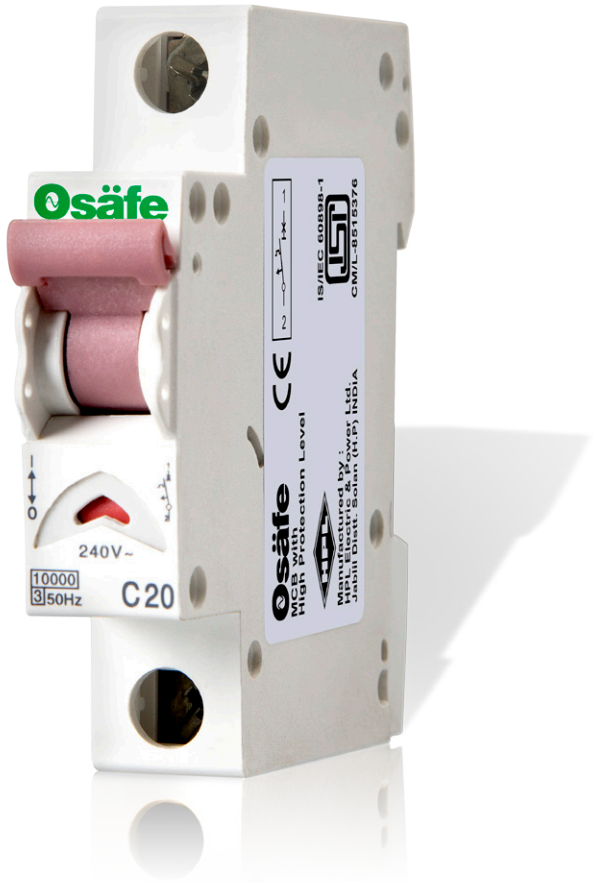
Osäfe MCB



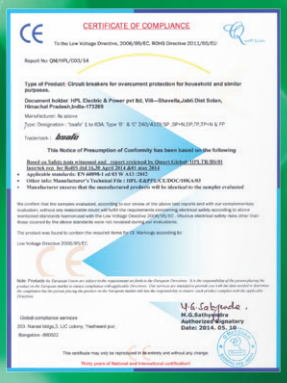
Elegance and precision engineering in the same breath.

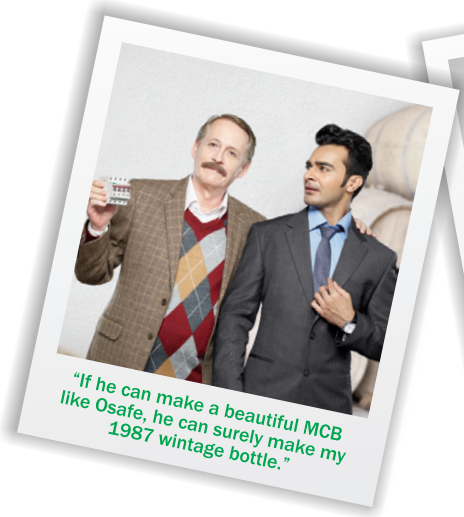
Range : upto 63Amps.
Available in SP, SPN, DP, TP, TPN & FP version also

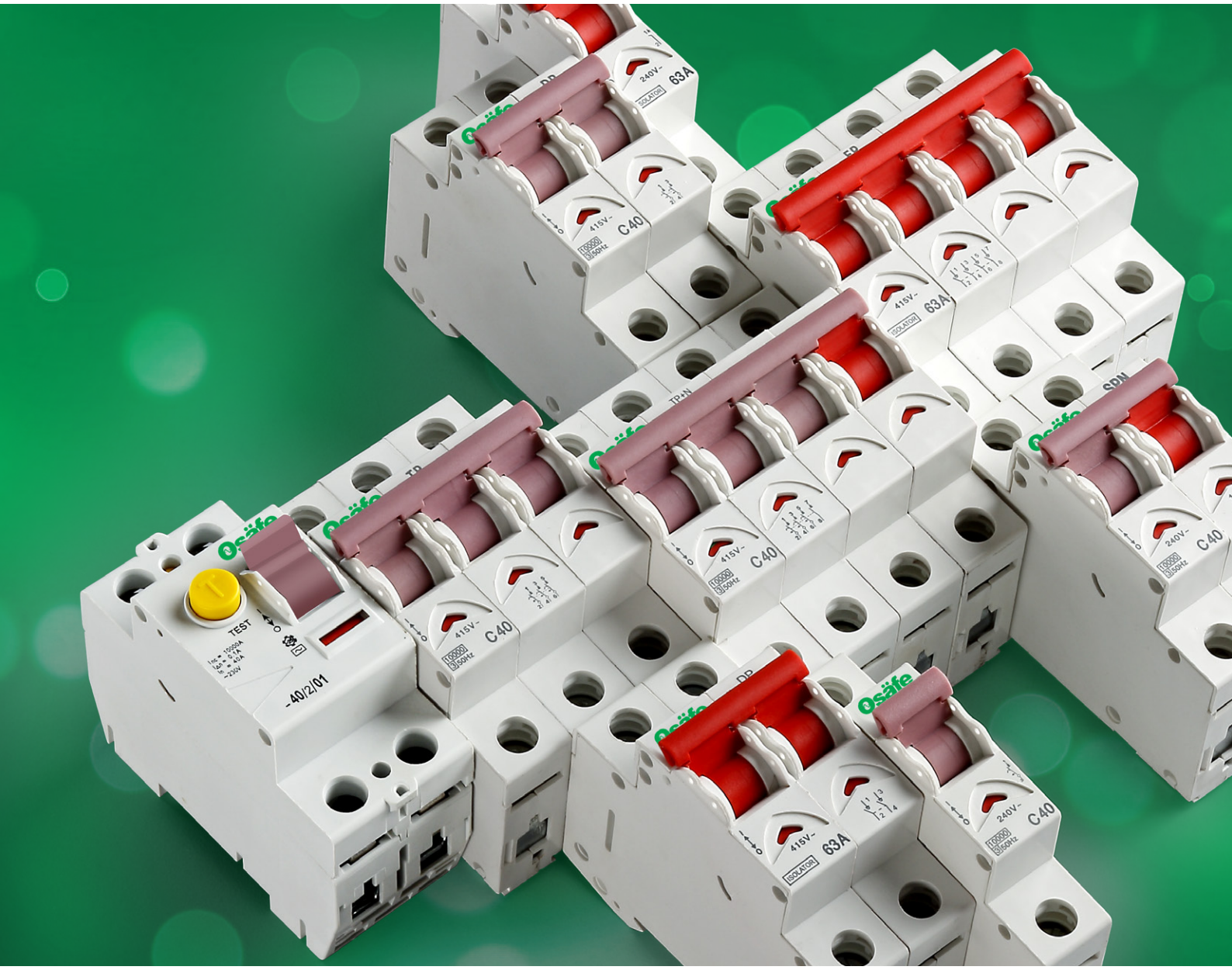
Designed by **HPL**

Osäfe

HPL Established in 1956, is among the leading players in the electrical industry today. HPL is a company with a strong innovative tradition, constantly striving for new levels of excellence, developing innovative products and solutions. HPL product range features high quality electronic energy meters, switchgears, Lighting, wires & cables, as well as modular switches and accessories. With its strong R&D, HPL introduces one more innovative product with our latest technology.. Osafe MCB.







- Protection against overload & Short Circuit.
- Widest Range 0.5A to 63 A.
- High Breaking Capacity – 10KA
- With IP 20 Protection on Live Parts.
- With contact Position indicator
- Tested as Per IS/IEC 60898-1 : 2002 & 2003
- RCCB available 25A, 40A, 63 Amp, 80Amp in 30mA, 100mA, 300mA leakage tripping current.
- Tested as per IEC 610008-1, IS 12640-1

ISO 9001-2015

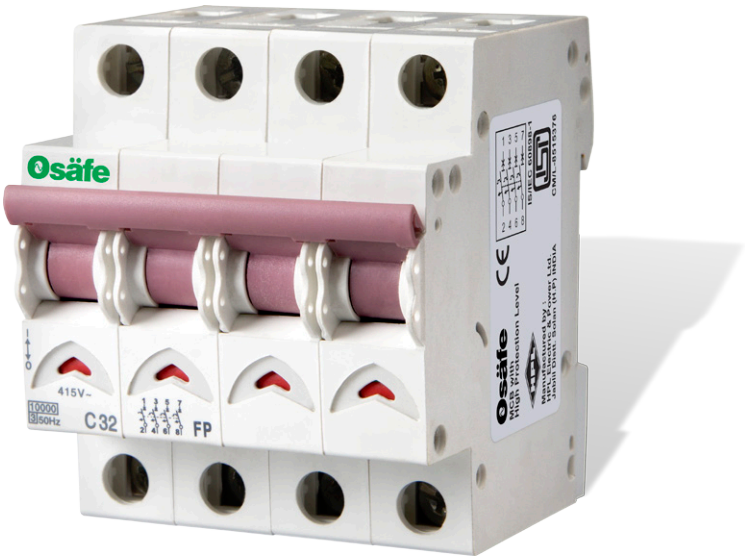
IS/IEC 60898-1
CM/L-8515376

Osäfe

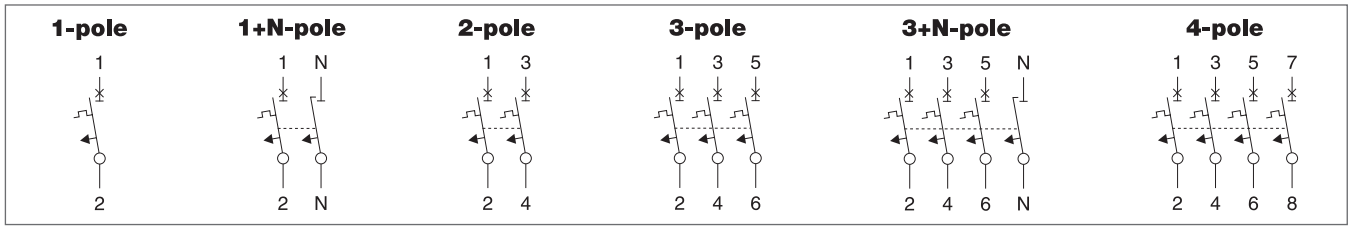
Miniature Circuit Breakers 10kA

Miniature Circuit Breakers 10kA

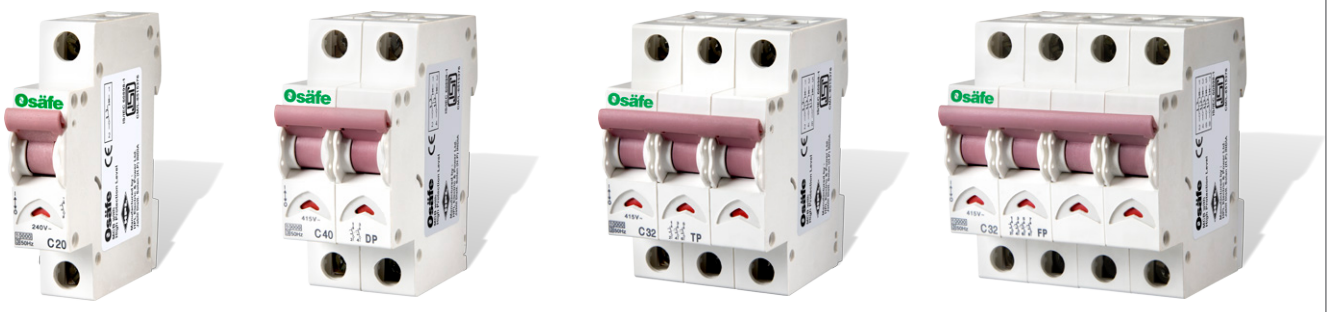
- Contact position indicator red / green
- Secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories suitable for subsequent installation
- Rated currents up to 63 A
- Tripping characteristics B, C, D
- Rated breaking capacity 10 kA
- Tested as per IS/IEC 60898-1 : 2002 & 2003
- IP20 degree of protection



Connection Diagrams



Range

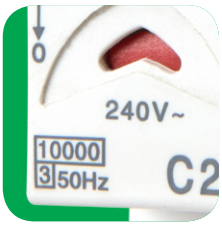


Single Pole MCB | Double Pole MCB | Triple Pole MCB | Four Pole MCB

Pad Lock

MCB Dolly can be pad locked in both ON/OFF conditions for safety during maintenance and to limit the electricity consumption.

Cable Termination upto 35mm² Cable



RED - ON

GREEN - OFF

Contact Position Indicator

3 Position Mounting Clip

Permits installation and removal without removing busbar.

Design according to	
Osafe : AC	IS/IEC 60898-1
Osafe : DC	IS/IEC 60898-2
Breaking capacity	
Osafe : AC	10kA (as per IS/IEC 60898-1)
Characteristics	B, C, D
Rated Voltage	V_{AC} 240/415V
	V_{DC} 24V, 48V, 60V, 110V & 220V (Per pole)

Osäfe

Miniature Circuit Breakers 10kA

Miniature Circuit Breakers 10kA

- High selectivity between MCB and back-up device due to low let-through energy
- Compatible with standard busbar
- Busbar positioning optionally above or below
- Meets the requirements of insulation co-ordination, distance between contacts > 4 mm, for secure isolation
- Rated breaking capacity 10 kA
  Tested as per IS/IEC 60898-1: 2002.
- All range tested as per IEC 60898-1 : 2003.
- Tested at 16kA Icu as per IEC 60947-2, SPC 16A

	ACCESSO-RIES:	TECHNICAL SPECIFICATIONS	CODE
A	AUXILIARY SWITCH*	6A 1NO+1NC	bAUX61NO+1NC
B	SHUNT TRIP RELEASE*	OPERATIONAL VOLTAGE a) 12-110-AC/12-60 VDC b) 110-415V AC/110-220 VDC	bSTR24 bSTR240
C	UNDER VOLTAGE RELEASE*	a) 240 V/WITHOUT DELAY b) 415 V/WITHOUT DELAY	bUVR240 bUVR415

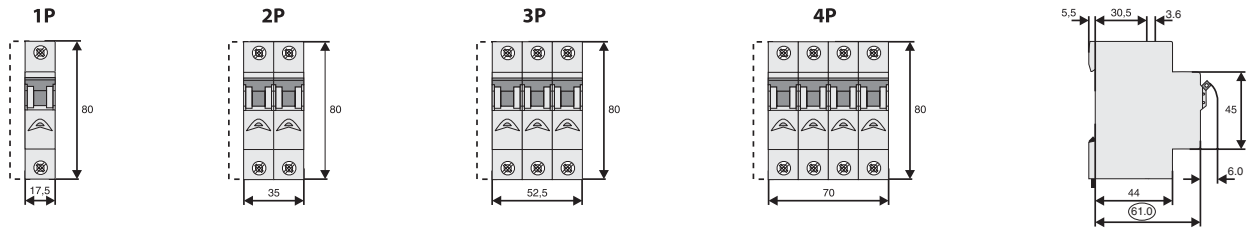
*Under Development

Technical Data **Osafe**

Electrical	
Design according to	IS/IEC 60898-1 IS/IEC 60898-2
Current test marks as printed on the device	
Rated voltage	AC: 240/415V DC: 24V, 48V, 60V, 110V & 220V (per pole)
Rated frequency	50 Hz
Rated breaking capacity according to IS/IEC 60898 10 kA	
Characteristic	B, C, D
Back-up fuse Selectivity class	max. 125 A gG 3
Endurance	4000 operating cycles On Load & Off Load
Terminal	Un marked (Line/Load) reversable

Mechanical	
Frame size	45 mm
Device height	80 mm
Device width	17.5 mm per pole (1MU)
Mounting	quick fastening with 3 lock-in positions on DIN rail EN 50022
Degree of protection	IP20
Upper and lower terminals	open mouthed/lift terminals
Terminal protection	finger and hand touch safe,
Terminal capacity	1-35 mm^2
(1p+N, 1.5MU)	1-35 mm^2 / 1-2x10 mm^2 (N)
Terminal fastening torque	2-2.4 Nm
(1p+N, 1.5MU)	2-2.4 Nm / 1,2-1,5 Nm (N)
Busbar thickness	0.8 - 2 mm
Mounting	independent of position

Connection Diagrams



all dimension are in mm.

DC MCB UPTO 63 AMPS

TECHNO MCB specially designed for DC application has been developed by HPL's world class R&D to meet the market's stringent requirements for DC circuits.

AVAILABILITY

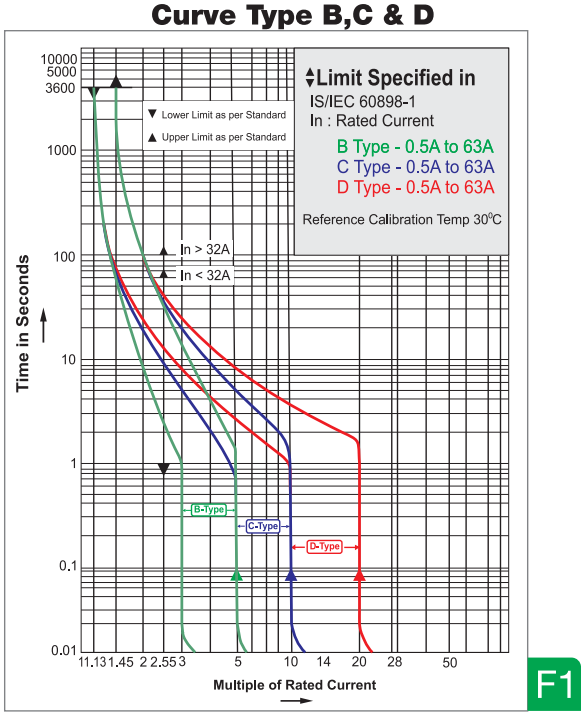
DC MCBs are available in SP & DP configuration from 0.5 Amp to 63 Amp in various voltages such as 12V, 24V, 48V, 60V, 110V, & 220V.

FEATURES

- Dual tripping system-overload through precisely calibrated bimetal and short circuit through electromagnetic coil.
- DC MCB incorporates a built in permanent magnet, which directs the arc into the arc quenching chamber.
- Free from nuisance tripping caused by vibrations.
- Time constant < 5ms
- DC MCB offers a unique feature of knob assuming mid trip position in the event of fault. This enables clear visual indication of the faulty circuit.
- Housing of DC MCB is made up of fire retardant, anti-cracking and non-hygroscopic PBT/Nylon.
- Contacts are made up of silver inlaid copper, which ensure low resistance and longer life of circuit breaker.

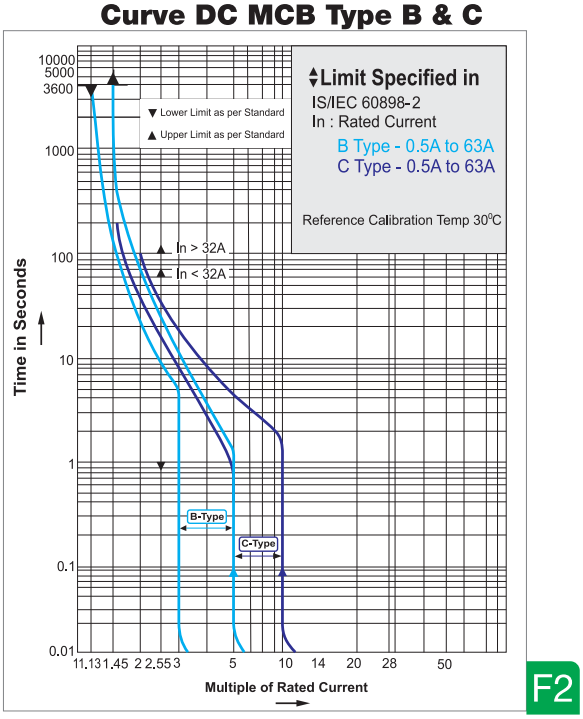
Tripping Characteristics (IS/IEC 60898)

Tripping Characteristics
Curve Type B,C & D



F1

Tripping Characteristics
Curve DC MCB Type B & C



F2

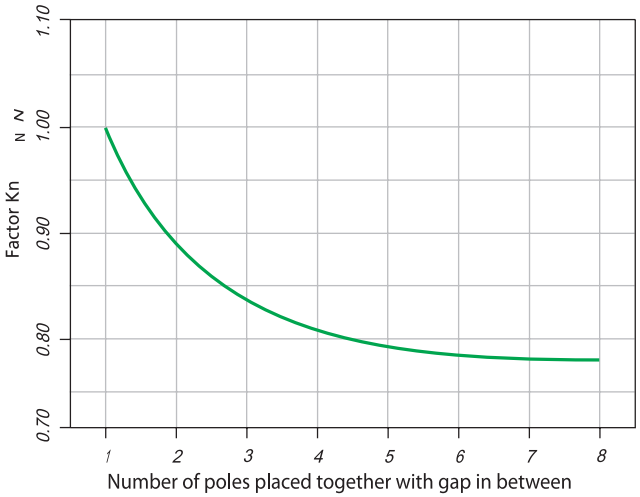
Resistive Load (B), Impendence Load (C), Purly Inductive or Capacitive Load (D)

Effect of the Ambient Temperature on Thermal Tripping Behaviour

Adjusted rated current values according to the ambient temperature

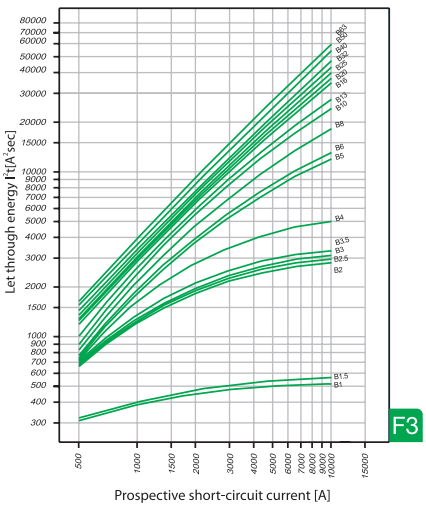
	Ambient temperature T [°C]												
I_n [A]	**-25**	**-20**	**-10**	**0**	**10**	**20**	**30**	**35**	**40**	**45**	**50**	**55**	**60**
0.5	0.61	0.60	0.58	0.56	0.54	0.52	0.50	0.49	0.48	0.47	0.46	0.45	0.44
1	1.2	1.2	1.2	1.1	1.1	1.0	1.0	0.99	0.97	0.95	0.93	0.90	0.89
1.5	1.8	1.8	1.7	1.7	1.6	1.6	1.5	1.5	1.5	1.4	1.4	1.4	1.3
1.6	2.0	1.9	1.9	1.8	1.7	1.7	1.6	1.6	1.5	1.5	1.5	1.4	1.4
2	2.4	2.4	2.3	2.2	2.2	2.1	2.0	2.0	1.9	1.9	1.9	1.8	1.8
2.5	3.1	3.0	2.9	2.8	2.7	2.6	2.5	2.5	2.4	2.4	2.3	2.3	2.2
3	3.7	3.6	3.5	3.4	3.3	3.1	3.0	3.0	2.9	2.8	2.8	2.7	2.7
3.5	4.3	4.2	4.1	3.9	3.8	3.7	3.5	3.4	3.4	3.3	3.2	3.2	3.1
4	4.9	4.8	4.7	4.5	4.3	4.2	4.0	3.9	3.9	3.8	3.7	3.6	3.5
5	6.1	6.0	5.8	5.6	5.4	5.2	5.0	4.9	4.8	4.7	4.6	4.5	4.4
6	7.3	7.2	7.0	6.7	6.5	6.3	6.0	5.9	5.8	5.7	5.6	5.4	5.3
8	9.8	9.6	9.3	9.0	8.7	8.4	8.0	7.9	7.7	7.6	7.4	7.2	7.1
10	12	12	12	11	11	10	10	9.9	9.7	9.5	9.3	9.0	8.9
12	15	14	14	13	13	13	12	12	12	11	11	11	11
13	16	16	15	15	14	14	13	13	13	12	12	12	12
15	18	18	17	17	16	16	15	15	15	14	14	14	13
16	20	19	19	18	17	17	16	16	15	15	15	14	14
20	24	24	23	22	22	21	20	20	19	19	19	18	18
25	31	30	29	28	27	26	25	25	24	24	23	23	22
32	39	38	37	36	35	33	32	32	31	30	30	29	28
40	49	48	47	45	43	42	40	39	39	38	37	36	35
50	61	60	58	56	54	52	50	49	48	47	46	45	44
63	77	76	73	71	68	66	63	62	61	60	58	57	56

Load Capacity of Series Connected Miniature Circuit Breakers

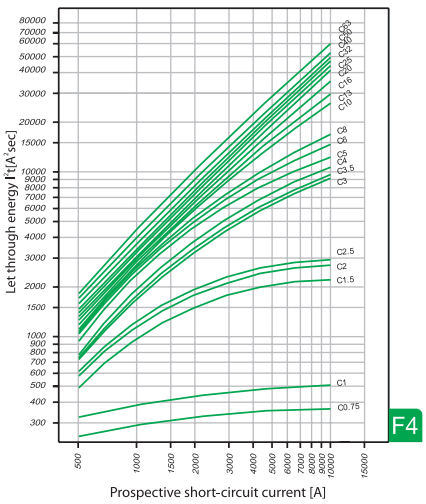


Let-through Energy 10kA

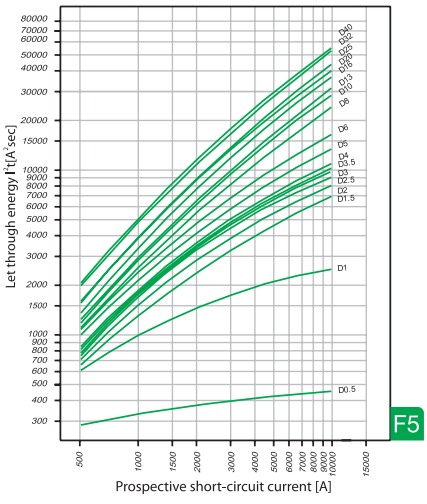
Let-through energy 10kA, characteristic B, 1-pole



Let-through energy 10kA, characteristic C, 1-pole



Let-through energy 10kA, characteristic D, 1-pole

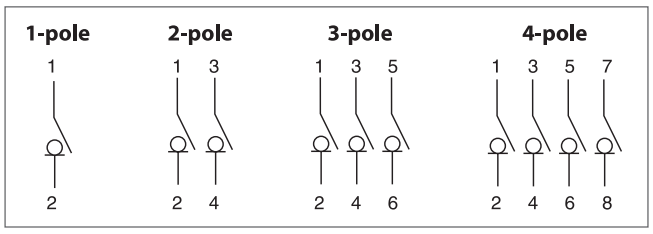


Osäfe

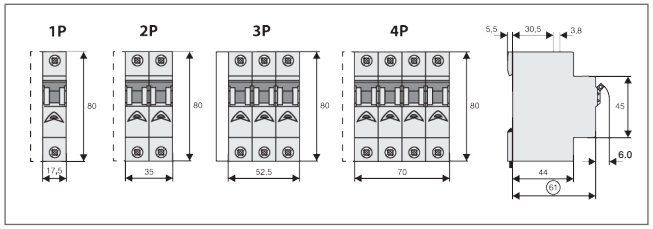
Isolator

- Available in single break & double break
- Contact position indicator red / green
- Secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories suitable for subsequent installation
- Rated currents 40A - 125A
- Rated conditional short circuit capacity 10 kA according to IS/IEC 60947-3
- IP20 degree of protection

Connection diagrams Isolator



Single Break Dimensions (mm)



all dimension are in mm.

Mechanical	
Frame size	45 mm
Device height	80 mm
Device width	17.5 mm per pole (1MU)
Mounting	quick fastening with 3 lock-in positions on DIN rail EN 50022
Degree of protection	IP20
Upper and lower terminals	open mouthed/lift terminals
Terminal protection	finger and hand touch safe,
Terminal capacity	1-35 mm^2
Terminal fastening torque	2-2.4 Nm
Busbar thickness	0.8 - 2 mm
Mounting	independent of position

Electrical	
Reference Standard	IS/IEC 60947-3
No. of Poles	1P,2P,3P,4P
Utilization Category	AC 22B, AC 23B
Rated Current (In)	40A, 63A, 80A, 100A, 125A
Rated Voltage (Ue)	240/415 V ~
Rated Frequency (f)	50 Hz
Rated Insulation Voltage (Ui)	660V
Rated Impulse Voltage (Uimp)	6kV
Dielectric Strength	2.5kV
Electrical/Mechanical Endurance (no. of operations) minimum	Electrical : 1500 Mechanical : 8500
Humidity	95% RH
Terminal Capacity (max)	35mm^2
Tightening Torque	2 N-m
Vibration	3 g
Shock Resistance	40mm free fall
Protection Class	IP20
Positive Contact Indication	Yes, Through Flag Indication (Red-ON,Green-OFF)
Mounting	Clip on DIN Rail (35mm x 7.5mm)
Installation Position	Vertical/Horizontal
Case & Cover	Moulded, flame retardant PBT/Nylon
Busbar Connections Top Side	Pin/Fork Type
Busbar Connections Bottom Side	Pin/Fork Type

Osäfe

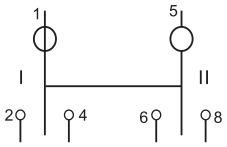
MCB Changeover Switch

MCB Changeover Switch

- Conforms to IS/IEC : 60947-3
- Choice of Two Pole & Four Pole versions
- Front operation with three stable positions I-0-II
- Off at middle position
- DIN Rail Mounting facility

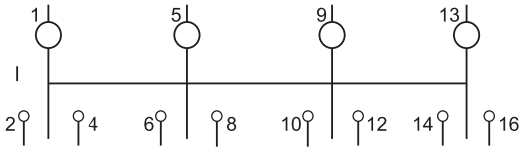
Connection Diagrams / Technical Marking

Two Pole



"I"	Incoming Terminals (Main Supply)	2 & 6
"II"	Incoming Terminals (Standby Supply)	4 & 8
	Outgoing Terminals (to load)	1 & 5
•	Mid position of knob is 'OFF' position	

Four Pole



"I"	Incoming Terminals (Main Supply)	2, 6, 10 & 14
"II"	Incoming Terminals (Standby Supply)	4, 8, 12 & 16
	Outgoing Terminals (to load)	1, 5, 9 & 13
•	Mid position of knob is 'OFF' position	

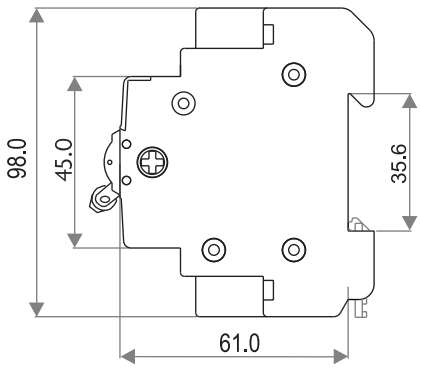
Range

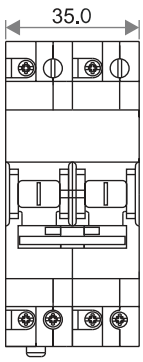
Double Pole MCB

Four Pole MCB

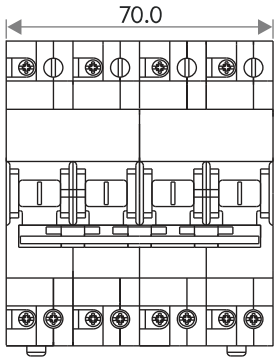
Standard Conformity		:	IS/IEC 60947 - 3
No. of Poles (Execution)		:	2 Pole, 4 Pole
Rated Current (In)	A	:	25A, 40A, 63A
Rated Voltage (Ue)	V	:	240 AC/415 AC
Rated Frequency	Hz	:	50
Rated Insulation Voltage	V	:	660
Dielectric Strength	kV	:	2.5
Rated Impulse Voltage	kV	:	4
Utilization Category		:	AC 22 A
Ambient Temp.	°C	:	-5 to +55
Mechanical Life		:	10000 operations
Electrical Life		:	1500 operations
Mounting		:	Standard (35 x 7.5) mm - DIN Rail
Mounting Position		:	Vertical / Horizontal
Terminal Capacity	mm^2	:	35
Weight - Double Pole	gms	:	134
Four Pole	gms	:	268

Dimmension (in mm)





2 Pole



4 Pole

Osäfe

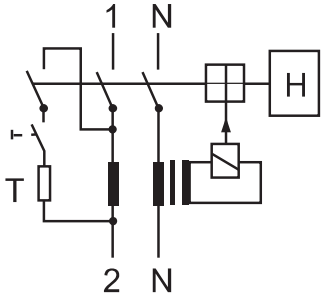
Residual Current Circuit Breaker

Residual Current Circuit Breaker

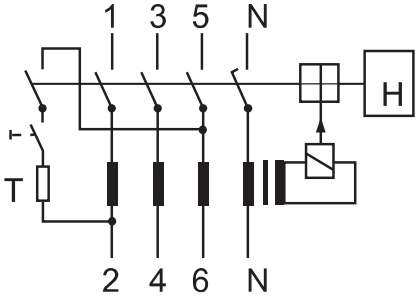
- Tested as per IEC 61008-1, IS 12640-1,
- Dedicated Earth leakage protection.
- Short Circuit Withstand capacity 10 kA
- In Double Pole & Four Pole version
- Protection against Electrocution, Short Circuit & Electrical Fire.
- Range: 25 Amp, 40 Amp, 63Amp & 80 Amp in 30mA, 100mA & 300mA
- Consistent performance, Compact & Space Saving
- Wide variety of nominal current.
- Automatic re-setting possible.

Connection Diagrams

2 Pole



4 Pole



Range

Double Pole
RCCB

Four Pole
RCCB

Test Switch

Busbar

Wire

Cable Termination upto 35mm² Cable

RED - ON

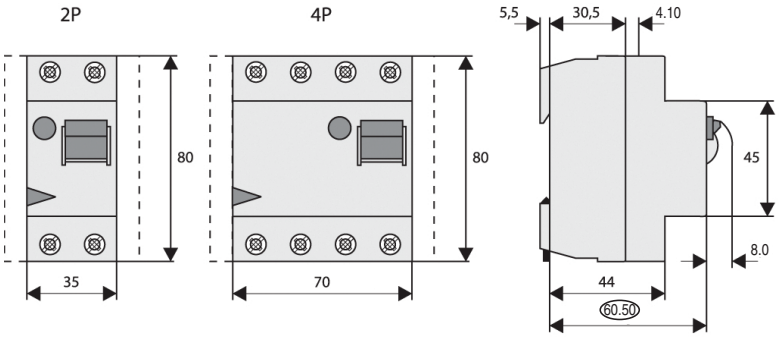
GREEN - OFF

Contact postition flag indicator

3 Position Mounting Clip

Permits installation and removal without removing busbar.

Description



Electrical

Rated voltage	230 / 400V; 50 Hz
Sensitivity/Rated 30, 100, 300 mA	Leakage tripping current
Rated Conditional short circuit strength	10kA with 63 A gG back-up fuse 10kA with 80 A gG
Maximum back-up fuse for short circuit protection	63 A gG 80 A gG
Maximum back-up fuse for overload protection	25 A gG 40 A gG 50 A gG
Endurance electrical mechanical	> 4,000 operations

Osäfe

Residual Current Protection Unit

Residual Current Protection Unit

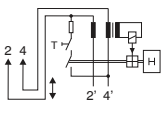
- Add-on residual current unit
- Line voltage-independent tripping
- By combining this device with a miniature circuit breaker a top-quality RCBO unit (combined RCD/MCB device) is formed.
- Rated current 16 and 63 A
- Permits combinations with a variety of characteristics thanks to the different rated currents and characteristics of the miniature circuit breakers which can be connected
- Comrehensive range of accessories suitable for subsequent installation onto PLS.
- 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 intervall of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it’s recommended to test in shorter intervalls (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 :** Protect against special forms of residual pulsating DC which have not been smoothed.
- **Type - G :** High reliability against unwanted tripping. Compulsory for any circuit where personal injury or damage to property may occur in case of unwanted tripping (ÖVE-EN1, Part1, §12.14).
- **Type - S :** Selective residual current device, either sensitive to AC, type -S, or sensitive to pulsating DC, type -S/A, for protection against special forms of residual pulsating DC which have not been smoothed. Compulsory for systems with surge arresters downstream of the RCD (ÖVE-EN1, Part 1, §12.15).

Accessories :
Cover cap for draw-out connection bar
Slotted one-way cheese head screw

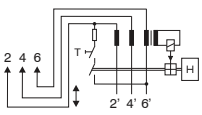
Accessories (on PLS.) :	
Auxiliary switch for	included
subsequent installation	ZP-IHK
	ZP-WHK
Tripping signal contact for subsequent installation	ZP-NHK
Remote control and automatic switching device	Z-FW/LP
Shunt trip release	ZP-ASA/..
Undervoltage release	Z-USA/..
Compact enclosure	KLV-TC-2
	KLV-TC-4
Additional terminal 35mm2	Z-HA-EK/35
Switching interlock	IS/SPE-1TE

Connection diagramms

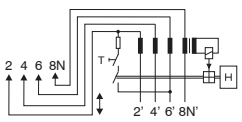
2 pols



3 pols



4 pols

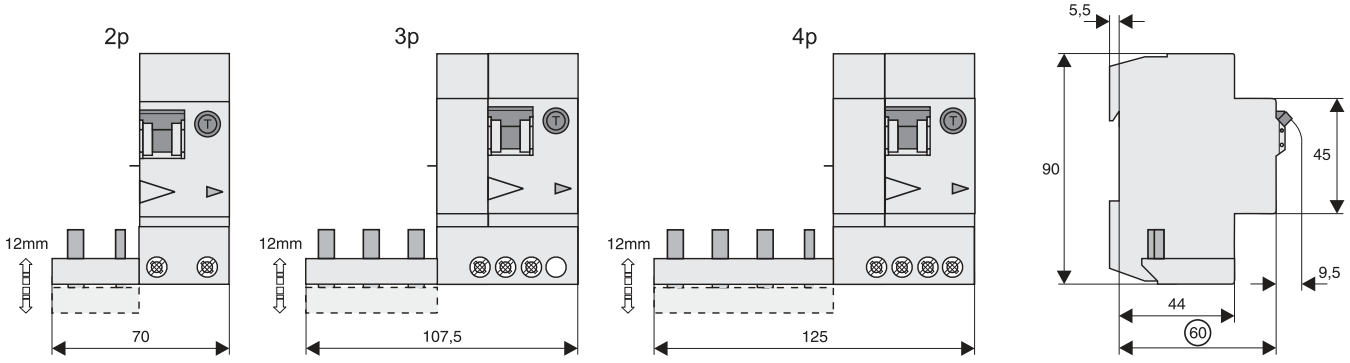


Technical Data

Electrical	
Design according to	IEC/EN 61009
Current test marks as printed onto the device	
Tripping	instantaneous 250A (8/20µs),surge current-proof
Type G	10 ms delay 3kA (8/20µs), surge current-proof
Type S	40 ms delay 6kA - with selective disconnecting function]
Rated voltage U_n	230/400 V AC
Operational voltage range	196 - 440 V
Rated frequency	50 Hz
Use at $16^{2/3}$ Hz	Recesses time between the single switchings increases to 88 s, I_n max. 63A
Use at 400 Hz	I_n max. 40 A
Rated current I_n	≤ 40 A, ≤ 63 A
Rated tripping current $I_{\Delta n}$	30, 100, 300mA
Rated non-tripping current $I_{\Delta no}$	0.5 $I_{\Delta n}$
Sensitivity	AC and pulsating DC
Service short circuit breaking capacity I_{cs}	same as connected PLS. (7.5 kA)
Rated breaking capacity I_{cn}	same as connected PLS. (10 kA)
Rated fault breaking capacity IΔm	6 kA (U_n = 230V)3 kA (U_n = 400V)

Mechanical	
Frame-size	45 mm
Device height	90 mm
Device width	70 mm (2p), 107.5 mm (3p),125 mm (4p)
Mounting	fix mounted onto PLS.
Degree of protection installed device	IP20
Fastening screw	M 2.5 (slotted one-way cheese head screw;
Screw head breaking torque	> 0.6 Nm
Upper and lower terminals	lift terminals
Terminal screws	M 5 (combined Philips/standard head screws according to DIN7962-Z2, Pozidrive)
Terminal protection	finger and hand touch safe, BGV A3, ÖVE-EN 6
Terminal capacity	
Rigid conductors	1 x (1 - 25) mm^2
Flexible conductors (with wire end sleeve)	1 x (0.75 - 16) mm^2
Busbar thickness	0.8 - 2 mm
Permitted ambient temperature range	-25°C to +40°C
Resistance to climatic conditions	acc. to IEC/EN 60068-2 (25..55°C/90..95% relative humidity)
Rated fault breaking capacity IΔm	6 kA (U_n = 230V)3 kA (U_n = 400V)

Connection diagramms



Osäfe

Combined RCD/MCB Devices

Combined RCD/MCB Devices, 1+N-pole

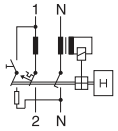
- Combined RCD/MCB device
- Line voltage-independent tripping
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Guide for secure terminal connection
- Switching 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 intervall of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it’s recommended to test in shorter intervalls (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 have not been smoothed
- **Type -G :** 10 ms time delay in order to avoid unwanted tripping (e.g. during thunderstorms).

Compulsory in Austria for any circuit where personal injury or damage to property may occur in case of unwanted tripping (§12.1.6 ÖVE/ÖNORM E 8001-1).

Accessories:	
Auxiliary switch for subsequent installation	ZP-IHK
	ZP-WHK
Tripping signal switch for subsequent installation	ZP-NHK
Shunt trip release	ZP-ASA/..
Tripping module	Z-KAM
Terminal cover cap	KLV-TC-2
Additional terminal 35mm2	Z-HA-EK/35
Switching interlock	IS/SPE-1TE

Connection diagramms

1+N pols

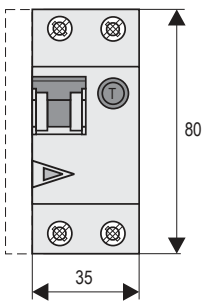


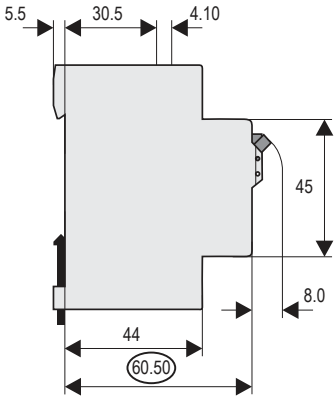
Technical Data

Electrical	
Design according to	IEC/EN 61009
Current test marks as printed onto the device	
Tripping line voltage-independent	instantaneous 250A (8/20µs) surge current-proof;
Type G	10 ms delay 3kA (8/20$_{µs}$) surge current-proof
Rated voltage U_e	230 V; 50 Hz
Operational voltage range	196-253 V
Rated tripping current $I_{\Delta n}$	30, 100, 300 mA
Rated non-tripping current IΔno	0.5 $I_{\Delta n}$
Rated insulation voltage U_i	440 VAC
Sensitivity	AC and pulsating DC
Selectivity class	3
Rated breaking capacity	10 kA
Rated current	16 - 40 A
Rated peak withstand voltage U_{imp}	4 kV (1.2/50$_{µs}$)
Characteristic	B, C
Maximum back-up fuse (short circuit)	100 A gL (>10 kA)
Endurance electrical comp.	≥ 4,000 operating cycles
Mechanical comp.	≥ 20,000 operating cycles

Mechanical	
Frame size	45 mm
Device height	80 mm
Device width	35 mm (2MU)
Mounting	3-position DIN rail clip,permits removal from existing busbar system
Upper and lower terminals	open mouthed/lift terminals
Terminal protection	finger and hand touch safe,BGV A3, ÖVE-EN 6
Terminal capacity	1 - 25 mm^2
Busbar thickness	0.8 - 2 mm
Degree of protection switch	IP20
Degree of protection, built-in	IP40
Tripping temperature	-25°C to +40°C
Storage- and transport temperature	-35°C to +60°C
Resistance to climatic conditions	acc. to IEC/EN 61009
Rated peak withstand voltage U_{imp}	4 kV (1.2/50$_{µs}$)
Characteristic	B, C
Maximum back-up fuse (short circuit)	100 A gL (>10 kA)
Endurance electrical comp.	≥ 4,000 operating cycles
Mechanical comp.	≥ 20,000 operating cycles

Connection diagramms





Osäfe

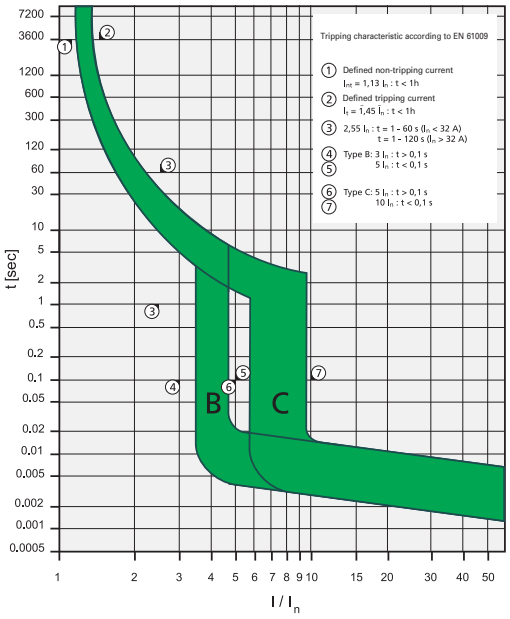
Combined RCD/MCB Devices

Load Capacity -1N/

Effect of ambient temperature (MCB component)

	Ambient temperature **T [°C]**								
I_n [A]	**-25**	**-20**	**-10**	**0**	**10**	**20**	**30**	**35**	**40**
2	2.5	2.4	2.3	2.2	2.2	2.1	2.0	2.0	1.9
4	4.9	4.8	4.7	4.5	4.3	4.2	4.0	3.9	3.9
5	6.2	6.0	5.8	5.6	5.4	5.2	5.0	4.9	4.8
6	7.4	7.2	7.0	6.7	6.5	6.3	6.0	5.9	5.8
8	9.9	9.6	9.3	9.0	8.7	8.4	8.0	7.9	7.7
10	12	12	12	11	11	10	10	9.9	9.7
12	15	14	14	13	13	13	12	12	12
13	16	16	15	15	14	14	13	13	13
15	19	18	17	17	16	16	15	15	15
16	20	19	19	18	17	17	16	16	15
20	25	24	23	22	22	21	20	20	19
25	31	30	29	28	27	26	25	25	24
32	40	38	37	36	35	33	32	32	31
40	49	48	47	45	43	42	40	39	39

Tripping Characteristic -1N/, Characteristics B a. C



Short Circuit Selectivity -1N/ towards DII-DIV fuse link

In case of short circuit, there is selectivity between the combined RCD/MCB devices 1N/ and the upstream fuses up to the specified values of the selectivity limit current I_s [kA] (i. e. in case of short-circuit currents I_{ks} under I_s, only the MCB will trip, in case of short circuit currents above this value both protective devices will respond).

*) basically in accordance with EN 60898-1 D.5.2.b

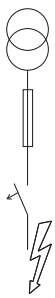
*Short circuit selectivity characteristic B towards fuse link DII-DIV *)*

Rating	DII-DIV gL/gG								
I_n [A]	**10**	**16**	**20**	**25**	**35**	**50**	**63**	**80**	**100**
2	<0.5[1]	<0.5[1]	2.2	8.5	10.0[2]	10.0[2]	10.0[2]	10.0[2]	10.0[2]
4	<0.5[1]	<0.5[1]	0.7	1.2	3.7	10.0	10.0[2]	10.0[2]	10.0[2]
6		<0.5[1]	0.7	1.0	2.9	6.9	10.0[2]	10.0[2]	10.0[2]
8		<0.5[1]	0.6	1.0	2.4	5.1	10.0[2]	10.0[2]	10.0[2]
10			0.6	0.9	1.9	3.3	7.0	10.0[2]	10.0[2]
13			0.5	0.7	1.6	2.8	5.7	9.0	10.0[2]
16				0.7	1.4	2.4	4.4	7.0	10.0[2]
20					1.3	2.2	4.0	6.3	10.0[2]
25					1.3	2.1	3.8	5.8	10.0[2]
32						2.0	3.5	5.2	9.5
40							3.1	4.5	8.1

*Short circuit selectivity characteristic C towards fuse link DII-DIV *)*

Rating	DII-DIV gL/gG								
I_n [A]	**10**	**16**	**20**	**25**	**35**	**50**	**63**	**80**	**100**
2	<0.5[1]	<0.5[1]	1.7	6.0	10.0[2]	10.0[2]	10.0[2]	10.0[2]	10.0[2]
4	<0.5[1]	<0.5[1]	0.7	1.3	4.2	8.5	10.0[2]	10.0[2]	10.0[2]
5	<0.5[1]	<0.5[1]	0.6	1.1	3.6	7.0	10.0[2]	10.0[2]	10.0[2]
6		<0.5[1]	0.6	1.0	2.9	5.8	10.0[2]	10.0[2]	10.0[2]
8		<0.5[1]	<0.5	0.9	2.5	4.8	10.0[2]	10.0[2]	10.0[2]
10			<0.5	0.7	1.5	2.6	5.3	9.0	10.0[2]
13					1.4	2.3	4.6	7.6	10.0[2]
16					1.2	1.8	3.4	5.5	10.0[2]
20					1.2	1.7	3.1	5.0	10.0[2]
25						1.6	2.9	4.6	10.0[2]
32							2.3	3.4	7.7
40								2.9	6.2

[1] Selectivity limit current I_s under 0.5 kA
[2] Selectivity limit current I_s = rated breaking capacity I_{cn} of the RCD/MCB device
Darker areas: no selectivity



Protective Devices

Short Circuit Selectivity-1N/ towards D01-D03 fuse link

In case of short circuit, there is selectivity between the combined RCD/MCB devices 1N/ and the upstream fuses up to the specified values of the selectivity limit current I_s [kA] (i. e. in case of short-circuit currents I_{ks} under I_s , only the MCB will trip, in case of short circuit currents above this value both protective devices will respond).

*) basically in accordance with EN 60898-1 D.5.2.b

*Short circuit selectivity characteristic B towards fuse link D01-D03 *)*

Rating	D01-D03 gL/gG								
I_n [A]	10	16	20	25	35	50	63	80	100
2	<0.5[1]	0.7	1.6	3.3	10.0[2]	10.0[2]	10.0[2]	10.0[2]	10.0[2]
4	<0.5[1]	<0.5[1]	0.6	0.9	2.9	10.0	10.0[2]	10.0[2]	10.0[2]
6		<0.5[1]	0.5	0.8	2.4	8.2	10.0[2]	10.0[2]	10.0[2]
8			0.6	0.8	2.0	6.0	10.0[2]	10.0[2]	10.0[2]
10			0.5	0.8	1.6	3.7	6.0	10.0[2]	10.0[2]
13			0.6	0.7	1.4	3.0	4.7	9.0	10.0[2]
16				0.6	1.2	2.6	3.9	7.0	10.0[2]
20					1.2	2.5	3.6	6.2	10.0[2]
25					1.2	2.3	3.3	5.7	10.0[2]
32						2.3	3.1	5.1	10.0[2]
40							2.8	4.5	9.5

*Short circuit selectivity characteristic C towards fuse link D01-D03 *)*

Rating	D01-D03 gL/gG								
I_n [A]	10	16	20	25	35	50	63	80	100
2	<0.5[1]	0.5	0.5	2.4	10.0[2]	10.0[2]	10.0[2]	10.0[2]	10.0[2]
4	<0.5[1]	<0.5[1]	<0.5[1]	0.9	3.4	9.5	10.0[2]	10.0[2]	10.0[2]
5	<0.5[1]	<0.5[1]	<0.5[1]	0.9	2.9	8.0	10.0[2]	10.0[2]	10.0[2]
6		<0.5[1]	<0.5[1]	0.8	2.3	6.5	10.0[2]	10.0[2]	10.0[2]
8			<0.5	0.7	2.1	5.5	9.5	10.0[2]	10.0[2]
10			<0.5	0.6	1.3	2.9	4.5	8.9	10.0[2]
13					1.2	2.5	3.9	7.6	10.0[2]
16					1.0	2.1	3.0	5.5	10.0[2]
20					1.0	2.0	2.7	5.0	10.0[2]
25						1.9	2.6	4.5	10.0[2]
32							2.1	3.4	10.0[2]
40								3.0	8.7

Short Circuit Selectivity -1N/ towards NH-00 fuse link

In case of short circuit, there is selectivity between the combined RCD/MCB devices 1N/ and the upstream fuses up to the specified values of the selectivity limit current I_s [kA] (i. e. in case of short-circuit currents I_{ks} under I_s , only the MCB will trip, in case of short circuit currents above this value both protective devices will respond).

*) basically in accordance with EN 60898-1 D.5.2.b

*Short circuit selectivity characteristic B towards fuse link NH-00 *)*

Rating	NH-00 gL/gG											
I_n [A]	16	20	25	32	35	40	50	63	80	100	125	160
2	<0.5[1]	1.1	3.6	10.0[2]	10.0[2]	10.0[2]	10.0[2]	10.0[2]	10.0[2]	10.0[2]	10.0[2]	10.0[2]
4	<0.5[1]	0.5	0.9	1.6	2.8	4.4	10.0[2]	10.0[2]	10.0[2]	10.0[2]	10.0[2]	10.0[2]
6	<0.5[1]	0.5	0.8	1.4	2.2	3.3	7.0	10.0[2]	10.0[2]	10.0[2]	10.0[2]	10.0[2]
8	<0.5[1]	<0.5[1]	0.7	1.0	1.9	2.8	5.3	7.8	10.0[2]	10.0[2]	10.0[2]	10.0[2]
10		<0.5[1]	0.7	0.9	1.5	2.1	3.4	4.3	7.3	10.0[2]	10.0[2]	10.0[2]
13		<0.5[1]	0.6	0.8	1.4	1.8	2.8	3.6	5.7	10.0[2]	10.0[2]	10.0[2]
16			0.6	0.7	1.2	1.5	2.4	3.0	4.5	10.0[2]	10.0[2]	10.0[2]
20				0.7	1.1	1.5	2.2	2.8	4.2	9.2	10.0[2]	10.0[2]
25				0.7	1.1	1.4	2.1	2.6	4.0	8.2	10.0[2]	10.0[2]
32					1.0	1.4	2.0	2.5	3.7	7.1	10.0[2]	10.0[2]
40							2.3	3.4	6.2	8.8	10.0[2]	

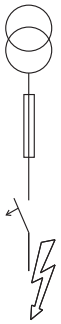
*Short circuit selectivity characteristic C towards fuse link NH-00 *)*

Rating	NH-00 gL/gG											
I_n [A]	16	20	25	32	35	40	50	63	80	100	125	160
2	<0.5[1]	0.6	2.6	10.0[2]	10.0[2]	10.0[2]	10.0[2]	10.0[2]	10.0[2]	10.0[2]	10.0[2]	10.0[2]
4	<0.5[1]	<0.5[1]	0.9	1.8	3.2	4.8	8.7	10.0[2]	10.0[2]	10.0[2]	10.0[2]	10.0[2]
5	<0.5[1]	<0.5[1]	0.8	1.6	2.7	4.1	7.2	9.7	10.0[2]	10.0[2]	10.0[2]	10.0[2]
6	<0.5[1]	<0.5[1]	0.7	1.3	2.2	3.3	5.9	8.0	10.0[2]	10.0[2]	10.0[2]	10.0[2]
8	<0.5[1]	<0.5[1]	0.6	1.1	1.9	2.8	5.0	6.7	10.0[2]	10.0[2]	10.0[2]	10.0[2]
10		0.5	0.8	1.2	1.7	2.7	3.4	5.5	10.0[2]	10.0[2]	10.0[2]	
13				1.1	1.5	2.3	2.9	4.7	10.0[2]	10.0[2]	10.0[2]	
16				1.0	1.3	1.8	2.3	3.7	8.7	10.0[2]	10.0[2]	
20				0.9	1.1	1.7	2.2	3.4	8.0	10.0[2]	10.0[2]	
25					1.6	2.1	3.2	7.2	10.0[2]	10.0[2]		
32						1.7	2.6	5.3	9.0	10.0[2]		
40							2.4	4.5	7.5	10.0		

[1] Selectivity limit current I_s under 0.5 kA

[2] Selectivity limit current I_s = rated breaking capacity I_{cn} of the RCD/MCB device

Darker areas: no selectivity



Distribution Board

Wide Range-Varied Application

Wide Range-Varied Application

Osafe DB's are design to meet the requirement of today's Building Industry for domestic, commercial & Industrial application.

Osafe DB's are aesthetically designed it cover all functionality & Safety norms to meets high standard of quality.

Our Distribution boards are manufactured with high precision & High Quality CRCA Steel Sheets. Its finest process of Phosphatizing ensure anti-rust conditioning with better finish.

Osafe is available in elegant white colour. (RAL9003) Osafe Distribution boards are as per IP 43 Protection with metal door.

Knockout for SPN & TPN DB's (26mm & 32mm).

Detachable Plate on Top and Bottom in case of higher conduits.

Range

SPN DB

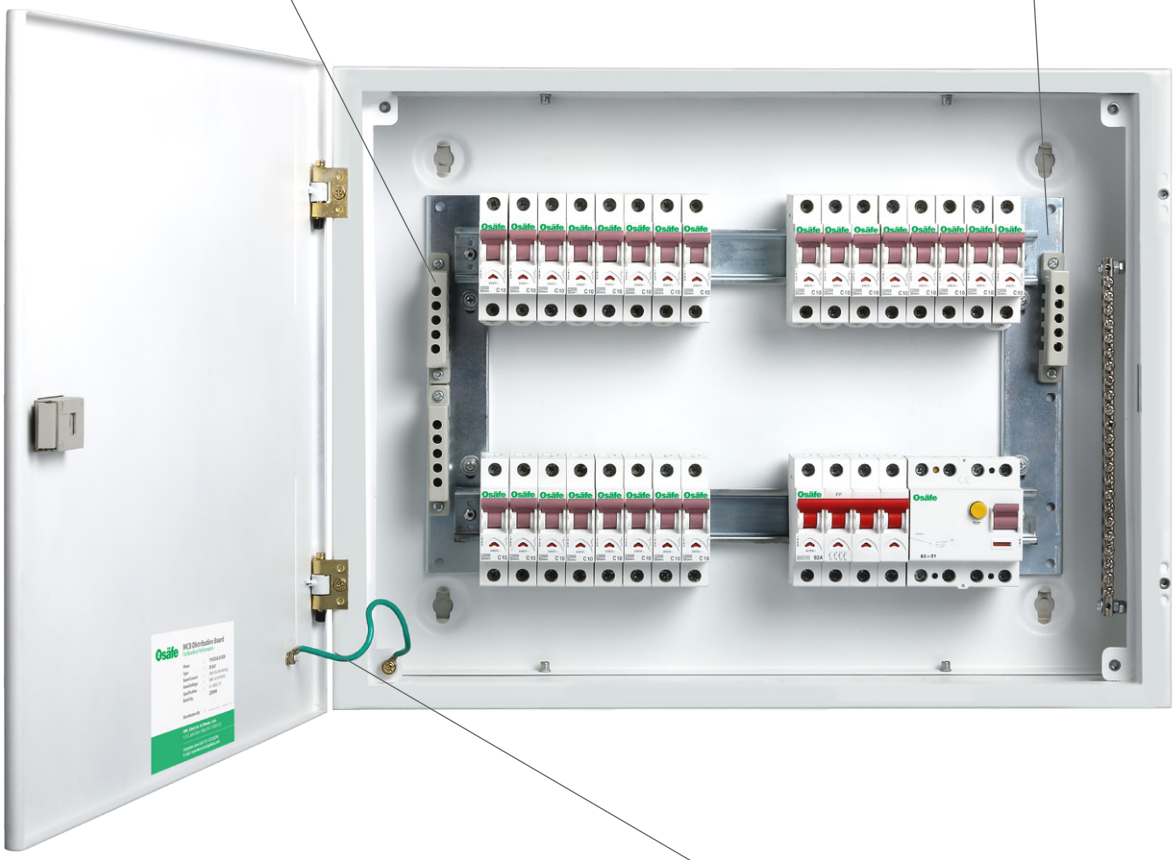
SPN DB

TPN DB

TPN DB

Shrouded Neutral Bar

Detachable Pan Assembly



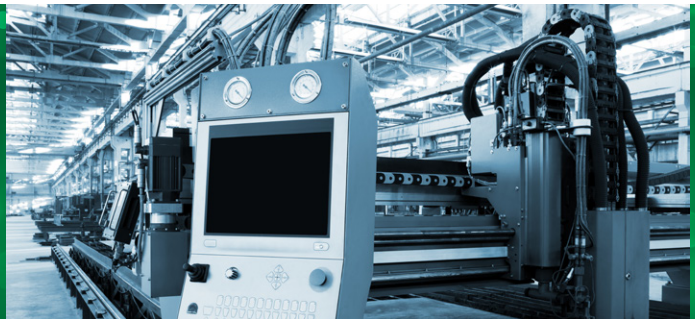
Door Earthing

Major Features

- Color white (RAL9003)
- As per IS 8623
- Cement Guard
- Anti Insertion Marker
- Shrouded neutral bar & insulated copper bus bar.
- Door Earthling
- Suitable for flash & Surface Mounting.
- As per IP-43 Protection

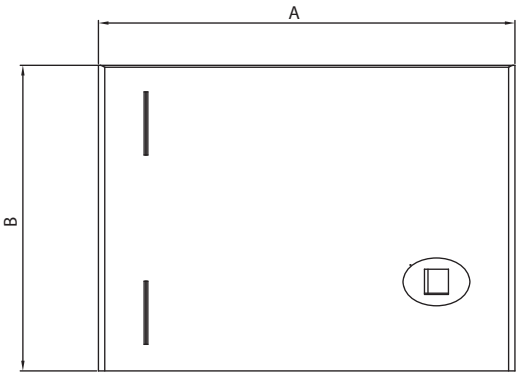
Distribution Board

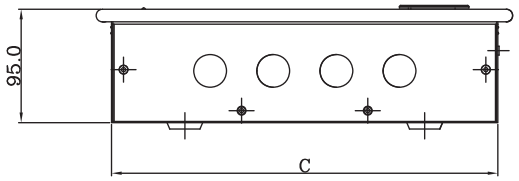
Wide Range-Varied Application



SPN DB Sailent Features

- Suitable for flush mounting & surface mounting.
- Insulated Bus bar rated upto 200A.
- Safe Neutral link covered with FR Housing
- Door Earthing
- PAN Assy for ease of installation.
- Special care of Cable Management
- Sunpack sheet
- Mat finish with new look & New Innovative DB





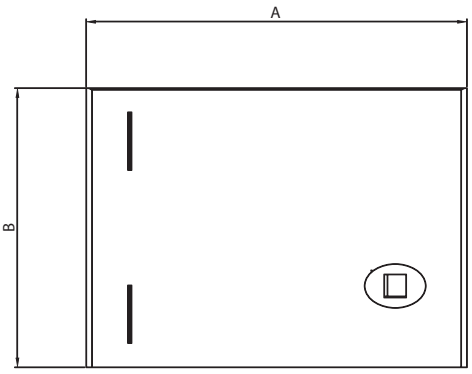
Ways	A	B	C
4	220.00	226.00	196.00
6	255.00	226.00	231.00
8	290.00	226.00	266.00
10	325.00	226.00	301.00
12	360.00	226.00	336.00
14	395.00	226.00	371.00
16	430.00	226.00	406.00

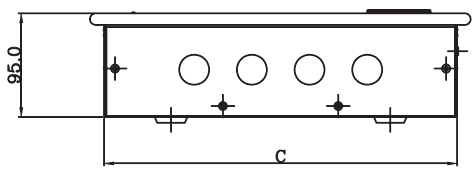
TPN DB Sailent Features

- Suitable for flush mounting & surface mounting.
- Insulated Bus bar rated upto 200A.
- Safe Neutral link covered with FR Housing
- Door Earthing
- Equipped with wire set
- Provision for FPMCB/Isolator & FP RCCB as Incommer
- PAN Assy for ease of installation.
- Special care of Cable Management
- Sunpack sheet
- Mat finish with new look & New Innovative DB

Standard accessories

- Wire Set
- Insulated bus bar
- Insulated neutral bars & Earth Bar
- Blanking Plates
- Wire Management System
- Circuits identification Labels





Ways	A	B	C
4	438.00	400.00	412.00
6	473.00	400.00	447.00
8	543.00	400.00	517.00
12	688.00	400.00	657.00

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Bareilly	Cuttack	Jalandhar	Meerut	Salem	Udaipur	

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- Sonepat - Haryana
- Kundli - Haryana
- Karnal - Haryana
- Jabli - Himachal Pradesh

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E-mail : hpl@hplindia.com; enquiry@hplindia.com

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