

MINING OIL & GAS



HEAVY DUTY SWITCHBOARDS



Heavy Duty Switchboards

CBI type HPR & HPS Heavy Duty Switchboards & HCF, HPR & Xtreme Heavy Duty Load centres are designed to meet the needs of Australia's harsh mining and industrial requirements. The clean and structured appearance in combination of a robust steel cabinet construction and positive door sealing guarantees electrical equipment is fully protected from the elements. Built to last our Heavy Duty Switchboards meet ever increasing safety requirements demanded by our Mining and Industrial related customers.

Standard Features

- Integral padlocking provision on main switch, circuit breakers and residual current devices
- Baked polyester powder coated finish (X15 Orange to AS2700) as standard. Alternate colours available on request
- All external and internal labels secured with stainless steel screws
- Phase coloured I.P.A studs fitted to the escutcheon
- IP2X protection on all line and load terminals
- Dummy circuit breakers as pole fillers



HPR & HPS HEAVY DUTY SWITCHBOARDS

Enclosure dimensions of 225mm D x 580mm W (HPR) and 325mm D x 700mm W or 900mm W (HPS) offer increased gland plate area for the termination of cables and increased internal area for cable routing. A double return enclosure sealing flange provides positive deflection from the ingress of foreign material and liquids entering the enclosure; while a high quality door sealing gasket with high UV withstand provides sealing and stability over a wide temperature range. The HPR and HPS switchboards offer IP54 (with vented rain hood), IP56 and IP66 degree of protection.

MINING DUTY LOAD CENTRES

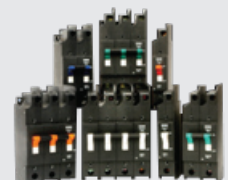
Our HCF, HPR & Xtreme Mining Duty Load Centres are designed & constructed for optimum performance. The range offers a greater box depth than most standard load centres, & provides IP40 degree of protection for the HCF range, & IP66 degree of protection for the HPR & Xtreme range therefore offering ultimate protection for your switchgear. The Xtreme range offers a fully customisable and modular solution making it one of the most durable & cost effective weatherproof solutions for any outdoor application on the market.

RAIN HOODS

These are optional on the HPR and HPS and provide positive enclosure protection from rain and moisture. An IP54 rating is achieved when using a vented rain hood while an IP66 rating is maintained with a non-vented rain hood. All vented rain hoods contain a non-hydroscopic membrane filter mesh material which allows the enclosure to 'breathe' (an IP54 enclosure) as well as preventing condensation forming and falling onto equipment. The additional lip designed over the door flange prevents the build-up of dirt and dust falling when the door is opened.

SWITCHGEAR

CBI-electric: Australia offer a unique & extensive portfolio of switchgear that ensures reliability & efficient use within a wide range of applications. Our SF range of circuit breakers employs the Hydraulic-Magnetic principle of operation. This technology boasts two distinct properties; one being the accurate tripping characteristics, the other is its independent ambient temperature variations. Our core product range includes circuit breakers for equipment, miniature circuit breakers, moulded case circuit breakers, RCBOs and auxiliary products for the protection of installations and equipment against overload and short circuit.



PADLOCK ATTACHMENTS

All CBI switch disconnector, MCBs and RCBOs used have an integral padlock attachment fitted. These attachments provide positive lock-out for isolation procedures and accept padlocking scissors and padlocks with up to 8mm hasps.

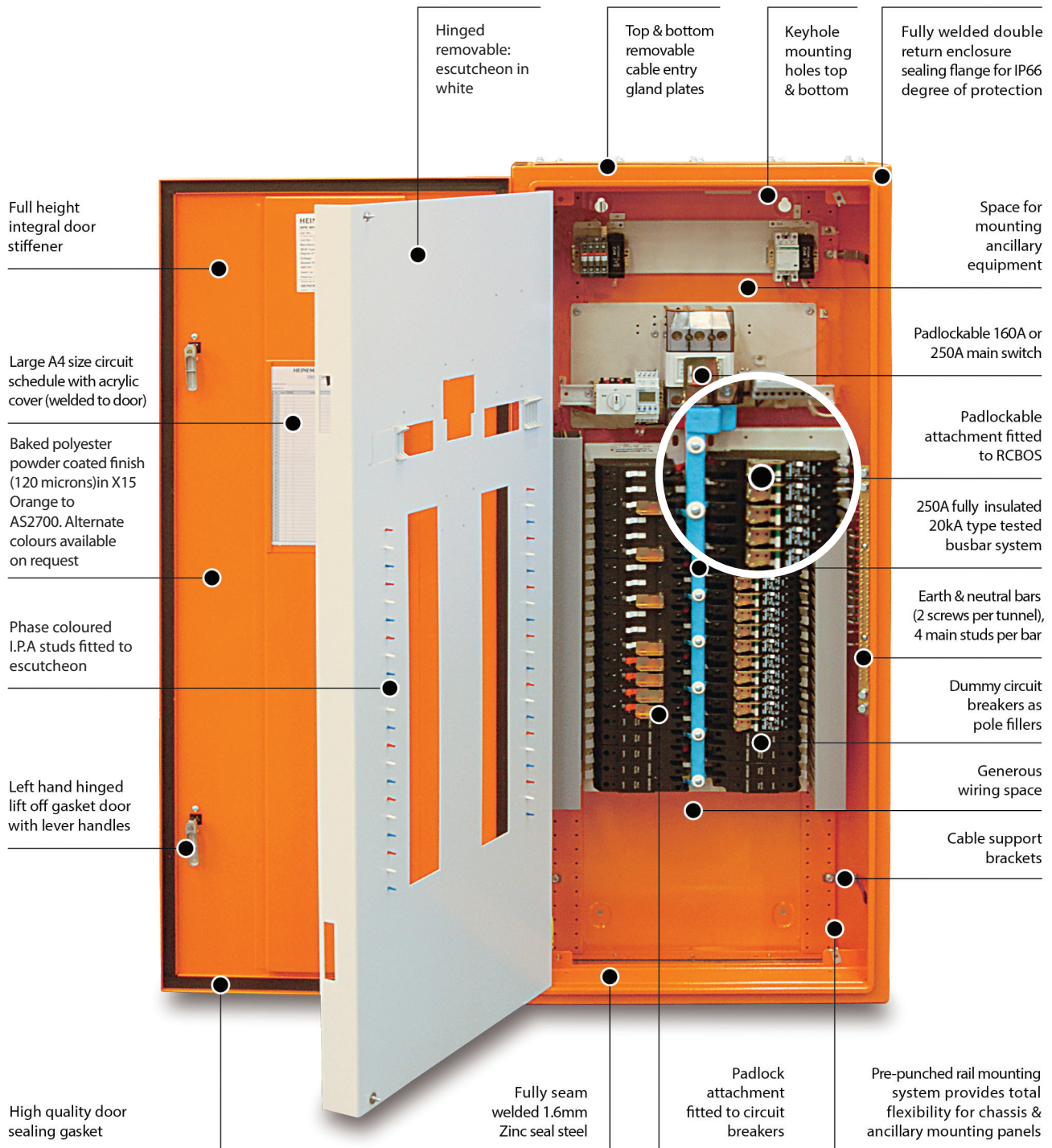
Features

- Robust Metal Padlocking attachment
- Embedded nutsert in switchgear, offering greater security
- Durable enough to hold six (6) padlocks



Features at a Glance

The generous space within the HPR heavy duty switchboard, coupled with ergonomic design & removable sections allow for easy access for equipment fitting & wiring



Company Overview

CBI Electric is a major manufacturer and supplier of quality low voltage protection equipment, power and distribution boards, motor control centres and a range of electrical installation type products. With a national distribution presence we are able to provide a quality service for all our client needs.

CBI Electric provides trusted, durable and reliable products for the protection, control and fitting of most Low Voltage electrical installations. We design, manufacture and supply Electrical Main Switchboards up to 3200 Amp, Distribution Boards, load centres, Temporary Site Switchboards, Switchgear that utilizes Hydraulic Magnetic technology, switchboard hardware, Auxiliary products and a wide range of electrical Installation products. We work to keep up with relevant technologies, improve our capabilities, customise our products in line with customer needs, and build long term relationships with our customers. Our overall aim is to make our customer's path to success easier.

Our Mission

CBI Electric will strive to become the leader in the electrical industry in design, manufacture and supply of electrical switchboards, circuit protection devices and electrical installation products.

Our Vision

- Provide the best customer service
- Exceed customer's expectations
- Continually improve product quality
- Protect our environment
- Provide a safe and efficient product

Our Core Capabilities

- Complete and mutual understanding of, our clients objectives and goals
- Electrical design and testing
- Designing of main switchboards, distribution boards, and other related equipment
- Our design services utilize the latest design engineering software
- Personalised project management from start to finish
- Experienced quotation department allowing for fast turnaround on most quotations
- Extensive testing and quality reviews
- Experienced and accredited manufacturing partners ensuring fast turnaround for customised variations
- Deliver the highest standards possible inline with our long standing accreditation to AS/NZS ISO 9001:2000

Our Customers



Mobil



bhpbilliton



Brumby's



red rooster
It's gotta be red

WILKINSON
warehouses

Australian Government
Values of Australia

ORICA

reece

RIO
TINTO

The Royal
Melbourne Hospital



HPR Mining Duty Range Heavy Duty Distribution Board

Features

- Optional vented and non-vented rain hoods
- High quality door sealing gasket with double return enclosure sealing flange
- Left hand hinged lift-off gasketed door with lever handles (1 handle is padlockable)
- Left hand hinged removable escutcheon painted in white with tool operated captive screws
- Integral padlocking provision on main switch, circuit breakers & RCBs
- Phase coloured I.P.A studs fitted to the escutcheon
- Top and bottom, brass or aluminium gasketed screw on gland plates
- Optional Rainhoods available
- All external and internal labels, secured with stainless steel fasteners
- Galvanised chassis pan and gear trays
- Dummy circuit breakers used as pole fillers
- International danger label on door
- Metal A4 legend card holder, welded to inside of door (includes acrylic cover and legend card)
- Cable support brackets at 200mm centres
- Optional wall mounting brackets (field fittable or factory welded)
- Optional Aluminium & Stainless Steel enclosure construction available



Technical Data

- Complies with AS/NZS 3439.3
- IP66 Degree of protection
- 250A, 20kA 0.2s type tested busbar system (Type HVC)
- 225mm enclosure depth including door
- 140mm depth below escutcheon
- 65mm useable space between escutcheon and door
- Premier fully welded 1.6mm, Zincseal steel construction
- Neutral and earth bars (2 screws per terminal) at the side, 4 main studs per bar
- IP2x on all line and load terminals
- Baked polyester powder coated finish (120 microns) in X15 Orange to AS 2700

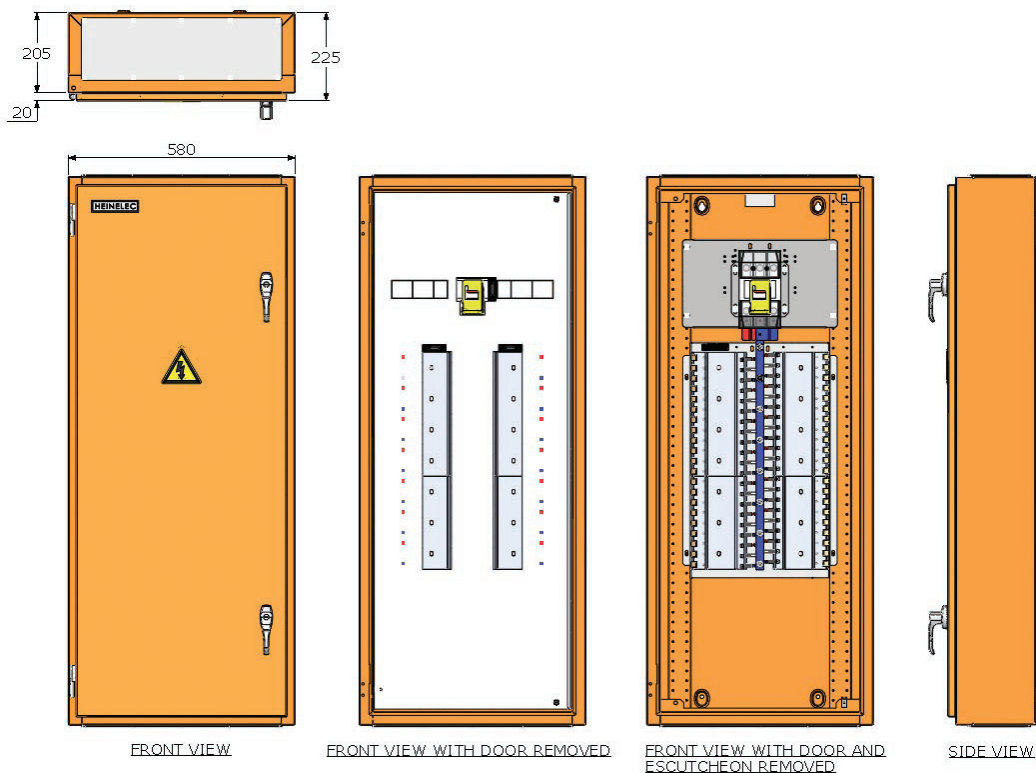
Selection Data

| HPR MINING DUTY DISTRIBUTION SWITCHBOARDS | | | | | | |
|-------------------------------------------|-----------|-----------------|-------|-------|---------------------|---------------------|
| NO OF POLES | RAIL TYPE | DIMENSIONS (mm) | | | CAT. NO. | |
| | | HEIGHT | WIDTH | DEPTH | 160 Amp Main Switch | 250 Amp Main Switch |
| 18 | SFM | 1000 | 580 | 225 | HPR18M160MD | HPR18M250MD |
| 24 | SFM | 1200 | 580 | 225 | HPR24M160MD | HPR24M250MD |
| 30 | SFM | 1200 | 580 | 225 | HPR30M160MD | HPR30M250MD |
| 36 | SFM | 1400 | 580 | 225 | HPR36M160MD | HPR36M250MD |
| 42 | SFM | 1400 | 580 | 225 | HPR42M160MD | HPR42M250MD |
| 48 | SFM | 1600 | 580 | 225 | HPR48M160MD | HPR48M250MD |

Accessories & Options

| HPR MINING-DUTY ACCESSORIES | | |
|-----------------------------|------------------------------------------------|-----------------|
| CAT. NO. | DESCRIPTION | DIMENSIONS (MM) |
| 703100G01 | Lockable Lever Handle CL001 for HPR | - |
| 703100G02 | Lockable Lever Handle 604 for HPR | - |
| 703100G03 | Lockable Lever Handle 92268 for HPR | - |
| 703100G04 | Padlockable Handle for HPR | - |
| 703100G05 | Non-Lockable Lever Hand for HPR | - |
| 703102G01 | Screwdriver (Flush) Catch Kit for HPR | - |
| HPR-RH225MD | Weatherproof Rain Hood Flat: Vented (IP54) | 580W |
| HPR-RHNV225MD | Weatherproof Rain Hood Flat: Non Vented (IP66) | 580W |
| HPR-RHNVSO225MD | Rainhood Sloping, Single Overhang, Non Vented | - |
| HPR-RHNVDO225MD | Rainhood Sloping, Double Overhang, Non Vented | - |
| HPR-RHNV3225MD | Weatherproof Rain Hood 30°: Non Vented (IP66) | 580W |
| HPR-MB10MD | External mounting Brackets HPR | 580W |
| HPR-PL2G | 75mm High Hot Dip Galv. Plinth Kit | 580W |
| HPR-BG3 | Gland Plate Brass 3mm | 580W |
| HPR-AG3 | Gland Plate Aluminium 3mm | 580W |
| HPR-AG6 | Gland Plate Aluminium 6mm | 580W |
| 703600G01 | Mounting Hole Bung | - |

Note: Rainhoods - Overhang front, sides, front & back, sloping etc. Can be ordered specifically, in IP56 & IP66 versions. Also optional in Stainless Steel & Aluminium



HPS Mining Duty Range Premier Distribution Board

Features

- Optional vented and non-vented rain hoods
- High quality door sealing gasket with double return enclosure sealing flange
- Left hand hinged lift-off gasketed door with lever handles (1 handle is padlockable)
- Left hand hinged removable escutcheon painted in white with tool operated captive screws
- Integral padlocking provision on main switch, circuit breakers & RCBs
- Phase coloured I.P.A studs fitted to the escutcheon
- Top and bottom steel, brass or aluminium gasketed, screw on gland plates
- Optional rainhoods available
- All external and internal lables
- Secured with stainless steel screws
- Galvanised chassis pan and gear trays
- Dummy circuit breakers used as pole fillers
- International danger label on door
- Metal A4 legend card holder, welded to inside of door (includes acrylic cover and legend card)
- Cable support brackets at 200mm centres
- Optional wall mounting brackets (field fittable or factory welded)
- Available in 316 stainless steel as an option
- Optional Aluminium & Stainless Steel enclosure construction available



Technical Data

- IP66 Degree of protection
- 250A, 20kA 0.2s type tested busbar system (Type HVC)
- 315A, 20kA 0.4s type tested busbar system (Type HVC)
- 400A, 20kA 1.0s type tested busbar system (Type HVC)
- Complies with AS/NZS 3439.3
- 325mm standard enclosure depth including door, customised enclosure depth can be made to order
- 225 depth below escutcheon
- 95mm useable space between escutcheon and door
- Premier fully welded 2.0mm, Zincseal steel construction
- Neutral and earth bars (2 screws per tunnel) at the side, 4 main studs per bar
- IP2x on all line and load terminals
- Baked polyester powder coated finish (120 microns) in X15 Orange to AS 2700

Selection Data

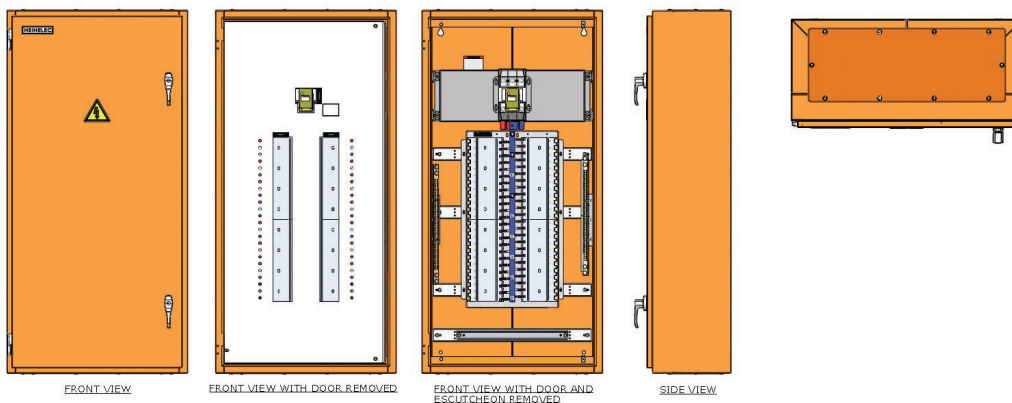
| HPS MINING DUTY DISTRIBUTIONS SWITCHBOARDS | | | | | | |
|--------------------------------------------|--------------|-----------------|-------|-------|---------------------|---------------------|
| NO OF POLES | RAIL TYPE | DIMENSIONS (mm) | | | CAT. NO. | |
| | | HEIGHT | WIDTH | DEPTH | 160 Amp Main Switch | 250 Amp Main Switch |
| 48 | SFM Cliptray | 1400 | 700 | 325 | HPS48M160MD7 | HPS48M250MD7 |
| 60 | SFM Cliptray | 1600 | 700 | 325 | HPS60M160MD7 | HPS60M250MD7 |
| 72 | SFM Cliptray | 1800 | 700 | 325 | HPS72M160MD7 | HPS72M250MD7 |
| 84 | SFM Cliptray | 2000 | 700 | 325 | HPS84M160MD7 | HPS36M250MD7 |
| 48 | SFM Cliptray | 1400 | 900 | 325 | HPS48M160MD9 | HPS42M250MD9 |
| 60 | SFM Cliptray | 1600 | 900 | 325 | HPS60M160MD9 | HPS60M250MD9 |
| 72 | SFM Cliptray | 1800 | 900 | 325 | HPS72M160MD9 | HPS72M250MD9 |
| 84 | SFM Cliptray | 2000 | 900 | 325 | HPS84M160MD9 | HPS84M250MD9 |

Note: Customised enclosure depth as requested

Accessories & Options

| HPS MINING ACCESSORIES | | |
|------------------------|------------------------------------------------|-----------------|
| CAT. NO. | DESCRIPTION | DIMENSIONS (MM) |
| HPS-RH73MD | Weatherproof Rain Hood Flat: Vented (IP54) | 700W |
| HPS-RH93MD | Weatherproof Rain Hood Flat: Vented (IP54) | 900W |
| HPS-RHNV73MD | Weatherproof Rain Hood Flat: Non Vented (IP66) | 700W |
| HPS-RHNV93MD | Weatherproof Rain Hood Flat: Non Vented (IP66) | 900W |
| HPS-RHNV373MD | Weatherproof Rain Hood 30°: Non Vented (IP66) | 700W |
| HPS-RHNV393MD | Weatherproof Rain Hood 30°: Non Vented (IP66) | 900W |
| HPS-RHNV73S0MD | Rainhood Sloping, Single Overhang, Non Vented | 700W |
| HPS-RHNV73D0MD | Rainhood Sloping, Double Overhang, Non Vented | 700W |
| HPS-RHNV93S0MD | Rainhood Sloping, Single Overhang, Non Vented | 900W |
| HPS-RHNV93D0MD | Rainhood Sloping, Double Overhang, Non Vented | 900W |
| HPS-MB7MD | External mounting Brackets HPS | 700W |
| HPS-MB9MD | External mounting Brackets HPS | 900W |
| HPS-PL73G | Switchboard Plinth Kit HPS | 700W |
| HPS-PL93G | Switchboard Plinth Kit HPS | 900W |
| HPS-PL143G | 75mm High Hot Dip Galv. Plinth Kitch | 1400W |
| HPS-PL163G | 75mm High Hot Dip Galv. Plinth Kitch | 1600W |
| HPS-PL183G | 75mm High Hot Dip Galv. Plinth Kitch | 1800W |
| HPS-SG | Gland Plate Painted 2mm | 700W |
| HPS-SG | Gland Plate Painted 2mm | 900W |
| HPS-BG | Gland Plate Brass 3mm | 700W |
| HPS-BG | Gland Plate Brass 5mm | 700W |
| HPS-BG | Gland Plate Brass 3mm | 900W |
| HPS-BG | Gland Plate Brass 5mm | 900W |
| HPS-AG | Gland Plate Aluminium 3mm | 700W |
| HPS-AG | Gland Plate Aluminium 5mm | 700W |
| HPS-AG | Gland Plate Aluminium 3mm | 900W |
| HPS-AG | Gland Plate Aluminium 5mm | 900W |
| HPS-BGT | Gland Plate Internal Brass 3mm | 700W |
| HPS-BGT | Gland Plate Internal Brass 5mm | 900W |
| HPS-AGT | Gland Plate Internal Aluminium 3mm | 700W |
| HPS-AGT | Gland Plate Internal Aluminium 5mm | 900W |
| 703600G01 | Mounting Hole Bung | - |

Note: Rainhoods - Overhang front, sides, front & back, sloping etc. Can be ordered specifically, in IP56 & IP66 versions.



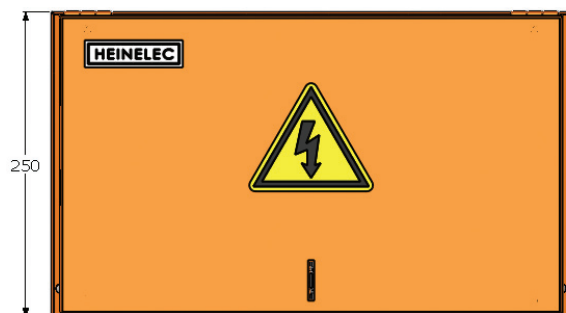
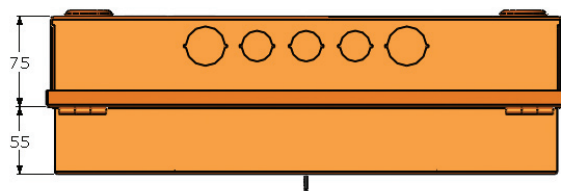
HCF Mining Duty Load Centre Range

Features

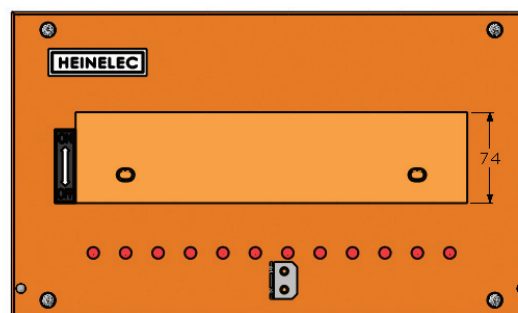
- IP40 degree of protection
- 100A Single phase or three phase link busbar
- Complies with AS/NZS 3439.3 (Form 1)
- Padlockable door
- 130mm enclosure depth including door
- Single phase red coloured I.P.A studs fitted
- Robust 1.2mm steel construction
- Integral padlocking provision on main switch, circuit breakers & RCBO's
- Baked polyester powder coated finish in X15 orange
- IP2X on all line & load terminals
- Dummy circuit breakers used as pole fillers
- Metal A5 legend card holder, welded to inside of door



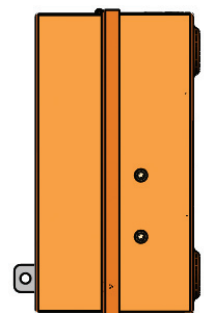
| HCF (SFM) MINING DUTY LOAD CENTRES | | | | | | |
|------------------------------------|-------------------------|-------------|--------------|-----------------|-------|-------|
| CAT NO | DESCRIPTION | NO OF POLES | RAIL TYPE | DIMENSIONS (mm) | | |
| | | | | HEIGHT | WIDTH | DEPTH |
| HCF6DMD | Mining Duty Load Centre | 6 | SFM Cliptray | 250 | 260 | 130 |
| HCF12DMD | Mining Duty Load Centre | 12 | SFM Cliptray | 250 | 420 | 130 |
| HCF18DMD | Mining Duty Load Centre | 18 | SFM Cliptray | 250 | 580 | 130 |



FRONT VIEW



FRONT VIEW WITH DOOR REMOVED



SIDE VIEW

HPR Mining Duty Load Centre Range

Features

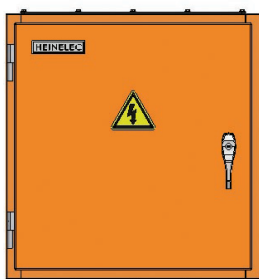
- IP66 degree of protection
- IP54 degree of protection if fitted with vented rain hood
- Premier fully welded 1.6mm Zincseal Steel Construction
- Double return enclosure sealing flange
- Baked polyester powder coated finish X15 orange
- Hinged removable escutcheon with identification marking label, or optional I.P.A studs available
- Left hand hinged lift off gasketed door with lockable lever handle
- High quality door sealing gasket with retaining angle
- Optional weatherproof rainhood
- External mounting brackets supplied as standard on weatherproof load centre
- 225mm enclosure depth including door
- Optional stainless steel & aluminium construction available



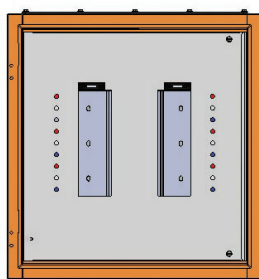
| HPR (SFM) LOAD CENTRES | | | | | | |
|------------------------|-----------------------------|------------|-------------|--------------|-----------------|-------|
| CAT NO | DESCRIPTION | COLOUR | NO OF POLES | RAIL TYPE | DIMENSIONS (mm) | |
| | | | | | HEIGHT | WIDTH |
| HPR15LCMD | Mining Duty Load Centre HPR | X15 Orange | 15 | SFM Cliptray | 600 | 580 |
| HPR18LCMD | Mining Duty Load Centre HPR | X15 Orange | 18 | SFM Cliptray | 600 | 580 |
| HPR24LCMD | Mining Duty Load Centre HPR | X15 Orange | 24 | SFM Cliptray | 600 | 580 |

| HPR (SFM) LOAD CENTRE ACCESSORIES | | |
|-----------------------------------|---------------------------------------------|-------|
| CAT NO | DESCRIPTION | WIDTH |
| HPR-RH225MD | Weatherproof Rain Hood Flat: Vented | 580 |
| HPR-RHNV225MD | Weatherproof Rain Hood Flat: Non Vented | 580 |
| HPR-RHNV3225MD | Weatherproof Rain Hood Flat 30°: Non Vented | 580 |
| HPR-MB10MD | External Mounting Brackets HPR | 580 |
| HPR-BG3 | Gland Plate Brass 3mm | 580 |
| HPR-AG3 | Gland Plate Aluminium 3mm | 580 |
| HPR-AG5 | Gland Plate Aluminium 5mm | 580 |

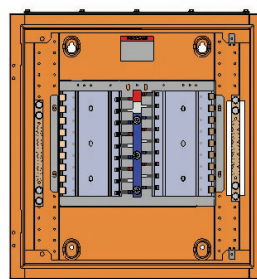
HPR Mining Duty Load Centre



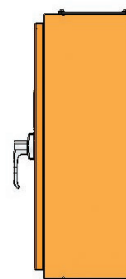
FRONT VIEW



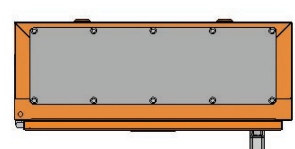
FRONT VIEW WITH DOOR REMOVED



FRONT VIEW WITH DOOR AND ESCUTCHEON REMOVED



SIDE VIEW



Xtreme IP66 Load Centre Range

Features

- IP66 protection rating
- DIN or SFM Cliptray versions
- Easy to fit modular design
- Innovative & easily fitted weatherproof Rain Hood option. Also 40° sloping version available
- Pad lockable swing handle
- Top & Bottom Gland plates, fitted with high quality gaskets
- Light weight, heavy duty fully welded Zinc Anneal construction
- Quality 100Amp busbar system
- Heavy Duty fixed mounting tags
- 1 Phase coloured I.P.A studs fitted to escutcheon as standard, other phases available as option
- High Quality door sealing gasket with double return enclosure sealing flange
- Baked polyester UV resistant X15 Orange, powder coated finish
- Stainless Steel Hinges & Fasteners
- Robust 1.2mm Zinc anneal construction (gland plates 2.0mm)
- Internal 6mm earth stud
- Innovative internal cable support brackets
- Integrated document holder
- Vandal resistant Kit optional
- Brass & Aluminium Gland Plate options available
- Stainless Steel enclosure available on request

Application

- Mining
- Oil & Gas
- Food & Beverage processing
- Heavy Industrial
- Rail
- Transportable Buildings




| XTREME ENCLOSURE DETAILS | | |
|--------------------------------------|--------------------------|--------------------------|
| ENCLOSURE DETAILS | HLC6612X | HLC6624X |
| IP Rating | 66 | 66 |
| Material (Body) | 1.2mm | 1.2mm |
| Material (Gland Plates) | 2.0mm | 2.0mm |
| Rail Type | SFM | SFM |
| Poles Capacity: SFM / DIN MCB's | 12 | 24 |
| Colours to AS2700 | X15 Orange | X15 Orange |
| Handle Type | Padlockable Swing Handle | Padlockable Swing Handle |
| Handle Material | Chrome Plated | Chrome Plated |
| Removeable Gland Plates Top & Bottom | ✓ | ✓ |
| Door Hinge independent of escutcheon | ✓ | ✓ |
| Door Hinge Material | Stainless Steel | Stainless Steel |
| Busbar Rating | 100 Amp | 100 Amp |
| Busbar Type | SFM MCB's | SFM MCB's |
| Neutral Bar 2 x M8 Connections | ✓ | ✓ |
| Earth Bar 2 x M8 Connections | ✓ | ✓ |

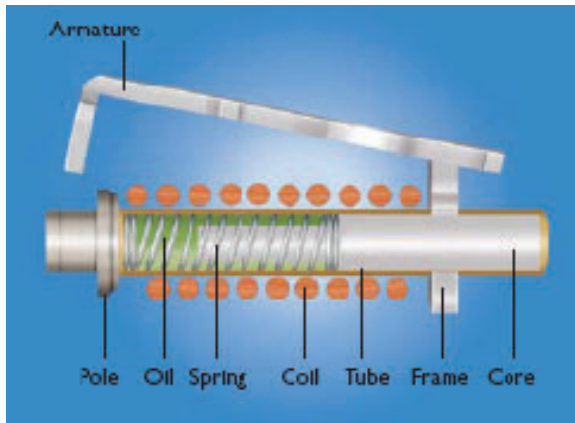
| XTREME (SFM) RANGE | | | | | | |
|--------------------|------|-------------|-------------|------------|------------|--------|
| CAT NO | TYPE | NO OF POLES | HEIGHT (mm) | WIDTH (mm) | DEPTH (mm) | COLOUR |
| HLC6612X | SFM | 12 | 320 | 500 | 170 | Orange |
| HLC6624X | SFM | 24 | 640 | 500 | 170 | Orange |

| XTREME RAIN HOOD | | | | | |
|----------------------|--------------------|-------------|------------|------------|--------|
| CAT NO | SUITS MODEL | HEIGHT (mm) | WIDTH (mm) | DEPTH (mm) | COLOUR |
| HLCRHX | HLC6612X, HLC6624X | 62 | 504 | 198 | Orange |
| HLCRHX40 (40° Slope) | HLC6612X, HLC6624X | 151 | 504 | 198 | Orange |

| XTREME ENCLOSURE OPTIONAL ACCESSORIES | | |
|------------------------------------------|----------|----------|
| ACCESSORIES | HLC6612X | HLC6624X |
| Brass 3mm Gland Plate | ✓ | ✓ |
| Aluminium 3mm Gland Plate | ✓ | ✓ |
| Aluminium 6mm Gland Plate | ✓ | ✓ |
| Stainless Steel Padlockable Swing Handle | ✓ | ✓ |
| Tamper Proof Gland Plate Screw Kit | ✓ | ✓ |
| Stainless Steel 316 Grade Enclosure | ✓ | ✓ |
| SFM 3 Phase conversion Kit | ✓ | ✓ |
| DIN 3 Phase conversion Kit | ✓ | ✓ |

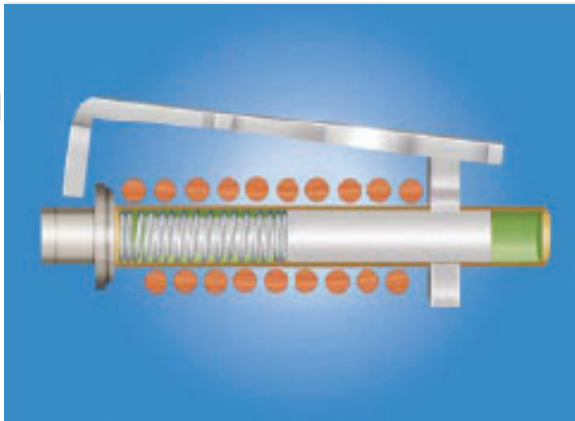
HYDRAULIC MAGNETIC PRINCIPLES OF OPERATION

1



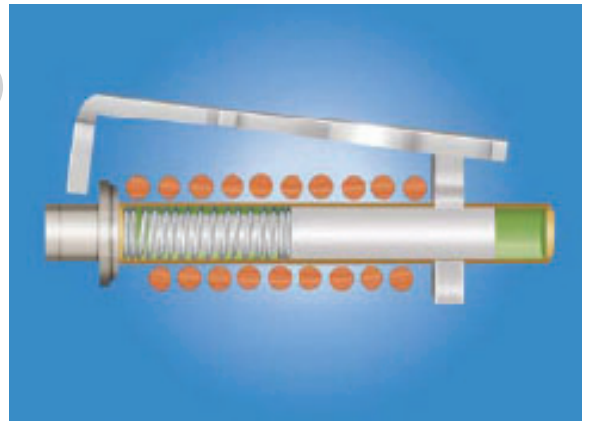
It operates on the magnetic force produced by the load current flowing through a solenoid coil. The coil is wound around a hermetically sealed tube containing an iron core, a spring and dampening fluid. At currents below the circuit breaker rating the magnetic flux in the solenoid is insufficient to attract the core to the pole piece due to the opposing spring pressure. When an overload occurs, the magnetic flux in the solenoid produces sufficient magnetic attraction to overcome the spring force and the core moves towards the pole.

2

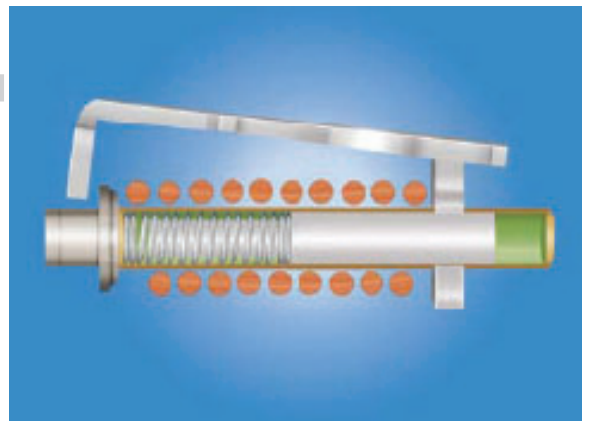


The fluid, creating a time delay inversely proportional to the current dampens the speed of movement. If the overload is of short duration - such as during start up of motors - the core returns to its rest position when the overload disappears.

3



4



If an overload persists, the core reaches the pole piece with a delay particular to that current. In so doing the reluctance of the magnetic circuit drops so that the armature is attracted to the pole face with sufficient force to collapse the latch mechanism and trip the breaker. The contacts separate, the current stops flowing and the core returns to the reset position.

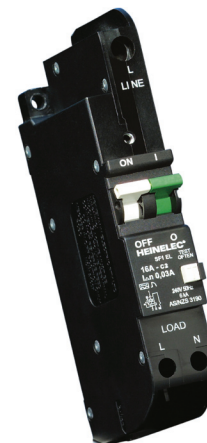
At high overload values or short circuit, the magnetic flux produced by the coil is sufficient to attract the armature to the pole face and trip the breaker even though the core has not moved. This is referred to as the 'instantaneous trip' characteristic of the circuit breaker.

The circuit breaker may be immediately reclosed after tripping, provided the fault has been cleared, as there is no cooling down time required. Its principle of operation allows for a variety of time/current characteristics to be tailored to individual requirements.

SF RCBO'S

FEATURES

- AS/NZS 3190 Type II approved (Approval N°: NSW 21007)
- Switches both Active & Neutral conductors
- Overload & short circuit protection
- Shock & Fire Hazard protection
- Suitable for pulsating DC current
- Single phase over-current protection
- IP2X terminals
- 26mm module width
- High Immunity to transient currents
(Peak withstand current 250A, 8/20 μ s)
- Special high sensitivity 10mA SF1EL RCBO'S are available for hospital applications & medical equipment which complies to AS/NZS 3003
- Hydraulic Magnetic Technology
 - Trip point unaffected by ambient temperature
 - Precision circuit breaker, always holds 100% of rated current
 - Immediate resetting after tripping (provided the fault condition has been cleared)
 - Mid trip handle position, indicating that the RCBO has tripped
- Optional integral padlock attachment accepting up to 8mm hasp
- Insulation resistance testing can be done with the handle in the OFF position
(No disconnection of the unit is required)



APPLICATION

- Mining & Minerals
- Oil & Gas
- Heavy Industrial
- Multi Storey Complexes
- Hotels & Clubs
- Hospital & Medical Centres
- Schools & Universities
- Electrical office equipment
- Rail & Infrastructure

SELECTION DATA

| SF RCBO | | | | | | | |
|-----------|-----------|----------------|-------------|------------------|---------------|------------------------------|----------------|
| PART NO | RAIL TYPE | AMP RATING (A) | NO OF POLES | SENSITIVITY (mA) | RATED VOLTAGE | RATED BREAKING CAPACITY (kA) | TRIPPING CURVE |
| SF1EL6-3 | Cliptray | 6 | 1+N | 30 mA | 240V | 6 kA | Curve 2 |
| SF1EL10-3 | Cliptray | 10 | 1+N | 30 mA | 240V | 6 kA | Curve 2 |
| SF1EL16-3 | Cliptray | 16 | 1+N | 30 mA | 240V | 6 kA | Curve 2 |
| SF1EL20-3 | Cliptray | 20 | 1+N | 30 mA | 240V | 6 kA | Curve 2 |
| SF1EL25-3 | Cliptray | 25 | 1+N | 30 mA | 240V | 6 kA | Curve 2 |
| SF1EL32-3 | Cliptray | 32 | 1+N | 30 mA | 240V | 6 kA | Curve 2 |
| SF1EL40-3 | Cliptray | 40 | 1+N | 30 mA | 240V | 6 kA | Curve 2 |
| SF36AE10 | Cliptray | 10 | 3+N | 30 mA | 240V | 6 kA | Curve 2 |
| SF36AE16 | Cliptray | 16 | 3+N | 30 mA | 240V | 6 kA | Curve 2 |
| SF36AE20 | Cliptray | 20 | 3+N | 30 mA | 240V | 6 kA | Curve 2 |
| SF36AE25 | Cliptray | 25 | 3+N | 30 mA | 240V | 6 kA | Curve 2 |
| SF36AE32 | Cliptray | 32 | 3+N | 30 mA | 240V | 6 kA | Curve 2 |
| SF36AE40 | Cliptray | 40 | 3+N | 30 mA | 240V | 6 kA | Curve 2 |
| SF36AE50 | Cliptray | 50 | 3+N | 30 mA | 240V | 6 kA | Curve 2 |
| SF36AE63 | Cliptray | 63 | 3+N | 30 mA | 240V | 6 kA | Curve 2 |
| SF36AE80 | Cliptray | 80 | 3+N | 30 mA | 240V | 6 kA | Curve 2 |

ACCESSORIES & OPTIONS

| | |
|-----------|-------------------------------------------------------------------------|
| SF1EL | 10mA Setting, Integral padlocking facility |
| SF36/SM36 | 100mA, 250mA & 500mA Settings, Integral padlocking facility, Shunt Trip |

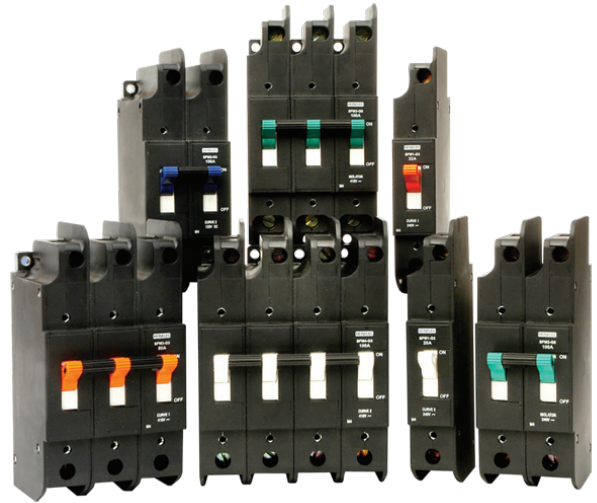
SFM Miniature Circuit Breakers and Switch Disconnectors

Features

- AS3111 approved (Approved No. N15215)
- Available in single, double, triple & four pole units
- Precision circuit breaker utilizing hydraulic magnetic technology, results in accurate temperature independent tripping
- IP2X “finger proof” line & loud box (tunnel) type terminals
- Clear positive identification for ON/OFF (I/O) provided
- Shunt trip provides for remote tripping
- Auxiliary switch provides for remote indication

Application

- Mining
- Oil & Gas
- Heavy industrial
- Multi Storey Complexes
- Hotels & Clubs
- Hospital & Medical Centres
- Schools & Universities
- Electrical office equipment
- Rail & Infrastructure



| SFM MINIATURE CIRCUIT BREAKERS (MCB) | | | | | | |
|--------------------------------------|---------------|----------------|-------------|---------------|-------------------------------|----------------|
| PART NO | MOUNTING TYPE | AMP RATING (A) | NO OF POLES | RATED VOLTAGE | RATED BREAKING CAPACITY (k A) | TRIPPING CURVE |
| SFM1-G3-2-2 | Cliptray | 2 | 1 | 240V | 6 k A | Curve 2 |
| SFM1-G3-4-2 | Cliptray | 4 | 1 | 240V | 6 k A | Curve 2 |
| SFM1-G3-6-2 | Cliptray | 6 | 1 | 240V | 6 k A | Curve 2 |
| SFM1-G3-10-2 | Cliptray | 10 | 1 | 240V | 6 k A | Curve 2 |
| SFM1-G3-16-2 | Cliptray | 16 | 1 | 240V | 6 k A | Curve 2 |
| SFM1-G3-20-2 | Cliptray | 20 | 1 | 240V | 6 k A | Curve 2 |
| SFM1-G3-25-2 | Cliptray | 25 | 1 | 240V | 6 k A | Curve 2 |
| SFM1-G3-32-2 | Cliptray | 32 | 1 | 240V | 6 k A | Curve 2 |
| SFM1-G3-40-2 | Cliptray | 40 | 1 | 240V | 6 k A | Curve 2 |
| SFM1-G3-50-2 | Cliptray | 50 | 1 | 240V | 6 k A | Curve 2 |
| SFM1-G3-63-2 | Cliptray | 63 | 1 | 240V | 6 k A | Curve 2 |
| SFM1-G3-80-2 | Cliptray | 80 | 1 | 240V | 6 k A | Curve 2 |
| SFM1-G3-100-2 | Cliptray | 100 | 1 | 240V | 6 k A | Curve 2 |
| SFM2-G3-2-2 | Cliptray | 2 | 2 | 240V | 6 k A | Curve 2 |
| SFM2-G3-4-2 | Cliptray | 4 | 2 | 240V | 6 k A | Curve 2 |
| SFM2-G3-6-2 | Cliptray | 6 | 2 | 240V | 6 k A | Curve 2 |
| SFM2-G3-10-2 | Cliptray | 10 | 2 | 240V | 6 k A | Curve 2 |
| SFM2-G3-16-2 | Cliptray | 16 | 2 | 240V | 6 k A | Curve 2 |
| SFM2-G3-20-2 | Cliptray | 20 | 2 | 240V | 6 k A | Curve 2 |
| SFM2-G3-25-2 | Cliptray | 25 | 2 | 240V | 6 k A | Curve 2 |
| SFM2-G3-32-2 | Cliptray | 32 | 2 | 240V | 6 k A | Curve 2 |
| SFM2-G3-40-2 | Cliptray | 40 | 2 | 240V | 6 k A | Curve 2 |
| SFM2-G3-50-2 | Cliptray | 50 | 2 | 240V | 6 k A | Curve 2 |
| SFM2-G3-63-2 | Cliptray | 63 | 2 | 240V | 6 k A | Curve 2 |
| SFM2-G3-80-2 | Cliptray | 80 | 2 | 240V | 6 k A | Curve 2 |
| SFM2-G3-100-2 | Cliptray | 100 | 2 | 240V | 6 k A | Curve 2 |
| SFM3-G3-2-2 | Cliptray | 2 | 3 | 240V | 6 k A | Curve 2 |

| SFM MINIATURE CIRCUIT BREAKERS (MCB) | | | | | | |
|--------------------------------------|---------------|----------------|-------------|---------------|-------------------------------|----------------|
| PART NO | MOUNTING TYPE | AMP RATING (A) | NO OF POLES | RATED VOLTAGE | RATED BREAKING CAPACITY (k A) | TRIPPING CURVE |
| SFM3-G3-4-2 | Cliptray | 4 | 3 | 240V | 6 k A | Curve 2 |
| SFM3-G3-6-2 | Cliptray | 6 | 3 | 240V | 6 k A | Curve 2 |
| SFM3-G3-10-2 | Cliptray | 10 | 3 | 240V | 6 k A | Curve 2 |
| SFM3-G3-16-2 | Cliptray | 16 | 3 | 240V | 6 k A | Curve 2 |
| SFM3-G3-20-2 | Cliptray | 20 | 3 | 240V | 6 k A | Curve 2 |
| SFM3-G3-25-2 | Cliptray | 25 | 3 | 240V | 6 k A | Curve 2 |
| SFM3-G3-32-2 | Cliptray | 32 | 3 | 240V | 6 k A | Curve 2 |
| SFM3-G3-40-2 | Cliptray | 40 | 3 | 240V | 6 k A | Curve 2 |
| SFM3-G3-50-2 | Cliptray | 50 | 3 | 240V | 6 k A | Curve 2 |
| SFM3-G3-63-2 | Cliptray | 63 | 3 | 240V | 6 k A | Curve 2 |
| SFM3-G3-80-2 | Cliptray | 80 | 3 | 240V | 6 k A | Curve 2 |
| SFM3-G3-100-2 | Cliptray | 100 | 3 | 240V | 6 k A | Curve 2 |
| SFM4-3G3G0-10-2 | Cliptray | 10 | 3 + N | 415V | 6 k A | Curve 2 |
| SFM4-3G3G0-16-2 | Cliptray | 16 | 3 + N | 415V | 6 k A | Curve 2 |
| SFM4-3G3G0-20-2 | Cliptray | 20 | 3 + N | 415V | 6 k A | Curve 2 |
| SFM4-3G3G0-25-2 | Cliptray | 25 | 3 + N | 415V | 6 k A | Curve 2 |
| SFM4-3G3G0-32-2 | Cliptray | 32 | 3 + N | 415V | 6 k A | Curve 2 |
| SFM4-3G3G0-40-2 | Cliptray | 40 | 3 + N | 415V | 6 k A | Curve 2 |
| SFM4-3G3G0-50-2 | Cliptray | 50 | 3 + N | 415V | 6 k A | Curve 2 |
| SFM4-3G3G0-63-2 | Cliptray | 63 | 3 + N | 415V | 6 k A | Curve 2 |
| SFM4-3G3G0-80-2 | Cliptray | 80 | 3 + N | 415V | 6 k A | Curve 2 |
| SFM4-3G3G0-100-2 | Cliptray | 100 | 3 + N | 415V | 6 k A | Curve 2 |

| SFM MINIATURE CIRCUIT BREAKERS (MCB) ACCESSORIES | | SFM SWITCH DISCONNECTORS | | | | |
|--------------------------------------------------|------------------------------------------------------------|--------------------------|---------------|----------------|-------------|---------------|
| CATEGORY NO | DESCRIPTION | CATEGORY NO | MOUNTING TYPE | AMP RATING (A) | NO OF POLES | RATED VOLTAGE |
| SFMHL | Handle lock off, multi pole SFM | SFM1-G0-63 | Cliptray | 63 | 1 | 240V |
| SFPF2 | Pole Filler 74mm Cut Out SFM | SFM1-G0-80 | Cliptray | 80 | 1 | 240V |
| SFPF3 | Pole Filler (Dummy MCB) SFM | SFM1-G0-100 | Cliptray | 100 | 1 | 240V |
| SFPF4 | Pole Filler (Dummy MCB) SFM (Used for link busbar support) | SFM2-G0-63 | Cliptray | 63 | 2 | 415V |
| | | SFM2-G0-80 | Cliptray | 80 | 2 | 415V |
| | | SFM2-G0-100 | Cliptray | 100 | 2 | 415V |
| | | SFM3-G0-63 | Cliptray | 63 | 3 | 415V |
| | | SFM3-G0-80 | Cliptray | 80 | 3 | 415V |
| | | SFM3-G0-100 | Cliptray | 100 | 3 | 415V |
| | | SFM4-G0-63 | Cliptray | 63 | 4 | 415V |
| | | SFM4-G0-80 | Cliptray | 80 | 4 | 415V |
| | | SFM4-G0-100 | Cliptray | 100 | 4 | 415V |

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