

RCCBs Ex9L-H, 10 kA



- Residual Current Circuit Breakers according to EN 61008-1
- Cond. rated short circuit strength I_{nc} 10 kA
- 2 and 4-pole versions
- Rated residual current 10, 30, 100, 300 and 500 mA
- Rated current up to 63 A
- Rated operational voltage 230/400 V AC
- AC, A, S and G types
- Indication of electrical tripping
- Suitable for applications from -25°C to 60°C

Ex9L-H residual current circuit breakers are suitable for domestic as well as industrial applications. They are based on permanent magnet principle. It brings the advantage of voltage independent function. Adequate voltage is only necessary when testing of the RCCB with the test button. Magnetic RCCBs should be tested regularly with a period of one month.

Type Key

Ex9	L	-H	2P	63 A	A	30mA	S
↓	↓	↓	↓	↓	↓	↓	↓
Product family	Product	Conditional short circuit strength	Poles	Rated current	Sensitivity to type of current	Rated residual current	Time delay (insensitivity)
Ex9	L: RCCB	-H : 10 kA	2P 4P	16 A 25 A 40 A 63 A	_ : AC A: A	10 mA 30 mA 100 mA 300 mA 500 mA	_ : 0 ms G : 10-300 ms S : 40-500 ms

Certification marks



RCCBs Ex9L-N, 6 kA

G type, 2-pole

- G type of residual current circuit breaker based on AC type sensitive on residual AC current
- High reliability against unwanted tripping
- Compulsory for any circuit where personal injury or damage to property may occur in case of unwanted tripping
- With time delay (insensitivity) 10 - 300 ms
- Surge current-proof 3000 A
- 30 mA version suitable for protection of people in case of direct and indirect contact with live parts and exposed conductive part during a fault, respectively



Rated current	Rated residual current	Poles	Article No.	Type	Packing
16 A	30 mA	2	108412	Ex9L-N 2P 16A 30mA G	1/81
25 A	30 mA	2	108413	Ex9L-N 2P 25A 30mA G	1/81
40 A	30 mA	2	108414	Ex9L-N 2P 40A 30mA G	1/81
63 A	30 mA	2	108415	Ex9L-N 2P 63A 30mA G	1/81
16 A	100 mA	2	108416	Ex9L-N 2P 16A 100mA G	1/81
25 A	100 mA	2	108417	Ex9L-N 2P 25A 100mA G	1/81
40 A	100 mA	2	108418	Ex9L-N 2P 40A 100mA G	1/81
63 A	100 mA	2	108419	Ex9L-N 2P 63A 100mA G	1/81
16 A	300 mA	2	108420	Ex9L-N 2P 16A 300mA G	1/81
25 A	300 mA	2	108421	Ex9L-N 2P 25A 300mA G	1/81
40 A	300 mA	2	108422	Ex9L-N 2P 40A 300mA G	1/81
63 A	300 mA	2	108423	Ex9L-N 2P 63A 300mA G	1/81
16 A	500 mA	2	108424	Ex9L-N 2P 16A 500mA G	1/81
25 A	500 mA	2	108425	Ex9L-N 2P 25A 500mA G	1/81
40 A	500 mA	2	108426	Ex9L-N 2P 40A 500mA G	1/81
63 A	500 mA	2	108427	Ex9L-N 2P 63A 500mA G	1/81

G type, 4-pole



Rated current	Rated residual current	Poles	Article No.	Type	Packing
16 A	30 mA	4	108428	Ex9L-N 4P 16A 30mA G	1/45
25 A	30 mA	4	108429	Ex9L-N 4P 25A 30mA G	1/45
40 A	30 mA	4	108430	Ex9L-N 4P 40A 30mA G	1/45
63 A	30 mA	4	108431	Ex9L-N 4P 63A 30mA G	1/45
16 A	100 mA	4	108432	Ex9L-N 4P 16A 100mA G	1/45
25 A	100 mA	4	108433	Ex9L-N 4P 25A 100mA G	1/45
40 A	100 mA	4	108434	Ex9L-N 4P 40A 100mA G	1/45
63 A	100 mA	4	108435	Ex9L-N 4P 63A 100mA G	1/45
16 A	300 mA	4	108436	Ex9L-N 4P 16A 300mA G	1/45
25 A	300 mA	4	108437	Ex9L-N 4P 25A 300mA G	1/45
40 A	300 mA	4	108438	Ex9L-N 4P 40A 300mA G	1/45
63 A	300 mA	4	108439	Ex9L-N 4P 63A 300mA G	1/45
16 A	500 mA	4	108440	Ex9L-N 4P 16A 500mA G	1/45
25 A	500 mA	4	108441	Ex9L-N 4P 25A 500mA G	1/45
40 A	500 mA	4	108442	Ex9L-N 4P 40A 500mA G	1/45
63 A	500 mA	4	108443	Ex9L-N 4P 63A 500mA G	1/45

Technical Data Ex9L-H

Residual Current Circuit Breakers, 10 kA

General parameters

Permanent magnet principle - voltage independent tripping function
Suitable for household as well as industrial applications
AC, A, S and G types
Magnetic RCCBs should be tested regularly with a period of one month. This is a responsibility of the user of an installation given by law
In case all wires are not connected at 4-pole RCCB, it is necessary to ensure that circuit of the test button T is supplied with appropriate voltage (by means of mutual connection of respective terminals of the RCCB, see wiring diagram)
Indication of electrical tripping

Electrical parameters

Tested according to	EN 61008
Rated operational voltage U_e	230/400 V AC
Min. voltage for RCD function	voltage independent
Voltage range of the test button T	150 — 254 V AC (2-pole) 150 — 440 V AC (4-pole)
Rated frequency f	50/60 Hz
Conditional short circuit strength I_{nc}	10 kA
Rated current I_n	16, 25, 40, 63 A
Rated residual current $I_{\Delta n}$	10, 30, 100, 300, 500 mA
Sensitivity to residual current	AC type - AC residual current A type - residual AC and pulsating DC current
Time characteristic	AC, A - undelayed type G - delay (insensitivity) 10 - 300 ms S - delay (insensitivity) 130 - 500 ms
Rated impulse withstand voltage U_{imp}	6 kV
Rated insulation voltage U_i	500 V
Surge current proof	3000 A
Mechanical service life	20 000 operation cycles
Electrical service life	4 000 operation cycles
Back-up fuse for overload	
$I_n = 16$ A	max. 25 A gG
$I_n = 25$ A	max. 25 A gG
$I_n = 40$ A	max. 32 A gG
$I_n = 63$ A	max. 50 A gG
Back-up fuse for short circuit	
$I_n = 16$ A	max. 63 A gG
$I_n = 25$ A	max. 63 A gG
$I_n = 40$ A	max. 63 A gG
$I_n = 63$ A	max. 63 A gG
Rated making capacity I_m (rated residual making capacity $I_{\Delta m}$)	
$I_n = 16$ A	500 A
$I_n = 25$ A	500 A
$I_n = 40$ A	500 A
$I_n = 63$ A	630 A
Line voltage connection	arbitrary above or below

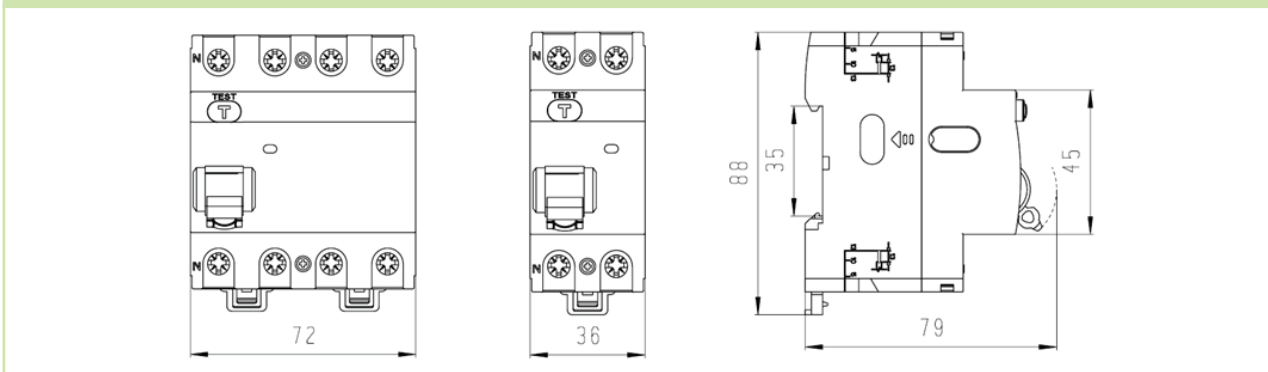
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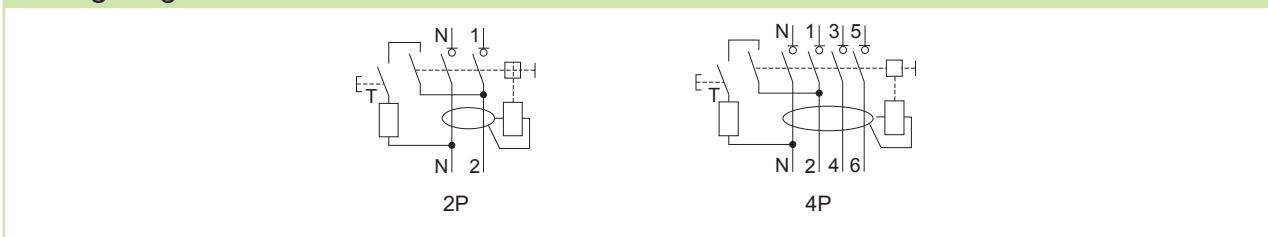
Mechanical parameters

Device width	36 mm (2-pole), 72 mm (4-pole)
Device height	85 mm including rail clip
Frame size	45 mm
Mounting	easy fastening onto 35 mm device rail (DIN)
Degree of protection	IP20
Terminals	combined lift + open mouthed
Terminal capacity	1 — 25 mm ²
Fastening torque of terminals	1.5 — 2.5 Nm
Busbar thickness	0.8 — 2 mm
Ambient temperature	-25 — +60 °C
Altitude	≤ 2000 m
Relative humidity	≤ 95 %
Resistance to humidity and heat	class 2
Pollution degree	2
Installation class	III
Weight	0.22 kg (2-pole), 0.4 kg (4-pole)

Dimensions



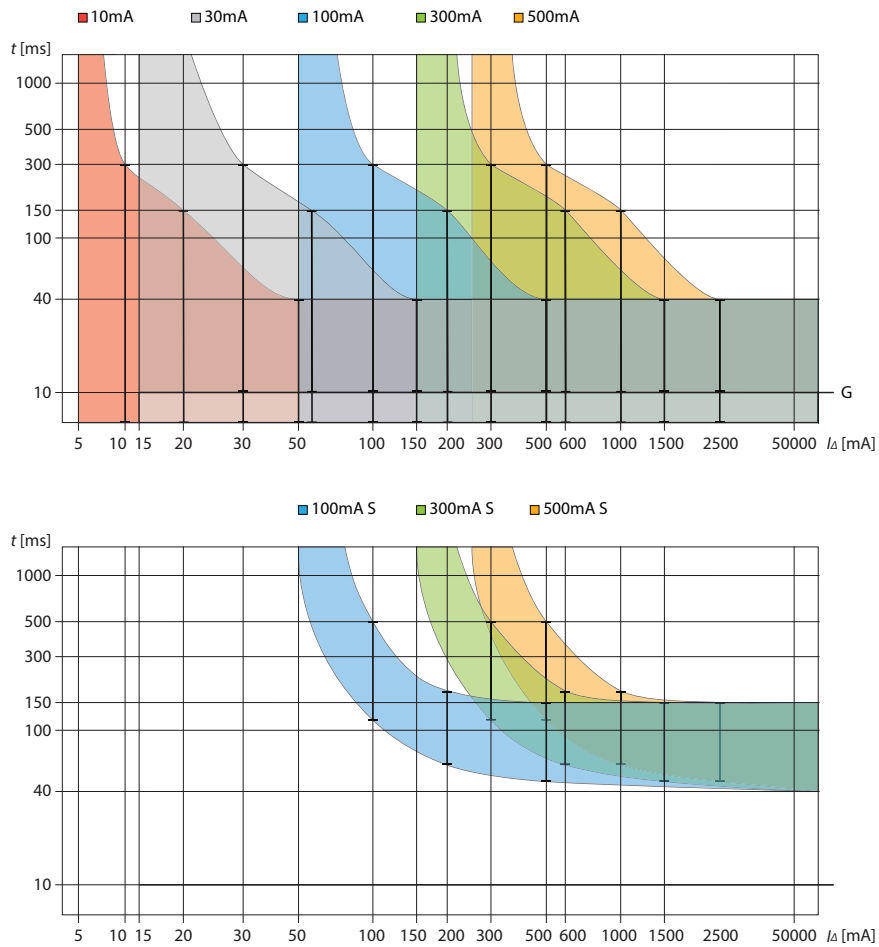
Wiring diagrams



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Residual Current Circuit Breakers, 10 kA

Tripping characteristics



Power loss

I_n	I_{Δ}	2P	4P
16 A	10 mA	1.8 W	3.8 W
	30 mA	1.8 W	3.8 W
	100 mA	1.8 W	3.8 W
	300 mA	1.8 W	3.8 W
	500 mA	1.8 W	3.8 W
25 A	10 mA	3.4 W	7.2 W
	30 mA	3.4 W	7.2 W
	100 mA	3.4 W	7.2 W
	300 mA	3.4 W	7.2 W
	500 mA	3.4 W	7.2 W
40 A	30 mA	7.2 W	15.3 W
	100 mA	7.2 W	15.3 W
	300 mA	7.2 W	15.3 W
	500 mA	7.2 W	15.3 W
63 A	30 mA	15 W	24 W
	100 mA	15 W	24 W
	300 mA	15 W	24 W
	500 mA	15 W	24 W

Technical Data Ex9L-N

Residual Current Circuit Breakers, 6 kA

General parameters

Permanent magnet principle - Voltage independent tripping function
Suitable for household as well as industrial applications
AC, A, S and G type
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Indication of electrical tripping

Electrical parameters

Tested according to	EN 61008
Rated op. voltage U_e	240/415 V AC
Min. voltage for RCD function	voltage independent
Voltage range of the test button T	150 — 254 V AC (2-pole), 150 — 440 V AC (4-pole)
Rated frequency f	50 Hz
Conditional short circuit strength I_{nc}	6 kA
Rated current I_n	16, 25, 40, 63 A
Rated residual current $I_{\Delta n}$	10, 30, 100, 300, 500 mA
Sensitivity to residual current	AC type - AC residual current A type - residual AC and pulsating DC current
Time characteristic	AC, A - undelayed type G - delay (insensitivity) 10 - 300 ms S - delay (insensitivity) 130 - 500 ms
Rated impulse withstand voltage U_{imp}	6 kV
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Surge current proof	3000 A
Mechanical service life	20 000 operation cycles
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$I_n = 16$ A	max. 25 A gG
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$I_n = 63$ A	max. 50 A gG
Back-up fuse for short circuit	
$I_n = 16$ A	max. 63 A gG
$I_n = 25$ A	max. 63 A gG
$I_n = 40$ A	max. 63 A gG
$I_n = 63$ A	max. 63 A gG
Rated making capacity I_m (rated residual making capacity $I_{\Delta m}$)	
$I_n = 16$ A	500 A
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Line voltage connection	arbitrary above or below

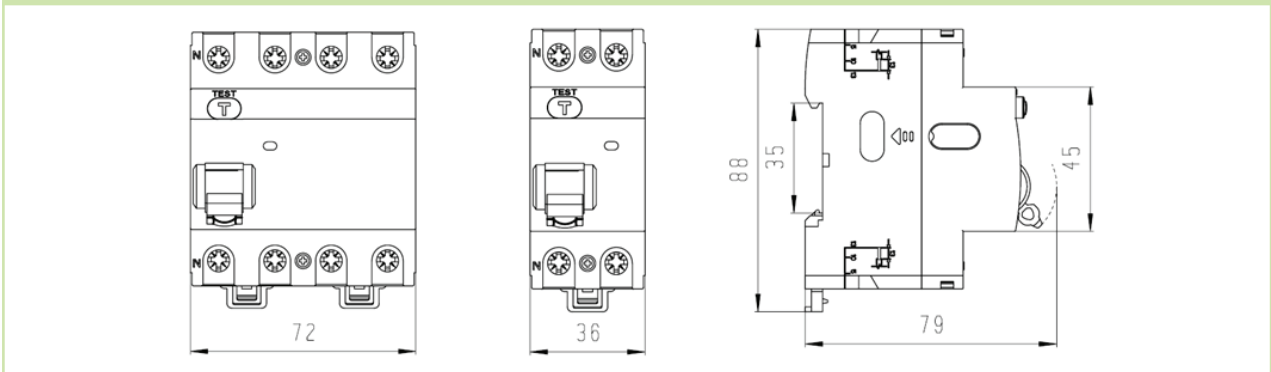
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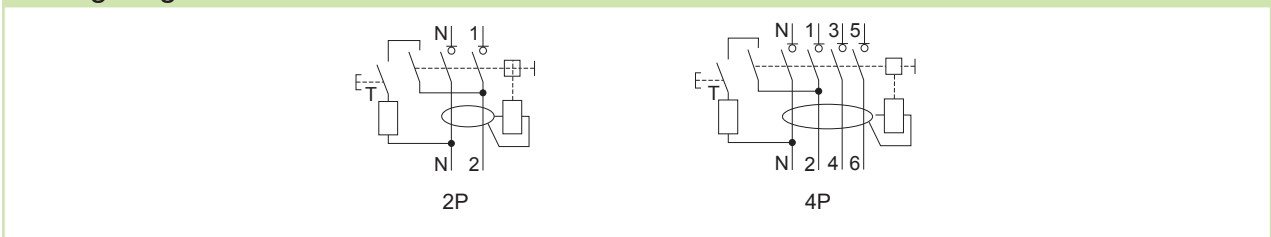
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Installation class	III
Weight	0.22 kg (2-pole), 0.4 kg (4-pole)

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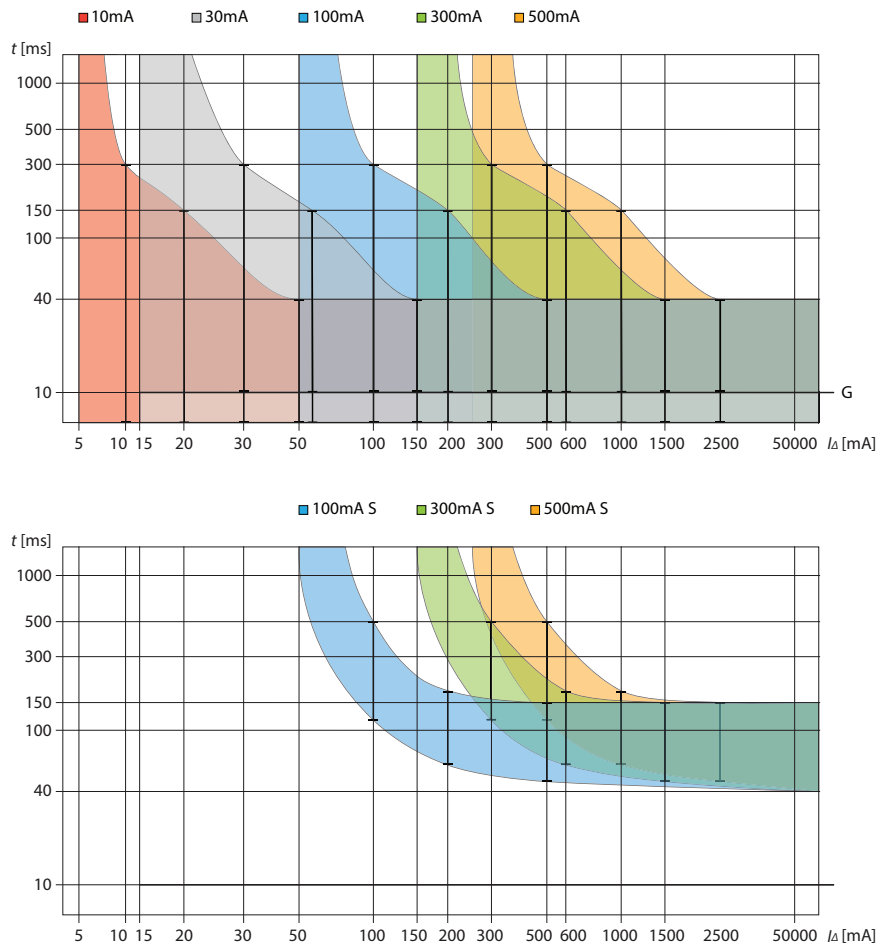
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	500 mA	3.4 W	7.2 W
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	100 mA	7.2 W	15.3 W
	300 mA	7.2 W	15.3 W
	500 mA	7.2 W	15.3 W
63 A	30 mA	15 W	24 W
	100 mA	15 W	24 W
	300 mA	15 W	24 W
	500 mA	15 W	24 W