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Measuring current transformers of the W...AB(P) series

W-AB(P)_D00074_01_D_XXEN/05.2016

Measuring current transformers of the W…AB(P) series

W60AB measuring current transformer

Device features

- W20AB…W60AB for AC/DC sensitive RCMA420 residual current monitors
- W20AB…W210AB for RCMS460/490 residual current monitoring systems or for RCMA423 residual current monitors
- W35ABP and W60ABP for RCMS460/490 and for RCMA420/423 residual current monitors. For use in systems where short-term load currents are likely to occur.

Approvals

Product description

Measuring current transformers of the W…-AB series are measuring current transformers which in combination with devices of the RCMA420/423 resp. RCMS460/490 series convert AC and DC currents into evaluable measurement signals. Connection to the respective devices is via a five-wire or six-wire cable. The CTs can be used in DC, AC, and 3(N) AC systems. If the measuring current transformers are to be connected to an RCMS460/490 system, one AN420 or AN110 power supply unit is required for six measuring current transformers each.

The measuring current transformers of the W35ABP and W60ABP series feature an integrated Mumetal shield.

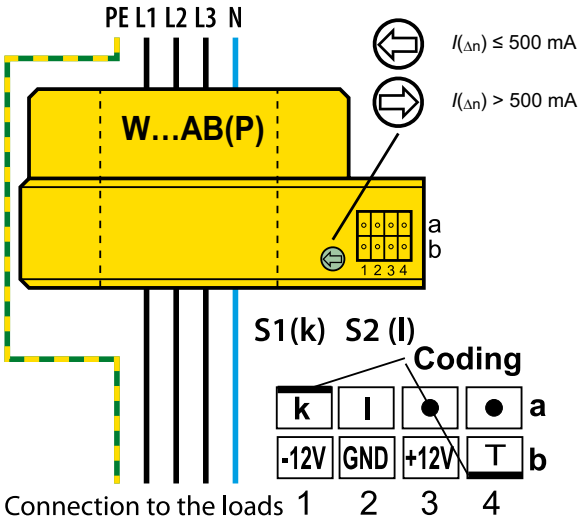
Standards

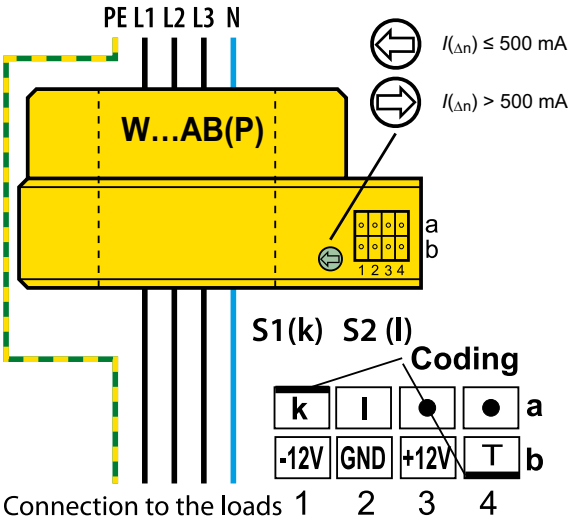
W…AB series measuring current transformers comply with the device standards: IEC 61869-1.

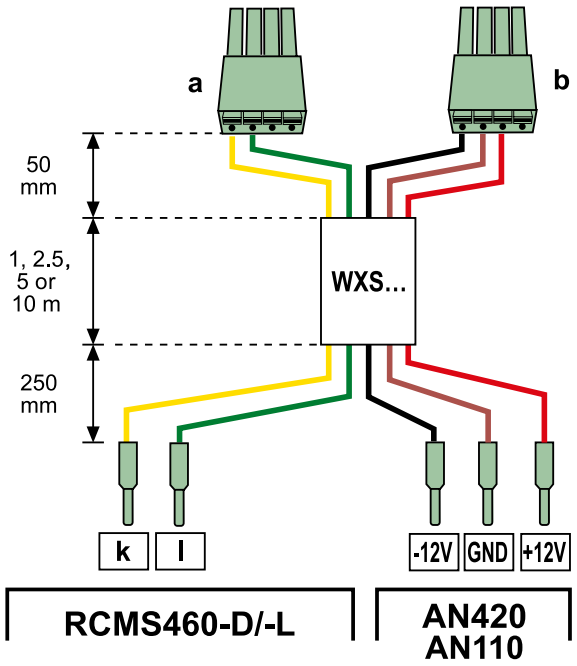
Installation instructions

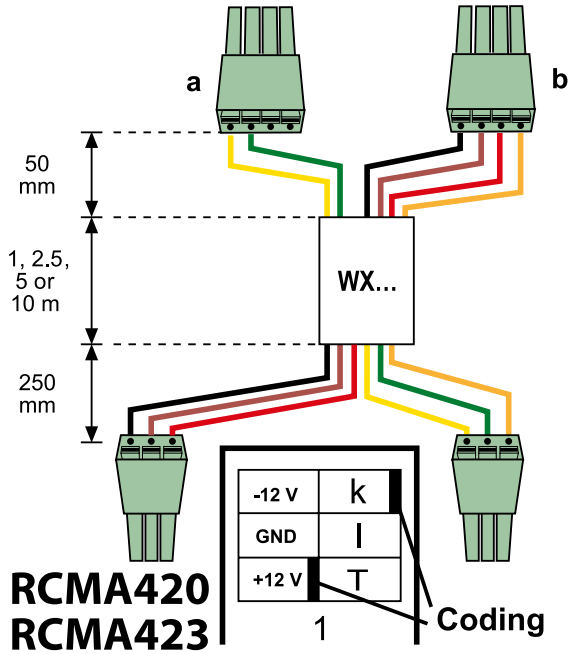
- Make sure that all live conductors are routed through the measuring current transformer
- Do not route shielded conductors through the measuring current transformer
- As a general principle, the PE conductor und low-resistance conductor loops must not be passed through the measuring current transformer! Otherwise the applied AC/DC sensitive measurement technique can result in high currents being induced into the conductor loop.

Wiring diagram





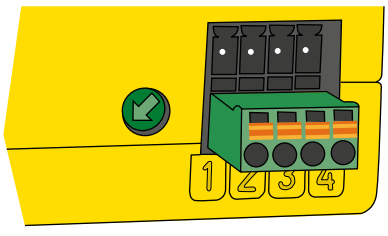


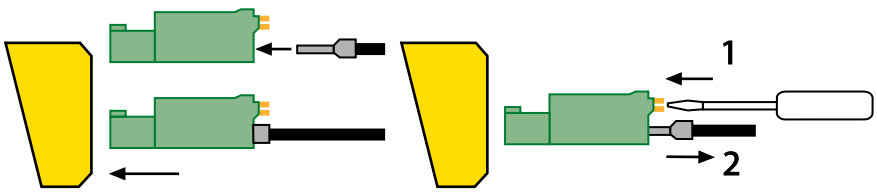


Connection to the RCMS460/490 residual current monitor using the WXS-… connecting cable.

Connection to the RCMA420/423 residual current monitor using the WX-… connecting cable.

Colour coding for WXS… and WX…:
k = yellow, l = green, -12 V = black, GND = brown, +12 V = red, Test (T) = orange





Technical data

Insulation coordination acc. to IEC 60664-1/IEC 60664-3

Rated voltage	800 V
Rated impulse voltage/pollution degree	8 kV/3

Supply voltage

Supply voltage U_S	DC ± 12 V
Operating range of U_S	0.95…1.05 x U_S
Power consumption	≤ 2.5 VA

CT circuit

Rated primary residual current W20AB	10…500 mA
Rated primary residual current W35AB(P)…W120AB	10 mA…10 A
Rated primary residual current W210AB	300 mA…10 A
Rated continuous thermal current Icth	40 A
Rated short-time thermal current Ith	2.4 kA/1 s
Rated dynamic current Idyn	6.0 kA/40 ms

Environment/EMC

EMC	IEC 62020
Operating temperature	-10…+55 °C
Climatic class acc. to IEC 60721	
Stationary use (IEC 60721-3-3)	3K5 (except condensation and formation of ice)
Transport (IEC 60721-3-2)	2K5 (except condensation and formation of ice)
Long-time storage (IEC 60721-3-1)	1K5 (except condensation and formation of ice)
Classification of mechanical conditions IEC 60721	
Stationary use (IEC 60721-3-3)	3M4
Transport (IEC 60721-3-2)	2M2
Long-time storage (IEC 60721-3-1)	1M3

Connection

Type of connection	plug-in connectors
Connection RCMA/RCMS measuring current transformers	see table “connecting cables”

Other

Degree of protection, internal components (IEC 60529)	IP40
Degree of protection, terminals (IEC 60529)	IP20
Screw mounting	fillister head screw M5 acc. to DIN7985
DIN rail mounting (W20AB… W60AB(P) only)	Snap-on mounting
Flammability class	UL94 V-HB
Documentation number	D00074

Ordering information

Mounting	Inside diameter	Type	Art. No.
Mounting brackets, DIN rail	20 mm	W20AB	B 9808 0008
	35 mm	W35AB	B 9808 0016
		W35ABP	B 9808 0051
	60 mm	W60AB	B 9808 0026
		W60ABP	B 9808 0052
Mounting brackets	120 mm	W120AB	B 9808 0041
	210 mm	W210AB	B 9808 0040

Connecting wires

For device	Length	Type	Art. No.
RCMA420/423	1 m	WX-100	B 9808 0503
	2.5 m	WX-250	B 9808 0504
	5 m	WX-500	B 9808 0505
	10 m	WX-1000	B 9808 0511
RCMS460/490	1 m	WXS-100	B 9808 0506
	2.5 m	WXS-250	B 9808 0507
	5 m	WXS-500	B 9808 0508
	10 m	WXS-1000	B 9808 0509

Control cable LiYY flexible, 6 x AWG 20 (6 x 0.56 mm²), approved by UL 2464

Accessories

Type designation	For device	Art. No.
Snap-on mounting	W20AB, W35AB(P)	B 9808 0501
	W60AB(P)	B 9808 0502

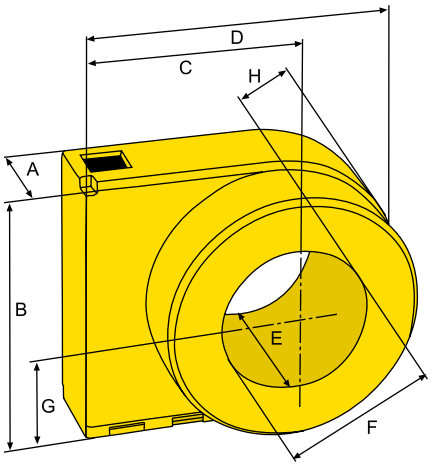
Suitable system components

Type designation	Supply voltage U_S	Type	Art. No.
Power supply units	AC 16…72 V/DC 9,6…94 V DC, AC 42…66 Hz	AN420-1	B 7405 3099
	AC/DC 70…276 V DC, AC 42…460 Hz	AN420-2	B 9405 3100
	AC 20…60 V; DC 18…72 V DC, AC 50…60 Hz	AN110-1	B 9405 3101
	AC 90…264 V; DC 100…353 V DC, AC 50…60 Hz	AN110-2	B 9405 3102

Selection list

Type	RCMA420	RCMA423	RCMS460/490
W20AB	■	■	■
W35AB(P)	■	■	■
W60AB(P)	■	■	■
W120AB	–	■	■
W210AB	–	■	■

Dimension diagram

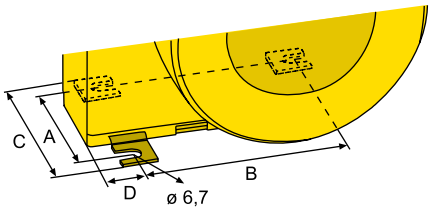


Dimensions (mm)									Weight
Type	A	B	C	D	E	F	G	H	
W20AB	30	56.3	50	76.4	48.5	ø 20	29.8	16.4	180 g
W35AB(P)	30	79.2	62	99.5	55	ø 35	41.7	20	350 g
W60AB(P)	37	116.4	79	135	67	ø 60	60.4	24	570 g
W120AB	37	191.5	116.5	210	67	ø 120	98	33.5	1920 g
W210AB	45	304.5	173	323	80	ø 210	154.5	45	5800 g

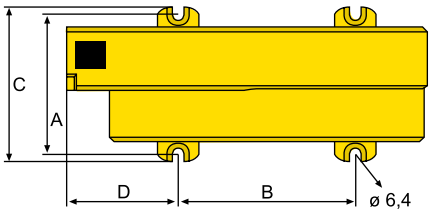
Tolerance: ± 0.5 mm

Mounting details

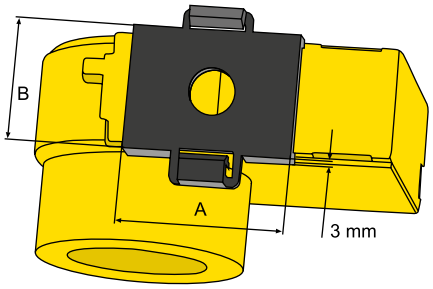
Screw mounting with mounting brackets:
W20AB, W35AB(P), W60AB(P)

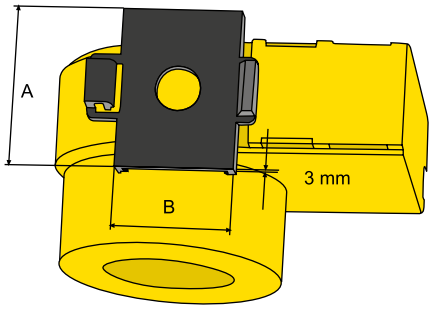


Screw mounting: W120AB, W210AB



Snap-on mounting on DIN rail, for vertical or horizontal mounting:
W20AB, W35AB(P), W60AB(P)





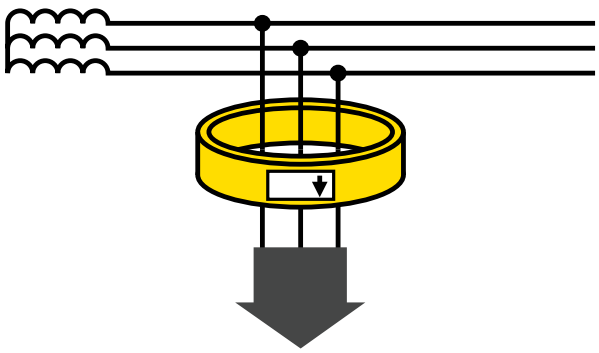
Dimensions (mm)				
Type	A	B	C	D
W35 (mounting with 2 mounting brackets diagonal)	49	31.4	65	18.6
W35AB(P) (mounting with 2 mounting brackets diagonal)	49	49.8	65	12.1
W60AB(P) (mounting with 3 mounting brackets diagonal)	56	66	72	17.7
W120AB (screw mounting)	81	103	90.6	65
W210AB (screw mounting)	98	180	117.1	83

Dimensions in mm
Tolerance for screw mounting with mounting brackets: ± 1.5 mm

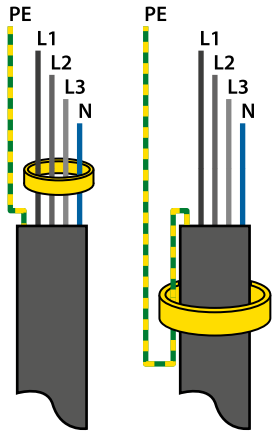
Dimensions (mm)		
Type	A	B
W20AB	43.5	32
W35AB(P)	43.5	32
W60AB(P)	50	39

Installation instructions

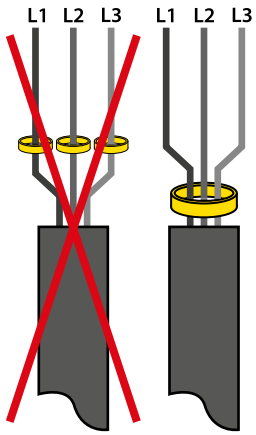
- Do not pass shielded cables through the measuring current transformer.
- As a general principle, the PE conductor and low-resistance conductor loops must not be passed through the measuring current transformer!



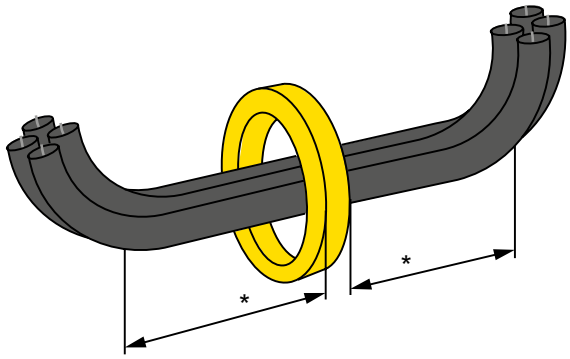
It is important that the leads are passed through the measuring current transformer in the right direction



Never pass a PE conductor through the measuring current transformer

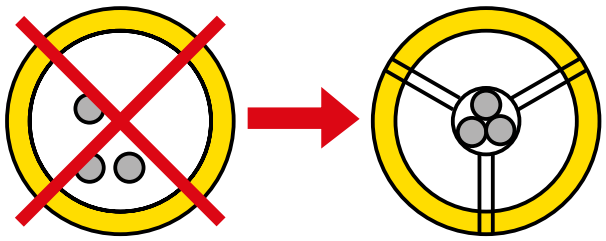


Make sure that all current-carrying leads are passed through the measuring current transformer



* Distance to the 90° angle = 2 x transformer outside diameter

Bending a lead is only permissible with a certain distance to the current transformer



The leads must be aligned with the centre of the measuring current transformer

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