

Miniature Circuit Breakers B4/BR6/B10

IMO

Technical Datasheet

The IMO range of miniature circuit breakers have been designed for protection of electrical installations against overload and short circuits and are manufactured in accordance with IEC 60898-1

Technical Data

- Handle central-tripping function for circuit fault indicating
- New front design; cover and handle in arc shape
- Contact position indicating window; transparent cover to carry label
- High short circuit capacity
- Suitable for terminal and Pin/Fork type busbar connection
- Finger protected connection terminals
- Handle padlock device



Tripping characteristics in accordance with B, C and D type curves

- Curve B: $3-5 I_n$
- Curve C: $5-10 I_n$
- Curve D: $10-20 I_n$

Options & Ordering Codes

MCB Series	Curve Characteristic	Rated Current Amps	Pole Configuration	Neutral on the left
MCB 4.5kA	B	10	10 Single pole	L Neutral on the left
MCB 6kA (Curve D: 4.5kA)	C	16A	1N Single pole + Neutral	Applies to units with neutral.
MCB 10kA	D		20 Two pole	
			30 Three pole	
			3N Three pole + Neutral	
			40 Four pole	

Specifications

In accordance with	IEC 60898-1	
Certification	CE, SEMKO (only with B4 & BR6) Kema Keur (only with B10), RCM (only with 1, 2 & 3 pole B10)	
Pole composition	1P, 1P+N, 2P, 3P, 3P+N, 4P	
Tripping Curve	B, C, D	
Calibration temperature	+30°C	
Rated frequency	50/60Hz	
Rated voltage	240/415VAC; 60VDC Max	
Rated insulation voltage	240VAC / 415VAC	
Rated impulse withstand voltage	6.2kV	
Rated short circuit breaking capacity as per IEC 60898-1	B4	4.5kA
	BR6	4.5kA (Curve D only), 6kA
	B10	10kA
Mechanical lifetime	> 20,000 cycles	
Electrical lifetime	≤ 4,000 cycles	
Tightening torque	2.0Nm, 1.2Nm (B4 only)	
Screw Type	M5, M4 (B4 only)	
Terminal capacity	35mm ² solid, 25mm ² stranded conductor (10mm ² for 1P+N)	
Mounting	DIN Rail EN 60715 (EN 50022)	
Protection degree	IP20	
Energy Limiting Class	3	
Operating temperature	-5°C +40°C	

Miniature Circuit Breakers B4/BR6/B10



Technical Datasheet

Accessories

Auxiliary Switch	B10-F3 (only for B10 MCB, B10R RCD & B6 RCBO)
For monitoring the status of the protection device (open/closed)	
1 pole changeover (for C & D curve only)	
Rated current: 6A @ 230VAC & 24VDC or 3A @ 400VAC	
Dielectric Strength: 2000V/1min	
Terminal Capacity: 2.5mm ²	
Mounting on the Left side	

Shunt Trip	BR6-S2 (only for BR6) & B10-S3 (only for B10)
Shunt Trip to remotely switch off the protection device	
Rating voltage Ue: AC 110V / 230V / 400V	
Operating Voltage: 70%~110% X Ue	
Mounting on the Left side	

Under / Over Voltage Trip	BR6-U2-02
Trips the attached unit in case of under / over voltage	
Rated Voltage Ue: AC 230V	
Over-Voltage Tripping Range: 280V ±5%	
Under-Voltage Tripping Range: 170V ±5%	
Mounting on Left Side	

Auxiliary Alarm Switch	B10-A3 (only for B10 MCB, B10R RCD & B6 RCBO)
For the detection of MCB tripping	
1 pole changeover	
Rated current: 6A @ 230VAC & 24VDC or 3A @ 400VAC	

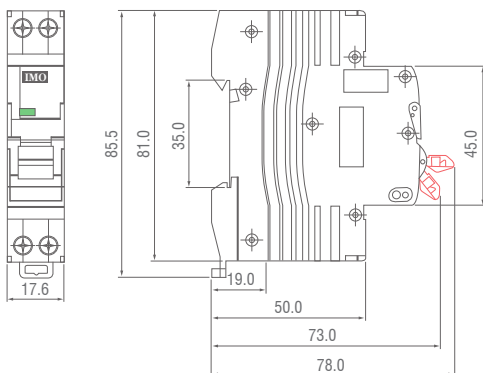
Busbars	
Description	Ref.
Busbar 1 Pole, 80A, Fork Type, 1M	BB80A1P-F
Busbar 3 Pole, 80A, Fork Type, 1M	BB80A3P-F
Busbar 1 Pole, 80A, Pin Type, 1M	BB80A1P-P
Busbar 3 Pole, 80A, Pin Type, 1M	BB80A3P-P
End Cap 1 Pole	BB1P-CAP
End Cap 3 Pole	BB3P-CAP

Terminal Adapter	BA1
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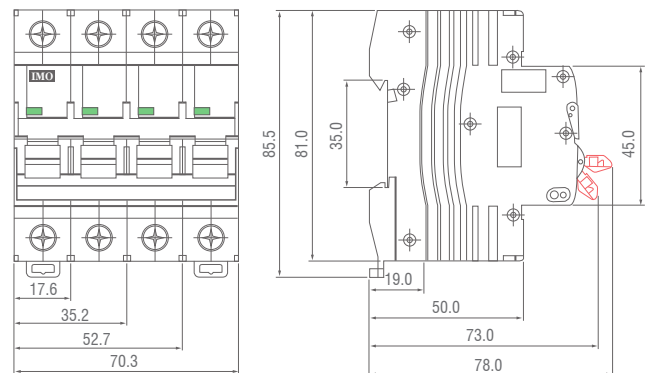
Locking Device	B10-LOCK
4mm padlock max diameter, padlock not included	

Dimensions (mm)

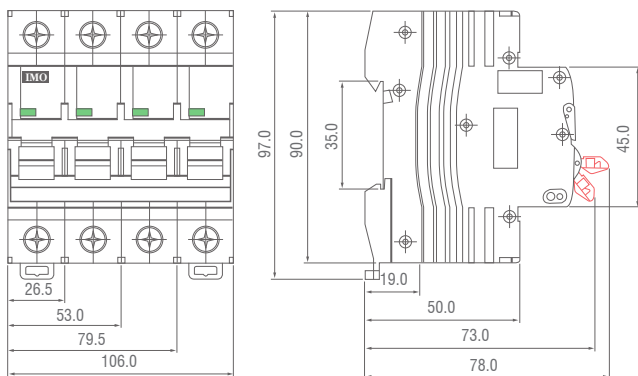
Miniature Circuit Breakers up to 32A (4.5kA Only)



Miniature Circuit Breakers up to 63A



Miniature Circuit Breakers from 80A to 125A



MCB - BR6-U2/02 Wiring Diagram

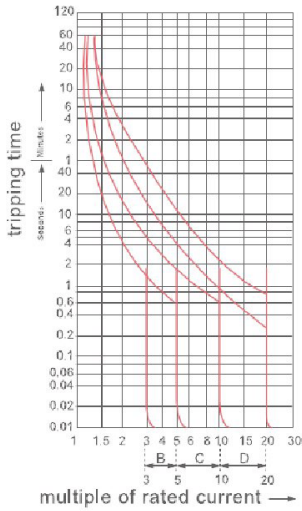


Miniature Circuit Breakers B4/BR6/B10



Technical Datasheet

B, C, D Tripping Curve



Power Loss (W)

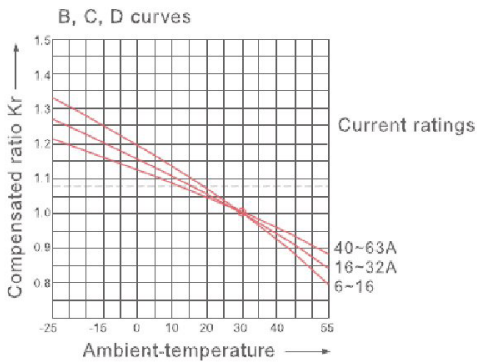
BR6 Models

	Number of Poles			
	1P	2P	3P	4P
1A	0.70	1.40	2.11	2.79
2A	1.25	2.63	3.90	4.82
4A	1.29	2.53	4.08	5.08
6A	0.92	1.84	2.70	3.84
10A	1.32	2.85	4.24	5.77
16A	2.23	4.62	7.03	9.05
20A	2.67	5.97	8.10	11.35
25A	2.9	5.71	10.27	12.27
32A	3.55	8.30	14.31	17.45
40A	5.39	12.07	18.31	25.2
50A	6.71	14.43	24.09	30.64
63A	7.51	12.88	24.54	33.21

B10B/C/D Models

	Number of Poles			
	1P	2P	3P	4P
1A	1.35	2.70	4.04	5.39
2A	1.71	3.42	5.12	6.83
3A	1.28	2.57	3.85	5.14
4A	1.48	2.96	4.44	5.93
6A	1.67	3.34	5.01	6.68
10A	1.33	2.66	3.99	5.32
16A	2.04	4.09	6.13	8.17
20A	2.16	4.32	6.48	8.64
25A	2.34	4.69	7.03	9.38
32A	3.25	6.49	9.74	12.98
40A	3.22	6.43	9.65	12.86
50A	3.35	6.70	10.05	13.40
63A	4.68	9.37	14.05	18.73
80A	10.00	20.00	30.00	40.00
100A	15.00	30.00	45.00	60.00
125A	19.00	38.00	57.00	76.00

Ambient temperature & Current rating curve



NOTE: These figures should be used for guidance only, and actual value will vary from device to device.

Residual Current Circuit Breakers B10R



The IMO range of Residual Current Circuit Breakers have been designed for protection of electrical installations against earth fault / leakage current and are manufactured in accordance with IEC 61008-1.

Options & Ordering Codes

B10	R	20	25	30	A	110
10kA Rated	B10					230VAC / 400VAC
RCCB Version	R					110 110VAC
Rated Current Amps						
1 pole + N (2 pole)		20				
3 pole + N (4 pole)		40				
					Type AC	
					Type A	
					S Type AC, Selective (0.1s)	
					SA Type A, Selective (0.1s)	
					A-SI Type A, Super-Immunist	
			30			30mA residual operating current
			100			100mA residual operating current
			300			300mA residual operating current



Specifications

In accordance with	IEC 61008-1
Certification	CE
Pole composition	1P+N, 3P+N
Rated current	16A, 25A, 32A, 40A, 63A, 80A, 100A, 125A
Residual current characteristics	AC, A
Calibration Temperature	+30°C
Rated frequency	50/60Hz
Rated voltage	110VAC/230VAC/400VAC
Rated residual operating current I _{Δn}	30mA, 100mA, 300mA
Max. Switching Time@ I _Δ	100ms
Residual tripping current range	0.5 I _{Δn} ~ 1 I _{Δn}
Rated conditional short circuit current	10kA
Electrical lifetime	> 4,000 cycles
Fastening torque	2.0Nm
Terminal capacity	35mm ² solid, 25mm ² stranded conductor
Mounting on	DIN Rail EN 60715 (EN 50022)
Protection degree	IP20
Energy Limiting Class	3
Operating temperature	-25°C - +55°C

Legend

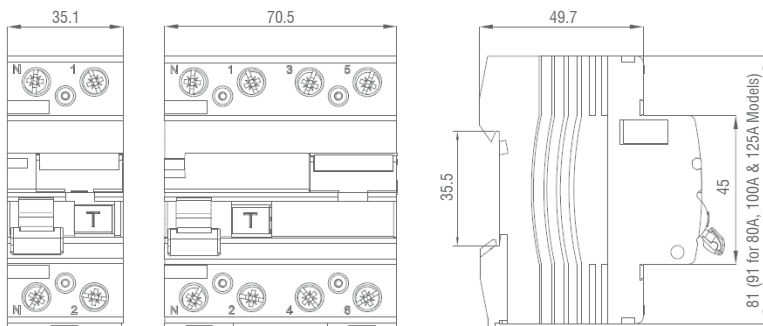
Type AC:
Tripping is ensured for sinusoidal, alternating currents.

Type A:
Tripping is ensured for sinusoidal, alternating residual currents as well as for pulsed DC residual currents.

Selective:
Total discrimination can be achieved using a non-selective residual current device placed downstream.

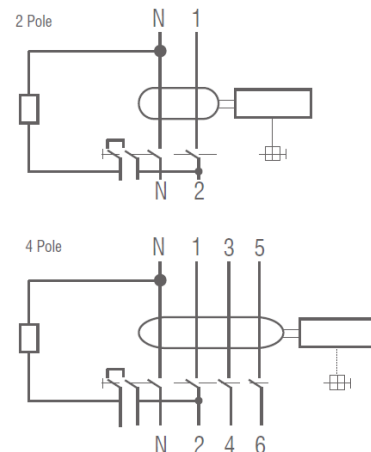
- “SI”:**
- Designed to prevent nuisance tripping when a non-dangerous high frequency residual current is presented.
 - High surge current compatibility small tripping delay.

Dimensions (mm)



NOTE: For accessories, please see B10 MCB Data

Wiring Diagram



Residual Current Circuit Breakers With Overload Protection

The IMO range of Residual Current-Circuit Breakers with Overload have been designed for protection of electrical installations against earth fault / leakage current, overload and short circuit and are manufactured in accordance with IEC 61009.

RCBO Features

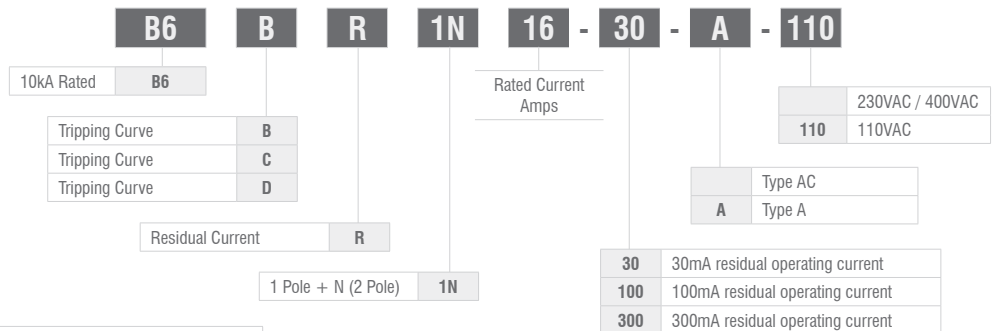
- Provides protection against earth fault / leakage current, overload, short circuit and function of isolation
- Elegant appearance; cover and handle in arc shape.
- Contact position indicating window; transparent cover to carry label
- High short circuit current withstand capacity
- Applicable to terminal and Pin/Fork type busbar connection
- Finger protected connection terminals
- Compatible with MCB accessories range
- Handle padlock device



Tripping characteristics in accordance with B, C and D type curves

- Curve B: 3-5 I_n
- Curve C: 5-10 I_n
- Curve D: 10-20 I_n

Options & Ordering Codes

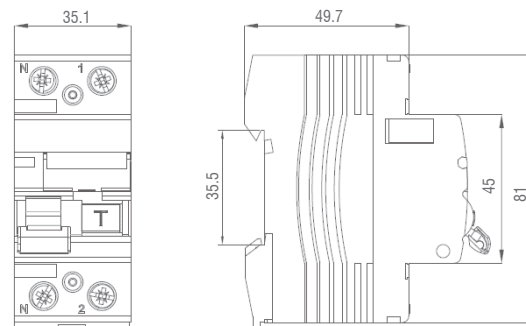


Specifications

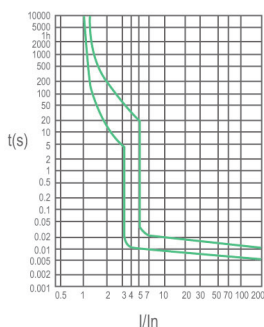
In accordance with:	IEC 61009
Certification:	CE, SEMKO, RCM
Pole composition:	1P+N
Residual current characteristics:	AC, A
Tripping Curve:	B, C, D
Calibration temperature:	+30°C
Rated current:	1A, 2A, 3A, 4A, 6A, 10A, 16A, 20A, 25A, 32A, 40A
Rated short circuit capacity:	10kA
Rated frequency:	50/60Hz
Rated voltage:	110VAC, 230VAC
Rated residual operating current $I_{\Delta n}$:	30mA, 100mA, 300mA
Residual tripping current range:	0.5 $I_{\Delta n}$ ~ 1 $I_{\Delta n}$
Electrical lifetime:	> 4,000 cycles
Fastening torque:	2.0Nm
Terminal capacity:	35mm ² solid, 25mm ² stranded conductor
Mounting on:	DIN rail EN 60715 (EN 50022)
Protection degree:	IP20
Energy Limiting Class:	3
Operating temperature range:	-25°C - +55°C

For Dimensions refer to RCCB Data.
For Tripping Curve refer to MCB.

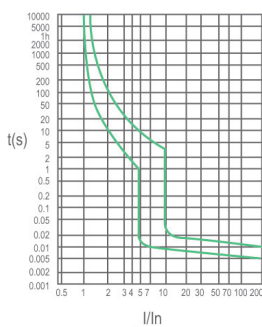
Dimensions (mm)



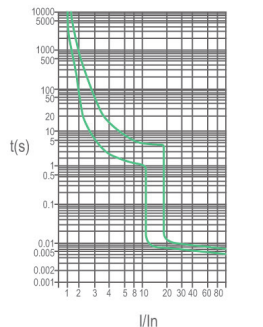
Tripping Curve B



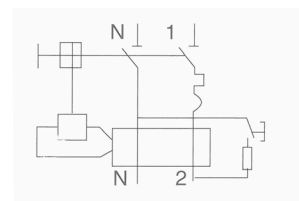
Tripping Curve C



Tripping Curve D



Wiring Diagram



NOTE: For accessories, please see B10 MCB Data

BIS Isolating Switches

The IMO range of isolating switch have been designed to isolate safely your electrical circuit from the main supply and are manufactured in accordance with IEC 60947-3.

- Capable of switch electric circuit with load
- Elegant appearance; cover and handle in arc shape
- Contact position indicating window; transparent cover to carry label
- Applicable to terminal and Pin/Fork type busbar connection
- Finger protected connection terminals
- Compatible with MCB accessories range
- Handle padlock device



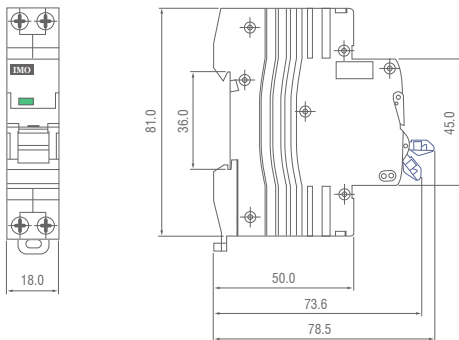
Options & Ordering Codes

Distribution board Isolating Switch	BIS			
		2	063A	
1 Pole	1		N32A	Compact Size, Blue Handle, 32A
2 Pole	2		063A	63 Amps
3 Pole	3		100C	100 Amps
4 Pole	4		125A	125 Amps
			250A	250 Amps

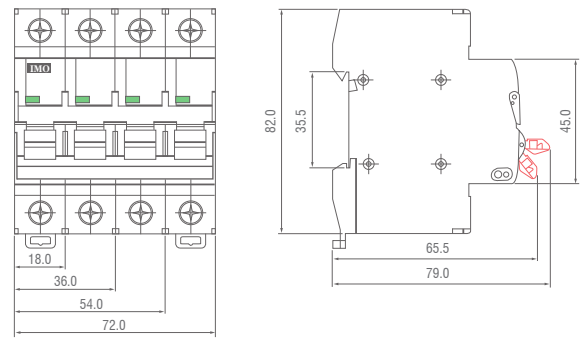
Specifications

In accordance with	IEC 60947-3
Certification	CE, SEMKO (63 and 125A only)
Pole composition	1P / 2P / 3P / 4P
Rated current	32A / 63A / 100A / 125A / 250A
Rated voltage	AC 230 / 400V
Rated frequency	50/60Hz
Rated short circuit capacity	6kA (3kA for 100A version)
Electrical lifetime	> 10,000 cycles
Fastening torque	2.0Nm
Terminal capacity	35mm ² solid, 25mm ² stranded conductor
Protection degree	IP20

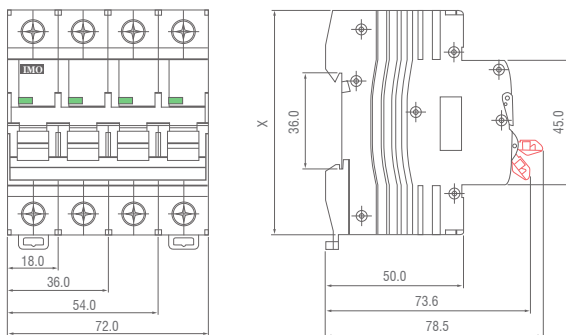
Dimensions (mm) for Compact 32A version



Dimensions (mm) for 100A version

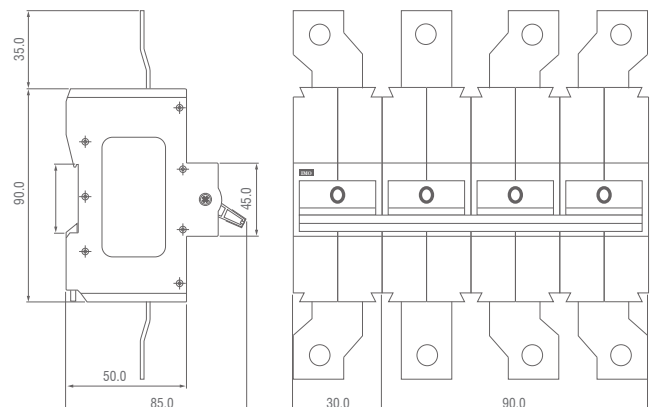


Dimensions (mm) for 63A & 125A version



Rating	X
63A	81mm
125A	90mm

Dimensions (mm) for 250A version



Residual Current Circuit Breakers With Overload Protection 1P+N Single Module

The IMO range of Residual Current-Circuit Breakers with Overload have been designed for protection of electrical installations against earth fault / leakage current, overload and short circuit and are manufactured in accordance with IEC 61009-1.

RCBO Features

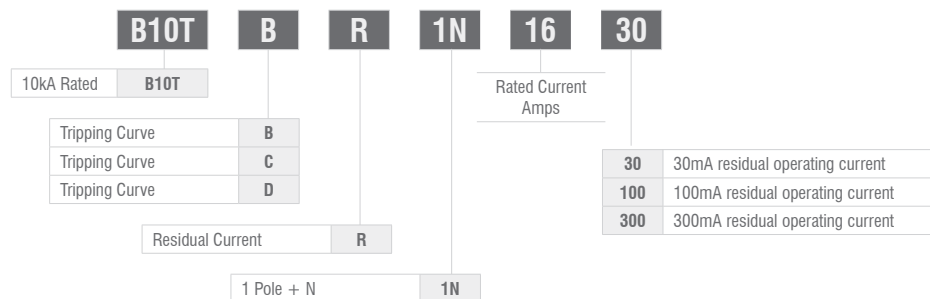
- Provides protection against earth fault / leakage current, overload, short circuit and function of isolation
- Elegant appearance; cover and handle in arc shape.
- Single width module RCBO, 119mm tall
- Contact position indicating window; transparent cover to carry label
- High short circuit current withstand capacity
- Applicable to terminal and Pin/Fork type busbar connection (line input only)
- Finger protected connection terminals
- Compatible with MCB accessories range
- Handle padlock device



Tripping characteristics in accordance with B, C and D type curves

- Curve B: 3-5 I_n
- Curve C: 5-10 I_n
- Curve D: 10-20 I_n

Options & Ordering Codes

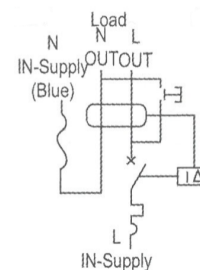


Specifications

In accordance with	IEC 61009-1
Certification	CE
Pole composition	1P+N
Residual current characteristics	AC
Tripping Curve	B, C, D
Rated current	1A, 2A, 3A, 4A, 6A, 10A, 16A, 20A, 25A, 32A
Rated short circuit capacity	10 kA
Calibration Temperature	+30°C
Rated frequency	50/60Hz
Rated voltage	230/400VAC
Rated residual operating current $I_{\Delta n}$	30mA, 100mA, 300mA
Residual tripping current range	0.5 $I_{\Delta n}$ ~ 1 $I_{\Delta n}$
Electrical lifetime	> 4,000 cycles
Fastening torque	2.0 Nm
Terminal capacity (Live input)	35mm ² solid or 25mm ² stranded
Terminal capacity (output)	10mm ² solid or 6mm ² stranded
Mounting on	DIN rail EN 60715 (EN 50022)
Protection degree	IP20
Energy Limiting Class	3
Operating temperature	-25°C - +55°C
Weight g/pc	178.0

Dimensions (mm) for 1P+N: 1 module (18W x 119H x 69D)
For Tripping Curve refer to MCB.

Wiring Diagram

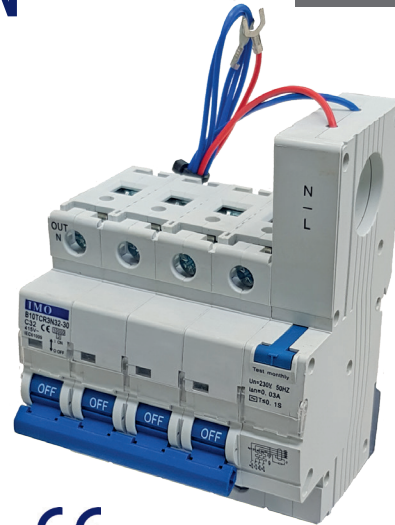


Residual Current Circuit Breakers With Overload Protection 3P+N

The IMO range of Residual Current-Circuit Breakers with Overload have been designed for protection of electrical installations against earth fault / leakage current, overload and short circuit and are manufactured in accordance with IEC 61009-1.

RCBO Features

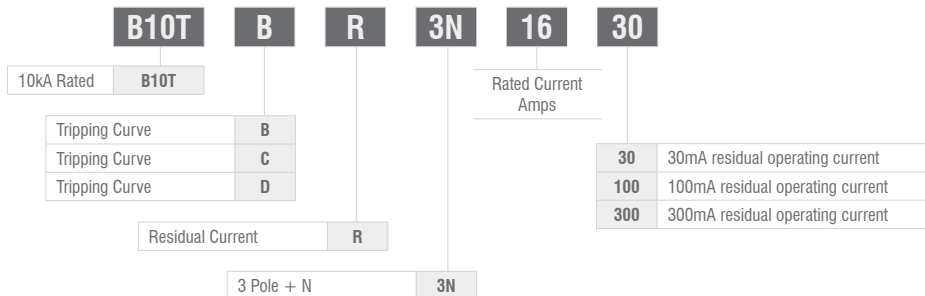
- Provides protection against earth fault / leakage current, overload, short circuit and function of isolation
- Elegant appearance; cover and handle in arc shape.
- 3P+N version, 5 module width RCBO, 119mm tall
- Contact position indicating window; transparent cover to carry label
- High short circuit current withstand capacity
- Applicable to terminal and Pin/Fork type busbar connection
- Finger protected connection terminals
- Compatible with MCB accessories range
- Handle padlock device



Tripping characteristics in accordance with B, C and D type curves

- Curve B: 3-5 I_n
- Curve C: 5-10 I_n
- Curve D: 10-20 I_n

Options & Ordering Codes



Specifications

In accordance with	IEC 61009-1
Certification	CE
Pole composition	3P+N
Residual current characteristics	AC
Tripping Curve	B, C, D
Rated current	1A, 2A, 3A, 4A, 6A, 10A, 16A, 20A, 25A, 32A, 40A, 50A, 63A
Rated short circuit capacity	10 kA
Calibration Temperature	+30°C
Rated frequency	50/60Hz
Rated voltage	230/400VAC
Rated residual operating current $I_{\Delta n}$	30mA, 100mA, 300mA
Residual tripping current range	0.5 $I_{\Delta n}$ ~ 1 $I_{\Delta n}$
Electrical lifetime	> 4,000 cycles
Fastening torque	2.0 Nm
Terminal capacity	35mm ² solid or 25mm ² stranded
Mounting on	DIN rail EN 60715 (EN 50022)
Protection degree	IP20
Energy Limiting Class	3
Operating temperature	-25°C - +55°C

Dimensions (mm) for 3P+N: 4 module (72W x 81H x 69D) + 1 module (18W x 130H x 69D).
For Tripping Curve refer to MCB.

Wiring Diagram

