DDA 500 RCD blocks for S500 Heavy Duty Circuit-Breakers

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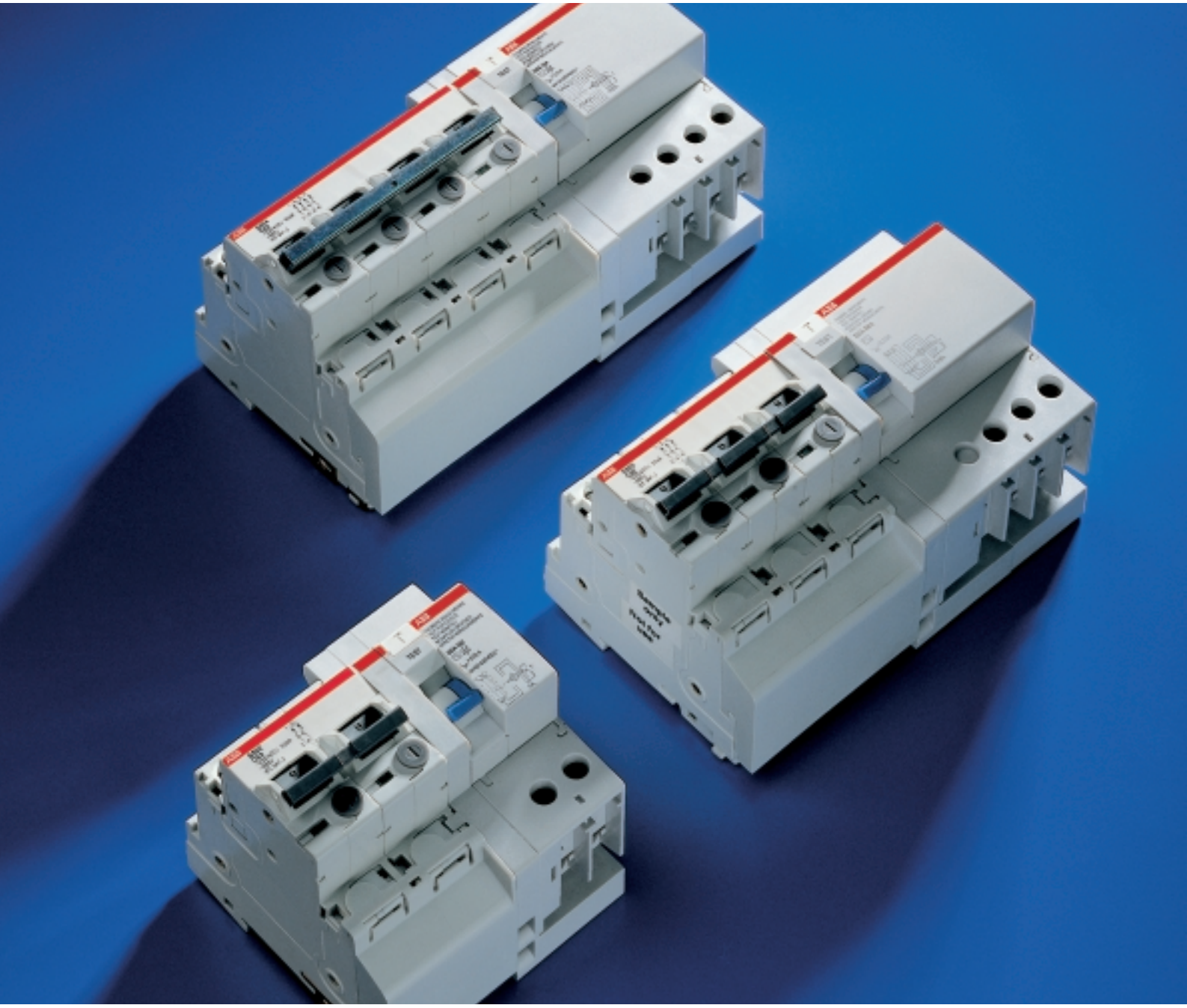

The new series of DDA 500 for Heavy Duty Circuit-Breakers is now available thus completing the offer of residual current blocks from ABB

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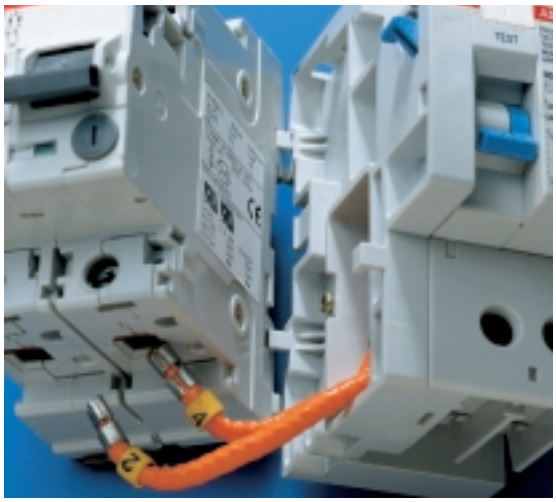

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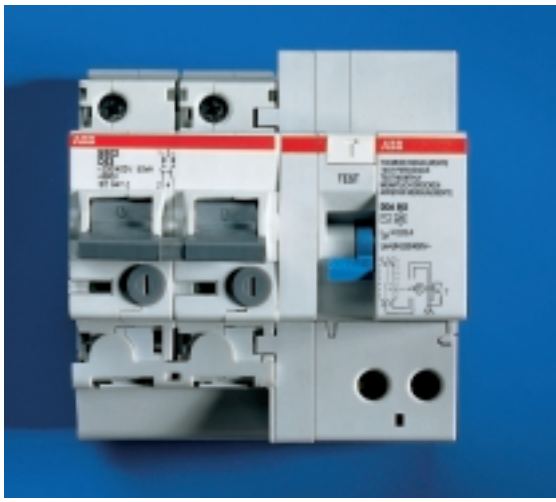
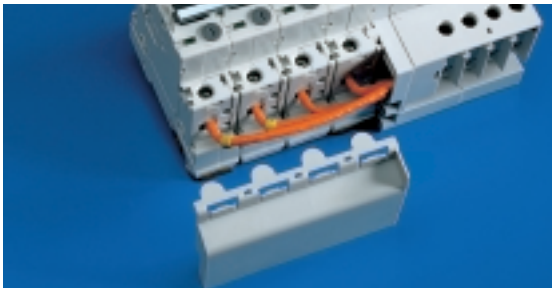


The DDA 500 series includes blocks size of 63 A. Sensitivity IDn 30 mA and 300 mA for the AC and A type while A selective type provides for 300 mA, 500 mA and 1000 mA. Type AC and A are available in 2P, 3P and 4P configuration while A selective type is supplied only in 4P.

In all applications where high short-circuit currents may occur, the coupling of DDA 500 blocks to S500 circuit-breakers with B, C and D characteristic guarantees residual protection of people from direct and indirect contacts while allowing the safe operation of installations against insulation faults.
Efficiency can be even increased by the installation of auxiliary and signal contacts or other accessories.



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The additional plastic cover makes the installation of the DDA 500 blocks safer since it prevents any accidental contact with terminals.

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Correct operation of the DDA 500 blocks is guaranteed even at the lowest temperatures (-25 °C).

The range of ABB residual current blocks has been extended to include the new DDA 500 for coupling to S500 Heavy Duty Circuit-Breakers; therefore guaranteeing the highest performances required in industrial applications.
To this adds the ease of cabling, which is as flexible and quicker as for all ABB modular circuit-breakers; and the choice for auxiliary and accessory elements is just as wide.

The mounting on the right side of the circuit-breaker allows for space saving in the switchboard and makes coordination possible with the whole range of System pro *M* devices. The block can be fitted directly by the installer:
installing of signal and auxiliary contacts, shunts and undervoltage releases is admitted on the left side.
Compliance with protection and safety requirements is met in the DDA 500 by the additional plastic cover that prevents accidental contacts from terminals. The blue toggle operates to indicate any residual current trip and the test button allows for periodically checking their functionality.
The new blocks also assure insensitivity to electric or electromagnetic disturbances and operation at the lowest temperatures; the insulation voltage is 690 V.

Technical characteristic

			DDA 560	DDA 570	DDA 590
Standards			IEC/EN 61009 IEC/EN 60947-2 Ann. B		
Type			AC	A	A (selective)
Rated current In		A	63		
Poles			2P, 3P, 4P		4P
Rated voltage Ue		V	230/400		
Insulation voltage Ui		V	690		
Max. operating voltage Ub max.		V	440		
Min. operating voltage Ub min.		V	195		
Rated breaking capacity acc. to IEC/EN 61009		A	according to the breaking capacity of associated MCB		
Rated breaking capacity acc. to IEC/EN 60947-2		A	according to the breaking capacity of associated MCB		
Rated residual breaking capacity IΔm with S500		kA	50		
Voltage with standing capacity	impulse (1.2/50) Uimp	kV	5		
	at rated freq. (50-60Hz) x 1 min.	kV	3		
Max. operating voltage of circuit test		V	440*		
Min. operating voltage of circuit test (special version down to 125 V)		V	195*		
Surge current resistance		A	250 A (8/20 wave) acc. to VDE 0432 Part 2		3000 A (8/20 wave) acc. to VDE 0432 Part 2
Rated frequency		Hz	50…60		
Rated sensitivity IΔn		A	0.03 - 0.3	0.03 - 0.3	0.3 - 0.5 - 1
Tripping threshold	AC Type		0.5…1 IΔn		
	A Type		0.11…1.4 IΔn		
Tripping time	at IΔn	ms	< 220		130…500
	2 IΔn	ms	< 80		60…200
	5 IΔ n	ms	< 40		50…150
	500 A	ms	< 40		40…150
Toggle			blue operating just from OFF position		
Electrical life			10000		
Mechanical life			20000		
Protection degree	housing		IP4X/IPXXD (excluding terminal area)		
	terminals		IP2X/IPXXB		
Self-extinguishing degree			V0 thickness 1.6 UL 94 yellow paper		
Mechanical shock resistance			"26 g half wave, duration 6 ms, 2000 shocks"		
Resistance to vibrations acc. to IEC 68-2-6			"minimum 5 g, duration 30 min., at frequency 0…80 Hz"		
Tropicalization	humid heat	°C/RH	28 cycles with 55/95…100		
acc. to IEC 68-2	constant climatic conditions	°C/RH	23/83 - 40/93 - 55/20		
	variable climatic conditions	°C/RH	25/95 - 40/95		
Ambient temperature (with daily average ≤+35°C)		°C	-25...+55		
Storage temperature		°C	-25…+70		
Terminal size		mm2	25		
Mounting			on DIN rail EN 50022 (35 mm)		
Dimensions	2P	mm	44		
H 97.5 x D 80.5 x W:	3P/4P	mm	79		
Weight	2P	g	250		
	3P/4P	g	325/390		

			S500
Standards			IEC/EN 60898 IEC/EN 60947-2 UL 1077 CAN/CSA-C22.2 N235-M89
Poles			1P, 2P, 3P, 4P
Rated current In		A	6 ≤ In ≤ 63
Rated voltage Ue		V	690
Insulation voltage Ui		V	690
Rated breaking capacity acc. to IEC/EN 60898			
	ultimate Icn	kA	25
	service Ics	kA	12.5
Rated breaking capacity acc. to IEC/EN 60947-2 230 /400 V			
	ultimate Icu	kA	50
	service Ics	kA	25
Rated breaking capacity acc. to IEC/EN 60947-2 440 V			
	ultimate Icu	kA	30
	service Ics	kA	22
Tripping characteristic	B: 3 In < Im < 5 In		●
	C: 5 In < Im < 10 In		●
	D: 10 In < Im < 20 In		●
Total short-circuit breaking time			max. 2.5 ms at I_{cc} 30 kA
Mounting			on DIN rail EN 50022 (35 mm) by means of rapid fixing device

* For other voltages, special versions are available upon request

Ordering information

Order code	ELC code	DESCRIPTION
16258302	EY 830 2	DDA 562 63A 30MA
16258310	EY 831 0	DDA 562 63A 300MA
16258328	EY 832 8	DDA 563 63A 30MA
16258336	EY 833 6	DDA 563 63A 300MA
16258344	EY 834 4	DDA 564 63A 30MA
16258351	EY 835 1	DDA 564 63A 300MA
16258369	EY 836 9	DDA 572 63A 30MA
16258377	EY 837 7	DDA 572 63A 300MA
16258385	EY 838 5	DDA 573 63A 30MA
16258393	EY 839 3	DDA 573 63A 300MA
16258401	EY 840 1	DDA 574 63A 30MA
16258419	EY 841 9	DDA 574 63A 300MA
16258427	EY 842 7	DDA 594 63A 300MA
16258435	EY 843 5	DDA 594 63A 500MA
16258443	EY 844 3	DDA 594 63A 1000MA

According to their specific tripping times DDA 500 residual current blocks can be classified into the two different categories of:

- DDA 560 and DDA 570 instantaneous RCD blocks
- DDA 590 selective RCD blocks.

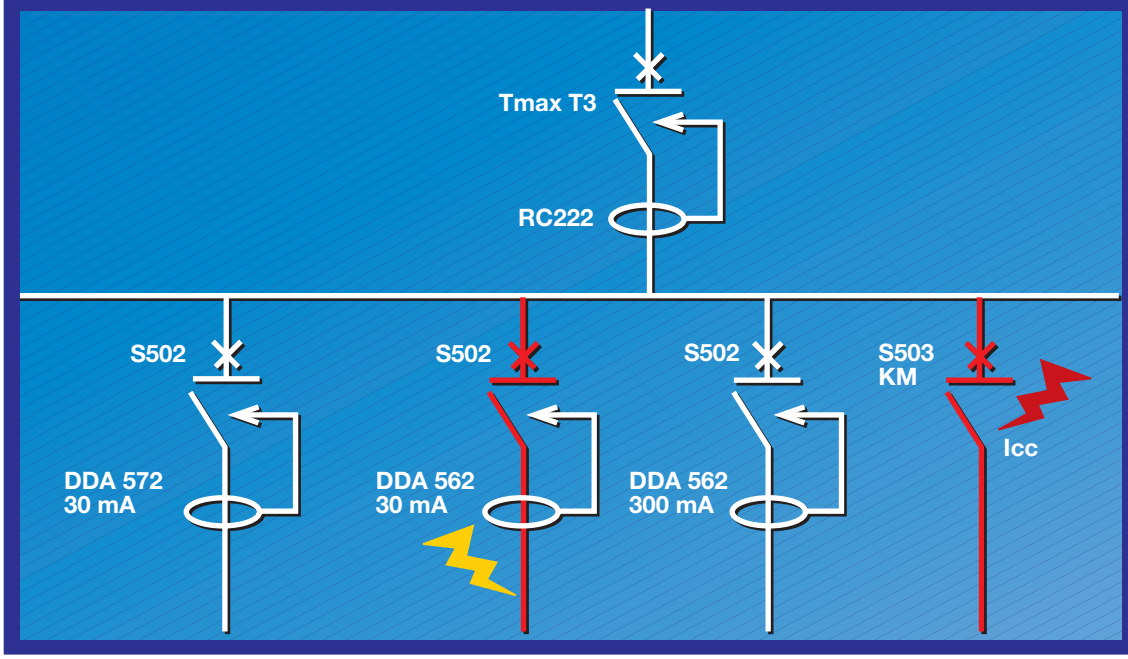
According to the wave shape of the earth leakage current to which they are sensitive, RCD blocks are divided into:

- AC type DDA 560 blocks for installations where there may be loads with alternate faults currents;
- A type DDA 570 and 590 blocks for installations where there may be loads with pulsating leakage currents with DC components (e.g. users equipped with electronic devices meant to rectify currents or other physical variables such as speed, temperature, light intensity and so on).

The RCBO device derived by the coupling of a DDA

(left) A first residual current protection level is supplied when S500 circuit-breakers are coupled to instantaneous DDA 560 or DDA 570 blocks downstream with respect to moulded-case circuit-breakers (e.g. Tmax).

(below) In case of an additional delayed residual current release coupled with the upstream MCCB (eg. Tmax) total selectivity is assured by the tripping time either of the DDA 500 block and of the S500.



In this case DDA 590 supply a second residual current protection level; the first level is provided by the instantaneous RCDs downstream.
The S500 assures back-up protection up to 50 kA for any downstream MCB/ RCBO.
As shown either in the picture and in the diagram, the coupling of the circuit-breaker to a selective DDA 590 block allows for vertical selectivity in case of earth faults when downstream MCBs (e.g. S 2.. and S 9..) are fitted with instantaneous residual current devices (e.g. D and DDA blocks and DS 9..) thus guaranteeing total continuity of the supply.

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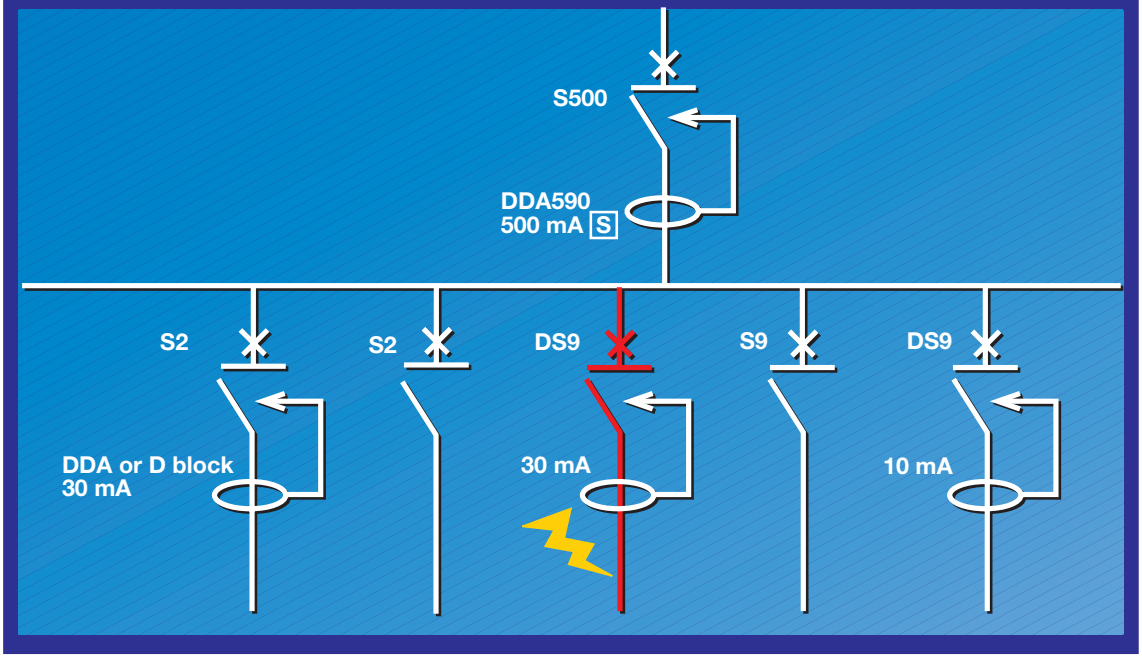

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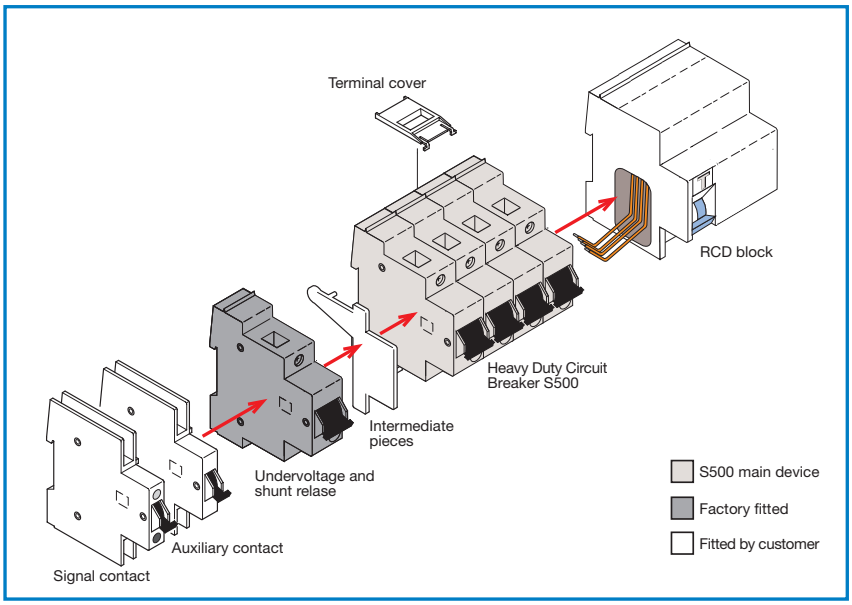
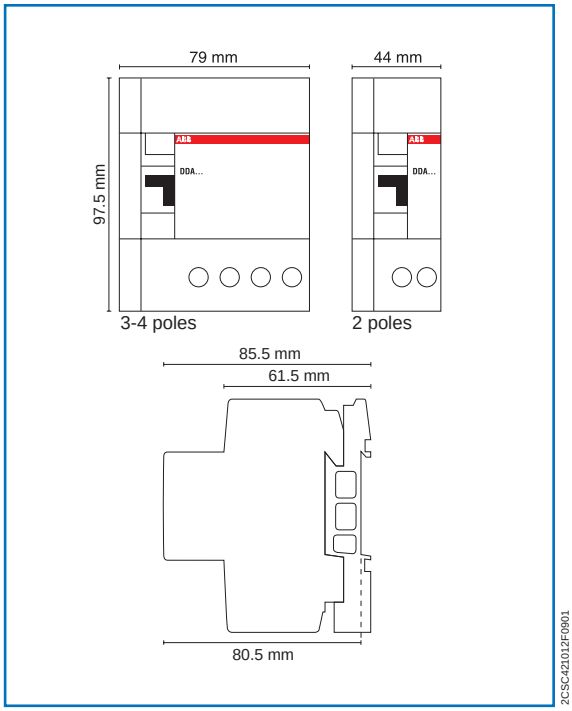
500 block to an S500 circuit-breaker provides for I_{cu} breaking capacity of 50 kA according to IEC 60947-2.
Thanks to its short tripping time it is possible to assure a back-up protection installing an S500 upstream with respect to standards MCBs; the availability of selective type RCD-blocks allows the vertical selectivity in case of earth faults when downstream MCBs are fitted with residual current protection.

Accessories



Overall dimensions



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