



NL1 Residual Current Operated Circuit Breaker without over-current protection (Magnetic)

1. General

1.1 Application:

For protection against risk of fire due to live to earth fault where fault current is insufficient to cause over-current protection device to operate.

For protection against risk of shock from indirect contact with equipment suffering a live to earth fault.

For protection against shock in potentially hazardous environment. As supplementary protection against shock from directly touching 'Live' parts.

Note: an RCCB must not be used as the sole means of protection against touching live parts.

1.2 General rules for choosing RCCB:

a. Rated residual operating current:

10mA – to give a high degree of protection against electric shock in a hazardous environment situation where supplementary protection against shock from accidental direct contact is required.

30mA – to give a high degree of protection against electric shock in a situation where supplementary protection against shock from accidental direct contact is required when it must be able to trip within 40 milliseconds when a fault current of 150mA is detected.

1.2 General rules for choosing RCCB:

a. Rated residual operating current:

10mA – to give a high degree of protection against electric shock in a hazardous environment situation where supplementary protection against shock from accidental direct contact is required.

30mA – to give a high degree of protection against electric shock in a situation where supplementary protection against shock from accidental direct contact is required when it must be able to trip within 40 milliseconds when a fault current of 150mA is detected.

100mA – to give a degree of protection against electric shock due to indirect contact situation.

300mA – to give overall protection against risk of fire from electrical faults in wiring etc, only where sufficient current (typically less than 500mA) may cause incandescence of metal parts in suitable circumstances and in consideration that installed over current devices would require far in excess of 300mA to operate.

b. Tripping class

AC class – Tripping is ensured for sinusoidal, alternating currents, whether they be quickly applied or slowly increase.

A class – Tripping is ensured for sinusoidal, alternating residual currents as well as for pulsed DC residual currents, whether they be quickly applied or slowly increase.

S class– Be used as upstream group switch for selective tripping contrary to a downstream standard RCCB.

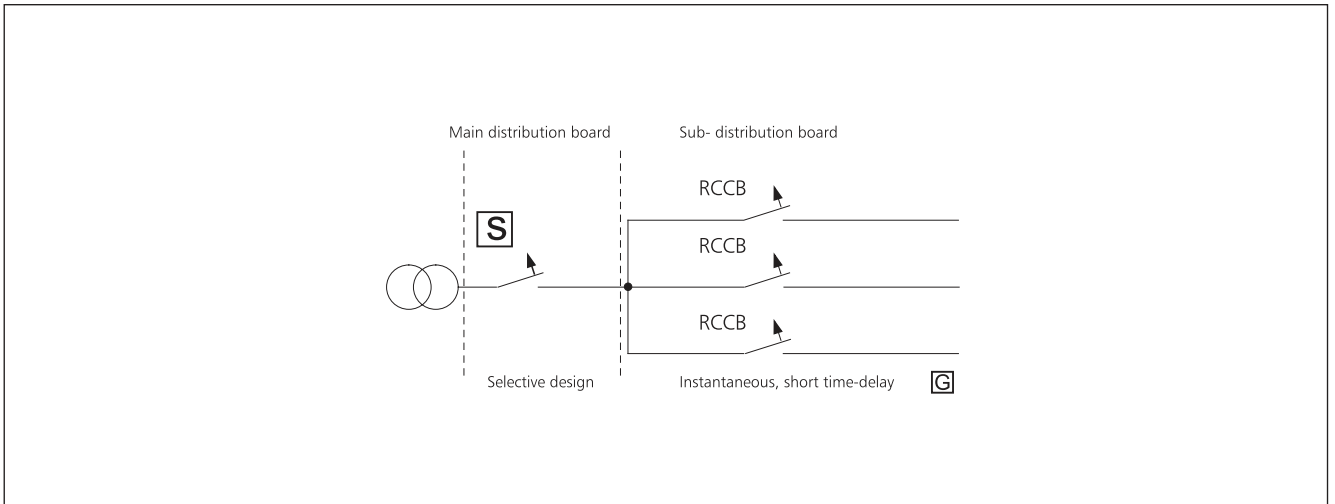
c. Residual current protective devices normally has an instantaneous tripping operation. This means that a series connection of this type of residual current protective devices does not provide selective tripping in the event of a fault. In order to achieve selectivity for a series connection of residual current protective devices, both the tripping time and the rated residual current of series-connected devices must be time graded. Selective residual current protective devices has a tripping delay.

The table below shows the time grading options available for residual current protective devices for selective tripping in series connection with devices without time delay and with short-time delay.

1.3 Detailed certificates information,

please refer to Certificates Table on P151.

CE	EU	
N	Spain	
S	Sweden	
FI	Finland	
	Czech	
	Ukraine	
	Russia	
RCC	South Africa	



2. Ordering Information

$I\Delta c=6000A$

★ NL1, 2P



In (A)	$I\Delta n$ (mA)	CTN	Order Code	
			Standard	RoHS
25	30	90	972165	972174
25	100	90	972166	972175
25	300	90	972167	972176
40	30	90	972168	972177
40	100	90	972169	972178
40	300	90	972170	972179
63	30	90	972171	972180
63	100	90	972172	972181
63	300	90	972173	972182

$I\Delta c=10000A$

★ NL1, 2P



In (A)	$I\Delta n$ (mA)	CTN	Order Code	
			Standard	RoHS
25	30	90	984889	984904
25	100	90	984890	984905
25	300	90	984891	984906
40	30	90	984892	984907
40	100	90	984893	984908
40	300	90	984894	984909
63	30	90	984895	984910
63	100	90	984896	984911
63	300	90	984897	984912

$I\Delta c=6000A$

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In (A)	$I\Delta n$ (mA)	CTN	Order Code	
			Standard	RoHS
25	30	45	972183	972192
25	100	45	972184	972193
25	300	45	972185	972194
40	30	45	972186	972195
40	100	45	972187	972196
40	300	45	972188	972197
63	30	45	972189	972198
63	100	45	972190	972199
63	300	45	972191	972200

$I\Delta c=10000A$

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In (A)	$I\Delta n$ (mA)	CTN	Order Code	
			Standard	RoHS
25	30	45	984919	984934
25	100	45	984920	984935
25	300	45	984921	984936
40	30	45	984922	984937
40	100	45	984923	984938
40	300	45	984924	984939
63	30	45	984925	984940
63	100	45	984926	984941
63	300	45	984927	984942

AC-S type $I\Delta c=10000A$

★ NL1, 2P



In(A)	$I\Delta n$ (mA)	CTN	Order Code
63	100	90	985541
63	300	90	985542
80	100	90	985543
80	300	90	985544
100	100	90	985545
100	300	90	985546

A-S type $I\Delta c=10000A$

★ NL1, 2P



In(A)	$I\Delta n$ (mA)	CTN	Order Code
63	100	90	985555
63	300	90	985556
80	100	90	985557
80	300	90	985558
100	100	90	985559
100	300	90	985560

AC-S type $I\Delta c=10000A$

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In(A)	$I\Delta n$ (mA)	CTN	Order Code
63	100	45	985547
63	300	45	985548
80	100	45	985549
80	300	45	985550
100	100	45	985551
100	300	45	985552


A-S type $I\Delta c=10000A$

★ NL1, 4P



In(A)	$I\Delta n$ (mA)	CTN	Order Code
63	100	45	985561
63	300	45	985562
80	100	45	985563
80	300	45	985564
100	100	45	985565
100	300	45	985566

3. Technical features

	Standard		IEC/EN 61008-1
Electrical features	Type (wave form of the earth leakage sensed)		AC, A, AC~S, A~S
	Rated current I _n	A	25, 40, 63, 80, 100
	Poles		2P, 4P
	Rated voltage U _e	V	230/400
	Rated sensitivity I Δ _n	A	0.03, 0.1, 0.3
	Insulation voltage U _i	V	500
	Rated residual making and breaking capacity I Δ _m	A	500 (I _n =25A/40A)
			630 (I _n =63A)
	Short-circuit current I _{nc} =I Δ _c	A	6000/10000
	SCPD fuse	A	 10000
	break time under I Δ _n	S	≤0.1
	Rated frequency	Hz	50/60
	Rated impulse withstand voltage(1.2/50) U _{imp}	V	6000
	Dielectric test voltage at ind. Freq. for 1 min	kV	2.5
Pollution degree		2	
Mechanical features	Electrical life		2, 000
	Mechanical life		2, 000
	Fault current indicator		Yes
	Protection degree		IP20
	Ambient temperature (with daily average ≤35°C)	°C	-5...+40
	Storage temperature	°C	-25...+70
Installation	Terminal connection type		Cable/U-type busbar/Pin-type busbar
	Terminal size top/bottom for cable	mm ²	25
		AWG	18-3
	Terminal size top/bottom for busbar	mm ²	25
		AWG	18-3
	Tightening torque	N*m	2.5
		In-lbs.	22
Mounting		On DIN rail EN 60715 (35mm) by means of fast clip device	
Connection		From top and bottom	

4. Overall and Mounting Dimensions (mm)

