Miniature Circuit Breakers B4/BR6/B10

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 indication
- Contact position indicating window; transparent cover to carry label
- High short circuit capacity
- Suitable for terminal and Pin or Fork type busbar connection
- IP20 Finger protected connection terminals
- Optional Handle padlock device: B10-LOCK

Tripping characteristics: available in B, C, and D curves

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

Options & Ordering Codes

B10	B	10	16A	L

MCB Series

MCB 4.5kA	**B4**
MCB 6kA (Curve D: 4.5kA)	**BR6**
MCB 10kA	**B10**

Tripping characteristic

B Curve	**B**
C Curve	**C**
D Curve	**D**

Pole Configuration

10	Single pole
1N	Single pole + Neutral
20	Two pole
30	Three pole
3N	Three pole + Neutral
40	Four pole

Rated Current Amps

L	Neutral on the left

Applies to units with neutral.

Specifications

In accordance with		IEC 60898-1
Certification		CE, SEMKO (only with B4 & BR6) Kema Keur (only with B10) RCM (AS/NZS 60898.1:2004)(B10:1,2 & 3 Pole; BR6 B & C Curve: 1,2,3 & 4 Pole)
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		35mm² solid, 25mm² stranded conductor (10mm² for 1P+N)
Mounting		DIN Rail EN 60715 (EN 50022)
Protection degree		IP20
Energy Limiting Class		3
Operating temperature		-30°C to 60°C

NOTE: 60VDC max only on B10

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Miniature Circuit Breakers B4/BR6/B10

Technical Datasheet

Accessories

Auxiliary Switch	B10-F3 (only for B10 MCB, B10R RCD & B6 RCBO)
	BR6-F3 (only for BR6) & B10-S3 (only for B10)
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: 2.5mm² 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-O2
Trips the attached unit in case of under / over voltage Rated Votlage 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	

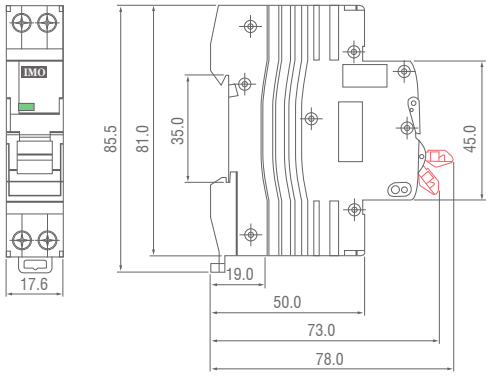
Busbars	
Description	**Ref.**
Busbar 1 Pole, 80A, Fork Type, 1M	BB80A1P-F
Busbar 3 Pole, 80A, Fork Type, 1M	BB80A3P-F
Busbar 3 Pole, 125A, Fork Type, 1M	BB125A3P-F
Busbar 1 Pole, 80A, Pin Type, 1M	BB80A1P-P
Busbar 3 Pole, 80A, Pin Type, 1M	BB80A3P-P
End Cap 1 Pole	BB1P-CAP
End Cap 3 Pole	BB3P-CAP

Terminal Adapter	BA1

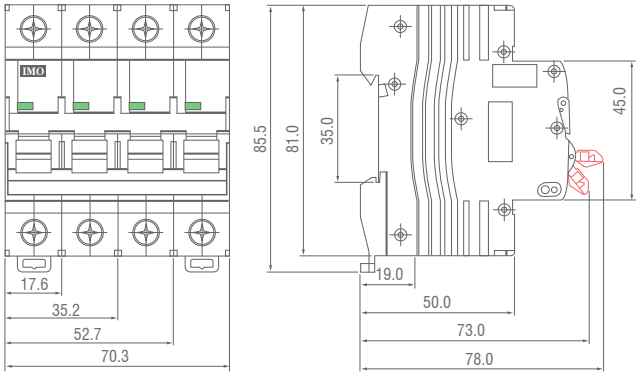
Locking Device	B10-LOCK
4mm padlock max diameter, padlock not included	

Dimensions (mm)

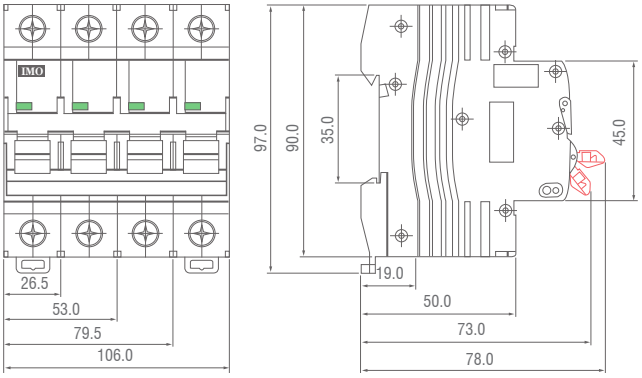
Miniature Circuit Breakers up to 32A (4.5kA Only)



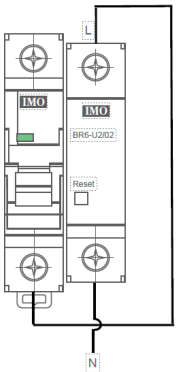
Miniature Circuit Breakers up to 63A



Miniature Circuit Breakers from 80A to 125A



MCB - BR6-U2/O2 Wiring Diagram

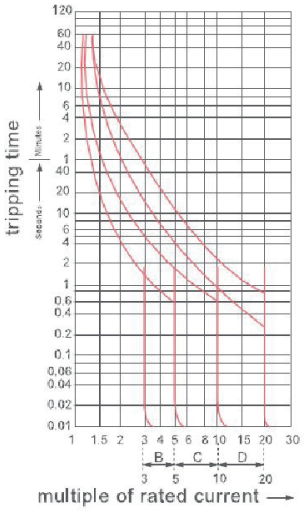


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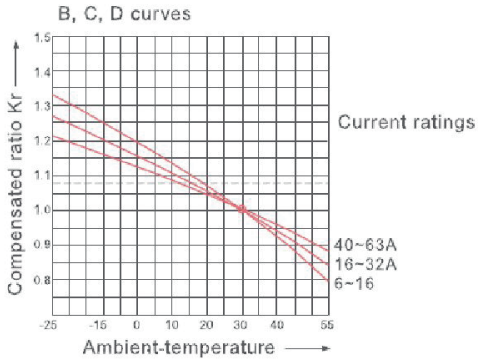
Miniature Circuit Breakers B4/BR6/B10

Technical Datasheet

B, C, D Tripping Curve



Ambient temperature & Current rating 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

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

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Residual Current Circuit Breakers
B10R

Technical Datasheet

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

RCCB Version	R

1 pole + N (2 pole)	20
3 pole + N (4 pole)	40

Rated Current Amps: 16-125A

	230VAC / 400VAC
110	110VAC

	Type AC
A	Type A
S	Type AC, Time Delay
SA	Type A, Time Delay

30	30mA residual tripping current
100	30mA residual tripping current
300	30mA residual tripping current

Legend

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

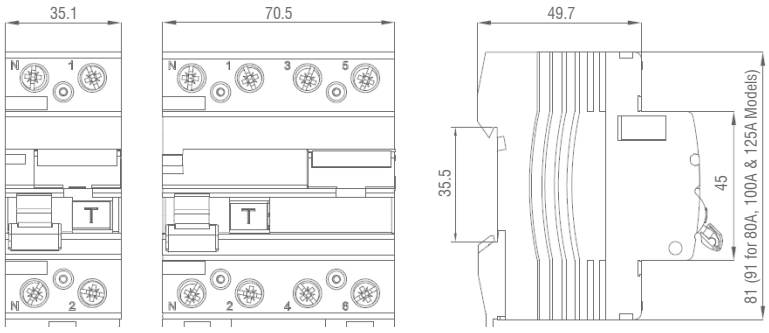
Type A:
Tripping is ensured for sinusoidal, alternating residual currents as well as for pulsed DC residual currents.

Time Delay:
The Type S RCD is a sinusoidal residual current device incorporating a time delay.

Specifications

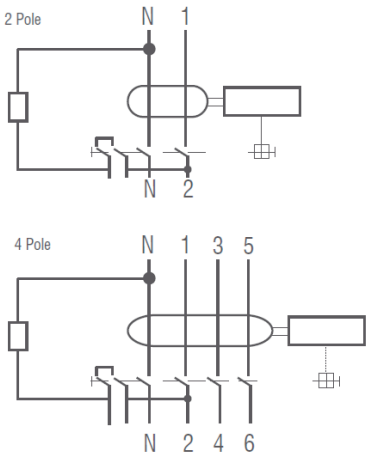
In accordance with	IEC 61008-1
Certification	CE
Pole composition	1P+N, 3P+N
Rated current	16A, 25A, 32A, 40A, 63A, 80A, 100A, 125A
Residual current characteristics	AC, A
Calibration Temperature	+30°C
Rated frequency	50/60Hz
Rated voltage	110VAC/230VAC/400VAC
Rated residual operating current IΔn	30mA, 100mA, 300mA
Max. Switching Time@ IΔ	100ms
Residual tripping current range	0.5 IΔn ~ 1 IΔn
Rated conditional short circuit current	10kA
Electrical lifetime	> 4,000 cycles
Fastening torque	2.0Nm
Terminal capacity	35mm² solid, 25mm² stranded conductor
Mounting on	DIN Rail EN 60715 (EN 50022)
Protection degree	IP20
Energy Limiting Class	3
Operating temperature	-30°C to 60°C

Dimensions (mm)



NOTE: For accessories, please see B10 MCB Data

Wiring Diagram



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Residual Current Circuit Breakers With Overload Protection

IMO

Technical Datasheet

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
- Contact position indicating window; transparent cover to carry label
- High short circuit current withstand capacity
- Suitable for terminal and Pin or Fork type busbar connection
- IP20 Finger protected connection terminals
- Compatible with MCB accessories range
- Optional handle padlock device: B10-LOCK

Tripping characteristics: available in B, C, and D curves

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

Options & Ordering Codes

B6 B R 1N 16 - 30 - A - 110

10kA Rated	B6

Tripping Curve	B
Tripping Curve	C
Tripping Curve	D

Residual Current	R

1 Pole + N (2 Pole)	1N

Rated Current Amps

1-40A

30	30mA residual tripping current
100	100mA residual tripping current
300	300mA residual tripping current

	Type AC
A	Type A

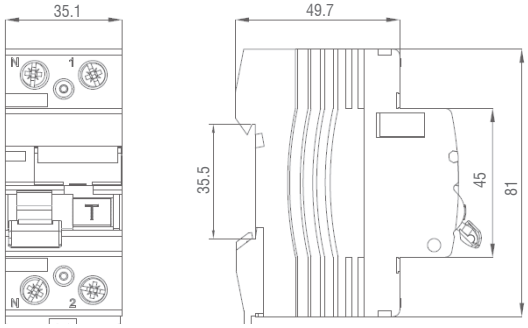
	230VAC / 400VAC
110	110VAC

Specifications

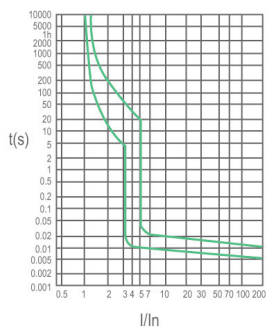
In accordance with:	IEC 61009
Certification:	CE, SEMKO, RCM
Pole composition:	1P+N
Residual current characteristics:	AC, A
Tripping Curve:	B, C, D
Calibration temperature:	+30°C
Rated current :	1A, 2A, 3A, 4A, 6A, 10A, 16A, 20A, 25A, 32A, 40A
Rated short circuit capacity :	10kA
Rated frequency:	50/60Hz
Rated voltage:	110VAC, 230VAC
Rated residual operating current IΔn:	30mA, 100mA, 300mA
Residual tripping current range:	0.5 IΔn ~ 1 IΔn
Electrical lifetime	> 4,000 cycles
Fastening torque:	2.0Nm
Terminal capacity:	35mm² solid, 25mm² stranded conductor
Mounting on	DIN rail EN 60715 (EN 50022)
Protection degree:	IP20
Energy Limiting Class:	3
Operating temperature range:	-30°C to 60°C

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

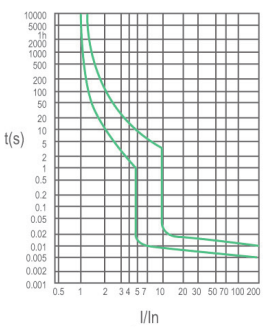
Dimensions (mm)



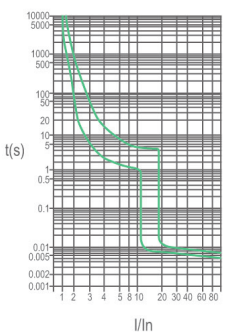
Tripping Curve B



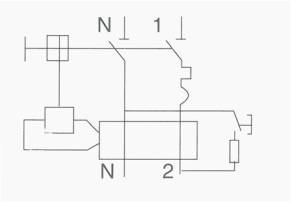
Tripping Curve C



Tripping Curve D



Wiring Diagram



NOTE: For accessories, please see B10 MCB Data

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BIS Isolating Switches

IMO

Technical Datasheet

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.

- On-load isolator
- Capable of switch electric circuit with load
- Contact position indicating window; transparent cover to carry label
- Suitable for terminal and Pin or Fork type busbar connection
- IP20 Finger protected connection terminals
- Compatible with MCB accessories range
- Optional handle padlock device: B10-LOCK



CE

Options & Ordering Codes

BIS **2** **063A**

Distribution board Isolating Switch	**BIS**

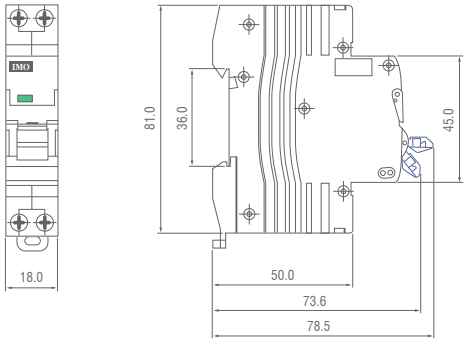
1 Pole	**1**
2 Pole	**2**
3 Pole	**3**
4 Pole	**4**

N32A	Compact Size, Blue Handle, 32A
063A	63 Amps
100C	100 Amps
125A	125 Amps
250A	250 Amps (Supplied with terminal separators)

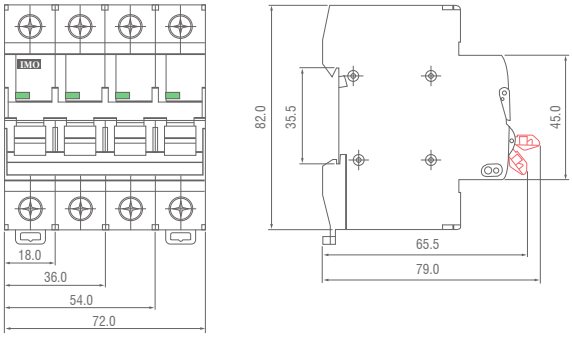
Specifications

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 operations
Fastening torque	2.0Nm
Terminal capacity	35mm² solid, 25mm² stranded conductor
Protection degree	IP20
Operating temperature range:	-30°C to 60°C

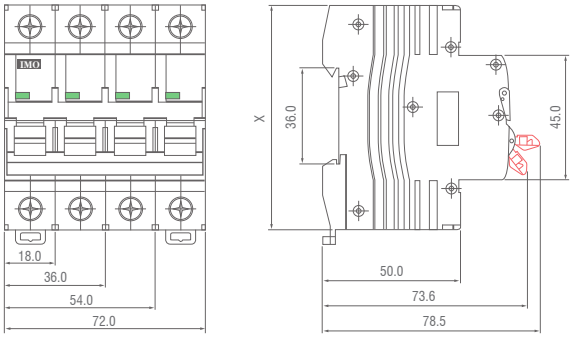
Dimensions (mm) for Compact 32A version



Dimensions (mm) for 100A version

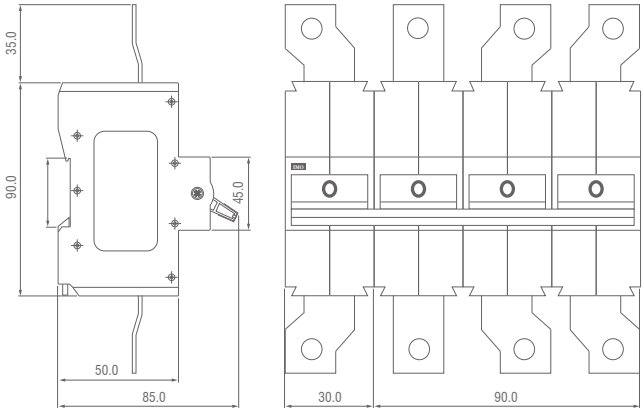


Dimensions (mm) for 63A & 125A version



Rating	X
63A	81mm
125A	90mm

Dimensions (mm) for 250A version



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

Technical Datasheet



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
- Single width module RCBO, 119mm tall
- Contact position indicating window; transparent cover to carry label
- High short circuit current withstand capacity
- Suitable for terminal and Pin or Fork type busbar connection
- Finger protected connection terminals
- Compatible with MCB accessories range
- Optional handle padlock device: B10-LOCK

Tripping characteristics: available in B, C, and D curves

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

Options & Ordering Codes

B10T	B	R	1N	16	30	-	A

B10T	
10kA Rated	B10T

B	
B Curve	B
C Curve	C
D Curve	D

R	
Residual Current	R

1N	
1 Pole + N	1N

16	
Rated Current Amps	1-32A

30	
30	30mA residual tripping current
100	100mA residual tripping current
300	300mA residual tripping current

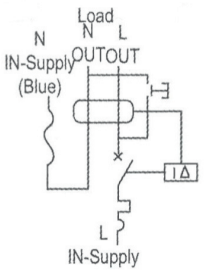
A	
	Type AC
A	Type A

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 IΔn	30mA, 100mA, 300mA
Residual tripping current range	0.5 IΔn ~ 1 IΔn
Electrical lifetime	> 4,000 cycles
Fastening torque	2.0 Nm
Terminal capacity (Live input)	35mm² solid or 25mm² stranded
Terminal capacity (ouput)	10mm² solid or 6mm² stranded
Mounting on	DIN rail EN 60715 (EN 50022)
Protection degree	IP20
Energy Limiting Class	3
Operating temperature	-30°C to 60°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

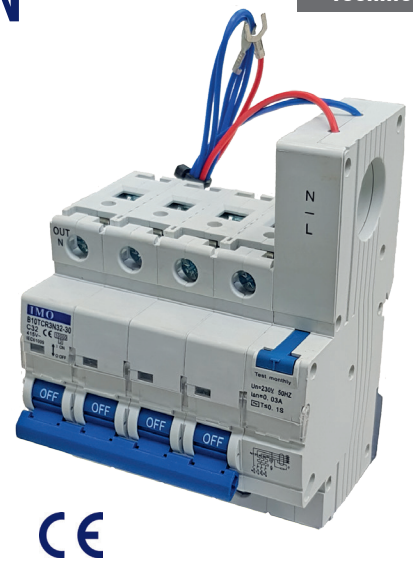


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Residual Current Circuit Breakers With Overload Protection 3P+N

Technical Datasheet

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
- 3P + N Version, 5 module width RCBO, 119mm tall
- Contact position indicating window; transparent cover to carry label
- High short circuit capacity
- Suitable for terminal and Pin or Fork type busbar connection
- IP20 Finger protected connection terminals
- Compatible with MCB accessories range
- Optional handle padlock device: B10-LOCK

Tripping characteristics: avaialable in B, C, and D curves

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

Options & Ordering Codes

B10T	B	R	3N	16	30

10kA Rated	**B10T**

B Curve	**B**
C Curve	**C**
D Curve	**D**

Residual Current	**R**

3 Pole + N	**3N**

Rated Current Amps

1-63A

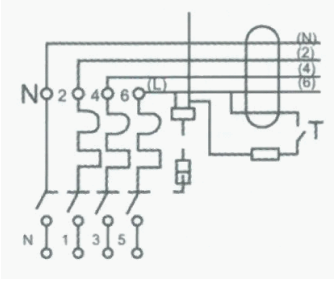
30	30mA residual operating current
100	100mA residual operating current
300	300mA residual operating current

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 IΔn	30mA, 100mA, 300mA
Residual tripping current range	0.5 IΔn ~ 1 IΔn
Electrical lifetime	> 4,000 cycles
Fastening torque	2.0 Nm
Terminal capacity	35mm² solid or 25mm² stranded
Mounting on	DIN rail EN 60715 (EN 50022)
Protection degree	IP20
Energy Limiting Class	3
Operating temperature	-30°C to 60°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



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Temperature Derating Tables

IMO

Technical Datasheet

The Temperature Derating section of the IMO circuit protection device datasheet provides essential guidance on how the device's current-carrying capacity diminishes with rising ambient temperatures. Specifically, for devices ranging from 1A to 125A, this section includes comprehensive derating tables that outline the necessary adjustments to ensure optimal performance and safety. With an optimum temperature of 30°C, the temperature derating table are as follows;

IMO circuit protection devices: 1A to 125A

In (A)	-30°C	-20°C	-10°C	-0°C	10°C	20°C	30°C	40°C	50°C	60°C
1	1.1	1.1	1.1	1.0	1.0	1.0	1	0.9	0.9	0.8
2	2.3	2.2	2.1	2.1	2.0	2.0	2	1.8	1.8	1.7
3	3.4	3.3	3.2	3.1	3.0	2.9	3	2.7	2.6	2.5
4	4.5	4.4	4.3	4.2	4.1	3.9	4	3.7	3.5	3.4
6	6.8	6.6	6.4	6.3	6.1	5.9	6	5.5	5.3	5.1
10	11.3	11.0	10.7	10.4	10.1	9.8	10	9.2	8.8	8.4
16	18.1	17.7	17.2	16.7	16.2	15.7	16	14.7	14.1	13.5
20	22.6	22.1	21.5	20.9	20.3	19.7	20	18.3	17.6	16.9
25	28.3	27.6	26.9	26.1	25.4	24.6	25	22.9	22.0	21.1
32	36.2	35.3	34.4	33.4	32.5	31.4	32	29.3	28.2	27.0
40	45.3	44.1	43.0	41.8	40.6	39.3	40	36.6	35.2	33.8
50	56.6	55.2	53.7	52.2	50.7	49.1	50	45.8	44.1	42.2
63	71.3	69.5	67.7	65.8	63.9	61.9	63	57.7	55.5	53.2
80	90.6	88.3	86.0	83.6	81.1	78.6	80	73.3	70.5	67.6
100	113.2	110.4	107.5	104.5	101.4	98.3	100	91.6	88.1	84.4
125	141.5	138.0	134.3	130.6	126.8	122.8	125	114.5	110.1	105.6

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