RCBO DS201
Data sheet

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01

The 1P+N DS201 RCBOs are the perfect solution for a complete protection against overcurrent and earth fault currents.
In two modules width the series ensure, at any time and under any condition, the safety of people, facilities and related equipment.

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01 DS201: residual current circuit breaker with overcurrent protection

DS201 is a 1P+N RCBO compliant to product standard IEC/EN 61009 and with the following main technical features:

- Breaking capacity 4.5 - 6 -10 kA
- Type AC - A - APR - F
- Sensitivity 10 - 30 - 100 - 300 mA
- Tripping characteristics B - C - K
- Rated current from 1 to 40 A

Application benefits

- Supply possible both from top and bottom and in parallel with cables and busbars thanks to terminals composed by two different seats: a front seat for 25 mm² cables and a back seat for 10 mm² busbars.
- Easy troubleshooting and reduced downtime for maintenance operations thanks to the earth fault indicator (blue flag on the toggle) and contact position indicator (CPI).
- Product Made in Italy, with RFid tag on the product side to authenticate the device.
- Family feeling in the System pro M compact® range.

RCBOs DS201

Technical data

				DS201 L
	Standards			IEC/EN 61009-1; IEC/EN 61009-2-1
Electrical features	Type (wave form of the earth leakage sensed)			A - AC - APR
	Number of poles			1P + N
	Rated current In		A	6 ≤ In ≤ 32
	Rated sensitivity IΔn		A	0.01 - 0.03 - 0.3
	Rated voltage Ue		V	230-240
	Insulation voltage Ui		V	500 V AC
	Overvoltage category			III
	Pollution degree			2
	Operating voltage of circuit test Ut		V	110 (170 for 30mA) - 264
	Rated frequency		Hz	50/60
	Rated breaking capacity acc. to IEC/EN 61009-1	Icn	A	4500
	Rated breaking capacity acc. to IEC/EN 60947-2 (only referring to short circuit test)	ultimate Icu	kA	6
		service Ics	kA	4.5
	Rated residual breaking capacity IΔm according to EN 61009-1	IΔm	A	4500
	Rated residual breaking capacity IΔm according to IEC 61009-1	IΔm	A	4500
	Rated impulse withstand voltage (1.2/50) Uimp		kV	4 kV
	Dielectric test voltage at ind. freq. for 1 min.		kV	2 kV (50 / 60Hz, 1 min.)
	Thermomagnetic release - characteristic	B: 3 In ≤ In ≤ 5 In		
		C: 5 In ≤ In ≤ 10 In		■
		K: 10 In ≤ In ≤ 14 In		
	Energy limiting class acc. to EN 61009-1			3
	Surge current resistance (wave 8/20)		A	NA for A, AC versions; 3000 for APR version
Mechanical features	Housing			Insulation group I - II, RAL 7035
	Toggle			Insulation group II, Black RAL 9005, sealable in ON-OFF positions
	Contact position indication			Green/Red Window
	Earth fault trip indication			Blue flag on toggle
	Electrical life		operations	10000
	Mechanical life		operations	20000
	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…+55
	Storage temperature		°C	-40…+70

DS201	DS201 M	DS201 M 110V
IEC/EN 61009-1; IEC/EN 61009-2-1	IEC/EN 61009-1; IEC/EN 61009-2-1	IEC 61009-1; IEC 61009-2-1
A - AC - APR	A - AC - APR - F	A
1P + N	1P + N	1P + N
1 ≤ In ≤ 40	4 ≤ In ≤ 40	6 ≤ In ≤ 40
0.01 - 0.03 - 0.1 - 0.3	0.01 - 0.03 - 0.1 - 0.3	0.03
230-240	230-240	230-240
500 V AC	500 V AC	500 V AC
III	III	III
2	2	2
110 (170 for 30mA) - 264	110 (170 for 30mA) - 264	110 - 264
50/60	50/60	50/60
6000	10000	10000
10	15	15
7.5	11.2	11.2
6000	6000	6000
6000 up to 25 A; 4500 for 32A and 40A	6000 up to 25 A; 4500 for 32A and 40A	6000 up to 25 A; 4500 for 32A and 40A
4 kV	4 kV	4 kV
2kV (50 / 60Hz, 1 min.)	2 kV (50 / 60Hz, 1 min.)	2 kV (50 / 60Hz, 1 min.)
■	■	■
■	■	■
■	■	
3	3	NA
NA for A, AC versions; 3000 for APR version	NA for A, AC versions; 3000 for APR and F version	NA
Insulation group I - II, RAL 7035	Insulation group I - II, RAL 7035	Insulation group I - II, RAL 7035
Insulation group II, Black RAL 9005, sealable in ON-OFF positions	Insulation group II, Black RAL 9005, sealable in ON-OFF positions	Insulation group II, Black RAL 9005, sealable in ON-OFF positions
Green/Red Window	Green/Red Window	Green/Red Window
Blue flag on toggle	Blue flag on toggle	Blue flag on toggle
10000	10000	10000
20000	20000	20000
IP4X	IP4X	IP4X
IP2X	IP2X	IP2X
25g - 2 shocks - 13ms	25g - 2 shocks - 13ms	25g - 2 shocks - 13ms
0.1 mm or 1 g - 20 cycles at 5…150…5 Hz	0.1 mm or 1 g - 20 cycles at 5…150…5 Hz	0.1 mm or 1 g - 20 cycles at 5…150…5 Hz
28 cycles with 55°C/90-96% and 25°C/95-100%	28 cycles with 55°C/90-96% and 25°C/95-100%	28 cycles with 55°C/90-96% and 25°C/95-100%
30 (20 for K tripping char)	30 (20 for K tripping char)	30
-25…+55	-25…+55	-25…+55
-40…+70	-40…+70	-40…+70

RCBOs DS201

Technical data

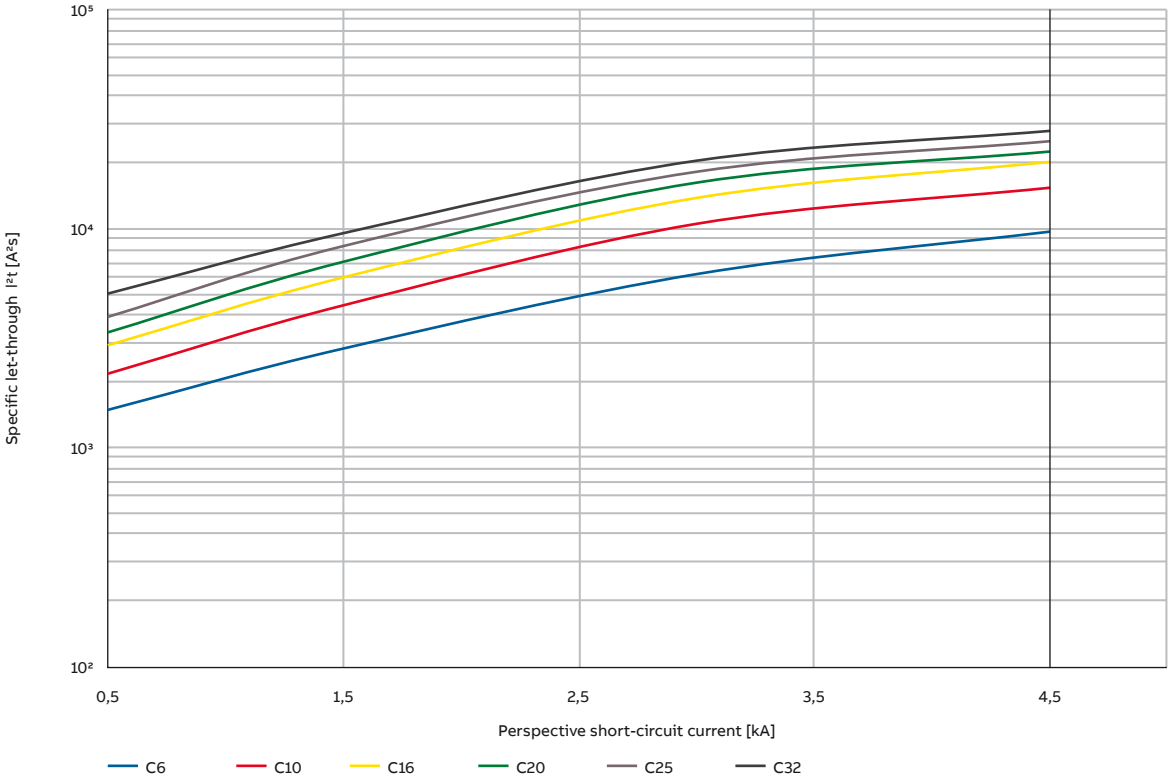
					DS201 L
Installation	Terminal type		top / bottom		failsafe bi-directional cylinder-lift terminal (shock protected)
	Terminal size for cables		top / bottom	mm2	25/25
	Terminal size for busbars		top / bottom	mm2	10/10
	Solid /stranded wiring				1 x 0,75-25 mm² for front terminal and 1 x 1-10 mm² for rear terminal; 2 x 0,75-10 mm² for front terminal
	Flexible wires with or without ferrules				1 x 0,75-16 mm² for front terminal and 1 x 1-4 mm² for rear terminal; 2 x 0,75-6 mm² for front terminal
	Solid /stranded and flexible wiring with or without ferrules				2 x 0,75-4 mm² for front terminal and 2 x 1,5 mm² or 1 x 2,5-4 mm² for rear terminal
	Tightening torque		top / bottom	Nm	2.8
	Stripping length of the cable			mm	12
	Mounting				on DIN rail EN 60715 (35mm) by means of mounting clip
	Mounting position				Any
	Supply from				Top/Bottom terminals
Dimensions and weight	Dimensions (H x D x W)			mm	85 x 69 x 35
	Weight			g	200
Combination with auxiliary elements	Combinable with accessories and auxiliaries	Auxiliary contact			yes
		Signal contact / auxiliary contact			yes
		Shunt trip			yes
		Auxiliary contact for bottom fitting			yes
		Undervoltage release			yes
		Overvoltage release			yes
		Motor operating device			yes

DS201	DS201 M	DS201 M 110V
failsafe bi-directional cylinder-lift terminal (shock protected)	failsafe bi-directional cylinder-lift terminal (shock protected)	failsafe bi-directional cylinder-lift terminal (shock protected)
25/25	25/25	25/25
10/10	10/10	10/10
1 x 0,75-25 mm² for front terminal and 1 x 1-10 mm² for rear terminal; 2 x 0,75-10 mm² for front terminal	1 x 0,75-25 mm² for front terminal and 1 x 1-10 mm² for rear terminal; 2 x 0,75-10 mm² for front terminal	1 x 0,75-25 mm² for front terminal and 1 x 1-10 mm² for rear terminal; 2 x 0,75-10 mm² for front terminal
1 x 0,75-16 mm² for front terminal and 1 x 1-4 mm² for rear terminal; 2 x 0,75-6 mm² for front terminal	1 x 0,75-16 mm² for front terminal and 1 x 1-4 mm² for rear terminal; 2 x 0,75-6 mm² for front terminal	1 x 0,75-16 mm² for front terminal and 1 x 1-4 mm² for rear terminal; 2 x 0,75-6 mm² for front terminal
1 x 0,75-4 mm² for front terminal and 2 x 1,5 mm² or 1 x 2,5-4 mm² for rear terminal	1 x 0,75-4 mm² for front terminal and 2 x 1,5 mm² or 1 x 2,5-4 mm² for rear terminal	1 x 0,75-4 mm² for front terminal and 2 x 1,5 mm² or 1 x 2,5-4 mm² for rear terminal
2.8	2.8	2.8
12	12	12
on DIN rail EN 60715 (35mm) by means of mounting clip	on DIN rail EN 60715 (35mm) by means of mounting clip	on DIN rail EN 60715 (35mm) by means of mounting clip
Any	Any	Any
Top/Bottom terminals	Top/Bottom terminals	Top/Bottom terminals
85 x 69 x 35	85 x 69 x 35	85 x 69 x 35
200	200	200
yes	yes	yes
yes	yes	yes
yes	yes	yes
yes	yes	yes
yes	yes	yes
yes	yes	yes
yes	yes	yes

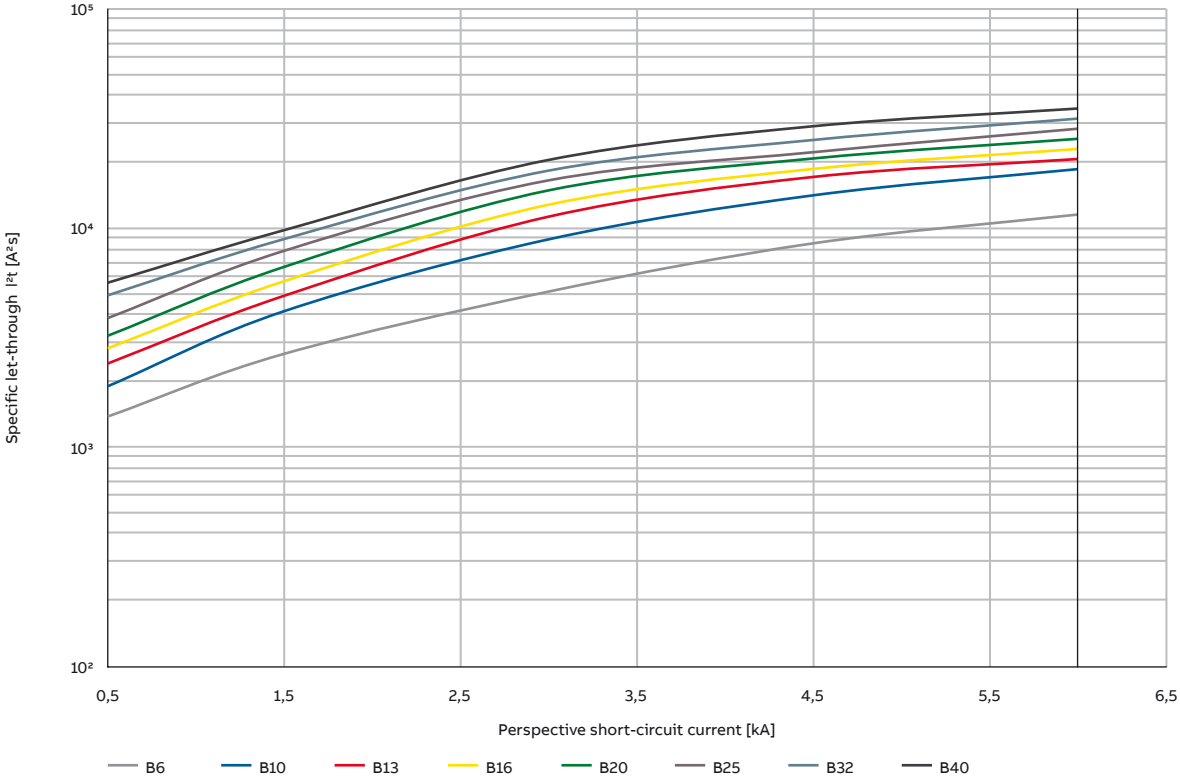
RCBOs DS201

Technical data

Specific let-through energy I²t DS201L - Characteristic C



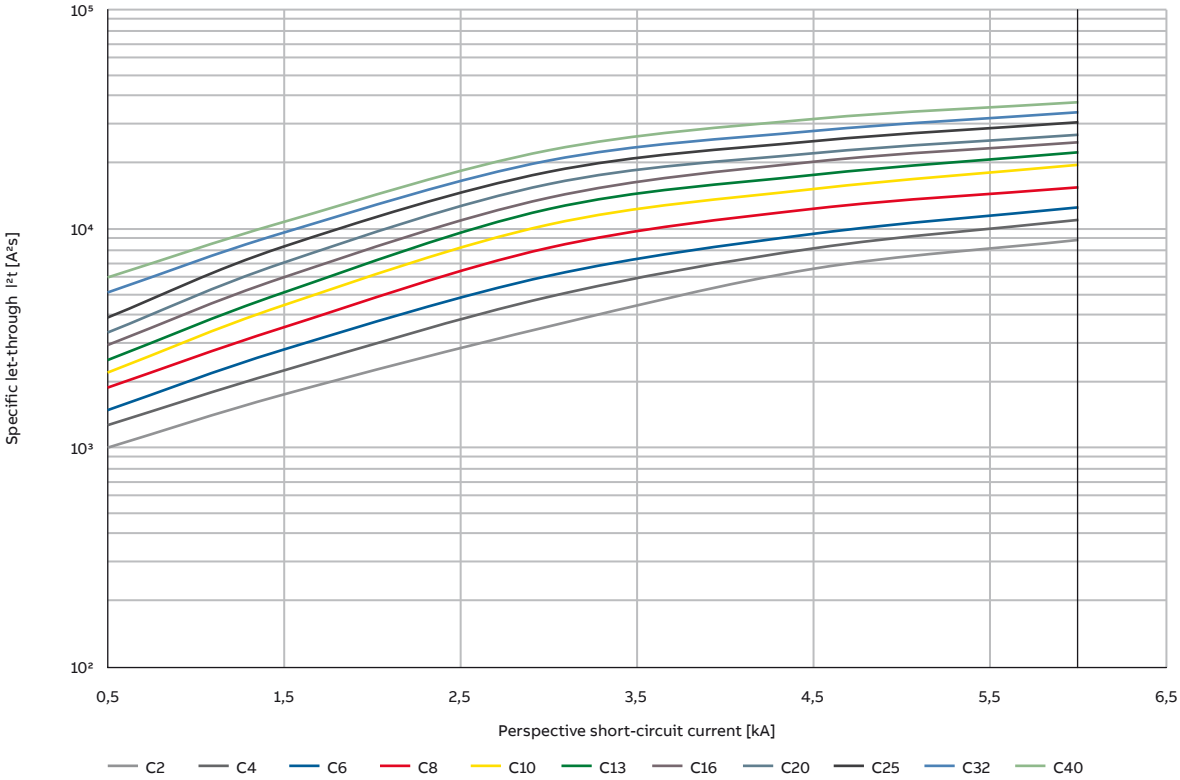
Specific let-through energy I²t DS201 - Characteristic B



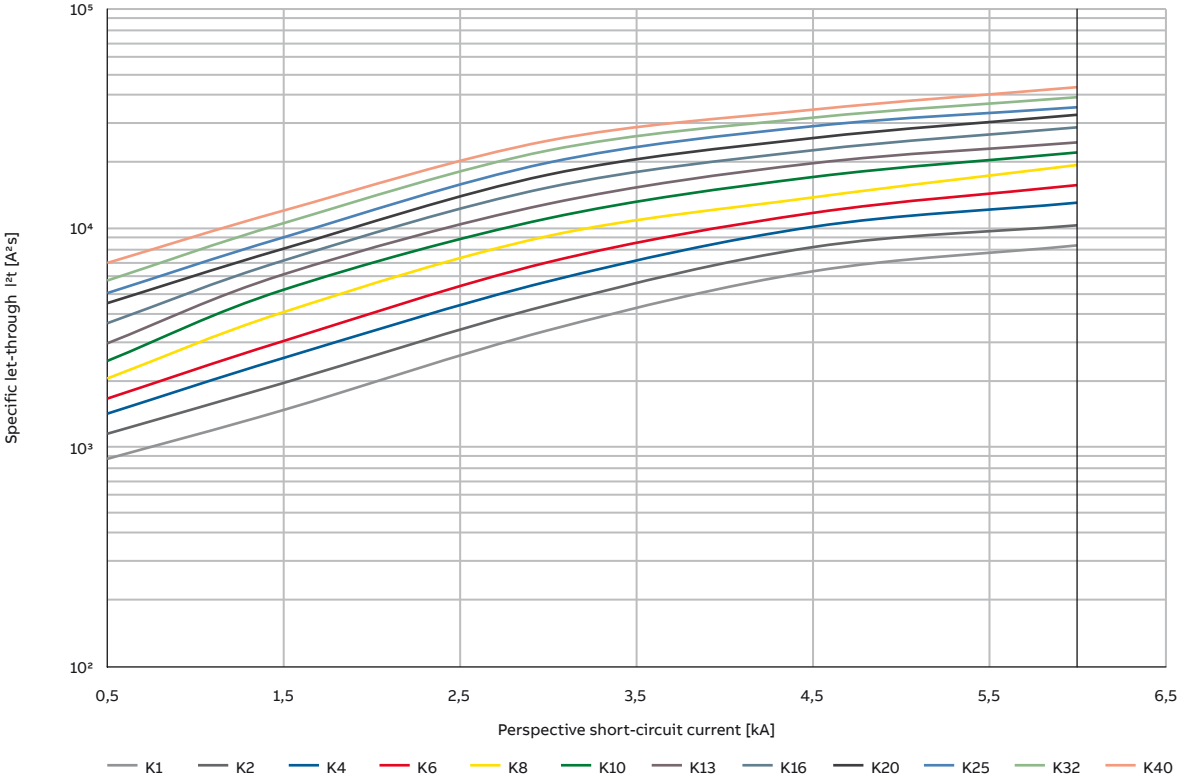
RCBOs DS201

Technical data

Specific let-through energy I²t DS201 - Characteristic C



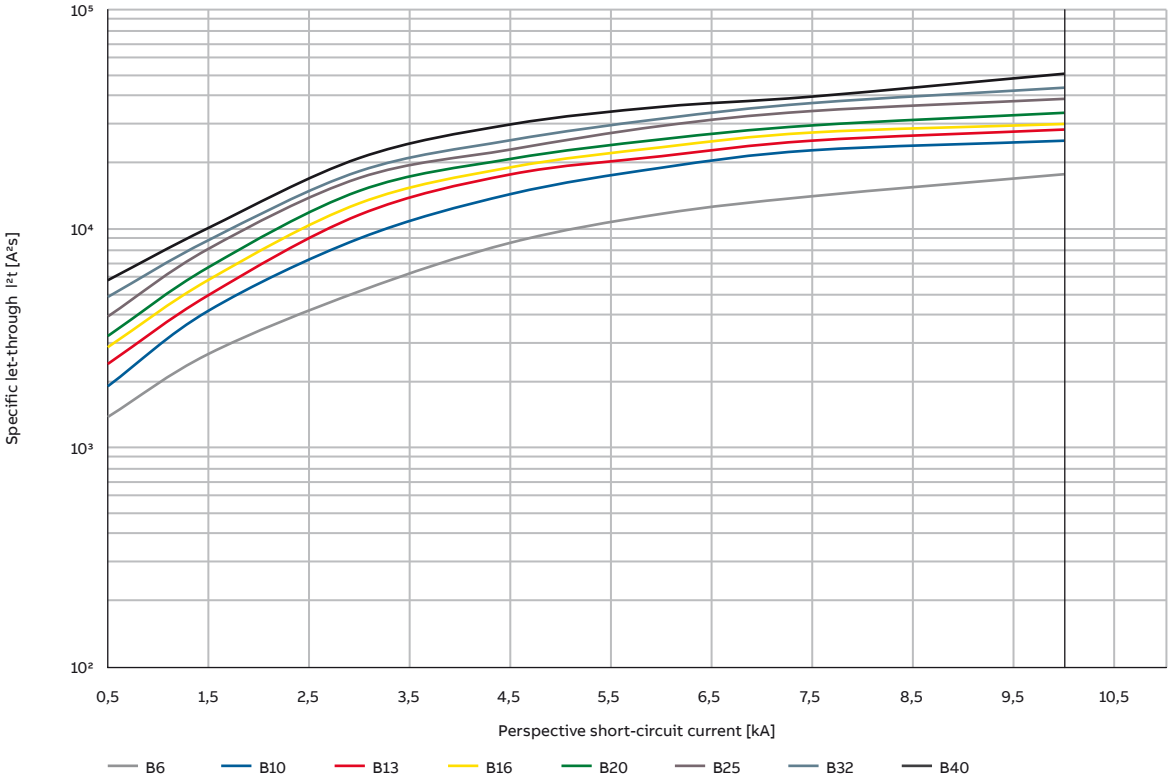
Specific let-through energy I²t DS201 - Characteristic K



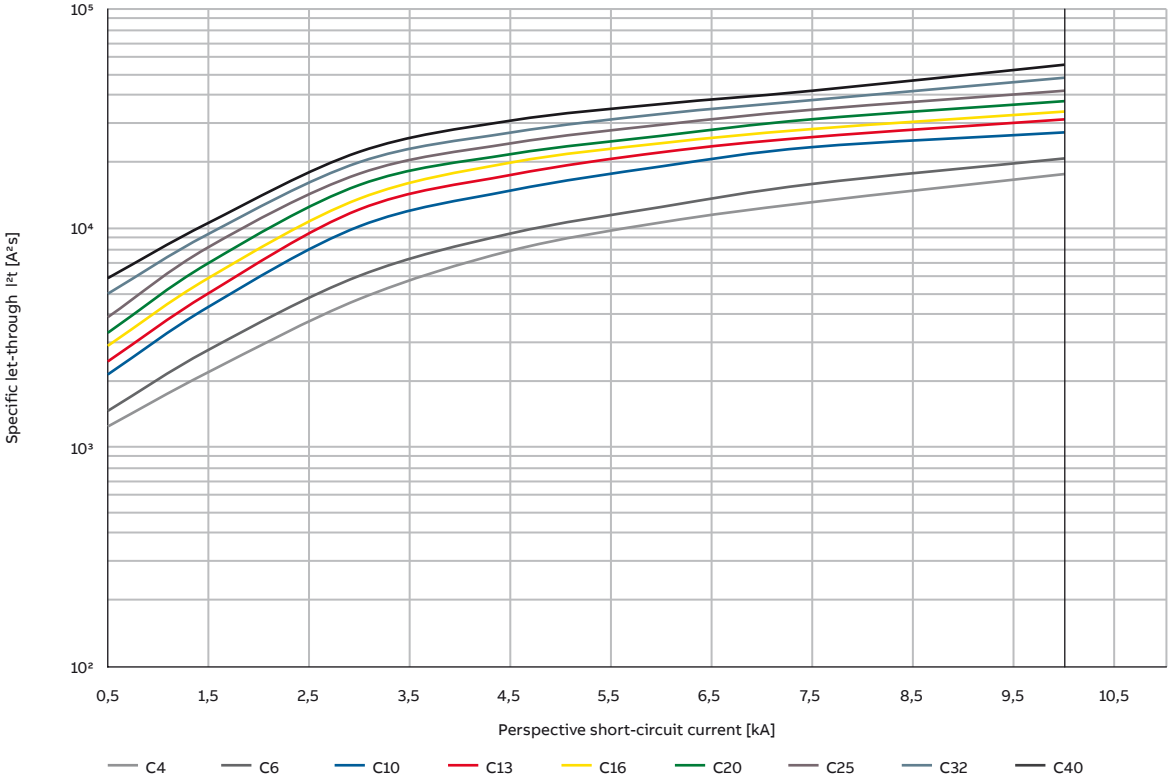
RCBOs DS201

Technical data

Specific let-through energy I²t DS201M - Characteristic B



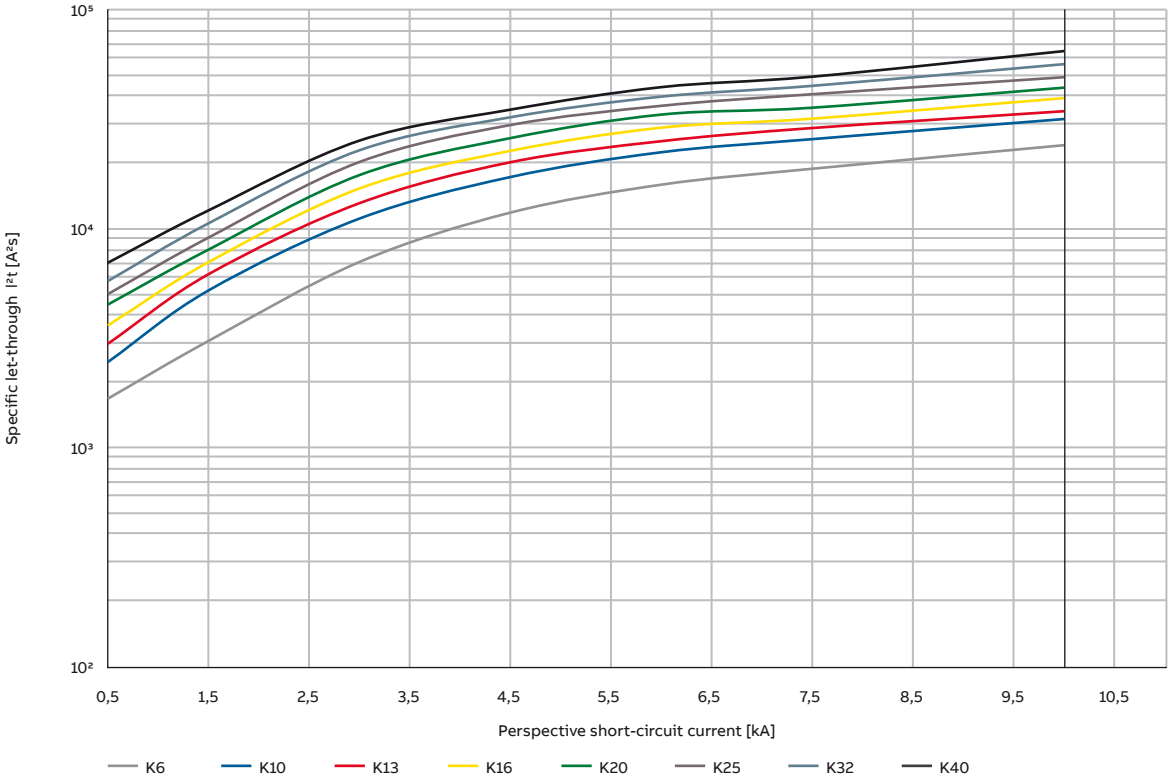
Specific let-through energy I²t DS201M - Characteristic C



RCBOs DS201

Technical data

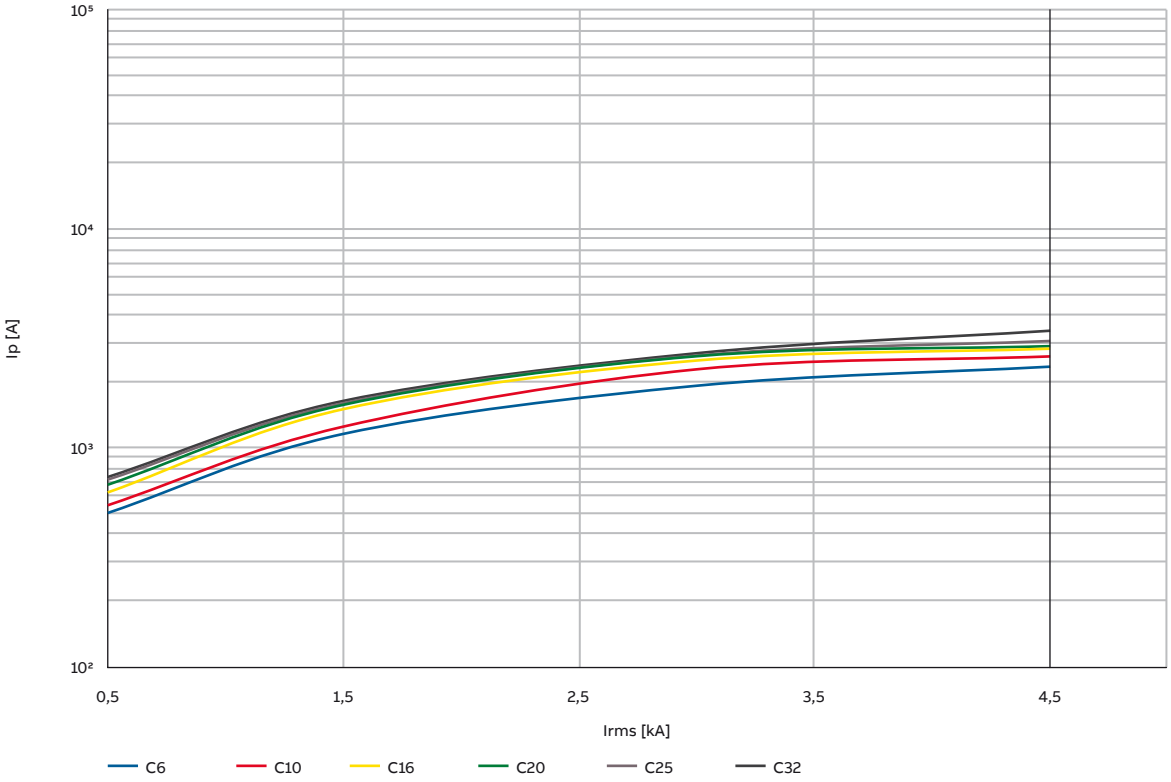
Specific let-through energy I²t DS201M - Characteristic K



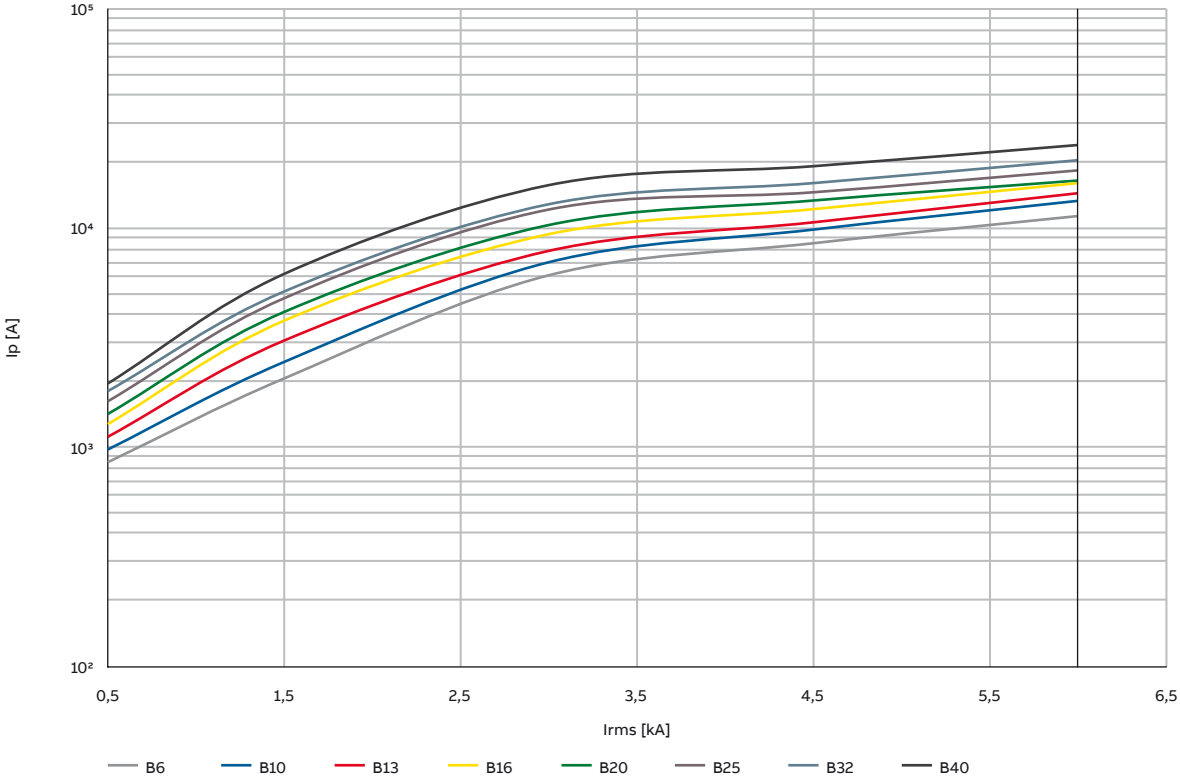
RCBOs DS201

Technical data

Ipeak DS201L - Characteristic C



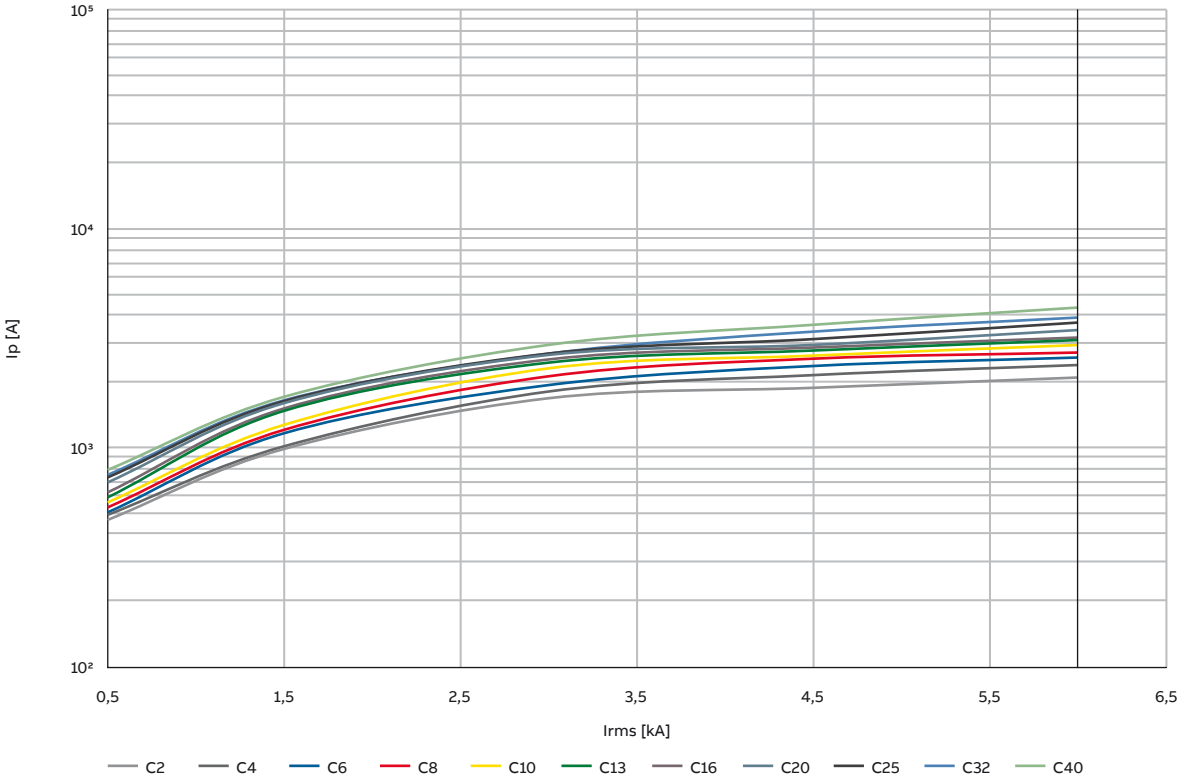
Ipeak DS201 - Characteristic B



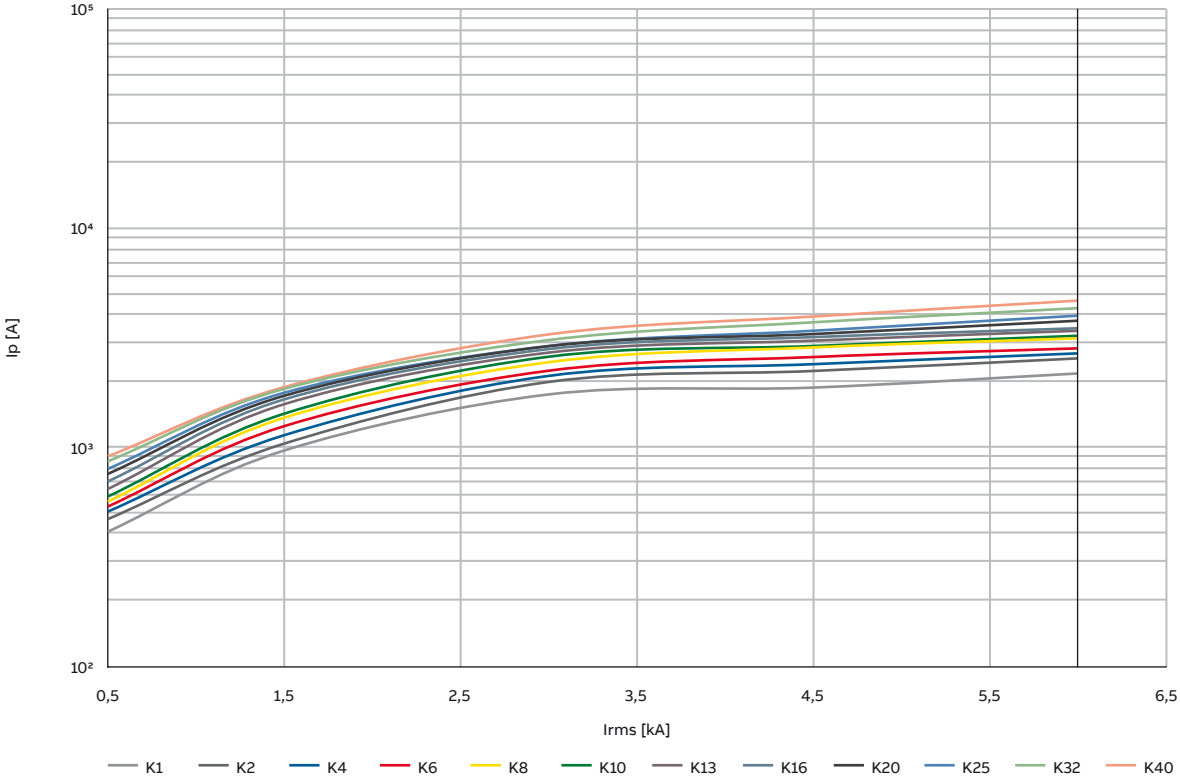
RCBOs DS201

Technical data

Ipeak DS201 - Characteristic C



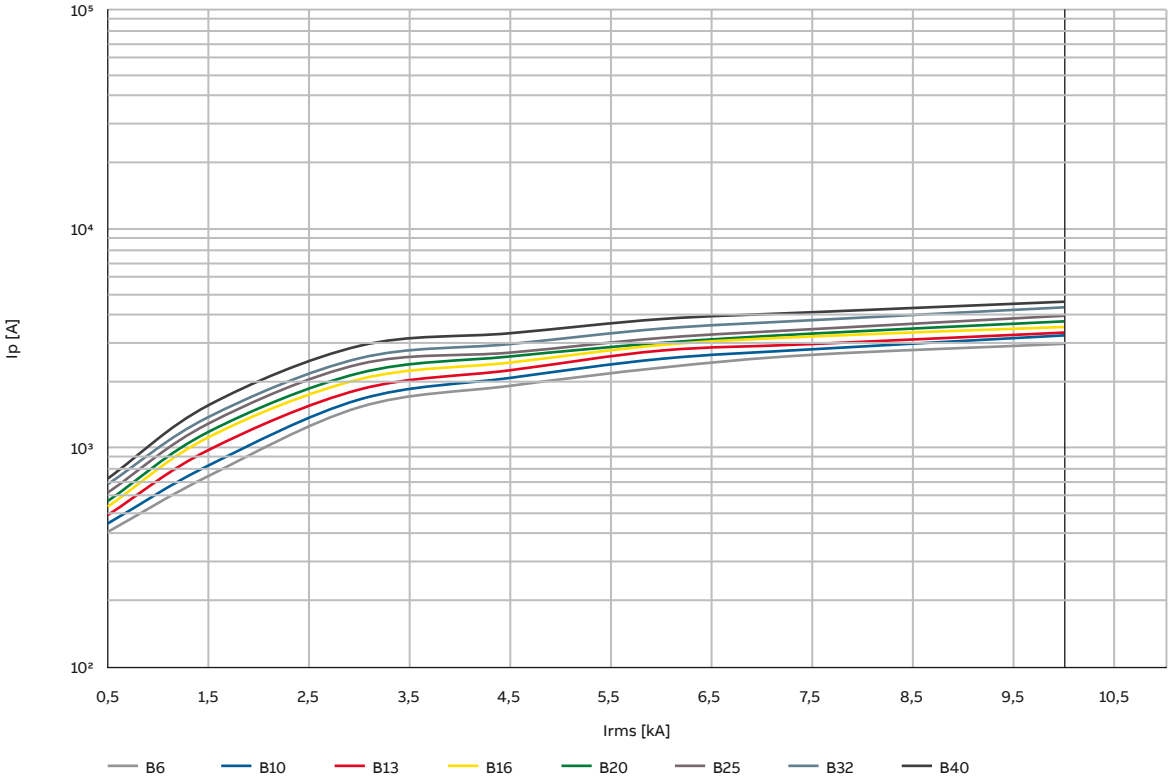
Ipeak DS201 - Characteristic K



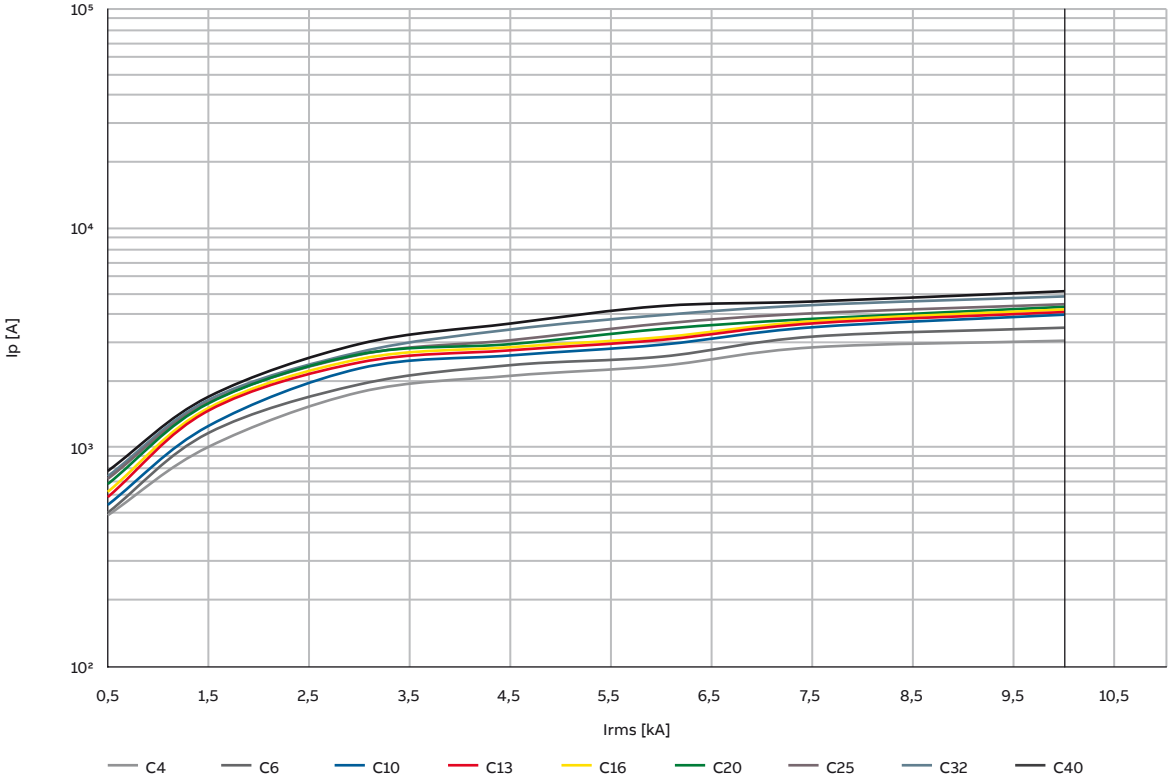
RCBOs DS201

Technical data

Ipeak DS201M - Characteristic B



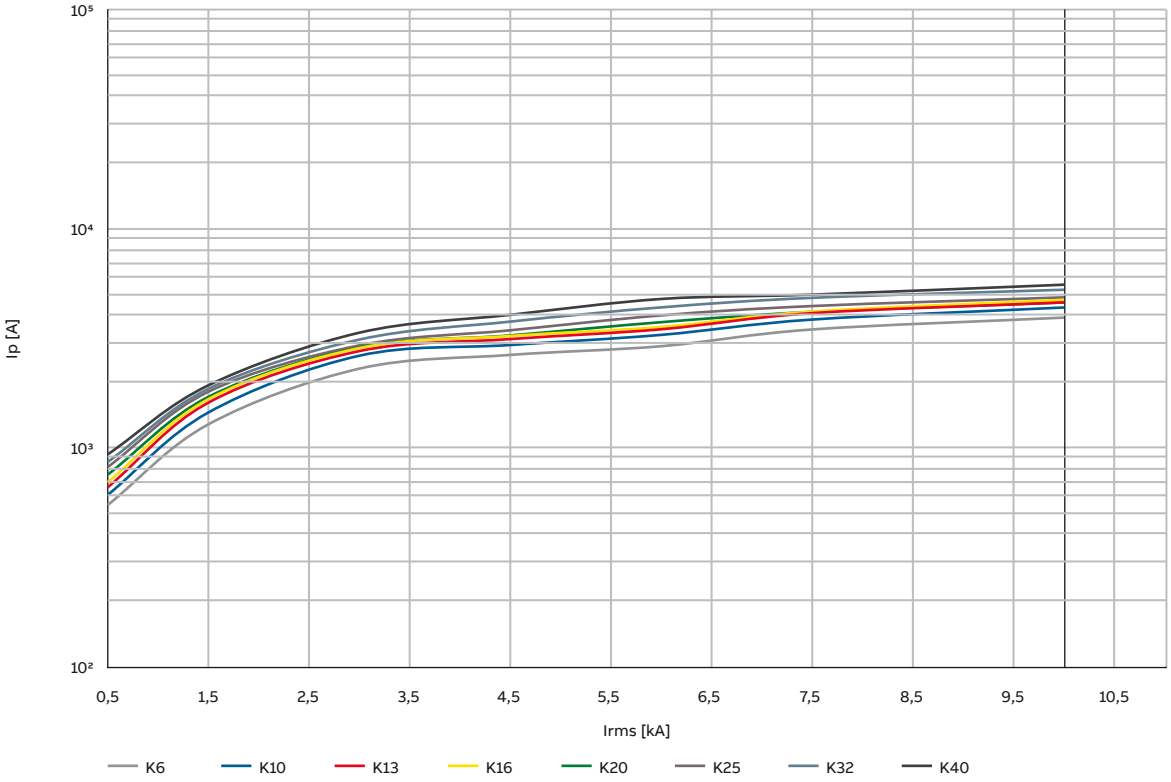
Ipeak DS201M - Characteristic C



RCBOs DS201

Technical data

Ipeak DS201M - Characteristic K

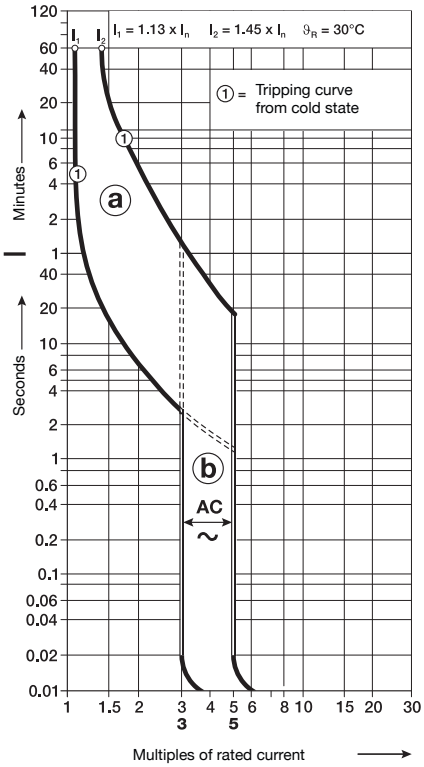


RCBOs DS201

Technical data

Tripping characteristics B

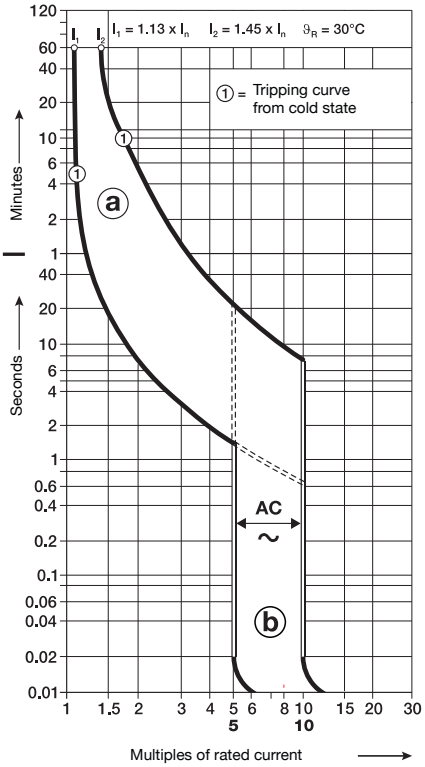
IEC/EN 61009-1



a: thermal trip
b: electromagnetic trip

Tripping characteristics C

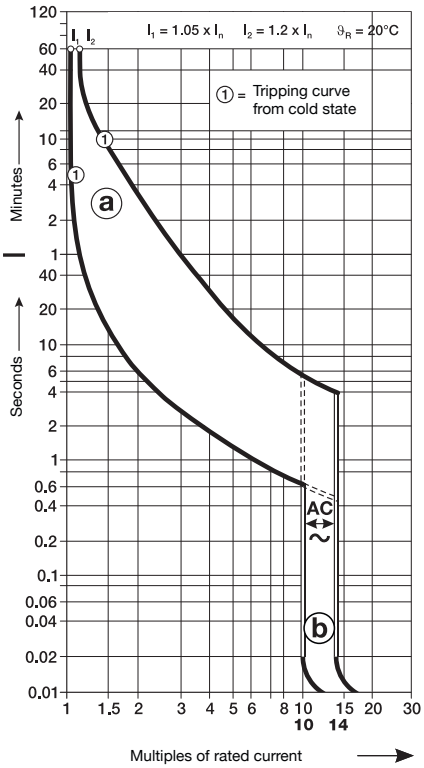
IEC/EN 61009-1



a: thermal trip
b: electromagnetic trip

Tripping characteristics K

IEC-EN60947-2



a: thermal trip
b: electromagnetic trip

RCBOs DS201

Technical data

Performance in altitude

Elevation [m]	2000	3000	4000	5000	6000
Rated Current [A]	1 x In	0.96 x In	0.94 x In	0.92 x In	0.90 x In
Rated Voltage [V]	1 x Un	0.877 x Un	0.775 x Un	0.676 x Un	0.588 x Un

Derating in temperature

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

In (A)	Temperature (°C)												
	-25	**-20**	**-10**	**0**	**10**	**20**	**30**	**40**	**50**	**55**	**60**	**65**	**70**
2A	3.9	3.6	3.2	2.9	2.7	2.4	2.0	1.8	1.7	1.6	1.5	1.4	1.3
4A	6.1	5.8	5.4	5.0	4.7	4.4	4.0	3.6	3.4	3.2	3.1	3.0	2.8
6A	8.7	8.4	7.7	7.3	7.0	6.4	6.0	5.5	5.3	5.1	4.9	4.7	4.6
8A	10.8	10.3	9.5	9.0	8.7	8.3	8.0	7.4	7.1	7.0	6.8	6.6	6.5
10A	13.5	13.0	12.1	11.5	11.0	10.6	10.0	9.4	9.0	8.8	8.6	8.4	8.3
13A	16.0	15.6	14.9	14.5	14.0	13.4	13.0	12.4	11.7	11.4	11.2	11.0	10.8
16A	18.9	18.6	18.1	17.5	17.0	16.4	16.0	15.3	14.8	14.5	14.3	14.1	14.0
20A	24.0	23.5	22.7	22.0	21.4	20.7	20.0	19.1	18.5	18.3	18.0	17.8	17.7
25A	27.9	27.5	27.1	26.6	26.0	25.3	25.0	24.3	23.6	23.4	23.2	23.0	22.8
32A	36.8	36.2	35.4	34.8	34.0	32.9	32.0	31.3	30.5	30.0	29.7	29.5	29.4
40A	44.8	44.6	44.0	43.2	42.1	41.0	40.0	39.0	38.1	37.9	37.6	37.4	37.2

Max operating current depending on the ambient temperature (daily average ≤ +35 °C) of characteristics type K.

In (A)	Temperature (°C)												
	-25	**-20**	**-10**	**0**	**10**	**20**	**30**	**40**	**50**	**55**	**60**	**65**	**70**
1A	2.2	2.2	1.7	1.5	1.3	1.0	0.7	0.6	0.6	0.5	0.5	0.4	0.4
2A	3.5	3.2	2.8	2.8	2.4	2.0	1.8	1.8	1.7	1.6	1.5	1.5	1.4
4A	5.7	5.3	4.9	4.8	4.4	4.0	3.6	3.4	3.3	3.0	2.9	2.8	2.8
6A	8.0	7.7	7.4	7.0	6.5	6.0	5.4	5.3	5.2	4.8	4.7	4.6	4.5
8A	10.0	9.5	9.0	8.7	8.2	8.0	7.4	7.1	7.0	6.7	6.6	6.5	6.4
10A	12.6	12.1	11.5	11.0	10.5	10.0	9.4	9.1	8.9	8.8	8.6	8.4	8.3
13A	15.4	14.9	14.4	14.1	13.4	13.0	12.5	11.8	11.4	11.2	11.0	10.8	10.7
16A	18.7	18.2	17.5	17.0	16.4	16.0	15.4	14.7	14.6	14.3	14.2	14.0	13.9
20A	23.1	22.7	22.1	21.3	20.7	20.0	19.1	18.5	18.2	18.1	17.9	17.8	17.7
25A	27.4	27.1	26.5	26.0	25.4	25.0	24.3	23.6	23.4	23.2	23.0	22.8	22.6
32A	36.1	35.4	34.9	34.0	32.8	32.0	31.2	30.5	29.9	29.7	29.5	29.4	29.3
40A	44.4	43.9	43.2	42.1	40.9	40.0	39.0	38.2	37.7	37.4	37.2	37.0	36.8

RCBOs DS201

Technical data

Influence of adjacent devices

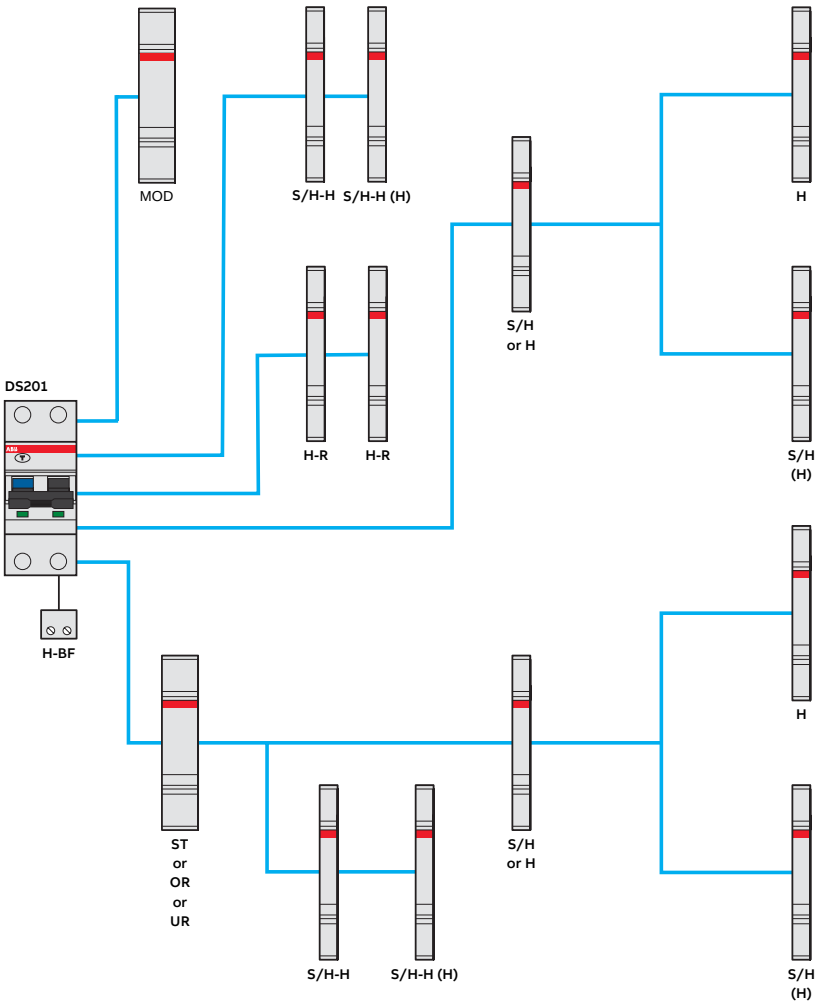
Number of devices	1	3	5	7	9
Correction factor	1	0.9	0.85	0.81	0.8

Voltage Drop, power loss, internal resistance, own consumption

In (A)	Voltage drop (V)	Power loss (W)	Int. res. (mΩ)
1A	1.4	1.4	1400.0
2A	0.8	1.6	400.0
4A	0.6	2.2	137.5
6A	0.4	2.4	66.7
8A	0.2	1.9	29.7
10A	0.2	1.8	18.0
13A	0.2	2.5	15.0
16A	0.2	3.3	12.8
20A	0.2	3.6	9.0
25A	0.2	5.5	8.8
32A	0.2	6.4	6.3
40A	0.1	5.0	3.1

RCBOs DS201
Accessories

Combination of auxiliary elements with DS201
System pro M compact® accessories can be mounted directly in few steps.
Combination possible with the same motor operating device suitable for S200.
Combination possible also with auxiliary contact for bottom fitting, making DS201 particular suitable also for retrofitting and space constraint applications.



H	Auxiliary contact	S2C-H6R
H-R	Auxiliary contact	S2C-H6-xxR
S/H	Signal / auxiliary contact	S2C-S/H6R
S/H (H)	Signal / auxiliary contact used as auxiliary contact	S2C-S/H6R
S/H-H	Auxiliary contact-Signal contact/ Auxiliary contact 2CO	S3C-H-S/H6R
S/H-H (H)	Auxiliary contact-Signal contact/ Auxiliary contact 2CO (used as auxiliary contact)	S3C-H-S/H6R
ST	Shunt Trip	S3C-A...
OR	Overvoltage release	S2C-OVP
UR	Undervoltage release	S3C-UA*
H-BF	Auxiliary contact for bottom fitting (only DS201 (2019))	S2C-H01 / S2C-H10
MOD	Motor operating device	S3C-MOD...

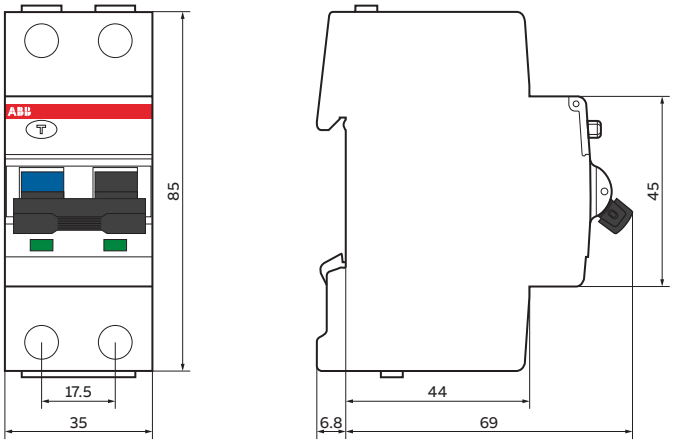
* S3C-UA can accept only one auxiliary or signal contact mounted after it

RCBOs DS201

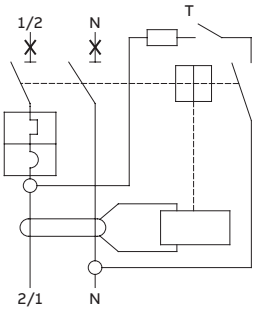
Dimensions and connections

Overall dimensions DS201

All measurements in mm



Main connection



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9AKK107492A1718 - 04.2025