

# RCBO L80M

## Data Sheet V1.01



The L80M RCBO's (residual current-breaker with overload protection) is the best solution for protection against overcurrent and earth fault currents. The series ensures the best possible safety for people and equipment.



L80M residual current breaker with overcurrent protection

L80M is a RCBO compliant to product standard IEC/EN 61009 and with the following main technical features

### Application benefits

- Supply possible from top and bottom
- Fork type busbar connection (above and below) up to 16mm<sup>2</sup> and cable connection up to 25mm<sup>2</sup> cables.
- Toggle can be sealable in ON-OFF positions true a position inside attribute

CE

CB



RoHS

- Breaking capacity 6kA
- Electromagnetic (IEC/EN 61009-2-1)
- Type A
- Sensitivity 30, 300 mA
- Tripping characteristics B – C
- 1p+n rated current up to 32A

## RCBO's L80M

### Technical Data



	Type			<b>L80M</b>
	Standards			IEC/EN 61009-1; IEC/EN 61009-2-1
Electrical features	Certification			CE, CB, KEMA KEUR
	Country of origin			CN
	RoHS Compliance Status			Compliant, No Exemption
	Type (wave form of the earth leakage sensed)			A
	Number of poles			1p+n
Electrical features	Rated current	In	A	6, 10, 13, 16, 20, 25, 32
	Rated sensitivity	IΔn	A	0.03 - 0.3
	Rated voltage	Ue	V	230 / 240
	Operating time	Type A		instantaneous
	Insulation voltage	Ui	V	400 V AC
	Overvoltage category			III
	Pollution degree			2
	Operating voltage of circuit test		V	187 - 264
	Rated frequency		Hz	50 - 60
	Rated breaking capacity acc. to IEC/EN 61009-1	Icu	A	6.000
		Ultimate Icu	kA	6
	Rated breaking capacity acc. to IEC/EN 60947-2 (only referring to short circuit test)	Service Ics	kA	4.5
	Rated residual breaking capacity IΔm according to EN 61009-1	IΔm	A	3.000
	Rated impulse withstand voltage (1.2/50) Uimp		kV	4
	Dielectric test voltage at ind. freq. for 1 min.		kV	2.5 kV (50 / 60Hz, 1 min.)
	Thermomagnetic release – characteristics	B: 3 In ≤ In ≤ 5 In		■
		C: 5 In ≤ In ≤ 10 In		■
	Energy limiting class acc. to EN 61009-1			3
	Surge current resistance (wave 8/20)			3000
Mechanical features	Housing			Insulation group I - II, RAL 7035
	Toggle			Insulation group II, RAL 5017
	Test button			Insulation group II, RAL 2000
	Contact position indication			Green / Red window
	Earth fault trip indication			White window
	Electrical life	operations		4.000
	Mechanical life	operations		10.000
	Protection degree acc. to EN 60529	housing		IP4X
		terminals		IP2X
	Shock resistance acc. to IEC/EN 60068-2-27			25g - 2 shocks - 13ms
	Vibration resistance acc. to IEC/EN 60068-2-6			0.1 mm or 1 g - 20 cycles at 5...150...5 Hz
	Environmental conditions (damp heat) acc. to IEC/EN 60068-2-30	°C/RH		28 cycles with 55°C/90-96% and 25°C/95-100%
	Reference temperature for setting of thermal element		°C	30
	Ambient temperature (with daily average ≤ +35 °C)		°C	-25... +40
	Storage temperature		°C	-40... +70

\* IEC/EN 60947-2 certificate and test-report are not available at present, the use of these values is the responsibility of the user

## RCBO's L80M

### Technical Data



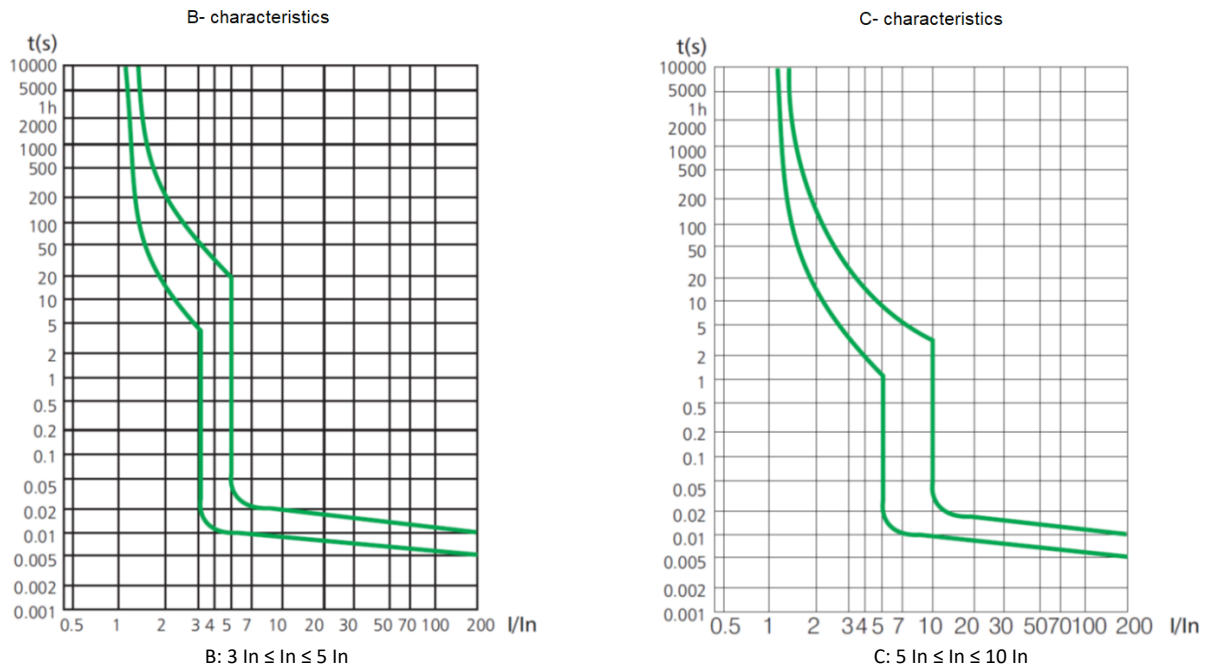
Type			L80M
Installation	Terminal type	bottom / top	Twin-purpose terminal (lift / open-mouthed)
	Terminal size for cables	bottom / top      mm <sup>2</sup>	16/25
	Terminal size for PIN busbar	bottom / top      mm <sup>2</sup>	10/16
	Terminal size for FORK busbar	bottom / top      mm <sup>2</sup>	M6 - 10/16
	Solid /stranded wiring		1x 1mm <sup>2</sup> - 25mm <sup>2</sup> 2 x 1mm <sup>2</sup> - 16mm <sup>2</sup> *
	Flexible wires with or without ferrules		1x 1mm <sup>2</sup> - 16mm <sup>2</sup> 2 x 1mm <sup>2</sup> - 10mm <sup>2</sup> *
	Tightening torque	bottom / top	2~3 Nm
	Stripping length of the cable		10mm
	Mounting		on DIN rail EN 60715 (35mm) by means of mounting clip
	Mounting position		Any
	Supply from		Top / bottom terminals
	Dimensions (H x W x D)	mm	81 x 35,7 x 74
	Weight	kg	0,194
Packing	Packing A	QTY	6
		Dimensions (H x W x D)      mm	220 x 88 x 82
		Weight      kg	1,210
	Packing B (x A)	QTY	60
		Dimensions (H x W x D)      mm	425 x 234 x 190
		Weight      kg	13
	CN-code		85362010
Combination with auxiliary elements	Auxiliary contact		Yes
	Signal contact / auxiliary contact		Yes
	Shunt trip		NA
	Auxiliary contact for bottom fitting		NA
	Undervoltage release		NA
	Overvoltage release		NA
	Motor operating device		NA

\* Check local installation rules, this type of connection is not advised. Special add-on terminals are available.

## RCBO's L80M

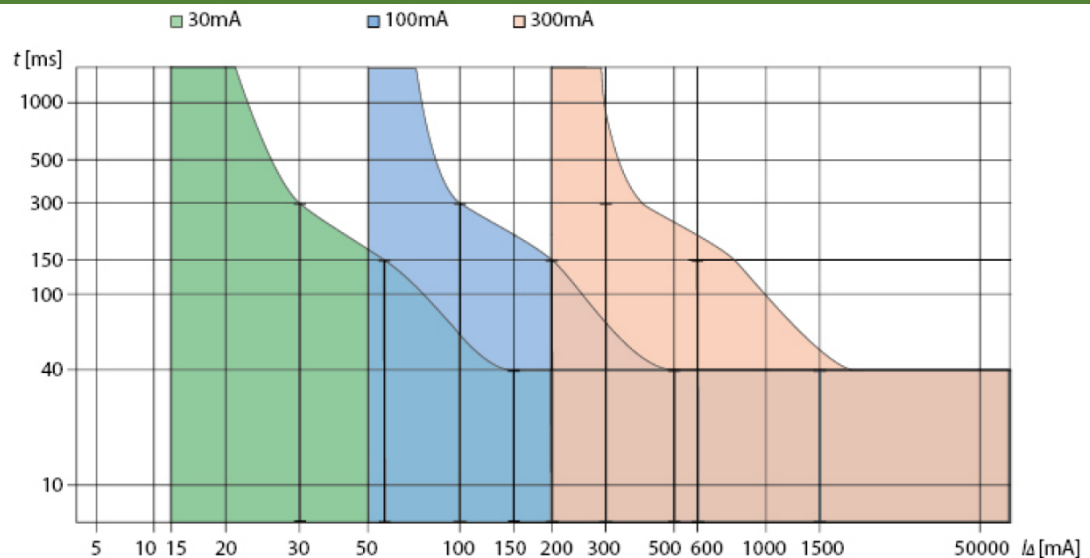
### Technical Data

#### Tripping characteristics



#### Tripping Characteristics (IEC/EN 61008)

Tripping characteristics, tripping time range and selectivity of instantaneous residual current devices.



# RCBO's L80M

## Technical Data

### Performance in altitude\*

Elevation [m]	2000	3000	4000	5000	6000
Rated current [A]	1 x In	0,95 x In	0,92 x In	0,90 x In	0,88 x In
Rated voltage [V]	1 x Un	0,85 x Un	0,75 x Un	0,65 x Un	0,55 x Un

\* the RCBO is designed for standard level operations, performance information on higher altitude is not available

### Derating in temperature

Max operating current depending on the ambient temperature (daily average  $\leq +35$  °C) of characteristics type B and C.

In [A]	Ambient temperature [°C]										
	-20	-15	-5	10	30	40	45	55	60	65	70
6	8.0	7.8	7.3	6.8	6	5.9	5.8	5.6	5.5	5.4	5.2
10	13.5	13.3	12.7	12.1	10	9.8	9.8	9.5	9.0	8.6	8.0
13	17.0	16.8	16.1	15.2	13	12.5	12.2	11.5	11.2	11.0	10.8
16	20.0	19.8	19.2	18.6	16	15.4	15.1	14.7	14.5	14.0	13.8
20	24.5	24.3	23.8	23.3	20	19.3	18.8	18.2	17.8	17.5	17.3
25	29.8	29.7	29.3	28.8	25	24.3	24.0	23.5	23.0	22.0	21.5
32	39.5	39.3	38.8	38.2	32	31.1	30.8	29.5	28.5	27.5	27.0

### Influence of adjacent devices

Number of devices	1	2-3	4-5	6-9	$\geq 10$
Correction factor	1	0,9	0,8	0,7	0,6

These values are provided by recommendation IEC 61439-1 and standards EN 61439-1. In order to avoid having to use these coefficients there must be good ventilation and the devices must be kept apart using the spacing element article number 2119000010 (0.5 module).

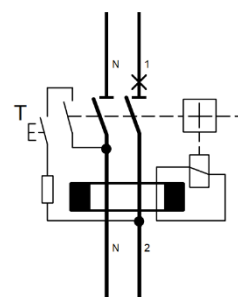
## RCBO's L80M

### Technical Data

#### Power loss, resistance, voltage drop

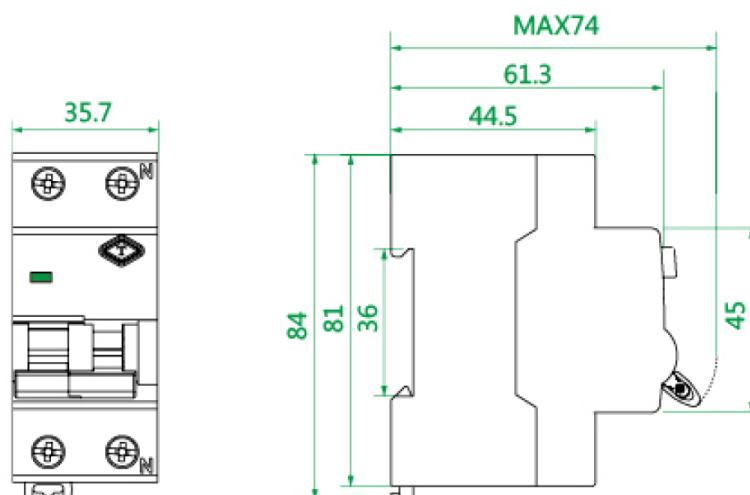
In [A]	Component power loss [W]
6	1.8
10	2,5
13	3,5
16	4
20	5
25	5.8
32	6.5

#### Connection diagram



#### Overall dimensions




All measurements in mm



## RCBO's L80M

### Order codes



Type A	IΔn	Inom	B characteristic	C characteristic
	30mA	6 A	5104540006	5104550006
		10 A	5104540010	5104550010
		13 A	5104540013	5104550013
		16 A	5104540016	5104550016
		20 A	5104540020	5104550020
		25 A	5104540025	5104550025
		32 A	5104540032	5104550032
	300mA	6 A	5104541006	5104551006
		10 A	5104541010	5104551010
		13 A	5104541013	5104551013
		16 A	5104541016	5104551016
		20 A	5104541020	5104551020
		25 A	5104541025	5104551025
		32 A	5104541032	5104551032
	Auxiliary contact 1CO		5101000012	
	Alarming contact 1CO		5101000022	
	Connection cover yellow		5102290010	

## RCBO's L80M

### Order codes for connective rail

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Busbar / connective rail type	No. devices	10mm <sup>2</sup> (closed end - non cuttable)		16mm <sup>2</sup> (cut to size with end- caps)	
		$\Sigma I$	$\Sigma I$	$\Sigma I$	$\Sigma I$
		63A 100A		80A 125A	
PIN		PIN	FORK	PIN	FORK
<b>2 pole (phase neutral)   N1-N1-N1...</b>					
	2	2305102004	2305112004	-	-
	3	2305102006	2305112006	2306020006	2306120006
	4	2305102008	2305112008	2306020008	2306120008
	5	2305102010	2305112010	2306020010	2306120010
	6	2305102012	2305112012	2306020012	2306120012
	7	2305102014	2305112014	2306020014	2306120014
	8	2305102016	2305112016	2306020016	2306120016
	9	2305102018	2305112018	2306020018	2306120018
	10	-	-	2306020020	2306120020
	11	-	-	2306020022	2306120022
	12	-	-	2306020024	2306120024
	27	-	-	2306160200	2306161200
<b>3N pole (3 phase neutral)   N1-N2-N3...</b>					
	6	2305105012	2305115012	2306050012	2306150012
	9	2305105018	2305115018	2306050018	2306150018
	12	-	-	2306050024	2306150024
	28	-	-	2306160500	2306161500
<b>Top Combi-rail   N123-N1-N2-N3-(N1)</b>					
	1x 4p + 3x 2p	2305195310	2305195010	-	-
	1x 4p + 4x 2p	2305195312	2305195012	-	-
<b>Bottom Combi-rail   N123-N1-N2-N3-(N1)</b>					
	1x 4p + 3x 2p	2305195110	2305195210	-	-
	1x 4p + 4x 2p	2305195112	2305195212	-	-



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Busbar / connective rail type	No. devices	10mm <sup>2</sup> (closed end - non cuttable)		16mm <sup>2</sup> (cut to size with end- caps)	
		$\Sigma I$	$\Sigma I$	$\Sigma I$	$\Sigma I$
		PIN	FORK	PIN	FORK
<b>1 phase – neutral bar (35.6mm)</b> 	2	2305171902	2305181902	-	-
	3	2305171903	2305181903	-	-
	4	2305171904	2305181904	-	-
	5	2305171905	2305181905	-	-
	6	2305171906	2305181906	2306019206	2306119206
	9	-	-	2306019209	2306119209
	12	-	-	2306019212	2306119212
	27	-	-	2306160121	2306161121
<b>1 phase – phase bar (35.6mm)</b> 	2	2305171002	2305181002	-	-
	3	2305171003	2305181003	-	-
	4	2305171004	2305181004	-	-
	5	2305171005	2305181005	-	-
	6	2305171006	2305181006	2306010206	2306110206
	9	-	-	2306010209	2306110209
	12	-	-	2306010212	2306110212
	27	-	-	2306160120	2306161120
	Open mouth covers for busbar PIN/FORK	2115900010			

## RCBO's L80M


### Order codes accessories

Supplied by SEP EUROPE ®


#### Add-on terminals

Reference image	Wire size	PIN		FORK	
		Grey	Blue	Grey	Blue
	1x50mm2 solid/stranded 1x35mm2 flexible	2115900060	2115900120	2115900090	2115900150
	2x25mm2 solid/stranded 2x16mm2 flexible	2115900070	2115900130	2115900100	2115900160
	3x16mm2 solid/stranded 3x10mm2 flexible	2115900080	2115900140	2115900110	2115900170

#### Marker - spacer

Reference image	Description	Code
	Component Spacer 0,5mm	2119000010

#### Lockout

Reference image	Description	Code
	Lockout set - complete	2115909099
	Locking devices adaptor	2115909015
	Locking device screw adaptor	2115909010
	Padlock with 2 identical keys	2115909020
	Warning tag (English)	2115909030

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