x38 Fuse Switch - 60mm System**

Code	Max Current	Rated Voltage	Poles
DN56017	32A	690VAC	3P
DN56021	32A	690VAC	3P+N
DN56023	32A	690VAC	2P
DN56024	32A	1000VDC	2P



**Busbar Mounted Vertical NH Fuse Disconnecter - 185mm System**

Standard Code	Code c/w CT's	Fuse Size	Rated Current	Rated Voltage	Ui
DNH18-160/3L	DNH18-160/3L-A	00	160A	690VAC	1000V
DNH18-250/3L	DNH18-250/3L-A	1	250A	690VAC	1000V
DNH18-400/3L	DNH18-400/3L-A	2	400A	690VAC	1000V
DNH18-630/3L	DNH18-630/3L-A	3	630A	690VAC	1000V

c/w CT's & Ammeter Support

## CYLINDRICAL FUSES & HOLDERS

Cylindrical Fuses (500V) IEC269				1500V Fuses	Glass Fuses	Ceramic Fuses	Fast Blow
Size mm	10 x 38	14 x 51	22 x 58	10 x 85	5 x 20	5 x 20	6.3 x 32
<p>AM type UF type</p>					<p>250V</p> <p>135% – 1h max</p>	<p>250V</p>	<p>250V</p> <p>200% – 5s max</p>
<b>GL Fuse</b>	<b>1038*</b>	<b>1451*</b>	<b>2258*</b>	<b>F602*</b>	<b>F600**</b>	<b>F700**</b>	<b>F601**</b>
<b>AM Fuse</b>	<b>AM1038*</b>	<b>AM1451*</b>	<b>AM2258*</b>	<b>*2A</b>	<b>*0.1A *3.5A</b>	<b>*1A</b>	<b>*0.25A *5A</b>
<b>Ultra Fast Fuse</b>	<b>UF1038*</b>	<b>UF1451*</b>	<b>UF2258*</b>	<b>*4A</b>	<b>*0.25A *4A</b>	<b>*2A</b>	<b>*0.5A *6.3A</b>
Current	<b>*01A *16A</b>	<b>**1A *16A</b>	<b>*10A *50A</b>	<b>*6.3A</b>	<b>*0.5A *5A</b>	<b>*3A</b>	<b>*0.75A *8A</b>
*Add Amp to code	<b>*02A *20A</b>	<b>**2A *20A</b>	<b>*12A *63A</b>	<b>*10A</b>	<b>*0.8A *6.3A</b>	<b>*4A</b>	<b>*0.8A *10A</b>
Rated Voltage: 500V	<b>*04A *25A</b>	<b>**4A *25A</b>	<b>*16A *80A</b>	<b>*16A</b>	<b>*1A *8A</b>	<b>*5A</b>	<b>*1A *15A</b>
Breaking Capacity: 100kA	<b>*06A *32A</b>	<b>**6A *32A</b>	<b>*20A *100A</b>		<b>*1.25A *10A</b>	<b>*6.3A</b>	<b>*1.6A *16A</b>
	<b>*08A</b>	<b>**8A *40A</b>	<b>*25A</b>		<b>*1.5A *15A</b>	<b>*10A</b>	<b>*2A *20A</b>
* For AM range only	<b>*10A</b>	<b>*10A *50A</b>	<b>*32A</b>		<b>*1.6A *20A</b>	<b>*15A</b>	<b>*3A *25A</b>
	<b>*12A</b>	<b>*12A *63A</b>	<b>*40A</b>		<b>*2A *25A</b>	<b>*20A</b>	<b>*4A *30A</b>
					<b>*3A</b>		<b>5 Pack</b>

Fuse Holders 690V			
Neutral link 1038.N			CMS2258.3

Size mm	10 x 38	14 x 51	22 x 58
Neutral link	<b>1038.N</b>	<b>1451.N</b>	<b>2258.N</b>
1 Pole	<b>MSC1038.1</b>	<b>CMS1451.1</b>	<b>CMS2258.1</b>
2 Pole	<b>MSC1038.2</b>	<b>CMS1451.2</b>	<b>CMS2258.2</b>
3 Pole	<b>MSC1038.3</b>	<b>CMS1451.3</b>	<b>CMS2258.3</b>
4 Pole	<b>MSC1038.4</b>	<b>CMS1451.4</b>	-
1 N Pole	<b>MSC1038.N</b>	<b>CMS1451.N</b>	<b>VS2258.N</b>

* Add quantity to Code /100, /5 eg F601 1.6A/5	

Fuse Holders				
<b>P114</b> 21.5mmØ 1000V	<b>P115/10</b> 12mmØ 250V	<b>HF-015</b> 12mmØ 250V	<b>SP1120/10 (5x20)</b> <b>SP1132 (6.3x32)</b> 250V	<b>P113/10</b> 15mmØ 250V
For Fuse 10 x 85 16A max.	5 x 20mm Panel Mount	5 x 20mm Panel Mount	Inline Fuse Holder	6.3 x 32mm Panel Mount

Econo Type Fuse Holders 500V			Panel Mount Fuse Holder			Open Type Fuse Holders		P.C.B. Fuse Holders		DIN Mount	
10 x 38			10 x 38			10 x 38					
								<b>CQ-2005</b>		Max 250VAC 32A	
			P1891 P1892					For 5 x 20 Fuse 10A 250V			
<b>Pole</b>	<b>Code w/o indication</b>	<b>Code with indication</b>	<b>Pole</b>	<b>Code</b>	<b>Specification</b>	<b>Pole</b>	<b>Code</b>			<b>Code</b>	<b>Pole</b>
1 Pole	<b>VS1038.1</b>	<b>LVS1038.1</b>	1 Pole	<b>P1891</b>	Max. 30A 600V	1 Pole	<b>FB1038.1</b>			<b>FS10</b>	1 Pole
2 Pole	<b>VS1038.2</b>	<b>LVS1038.2</b>	1 Pole	<b>P1892</b>	Max. 30A 600V					6.3 x 32 Fuse Base c/w neon indication	
3 Pole	<b>VS1038.3</b>	<b>LVS1038.3</b>						<b>HF004</b>			
1 N Pole	<b>VS1038.N</b>	-						For 5 x 20 Fuse			

## DIN HRC FUSE LINKS AND CARRIERS

Standard Protection Fuses with Indicator - Rated Voltage: 500V | Fault Capacity: 120kA

DIN Size	C00	00	0	1	2	3	
Code GL	24700-*	24585-*	24710-*	24720-*	24582-*	24588-*	
Current	*6A *10A *16A *20A *25A *32A	*35A *40A *50A *63A *80A *100A	*100A *125A *160A	*125A *160A	*200A *250A	*200A *355A *400A	*400A *500A *630A *800A
*Add Amp to code							

Semi-Conductor Protection Ultra Fast Fuses - Rated Voltage: 500V | Fault Capacity: 120kA

Code	UF24700-*	UF24585-*	UF24710-*	UF24720-*	-	-
Current	*6A, *10A, *16A, *20A, *25A, *32A	*40A, *50A, *63A, *80A, *100A	*100A *125A	*125A *160A *200A *250A	-	-
*Add Amp to code						

Bolt Down Semi-Conductor Ultra Fast Fuses - Rated Voltage: 660V | Fault Capacity: 120kA

Code	UFB00-*	UFB00-*	UFB00-*	UFB1-*	S1000-80-00
Current	*6A, *10A, *16A, *20A, *25A, *32A	*40A, *50A, *63A, *80A, *100A	*100A *125A	*125A *160A *200A *250A	For Size 00 UFB Fuses
*Add Amp to code					

Fuse Bases for DIN HRC Fuse Links

<p>IP00 Fuse Bases</p> <p>Fuse Handle 24649 fits all sizes</p>							
	DIN	C00	00	0	1	2	3
	1 Pole	CT-00FB	CT-00FB	CT-01FB	CT-01FB	CT-02FB	CT-03FB
	3 Pole	24645	24645	24646	24646	24647	-

Fuse & Fuse Base Accessories

Accessories							
Code	1 Pole	3 Pole	Terminal Cover	Fuse Cover	Fuse Barriers	Fuse Linking Piece	Neutral Link
Size C00 & 00	7900.N	7903.00	CT-00FBC1	CT-00FBC2	CT-00FBC3	-	NL24585
Size 0	7901.N	7903.01	CT-01FBC1	CT-01FBC2	CT-01FBC3	CT-01FBC4	NL24710
Size 1	7901.N	7903.01	CT-01FBC1	CT-01FBC2	CT-01FBC3	CT-01FBC4	NL24720
Size 2	7902.N	7903.02	CT-01FBC1	CT-01FBC2	CT-01FBC3	CT-01FBC4	NL24582
Size 3	7903.N	7903.03	CT-03FBC1	CT-03FBC2	-	CT-03FBC4	NL24588



## BS HRC FUSE LINKS & CARRIERS

BS 88 Size	NS	A1	A2	A3	A4	A5
Code ACDC	NS*	NIT*	TIA*	TIS*	TCP*	TFP*
Code Bussman	BNS*	BNIT*	BTIA	BTIS	BTCP	BTFP
Current (*Add Amp to code)	*2A *16A *4A *20A *6A *25A *10A *32A	*2A *4A *6A *10A *16A *20A	*2A *20A *4A *25A *6A *32A *10A *16A	*35A *63M80A *40A *63M100A *50A *63A	*80A *100A *100M200A	*125A *160A
Voltage AC	550V	550V	660V	660V	660V	660V
Fault capacity	80kA	80kA	80kA	80kA	80kA	80kA

Dimensions						
Overall length	58.5mm	55.6mm	85.8mm	85.8mm	111mm	111mm
Hole fixing centres	CLIP-IN	44.5mm	73mm	73mm	93.7mm	93.7mm
Diameter	13.8mm	14.1mm	22.2mm	22.2mm	28mm	33.7mm
Tag type / holes	Offset / None	One side / 2	One side / 2	One side / 2	One side / 2	One side / 2

	NS Fuse Holders				NIT Fuse Holders - A1	
Volts	415V	415/660V	660V	550V	660V	415V
Mounting	Screw	Screw	Busbar	DIN	Screw	Screw
Neutral link for NS Fuse: <b>NS-N</b>						
Connection	Front	Rear	Rear/Front	Front	Front	Front
Black	<b>NSH-B</b>	<b>NSP-B *</b>	<b>NSB-B</b>	<b>32NNSF-B</b>	<b>RS20H</b>	<b>CSM-20H</b>
White	<b>NSH-W</b>	<b>NSP-W *</b>	-	<b>32NNSF-W</b>	-	-
	*Add 415V or 600V					

Dimensions						
Height	82.5mm	80mm	80mm	83mm	80mm	81mm
Width	44mm	25mm	25mm	25mm	27mm	25mm
Depth	67mm	81mm	44mm	49mm	54mm	46mm

	TIA Fuse Holders - A2			TIS Fuse Holders - A3				TCP Fuse Holders - A4	
Volts	660V	660V	415V	660V	660V	660V	415V	660V	415V
Mounting	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw	Screw
Connection	Front	Rear/Front	Front	Front	Rear	Rear/Front	Front	Front	Front
Black	<b>RS32HD</b>	<b>RS32PH</b>	<b>CSM-32H</b>	<b>RS63HD</b>	<b>RS63P</b>	<b>RS63-B</b>	<b>CSM-63H</b>	<b>RS100HD</b>	<b>CSM-100H</b>
Dimensions									
Height	103mm	103mm	98mm	110mm	105mm	110mm	110mm	140mm	130mm
Width	32mm	32mm	32mm	35mm	36mm	35mm	35mm	51mm	47mm
Depth	70mm	70mm	65mm	76mm	65mm	76mm	76mm	100mm	91mm

## BS HRC FUSE LINKS & CARRIERS

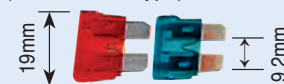
BS 88 Size	B1	B2	B3	B4	C1/C2		C3	Fuse Holders Screw Mount Front Connection
<b>Code ACDC</b>	TS*	TF*	TKF*	TMF*	TM*	TTM*	TLM*	RS200HD
<b>Code Bussman</b>	BTS*	BTF*	BTKF*	BTMF*	BTM*	BTTM*	BTLM*	RS200HD
Current (*Add Amp to code)	*100A	*125A *160A *200A	*250A *315A	*355A *400A	*400A	*500A *560A *630A	*800A	175 x 70 x 115 TF 200A 415V
Voltage AC	660V		660V	660V	660V		660V	
Fault Capacity	80kA		80kA	80kA	80kA		80kA	
<b>Dimensions</b>								
Overall Length	136.5mm		136.5mm	136.5mm	211mm	209.6mm	209.6mm	<b>CSM-200H</b> 176 x 70 x 125
Hole Fixing Centres	111mm		111mm	111mm	133mm / 184mm		133mm / 184mm	
Diameter	33.7mm		40 / 52.6mm	60mm	60mm	74.2mm	82.2mm	
Tag type / Holes	Centre / 2		Centre / 2	Centre / 2	Centre / 4		Centre / 4	

## FUSES & HOLDERS

Bottle Fuses with blown indicator (diaized)					
Size	D01-E14	D02-E18	D1 - E16	D11 - E27	D111 - E33
Standard Protection IEC269					
<b>Code</b>	<b>E14-*</b>	<b>E18-*</b>	<b>E16-*</b>	<b>E27-*</b>	<b>E33-*</b>
Current	*2A	*20A	*2A	*2A	*35A
*Add Amp to code	*4A *6A *10A *16A	*25A *35A *50A *63A	*4A *6A *10A *16A *20A *25A	*4A *6A *10A *16A *20A *25A	*50A *63A
50kA					
Voltage AC	400V	400V	500V	500V	500V
Dimensions Overall length	36mm	36mm	50mm	50mm	50mm
Diameter	11mm	14mm	13mm	22mm	26mm
<b>Fuse Holders</b>					
Plastic, DIN Mount Base 400VAC IEC60269, VDE0636 Order Caps separately	-			 	
<b>Code 1P</b>	-	PPD02-1	PPE16-1	-	PPE33-1
<b>Code 3P</b>	-	PPD02-3	-	-	-
<b>Cap Code</b>	-	E18-CAP	-	-	E33-CAP
<b>Fuse Disconnectors - DIN Mount</b>			<b>Fuse Holders c/w Caps - DIN Mount</b>		
	-				
<b>Code 1P</b>	-	-	E16/1B	E27/1B	E33/1B
<b>Code 2P</b>	-	STVD02-2	-	-	-
<b>Code 3P</b>	-	STVD02-3	E16/3B	E27/3B	E33/3B
	<b>Spare Caps</b>		-	E27-CAP	E33-CAP

### Automotive Fuses - 5 Pack

(9.2mm Blade type) 32V



Code/Amps	Colour
AF-2A/5	Dark Green
AF-3A/5	Violet
AF-4A/5	Pink
AF-5A/5	Tan
AF-7.5A/5	Brown
AF-10A/5	Red
AF-15A/5	Blue
AF-20A/5	Yellow
AF-25A/5	Clear
AF-30A/5	Green
AF-35A/5	Purple

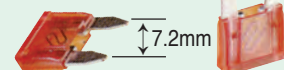
### Inline Fuse Holder



Code	V1161/5
	(7.2mm Blade type)

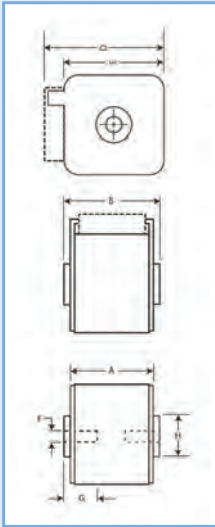
### Mini Automotive Fuses - 5 Pack

(7.2mm Blade type)



Code/Amps	Colour
RL-3A/5	Violet
RL-4A/5	Pink
RL-5A/5	Tan
RL-7.5A/5	Brown
RL-10A/5	Red
RL-15A/5	Blue
RL-20A/5	Yellow
RL-25A/5	Clear
RL-30A/5	Green

## SQUARE BODY TYPE B FUSES



**COOPER Bussmann**



Dimensions (mm)

Size	A	B	D	E	F	G	H
01	50	51	N/A	45	M8	5	17
1	50	51	69	N/A	M8	8	20
2	50	51	N/A	61	M10	10	24
3	51	53	N/A	76	M12	10	30

**High Speed Fuse** - Rated Voltage: 690VAC (IEC/UL)

• Characteristic: aR • Fault Capacity: 200kA

Size	Size 01	Size 1	Size 2	Size 3
<b>Code</b>	<b>170M34-*</b>	<b>170M44-*</b>	<b>170M54-*</b>	<b>170M64-*</b>
Current	*63A	*200A	*400A	*500A
	*80A	*250A	*450A	*550A
	*100A	*315A	*500A	*630A
	*125A	*350A	*550A	*700A
	*160A	*400A	*630A	*800A
	*200A	*450A	*700A	*900A
	*250A	*500A	*800A	*1000A
	*315A	*550A	*900A	*1100A
	*350A	*630A	*1000A	*1250A
	*400A	*700A	*1100A	*1400A
	*450A	*800A	*1250A	*1500A
	*500A	*900A	-	*1600A
	*550A	-	-	-
	*630A	-	-	-

\*Add Amp to code

## BS ULTRA RAPID FUSE LINKS

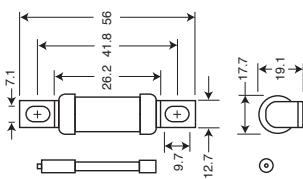
Bussmann Ultra Rapid Fuses – 240V

Code	Rated Current RMS-Amps	I <sup>2</sup> t (Amps <sup>2</sup> secs)			Loss
		Pre-arc	Clearing at 120V	Clearing at 240V	
25LET	25A	18	120	250	4W
32LET	32A	32	200	450	5W
35LET	35A	50	320	600	5W
50LET	50A	100	500	1.4k	7W
63LET	63A	180	1.1k	2.2k	9W
80LET	80A	300	1.9k	3.8k	10W
100LET	100A	600	3.8k	7.5k	10W
125LET	125A	600	3.8k	7.5k	16W
160LET	160A	1.1k	7k	16k	20W
180LET	180A	1.6k	12k	29k	21W

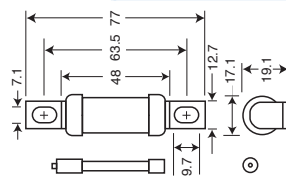
Bussmann Ultra Rapid Fuses – 690V

Code	Rated Current RMS-Amps	I <sup>2</sup> t (Amps <sup>2</sup> secs)			Loss
		Pre-arc	Clearing at 415V	Clearing at 660V	
25ET	25A	25	150	250	7W
32ET	32A	32	190	350	11W
40ET	40A	103	600	900	9W
45ET	45A	103	680	1.1k	11W
56ET	56A	135	950	1.5k	14W
63ET	63A	171	1.2k	2k	16W
80ET	80A	360	2.5k	4k	18W
63FE	63A	135	480	750	12W
80FE	80A	250	900	1.5k	20W
90FE	90A	360	1.3k	2.1k	20W
100FE	100A	470	1.8k	2.8k	23W
110EET	110A	600	4k	6.5k	27W
140EET	140A	1050	7k	12k	35W

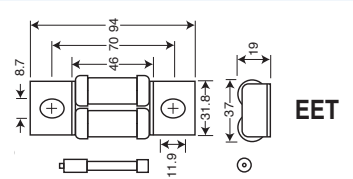
Dimensions Fuse Guide for SCRs: Fuse I<sup>2</sup>t ≤ 0.75 x SCR I<sup>2</sup>t



LET



ET, FE



EET

## J-TYPE POLE FUSES



Code	SMJ30-*	SPJ30-*	SMJ31-*	SPJ31-*
<b>Fixing Centres</b>	82mm	82mm	92mm	92mm
<b>Fuse Body</b>	Ø39mm	Ø50mm	Ø39mm	Ø50mm
Rated voltage: 415V Fault Capacity: 80kA	*20A *100A *32A *125A *40A *160A *50A *200A *63A *250A *80A *315A	*355A *400A	*20A *100A *32A *125A *40A *160A *50A *200A *63A *250A *80A *315A	*355A *400A

\*Add current rating to code

Slotted type fuses designed for wedge type fuse carriers on BS applications. For use by electrical authorities in distribution pillars, open type sub-station boards, heavy duty cutouts and underground connection boxes.

## PLUG TOP FUSE-LINKS

Rated Voltage: 240V  
Breaking Capacity: 6kA

**Cylindrical Fuses** - Size: 6.45 x 24.4mm



Code	Rating	Colour Code
C180-13A	13A	Black

## STOVE FUSES

**Screw Capped (E27) Glass Fuses 240V**



Code	Current Rating	Code	Current Rating
SF-E27-6A	6A	SF-E27-20A	20A
SF-E27-10A	10A	SF-E27-25A	25A
SF-E27-15A	15A	SF-E27-30A	30A



## FIRE RATED ISOLATORS



Fire Rated Aluminium Enclosed Isolators - **IP66**, c/w Padlockable Handle for up to 3 Padlocks

F200 (300°C for 3 Hours)		F300 (300°C for 2 Hours)		AC22@ 400/415V	AC23@ 400/415V	AC23kW@ 400/415V	Dimensions HxWxD(mm)
3 Pole Code	4 Pole Code	3 Pole Code	4 Pole Code				
KEA325-FR-A2	KEA425-FR-A2	KEA325-FR3-A2	KEA425-FR3-A2	25A	25A	11KW	159 x 104 x 116
KEA340-FR-A2	KEA440-FR-A2	KEA340-FR3-A2	KEA440-FR3-A2	40A	40A	22KW	159 x 104 x 116
KEA363-FR-A4	KEA463-FR-A4	KEA363-FR3-A4	KEA463-FR3-A4	63A	40A	22KW	262 x 162 x 143
KEA380-FR-A4	KEA480-FR-A4	KEA380-FR3-A4	KEA480-FR3-A4	80A	63A	30KW	262 x 162 x 143
KEA3125-FR-A5	KEA4125-FR-A5	KEA3125-FR3-A5	KEA4125-FR3-A5	125A	100A	55KW	422 x 300 x 230
KEA3160-FR-A5	KEA4160-FR-A5	KEA3160-FR3-A5	KEA4160-FR3-A5	160A	135A	75KW	422 x 300 x 230
KEA3200-FR-A5	KEA4200-FR-A5	KEA3200-FR3-A5	KEA4200-FR3-A5	200A	200A	110KW	422 x 300 x 230

## FIREMAN SWITCHES IP66



3 Pole Aluminium Side Operated Fire Switches

Code	Description	AC21@ 400/415/ 690V	AC22@ 400/415V 690V	AC23@ 400/415V	AC23kW@ 400/415V	AC23kW@ 690V	Dimensions HxWxD(mm)
KEF316A-A2S	16A 3P Side Operated	16A	16A	16A	7.5KW	11KW	157 x 103 x 80
KEF340A-A2S	63A 3P Side Operated	40A	40A	40A	22KW	22KW	157 x 103 x 80

- Fully Rated Load Break Switch, with Breaking Capacity of 8 x AC23 Rating
- Good UV Resistance
- High Impact Resistance
- Handle Padlockable in Off Position

## FIRE RATED SWITCH DISCONNECTOR IP65



Designed to meet EN-12101-3 which specifies temperature/time requirements for Powered Smoke and Heat Exhaust fans in order to maintain safety under emergency conditions.

EN-12101-3/ F300:



The switch will be operational after 1 hour at 300°C.

EN-12101-3/ F400:



The switch will be operational after 2 hours at 400°C.



25A

40-63A

100 - 125A

\* Four and Six Pole Only Available Ex - Indent

3 Pole Code	AB55225F3	AB55221F4	AB55241F4	AB55261F4	AB55271F4	AB55291F4
3 Pole + 1 Aux (1NO) Code	AB55225F3-A	AB55221F4-A	AB55241F4-A	AB55261F4-A	AB55271F4-A	AB55291F4-A
*4 Pole Code	AB55325F3	AB55321F4	AB55341F4	AB55361F4	AB55371F4	AB55391F4
*6 Pole Code	AB55625F3	AB55621F4	AB55641F4	AB55661F4	AB55671F4	AB55691F4
Temperature Rating to EN12101-3	F300	F400	F400	F400	F400	F400
Rated Current In	25A	25A	40A	63A	100A	125A
Thermal Rating Ith	30A	30A	50A	70A	120A	125A
Rated Operating Voltage	690VAC	690VAC	690VAC	690VAC	690VAC	690VAC
AC23kW @ 400 VAC	7.5kW					
Size L x W x H (mm)	100 x 100 x 106	130 x 130 x 124	160 x 160 x 124	160 x 160 x 124	250 x 250 x 145	250 x 250 x 145

## FIREMANS EMERGENCY SWITCHES



38042



38052

For Illuminated Signs – Weatherproof – **IP65**

Code	Description	Size
38042	Double pole 16A 250V (ACI) Red	Size: 143 x 100 x 65(D) mm
38052	Four Pole 16A 250V (ACI) Grey	Size: 172 x 101 x 73(D)mm

### Safety Features

- Circuit breaking possible using fireman's baton, or similar object.
- Box impossible to open when power is on
- Automatic locking device in "off" position to prevent accidental switching on
- Plastic enclosure, glow wire tested in accordance with IEC 60 695-2-1.1

## ENCLOSED ONLOAD ISOLATORS



25-40A



63-125A



160-630A

**ABS Enclosed Isolators** - c/w Padlockable Handle for up to 3 Padlocks, Indoor Use

3 Pole Code	4 Pole Code	Protection Rating	AC21@ 400/415V	AC22@ 400/415V	AC23@ 400/415V	AC23kW@ 400/415V	Dimensions HxWxD(mm)
KEM325-YR-M2-ABS	KEM425-YR-M2-ABS	IP65	40A	25A	25A	11kW	131 x 97 x 106
KEM340-YR-M2-ABS	KEM440-YR-M2-ABS	IP65	63A	40A	40A	22kW	131 x 97 x 106
KEM363-YR-M3-ABS	KEM463-YR-M3-ABS	IP65	80A	63A	40A	22kW	190 x 144 x 131
KEM380-YR-M3-ABS	KEM480-YR-M3-ABS	IP65	100A	80A	63A	30KW	190 x 144 x 131

**Polycarbonate Enclosed Isolators** - c/w Padlockable Handle for up to 3 Padlocks, Outdoor Use, Good UV Resistance

3 Pole Code	4 Pole Code	Protection Rating	AC21@ 400/415V	AC22@ 400/415V	AC23@ 400/415V	AC23kW@ 400/415V	Dimensions HxWxD(mm)
KEM325-YR-M2	KEM425-YR-M2	IP66	40A	25A	25A	11KW	131 x 96 x 106
KEM340-YR-M2	KEM440-YR-M2	IP66	63A	40A	40A	22KW	131 x 96 x 106
KEM363-YR-M3	KEM463-YR-M3	IP66	80A	63A	40A	22KW	190 x 144 x 131
KEM380-YR-M3	KEM480-YR-M3	IP66	100A	80A	63A	30KW	190 x 144 x 131
KEM3100-YR-M4	KEM4100-YR-M4	IP66	125A	100A	100A	45KW	255 x 180 x 139
KEM3125-YR-M4	KEM4125-YR-M4	IP66	160A	125A	125A	55KW	255 x 180 x 139
KEM3160-YR-MF11	KEM4160-YR-MF11	IP65	160A	160A	160A	90KW	380 x 280 x 171
KEM3200-YR-MF03	KEM4200-YR-MF03	IP65	200A	200A	200A	110KW	560 x 380 x 240
KEM3250-YR-MF03	KEM4250-YR-MF03	IP65	250A	250A	250A	132KW	560 x 380 x 240
KEM3315-YR-MF03	KEM4315-YR-MF03	IP65	315A	315A	315A	160KW	560 x 380 x 240
KEM3400-YR-MF03	KEM4400-YR-MF03	IP65	400A	400A	400A	200KW	560 x 380 x 240
KEM3630-YR-MF03	KEM4630-YR-MF03	IP65	630A	630A	630A	355KW	760 x 560 x 310



**6 Pole Polycarbonate Enclosed Isolators** - for Motor Starter Isolation Applications | c/w Padlockable Handle for up to 3 padlocks

6 Pole Code	Protection Rating	AC21@ 400/415V	AC22@ 400/415V	AC23@ 400/415V	AC23kW@ 400/415V	Dimensions HxWxD(mm)
KEM625-YR-M3	IP66	40A	25A	25A	11kW	190 x 144 x 131
KEM640-YR-M3	IP66	63A	40A	40A	22kW	190 x 144 x 131
KEM663-YR-M3	IP66	80A	63A	40A	22kW	190 x 144 x 131
KEM680-YR-M3	IP66	100A	80A	63A	30kW	190 x 144 x 131
KEM6100-YR-MF11	IP65	125A	100A	100A	45KW	380 x 280 x 171
KEM6125-YR-MF11	IP65	160A	125A	125A	55kW	380 x 280 x 171
KEM6160-YR-MF11	IP65	160A	160A	160A	90kW	380 x 280 x 171



**EMC-Protected Polycarbonate Enclosed Isolators** - for Variable speed drive applications, c/w Padlockable Handle for up to 3 Padlocks & Glands (EMC)

3 Pole Code	Protection Rating	AC21@ 400/415V	AC22@ 400/415V	AC23@ 400/415V	AC23kW@ 400/415V	Dimensions HxWxD(mm)
KEM325-YR-M2EMC	IP66	40A	25A	25A	11KW	131 x 97 x 106
KEM340-YR-M2EMC	IP66	63A	40A	40A	22KW	131 x 97 x 106
KEM363-YR-M3EMC	IP66	80A	63A	40A	22KW	190 x 144 x 131
KEM380-YR-M3EMC	IP66	100A	80A	63A	30KW	190 x 144 x 131
KEM3100-YR-M4EMC	IP66	125A	100A	100A	45KW	225 x 180 x 139
KEM3125-YR-M4EMC	IP66	160A	125A	125A	55KW	225 x 180 x 139

## ENCLOSED ISOLATORS



**Surface Mounting IP65** with padlockable handle

Code	Pole	AC21 400V	AC23 400V	Terminal Capacity	Dimensions H x W x D	Qty/Box
UKF2-63	2	-	63A	16mm <sup>2</sup>	162 x 85 x 87	1
UKF3-63	3	-	63A	16mm <sup>2</sup>	162 x 85 x 87	1

## ALUMINIUM ENCLOSED ISOLATORS IP66

Aluminium Enclosed Isolators - c/w Padlockable Handle for up to 3 Padlocks



- Good UV Resistance
- IK08 - 25 - 160A
- IK10 - 200 - 250A

3 Pole Code	4 Pole Code	Protection Rating	AC21@ 400/415V	AC22@ 400/415V	AC23@ 400/415V	AC23kW@ 400/415V	Dimensions HxWxD(mm)
KEA325-A2	KEA425-A2	IP66	40A	25A	25A	11KW	159 x 104 x 116
KEA340-A2	KEA440-A2	IP66	63A	40A	40A	22KW	159 x 104 x 116
KEA363-A4	KEA463-A4	IP66	80A	63A	40A	22KW	262 x 162 x 143
KEA380-A4	KEA480-A4	IP66	100A	80A	63A	30KW	262 x 162 x 143
KEA3100-A4	KEA4100-A4	IP66	125A	100A	100A	45KW	262 x 162 x 143
KEA3125-A4	KEA4125-A4	IP66	160A	125A	125A	55KW	262 x 162 x 143
KEA3160-A4	KEA4160-A4	IP66	160A	160A	160A	90KW	262 x 162 x 143
KEA3200C-A5	KEA4200C-A5	IP65	200A	200A	200A	110KW	422 x 300 x 230
KEA3250C-A5	KEA4250C-A5	IP65	250A	250A	250A	132KW	422 x 300 x 230

6 Pole Aluminium Enclosed Isolators - for Motor Starter Isolation Applications | c/w Padlockable Handle for up to 3 padlocks



6 Pole Code	Protection Rating	AC21@ 400/415V	AC22@ 400/415V	AC23@ 400/415V	AC23kW@ 400/415V	Dimensions HxWxD(mm)
KEA625-A4	IP66	40A	25A	25A	11KW	262 x 162 x 143
KEA640-A4	IP66	63A	40A	40A	22KW	262 x 162 x 143
KEA663-A4	IP66	80A	63A	40A	22KW	262 x 162 x 143
KEA680-A4	IP66	100A	80A	63A	30KW	263 x 162 x 143
KEA6100-A5	IP65	125A	100A	100A	45kW	422 x 300 x 230
KEA6125-A5	IP65	160A	125A	125A	55KW	422 x 300 x 230
KEA6160-A5	IP65	160A	160A	160A	90KW	422 x 300 x 230

## STAINLESS STEEL ENCLOSED ONLOAD ISOLATORS

Stainless Steel Enclosed Isolators - c/w Padlockable Handle, for up to 3 Padlocks



- 25-160A **IP66** AISI 316
- 200-630A **IP65** AISI 304



- 25-160A **IP66** AISI 316
- For Hygienic and Heavy Duty Applications
- Corrosion Resistant

3 Pole Code	4 Pole Code	Protection Rating	AC21@ 400/415V	AC22@ 400/415V	AC23@ 400/415V	AC23kW@ 400/415V	Dimensions HxWxD(mm)
KER325-YR-RA2	KER425-YR-RA2	IP66	40A	25A	25A	11KW	180 x 120 x 115
KER340-YR-RA2	KER440-YR-RA2	IP66	63A	40A	40A	22KW	180 x 120 x 115
KER363-YR-RA4	KER463-YR-RA4	IP66	80A	63A	40A	22KW	280 x 160 x 128
KER380-YR-RA4	KER480-YR-RA4	IP66	100A	80A	63A	30KW	280 x 160 x 128
KER3100-YR-RA4	KER4100-YR-RA4	IP66	125A	100A	80A	45KW	280 x 160 x 128
KER3125-YR-RA4	KER4125-YR-RA4	IP66	160A	125A	125A	55KW	280 x 160 x 128
KER3160-YR-RA5	KER4160-YR-RA5	IP66	160A	160A	160A	90KW	420 x 300 x 161
KER3200-YR-R6	KER4200-YR-R6	IP65	200A	200A	200A	110KW	620 x 400 x 270
KER3250-YR-R6	KER4250-YR-R6	IP65	250A	250A	250A	132KW	620 x 400 x 270
KER3315-YR-R6	KER4315-YR-R6	IP65	315A	315A	315A	160KW	620 x 400 x 270
KER3400-YR-R6	KER4400-YR-R6	IP65	400A	400A	400A	200KW	620 x 400 x 270
KER3630-YR-R7	KER4630-YR-R7	IP65	630A	630A	630A	355KW	790 x 630 x 270

Full Stainless Steel Enclosed Isolators - c/w Padlockable Handle, Angled Top

KER325-RA2RS	KER425-RA2RS	IP66	40A	25A	25A	11KW	293 x 120 x 113
KER340-RA2RS	KER440-RA2RS	IP66	63A	40A	40A	22KW	293 x 120 x 113
KER363-RA4RS	KER463-RA4RS	IP66	80A	63A	40A	22KW	389 x 160 x 127
KER380-RA4RS	KER480-RA4RS	IP66	100A	80A	63A	30KW	389 x 160 x 127
KER3125-RA5RS	KER4125-RA5RS	IP66	160A	125A	125A	55KW	552 x 300 x 156
KER3160-RA5RS	KER4160-RA5RS	IP66	200A	160A	135A	75KW	552 x 300 x 156

Stainless Steel Enclosed Isolators - c/w Padlockable Handle, Angled Top & Visual Contact Status Indication

3 Pole Code	4 Pole Code	Protection Rating	AC21@ 400/415V	AC22@ 400/415V	AC23@ 400/415V	AC23kW@ 400/415V	AC23 KW @ 690V	Dimensions HxWxD(mm)
KER3250-RA6AVS	KER3250-RA6AVS	IP66	250A	250A	250A	132KW	250KW	680 x 345 x 265
KER3400-RA7AVS	KER3400-RA7AVS	IP66	400A	400A	400A	200kw	355kw	936 x 445 x 325
KER3630-RA7BVS	KER3630-RA7BVS	IP66	630A	630A	630A	355KW	630KW	1096 x 575x325
KER3800-RA10VS	KER3800-RA10VS	IP66	800A	800A	800A	400KW	800KW	1414 x 800 x375

**NEW**



AISI 316  
250-800A



**NEW**

## KU RANGE - ROTARY LOAD BREAK SWITCHES

### Compact DIN Rail / Chassis Mount Isolators

Code 3 Pole	Code 4 Pole	AC22 @ 400/415/690V	AC23 @ 400/415V	AC23 kW @ 400/415V	3 Pole Size H x W x D	4 Pole Size H x W x D
KU325	KU425	25A	25A	11kW	71 x 36 x 62.5	71 x 47.4 x 46
KU340	KU440	40A	40A	22kW	71 x 36 x 62.5	71 x 47.4 x 46



KU340



KU440



RT340L42LKX50



RT325L42LKX50YR



LK10YR



LKX50YR



LK10



LKX50

### Compact Door Mount with Black Handle - c/w padlockable handle and 42mm Shaft

RT325L42LKX50	-	25A	25A	11kW	59 x 36 x 59	-
RT340L42LKX50	-	40A	40A	22kW	59 x 36 x 59	-

### Compact Door Mount with Yellow / Red Handle - c/w padlockable handle and 42mm Shaft

RT325L42LKX50YR	-	25A	25A	11kW	59 x 36 x 59	-
RT340L42LKX50YR	-	40A	40A	22kW	59 x 36 x 59	-

### Accessories

Description	Code	Description	Code
<b>Operating Handles - Padlockable</b>		<b>Extension Shafts</b>	
Black Handle <b>IP65</b>	LKX50	42mm Aluminium	L42AD11
Yellow/red Handle <b>IP65</b>	LKX50YR	100mm Aluminium	L100AD11
Black Handle <b>IP66</b>	LK10	200mm Aluminium	L200AD11
Yellow/red Handle <b>IP66</b>	LK10YR	300mm Aluminium	L300AD11
<b>Auxilliary Contacts - Side mount with 6.3mm Quick Connect Terminal</b>			
Auxilliary 1 NC	1NC40QC	Auxilliary 1 NO	1NO40QC



L100AD11



1NO40QC



KU 630-800A



LKX100



LKX150



LS250H



LS250F



1.V160KU



2.V160KU

### Large Frame Isolators - c/w Padlockable Handle & Shaft

Code 3 Pole	Code 4 Pole	AC22 @ 400/690V	AC23 @ 400/415V	AC23 kW @ 400/415V	3 Pole Size H x W x D	4 Pole Size H x W x D
KU3250L200AD12LKX100	KU4250L200AD12LKX100	250	250	132KW	100x178.5x70	100x224.5x70
KU3400LVK228LKX150	KU4400LVK228LKX150	400	400	200KW	120x203.5x85	120x247.5x85
KU3630LVK228LKX150	KU4630LVK228LKX150	630	630	355KW	160x279.4x110	160x344.4x110
KU3800LVK228LKX150	KU4800LVK228LKX150	800	800	400KW	160x279.4x110	160x344.4x110

### Accessories

Description	Code 250A	Code 400A	Code 630A-800A
<b>Door Mount Handles IP66 - Padlockable, Accepts up to 3 Locks</b>			
Black Padlockable Handle	LKX100	LKX150	LKX150
Yellow/red Padlockable Handle	LKX100YR	LKX150YR	LKX150YR
<b>Terminal Covers &amp; Phase Barriers</b>			
1-pole terminal cover - High	LS250H	LS400H	LS800H
1-pole terminal cover - Flush	LS250F	LS400F	LS800F
Phase barrier - 1pc	VS250	VS400	VS800

### Extension Shafts

Steel Extension Shaft	L200AD112T6 (200mm)	LVK228 (228mm)	LVK228 (228mm)
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### Aux Contact Arrangements

1NO/NC Aux Contact	1.V160KU	1.V160KU	1.V160KU
2NO/2N/C Aux Contact	2.V160KU	2.V160KU	2.V160KU

## KU RANGE - ROTARY LOAD BREAK SWITCHES

DC Ratings Available on Request



KU(N) 25-80A KU 100-160A



KU1V KU2V



LK10 LK10YR L100AD11



LK2/OK2 LK11 LK11YR



VKA with ALK3160 Fitted RV52S



KU3/4P VV



OKA/KU  
OKA/VKA

### Compact DIN Rail Mount Isolators

Code 3 Pole	Code 4 Pole	AC22 @ 400/415/690V	AC23 @ 400/415V	AC23 kW @ 400/415V	AC23 kW @ 690V	3 Pole Size H x W x D	4 Pole Size H x W x D
-	KU425N	25A	25A	11kW	22kW	74 x 50 x 73	74 x 65 x 73
KU340N	KU440N	40A	40A	15kW	30kW	74 x 50 x 73	74 x 65 x 73
KU363N	KU463N	63A	63A	22kW	37kW	74 x 50 x 73	74 x 65 x 73
KU380N	KU480N	80A	80A	30kW	37kW	74 x 50 x 73	74 x 65 x 73
KU3100	KU4100	100A	100A	55kW	55kW	100 x 70 x 87	100 x 94 x 87
KU3125	KU4125	125A	125A	55kW	75kW	100 x 70 x 87	100 x 94 x 87
KU3160	KU4160	160A	160A	90kW	90kW	100 x 70 x 87	100 x 94 x 87
VKA3125N	VKA4125N	125A	100A	55kW	55kW	82 x 79 x 82	82 x 99 x 82
VKA3160N	-	160A	135A	75kW	90kW	83 x 79 x 82	-

### Accessories

Description	Code KU(N) 25-80A	Code KU 100-160A	Code VKA 125-160A
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### Aux Contact Arrangements

1NO / 2NC	KU1V	1.V160KU	VKA1V
2NO / 2NC	KU2V	2.V160KU	VKA2V

### Extension Shafts

100mm Aluminium	L100AD11	L100AD11	L100AD11
200mm Aluminium	L200AD11	L200AD11	L200AD11
300mm Aluminium	L300AD11	L300AD11	L300AD11
100mm steel	L100AD11VT	L100AD12VT	L100AD12VT
200mm steel	L200AD11VT	L200AD12VT	L200AD12VT
300mm steel	L300AD11VT	L300AD12VT	L300AD12VT

### Door Mount Handles On/Off IP65 - Padlockable, accepts up to 3 padlocks

Black Short	LK10	LK10	LK10
Yellow/Red Short	LK10YR	LK10YR	LK10YR
Black Long	LK11	LK11	LK11
Yellow/Red Long	LK11YR	LK11YR	LK11YR
Yellow/Red Economy Handle	LK2/OK2	-	-

### Spreader Connections Bars

For 3 Pole	-	-	ALK3160
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### Change-Over and Parallel Kits - With Padlockable Handle IP65

Change-over Kit	KU3P/4P VV	CO160KU	-
Black handle - Door Mount	LK12 1-0-2	LK12 1-0-2	-
Aux Contact (Max 2 Kits)	VV1.V	1.V160KU	-
Extension Shaft 300 mm steel	L300AD12/VT	L300AD12/VT	-
Parallel kit for 3P	RV52S	PK160KU	RV80S
Parallel kit for 4P	RV66S	PK160KU	RV104S

### Door Mounting Kits - With Padlockable Handle IP65

Black for 3P	OKA/KU/LK10	-	OKA/VKA
Yellow/Red for 3P	OKA/KU/LK10Y/R	-	OKA/VKAY/R
Black for 4P	OKA/KU4P/LK10	-	OKA/VKAY4P
Yellow/Red for 4P	OKA/KU4PLK10Y/R	-	OKA/VKA4PY/R

## LARGE FRAME ISOLATORS

### KATKO

- Includes Fuse Covers, Excludes Terminal Covers
- Dimensions Exclude Terminal Covers



**Din Fused Isolators** - Switch is supplied c/w operating handle and shaft (Padlockable for 3 padlocks)

Code DIN	Fuse Size	Code BS	Fuse Size	AC22 @ 400/415/690V	AC23 @ 400/415V	AC23 KW @ 400/415V	AC23 KW @ 690V	Size H x W x D
KVKE332AD	10 x 38	KVKE332ABS	A1	32A	32A	15KW	-	102 x 108 x 92
KVKE363AD	00	KVKE363ABS	A2-A3	63A	63A	30KW	55KW	163 x 146 x 118
KVKE380AD	00	KVKE380ABS	A2-A3	80A	80A	40KW	75KW	163 x 146 x 118
KVKE3100AD	00	KVKE3100ABS	A2-A3	100A	100A	55KW	90KW	163 x 146 x 118
KVKE3125AD	00	KVKE3125ABS	A2-A3	125A	125A	55KW	110KW	163 x 146 x 118
KVKE3160AD	00	KVKE3160ABS	B1-B2	160A	160A	55KW	110KW	163 x 146 x 118
KVKE3200AD	1	KVKE3200ABS	B1-B3	200A	200A	110KW	160KW	217 x 234 x 128
KVKE3250AD	1	KVKE3250ABS	B1-B4	250A	250A	132KW	250KW	217 x 234 x 128
KVKE3315AD	2	KVKE3315ABS	B1-B4	315A	315A	160KW	315KW	224 x 271 x 140
KVKE3400AD	2	KVKE3400ABS	B1-B4	400A	400A	200KW	355KW	224 x 271 x 140
KVKE3630AD	3	KVKE3630ABS	B1-B4	630A	630A	355KW	500KW	236 x 293 x 151

### KATKO



#### On Load Isolators

Switch is supplied, c/w operating handle and shaft (Padlockable for 3 Padlocks)

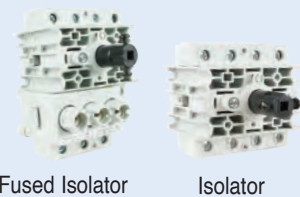
Code 3 Pole	Code 4 Pole	AC22 @ 400/415/690V	AC23 @ 400/415V	AC23 kW @ 400/415V	AC23 kW @ 690V	Size H x W x D
VKE3125	VKE4125	125A	125A	55kW	90kW	163 x 146 x 94
VKE3160	VKE4160	160A	125A	55kW	90kW	163 x 146 x 94
VKE3200	VKE4200	200A	200A	110kW	160kW	217 x 234 x 101
VKE3250	VKE4250	250A	250A	132kW	250kW	217 x 234 x 101
VKE3315	VKE4315	315A	315A	160kW	315kW	224 x 271 x 101
VKE3400	-	400A	400A	200kW	355kW	224 x 271 x 101
VKE3630	VKE4630	630A	630A	355kW	500kW	238 x 307 x 101

#### Accessories for VKE and KVKE

Code	Description	Code	Description
<b>Aux Contact Arrangements</b>			
KVKEC1V	1N0/1NC for KVKE 32A	KVKE1V	1N0/1NC for KVKE/VKE 63-630A
KVKEC2V	2N0/2NC for KVKE 32A	KVKE2V	2N0/2NC for KVKE/VKE 63-630A
<b>Shafts</b>			
L100AD12T	100mm for KVKE/VKE 63-160A	LVK228	228mm for KVKE/VKE 200-630A
L200AD12T	200mm for KVKE/VKE 63-160A	LVK320	300mm for KVKE/VKE 200-630A
L300AD12T	300mm for KVKE/VKE 63-160A		
<b>Handles On/Off IP65 - Padlockable</b>			
LK12	Black for KVKE/VKE 125-160A	LK13YR	Yellow & Red for KVKE/VKE 200-400A
LK12YR	Yellow & Red for KVKE/VKE 125-160A	LK14	Black for KVKE/VKE 200-630A
LK13	Black for KVKE/VKE 200-400A	LK14YR	Yellow & Red for KVKE/VKE 200-630A
<b>Terminal Covers</b>			
LS125	VKE 125-160A & KVKE 63-160A	LS400	VKE 315-400A & KVKE 315-400A
LS250	VKE 200-250A & KVKE 200-250A	LS630	VKE 630A & KVKE 630A
<b>Spreader Connection Bars</b>			
KVKEALK1603P	Spreader bars for KVKE/VKE 125-160A 3 Pole Switches		
KVKEALK1604P	Spreader bars for KVKE/VKE 125-160A 4 Pole Switches		



## COMPACT ISOLATORS



Amps AC22		16A	32A	50A	63A	100A
Fused Isolator	3P	VQ413800	VQ422900	-	-	-
	4P	VQ416100	VQ425200	-	-	-
Isolator only	3P	VQ362700	VQ380900	VQ355100	VQ356900	VQ358500
	4P	VQ365000	VQ383300	-	-	-

16A Fused isolators use 10x38 fuses, 32A Fused isolators use 14x51. For fuses see page 7.25

#### Accessories for XNF Type Fused Isolator

Code	Description
VC301000	1 NO aux contact block 16A
VC300200	1 NC aux contact block 16A
VC303600	1 NO aux contact block 32A
VC302800	1 NC aux contact block 32A



VC301000  
VC300200  
VC303600  
VC302800

Fused Isolator

Isolator



Fused Isolator & Isolator supplied with IP65 ON/OFF Handle & Shaft



## ONLOAD ISOLATORS

### Open Isolators 25...3150A Ue 690V

25-63A supplied with red/yellow padlockable handle and 70mm shaft. For longer shaft order separately. 125-3150A supplied with padlockable pistol-grip handle and shaft. *DIN Rail mounting: 25 & 40A (3 & 4 pole) plus 63A 3 pole. All others are screw mounting.*



25-63A D Type



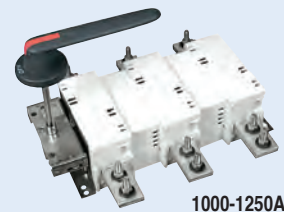
125A D Type



125-160A DM Type



200-800A



1000-1250A

Code		Ie 690V	AC23 415VAC	DC21				kVar 415V	Dimensions 3/4 Pole (mm)	
3 Pole	4 Pole			48VDC	110VDC	220VDC	440VDC		W/W x H x D	Panel Depth
CSSD0025D3	CSSD0025D4	25A	25A	25A/3	25A/3	25A/3	-	10	51/62 x 60 x 68	85-110
CSSD0040D3	CSSD0040D4	40A	40A	40A/3	40A/3	40A/3	-	12,5	51/62 x 60 x 68	85-110
CSSD0063D3	-	63A	63A	63A/3	63A/3	63A/3	-	30	53 x 84 x 68	85-110
-	CSSD0063D4	63A	63A	63A/3	63A/3	63A/3	-	30	110 x 97 x 75	85-110
CSSD0125D3	CSSD0125D4	125A	125A	125A/3	125A/3	125A/3	-	35	110 x 97 x 75	85-110
CSSD0125DM3	CSSD0125DM4	125A	125A	125A/2	125A/3	125A/3	-	50	190/230 x 142 x 90	135-235
CSSD0160DM3	CSSD0160DM4	160A	160A	160A/2	160A/3	160A/3	-	60	190/230 x 142 x 90	135-235
CSSD0200DM3	CSSD0200DM4	200A	200A	200A/2	200A/2	200A/2	200A/3	90	193/292 x 175 x 105	190-300
CSSD0250DM3	CSSD0250DM4	250A	250A	250A/2	250A/2	250A/2	250A/3	115	193/292 x 175 x 105	190-300
CSSD0315DM3	CSSD0315DM4	315A	315A	315A/2	315A/2	315A/2	315A/3	145	193/292 x 175 x 105	190-300
CSSD0400DM3	CSSD0400DM4	400A	400A	400A/2	400A/2	-	-	250	230/292 x 175 x 105	190-300
CSSD0630K3	CSSD0630K4	630A	630A	630A/1	630A/2	-	-	300	244/306 x 223 x 130	220-325
CSSD0800K3	CSSD0800K4	800A	720A	800A/1	800A/2	-	-	330	260/330 x 223 x 130	220-325
CSSD1000K3	CSSD1000K4	1000A	1000A	1000A/1	1000A/2	-	-	-	343/423 x 372 x 125	240-310
CSSD1250K3	CSSD1250K4	1250A	1000A	1250A/1	1250A/2	-	-	-	343/423 x 372 x 125	240-310
CSSD1600K3	CSSD1600K4	1600A	1000A	1600A/1	1600A/2	-	-	-	461/600 x 352 x 125	240-310
CSSD1800K3	CSSD1800K4	1800A	1000A	-	-	-	-	-	461/600 x 352 x 125	240-310
CSSD2000K3	CSSD2000K4	2000A	1000A	-	-	-	-	-	468/607 x 352 x 271	340-450
CSSD2500K3	CSSD2500K4	2500A	1000A	-	-	-	-	-	468/607 x 352 x 271	340-450
CSSD3200K3	CSSD3200K4	3200A	1000A	-	-	-	-	-	468/607 x 352 x 271	340-450

Values not specified are available on application

### Enclosed Isolators IP54

For any of the above to be supplied in a steel enclosure, add the prefix "E-" and -G (Grey) or -O (Orange) e.g. **E-CSSD0160DM3-G**

### Accessories



CSSDZX49



CSSDZX108



CSSDZX111BL



CSWH80S6



CSWH145S12



CSP6X165



CSSDB1/2/3/4



CSSDZW6/1

Switch size	25-40D	63D	125D*	125-160DM	200-315DM	400-800D/K	1000-1800K
Spare Handle – Black padlockable (IP54) Red/Yellow	CSSDZX111BL CSSDZX108	CSSDZX111BL CSSDZX108	CSSDZX111BL CSSDZX108	CSWH80S6*	CSWH80S8*	CSWH145S12*	CSWH220S12*
Shaft – Size (mm)	5² x 150	5² x 150	5² x 150	6² x 165	8² x 240	12² x 255	12² x 255
Code	CSP5X150	CSP5X150	CSP5X150	CSP6X165	CSP8X240	CSP12X255	CSP12X255
Support bracket	CSSDB1 (70mm)	CSSDB1 (70mm)	CSSDB2 (70mm)	CSSDB4 (70mm) CSSDB3 (150mm)	-	-	-
Changeover mechanism	CSSDZW6/1†	CSSDZW6/1†	CSSDZW6/1†	-	-	CSSFZW11	-
Aux. Contact – 1NO + 1NC 3P 2NO + 2NC	CSSDZX49 CSSDZX50	CSSDZX79 CSSDZX80	CSSDZX52 CSSDZX53	CSSDZX1 CSSDZX16	CSSDZX37 CSSDZX38	CSSDZX33 CSSDZX34	CSSDZX35 CSSDZX36
Aux. Contact – 1NO + 1NC 4P 2NO + 2NC	CSSDZX87 CSSDZX88	CSSDZX55 CSSDZX56	CSSDZX55 CSSDZX56	CSSDFZX 1 CSSDFZX 16	CSSDZX37 CSSDZX38	CSSDZX33 CSSDZX34	CSSDZX35 CSSDZX36
Terminal shrouds	-	-	SF701	SF702	SF703	-	-

\*These are supplied with the isolator and are offered for spares purposes only.

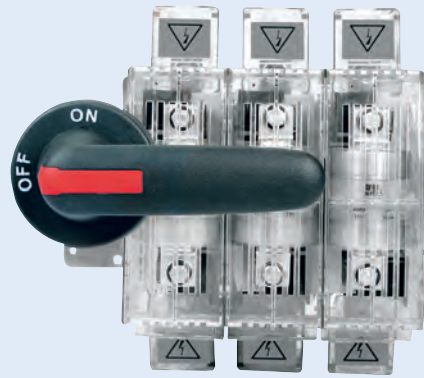
\*For pistol Grip Handle use **CSP5/6X160** Shaft + **CSWH80S6** Handle

†Order **CSP6X165** Shaft. **CSWH80S6** Pistol Grip Handle supplied

# FUSED ISOLATORS



Enclosed Version Electric Orange



BS Type Fuse    DIN Type Fuse

All open fused isolators supplied complete with **IP54** black handle and shaft. **NOTE:** Fuses to be ordered separately

3 Pole DIN Code	DIN Fuse Size	3 Pole BS Code	BS Fuse Size	AC23A 415V	kVAR Switching Capacity	DIN Dimensions H x W x D	BS Dimensions H x W x D	Enclosure Size H x W x D
CSSDF032D	00	CSSDF032B	A2	32A	15	107 x 168 x 126	107 x 168 x 126	300 x 250 x 200
CSSDF063D	00	CSSDF063B	A3	63A	30	107 x 168 x 126	107 x 168 x 126	300 x 250 x 200
CSSDF100D	00	CSSDF100B	A4	100A	45	142 x 190 x 134	142 x 190 x 134	300 x 250 x 200
CSSDF125D	00	CSSDF125B	A4	125A	50	142 x 190 x 134	142 x 190 x 134	300 x 250 x 200
CSSDF160D	00	CSSDF160B	B2	160A	60	142 x 212 x 135	142 x 212 x 134	300 x 250 x 200
CSSDF200D	1	CSSDF200B	B2	200A	90	200 x 261 x 184	200 x 261 x 184	500 x 400 x 200
CSSDF250D	1	CSSDF250B	B3	250A	115	200 x 261 x 184	200 x 261 x 184	500 x 400 x 200
CSSDF315D	2	CSSDF315B	B3	315A	145	200 x 285 x 184	200 x 285 x 184	500 x 400 x 200
CSSDF400D	2	CSSDF400B	B4	400A	180	200 x 285 x 184	200 x 285 x 184	500 x 400 x 200
CSSDF630D	3	CSSDF630B	C2	630A	250	320 x 343 x 223	320 x 403 x 223	800 x 600 x 320
CSSDF800D	3	CSSDF800B	C3	800A	310	320 x 373 x 223	320 x 403 x 223	800 x 600 x 320

For enclosed fused isolators **IP55** add prefix "E-" to the above codes, eg. **E-CSSDF200D**

- The fused isolators conform to IEC 60947 part 3.
- Max operational voltage without derating 690V.
- Utilisation category AC23A@415V.
- Rated insulation voltage  $U_i$  750V. Impulse withstand voltage  $U_{imp}$  12kV.
- Conventional enclosed thermal rating 45°C

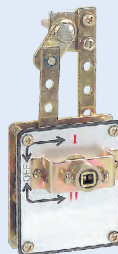
## Accessories



CSSDFZX 33/36



CSSDFZX 1/16



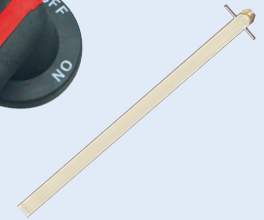
CSSFZW



CSWH8056



CSWH145512



CSP

Isolator Size	Auxiliary Contact 1NO+1NC	Auxiliary Contact 2NO+2NC	Change Over Mechanism	Spare Handle Code <b>IP54</b>	Spare Shaft Code
32-63A	CSSDFZX 46	CSSDFZX 32	CSSFZW1	CSWH80S6	CSP6X165
100-160A	CSSDFZX 1	CSSDFZX 16	CSSFZW1	CSWH80S6	CSP6X165
200-400A	CSSDFZX 33	CSSDFZX 34	CSSFZW12/1	CSWH145S12	CSP12X255
630-800A	CSSDFZX 35	CSSDFZX 36	CSSFZW12/1	CSWH220S12	CSP12X255

## ISOLATORS



**NOTE:** Accessories supplied with switch  
**YGL 125A-630A - YU-3, YU-8**  
**YGL 800A-3150A - YU-4, YU-5, YU-10, YU-12, YU-13, YU-14**  
 See accessories for additional spare parts on page 53



Enclosed Version

Isolators - c/w Handle and 360mm Shaft

Open Code 3 Pole	Open Code 4 Pole	KA RMS For 1 Sec	AMPS AC21 @ 400V	AMPS AC23 @ 400V	Dimensions 3 Pole (H x W x D)	Dimensions 4 Pole (H x W x D)
YGL-0125/3P	YGL-0125/4P	10	125	125	135 x 140 x 120	135 x 170 x 120
YGL-0160/3P	YGL-0160/4P	10	160	160	135 x 140 x 120	135 x 170 x 120
YGL-0200/3P	YGL-0200/4P	12	200	200	165 x 180 x 140	165 x 230 x 140
YGL-0250/3P	YGL-0250/4P	12	250	250	165 x 180 x 140	165 x 230 x 140
YGL-0315/3P	YGL-0315/4P	20	315	315	234 x 230 x 140	234 x 290 x 140
YGL-0400/3P	YGL-0400/4P	20	400	340	234 x 230 x 185	234 x 290 x 185
YGL-0500/3P	YGL-0500/4P	25	500	425	250 x 230 x 185	250 x 290 x 185
YGL-0630/3P	YGL-0630/4P	25	630	500	250 x 230 x 185	250 x 290 x 185
YGL-0800/3P	YGL-0800/4P	50	800	630	328 x 378 x 354	328 x 492 x 440
YGL-1000/3P	YGL-1000/4P	50	1000	800	328 x 378 x 354	328 x 492 x 440
YGL-1250/3P	YGL-1250/4P	50	1250	1000	336 x 378 x 354	336 x 492 x 440
YGL-1600/3P	YGL-1600/4P	50	1600	1250	336 x 378 x 354	336 x 492 x 440
YGL-2000/3P	YGL-2000/4P	50	2000	1250	422 x 378 x 354	422 x 492 x 440
YGL-2500/3P	YGL-2500/4P	50	2500	1250	432 x 378 x 354	432 x 492 x 440
YGL-3150/3P	YGL-3150/4P	50	3150	1250	442 x 378 x 354	442 x 492 x 440

**NOTE:** For enclosed models add: **EO-** (Orange) or **EG-** (Grey) to beginning of code eg.: **EO-YGL-0160/3P**

**NEW**

## LARGE FRAME ISOLATORS

**Gawe**

According to standards:  
IEC 60947-3

- Positive break indication
- High thermal and mechanical strength
- Large number of electrical and mechanical operations

**On Load Isolator** - Handle to be ordered separately | Designed to operate in demanding conditions. Operational categories of AC-22, AC-23 and DC-21 circuits up to 500V.



3 Pole 200A



3 Pole 800A



4 Pole 200A



4 Pole 800A

3P Code	4P Code	AC-23A @415V	DC-21B @500V	Frame size	Size 3 Pole H x W x D	Size 4 Pole H x W x D
55AC3012	55AC4012	125A	125A	B3	135 x 140 x 115	135 x 170 x 115
55AC3016	55AC4016	160A	125A	B3	135 x 140 x 115	135 x 170 x 115
55AC3020	55AC4020	200A	160A	B4	160 x 180 x 115	160 x 230 x 115
55AC3025	55AC4025	250A	200A	B4	160 x 180 x 115	160 x 230 x 115
55AC3040	55AC4040	400A	400A	B5	235 x 230 x 160	235 x 290 x 160
55AC3063	55AC4063	630A	500A	B5	260 x 230 x 160	260 x 290 x 160
55AC3080	55AC4080	800A	800A	B6	321 x 280 x 166	321 x 360 x 166
55AC3100	55AC4100	1000A	1000A	B6	321 x 280 x 166	321 x 360 x 166
55AC3120	55AC4120	1250A	1250A	B7	288 x 372 x 166	288 x 492 x 166
55AC3160	55AC4160	1600A	1600A	B7	288 x 372 x 166	288 x 492 x 166
55AC3200	55AC4200	2000A	1250A	B8	380 x 372 x 226	380 x 492 x 226
55AC3250	55AC4250	2500A	1250A	B8	380 x 372 x 226	380 x 492 x 226
55AC3320	55AC4320	3200A	1250A	B8	380 x 372 x 226	380 x 492 x 226

### Accessories



Phase Barrier



Terminal Screen



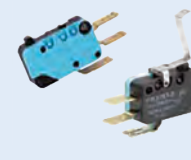
Direct Handle



Panel Mount Handle



Extension Shaft



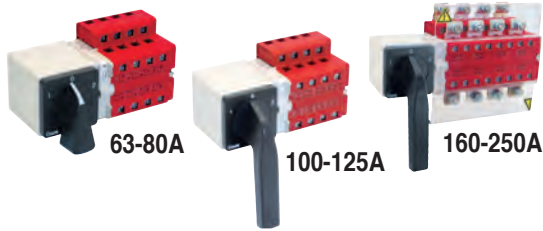
Auxiliary Contact

Frame Size		B3 125-160A	B4 200-250A	B5 400-630A	B6 800-1000A	B7 1250-1600A	B8 2000-3200A
Phase Barriers (Set for top or bottom)	3-Pole	S053B3	S053B4	S053B5		-	
	4-Pole	S054B3	S054B4	S054B5		-	
Terminal	3-Pole	S063B3	S063B4	S063B5	S063B6	S063B7	S063B8
Screen	4-Pole	S064B3	S064B4	S064B5	S064B6	S064B7	S064B8
Direct Handle		S11B1	S11B2	S11J1		S11J4	S11S5
Panel Mount Handle			S13S2			S13S4	S13S5
	200mm		S081020			S081520	S083020
Extension Shaft	320mm		S081032			S081532	S083032
	400mm		-			S081540	-
	500mm		S081050			-	-
Auxiliary Contact							1st NO/NC contact 26990031   2nd NO/NC contact 26990032

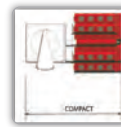


## ONLOAD ISOLATOR, CHANGEOVER & BYPASS SWITCHES

Supplied c/w black operating handle. Door mount kits to be ordered separately.



Integrated Link



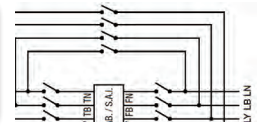
Compact Size

Integrating two circuits on each cell permits an extra compact size. Up to 40% space saving to conventional switches.



Installation

Designed to mount directly on DIN Rail.



**Bypass Switch**  
Switching Scheme for use with Voltage Stabilisers.

Code 3 Pole Isolator Switch	Code 4 Pole Isolator Switch	Code 3 Pole Changeover Switch	Code 4 Pole Changeover Switch	Code 4 Pole Bypass Switch	Rated Voltage	AC21 kW @ 400V	AC23 kW @ 400V	Max cable size (mm <sup>2</sup> )	Terminal Type
LQ5526100	LQ5536100	LQ5626100	LQ5636100	L271F6100	690VAC	37	22	16-50	Screw
LQ5528100	LQ5538100	LQ5628100	LQ5638100	-	690VAC	45	30	16-50	Screw
LQ5527100	LQ5537100	LQ5627100	LQ5637100	L271F7100	690VAC	55	30	16-50	Screw
LQ5529100	LQ5539100	LQ5629100	LQ5639100	L271F9100	690VAC	75	37	16-50	Screw
LQ552A100	LQ553A100	LQ562A100	LQ563A100	L271FA100	690VAC	90	52	70	Bolt
LQ552B100	LQ553B100	LQ562B100	LQ563B100	L271FB100	690VAC	110	65	95	Bolt
LQ552C100	LQ553C100	LQ562C100	LQ563C100	L271FC100	690VAC	132	-	120	Bolt

### Accessories

Code	Description
LK1720006	Door Mounting Kit with 200mm shaft & door interlock
LK0800006	Door Mounting Kit 200mm shaft extension
AK1200146	Black/Grey Padlockable Handle for 63-80A
AK1200148	Black/Grey Padlockable Handle for 100-250A
AK1200526	Red/Yellow Padlockable Handle for 63-80A
AK1200528	Red/Yellow Padlockable Handle for 100-250A
AK2240006	IP65 Gasket for Door Mounted Handles



**NEW**

## LARGE FRAME MANUAL CHANGE OVER SWITCHES

According to standards:  
IEC 60947-3  
IEC 60947-6-1

- Positive break indication
- High thermal & mechanical strength
- Large number of electrical and mechanical operations
- Auxiliary contacts for control circuits can be added as an accessory



**Manual Change Over** - Handle and bridging bars to be ordered separately

Designed to operate in commercial and industrial applications in switching motor or high inductive loads and mixed resistive and inductive loads, including moderate overloads.

3P Code	4P Code	AC-22A @415V	AC-23A @415V	Frame size	Size 3 Pole H x W x D	Size 4 Pole H x W x D
56AC3016	56AC4016	160A	160A	B3	135 x 221 x 148	135 x 251 x 148
56AC3020	56AC4020	200A	200A	B3	135 x 221 x 148	135 x 251 x 148
56AC3025	56AC4025	250A	250A	B4	160 x 262 x 148	160 x 312 x 148
56AC3040	56AC4040	400A	400A	B4	170 x 262 x 148	170 x 312 x 148
56AC3063	56AC4063	630A	630A	B5	260 x 319 x 225	260 x 379 x 225
56AC3080	56AC4080	800A	800A	B6	321 x 386 x 298	321 x 466 x 298
56AC3100	56AC4100	1000A	1000A	B6	321 x 386 x 298	321 x 466 x 298
56AC3120	56AC4120	1250A	1250A	B6	330 x 386 x 298	330 x 466 x 298
56AC3160	56AC4160	1600A	1600A	B7	288 x 478 x 298	288 x 598 x 298
56AC3200	56AC4200	2000A	2000A	B8	380 x 478 x 425	380 x 598 x 425
56AC3250	56AC4250	2500A	2500A	B8	380 x 478 x 425	380 x 598 x 425
56AC3320	56AC4320	3200A	3200A	B8	380 x 478 x 425	380 x 598 x 425

### Accessories

\*3P includes 3 Shrouds.  
4P includes 4 Shrouds.  
For top or bottom protection.



Frame Size	B3 160-200A	B4 250A	B4 400A	B5 630A	B6 800-1000A	B6 1250A	B7 1600A	B8 2000-3200A
Terminal	3-Pole*	S073B3	S073B4	S073B5	-	-	-	-
Shroud	4-Pole*	S074B3	S074B4	S074B5	-	-	-	-
Bridging Bars 1-Pole	S0410020	S0410025	S0410040	S0410063	S0410080	S0410120	S0410160	(See bridging bar table - page 54)
Direct Handle	S11J2			S11J3			S11S5	
Panel Mount Handle	S13S2C			S13S4C			S13S5C	
Extension	200mm	S081020			S081520			S083020
Shaft	320mm	S081032			S081532			S083032
Auxiliary Contact NO / NC	41090021 (1st & 2nd Position)							Included

## CHANGEOVER SWITCHES - CS SERIES



Enclosed Version



CO1

**Change Over Switches** - Supplied with shaft and Padlockable "pistol grip" handle. Ue = 690V

Code 3 Pole	Code 4 Pole	Ith	AC22 @415V	AC23 @415V	Dimensions 3/4 Pole (mm)	
					W/W x H x D	Panel Depth
CSCS0160DM3CO	CSCS0160DM4CO	160A	160A	160A	215/255 x 142 x 182	195-295
CSCS0200DM3CO	CSCS0200DM4CO	200A	200A	200A	248/309 x 163 x 242	255-355
CSCS0250DM3CO	CSCS0250DM4CO	250A	250A	250A	248/309 x 163 x 242	255-355
CSCS0315DM3CO	CSCS0315DM4CO	315A	315A	315A	248/309 x 163 x 242	255-355
CSCS0400K3CO	CSCS0400K4CO	400A	400A	400A	282/352 x 205 x 262	300-400
CSCS0630K3CO	CSCS0630K4CO	630A	630A	630A	282/352 x 223 x 262	300-400
CSCS0800K3CO	CSCS0800K4CO	800A	800A	720A	282/352 x 223 x 262	300-400
CSCS1000K3CO	CSCS1000K4CO	1000A	1000A	800A	396/496 x 352 x 260	330-450
CSCS1250K3CO	CSCS1250K4CO	1250A	1250A	800A	396/496 x 352 x 260	330-450
CSCS1600K3CO	CSCS1600K4CO	1600A	1600A	800A	396/496 x 352 x 260	330-450
CSCS2500K3CO	CSCS2500K4CO	2500A	1800A	-	436/556 x 352 x 552	590-690
CSCS3150K3CO	CSCS3150K4CO	3150A	1800A	-	436/556 x 352 x 552	590-690

Prefix the above codes with "E-". e.g. **E-CSCS0630K4CO** for IP54 Steel Enclosed Changeover Switches

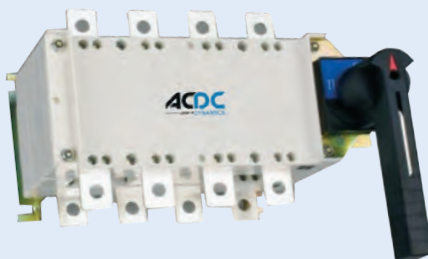
Suffix the above codes with "O-". e.g. **E-CSCS0630K4CO-O** for Orange Enclosures

For rating below 160A/64kVA, use 2 isolators plus changeover mechanism. See page 48

Auxiliary Contacts				Spare Handle & Handle Shafts	
Code	Contact Config	For Switch Type	Qty/ Switch	Code	Description
CSCSZX1-U	1NO + 1NC	160A	1	CCOH145S8	Spare Handle for 63 - 315A
CSCSZX1-L	1NO + 1NC	160A	1	CCOH220S12	Spare Handle for 400 - 1800A
CSCSZX3-U	2NO + 2NC	160A	1	CSDA6	Spare Handle for 2000 - 3150A
CSCSZX3-L	2NO + 2NC	160A	1	CSP8X200	Handle Shaft for 63 - 315A
CSCSZX2	1NO + 1NC	200 - 3150A	2	CSP12X205	Handle Shaft for 400 - 1800A
CSCSZX4	1NO + 2NC	200 - 3150A	2	CSP12X305	Handle Shaft for 2000 - 3150A

## CHANGE OVER SWITCHES

Each switch is supplied c/w:  
Padlockable Handle, Extension  
shaft, Joint sleeve, Face plate,  
Door plate, Ext shaft joint and  
Copper Bridge Pieces.  
Switch includes auxiliary contacts:  
2NO & 2NC.  
See accessories for additional  
spare parts on page 53



Enclosed Version

Open Code 3 Pole	Open Code 4 Pole	KA RMS For 1 Sec	AMPS AC21 @ 400V	AMPS AC23 @ 400V	Open Dimensions		Closed Dimensions	
					3 Pole	4 Pole	3 Pole	4 Pole
YGLZ1-0125/3P	YGLZ1-0125/4P	10	125	125	135 x 274 x 166	135 x 304 x 215	400 x 350 x 380	450 x 350 x 380
YGLZ1-0160/3P	YGLZ1-0160/4P	10	160	160	135 x 274 x 166	135 x 304 x 215	400 x 350 x 380	450 x 350 x 380
YGLZ1-0200/3P	YGLZ1-0200/4P	12	200	200	165 x 347 x 250	165 x 396 x 250	470 x 420 x 400	570 x 420 x 400
YGLZ1-0250/3P	YGLZ1-0250/4P	12	250	250	165 x 347 x 250	165 x 396 x 250	470 x 420 x 400	570 x 420 x 400
YGLZ1-0315/3P	YGLZ1-0315/4P	20	315	315	234 x 432 x 325	234 x 492 x 325	600 x 580 x 500	720 x 580 x 500
YGLZ1-0400/3P	YGLZ1-0400/4P	20	400	340	234 x 432 x 325	234 x 492 x 325	600 x 580 x 500	720 x 580 x 500
YGLZ1-0500/3P	YGLZ1-0500/4P	25	500	425	250 x 432 x 325	250 x 492 x 325	600 x 580 x 500	720 x 580 x 500
YGLZ1-0630/3P	YGLZ1-0630/4P	25	630	500	250 x 432 x 325	250 x 492 x 325	600 x 580 x 500	720 x 580 x 500
YGLZ1-0800/3P	YGLZ1-0800/4P	50	800	630	328 x 583 x 390	328 x 698 x 390	950 x 820 x 550	950 x 820 x 550
YGLZ1-1000/3P	YGLZ1-1000/4P	50	1000	800	328 x 583 x 390	328 x 698 x 390	950 x 820 x 550	950 x 820 x 550
YGLZ1-1250/3P	YGLZ1-1250/4P	50	1250	1000	336 x 583 x 390	336 x 698 x 390	950 x 820 x 550	950 x 820 x 550
YGLZ1-1600/3P	YGLZ1-1600/4P	50	1600	1250	336 x 583 x 390	336 x 698 x 390	1340 x 820 x 600	1540 x 820 x 600
YGLZ1-2000/3P	YGLZ1-2000/4P	50	2000	1250	422 x 583 x 568	422 x 698 x 568	1440 x 820 x 770	1540 x 820 x 770
YGLZ1-2500/3P	YGLZ1-2500/4P	50	2500	1250	432 x 583 x 568	422 x 698 x 568	1440 x 820 x 770	1540 x 820 x 770

**NOTE:** For enclosed models add: **EO-** (Orange) or **EG-** (Grey) to beginning of code eg.: **EG-YGLZ1-0160/3P**

**NOTE:** For enclosed models **EO-** dimensions to be confirmed with panel workshop

# MOTORISED CHANGE OVER SWITCHES

Supplied with manual operating handle.

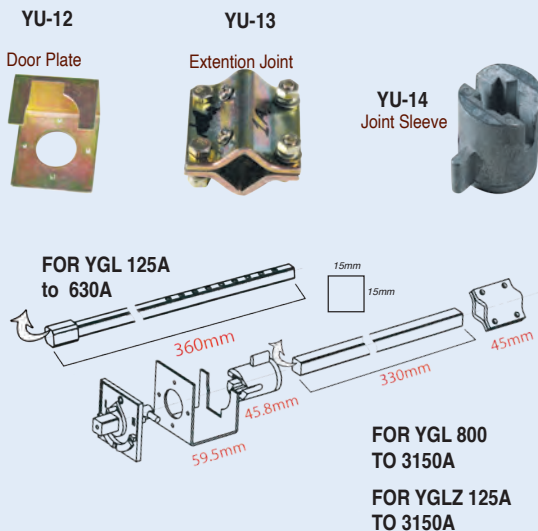
Copper Bridge Pieces included



**YES1** type Automatic Transfer Switch (ATS) Integrates control logic an electromechanical switch into a single housing without the requirements of additional controllers. Internally fitted with Aux contact 1 NO + 1 NC.

Open Type Code - 3 Pole	Open Type Code - 4 Pole	KA RMS for 1 Second	Internal Motor Watts	Switch Over Time in Secs	Amps @ AC21 400V	Amps @ AC23 400V	Open 4 Pole Size H x W x D (mm)
YES1-0100GA3P	YES1-0100GA4P	7	300	0.45	100	100	106 x 279 x 169
YES1-0160GA3P	YES1-0160GA4P	9	325	0.45	160	160	135 x 322 x 230
YES1-0250GA3P	YES1-0250GA4P	9	325	0.45	250	250	163 x 406 x 230
YES1-0400GA3P	YES1-0400GA4P	13	355	0.6	400	400	234 x 552 x 230
YES1-0630GA3P	YES1-0630GA4P	13	355	0.6	630	400	328 x 760 x 284
YES1-1000GA3P	YES1-1000GA4P	26	440	1.2	1000	800	328 x 760 x 363
YES1-1250GA3P	YES1-1250GA4P	50	440	1.2	1250	800	328 x 760 x 363
YES1-1600GA3P	YES1-1600GA4P	50	440	1.2	1600	1000	328 x 760 x 363
YES1-2000GA3P	YES1-2000GA4P	55	600	1.8	2000	2000	422 x 800 x 542
YES1-2500GA3P	YES1-2500GA4P	55	600	1.8	2500	2500	432 x 800 x 542
YES1-3200GA3P	YES1-3200GA4P	55	600	2.4	3200	3000	442 x 800 x 542

## ACCESSORIES FOR YGL - YGLZ - YES1 SERIES



Code	Description
YU-1	Spare Handle for YES1-0040 to 0100 / YGLZ1-0125
YU-2	Spare Handle for YES1-0125 to 0160 / YGLZ1-0160 to 0630
YU-3	Spare Handle for YGL-0125 to 0630
YU-4	Spare Handle for YGL-800 to 3150 / YGLZ1-800 to 3150
YU-5	Spare Handle for YES1-0400 to 630A
YU-6	Spare Handle for YES1-800 to 3200A
YU-8	Spare Shaft for YGL-0125 to 0630 (360mm)
YU-9	Spare Shaft for YGL-0800 to 3150 / YGLZ1-0125 to 3150 (330mm)
YU-10	Face Plate On-Off (YGL)
YU-11	Face Plate On-Off-On (YGLZ1)
YU-12	Door Plate
YU-13	Extension Joint
YU-14	Joint Sleeve



NEW

# LARGE FRAME MOTORISED CHANGEOVER SWITCHES

According to Standards:  
IEC 60947-3  
IEC 60947-6-1

### Motorised Changeover Switch - Manual override with handle

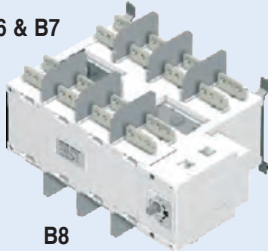
Designed to operate in commercial and industrial applications with external ATS/AMF control. They enable on-load transfer of two 3-phase supplies via potential-free contacts with incoming signaling from external controllers or relays.



B4 & B5



B6 & B7



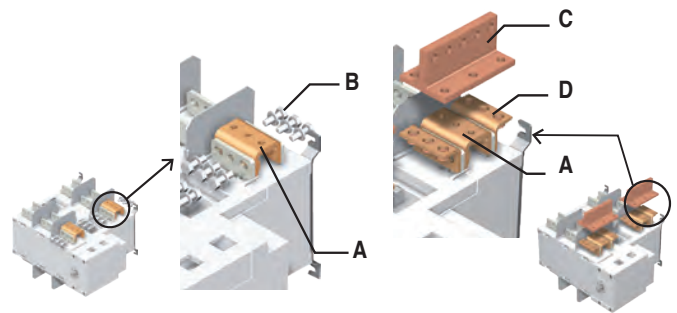
B8

Code	AC-23B @415VDC	DC-21B @440VDC	No. of Poles	Frame Size	Size (mm) H x W x D
56MAC4025	250A	200A	4 Pole	B4	160 x 378 x 244
56MAC4040	400A	200A	4 Pole	B4	170 x 378 x 244
56MAC4063	630A	630A	4 Pole	B5	260 x 437 x 221
56MAC4080	800A	800A	4 Pole	B6	370 x 584 x 391
56MAC4100	1000A	1000A	4 Pole	B6	370 x 584 x 391
56MAC4120	1250A	1250A	4 Pole	B6	370 x 584 x 391
56MAC4160	1250A	1250A	4 Pole	B7	380 x 716 x 391
56MAC4200	1600A	-	4 Pole	B8	288 x 716 x 512
56MAC4250	1600A	-	4 Pole	B8	288 x 716 x 512
56MAC4320	1600A	-	4 Pole	B8	288 x 716 x 512

### Features

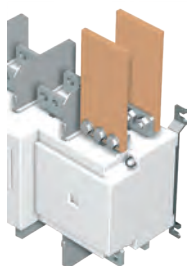
- Integrated watchdog relay - realtime monitoring of product status.
- Integrated auxiliary contacts for each position (NO)
- Wide motor supply range: 208-277VAC

### Accessories

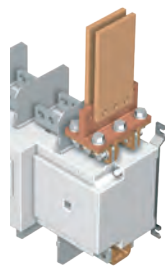


Size	Frame	Bridging Bars 1-Pole	Terminal Shrouds 4 Pole	Bridging Bar Table 2000A - 2500A			
				Code	Part	Description	Size
250A	B4	S0410025	S074B4	S04A1200	A	Connection Bar	2000A-2500A
400A	B4	S0410040	S074B4	S04B1200	B	Bolt Kit 35mm	2000A-2500A
630A	B5	S0410063	S074B5	S04C1200	C	T Bar + Bolt Kit	2000A-2500A
800A	B6	S0410080	-	S04D1200	D	Bracket + Bolt Kit	2000A-2500A
1000A	B6	S0410080	-	Bridging Bar Table 3200A			
1250A	B6	S0410120	-				
1600A	B7	S0410160	-	Code	Part	Description	Size
2000A	B8	See Bridging Bar Table	-	Included	A	Connection Bar	3200A
2500A	B8			S04B1200	B	Bolt Kit 35mm	3200A
3200A	B8			S04C1200	C	T Bar + Bolt Kit	3200A
				S04D1200	D	Bracket + Bolt Kit	3200A

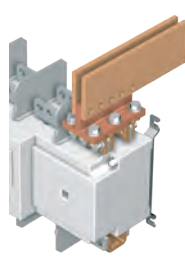
### Connection Configurations & Required Accessories - for more detail, see page 64



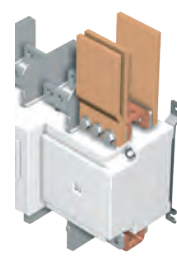
Connection 1 - B



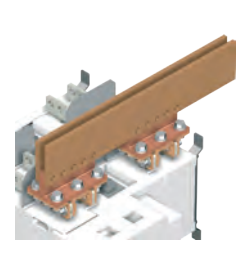
Connection 2 - A+C+D



Connection 3 - A+C+D



Connection 4 - A+B



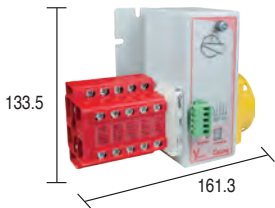
Connection 5 - 2xA + 2xC + 2xD

## MOTORISED CHANGEOVER SWITCHES 63-250A

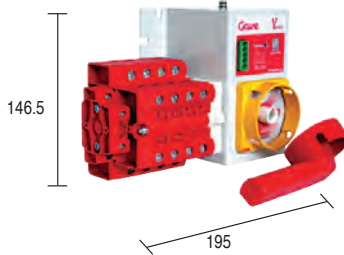
Rated Voltage: 690VAC@50Hz  
All current ratings above 80A are AC23

Auxiliary contacts included.  
No external bridging required.  
Padlockable manual operating handle included.

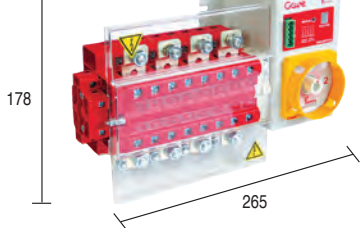
40-63A



63-125A



160-250A



New 3 Source motorised changeover switch is used in applications where three sources of supply are available, e.g:

- 0 = Off
- 1 = Mains
- 2 = Generator
- 3 = Battery Back-Up



Automatic Phase Selection to maintain power supply continuity for single phase loads. Especially useful in telecoms rectifier applications

**Note: All 230 VAC units are supplied with one Power Supply.**

4P Code	Rated Current	KVA @ 400V AC21	AC23 @ 400VAC	Terminal Capacity mm <sup>2</sup>
<b>Motor Volts 12VDC</b>				
Y-5634101	40A (AC21)	28kVA	18.5kW	10 - 25mm <sup>2</sup> Cage
Y-5635101	63A (AC22)	44kVA	-	10 - 25mm <sup>2</sup> Cage
YL5636101	63A (AC23)	44kVA	37kW	16 - 50mm <sup>2</sup> Cage
YL5638101	80A	55kVA	45kW	16 - 50mm <sup>2</sup> Cage
YL5637101	100A	69kVA	45kW	16 - 50mm <sup>2</sup> Cage
YL5639101	125A	87kVA	55kW	16 - 50mm <sup>2</sup> Cage
YL563A101	160A	111kVA	60kW	70mm <sup>2</sup> M8 Stud
YL563B101	200A	139kVA	75kW	95mm <sup>2</sup> M8 Stud
YL563C101	250A	173kVA	90kW	120mm <sup>2</sup> M8 Stud

### Motor Volts 24VDC

Y-5634201	40A (AC21)	28kVA	18.5kW	10 - 25mm <sup>2</sup> Cage
Y-5635201	63A (AC22)	44kVA	-	10 - 25mm <sup>2</sup> Cage
YL5636201	63A (AC23)	44kVA	37kW	16 - 50mm <sup>2</sup> Cage
YL5638201	80A	55kVA	45kW	16 - 50mm <sup>2</sup> Cage
YL5637201	100A	69kVA	45kW	16 - 50mm <sup>2</sup> Cage
YL5639201	125A	87kVA	55kW	16 - 50mm <sup>2</sup> Cage
YL563A201	160A	111kVA	60kW	70mm <sup>2</sup> M8 Stud
YL563B201	200A	139kVA	75kW	95mm <sup>2</sup> M8 Stud
YL563C201	250A	173kVA	90kW	120mm <sup>2</sup> M8 Stud

### Motor Volts 230VAC

Y-5634301	40A (AC21)	28kVA	18.5kW	10 - 25mm <sup>2</sup> Cage
Y-5635301	63A (AC22)	44kVA	-	10 - 25mm <sup>2</sup> Cage
YL5636301	63A (AC23)	44kVA	37kW	16 - 50mm <sup>2</sup> Cage
YL5638301	80A	55kVA	45kW	16 - 50mm <sup>2</sup> Cage
YL5637301	100A	69kVA	45kW	16 - 50mm <sup>2</sup> Cage
YL5639301	125A	87kVA	55kW	16 - 50mm <sup>2</sup> Cage
YL563A301	160A	111kVA	60kW	70mm <sup>2</sup> M8 Stud
YL563B301	200A	139kVA	75kW	95mm <sup>2</sup> M8 Stud
YL563C301	250A	173kVA	90kW	120mm <sup>2</sup> M8 Stud

### 3 Sources Motorised Changeover Switch 12VDC

YL3936101	63A (AC23)	44kVA	37kW	10 - 25mm <sup>2</sup> Cage
YL3938101	80A	55kVA	45kW	16 - 50mm <sup>2</sup> Cage
YL3937101	100A	69kVA	45kW	16 - 50mm <sup>2</sup> Cage
YL3939101	125A	87kVA	55kW	16 - 50mm <sup>2</sup> Cage
YL393A101	160A	111kVA	60kW	70mm <sup>2</sup> M8 Stud
YL393B101	200A	139kVA	75kW	95mm <sup>2</sup> M8 Stud
YL393C101	250A	173kVA	90kW	120mm <sup>2</sup> M8 Stud

### 3 Sources Motorised Changeover Switch 24VDC

YL3936201	63A (AC23)	44kVA	37kW	10 - 25mm <sup>2</sup> Cage
YL3938201	80A	55kVA	45kW	16 - 50mm <sup>2</sup> Cage
YL3937201	100A	69kVA	45kW	16 - 50mm <sup>2</sup> Cage
YL3939201	125A	87kVA	55kW	16 - 50mm <sup>2</sup> Cage
YL393A201	160A	111kVA	60kW	70mm <sup>2</sup> M8 Stud
YL393B201	200A	139kVA	75kW	95mm <sup>2</sup> M8 Stud
YL393C201	250A	173kVA	90kW	120mm <sup>2</sup> M8 Stud

### Motorised R-O-S-T Phase selector Switch 12VDC

YL6114101	40A (AC21)	28kVA	18.5kW	10 - 25mm <sup>2</sup> Cage
YL6116101	63A (AC23)	44kVA	37kW	10 - 25mm <sup>2</sup> Cage
YL6117101	100A	69kVA	45kW	16 - 50mm <sup>2</sup> Cage
YL6119101	125A	87kVA	55kW	16 - 50mm <sup>2</sup> Cage

### Power Supply for above Change Over Switches

Code	Output				Input
	DC Voltage	Rated Current	Rated Power	Voltage Adj. Range	Voltage Range
DRA30-12	12V	2.5A	30	10.8~13.2V	90~265VAC
DRA60-24	24V	2.5A	30	24~28V	90~265VAC

**NEW**

## MOTORISED CHANGEOVER SWITCHES



2 Pole

3 Pole



4 Pole

**Domestic ATS** - Automatically changes over to back-up power source in the event of a power failure. Compact design suitable for installation in existing domestic DIN distribution boards

Code	Rated Voltage	Rated Current	Control Voltage	C/O Time	No. of Poles	Size (mm) L x H x D
W2R-ATS-100A-2P	230VAC	100A	230VAC	≤50mSec.	2P	108 x 104 x 79
W2R-ATS-100A-3P	400VAC	100A	230VAC	≤50mSec.	3P	125 x 104 x 79
W2R-ATS-100A-4P	400VAC	100A	230VAC	≤50mSec.	4P	143 x 104 x 79

- Ui: 690VAC
- Auxiliary Contacts: 2 x C/O (5A@230VAC)
- Utilisation Category: AC33B
- Rated Operating Temperature: -5 to 40°C

## AUTO / MANUAL ATS

### MCB Based Motorised Change Over Switch



Code	Rated Voltage	Current	Control Voltage	C/O Time (sec)	Poles	Size L x H x D
YEQ1-M1-25A/4P	400V	25A	230VAC	1.5 - 3	4	218 x 135 x 115
YEQ1-M1-40A/4P	400V	40A	230VAC	1.5 - 3	4	218 x 135 x 115
YEQ1-M1-63A/4P	400V	63A	230VAC	1.5 - 3	4	218 x 135 x 115

- Mechanical and electrical interlock
- Auto / Manual Operation
- LED indication
- Operating Life >10000 operations
- Overload Protected

EXTENDED RANGE

## AUTOMATIC TRANSFER SWITCHES & AUTOMATIC MAINS FAILURE IP65

### Automatic Transfer Switch

**ATS** - Fitted with **ATS-10** controller which monitors the primary supply, in the event of failure the controller will actuate a c/o contact (i.e., alarm contact or start signal) when a secondary supply is detected the controller will switch to the secondary supply.

- Suitable for industrial, commercial, and domestic 3ph+N 400V applications
- Automatic Transfer Switch provide automatic switching between primary and secondary supply (i.e., Mains, generator, solar or other).
- The controller will not provide engine control and monitoring.



### Automatic Mains Failure

**AMF** - Fitted with **TRANS-AMF** controller (see Main Catalogue for controller specs), **GENCHARGE** (12/24VDC) battery charger (see Main Catalogue for charger specs) and 4 pole motorized change-over switch.

- The automatic mains failure unit is designed to monitor mains and generator supply, control generator via fuel solenoid and starter, monitoring engine temperature and oil pressure. (not fitted with an automatic voltage regulator)
- Suitable for industrial, commercial, and domestic 3ph+N 400V applications



	Gave 4P	ATS 040	ATS 063	ATS 080	ATS 100	ATS 125	ATS 160	ATS 200	ATS 250	-	-	-	-
YES1 4P	-	-	-	ATS 100Y	-	ATS 160Y	-	ATS 250Y	ATS 400	ATS 630	ATS 1000	ATS 1250	
YES1 3P	ATS 040Y3	ATS 063Y3	ATS 080Y3	ATS 100Y3	-	ATS 160Y3	-	ATS 250Y3	ATS 400-3	ATS 630-3	ATS 100-3	ATS 1250-3	
AMF 4P	AMF 040*	AMF 063*	AMF 080*	AMF 100*	AMF 125*	AMF 160*	AMF 200*	AMF 250*	AMF 400*	AMF 630*	AMF 1000*	AMF 1250*	
Rated Current	40A	63A	80A	100A	125A	160A	200A	250A	400A	630A	1000A	1250A	
Generator	28kVA	44kVA	55kVA	69kVA	87kVA	111kVA	139kVA	173kVA	277kVA	436kVA	692kVA	866kVA	
Size (mm)	600 x 400 x 260		700 x 500 x 260		800 x 600 x 260	1000 x 600 x 320			1200 x 800 x 320	1400 x 1000 x 300	1900 x 800 x 600		
Panel Colour	Orange (Red, Grey available on request)										Orange (Grey available on request)		



## POLYCARBONATE ENCLOSED CHANGE OVER SWITCHES



TKM225UVV



KEM325VV

### Polycarbonate Enclosed Change Over Switches IP66

2 & 3 Pole Code	No of Poles	4 Pole Code	AC21 @ 400/415/690V	AC22 @ 400/415/690V	AC23 @ 400/415V	AC23 KW @ 400/415V	AC23 KW @ 690V	Enclosure Size (mm) H x W x D
TKM240UVV-M2	2P	-	40A	40A	40A	7.5kW	-	130 x 97 x 106
KEM325VV-M3	3P	-	40A	25A	25A	11kW	22kW	190 x 144 x 131
KEM340VV-M3	3P	KEM440VV-M3	63A	40A	40A	22kW	30kW	190 x 144 x 131
KEM363VV-M3	3P	KEM463VV-M3	80A	63A	40A	22kW	37kW	190 x 144 x 131
KEM380VV-M3	3P	KEM480VV-M3	100A	80A	63A	30kW	37kW	190 x 144 x 131
KEM3125CO-MF11	3P	KEM4125CO-MF11	160A	125A	100A	55kW	55kW	380 x 280 x 171
KEM3160CO-MF11	3P	KEM4160CO-MF11	200A	160A	135A	75kW	90kW	380 x 280 x 171

#### Features

- Self Extinguishing Material
- Padlockable Handle, accepts upto 3 padlocks
- Interlocked Handle
- IEC 60947-3
- Good UV Resistance



## ENCLOSED CHANGE OVER SWITCHES

### EVB Type - Enclosed Rotary Change Over Switches IP65



EVB Type



EVB-L Type

Amps AC21	Amps AC23	2-Pole 1-0-2	3-Pole 1-0-2	4-Pole 1-0-2	4P Size (mm) H x W x D
20A	15A	-	EVB1403	EVB1478	100 x 100 x 80
32A	25A	-	56SW332C/O	EVB1510	190 x 140 x 70
40A	32A	-	56SW340C/O	EVB1528	190 x 140 x 70
63A	44A	EVB1263*	56SW363C/O*	EVB1529*	240 x 190 x 90
75A	63A	-	EVB1429*	EVB1544*	240 x 190 x 90
100A	80A	-	EVB1003*	EVB1004*	240 x 190 x 130

\*Add 'L' to code for LED Indication (White for Mains On, Blue for Generator run).

### ESDC Type - DB Type Changeover Switches IP65



ESDC Type

Amps AC22A	2-Pole 1-0-2	3-Pole 1-0-2	4-Pole 1-0-2	Size (mm) H x W x D
63A	ESDC-2063	ESDC-3063	ESDC-4063	260 x 298 x 140
100A	ESDC-2100	ESDC-3100	ESDC-4100	260 x 298 x 140
120A	ESDC-2125	ESDC-3125	ESDC-4125	260 x 298 x 140

### ESDCL Type - Enclosed Modular Change Over Switches IP65 - c/w pilot lights and buzzer



ESDCL Type

Amps AC22A	2-Pole 1-0-2	3-Pole 1-0-2	4-Pole 1-0-2	Size (mm) H x W x D
63A	ESDCL-2063	ESDCL-3063	ESDCL-4063	285 x 410 x 140
100A	ESDCL-2100	ESDCL-3100	ESDCL-4100	285 x 410 x 140
120A	ESDCL-2125	ESDCL-3125	ESDCL-4125	285 x 410 x 140

White LED for Mains On, Blue LED for Generator run, Buzzer on when main supply is restored and generator is still running.

### ESDCTL Type - Enclosed Change Over Switches IP65 - c/w pilot lights and buzzer



ESDCTL Type

Amps AC21	Amps AC23	2-Pole 1-0-2	3-Pole 1-0-2	4-Pole 1-0-2	Size (mm) H x W x D
63A	40A	ESDCTL-2063	ESDCTL-3063	ESDCTL-4063	285 x 410 x 140
100A	80A	ESDCTL-2100	ESDCTL-3100	ESDCTL-4100	285 x 410 x 140
125A	80A	ESDCTL-2125	ESDCTL-3125	ESDCTL-4125	285 x 410 x 140

White for Mains On, Blue for Generator run.

## ENCLOSED CHANGEOVER SWITCHES IP65

Rated Voltage: 690VAC  
 Ratings below 63A are AC21  
 Ratings from 62A-250A are AC23

**Gcwe**



16-32A



40-100A



100-125A



160-250A

Metal Enclosures c/w Gland Plate

Code 3P	AB562-16A	AB562-25A	AB562-32A	AB562-40A	AB562-63A	AB562P-100A	AB562-100A	AB562-125A	AB562-160A	AB562-200A	AB562-250A	
Code 4P	AB563-16A	AB563-25A	AB563-32A	AB563-40A	AB563-63A	AB563P-100A	AB563-100A	AB563-125A	AB563-160A	AB563-200A	AB563-250A	
Rated Current	16A	25A	32A	40A	63A	100A	100A	125A	160A	200A	250A	
Thermal Rating (Ithe)	20A	25A	40A	40A	70A	100A	100A	125A	160A	200A	250A	
Terminal Capacity	2.5-6 mm <sup>2</sup>	2.5-6 mm <sup>2</sup>	10-25mm <sup>2</sup>	10-25mm <sup>2</sup>	16-50mm <sup>2</sup>	16-50mm <sup>2</sup>	16-50mm <sup>2</sup>	16-50mm <sup>2</sup>	70mm <sup>2</sup>	95mm <sup>2</sup>	120mm <sup>2</sup>	
Enclosure	Plastic						Steel - Grey RAL7032					
Size (mm) H x W x D	190 x 140 x 70			240 x 190 x 90	240 x 190 x 130		300 x 300 x 200		400 x 300 x 200	500 x 400 x 200	600 x 400 x 260	

## CHANGE OVER SWITCHES



**VB1232**  
Door Mount



**VB1544**  
Door Mount



**VG9906**  
Chassis Mount



**CR0320006**  
22mm Door Mount

### Change Over Switch Door Mount - 2 Pole

AC21 AC23A	16A 12A	32A 25A	40A 32A	63A 50A	75A 63A	115A 100A	200A 160A
2 Pole	-	-	VB1232	VB1263	-	-	-

### Change Over Switch Door Mounting - 3 & 4 Pole

3 Pole	VB1353	VB1395	VB1403	VB1363	VB1429	VB1437	VB1445
4 Pole	VB1478	VB1510	VB1528	VB1463	VB1544	VB1551	VB1569
Plate Size (mm)	48 x 48	64 x 64	64 x 64	64 x 64	64 x 64	96 x 96	96 x 96

### Change Over Switches Chassis Mount - 3 & 4 Pole

3 Pole	-	VG9906	ZL0496	-	ZL0505	VF2993	VF3058
4 Pole	-	ZL0538	ZL0546	-	VD9446	VF3033	VF3066
Plate Size (mm)	-	75 x 75	105 x 105	-	105 x 105	130 x 130	130 x 130

### Change Over Switches 22mm Ø Door Mount

AC21 AC23A	16A 12A	32A 25A	40A 32A
2 Pole	CR0200006	CR0320006	CR0400006
3 Pole	CR0200007	CR0320007	CR0400007
4 Pole	CR0200039	CR0320039	CR0400039
Plate Size (mm)	48x48	48x48	48x48

## ROTARY ISOLATORS & CAM SWITCHES



VB0728



VB1106



CR020002

22mm Door Mount



Padlockable

CR03200G3

### Door Mounting Isolators (Switch supplied complete with operating handle)

	16A	20A	32A	40A	75A	115A
<b>AC21</b>	16A	20A	32A	40A	75A	115A
<b>AC23A</b>	12A	16A	25A	32A	63A	100A
1 Pole	VB0728	VB0751	VB0769	VB0777	VB0793	-
2 Pole	VB0801	VB0835	VB0843	VB0850	VB0876	-
3 Pole	VB0884	VB0918	VB0926	VB0934	VB0959	VB0967
4 Pole	VB1056	VB1080	VB1018	VB1106	VB1122	VB1130
Plate Size (mm)	48x48	48x48	64x64	64x64	64x64	96x96

### Isolator 22mm Ø Door Mount (48x48)

	16A	20A	32A	40A
<b>AC21</b>	16A	20A	32A	40A
<b>AC23</b>	12A	16A	25A	32A
2 Pole	CR0160002	CR0200002	CR0320002	CR0400002
3 Pole	CR0160003	CR0200003	CR0320003	CR0400003
4 Pole	CR0160004	CR0200004	CR0320004	CR0400004

### Isolator padlockable Front Door Mount (67x67)

	16A	20A	32A	40A
<b>AC21</b>	16A	20A	32A	40A
<b>AC23</b>	12A	16A	25A	32A
3 Pole	CR01600G3	CR02000G3	CR03200G3	CR04000G3
4 Pole	CR01600G4	CR02000G4	CR03200G4	CR04000G4



VB1940



VB1841



CR0320008

### Motor Control Switches - Door Mount

\*For motors with capacitor

AC-1	AC23	1 Phase * Reversing	3 Phase Reversing	Star-delta	Plate Size (mm)
16A	12A	VB1940	VB1593	VB1841	48 x 48
20A	16A	-	VB1619	VB1866	48 x 48
32A	25A	-	VB1635	VB1882	64 x 64
40A	32A	-	VB1643	VB1890	96 x 96
50A	40A	-	VB1650	VB1908	96 x 96

### Motor Control Switches - 22mm Door Mount

16A	12A	-	CR0160008	48 x 48
20A	16A	-	CR0200008	48 x 48
32A	25A	-	CR0320008	48 x 48
40A	32A	-	CR0400008	48 x 48

### Stepping Switches Rear Door Mount

Description	AC21A	Code	Plate Marking	Size (mm)
1 Pole 3 step+ off	16A	VB3045	0-1-2-3	48 x 48
1 Pole 5 step+ off	16A	VG5325	0-1-2-3-4-5	48 x 48
1 Pole 7 step+ off	16A	VF3783	0-1-2-3-4-5-6-7	48 x 48



VF3783

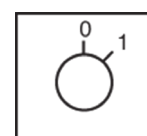


R201-23

### On - Off Switches 20Amps AC23 Switches spring return to centre

2 Poles	4 Poles	6 Poles
R201-23	R202-23	R203-23

Eschutcheon Plate





## ROTARY ISOLATORS

### Isolators

Rated Voltage:  
690VAC.

c/w Operating handle and plate. All supplied as door mount. For other mounting options see accessories.



Simple 'click' front plate fixing.

IP20 finger safe.

Rated Current	ITH	AC21 @ 400VAC	AC23 @ 400VAC	1 Pole Code	Panel Depth	2 Pole Code	Panel Depth	3 Pole Code	Panel Depth	4 Pole Code	Panel Depth	Plate Size
12A	16A	7.5kW	4kW	AN5500000	30.5mm	AN5510000	30.5mm	AN5520000	40.5mm	AN5530000	40.5mm	48x48mm
16A	20A	11kW	5.5kW	AN5501000	30.5mm	AN5511000	30.5mm	AN5521000	40.5mm	AN5531000	40.5mm	
25A	32A	15kW	7.5kW	AN5502000	30.5mm	AN5512000	30.5mm	AN5522000	40.5mm	AN5532000	40.5mm	60x60mm
32A	40A	18.5kW	11kW	AN5503100	36.3mm	AN5513100	36.3mm	AN5523100	48.3mm	AN5533100	48.3mm	
40A	50A	22kW	18.5kW	AN5504100	36.3mm	AN5514100	36.3mm	AN5524100	48.3mm	AN5534100	48.3mm	66x66mm
63A	70A	37kW	22kW	AN5506100	46mm	AN5516100	46mm	AN5526100	62.5mm	AN5536100	62.5mm	
80A	100A	45kW	30kW	-	-	AN5518100	46mm	AN5528100	62.5mm	AN5538100	62.5mm	
100A	100A	55kW	30kW	-	-	AN5517100	46mm	AN5527100	62.5mm	AN5537100	62.5mm	
125A	125A	75kW	37kW	-	-	-	-	AN5529100	62.5mm	AN5539100	62.5mm	
160A	160A	90kW	52kW	-	-	-	-	AN552A100	95.5mm	AN553A100	95.5mm	
200A	200A	110kW	65kW	-	-	-	-	AN552B100	95.5mm	AN553B100	95.5mm	
250A	250A	132kW	-	-	-	-	-	AN552C100	95.5mm	AN553C100	95.5mm	

### Spare Handles for Isolators

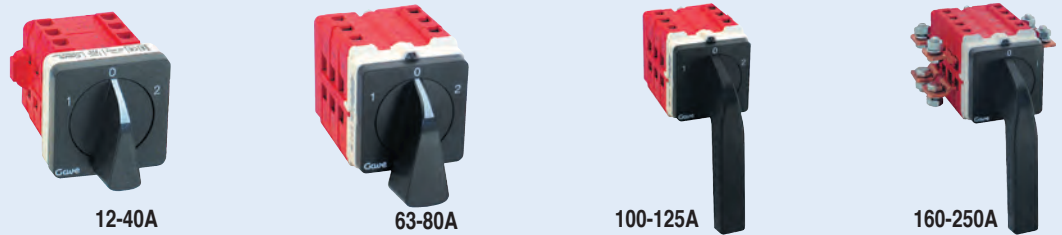


Rated Current	Black Handle c/w Plate 0-1	White Handle c/w Plate 0-1	Padlockable	Padlockable	Padlockable (3 lock)	Padlockable (3 lock)
12-25A	AR0386040	AR0386010	AK1200143	AK1200523	AK1300143	AK1300523
32-40A	AR0386140	AR0386110	AK1200143	AK1200523	-	-
63-80A	AR0386640	AR0386610	AK1200146	AK1200526	-	-
100-250A	AR0386840	AR0386810	AK1200148	AK1200528	-	-

## CHANGE OVER SWITCHES

Rated Voltage:  
690VAC

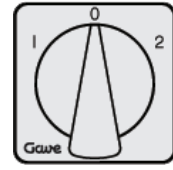
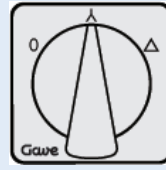
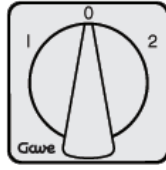
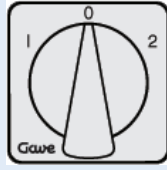
c/w Operating handle and plate. All supplied as door mount. For other mounting options see accessories.



Rated Current	ITH	AC21 @ 400VAC	AC23 @ 400VAC	2 Pole Code	Panel Depth	3 Pole Code	Panel Depth	4 Pole Code	Panel Depth	Plate Size
16A	20A	11kW	5.5kW	-	-	AN5621000	50.5mm	AN5631000	60.5mm	48x48mm
25A	32A	15kW	7.5kW	-	-	AN5622000	50.5mm	AN5632000	60.5mm	
32A	40A	18.5kW	11kW	AN5613100	48.3mm	AN5623100	60.3mm	AN5633100	72.3mm	60x60mm
40A	50A	22kW	18.5kW	-	-	AN5624100	60.3mm	AN5634100	72.3mm	
63A	70A	37kW	22kW	AN5616100	62.5mm	AN5626100	79mm	AN5636100	95.5mm	66x66mm
80A	100A	45kW	30kW	-	-	AN5628100	79mm	AN5638100	95.5mm	
100A	100A	55kW	30kW	-	-	AN5627100	79mm	AN5637100	95.5mm	
125A	125A	75kW	37kW	-	-	AN5629100	79mm	AN5639100	95.5mm	
160A	160A	90kW	52kW	-	-	AN562A100	128.5mm	AN563A100	161.5mm	
200A	200A	110kW	65kW	-	-	AN562B100	128.5mm	AN563B100	161.5mm	
250A	250A	132kW	-	-	-	AN562C100	128.5mm	AN563C100	161.5mm	

# MOTOR & PROCESS CONTROL CAM SWITCHES

## Motor Control Switches Door Mount



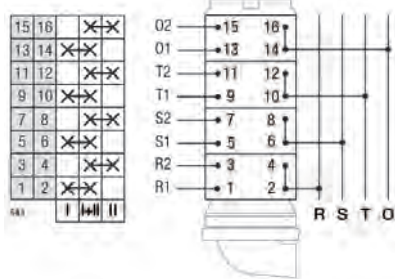
Rated Current	AC21 @ 400VAC	AC23 @ 400VAC	DC Reversing	Panel Depth	3 Phase Reversing	Panel Depth	Star Delta	Panel Depth	Dahlander	Panel Depth	Plate Size
12A	7.5kW	4kW	AN6700000	40.5mm	AN6710000	50.5mm	AN6400000	60.5mm	AN6810000	60.5mm	48x48mm
16A	11kW	5.5kW	-	-	AN6711000	50.5mm	AN6401000	60.5mm	AN6811000	60.5mm	48x48mm
25A	15kW	7.5kW	-	-	AN6712000	50.5mm	AN6402000	60.5mm	AN6812000	60.5mm	48x48mm
32A	18.5kW	10kW	-	-	AN6713100	60.3mm	AN6403100	72.3mm	AN6813100	72.3mm	64x64mm
40A	22kW	11kW	-	-	AN6714100	60.3mm	AN6404100	72.3mm	AN6814100	72.3mm	64x64mm

## Stepping Switches - Door Mount

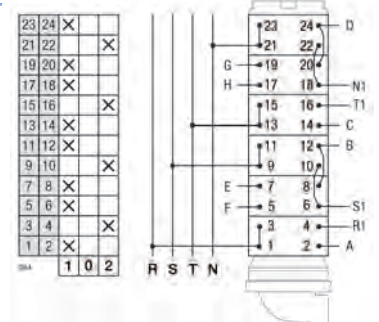


Type	Rated Current	AC23 @ 400VAC	Code	Plate Marking	Panel Depth	Plate Size
1 Pole 3 step + off	12A	4kW	AN6110000	0-1-2-3	40.5mm	48x48mm
1 Pole 5 step + off	12A	4kW	AN6130000	0-1-2-3-4-5	50.5mm	48x48mm
1 Pole 7 step + off	12A	4kW	AN6150000	0-1-2-3-4-5-6-7	60.5mm	48x48mm

## Overlapping Change Over Switch



## By-Pass Change Over Switch



Rated Current	AC21 @ 400VAC	AC23 @ 400VAC	4 Pole Code	Panel Depth	Rated Current	AC21 @ 400VAC	AC23 @ 400VAC	4 Pole Code	Panel Depth
12A	7.5kW	4kW	AN5430000	60.5mm	25A	15kW	7.5kW	AN9842000	80.5mm
16A	11kW	5.5kW	AN5431000	60.5mm	40A	22kW	18.5kW	AN9844100	96.3mm
25A	15kW	7.5kW	AN5432000	60.5mm	63A	37kW	22kW	AN9846100	128.5mm
32A	18.5kW	11kW	AN5433100	72.3mm	80A	45kW	30kW	AN9848100	128.5mm
40A	22kW	18.5kW	AN5434100	72.3mm	100A	55kW	30kW	AN9847100	128.5mm
63A	37kW	22kW	AN5436100	95.5mm	125A	75kW	37kW	AN9849100	128.5mm

## Mounting Accessories - for all Gawe Cam Switches



Code	Description	For Switch Amps
AK0000003	Base mounting plate	Up to 40A
AK0000006	Base mounting plate	63-250A
AK0100007	Din rail mounting plate	Up to 40A
AK1730003	Base mounting kit with extension shaft and door interlock	Up to 40A
AK1730006	Base mounting kit with extension shaft and door interlock	63-250A
AK1740003	Din rail mounting kit with extension shaft and door interlock	Up to 40A
AK1740006	Din rail mounting kit with extension shaft and door interlock	63-250A
AK2240003	IP65 gasket for door mount switches	Up to 40A
AK2240006	IP65 gasket for door mount switches	63-250A

## DISCREPANCY & POSITION SWITCHES

- Discrepancy switches are used to control and monitor the position of isolator switches and circuit breakers and signal any discrepancy on their operation.
- Control contacts rated 25Amp
- Signal elements consume 50mA from supply to switch
- Single colour signal: White
- Bi-colour signal (Green) 0-180°, (Red) 90-270°. Colours only indicate switch position. LED on/off will indicate correct operation or discrepancy.
- Each unit has one control contact and one signalling contact (Switches with different contact configurations available on request)

	Push & Turn with Spring Return		Turn		Turn & Push																																																																																	
Note: Switches are supplied with only the operating handle. Bezels are to be ordered separately (see accessories below).																																																																																						
<b>Code</b>	<b>AES112000</b>	<b>AEB112210</b>	<b>AMS112000</b>	<b>AMB112210*</b>	<b>AEV112000</b>	-																																																																																
Type	Single colour	Bi-colour	Single colour	Bi-colour	Single colour	Bi-colour																																																																																
Supply Voltage	24 - 240VAC 24 - 150VDC	*110VAC	24 - 240VAC 24 - 150VDC	*110VAC	24 - 240VAC 24 - 150VDC	*110VAC																																																																																
Description	 <b>ES</b> push-turn discrepancy control switches have two fixed positions for pre-selection contacts at 90° and two additional push-turn impulse positions with 30° spring return.		 <b>MS</b> Discrepancy control switches have two fixed positions for pre-selection contacts at 90° and two additional impulse positions with 30° spring return.		 <b>EV</b> switches have two fixed positions at 90° with turn contacts and discrepancy contacts, and two vertical push positions for maintained contacts.																																																																																	
* Bi-Colour type available in different voltages on request	<table border="1"> <tr><td>2</td><td>02</td><td></td><td></td><td>X</td><td rowspan="4">MANDO CONTROL</td></tr> <tr><td>1</td><td>01</td><td>X</td><td></td><td></td></tr> <tr><td>21</td><td>021</td><td>X</td><td>X</td><td></td><td rowspan="2">SENAI SIGNAL</td></tr> <tr><td>20</td><td>020</td><td></td><td>X</td><td>X</td></tr> <tr><td colspan="5"> </td></tr> </table>		2	02			X	MANDO CONTROL	1	01	X			21	021	X	X		SENAI SIGNAL	20	020		X	X						<table border="1"> <tr><td>2</td><td>02</td><td></td><td></td><td>X</td><td rowspan="4">MANDO CONTROL</td></tr> <tr><td>1</td><td>01</td><td>X</td><td></td><td></td></tr> <tr><td>21</td><td>021</td><td>X</td><td>X</td><td></td><td rowspan="2">SENAI SIGNAL</td></tr> <tr><td>20</td><td>020</td><td></td><td>X</td><td>X</td></tr> <tr><td colspan="5"> </td></tr> </table>		2	02			X	MANDO CONTROL	1	01	X			21	021	X	X		SENAI SIGNAL	20	020		X	X						<table border="1"> <tr><td>2</td><td>02</td><td></td><td>X</td><td rowspan="4">EMPLUEE PUSH</td></tr> <tr><td>1</td><td>01</td><td>X</td><td></td><td></td></tr> <tr><td>21</td><td>021</td><td>X</td><td></td><td></td><td rowspan="2">GIRO TURN</td></tr> <tr><td>20</td><td>020</td><td></td><td>X</td><td></td></tr> <tr><td colspan="5"> </td></tr> </table>		2	02		X	EMPLUEE PUSH	1	01	X			21	021	X			GIRO TURN	20	020		X						
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Accessories				
<b>Code</b>	<b>AP327906</b>	<b>AP326904</b>	<b>AP325906</b>	<b>AK1020050</b>
Description	Grey faceplate with black insert	Black faceplate with chrome insert	Chrome faceplate	Spare handle

Operation			
<b>Signal OK</b> Circuit breaker and control/signal contacts are disconnected. Knob light is on.	<b>Signal OK</b> Circuit breaker and control/signal contacts are connected. Knob light is on.	<b>Signal Discrepancy</b> Circuit breaker is disconnected (protection has tripped) and control/signal contacts are connected. Knob light is off indicating discrepancy.	

## VOLTMETER & AMMETER SWITCHES



A7431100



A7461100



A7671100

Code	Description	Size (mm)
<b>A7431100</b>	Voltmeter switch 3 phase 16A phase to phase measurement. O, RS, ST, TR	48 x 48 x 50.5
<b>A7461100</b>	Voltmeter switch 3 phase 16A phase to neutral measurement. RN, SN, TN, O, TR, ST, RS	48 x 48 x 60.5
<b>A7671100</b>	Ammeter switch 3 phase 16A. O, R, S, T	48 x 48 x 50.5



**NEW**

## ILLUMINATED CAM SWITCHES

### Padlockable Illuminated Isolators - Position controlled

Red in Off Position, Green in On Position.  
Supply for LED: 230VAC\*



### Illuminated Changeover Switches - Position controlled

Red in Position 0, Green in Position 1 and 2.  
Supply for LED: 230VAC\*



### On/Off Multi-coloured Illuminated Switches - Illumination controlled by external signal

Green/ Red/ Yellow illumination.  
Supply for LED: 230VAC\*



#### Isolators

Rated Current	ITH	AC21 @ 400VAC	AC23 @ 400VAC	2 Pole Code	Panel Depth	3 Pole Code	Panel Depth	4 Pole Code	Panel Depth	Plate Size
16A	20A	11kW	5.5kW	AB551112L	66mm	AB552112L	76mm	AB553112L	76mm	48x48mm
32A	40A	18.5kW	11kW	AB551312L	77mm	AB552312L	89mm	AB553312L	89mm	64x64mm
40A	50A	22kW	18.5kW	AB551412L	77mm	AB552412L	89mm	AB553412L	89mm	
63A	70A	37kW	22kW	AB551612L	87mm	AB552612L	103mm	AB553612L	103mm	
100A	100A	55kW	30kW	AB551712L	87mm	AB552712L	103mm	AB553712L	103mm	
125A	125A	75kW	37kW	AB551912L	87mm	AB552912L	103mm	AB553912L	103mm	

\* Other Colours and Supply voltages Available on request

#### Changeover Switches

Rated Current	ITH	AC21 @ 400VAC	AC23 @ 400VAC	2 Pole Code	Panel Depth	3 Pole Code	Panel Depth	4 Pole Code	Panel Depth	Plate Size
16A	20A	11kW	5.5kW	A-561112L	76mm	A-562312L	86mm	A-563312L	96mm	48x48mm
32A	40A	18.5kW	11kW	A-561312L	89mm	A-562312L	101mm	A-563312L	113mm	64x64mm
40A	50A	22kW	18.5kW	A-561412L	89mm	A-562412L	101mm	A-563412L	113mm	
63A	70A	37kW	22kW	A-561612L	103mm	A-562612L	120mm	A-563612L	136mm	
100A	100A	55kW	30kW	A-561712L	103mm	A-562712L	120mm	A-563712L	136mm	
125A	125A	75kW	37kW	A-561912L	103mm	A-562912L	120mm	A-563912L	136mm	

\* Other Colours and Supply voltages Available on request

#### Multi-Coloured Switches

Rated Current	ITH	AC21 @ 400VAC	AC23 @ 400VAC	2 Pole Code	Panel Depth	3 Pole Code	Panel Depth	4 Pole Code	Panel Depth	Plate Size
16A	20A	11kW	5.5kW	A-5511T0S	74mm	A-5521T0S	84mm	A-5531T0S	84mm	48x48mm
32A	40A	18.5kW	11kW	-	-	A-5523T0S	89mm	A-5533T0S	89mm	64x64mm
40A	50A	22kW	18.5kW	-	-	A-5524T0S	89mm	A-5534T0S	89mm	
63A	70A	37kW	22kW	-	-	A-5526T0S	103mm	A-5536T0S	103mm	
100A	100A	55kW	30kW	-	-	A-5527T0S	103mm	A-5537T0S	103mm	
125A	125A	75kW	37kW	-	-	A-5529T0S	103mm	A-5539T0S	103mm	

\* Other Colours and Supply voltages Available on request



External Signal Controlled

Padlockable Handle

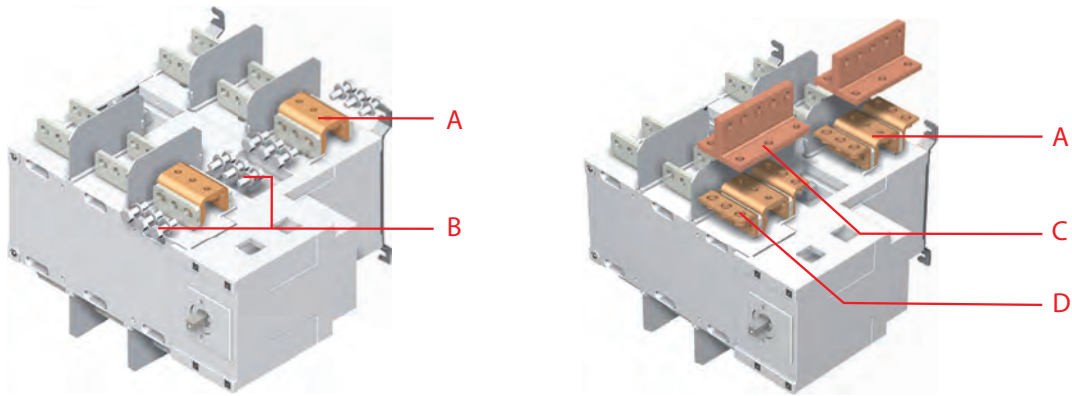
#### Add on Lighting Modules for Gawe CAM Switches

Type		12-16A Code	32-40A Code	63-125A Code	
External Signal Control	230V	AK2503120D	AK2503121D	AK2503126D	
	Yellow, Red, Green	400V	AK2543120D	AK2543121D	AK2543126D
		24V	AK2523120D	AK2523121D	AK2523126D
Padlockable Handle for Isolators		AK1230503	AK1230506	AK1230506	

For compatible switches see page 60-61

# BRIDGING BARS

## Large Frame Isolators & Changeover Switches



### Accessories, Reference Numbers & Contents

<b>Code</b>	<b>S04A1200</b>	<b>S04B1200</b>	<b>S04C1200</b>	<b>S04D1200</b>
Part	A	B	C	D
Description	Connection Bar	6 X Bolt Kit 35mm	T Bar + 6 X Bolt Kit	Bracket + 6 X Bolt Kit

### Connection Configurations & Required Accessories

	<b>Connection 1</b>	<b>Connection 2</b>	<b>Connection 3</b>
Requirements	S04B1200 x 1 - -	S04A1200 x 1 S04C1200 x 1 S04D1200 x 1	S04A1200 x 1 S04C1200 x 1 S04D1200 x 1
	<b>Connection 4</b>	<b>Connection 4A</b>	<b>Connection 5</b>
Requirements	S04A1200 x 1 S04B1200 x 1	S04A1200 x 1 S04B1200 x 1	S04A1200 x 2 S04C1200 x 2 S04D1200 x 2

## TECHNICAL INFORMATION

### Utilization Categories IEC 947-4-1

#### A.C. Contactors/Relays

Category	Description & Application
<b>AC-1</b>	Non-Inductive/Slightly Inductive Loads - Heaters, Resistance Furnaces etc.
<b>AC-2</b>	Slip Ring Motors (Start/Stop/Reverse) - Wire Drawing, Stone Crushing
<b>AC-3</b>	Squirrel Cage Motors (Start/Stop/Reverse) - Compressors, Mixers, Conveyors
<b>AC-4</b>	Squirrel Cage Motors (Plugging & Inching) -Cranes, Hoists
<b>AC5a</b>	Switching of Electrical Discharge Lamps - Mercury Lamp, Sodium Vapour Lamp
<b>AC5b</b>	Switching of Incandescent Lamps - Tungsten Filament Lamp
<b>AC6a</b>	Switching of Transformers - Switching of LT Transformer with Load (contactor on transformer primary)
<b>AC6b</b>	Switching of Capacitor Banks - Switching of Capacitor Bank for PF Correction
<b>AC7a</b>	Slightly Inductive Load in Household Appliances and Similar Applications - Switching of Fans, Mixers, Blenders etc.
<b>AC7b</b>	Motor Load for Household Application - Washing Machine, Dish Washer, etc.
<b>AC8a</b>	Hermetic Refrigerant Compressor Motor Control with Manual Resetting of Overloads - Refrigeration
<b>AC8b</b>	Hermetic Refrigerant Compressor Motor Control with Automatic Resetting of Overloads - Window Air Conditioners

#### A.C. Switches/Isolators

Category	Description & Application
<b>AC-12</b>	Control of Resistive Loads and Solid State Loads with Isolation by Opto Couplers
<b>AC-13</b>	Control of Solid State Loads with Transformer Isolation
<b>AC-14</b>	Control of Small Electromagnetic Loads ( $\leq 72VA$ )
<b>AC-15</b>	Control of Electromagnetic Loads ( $>72VA$ )
<b>AC-20</b>	Connecting and disconnecting under no-load conditions
<b>AC-21</b>	Switching of resistive loads including moderate overloads
<b>AC-22</b>	Switching of mixed resistive and inductive loads including moderate overloads
<b>AC-23</b>	Switching of motor loads or other highly inductive loads

#### D.C. Contactors/Relays

Category	Description & Application
<b>DC-1</b>	Non-Inductive/Slightly Inductive Loads - Heaters, Resistance Furnaces
<b>DC-3</b>	Shunt Motors (Starting, Plugging & Inching) Dynamic breaking of DC Motors - Shunt Motors, Textile Ind., Steel Ind.
<b>DC-5</b>	Series Motor (Starting, Plugging & Inching) Dynamic Breaking of DC Motors - Series Motor Used in EMU's, Lifts, Hoists
<b>DC-6</b>	Incandescent Lamps - Light used In Railways Coaches

#### D.C. Switches/Isolators

Category	Description & Application
<b>DC-12</b>	Control of Resistive Loads and Solid State Loads with Isolation by Opto Couplers
<b>DC-13</b>	Control of DC Electromagnets
<b>DC-14</b>	Control of Electromagnetic Loads Having Economy Resistors in Circuit
<b>DC-20</b>	Connecting and disconnecting under no-load conditions
<b>DC-21</b>	Switching of resistive loads including moderate overloads
<b>DC-22</b>	Switching of mixed resistive and inductive loads including moderate overloads
<b>DC-23</b>	Switching of motor loads or other highly inductive loads

### IP Rating for Enclosures – IEC 529

#### FIRST CHARACTERISTIC NUMERAL:

#### Protection against ingress of solid foreign objects and against access to dangerous parts

Meaning	0	1	2	3	4	5	6
Protection against ingress of:	No Protection	Solid objects larger than $\varnothing$ 50mm	Solid objects larger than $\varnothing$ 12,5mm	Solid objects larger than $\varnothing$ 2,5mm	Solid objects larger than $\varnothing$ 1mm	Dust in a harmful quantity	Dust (total protection)
Personal protection against access with:	No Protection	Back of hand	Finger	Tool		Wire	

#### SECOND CHARACTERISTIC NUMERAL:

#### Protection against water

Meaning	0	1	2	3	4	5	6	7	8	9
Protection against effect of:	No Protection	Vertically falling drops of water	Vertically falling drops of water with maximum inclination of 15°	Rain	Splashing water	Water jet	Powerful water jet	Temporary immersion	Continuous immersion	Powerful hot water jet

#### Example

Protection against ingress of dust in a harmful quantity

IP

5

4

Protected against effects of splashing water



## TECHNICAL INFORMATION

Standard F.L.C. data for 4 Pole motors

Rated Power		Standard 3-Phase 4 pole motors Line Connected				Phase Connected (Star-Delta)*		Single Phase Motors
kW	Hp	380V A	400V A	550V A	1000V A	380V A	400V A	230V A
0.37	0.5	1	1	0.72	0.4	-	-	3.4
0.55	0.75	1.6	1.5	1.16	0.64	-	-	4.6
0.75	1	2	1.9	1.4	0.75	-	-	5.8
1.1	1.5	2.6	2.5	1.9	1	-	-	8.4
1.5	2	3.5	3.3	2.5	1.3	-	-	11.2
2.2	3	5	4.7	3.6	1.9	-	-	16.4
3	4	6.6	6.3	4.8	2.5	-	-	21
4	5.5	8.5	8.1	6.2	3.3	4.9	4.7	28
5.5	7.5	11.5	10.9	8.6	4.5	6.7	6.3	37
7.5	10	15.5	14.7	11.5	6	9	8.5	-
10	13.5	20	19	14.3	7.5	11.6	11	-
11	15	22	21	16	8.7	12.8	12	-
15	20	30	28.5	22	12	17.4	16.6	-
18.5	25	37	35	27	14.3	21	20	-
22	30	44	42	32	17	25	24	-
30	40	60	57	43	23	35	33	-
37	50	72.5	69	53	28	42	40	-
45	60	85	81	62	33	49	47	-
55	75	105	100	76	40	64	61	-
75	100	138	131	100	53	79	75	-
90	125	170	161	123	65	99	94	-
110	150	205	195	152	78	119	113	-
132	175	245	233	179	91	142	135	-
160	220	300	285	218	117	174	165	-
200	270	370	351	268	149	215	204	-
220	300	408	388	296	161	237	225	-
250	350	475	451	344	200	275	262	-
315	430	584	555	422	240	339	322	-
355	480	636	604	477	265	369	350	-
375	500	670	636	503	278	389	369	-
425	580	760	722	548	303	441	419	-

\* These are the values of F.L.C. as seen by the overload and main/delta contactors when phase connected within a Star-Delta starter.

**Note:** Always check the rating plate of the motor when commissioning *before* switching on.

### Cable ratings

3 & 4 Core copper PVC/SWA/PVC 600/1000V cables - SABS 1507/1990

Cable Size (mm <sup>2</sup> )	Electrical Properties			Gland Size Type ACG	Gland Size		
	Current Ratings		Volt Drop		3 Core	4 Core	5 Core
	Ground A	Ducts A	Air A	(mV/A/m)			
1.5	23	18	18	25.080	0	0	0
2.5	30	24	24	15.363	0	0/1	2
4	38	31	32	9.561	1	1	2
6	48	39	40	6.391	1	2	3
10	64	52	54	3.793	2	2	
16	82	67	72	2.390	2	2/3	
25	126	101	113	1.515	3	3	
35	147	120	136	1.097	3	3/4	
50	176	144	167	0.817	4	4	
70	215	175	207	0.576	4	4/5	
95	257	210	253	0.427	4/5	5	
120	292	239	293	0.348	5	5/6	
150	328	369	336	0.294	5	6	
185	369	303	384	0.250	6	6	
240	422	348	447	0.211	6	7	
300	472	397	509	0.189	6/7	7	

### Borehole pump motor F.L.C. data

100mm submersible motors

kW	F.L.C.	
	230V Amps	400V Amps
0.25	3.1	-
0.37	3.9	1.3
0.56	5.0	1.6
0.75	6.0	2.2
1.12	8.8	3.0
1.50	11.8	3.9
2.20	17.0	5.9
3	-	7.2
4	-	9.3
5.5	-	13.2

**Note:**

Always check the rating plate of the motor when commissioning *before* switching on. Borehole pumps and motors require specialised protection. For a wide range of protection devices as well as special borehole control panels, see pages 40 and 41.

# 400V STAR-DELTA STARTERS – COMPONENT SELECTION GUIDE

Motor	F.L.C. 4 Pole	Main/Delta Contactors	Star Contactor	Overload Relay FLC x 3	Ammeter	CT	Back Up		Isolator	DIN MCB (D Curve)	MCCB Std kA
							BS Fuse	DIN Fuse			
7.5kW	14.7A	TC1-D09	TC1-D09	TR2-D09314 8.5A	SQ72-20AD	(Direct)	TIA25 24700-25A		CSSD25D3	GW92467 (6kA)	E160-SF 25A (16kA)
11kW	21A	TC1-D12	TC1-D09	TR2-D12316 12A	SQ72-25AD	(Direct)	TIA32 24700-32A		CSSD40D3	GW92469 (6kA)	E160-SF 32A (16kA)
15kW	28.5A	TC1-D18	TC1-D12	TR2-D18321 16.5A	SQ72-30AD	(Direct)	TIS40 24700-40A		CSSD63D3	GW92470 (6kA)	E160-SF 40A (16kA)
18.5kW	35A	TC1-D25	TC1-D25	TR2-D25322 20A	SQ72-40AD	(Direct)	TIS50 24700-50A		CSSD63D3	GW92471 (6kA)	E160-SF 50A (15kA)
22kW	42A	TC1-D32	TC1-D25	TR2-D32353 24A	SQ72-50AD	(Direct)	TIS63 24700-63A		CSSD63D3	GW93386 (16kA)	E160-SF 63A (16kA)
30kW	57A	TC1-D38	TC1-D32	TR2-D32355 33A	SQ72-5 + SQ72SP 60/5A	DS-605	TIS63M80 24700-80A		CSSD125D3	GW93386 (16kA)	E160-SF 80A (16kA)
37kW	69A	TC1-D40	TC1-D40	TR2-D65357 40A	SQ72-5 + SQ72SP 75/5A	DS-755	TIS80 24700-80A		CSSD125D3	GW93387 (16kA)	E160-SF 100A (16kA)
45kW	81A	TC1-D50	TC1-D40	TR2-D65357 47A	SQ72-5 + SQ72SP 100/5A	DS-1005	TCP100 24585-100A		CSSD125DM3	GW93388 (16kA)	E160-SF 125A (16kA)
55kW	100A	TC1-D65	TC1-D50	TR2-D65359 58A	SQ72-5 + SQ72SP 125/5A	DS-1255	TCP125 24585-125A		CSSD160DM3	-	E160-SF 160A (16kA)
75kW	131A	TC1-D80	TC1-D80	TR2-D80363 76A	SQ72-5 + SQ72SP 150/5A	DS-1505	TCP160 24585-160A		CSSD160DM3	-	E250-SCF 175A (16kA)
90kW	161A	TC1-D95	TC1-D80	TR2-D95365 93A	SQ72-5 + SQ72SP 200/5A	DS1-2005	TF200 24720-200A		CSSD200DM3	-	E250-SCF 200A (16kA)
110kW	195A	LC1-FDP115A	LC1-FDP115A	LR1-F160 113A	SQ72-5 + SQ72SP 250/5A	DS1-2505	TKF250 24720-250A		CSSD250DM3	-	E250-SCF 250A (16kA)
132kW	233A	LC1-FDP150A	LC1-FDP115A	LR1-F160 135A	SQ72-5 + SQ72SP 250/5A	DS1-2505	TKF250 24720-250A		CSSD250DM3	-	E400-NS 400A (25kA)
160kW	285A	LC1-FDP185A	LC1-FDP185A	LR1-F200 165A	SQ72-5 + SQ72SP 300/5A	DS1-3005	TKF315 24582-315A		CSSD315DM3	-	E400-NS 400A (25kA)
200kW	351A	LC1-FDP225A	LC1-FDP185A	LR1-F250 203A	SQ72-5 + SQ72SP 400/5A	DS2-4005	TM400 24582-400A		CSSD400D3	-	E630-NE 630A (36kA)
250kW	451A	LC1-FDP265A	LC1-FDP265A	LR1-F315 260A	SQ72-5 + SQ72SP 500/5A	DS2-5005	TTM500 24588-500A		CSSD630K3	-	E630-NE 630A (36kA)
315kW	555A	LC1-FDP330A	LC1-FDP330A	LR1-F400 320A	SQ72-5 + SQ72SP 600/5A	DS2-6005	TTM630 24588-630A		CSSD630K3	-	-
375kW	636A	LC1-FDP400A	LC1-FDP400A	LR1-F400 367A	SQ72-5 + SQ72SP 750/5A	DS2-7505	-		CSSD800K3	-	-

Notes: 1) The above guide excludes material such as enclosure, mechanical interlock, electrical interlocks and timer. 2) The F range contactors have been selected for use with horizontal mechanical interlocks. If vertical mechanical interlocks are used, the star point contactor can be reduced in size. 3) The above guide is not applicable to Star-Delta reversing starters.  
4) Fuse & circuit breaker selection assumes that starting time does not exceed 20 secs.

## TYPE 2 CO-ORDINATION CHART

Type "2" coordination according to IEC947-4-1 / IS13947-4-1

- Short-circuit current  $I_q = 50\text{kA}$ , Voltage : 400/ 415V, 50/60Hz
- DOL Feeders

Standard Motors AC-3 AT 400/415V 1500RPM		Manual Motor Start			Contactor	
		MPCB Code	Thermal Overload Release Setting Range	Magnetic Release Response Current		
KW	Amps				Code	Amps
		TCMS-32H 0.16	0.1 - 0.16	2.08	TC1-M06	6
0.06	0.2	TCMS-32H 0.25	0.16 - 0.25	3.25	TC1-M06	6
0.09	0.3	TCMS-32H 0.4	0.25-0.4	5.2	TC1-M06	6
0.12	0.4	TCMS-32H 0.63	0.4 - 0.63	8.19	TC1-M06	6
0.18	0.6	TCMS-32H 0.63	0.4 - 0.63	8.19	TC1-M06	6
0.25	0.8	TCMS-32H 1	0.63 - 1	13	TC1-M06	6
0.37	1.1	TCMS-32H 1.6	1 - 1.6	20.8	TC1-M06	6
0.55	1.5	TCMS-32H 1.6	1 - 1.6	20.8	TC1-M06	6
0.75	1.9	TCMS-32H 2.5	1.6 - 2.5	32.5	TC1-M12	12
1.1	2.7	TCMS-32H 4	2.5 - 4	52	TC1-M16	16
1.5	3.6	TCMS-32H 4	2.5 - 4	52	TC1-M16	16
2.2	5.2	TCMS-32H 6	4 - 6	78	TC1-M16	16
3	6.8	TCMS-32H 8	5 - 8	104	TC1-M16	16
4	9	TCMS-32H 10	6 - 10	130	TC1-M16	16
5.5	11.5	TCMS-32H 13	9 - 13	169	TC1-M16	16
7.5	15.5	TCMS-32H 17	11 - 17	221	TC1-M16	16
10	20	TCMS-32H 22	14 - 22	286	TC1-D25	25
11	22	TCMS-32H 26	18 - 26	338	TC1-D25	25
15	29	TCMS-32H 32	22 - 32	416	TC1-D32	32
18.5	35	TCMS-63H 40	28 - 40	520	TC1-D50	50
22	41	TCMS-63H 50	34 - 50	650	TC1-D50	50
30	55	TCMS-63H 63	45 - 63	819	TC1-D65	65
37	67	TCMS-100H 75	55 - 75	975	TC1-D80	80
-	-	TCMS-100H 90	70 - 90	1170	TC1-D95	95
45	80	TCMS-100H 100	80 - 100	1300	TC1-D95	95

Definition type '2' coordination according to IEC 947-4-1

- The contactor or the starter must not endanger persons or system in the event of a short-circuit
- The contactor or the starter must be suitable for further use.
- No damage to the overload relay or other parts may occur with the exception of welding of the contactor or starter contacts provided that these can be easily separated without significant deformation (such as with a screwdriver)

### Thermal Release Trip Current

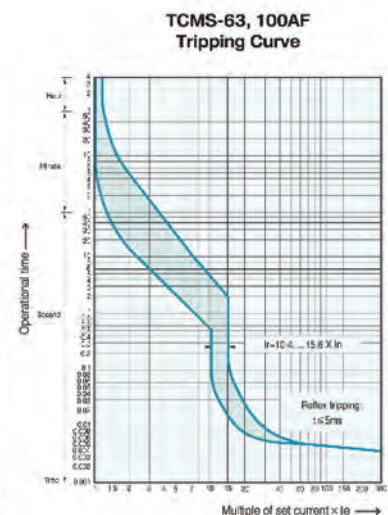
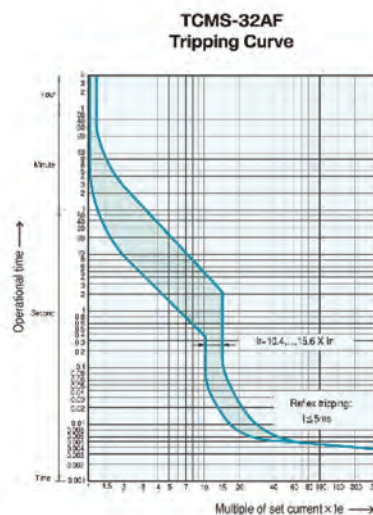
The adjustable inverse bimetal trip reliably protects motors against overloads. The curve shows the mean operating current at an ambient temperature of 20°C starting from cold. Careful testing and setting ensures effective motor protection even in the case of single-phasing.

### Magnetic Release Trip Current

The instantaneous magnetic trip has a fixed operating current setting. This corresponds to 13 times the maximum value of the setting range, at a lower setting it is correspondingly higher.

### Current setting le

The overload trip corresponds to a thermal overload relay in a motor starter conforming to IEC 947-4-1. If a different value is prescribed (e.g. reduced le for cooling medium having a temperature higher than 40°C or a place of installation higher than 200m above sea level), the setting current is equal to the reduced rated current le of the motor.





SELECTION CHART FOR TYPE -2 COORDINATION WITH MPCB : DOL FEEDERS

Sr. No.	Motor Rating, 3Ph,415 V			Motor Protection Circuit Breaker				Contactor	
	KW	HP	I FL(A)	Type	Thermal O/L Release Range (A)	Relay Reference	Magnetic Release Resonse Current	Type	Rating (A) Min
1	0.06	0.08	0.2	TCMS-32S-0.25A	0.16-0.25	TR2-D09302	3.25	TC1-D09	9
2	0.09	0.125	0.3	TCMS-32S-0.4A	0.25-0.4	TR2-D09303	5.2	TC1-D09	9
3	0.12	0.165	0.4	TCMS-32S-0.63A	0.4-0.63	TR2-D09304	8.19	TC1-D09	9
4	0.18	0.25	0.6	TCMS-32S-0.63A	0.4-0.63	TR2-D09304	8.19	TC1-D09	9
5	0.25	0.35	0.8	TCMS-32S-1A	0.63-1	TR2-D09305	13	TC1-D09	9
6	0.37	0.5	1.1	TCMS-32S-1.6A	1-1.6	TR2-D09306	20.8	TC1-D09	9
7	0.55	0.75	1.5	TCMS-32S-1.6A	1-1.6	TR2-D09306	20.8	TC1-D09	9
8	0.75	1	1.9	TCMS-32S2.5A	1.6-2.5	TR2-D09307	32.5	TC1-D18	18
9	1.1	1.5	2.7	TCMS-32S4A	2.5-4.0	TR2-D09308	52	TC1-D18	18
10	1.5	2	3.6	TCMS-32S4A	2.5-4.0	TR2-D09308	52	TC1-D18	18
11	2.2	3	5.2	TCMS-32S6A	4.0-6.0	TR2-D09310	78	TC1-D18	18
12	3	4	6.8	TCMS-32S8A	5.0-8.0	TR2-D09312	104	TC1-D18	18
13	4	5.5	9	TCMS-32S10A	6.0-10.0	TR2-D09314	130	TC1-D18	18
14	5.5	7.5	11.5	TCMS-32H13A	9.0-13.0	TR2-D12316	169	TC1-D18	18
15	7.5	10	15.5	TCMS-32H17A	11.0-17.0	TR2-D18321	221	TC1-D25	25
16	10	13.5	20	TCMS-32H22A	14-22	TR2-D25322	286	TC1-D25	25
17	11	15	22	TCMS-32H26A	18-26	TR2-D25322	338	TC1-D32	32
18	15	20	29	TCMS-32H32A	22-32	TR2-D32353	416	TC1-D40	40
19	18.5	25	35	TCMS-63H40A	28-40	TR2-D40355	520	TC1-D40	40
20	22	30	41	TCMS-63H50A	34-50	TR2-D65357	650	TC1-D50	50
21	30	40	55	TCMS-63H63A	45-63	TR2-D65357	819	TC1-D65	65
22	37	50	67	TCMS-100H75A	55-75	TR2-D65359	975	TC1-D80	80
23	40	54	72	TCMS-100H90A	70-90	TR2-D80363	1170	TC1-D95	95
24	45	60	80	TCMS-100H100A	80-100	TR2-D95365	1300	TC1-D95	95

Note :- ( 1 ) Type - 2, Co-ordination Chart as per IS 13947-4 / IEC 60947-4, Suitable for 3- Phase Motor 415V, 50/60 Hz AC, Iq = 50kA

( 2 ) Type 2 Co-ordination recommendation with C&S Make MPCB rating upto 100A / + Contactors

( 3 ) Product Selection is for normal starting conditions of Electric Motor with starting time < 6seconds.

( 4 ) The above 30KW will be used with external C T

**SELECTION CHART FOR TYPE -2 COORDINATION WITH MPCB: STAR DELTA FEEDERS**

Sr. No.	Motor Rating, 3Ph, 415V				Motor Protection Circuit Breaker				Contactor Line / Delta		Contactor Star	
	KW	HP	I FL(A)	I PH(A)	Type	A	Thermal O/L Release Range (A)	Magnetic Release Response Current (A)	Type	Rating (A)	Type	Rating (A)
1	3	4	6.8	3.7	TCMS-32S4A	4	2.5-4	52	TC1-D18	9	TC1-D09	9
2	4	5.5	9	5.2	TCMS-32S6A	6	4-6	78	TC1-D18	12	TC1-D09	9
3	5.5	7.5	11.5	6.5	TCMS-32S8A	8	5-8	104	TC1-D18	18	TC1-D09	12
4	7.5	10	15.5	9.2	TCMS-32S10A	10	6-10	130	TC1-D18	18	TC1-D09	12
5	10	13.5	20	11.0	TCMS-32H13A	13	9-13	169	TC1-D18	25	TC1-D09	18
6	11	15	22	12.0	TCMS-32H17A	17	11-17	221	TC1-D25	25	TC1-D12	18
7	15	20	29	16.2	TCMS-32H22A	22	14-22	286	TC1-D25	25	TC1-D18	18
8	18.5	25	35	19.7	TCMS-32H26A	26	18-26	338	TC1-D40	40	TC1-D32	32
9	22	30	41	23.2	TCMS-32H32A	32	22-32	416	TC1-D40	50	TC1-D32	40
10	30	40	55	30.6	TCMS-63H40A	40	28-40	520	TC1-D40	65	TC1-D32	50
11	37	50	67	37.5	TCMS-63H50A	50	34-50	650	TC1-D50	80	TC1-D32	65
12	45	60	80	45.0	TCMS-63H50A	50	34-50	650	TC1-D50	80	TC1-D32	65
13	55	75	97	55.4	TCMS-63H63A	63	45-63	819	TC1-D65	95	TC1-D32	80
14	75	100	132	75.6	TCMS-100H90A	90	70-90	1170	TC1-D95	150	TC1-D63	115
15	90	125	160	90.1	TCMS-100H100A	100	80-100	1300	TC1-D95	185	TC1-D63	150

Note :- ( 1 ) Type - 2, Co-ordination Chart as per IS 13947-4 / IEC 60947-4, Suitable for 3- Phase Motor 415V, 50/60 Hz AC, Iq = 50kA

( 2 ) Type 2 Co-ordination recommendation with C&S Make MPCB rating upto 100A / + Contactors + EMPR

( 3 ) Product Selection is for normal starting conditions of Electric Motor with starting time < 6seconds.

( 4 ) The above 30KW will be used with external C T

( 5 ) MPCB will be used only in the main circuit not in the phase circuit

SELECTION CHART : FUSE PROTECTED STAR DELTA FEEDERS TYPE'2' CO-ORDINATION Iq=50k A @ 380V, 415V& 440V 3-Ø 50Hz AS PER IEC60947-4-1 & IS/IEC 60947-4-1

MOTORS RATING 380V			MOTORS RATING 415V			MOTORS RATING 440V			SWITCH FUSE TYPE *	FUSE LINK REFERENCE CODE (gG)	FUSE LINK TYPE		CONTACTOR			BIMETAL OVERLOAD RELAY	
P(kW)	I Line	I ph	P(kW)	I Line	I ph	P(kW)	I Line	I ph			gG (A)	aM (A)	Main	Delta	Star	Type	Rating (A)
1.5	3.7	2.14	1.5	3.5	2.02	1.5	3.1	1.79		CDFL0010	TC1-D09	TC1-D09	TC1D09	TC1D09	TR2-D09307	1.6-2.5	
2.2	5	2.89	2.2	4.8	2.77	2.2	4.5	2.60		CDFL0010	TC1-D09	TC1-D09	TC1D09	TC1D09	TR2-D09308	2.5-4	
3	6.6	3.81	3	6.5	3.75	3	5.8	3.35		CDFL0016	TC1-D09	TC1-D09	TC1D09	TC1D09	TR2-D09308	2.5-4	
4	8.5	4.91	4	8.2	4.73	4	7.9	4.56	CSSDF32D3	CDFL0016	TC1-D09	TC1-D09	TC1D09	TC1D09	TR2-D09310	4-6	
5.5	11.5	6.64	5.5	11	6.35	5.5	10.4	6.00		CDFL0020	TC1-D09	TC1-D09	TC1D09	TC1D09	TR2-D09312	5.5-8	
7.5	15.5	8.95	7.5	14	8.08	7.5	13.7	7.91		CDFL0020	TC1-D09	TC1-D09	TC1D09	TC1D09	TR2-D09314	7-10	
11	22	12.70	11	21	12.12	11	20.1	11.61		CDFL0032	TC1-D12	TC1-D12	TC1D12	TC1D12	TR2-D12316	9-13	
15	30	17.32	15	28	16.17	15	26.5	15.30		CDFL0035	TC1-D18	TC1-D18	TC1D18	TC1D18	TR2-D18321	12-18	
18.5	37	21.36	22	40	23.09	22	39	22.52		CDFL01 50	TC1-D25	TC1-D25	TC1D25	TC1D25	TR2-D25322	17-25	
22	44	25.40	25	47	27.14	30	51.5	29.73		CDFL01 50	TC1-D32	TC1-D32	TC1D32	TC1D32	TR2-D32353	23-32	
30	59	34.06	30	55	31.76					CDFL01 63	TC1-D40	TC1-D40	TC1D40	TC1D40	TR2-D40355	30-40	
37	72	41.57	37	66	38.11	37	64	36.95		CDFL01 80	TC1-D40	TC1-D40	TC1D40	TC1D40	TR2-D65357	37-50	
45	85	49.08	45	80	46.19	45	76	43.88	CSSDF200D3	CDFL01 80	TC1-D50	TC1-D50	TC1D50	TC1D50	TR2-D65357	37-50	
55	105	60.62								CDFL01 100	TC1-D80	TC1-D80	TC1D80	TC1D80	TR2-D65359	48-65	
75	140	80.83	75	135	77.94	75	124	71.59		CDFL01 125	TC1-D80	TC1-D80	TC1D80	TC1D80	TR2-D80363	63-80	
90	170	98.15	90	160	92.38	90	156	90.07		CDFL01 125	TC1-D95	TC1-D95	TC1D95	TC1D95	TR2-D95365	80-93	
110	210	121.25	110	200	115.47	110	180	103.93		CDFL01 160	LC1-FDPI15A	LC1-FDPI15A	LC1FDPI15A	LC1FDPI15A	LR1-F105	65-105	
132	250	144.34	132	230	132.79	132	215	124.13		CDFL1 200	LC1-FDPI150A	LC1-FDPI150A	LC1FDPI150A	LC1FDPI150A	LR1-F125	80-125	
160	300	173.21	160	270	155.89	160	256	147.81	CSSDF250D3	CDFL1 250	LC1-FDPI150A	LC1-FDPI150A	LC1FDPI150A	LC1FDPI150A	LR1-F100	100-160	
200	380	219.40	220	380	219.40	220	360	207.85		CDFL1 250	LC1-FDPI185A	LC1-FDPI185A	LC1FDPI185A	LC1FDPI185A	LR1-F200	125-200	
220	420	242.49	250	430	248.27	250	401	231.52		CDFL1 250	LC1-FDP265A	LC1-FDP265A	LC1FDP265A	LC1FDP265A	LR1-F250	160-250	
250	480	277.14							CSSDF315D3	CDFL1 250	LC1-FDP265A	LC1-FDP265A	LC1FDP265A	LC1FDP265A	LR1-F250	160-250	
300	570	329.10	300	510	294.46	300	480	277.14		CDFL2 315	LC1-FDP330A	LC1-FDP330A	LC1FDP330A	LC1FDP330A	LR1-F315	200-315	
			335	580	334.87	335	540	311.78	CSSDF400D3	CDFL2 400	LC1-FDP400A	LC1-FDP400A	LC1FDP400A	LC1FDP400A	LR1-F400	250-400	
			375	590	340.65	375	590	340.65	CSSDF400D3	CDFL2 400	LC1-FDP400A	LC1-FDP400A	LC1FDP400A	LC1FDP400A	LR1-F400	250-400	

\* For Neutral, N will be added (CSSDF32D3N), For 4 pole 3 will be replaced by 4 (CSSDF32D4)



**SELECTION CHART FOR TYPE -2 COORDINATION 50 KA WITH HRC FUSES - DOL FEEDERS**

Standard Motor Rating, 415V AC			SDF		HRC Fuse gG max		Contactor (min)		Bimetal Overload Relay	
KW	HP	IFL(A)	Type	Rating (A)	Type	Rating (A)	Type	Rating (A)	Type	Rating (A)
0.06	0.08	0.2	CSSDF32D3	32	CDFL00	2	TC1D-09	9	TR2-D09303	0.25-0.4
0.09	0.13	0.3	CSSDF32D3	32	CDFL00	2	TC1D-09	9	TR2-D09303	0.25-0.4
0.12	0.17	0.4	CSSDF32D3	32	CDFL00	2	TC1D-09	9	TR2-D09304	0.4-0.63
0.18	0.25	0.6	CSSDF32D3	32	CDFL00	2	TC1D-09	9	TRD-D09304	0.4-0.63
0.25	0.33	0.8	CSSDF32D3	32	CDFL00	4	TC1D-09	9	TR2-D09304	0.63- 1.0
0.37	0.5	1.1	CSSDF32D3	32	CDFL00	4	TC1-D09	9	TR2-D09305	0.63-1.0
0.55	0.75	1.5	CSSDF32D3	32	CDFL00	4	TC1-D09	9	TR2-D09306	1.0-1.6
0.75	1	1.9	CSSDF32D3	32	CDFL00	6	TC1-D09	9	TR2-D09307	1.6-2.5
1.1	1.5	2.7	CSSDF32D3	32	CDFL00	10	TC1-D09	9	TR2-D09308	2.5-4.0
1.5	2	3.6	CSSDF32D3	32	CDFL00	10	TC1-D09	9	TR2-D09308	2.5-4.0
2.2	3	5.2	CSSDF32D3	32	CDFL00	16	TC1-D09	9	TR2-D09310	4.0-6.0
3.7	5	7.2	CSSDF32D3	32	CDFL00	20	TC1-D12	12	TR2-D09312	5.0-8.0
4	5.5	9	CSSDF32D3	32	CDFL00	20	TC1-D12	12	TR2-D09314	7.0-10.0
5.5	7.5	11.5	CSSDF32D3	32	CDFL00	25	TC1-D18	18	TR2-D09316	9.0-13.0
7.5	10	15.5	CSSDF63D3	63	CDFL00	32/35	TC1-D18	18	TR2-D18321	12.0-18.0
9	12	18	CSSDF63D3	63	CDFL00	32/35	TC1-D18	18	TR2-D18321	12.0-18.0
11	15	22	CSSDF63D3	63	CDFL1 00	50	TC1-D25	25	TR2-25322	17-25
15	20	29	CSSDF63D3	63	CDFL1 00	63	TC1-D32	32	TR2-D32353	23-32
18.5	25	35	CSSDF63D3	63	CDFL1 00	63	TC1-D40	40	TR2-D40355	28-36
22	30	41	CSSDF125D3	125	CDFL1 00	80	TC1-D50	50	TR2-D40355	30-40
25	35	45	CSSDF125D3	125	CDFL1 00	100	TC1-D65	65	TR2-D65357	37-50
30	40	55	CSSDF125D3	125	CDFL1 00	100	TC1-D80	80	TR2-D35359	48-65
37	50	67	CSSDF125D3	125	CDFL1 00	125	TC1-D95	95	TR2-D65361	55-70
45	60	80	CSSDF160D3	160	CDFL1 00	160	LC1-F115	115	LR1-F(M)105	65-105
55	75	100	CSSDF200D3	200	CDFL-1	160	LC1-F115	115	LR1-F(M)105	65-105
60	80	105	CSSDF200D3	200	CDFL-1	200	LC1-F150	150	LR1-F(M)125	80-125
80	110	140	CSSDF250D3	250	CDFL-1	250	LC1-F150	150	LR1-F160	100-160
90	125	160	CSSDF315D3	315	CDFL-2	315	LC1F-185	185	LR1-F200	125-200
100	136	170	CSSDF315D3	315	CDFL-2	315	LC1-F185	185	LR1-F200	125-200
132	175	230	CSSDF400D3	400	CDFL-2	315	LC1-F265	265	LR1-F250	160-250
150	200	250	CSSDF400D3	400	CDFL-2	400	LC1-F265	265	LR1-F250	160-250
160	220	270	CSSDF400D3	400	CDFL-2	500	LC1-F330	330	LR1-F315	200-315
200	270	340	CSSDF630D3	630	CDFL-3	630	LC1-F400	400	LR1-F500	315-500
257	350	425	CSSDF630D3	630	CDFL-3	630	LC1-F500	500	LR1-F500	315-500

Note :- (1) Type - 2, Co-ordination Chart as per IS 13947-4 / IEC 60947-4, Suitable for 3- Phase Motor 50 Hz, 415V AC, Iq = 50kA

(2) Type 2 Co-ordination recommendation with C&S Make HRC Fuse Type BS & DIN as applicable

(3) In the event the recommended combination is changed to accommodate another brand / rating of SDF/ Fuses / Contactor/OLR, it shall be the responsibility of the person making such a change to assure type 2 performance

(4) Product Selection is for normal starting conditions of Electric Motor with starting time < 6seconds.

(5) Product Selection is based on operational temperature upto +550 C. Thus at 600C service temperature the Overload Relay has to be derated. Example - The overload relay with setting 7~10A at 600C can be used upto 9.4A only.





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