

# **IEC DIN MCB**

#### xPole Arc Fault Detection Device

## The AFDD+ provides a full protection solution against electrical ignited fires

The AFDD+ provides a full protection solution in one device that enhances consumers' peace of mind against fires ignited by electrical installations, while adding additional comfort. This all-in-one device gives the consumer full protection in their home and enables the installer to offer and install products that comply with evolving new codes

- Electric fire protective device according to IEC/EN-62606
- Line-voltage-independent RCBO (combined switch) according to IEC/EN 61009
- 2-pole: Both clearances between open contacts are protected
- Tripped indication: CB, RCD or AFDD
- LED indication for arc faults
- Compatible with standard busbar
- Twin-purpose terminal above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Guide for secure terminal connection
- Switching toggle (MCB component) in colour designating the rated current
- Contact position indicator red green
- Comprehensive range of accessories suitable for subsequent installation
- The test key "T" must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test interval of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damp or dusty environments), it's recommended to test in shorter intervals (e.g. monthly).
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement (RE), or proper checking of the earth conductor condition redundant, which must be performed separately.
- Type A: Protects against special forms of residual pulsating DC which have not been smoothed
- Approval number NSW27674

**SHORT CIRCUIT & OVERCURRENT** 

thermal and magnetic detection

I <sub>n</sub> /	LΔn	(A)	Item no.
10	LεΛ	2 mala	

#### 10 kA, 2-pole

To a certain extent surge-current-proof 250A; non-delayed, pulse current sensitive, Type A

Characteristic B	
10A / 30mA	AFDD-10/2/B/003-A
16A / 30mA	AFDD-16/2/B/003-A
20A / 30mA	AFDD-20/2/B/003-A
25A / 30mA	AFDD-25/2/B/003-A
Characteristic C	
10A / 30mA	AFDD-10/2/C/003-A
16A / 30mA	AFDD-16/2/C/003-A
20A / 30mA	AFDD-20/2/C/003-A
25A / 30mA	AFDD-25/2/C/003-A

$I_n / I_{\Delta n} (A)$ Ite	em no.
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#### 6 kA, 2-pole

To a certain extent surge-current-proof 250A; non-delayed, pulse current sensitive, Type A

Characteristic B	
32A / 30mA	AFDD-32/2/B/003-A
40A / 30mA	AFDD-40/2/B/003-A
Characteristic C	
Characteristic C	
32A / 30mA	AFDD-32/2/C/003-A

Accessories	Item no.
Commoning busbar for 4 x AFDD devices	EVG-2PHAS/4AFDD
Auxiliary switch with 1NO+1NC contacts	ZP-IHK
Auxiliary switch with 2CO contacts	ZP-NHK
Shunt trip release	ZP-ASA/
Switching interlock	IS/SPE-1TE

detected via balance transformer **AFDD** 

**EARTH FAULT** 

**SERIAL & PARALLEL ARC FAULT** 

digital arc fault detection

#### **xPole Arc Fault Detection Device**

# The following types of fault can lead to severe hazard and danger.

#### **Overcurrents**

A moderate increase in current which does not immediately damage the wiring but results in a thermal overload over time. May increase over a period or almost instantaneously jump to a steady state current.

#### Typical causes

- Insulation defects
- Breakdown between phases
- Breakdown between phase and neutral

#### Short circuit currents

Faults with very low impedance and very high currents which can be up to 20 times the nominal current.

Typical causes
Phase and neutral
shortcircuiting over very low
impedance, due to:

- Insulation breakdown
- Mechanical damage to wiring
  - Water

#### **Fault currents**

High or low impedance faults between phase and earth. They can result in very low leakage and fault currents, either much lower than nominal current or in very high currents.

Typical causes

Changes in insulation and insulation resistance, due to:

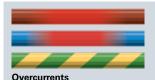
- Humidity
- Aging
- Mechanical stress
- Dust
- Dirt etc.

#### Arc fault currents

Typically at nominal current or just below, and therefore difficult to detect. Small arcs can grow over time as insulation is increasingly damaged. Identified by high frequency electrical noise and breakdown of the fault current close to the zero crossing of the driving voltage.

Typical causes

Broken or damaged wires leading to an arc continually or intermittently burning and damaging insulation.





Short circuit currents







Originate from a fault within the phase or neutral.

Originate from a fault between phase and neutral.

# Extended protection for people, property and assets

Protection against electrical hazards has evolved and improved to arrive at today's state-of-the-art EATON solutions.

## Money-saving

Billions of dollars are lost because of fires. The AFDD+ makes a definite and significant contribution to reducing this loss, by offering installers for the first time a single compact device which not only increases safety but also reduces the risk of fire hazards.

#### Time-saving

Easy to operate and with no assembly required, the EATON AFDD+ is a fully integrated device, resistant to nuisance tripping, with sensitivity above the requirements of the product standard.

In case of an earth fault, having all protection in one device makes fault finding easier. And, as the AFDD+ provides tripping reason indicators, you, as a professional electrician, know immediately what to look for.

#### **End User Convenience**

In the case of any (earth) fault, only the circuit that caused the fault will trip so other circuits will remain powered.

## Market-leading

EATON's long experience in developing electronic protection devices ensures the company's leading position in providing reliable and safe electronic protection devices – of which the AFDD+ is the latest in a long line.

#### Comprehensive protection in final end circuits

The AFDD+ provides complete protection in final sub circuits in one compact device

# **ARC FAULT PROTECTION**

- + ADDITIONAL PROTECTION
- + FAULT PROTECTION

Arc fault protection AFDD

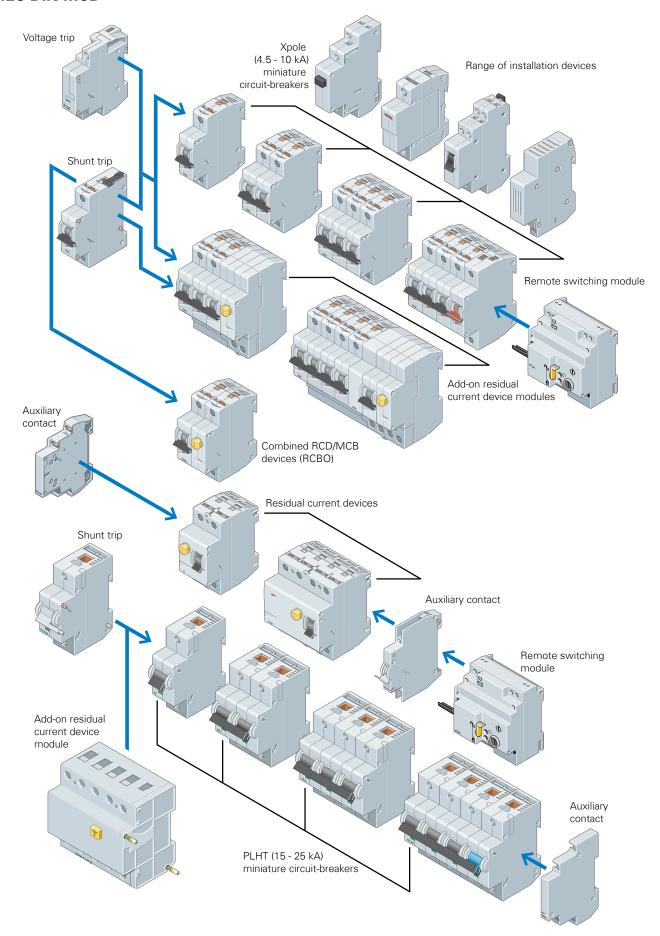
Additional protection 30mA RCD

Fault protection MCB or RCD

# Basic protection

Insulation of live parts

# **IEC DIN MCB**



## xPole IEC DIN MCB, RCCB & RCBO products

# IS Main switches/isolating switches

Rated uninterrupted current	Poles	Item no.
lu, A		
40	1	IS-40/1
63	1	IS-63/1
80	1	IS-80/1
100	1	IS-100/1
125	1	IS-125/1
40	2	IS-40/2
63	2	IS-63/2
80	2	IS-80/2
100	2	IS-100/2
125	2	IS-125/2
40	3	IS-40/3
63	3	IS-63/3
80	3	IS-80/3
100	3	IS-100/3
125	3	IS-125/3
40	4	IS-40/4
63	4	IS-63/4
80	4	IS-80/4
100	4	IS-100/4
125	4	IS-125/4



IS-63/



IS-63/2



IS-63/3



IS-63/4

# **PLS4 Miniature Circuit Breakers (MCB)**

- High-quality miniature circuit breakers for household applications
- Contact position indicator red green
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories suitable for subsequent installation
- 48 VDC rating (per pole, max. 2 poles)
- Terminal capacity 1-25mm²
- Rated currents up to 63A
- Tripping characteristics C
- Rated breaking capacity 4.5kA according to IEC/EN 60898-1
- Australian Standards AS/NZS60898 Approval Number NSW16860

Rated current In, A	1-Pole Item no.	2-Pole Item no.	3-Pole Item no.
4.5 kA, trip curve	e C: Rated current up to	63 A, Rated breaking capacit	y 4.5 kA to IEC/EN 60898 6
6	PLS4-C6/1-AU	PLS4-C6/2-AU	PLS4-C6/3-AU
10	PLS4-C10/1-AU	PLS4-C10/2-AU	PLS4-C10/3-AU
16	PLS4-C16/1-AU	PLS4-C16/2-AU	PLS4-C16/3-AU
20	PLS4-C20/1-AU	PLS4-C20/2-AU	PLS4-C20/3-AU
25	PLS4-C25/1-AU	PLS4-C25/2-AU	PLS4-C25/3-AU
32	PLS4-C32/1-AU	PLS4-C32/2-AU	PLS4-C32/3-AU
40	PLS4-C40/1-AU	PLS4-C40/2-AU	PLS4-C40/3-AU
50	PLS4-C50/1-AU	PLS4-C50/2-AU	PLS4-C50/3-AU
63	PLS4-C63/1-AU	PLS4-C63/2-AU	PLS4-C63/3-AU



PLS4-C50/1-AU



PLS4-C6/2-AU



PLS4-C10/3-AU

# **IEC DIN MCB**

#### xPole IEC DIN MCB, RCCB & RCBO products

## **PLS6 Miniature Circuit Breakers (MCB)**

- High-quality miniature circuit breakers for commercial & industrial applications
- Contact position indicator red green
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories suitable for subsequent installation
- 48 VDC rating (per pole, max. 2 poles)
- Terminal capacity 1-25mm<sup>2</sup>
- Rated currents up to 63 A
- Tripping characteristics B, C
- Rated breaking capacity 6 kA according to IEC/EN 60898-1
- Australian Standards AS/NZS60898 Approval Number NSW16860



PLS6-C50/1-AU







PLS6-C63/4-AU

Rated current	1-Pole	2-Pole	3-Pole	4-Pole
In, A	Item no.	Item no.	Item no.	Item no.
6 kA, trip curve E	3: Rated current up to 6	63 A, Rated breaking o	capacity 6 kA to IEC/E	N 60898
6	PLS6-B6/1-AU	PLS6-B6/2-AU	PLS6-B6/3-AU	PLS6-B6/4-AU
10	PLS6-B10/1-AU	PLS6-B10/2-AU	PLS6-B10/3-AU	PLS6-B10/4-AU
16	PLS6-B16/1-AU	PLS6-B16/2-AU	PLS6-B16/3-AU	PLS6-B16/4-AU
20	PLS6-B20/1-AU	PLS6-B20/2-AU	PLS6-B20/3-AU	PLS6-B20/4-AU
25	PLS6-B25/1-AU	PLS6-B25/2-AU	PLS6-B25/3-AU	PLS6-B25/4-AU
32	PLS6-B32/1-AU	PLS6-B32/2-AU	PLS6-B32/3-AU	PLS6-B32/4-AU
40	PLS6-B40/1-AU	PLS6-B40/2-AU	PLS6-B40/3-AU	PLS6-B40/4-AU
50	PLS6-B50/1-AU	PLS6-B50/2-AU	PLS6-B50/3-AU	PLS6-B50/4-AU
63	PLS6-B63/1-AU	PLS6-B63/2-AU	PLS6-B63/3-AU	PLS6-B63/4-AU
6 kA, trip curve C	C: Rated current up to 6	63 A, Rated breaking o	capacity 6 kA to IEC/E	N 60898
1	PLS6-C1/1-AU	PLS6-C1/2-AU	PLS6-C1/3-AU	PLS6-C1/4-AU
2	PLS6-C2/1-AU	PLS6-C2/2-AU	PLS6-C2/3-AU	PLS6-C2/4-AU
3	PLS6-C3/1-AU	PLS6-C3/2-AU	PLS6-C3/3-AU	PLS6-C3/4-AU
4	PLS6-C4/1-AU	PLS6-C4/2-AU	PLS6-C4/3-AU	PLS6-C4/4-AU
6	PLS6-C6/1-AU	PLS6-C6/2-AU	PLS6-C6/3-AU	PLS6-C6/4-AU
10	PLS6-C10/1-AU	PLS6-C10/2-AU	PLS6-C10/3-AU	PLS6-C10/4-AU
16	PLS6-C16/1-AU	PLS6-C16/2-AU	PLS6-C16/3-AU	PLS6-C16/4-AU
20	PLS6-C20/1-AU	PLS6-C20/2-AU	PLS6-C20/3-AU	PLS6-C20/4-AU
25	PLS6-C25/1-AU	PLS6-C25/2-AU	PLS6-C25/3-AU	PLS6-C25/4-AU
32	PLS6-C32/1-AU	PLS6-C32/2-AU	PLS6-C32/3-AU	PLS6-C32/4-AU
40	PLS6-C40/1-AU	PLS6-C40/2-AU	PLS6-C40/3-AU	PLS6-C40/4-AU
50	PLS6-C50/1-AU	PLS6-C50/2-AU	PLS6-C50/3-AU	PLS6-C50/4-AU
63	PLS6-C63/1-AU	PLS6-C63/2-AU	PLS6-C63/3-AU	PLS6-C63/4-AU



PLN6-B6/1N

## PLN6 Miniature Circuit Breakers (MCB)

- Top-quality miniature circuit breakers 1P+N with a width of 1 module unit requiring little space for installation
- Contact position indicator red green
- Guide for secure terminal connection
- Comprehensive range of accessories for subsequent installation
- Rated currents up to 40 A
- Tripping characteristics B, C
- Rated breaking capacity 6 kA according to IEC/ EN 60898
- Terminal capacity 1-16mm2
- Australian Standards AS/NZS60898 Approval Number NSW25330

Rated current In, A	1+N-Pole item no.	Rated current In, A	1+N-Pole item no.
6 kA, trip curve B		6 kA, trip curve C	
6	PLN6-B6/1N	6	PLN6-C6/1N
10	PLN6-B10/1N	10	PLN6-C10/1N
13	PLN6-B13/1N	13	PLN6-C13/1N
16	PLN6-B16/1N	16	PLN6-C16/1N
20	PLN6-B20/1N	20	PLN6-C20/1N
25	PLN6-B25/1N	25	PLN6-C25/1N
32	PLN6-B32/1N	32	PLN6-C32/1N
40	PLN6-B40/1N	40	PLN6-C40/1N

## xPole IEC DIN MCB, RCCB & RCBO products

# **PLSM Miniature Circuit Breakers (MCB)**

- Contact position indicator red green
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories suitable for subsequent installation

1-Pole

• Terminal capacity 1-25mm2

Rated current

- 48 VDC rating (per pole, max. 2 poles)
- Rated currents up to 63 A

3-Pole

- Tripping characteristics B, C, D
- Rated breaking capacity 10 kA according to IEC/EN 60898-1

4-Pole

 Australian Standards AS/NZS60898 Approval Number NSW16860



PLSM-C32/1-Al	Ρl	_SI	<b>VI-</b> (	232	2/1	-AΙ
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In, A	Item no.	Item no.	Item no.	Item no.
, ,	B: Rated current up toggle switch indicates	o 63 A, Rated breaking current rating	capacity 10 kA	to IEC/EN 60898,
1	DI SM-R1/1-AII	DI SM-R1/2-AII	DI CM_R1/2_ALI	DI SM-R1/A-A

2-Pole

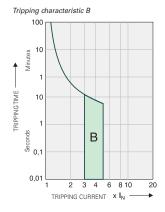
1	PLSM-B1/1-AU	PLSM-B1/2-AU	PLSM-B1/3-AU	PLSM-B1/4-AU
2	PLSM-B2/1-AU	PLSM-B2/2-AU	PLSM-B2/3-AU	PLSM-B2/4-AU
3	PLSM-B3/1-AU	PLSM-B3/2-AU	PLSM-B3/3-AU	PLSM-B3/4-AU
4	PLSM-B4/1-AU	PLSM-B4/2-AU	PLSM-B4/3-AU	PLSM-B4/4-AU
6	PLSM-B6/1-AU	PLSM-B6/2-AU	PLSM-B6/3-AU	PLSM-B6/4-AU
10	PLSM-B10/1-AU	PLSM-B10/2-AU	PLSM-B10/3-AU	PLSM-B10/4-AU
16	PLSM-B16/1-AU	PLSM-B16/2-AU	PLSM-B16/3-AU	PLSM-B16/4-AU
20	PLSM-B20/1-AU	PLSM-B20/2-AU	PLSM-B20/3-AU	PLSM-B20/4-AU
25	PLSM-B25/1-AU	PLSM-B25/2-AU	PLSM-B25/3-AU	PLSM-B25/4-AU
32	PLSM-B32/1-AU	PLSM-B32/2-AU	PLSM-B32/3-AU	PLSM-B32/4-AU
40	PLSM-B40/1-AU	PLSM-B40/2-AU	PLSM-B40/3-AU	PLSM-B40/4-AU
50	PLSM-B50/1-AU	PLSM-B50/2-AU	PLSM-B50/3-AU	PLSM-B50/4-AU
63	PLSM-B63/1-AU	PLSM-B63/2-AU	PLSM-B63/3-AU	PLSM-B63/4-AU
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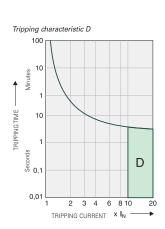
10 kA, trip curve C: Rated current up to 63 A, Rated breaking capacity 10 kA to IEC/EN 60898, Colour-coded toggle switch indicates current rating

1	PLSM-C1/1-AU	PLSM-C1/2-AU	PLSM-C1/3-AU	PLSM-C1/4-AU
2	PLSM-C2/1-AU	PLSM-C2/2-AU	PLSM-C2/3-AU	PLSM-C2/4-AU
3	PLSM-C3/1-AU	PLSM-C3/2-AU	PLSM-C3/3-AU	PLSM-C3/4-AU
4	PLSM-C4/1-AU	PLSM-C4/2-AU	PLSM-C4/3-AU	PLSM-C4/4-AU
6	PLSM-C6/1-AU	PLSM-C6/2-AU	PLSM-C6/3-AU	PLSM-C6/4-AU
10	PLSM-C10/1-AU	PLSM-C10/2-AU	PLSM-C10/3-AU	PLSM-C10/4-AU
16	PLSM-C16/1-AU	PLSM-C16/2-AU	PLSM-C16/3-AU	PLSM-C16/4-AU
20	PLSM-C20/1-AU	PLSM-C20/2-AU	PLSM-C20/3-AU	PLSM-C20/4-AU
25	PLSM-C25/1-AU	PLSM-C25/2-AU	PLSM-C25/3-AU	PLSM-C25/4-AU
32	PLSM-C32/1-AU	PLSM-C32/2-AU	PLSM-C32/3-AU	PLSM-C32/4-AU
40	PLSM-C40/1-AU	PLSM-C40/2-AU	PLSM-C40/3-AU	PLSM-C40/4-AU
50	PLSM-C50/1-AU	PLSM-C50/2-AU	PLSM-C50/3-AU	PLSM-C50/4-AU
63	PLSM-C63/1-AU	PLSM-C63/2-AU	PLSM-C63/3-AU	PLSM-C63/4-AU
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10 kA, trip curve D: Rated current up to 40 A, Rated breaking capacity 10 kA to IEC/EN 60898, Colour-coded toggle switch  $\,$  indicates current rating

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1	PLSM-D1/1-AU	PLSM-D1/2-AU	PLSM-D1/3-AU	PLSM-D1/4-AU
2	PLSM-D2/1-AU	PLSM-D2/2-AU	PLSM-D2/3-AU	PLSM-D2/4-AU
3	PLSM-D3/1-AU	PLSM-D3/2-AU	PLSM-D3/3-AU	PLSM-D3/4-AU
4	PLSM-D4/1-AU	PLSM-D4/2-AU	PLSM-D4/3-AU	PLSM-D4/4-AU
6	PLSM-D6/1-AU	PLSM-D6/2-AU	PLSM-D6/3-AU	PLSM-D6/4-AU
10	PLSM-D10/1-AU	PLSM-D10/2-AU	PLSM-D10/3-AU	PLSM-D10/4-AU
16	PLSM-D16/1-AU	PLSM-D16/2-AU	PLSM-D16/3-AU	PLSM-D16/4-AU
20	PLSM-D20/1-AU	PLSM-D20/2-AU	PLSM-D20/3-AU	PLSM-D20/4-AU
25	PLSM-D25/1-AU	PLSM-D25/2-AU	PLSM-D25/3-AU	PLSM-D25/4-AU
32	PLSM-D32/1-AU	PLSM-D32/2-AU	PLSM-D32/3-AU	PLSM-D32/4-AU
40	PLSM-D40/1-AU	PLSM-D40/2-AU	PLSM-D40/3-AU	PLSM-D40/4-AU



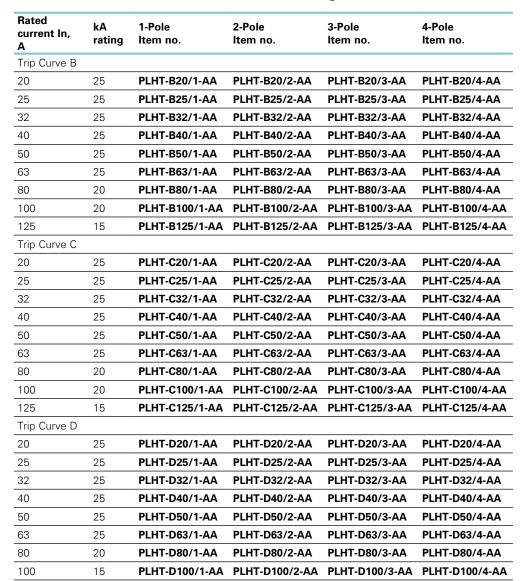


# **IEC DIN MCB**

## xPole IEC DIN MCB, RCCB & RCBO products

# **PLHT Miniature Circuit Breakers (MCB)**

- High-quality miniature circuit breakers for commercial & industrial applications
- Contact position indicator red green
- Accessories suitable for subsequent installation
- 60 VDC rating (per pole, max. 2 poles)
- Terminal capacity 2.5-50mm2
- 1.5 DIN modules per pole
- Rated currents up to 125 A
- Tripping characteristics B, C, D
- Rated breaking capacity up to 25 kA according to EN 60947-2





PLHT-B20/1-AA

PLHT-B25/2-AA



PLHT-B32/3-AA



PLHT-B25/4-AA



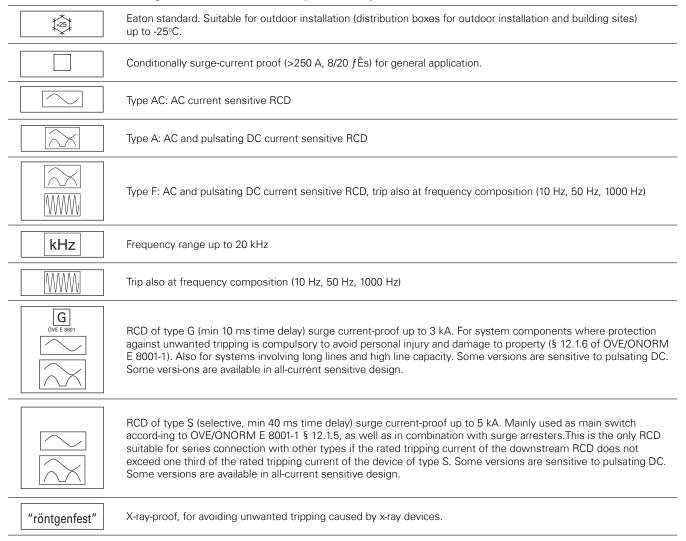
Z-LHASA/230

# **PLHT Miniature Circuit Breaker accessories**

Description	Item no.
Auxiliary switch (0.5 MU)	Z-LHK
Shunt trip release 110-415 Vac (1.5 MU)	Z-LHASA/230
Shunt trip release 12-60 Vac (1.5 MU)	Z-LHASA/24

#### xPole IEC DIN MCB, RCCB & RCBO products

#### Residual Current Devices general data - short description and symbol



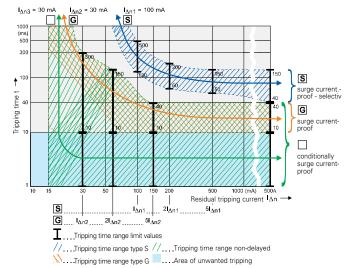
## Tripping characteristics (IEC/EN 61008)

AS/NZS 3000 - 2.6 deals with additional protection and provides essentially the following: In circuits with outlets and lighting points up to 20A with fault current/residual current protection by protective earthing, protective multiple earthing or residual current devices (RCDs), additional residual current protection devices with a rated tripping current of 0.03A must be installed.

#### Testing:

RCDs with tripping time delay (Types -G and -S) may be function tested with conventional testing equipment which must be set according to the instructions for operation of the testing device. Due to reasons inherent in the measuring process, the tripping time determined in this way may be longer than expected in accordance with the specifications of the manufacturer of the measuring instrument. However, the device is ok if the result of measurement is within the time range specified by the manufacturer of the measuring instrument.

Tripping characteristics, tripping time range and selectivity of instantaneous, surge current-proof "G" and surge current-proof - selective "S" residual current devices.



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# **IEC DIN MCB**

## xPole IEC DIN MCB, RCCB & RCBO products

# eRB6 Residual Current operated circuit Breaker with Overcurrent protection (RCBO)

- Rated breaking capacity 6kA
- Single module electronic RCBO
- · More compact and easier wiring
- Fully conforms to AS/NZS61009.1:2004 +A1
- Approval number NSW25350
- Terminal capacity 1-25mm2
- Complete with 950mm long pigtail
- Type AC

Description 1-Pole	Rating (A)	Width (mm)	Trip curve	Sensitivity (mA)	Item no.
eRB6 RCBO 6A 1P 6kA C curve 30mA	6	18	С	30	eRB6-6/1/C/003-AU
eRB6 RCBO 10A 1P 6kA C curve 30mA	10	18	С	30	eRB6-10/1/C/003-AU
eRB6 RCBO 16A 1P 6kA C curve 30mA	16	18	С	30	eRB6-16/1/C/003-AU
eRB6 RCBO 20A 1P 6kA C curve 30mA	20	18	С	30	eRB6-20/1/C/003-AU
eRB6 RCBO 25A 1P 6kA C curve 30mA	25	18	С	30	eRB6-25/1/C/003-AU
eRB6 RCBO 32A 1P 6kA C curve 30mA	32	18	С	30	eRB6-32/1/C/003-AU
eRB6 RCBO 40A 1P 6kA C curve 30mA	40	18	С	30	eRB6-40/1/C/003-AU
eRB6 RCBO 45A 1P 6kA C curve 30mA	45	18	С	30	eRB6-45/1/C/003-AU

<sup>\* 10</sup>mA version available - contact Eaton for details.



eRB6-32/1/C/003-AU

eRBM-20/1/C/003-A-AU

## eRBM Residual Current operated circuit Breaker with Overcurrent protection (RCBO)

- Rated breaking capacity 10kA
- Single module electronic RCBO
- More compact and easier wiring
- Fully conforms to AS/NZS61009.1:2004 +A1
- Approval number NSW25350
- Terminal capacity 1-25mm2
- Complete with 950mm long pigtail
- Type A pulsating DC

Description 1-Pole	Rating (A)	Width (mm)	Trip Curve	Sensitivity (mA)	Item no.
eRBM RCBO 6A 1P 10kA C-curve 30mA	6	18	С	30	eRBM-6/1/C/003-A-AU
eRBM RCBO 10A 1P 10kA C-curve 30mA	10	18	С	30	eRBM-10/1/C/003-A-AU
eRBM RCBO 16A 1P 10kA C-curve 30mA	16	18	С	30	eRBM-16/1/C/003-A-AU
eRBM RCBO 20A 1P 10kA C-curve 30mA	20	18	С	30	eRBM-20/1/C/003-A-AU
eRBM RCBO 25A 1P 10kA C-curve 30mA	25	18	С	30	eRBM-25/1/C/003-A-AU
eRBM RCBO 32A 1P 10kA C-curve 30mA	32	18	С	30	eRBM-32/1/C/003-A-AU
eRBM RCBO 40A 1P 10kA C-curve 30mA	40	18	С	30	eRBM-40/1/C/003-A-AU
eRBM RCBO 45A 1P 10kA C-curve 30mA	45	18	С	30	eRBM-45/1/C/003-A-AU
eRBM RCBO 6A 1P 10kA D-curve 30mA	6	18	D	30	eRBM-6/1/D/003-A-AU
eRBM RCBO 10A 1P 10kA D-curve 30mA	10	18	D	30	eRBM-10/1/D/003-A-AU
eRBM RCBO 16A 1P 10kA D-curve 30mA	16	18	D	30	eRBM-16/1/D/003-A-AU
eRBM RCBO 20A 1P 10kA D-curve 30mA	20	18	D	30	eRBM-20/1/D/003-A-AU

 $<sup>^{\</sup>ast}$  10mA, 100mA and 300mA versions available - contact Eaton for details.

# xPole IEC DIN MCB, RCCB & RCBO products

#### PKNM Residual Current operated circuit Breaker with Overcurrent protection (RCBO)

- High-quality residual current device / miniature circuit breaker combination, line voltage-independent
- Contact position indicator red green
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories suitable for subsequent installation
- Wide variety of rated tripping currents
- Rated currents up to 40A
- Tripping characteristics B, C
- Type AC
- Rated breaking capacity 10kA
- Australian Standards AS/NZS 61009.1 Approval Number NSW21900
- Terminal capacity 1-25mm2

Α	mA	2-Pole Item no.
10 kA,	trip curve C	
6	30	PKNM-6/1N/C/003-AU
10	30	PKNM-10/1N/C/003-AU
16	30	PKNM-16/1N/C/003-AU
20	30	PKNM-20/1N/C/003-AU
25	30	PKNM-25/1N/C/003-AU
32	30	PKNM-32/1N/C/003-AU
40	30	PKNM-40/1N/C/003-AU
6	300	PKNM-6/1N/C/03-AU
10	300	PKNM-10/1N/C/03-AU
16	300	PKNM-16/1N/C/03-AU
20	300	PKNM-20/1N/C/03-AU
25	300	PKNM-25/1N/C/03-AU
32	300	PKNM-32/1N/C/03-AU
40	300	PKNM-40/1N/C/03-AU



PKNM-16/1N/C/003-AU

# PKNM Type A Residual Current operated circuit Breaker with Overcurrent protection (RCBO)

- High-quality residual current device / miniature circuit breaker combination, line voltage-independent
- Contact position indicator red green
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories suitable for subsequent installation
- Wide variety of rated tripping currents
- Rated currents up to 40 A
- Tripping characteristics B, C
- Type A pulsating DC
- Rated breaking capacity 10 kA
- Australian Standards AS/NZS 61009.1 Approval Number NSW21900
- Terminal capacity 1-25mm2

Α	mA	2-Pole Item no.
10 kA,	trip curve C	
6	30	PKNM-6/1N/C/003-A-AU
10	30	PKNM-10/1N/C/003-A-AU
16	30	PKNM-16/1N/C/003-A-AU
20	30	PKNM-20/1N/C/003-A-AU
25	30	PKNM-25/1N/C/003-A-AU
32	30	PKNM-32/1N/C/003-A-AU
40	30	PKNM-40/1N/C/003-A-AU
6	300	PKNM-6/1N/C/03-A-AU
10	300	PKNM-10/1N/C/03-A-AU
16	300	PKNM-16/1N/C/03-A-AU
20	300	PKNM-20/1N/C/03-A-AU
25	300	PKNM-25/1N/C/03-A-AU
32	300	PKNM-32/1N/C/03-A-AU
40	300	PKNM-40/1N/C/03-A-AU



PKNM-16/1N/C/003-A-AU

#### **IEC DIN MCB**

#### xPole IEC DIN MCB, RCCB & RCBO products

# PFIM Residual Current operated Circuit Breaker without overcurrent protection (RCCB)

- A complete spectrum of compact residual current devices for a wide range of applications
- For residual current protection & additional protection
- Wide variety of nominal currents
- Comprehensive range of accessories
- Contact position indicator red-green
- Automatic re-setting possible
- Australian Standards AS/NZS61008.1 Approval Number NSW21900
- Terminal capacity 1.5-35mm2





PFIM-16/2/001-AU



PFIM-40/4/003-AU

Α

# xPole IEC DIN MCB, RCCB & RCBO products

# PFIM Residual Current operated Circuit Breaker without overcurrent protection (RCCB)

- A complete spectrum of compact residual current devices for a wide range of applications
- For residual current protection & additional protection

2-Pole Item no.

• Wide variety of nominal currents

mΑ

- Comprehensive range of accessories
- Contact position indicator red-green
- Automatic re-setting possible
- Australian Standards AS/NZS61008.1 Approval Number NSW21900

4-Pole Item no.

• Terminal capacity 1.5-35mm²

mΑ



PFIM-40/2/003-G-AU



PFIM-63/4/003-G-AU

_	1117	Z-i die itelli ild.		1117	4-1 Ole Itelli IIO.
Surge o	current-prod	of 3kA, type G/F 📉 🍿			
25	30	PFIM-25/2/003-G/F	25	30	PFIM-25/4/003-G/F
25	300	PFIM-25/2/03-G/F	25	300	PFIM-25/4/03-G/F
40	30	PFIM-40/2/003-G/F	40	30	PFIM-40/4/003-G/F
40	300	PFIM-40/2/03-G/F	40	300	PFIM-40/4/03-G/F
63	30	PFIM-63/2/003-G/F	63	30	PFIM-63/4/003-G/F
63	300	PFIM-63/2/03-G/F	63	300	PFIM-63/4/03-G/F
Selecti	ve + surge	current-proof 5kA, type S/F			
			25	300	PFIM-25/4/03-S/F
			40	300	PFIM-40/4/03-S/F
			63	300	PFIM-63/4/03-S/F
Surge of	current-prod	of 3 kA, type G ~			
40	30	PFIM-40/2/003-G-AU	40	30	PFIM-40/4/003-G
			40	100	PFIM-40/4/01-G
			63	30	PFIM-63/4/003-G
			63	100	PFIM-63/4/01-G
			100	30	PFIM-100/4/003-G
			100	300	PFIM-100/4/03-G
Surge of	current-prod	of 3 kA, sensitive to residual puls	ating DC, t	type G/A	$\boxtimes$
40	30	PFIM-40/2/003-G/A-AU	40	30	PFIM-40/4/003-G/A-AU
63	30	PFIM-63/2/003-G/A-AU	63	30	PFIM-63/4/003-G/A-AU
100	30	PFIM-100/2/003-G/A-AU	100	30	PFIM-100/4/003-G/A-AU
			100	300	PFIM-100/4/03-G/A-AU
Surge of	current-prod	of 3 kA, X-ray application, type R	$\overline{x}$		
			100	30	PFIM-100/4/003-R
Selecti	ve + surge	current-proof 5 kA, type S			
			63	300	PFIM-63/4/03-S/A-AU
			80	300	PFIM-80/4/03-S/A-AU

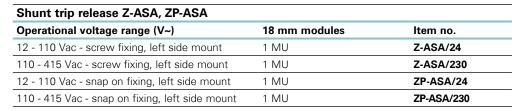
# **IEC DIN MCB**

#### xPole IEC DIN accessories

- Auxiliary switch
- Shunt trip release
- Undervoltage release
- RCD tripping module
- Remote control & automatic switching device

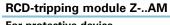


For protective device/function	18 mm modules	Item no.
Auxiliary Switch Z-HK, Z-AHK, Tripping Signa	I Switch Z-NHK.	Design: for screw fixing
PFIM 1NO+1NC left side mount	0.5 MU	Z-HK
PLS 1NO+1NC left side mount	0.5 MU	Z-AHK
PLS, PFIM, 2CO left side mount	0.5 MU	Z-NHK
Auxiliary Switch ZP-IHK, ZP-WHK, Tripping Si	gnal Switch ZP-NHK.	Design: snap fixing
PLS, PKN, 1NO+1NC left side mount	0.5 MU	ZP-IHK
PLS, PKN, 1CO left side mount	0.5 MU	ZP-WHK
PLS, PKN, 2CO left side mount	0.5 MU	ZP-NHK
PLS, PKN, 2CO left side mount	0.5 MU	ZP-NHK



# Undervoltage release Z-USA, Z-USD

Operational voltage range (V~)/function	18 mm modules	ltem no.
115 Vac non-delayed, left side mount	1 MU	Z-USA/115
230 Vac non-delayed, left side mount	1 MU	Z-USA/230
400 Vac non-delayed, left side mount	1 MU	Z-USA/400
115 Vac delayed 0.4s left side mount	1 MU	Z-USD/115
230 Vac delayed 0.4s left side mount	1 MU	Z-USD/230



For protective device	18 mm modules	Item no.
PFIM, RCD, left side mount	0.5 MU	Z-FAM
PKNM, RCBO, left side mount	0.5 MU	Z-KAM

# Remote control & automatic switching device Z-FW

Function	18 mm modules	Item no.
Automatic restarting 230VAC	4 MU	Z-FW-LP
Automatic restarting 24-48VDC	4 MU	Z-FW-LPD
+ Remote control ON/OFF/TEST	2 MU	Z-FW-MO

# Remote control & automatic switching device Z-FW

Function	18 mm modules	Item no.
Pre-mounted sets Z-FW: Set consisting of aut Z-FW-MO	tomatic switching device Z-F	W-LP. & switching module
230 VAC	6 MU	Z-FW-LP/MO
24-48 VDC	6 MU	Z-FW-LPD/MO

#### Remote control & automatic switching device Z-FW

Function	18 mm modules	Item no.
Remote Testing Module Z-FV	/ (for Z-FW-LP./MO set use only)	
0,01 A	6 MU	Z-FW/001
0,03 A	6 MU	Z-FW/003
0,1 A	6 MU	Z-FW/010
0,3 A	6 MU	Z-FW/030
0.5 A	6 MU	Z-FW/050



ZP-IHK



Z-ASA/24



Z-USA/115



Z-FAM



Z-FW-LP



Z-FW-LP/MO

# **Controlling & switching devices**

# Installation relays for light & power distribution

- Installation relays & contactors
- Signalling devices

• Impulse relays

Rated current In		Contacts	Actuating voltage	ltem no.
A (AC1)	A (AC3)		V AC	
			hand touch safe to VG tion with Pozidrive scre	
		1 N/O		Z-R230/S
20	8	2 N/O	—— 240 V AC	Z-R230/SS
20	δ	1 N/O, 1 N/C	— 240 V AC	Z-R230/SO
		2 N/C		Z-R230/OO
		1 N/O		Z-R24/S
00	0	2 N/O	24.1/ AC	Z-R24/SS
20	8	1 N/O, 1 N/C	—— 24 V AC	Z-R24/SO
		2 N/C		Z-R24/OO
Suitable for au	ixiliary contacts Z-SC	18 mm modules: 2 M	U	
		3 N/O, 1 N/C		Z-SCH230/25-31
		2 N/O, 2 N/C	240 \/ AC	Z-SCH230/25-22
25 9	0	4 N/O	240 V AC	Z-SCH230/25-40
	Э	4 N/C	<del></del>	Z-SCH230/25-04
		4 N/O	24 V AC	Z-SCH24/25-40
		2 N/O, 2 N/C	24 V AC	Z-SCH24/25-22



Z-R230/S



Z-SCH230/25-3

# Installation contactors for light & power distribution

Rated current	In	Contacts	Actuating voltage	Item no.
A (AC1)	A (AC3)		V AC	
Suitable for aux	xiliary contacts Z-SC,	, 18 mm modules: 3 N	1U	
		3 N/O, 1 N/C		Z-SCH230/40-31
40	27	2 N/O, 2 N/C	— — 240 V AC	Z-SCH230/40-22
40	21	4 N/O	— 240 V AC	Z-SCH230/40-40
		2 N/O		Z-SCH230/40-20
		4 N/O		Z-SCH230/63-40
00	20	3 N/O,1 N/C		Z-SCH230/63-31
63	30	2 N/O, 2 N/C 240 V AC	— 240 V AC	Z-SCH230/63-22
		2 N/O		Z-SCH230/63-20
Accessories				
Sealing cover 2	25A, 2 MU wide			Z-SCHAK-2TE
Sealing cover 40A & 63A, 3 MU wide		ide		Z-SCHAK-3TE
Auxiliary switch	n, 0.5 MU wide			Z-SC
Spacer, 0.5 MU	J wide			Z-DST



Z-DST



Z-S230/SO

## Impulse relays

Rated current In	Contacts	Actuating voltage	Item no.
AC1		V AC	
Rated current 16 A AC1, 18	mm modules: 1 MU		
	1 N/O		Z-S230/S
	1 N/O, 1 N/C	240 V AC	Z-S230/SO
	2 N/O		Z-S230/SS
16	1 N/O		Z-S24/S
	1 N/O, 1 N/C	24 V AC	Z-S24/SO
	2 N/O	<del></del>	Z-S24/SS
Accessories			
Twin diode block			Z-SC/GP



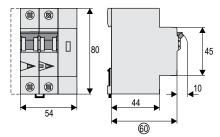
Technical application data within technical section refer to pages 438-441

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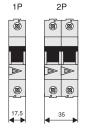
# **IEC DIN MCB**

#### **Dimensions (mm)**

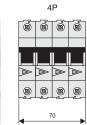
# AFDD+

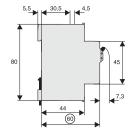


#### IS switches

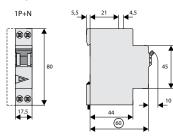




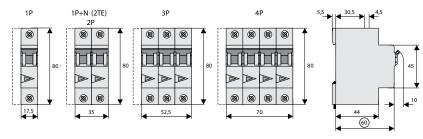




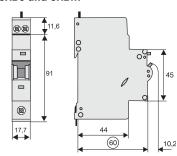
PLN6



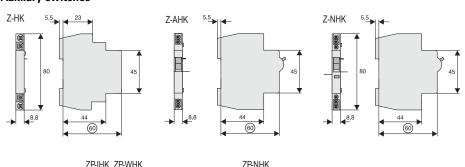
# PLS4, PLS6, PLSM

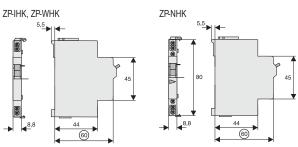


#### eRB6 and eRBM



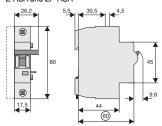
#### **Auxilary switches**





# Shunt trip release

Z-ASA and ZP-ASA

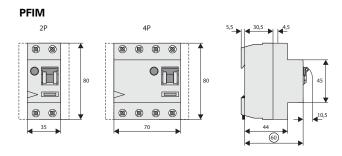


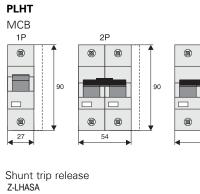
# Undervoltage release

Z-USA and Z-USD

## **Dimensions (mm)**

# **PKNM**5.5 30.5 4.5 8 8 8 10 10

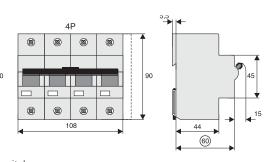


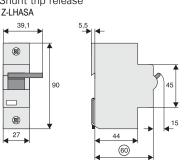


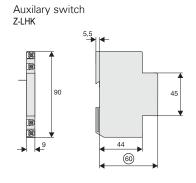
3P **®** 

(8)

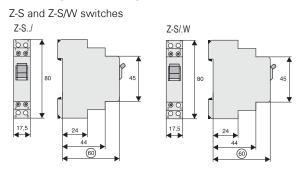
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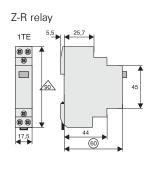


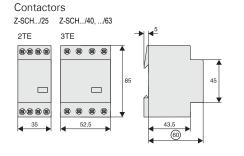


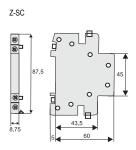


# Controlling and switching devices









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## **IEC DIN MCB**

Signal lamps O White

Red

Green

Blue

**Pushbuttons** 16 A, 1 N/O

Orange

16 A, 2 N/O

16 A, 1 N/C

Changeover switch 1 C/O, I - O - II

230 V, 50 Hz

Enclosed

**Illuminated Pushbuttons** 16 A, 2 N/O

16 A, 1 N/O + 1 N/C

16 A, 1 N/O + 1 N/C

1 C/O, DAY - O - NIGHT

Emergency lighting test kit

DIN rail mounting

**General accessories** 

Hour run counter: display 5 + 2 digit

Replacement key for Z-EMER-E

Pole filler 1 strip = 6 poles

Padlocking attachment for xPole PLS & eRB devices Padlocking attachment for xPole PKNM, PFIM & IS devices

Description

### Controlling & switching devices

Colour push button

•

•

Item no.

**Z-EL/WH230** 

Z-EL/R230

Z-EL/G230

Z-EL/OR230

Z-EL/BL230

Z-PU/S

**Z-PU/SS** 

Z-PU/SO

Z-PU/OO

Z-S/WM

Z-S/WTN

ASOHC230

**Z-EMER-E Z-EMER-DIN** 

M22-ES-MS1

Z-IS/SPE-1TE

IS/SPE-1TE

AP-45-W

Z-PUL230/SS Z-PUL230/SO



Z-EL/R230



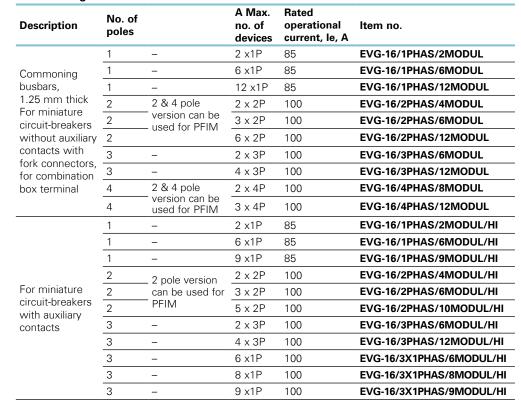
Z-S/WM





#### **Busbar combs**

#### Commoning busbars











#### **PE** loadcentres

Eaton offers a wide range of plastic loadcentres, available in a variety of sizes, mounting configurations and IP ratings. The PE range of enclosures are adequately sized to be suitable for use of Eaton xPole eRB type single module RCBOs. Aside from ease of use, PE loadcentres offer an aesthetically pleasing design with discreet markings.

No. of poles	Type of mounting	Type of door	ltem no.
Protection rating	IP42		
1	Surface	Opaque	PE1E
2	Surface	Opaque	PE2E
4	Surface	Opaque	PE4E
8	Surface	Opaque	PE8E
12	Flush	Transparent	PE12FT
12	Flush	Opaque	PE12FW
12	Surface	Transparent	PE12ST
12	Surface	Opaque	PE12SW
18	Flush	Transparent	PE18FT
18	Flush	Opaque	PE18FW
18	Surface	Transparent	PE18ST
18	Surface	Opaque	PE18SW
24	Flush	Transparent	PE24FT
24	Flush	Opaque	PE24FW
24	Surface	Transparent	PE24ST
24	Surface	Opaque	PE24SW
36	Flush	Transparent	PE36FT
36	Flush	Opaque	PE36FW
36	Surface	Transparent	PE36ST
36	Surface	Opaque	PE36SW
Protection rating	IP55		
4	Surface	Transparent	PE4ST-IP55
6	Surface	Transparent	PE6ST-IP55
8	Surface	Transparent	PE8ST-IP55
12	Surface	Transparent	PE12ST-IP55
18	Surface	Transparent	PE18ST-IP55
24	Surface	Transparent	PE24ST-IP55



PE1E



PE12SW



PE12ST



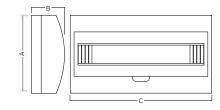
PE18SW



PE24ST

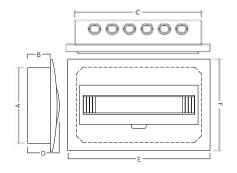
#### IP42 surface mount dimensionslos

Item no.	No of Din Rails	A (mm)	B (mm)	C (mm)
PE12ST/W	1	200	95	256
PE18ST/W	1	221	95	364
PE24ST/W	2	326	95	270
PE36ST/W	3	474	100	308



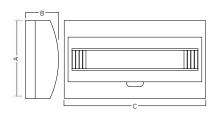
#### IP42 flush mount

Item no.	No of Din Rails	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)
PE12FT/W	1	200	66	256	92	305	245
PE18FT/W	1	218	66	366	100	414	270
PE24FT/W	2	312	66	260	100	306	358
PE36FT/W	3	456	66	296	100	340	504



#### IP55 surface mount

Item no.	No of DIN Rails	A (mm)	B (mm)	C (mm)
PE4ST-IP55	1	215	98	126
PE6ST-IP55	1	215	98	162
PE8ST-IP55	1	215	98	215
PE12ST-IP55	1	215	98	272
PE18ST-IP55	1	235	98	380
PE24ST-IP55	2	340	98	285



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