

Residual current evaluators

RCMS460-D... / -L...

RCMS490-D... / -L...

Multi-channel AC, pulsed DC and AC / DC sensitive residual current evaluators for earthed AC, DC and AC / DC systems (TN and TT systems)



RCMS460-D and RCMS490-L

Device features

- Optional AC, pulsed DC or AC / DC sensitive measurement by selecting the respective measuring current transformer for each channel
- True r.m.s. value measurement
- 12 measuring channels per device for residual current measurement or digital input
- Up to 90 RCMS... evaluators, monitoring of 1080 measuring channels in the system
- Fast parallel scanning for all channels
- Response ranges
 - 10 mA... 10 A (0...2000 Hz)
 - 6 mA... 20 A (42...2000 Hz)
 - 100 mA... 125 A (42...2000 Hz) RCMS...-D4
- Preset function
- Adjustable time delays
- The frequency response characteristics can be set for the protection of persons, fire and plant protection
- History memory with date and time stamp for 300 data records
- Data logger for 300 data records / channel
- Analysis of the harmonics, DC, THD
- Two alarm relays with one changeover contact each
- Device version RCMS490 with one alarm contact per channel
- N / O or N / C operation and fault memory behaviour selectable
- Connection external test / reset button
- Backlit graphical display (7-segment display) and alarm LEDs
- Data exchange via BMS bus
- Password protection for device setting
- Continuous CT connection monitoring
- RoHS-compliant

Approvals and certifications



Product description RCMS460-D... / -L... and RCMS490-D... / -L...

The RCMS system consists of one or more RCMS460-D / -L or RCMS490-D / -L residual current evaluators, which are able to detect and evaluate fault, residual and operating currents in earthed power supplies via the related measuring current transformers. The maximum voltage of the system being monitored depends on the nominal insulation voltage of the measuring current transformers used in case of busbar systems, or on the cables or conductors that are routed through. Optionally, the measuring channels can be used as digital inputs (I / O) for scanning potential-free contacts.

Closed W...AB series measuring current transformers are required to measure AC / DC sensitive residual currents (0...2000 Hz). Six W...AB series measuring current transformers require one AN420 or AN110 power supply unit. W... (closed), WR... (rectangular), WS... (split-core) and WF... (flexible) series measuring current transformers are used for alternating and pulsating currents (42...2000 Hz). The measuring current transformer series can be used in any combination with the measuring channels of the evaluators. Each RCMS460-D / -L and RCMS490-D / -L has 12 measuring channels. Up to 90 RCMS evaluators can be connected via a BMS bus (RS-485 interface with BMS protocol), thereby up to 1080 measuring channels (sub-circuits) can be monitored.

If this product is to be used for personnel, fire or plant protection, the frequency response can be set accordingly. The measured currents can be analysed for harmonics.

Applications

- Measuring and evaluating residual, fault and rated currents of loads and installations in the frequency range of 0...2000 Hz (W...AB series measuring current transformers), 42...2000 Hz (W..., WR..., WS..., WF... series measuring current transformers)
- Monitoring of currents regarded as fire hazards in flammable atmospheres
- Monitoring of TN-S systems for stray currents and additional N-PE connections
- Monitoring of N conductors for overload caused by harmonics
- Monitoring of PE and equipotential bonding conductors to ensure they are free of current
- Residual current monitoring of stationary electrical equipment and systems to determine test intervals which meet practical requirements in compliance with the accident prevention regulations BGV A3 (Germany)
- Personnel and fire protection due to rapid disconnection
- Monitoring of digital inputs

Function

The currents are detected and evaluated as true r.m.s. values in the frequency range of 0 (42)...2000 Hz. All channels are scanned simultaneously so that the maximum scanning time for all channels is ≤ 180 ms if 1 x the response value is exceeded and ≤ 30 ms if 5 x the response value is exceeded. The current values of all channels are shown on the LC display in bar graph format. If one of the two set response values is exceeded, the response delay begins. Once the response delay has elapsed, the "K1 / K2" alarm relays switch and the alarm LEDs 1 / 2 light up. Two response values / alarm relays, which can be set separately, allow a distinction to be made between a "prewarning" and an "alarm". The faulty channel(s) and the associated measured value are shown on the LC display. If the current falls below the release value (response value plus hysteresis), the release delay begins. Once the delay has elapsed, the alarm relays return to their initial position. If the fault memory is enabled, the alarm relays remain in alarm position until the reset button is pressed or a reset command is sent via the BMS bus. The device function can be tested using the test button. Parameters are assigned to the device via the LCD and the control keys on the front of one of the connected RCMS...-D devices or via connected panels and protocol converters (e.g. FTC470XET). The preset function allows all channels to be simultaneously set to the installation's pre-fault current plus an additional factor and offset, which you can select.

Digital input:

For each measuring channel it is possible to select a residual / current measurement or the scanning of a floating contact as a digital input (O / I).

History memory in RCMS460-D..., RCMS490-D...

The device utilises a history memory for failsafe storing of up to 300 data records (date, time, channel, event code, measured value), so that all data about an outgoing circuit or an area can be traced back at any time (what happened when).

Analysis of harmonics

The analysis of the harmonics of the measured currents can be selected via a menu item in RCMS460-D, RCMS490-D. There, the DC component, the THD factor and the current value of the harmonics (1...40 at 50, 60 Hz, 1...5 at 400 Hz) is displayed numerically and graphically.

Device variants

RCMS460-D...

Device version RCMS460-D utilises a backlit graphical display. This version is applied when detailed information about all devices in the switchboard cabinet, connected to the bus, are to be displayed locally. This device is capable of assigning parameters to all RCMS devices connected to the BMS bus and displaying all measurement details. Several RCMS...-D... devices can be used in one system.

RCMS460-L

Device version RCMS460-L utilises a two-digit 7-segment display where the address of this device is displayed within the BMS bus. The alarm LEDs indicate in which measuring channel the response value has been exceeded. Parameter assignment can be carried out via an RCMS-D... or the protocol converter FTC470XET.

RCMS490-D... / RCMS490-L...

The function of the device versions RCMS490-D/RCMS490-L corresponds to the function described above. In addition, a galvanically isolated alarm contact (N / O contact) is provided, for example, to trigger a circuit breaker in this sub-circuit when a response value has been exceeded or the value has fallen below the set response value.

RCMS460-D4 / -L4

The function of the device version RCMS460-D4 / -L4 corresponds to the function described above. Deviating from the functions described above, the measuring channels K9...12 are designed for current measurements with Type A measuring current transformers (measuring range 100 mA...125 mA). These channels cannot be used as digital inputs or in combination with W...AB series measuring current transformers.

Standards

The RCMS... corresponds to the requirements of IEC 62020: 2003-11 and DIN EN 62020 (VDE 0663): 2005-11.

Overview of device types				
Distinctive device features	RCMS460-D...	RCMS460-L	RCMS490-D...	RCMS490-L...
Parameter setting function	×	--	×	--
Master / Slave	×	×	×	×
Address range	1...90	1...90	1...90	1...90
Measuring circuit				
Measuring channels per device	12	12	12	12
W..., WR..., WS..., W...AB, WF... series measuring current transformers	×	×	×	×
CT monitoring	×	×	×	×
Rated residual operating current $I_{\Delta n2}$ (Alarm) AC / DC sensitive 0...2000 Hz (Type B)	10 mA...10 A	10 mA...10 A	10 mA...10 A	10 mA...10 A
Pulsed current sensitive 42...2000 Hz (Type A)	6 mA...20 A	6 mA...20 A	6 mA...20 A	6 mA...20 A
Pulsed current sensitive 42...2000 Hz (Type A) for channel 9...12 (RCMS4x0-D4 / -L4)	100 mA...125 A	100 mA...125 A	100 mA...125 A	100 mA...125 A
Rated residual operating current $I_{\Delta n1}$ (prewarning)	10...100 %, min. 5 mA	10...100 %, min. 5 mA	10...100 %, min. 5 mA	10...100 %, min. 5 mA
Function selectable per channel off, <, >, I / O	×	×	×	×
Cut-off frequency adjustable for personnel, plant and fire protection	×	*	×	*
Preset function for $I_{\Delta n2}$ and I / O	×	×	×	×
Hysteresis	2...40 %	2...40 %	2...40 %	2...40 %
Factor for additional CT	×	×	×	×
Switching elements				
Common alarm relay for all channels	2 x 1 changeover contact	2 x 1 changeover contact	2 x 1 changeover contact	2 x 1 changeover contact
Alarm relay per channel	--	--	12 x 1 N / O contact	12 x 1 N / O contact
Specified time				
Start-up delay 0...99 s	×	×	×	×
Response delay t_v , adjustable 0...999 s	×	×	×	×
Operating time at $I_{\Delta n} = 1 \times I_{\Delta n2} \leq 180$ ms	×	×	×	×
$I_{\Delta n} = 5 \times I_{\Delta n2} \leq 30$ ms	×	×	×	×
Displays, memory				
Analysis of the harmonics (I_{Δ} , DC, THD)	×	*	×	*
History memory 300 data records	×	--	×	--
Data logger for 300 data records / channel	×	--	×	--
Internal clock	×	--	×	--
Password	×	--	×	--
Language GB, D, F	×	--	×	--
Backlit graphics LC display	×	--	×	--
7-segment display and LED line	--	×	--	×

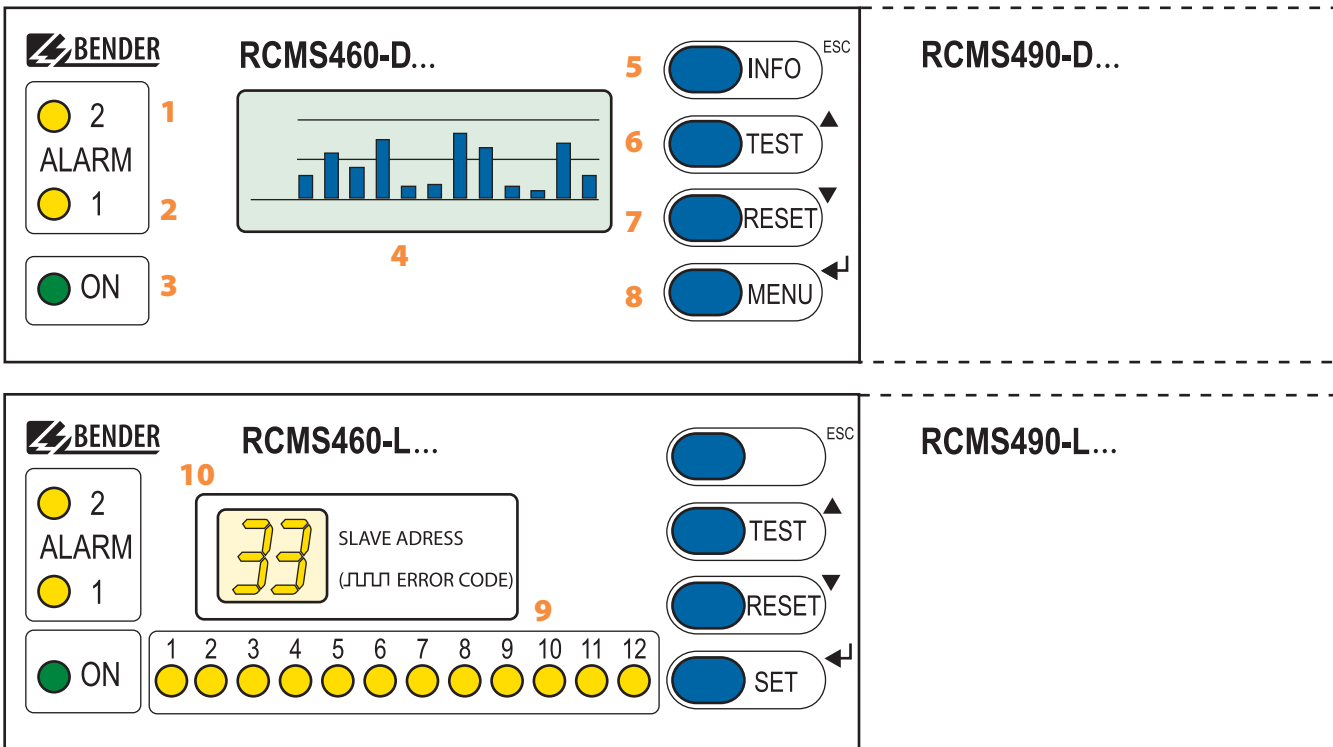
* only in conjunction with RCMS4xx-D, MK2430 or FTC470XET

The following table gives an overview of the measuring functions per channel:

Overview of measuring functions

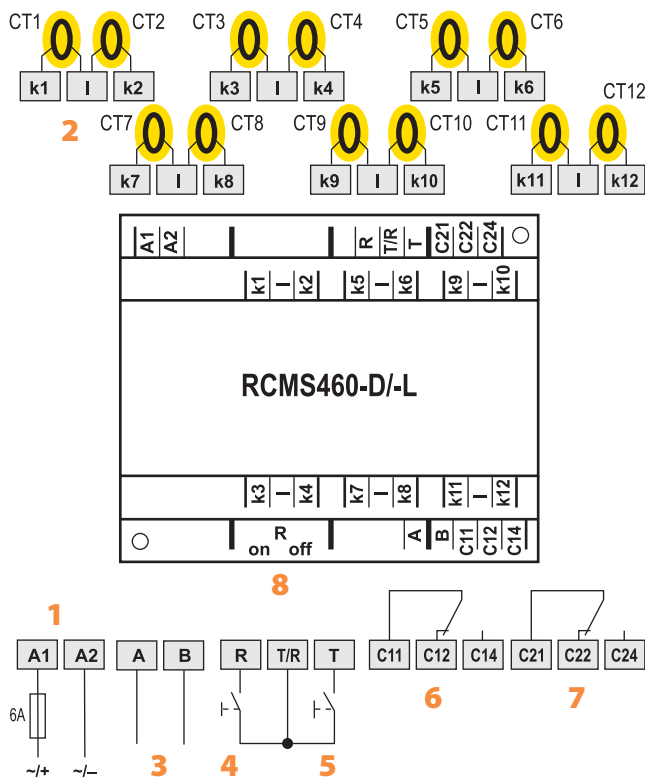
Type	RCMS460-D / -L, RCMS490-D / -L	RCMS460-D4 / -L4, RCMS490-D4 / -L4		
Measuring functions, selectable	Channel 1...12	Channel 1...8	Channel 9...12	
I / I _{Δn} 6 mA...20 A (42 ...2000 Hz)	</> / OFF	</> / OFF	--	
I / I _{Δn} 100 mA...125 A (42 ...2000 Hz)	--	--	</> / OFF	
I / I _{Δn} 10 mA...10 A (0 ...2000 Hz)	</> / OFF	</> / OFF	--	
I / 0	I / 0 / OFF	I / 0 / OFF	--	

Operating and display elements RCMS460-D... / -L ... and RCMS490-D... / -L...



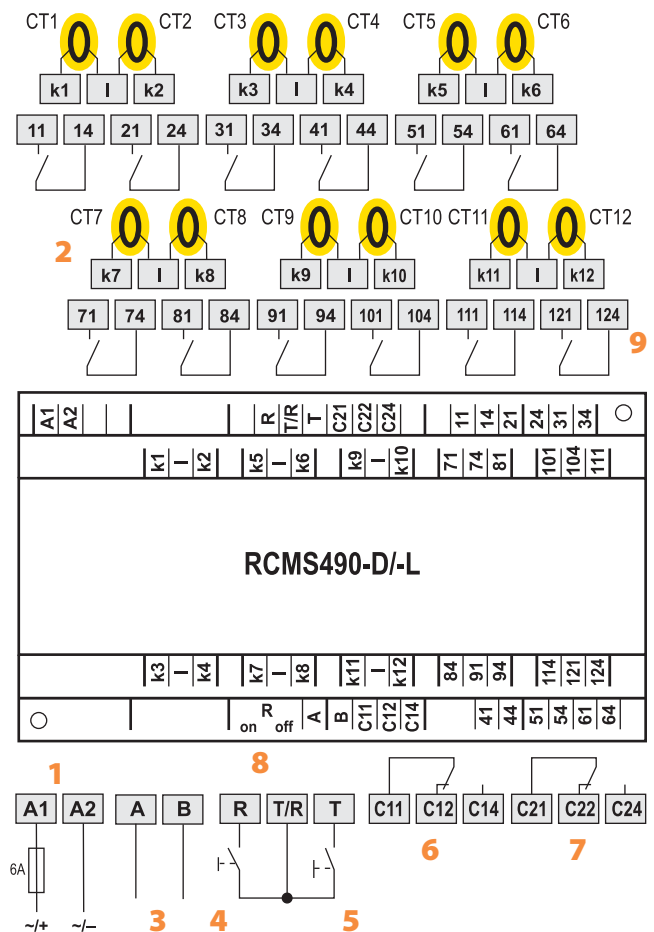
- 1 - LED "ALARM 2" lights up if the measured value falls below or exceeds the "Alarm" response value in a measuring channel or an error is indicated by the digital input
- 2 - LED "ALARM 1" lights up if the measured value exceeds or falls below the "Prewarning" response value in a channel or in the event of device error
- 3 - Power LED "ON" lights up when the device is switched on or flashes until the device is ready for operation during switching on
- 4 - Backlit graphics LC display
- 5 - INFO key: to query standard information (does not apply to RCMS4...-L)
ESC key: Exits the menu function without changing parameters
- 6 - TEST button: to call up the self test.
Up key: Parameter change, scroll.
- 7 - RESET button: to delete alarm and fault messages
Down key: Parameter change, scroll.
- 8 - MENU key: RCMS460-D / 490-D: toggles between the standard display, MENU and alarm display
SET key: RCMS460-L / 490-L: to set the BMS address
Enter key: To confirm parameter change
- 9 - Alarm LEDs "1...12" light up if a fault has been detected in the relevant measuring channel or flash if there is a fault with the measuring current transformer
- 10 - Digital display for device address and error codes

Wiring diagram RCMS460-D... / -L...



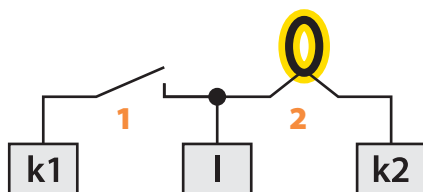
- 1 - Connection of supply voltage U_S (see ordering information) (6 A fuse recommended)
- 2 - Connection measuring current transformers CT1...CT12. Either Type A or Type B measuring current transformers can be selected for each measuring channel. Six W...AB series measuring current transformers require one AN420-2 or AN110 power supply unit. The channels k9...k12 of the device versions RCMS460-D4 / -L4 require the connection of Type A measuring current transformers.
- 3 - RS-485 interface (with BMS protocol)
- 4 - External reset button "R" (N / O contact)

Wiring diagram RCMS490-D... / -L...



- 5 - External test button "T" (N / O contact). The external T / R buttons of several devices must not be connected to one another.
- 6 - Alarm relay K1: Alarm 1, common alarm for alarm, prewarning, device error, ext. alarm (adjustable)
- 7 - Alarm relay K2: Alarm 2, common alarm for alarm, prewarning, device error, ext. alarm (adjustable)
- 8 - $R_{on/off}$: Activate or deactivate the BMS bus terminating resistor (120 Ω)
- 9 - Alarm relay: N / O contact per channel

Wiring diagram – Digital input

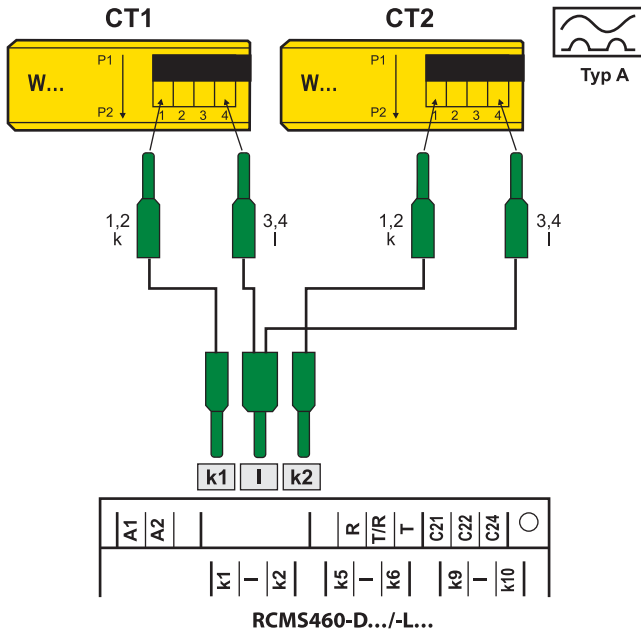


- 1 - Potential-free contact
 $0 \triangleq$ Resistance between k and I > 250 Ω
 $I \triangleq$ Resistance between k and I < 100 Ω
- 2 - Measuring current transformers

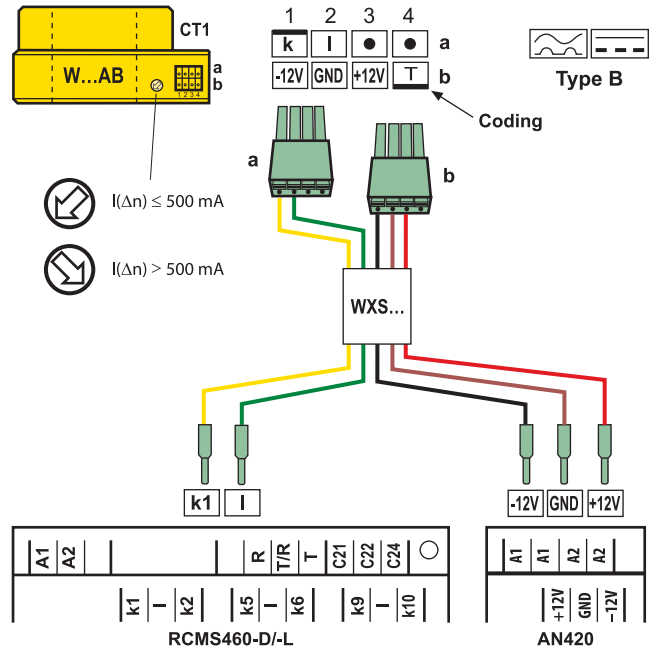


Connection W..., WR..., WS... series measuring current transformers (pulsed current sensitive)

Example: W...



Connection W...AB series measuring current transformer (AC / DC current sensitive)

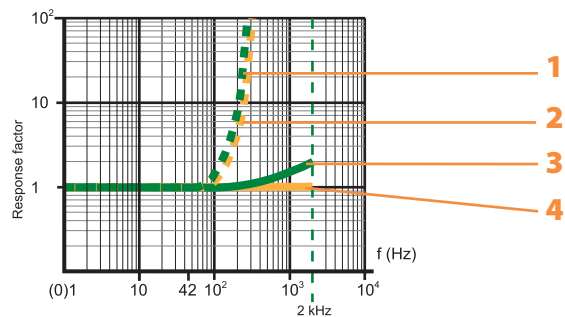


The connections k and I at the residual current evaluator must not be interchanged.

Frequency settings

The frequency response of the equipment can be set to a linear frequency response (up to the maximum frequency of Hz) if used for fire protection or to a frequency response in accordance with IEC 60990 for personnel protection. For plant protection, the residual current is measured up to the rated system frequency. The figure below shows the corresponding frequency response.

Frequency curves



Response factor = $I_{\Delta} / I_{\Delta n}$

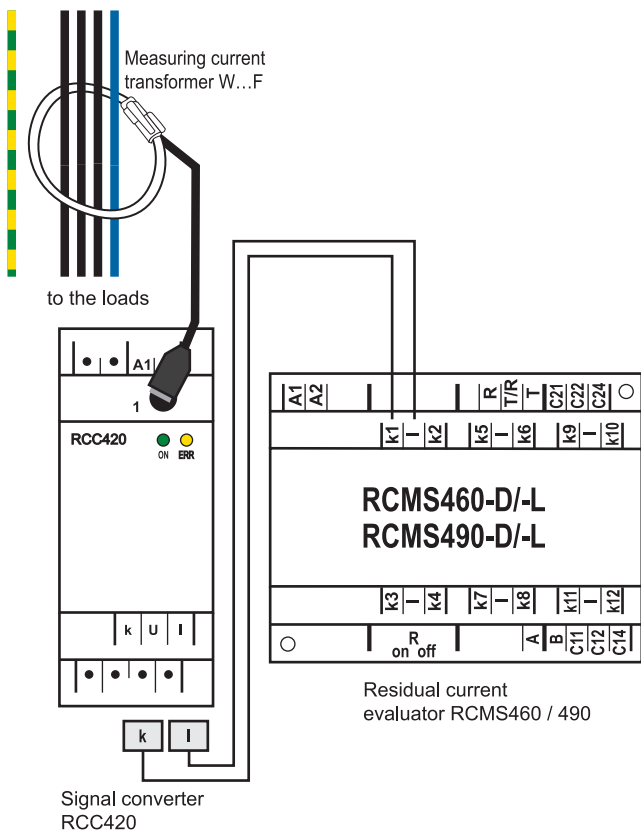
(I_{Δ}) Residual operating current: Measured value at which the RCMS responds

($I_{\Delta n}$) Rated residual operating current: Set response value

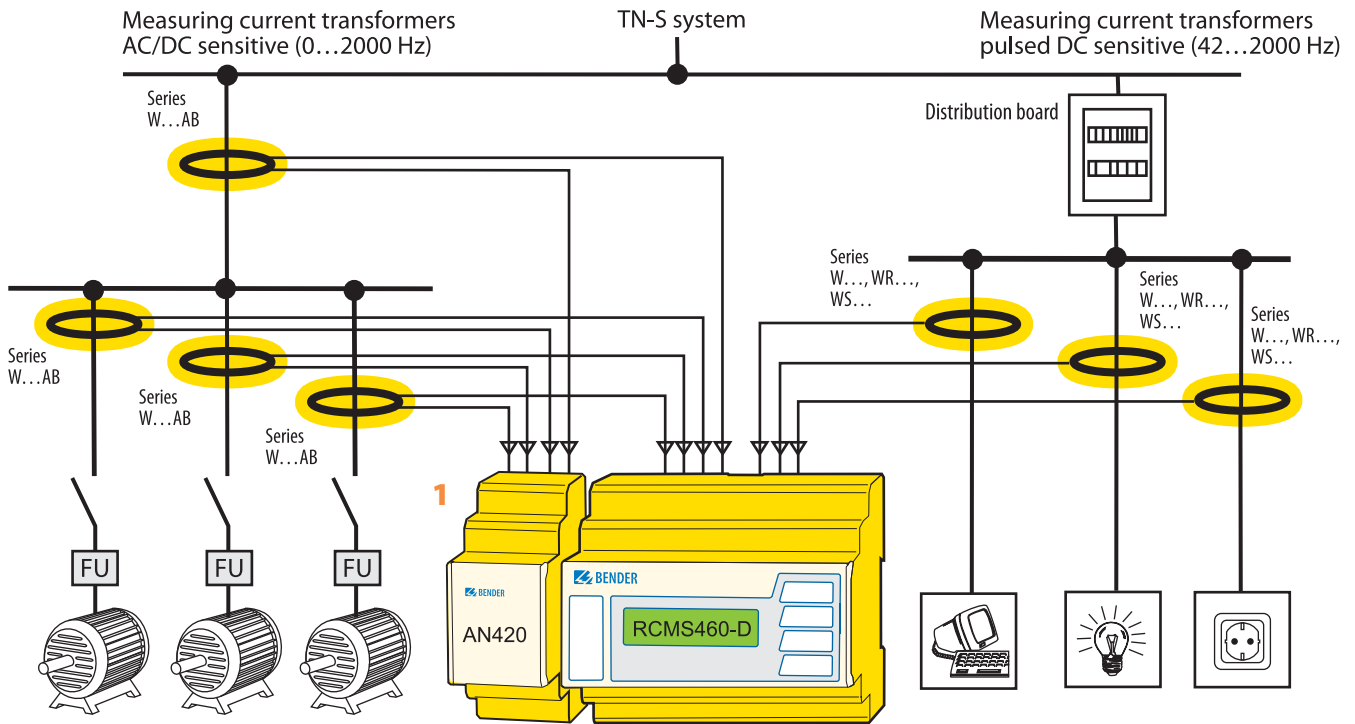
- 1 - Menu selection "50 Hz" – Plant protection: Only evaluates the fundamental component of the residual current
- 2 - Menu selection "60 Hz" – Plant protection: Only evaluates the fundamental component of the residual current
- 3 - Menu selection "IEC" – Touch current for let go (protection of persons) in accordance with IEC 60990
- 4 - Menu selection "None" – Fire protection: Response factor remains the same over the entire frequency range

4.3

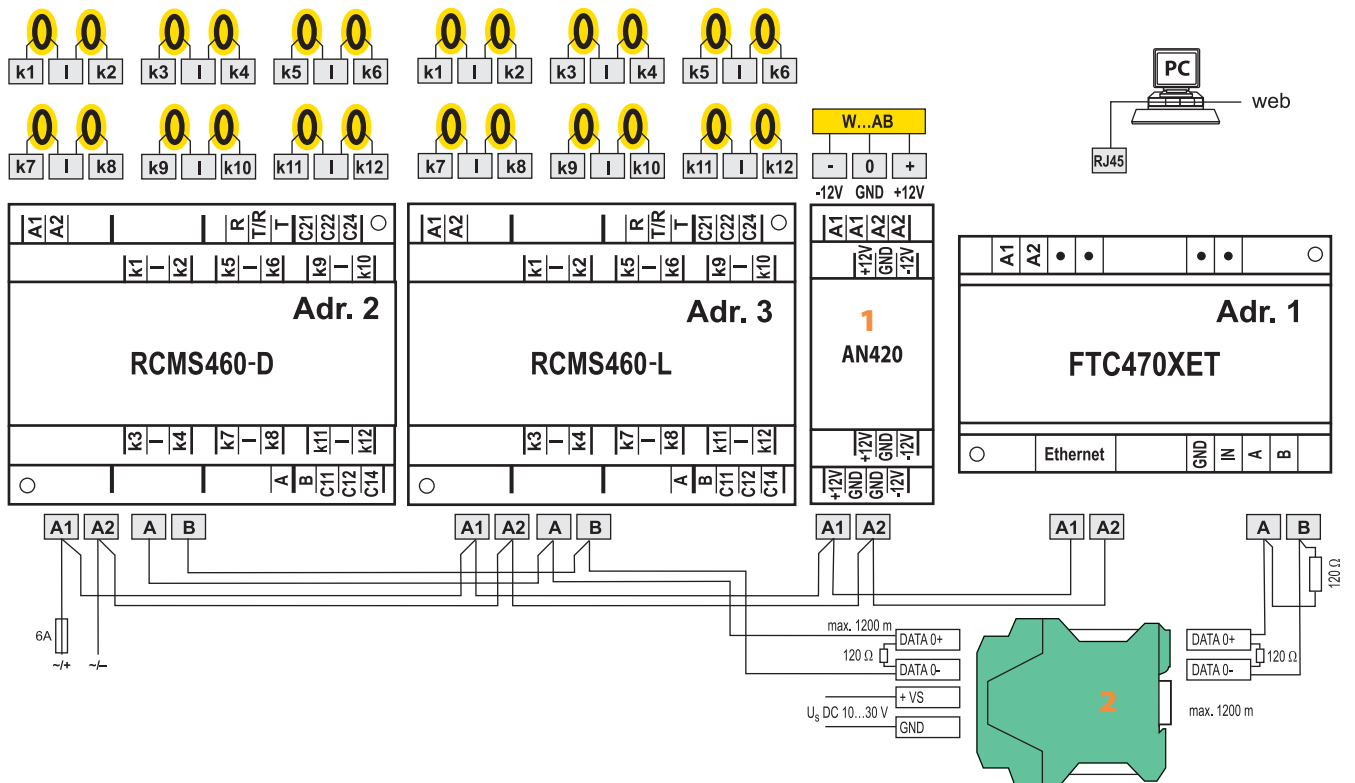
Connection WF... series measuring current transformers



Example for a design of a minimum system consisting of an RCMS460-D and 12 measuring points



Example for the design of a standard system consisting of an RCMS460-D and RCMS460-L and a protocol converter FTC470XET



Note:

- 1 - When AC / DC sensitive measuring current transformers of the W...AB series are used, an AN420 or AN110* is required that supplies up to six measuring current transformers of this type
- 2 - The DI-1 repeater PSM only is required when the length of the cable exceeds 1200 m or when more than 32 devices are connected to the bus

* If the AN110-1 is supplied with a voltage less than 30 V, the output power will be reduced, so that only five measuring current transformers can be connected.

Technical data

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

Rated insulation voltage	250 V
Rated impulse voltage / pollution degree	4 kV / III
Protective separation (reinforced insulation) between: (A1, A2) – (k1 / I...k12 / R / RT / T, AB) – (11, 12, 14) – (21, 22, 24)	
Voltage test acc. to IEC 61010-1	2.21 kV

Supply voltage

Supply voltage U_S	see ordering information
Frequency range U_S	see ordering information
Power consumption	≤ 10 VA (RCMS460) / ≤ 12 VA (RCMS490)

Measuring circuit

External measuring current transformer	W..., WR..., WS..., WF... series (Type A) W...AB series (Type B)
CT monitoring	on / off (on)*
Rated burden RCMS4x0-D / -L	68 Ω
Rated burden RCMS4x0-D4 / -L4 (channels 9...12 only)	1 Ω
Rated insulation voltage (measuring current transformer)	800 V
Operating characteristics acc. to IEC 60755	Type A and Type B (Type A)* depending on measuring current transformer series
Rated frequency	0...2000 Hz (Type B) / 42...2000 Hz (Type A)
Cut-off frequency	none, IEC, 50 Hz, 60 Hz (none)*
Measuring range RCMS4x0-D / -L	0...30 A (measuring current transformer Type A) 0...20 A (measuring current transformer Type B) crest factor up to 10 A = 4, up to 20 A = 2
Measuring range RCMS4x0-D4 / -L4 (channels 9...12 only)	100 mA...125 A
Rated residual operating current $I_{\Delta n2}$ (alarm)	10 mA...10 A (Type B) 6 mA...20 A (Type A) (100 mA overcurrent)*
Rated residual operating current $I_{\Delta n2}$ (alarm) RCMS4x0-D4 / -L4 (channels 9...12 only)	100 mA...125 A (16 A overcurrent)*
Rated residual operating current $I_{\Delta n1}$ (prewarning)	10...100 % $I_{\Delta n2}$ min. 5 mA (50 %)*
Digital input	$1 \triangle < 100 \Omega$, $0 \triangle > 250 \Omega$
Preset for alarm	Offset: 0...20 A (30 mA)*, I_{Δ} x Factor 1...99 (3)*
Preset for digital input	0 / 1 (I)*
Relative uncertainty	0...-20 %**
Hysteresis	2...40 % (20 %)
Factor for additional CT	1...10; x 1...250 (x 1)*
Number of measuring channels (per device / system)	12 / 1080

Specified time

Start-up delay t per device	0...99 s (0 ms)*
Response delay t_{on} per channel	0...999 s (200 ms)*
Delay on release t_{off} per channel	0...999 s (200 ms)*
Operating time t_{ae} at $I_{\Delta n} = 1 \times I_{\Delta n1} / 2$	≤ 180 ms
Operating time t_{ae} at $I_{\Delta n} = 5 \times I_{\Delta n1} / 2$	≤ 30 ms
Response time t_{an} for residual current measurement	$t_{an} = t_{ae} + t_{on1} / 2$
Operating time t_{ae} digital inputs	≤ 3.5 s
Scanning time for all channels (residual current measurement)	180 ms
Recovery time t_b	500...600 ms

Displays, memory

Measured value display range	0...30 A (CT Type A) 0...20 A (CT Type B)
Measured value display range RCMS4x0-D4 / -L4 (channels 9...12 only)	0...125 A (CT Type A) ... A (CT Type B)
Operating uncertainty	± 10 %
LEDs	ON / ALARM (RCMS4...-D) ON / ALARM / channel 1...12 (RCMS4...-L)
LC display	backlit graphical display (RCMS4...-D)
7-segment display	2 x 7.62 mm (RCMS4...-L)
History memory	300 data records (RCMS4...-D)
Data logger	300 data records per channel (RCMS4...-D)
Password	off / 0...999 (off)*
Language	D, GB, F (GB)*
Fault memory alarm relay	on/off (off)*

Inputs / outputs

Test / reset button	internal / external
Cable length for external test / reset button	0...10 m

Interface

Interface / protocol	RS-485 / BMS
Baud rate	9.6 kbit / s
Cable length	0...1200 m
Recommended cable (shielded, shield connected to PE on one side)	min. J-Y(ST)Y min. 2 x 0.8
Terminating resistor	120 Ω (0.25 W) via DIP switch connectable
Device address, BMS bus (RCMS460 / 490)	1...90 (2)*

Cable lengths for W..., WR..., WS... series measuring current transformers

Single wire $\geq 0.75 \text{ mm}^2$	0...1 m
Single wire, twisted $\geq 0.75 \text{ mm}^2$	0...10 m
Shielded cable $\geq 0.5 \text{ mm}^2$	0...40 m
Recommended cable (shielded, shield connected to terminal I at one end, not earthed)	J-Y(ST)Y min. 2 x 0.8

Cable lengths for W...AB series measuring current transformers

Single wire $\geq 0.75 \text{ mm}^2$	0...10 m
Connection	plug-in connector, recommended WXS...

Switching elements

Number	2 x 1 changeover contacts (RCMS460), 2 x 1 changeover contacts, 12 x 1 N / 0 contact (RCMS490)
Operating principle	N / C / N / 0 operation (N / 0 operation)*
Electrical endurance, number of cycles	10.000
Contact data acc. to IEC 60947-5-1	
Utilisation category	AC-13 AC-14 DC-12 DC-12 DC-12
Rated operational voltage	230 V 230 V 24 V 110 V 220 V
Rated operational current	5 A 3 A 1 A 0.2 A 0.1 A
Minimum contact rating	1 mA at AC / DC ≥ 10 V

EMC

EMC	IEC 62020: 2005-11
Operating temperature	-25 °C...+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)	2K3 (except condensation and formation of ice)
Long-time storage (IEC 60721-3-1)	1K4 (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

Connection	screw-type terminals
rigid / flexible / conductor sizes	0.2...4 / 0.2...2.5 mm ² / AWG 24...12
Multi-conductor connection (2 two conductors of the same cross section)	
rigid / flexible	0.2...1.5 mm ² / 0.2...1.5 mm ²
Stripping length	8...9 mm
Tightening torque	0.5...0.6 Nm

Other

Operating mode	continuous operation
Mounting	display-oriented
Degree of protection, internal components (IEC 60529)	IP30
Degree of protection, terminals (IEC 60529)	IP20
Enclosure material	polycarbonate
Flammability class	UL94V-0
Screw mounting	2 x M4
DIN rail mounting acc. to	IEC 60715
Operating manual	TGH 1393
Weight	≤ 360 g (RCMS460) ≤ 510 g (RCMS490)

() * factory setting

** In the frequency range of < 15 Hz the relative uncertainty is between - 35 % and 100 %.

Ordering information		
Type	Supply voltage U _S *	Art. No.
RCMS460-D-1	AC 42...460 Hz 16...72 V / DC 16...94 V	B 9405 3001
RCMS460-D4-1	AC 42...460 Hz 16...72 V / DC 16...94 V	B 9405 3009
RCMS460-D-2	DC 70...276 V AC 42...460 Hz 70...276 V	B 9405 3002
RCMS460-D4-2	DC 70...276 V AC 42...460 Hz 70...276 V	B 9405 3010
RCMS460-L-1	AC 42...460 Hz 16...72 V / DC 16...94 V	B 9405 3003
RCMS460-L-2	DC 70...276 V AC 42...460 Hz 70...276 V	B 9405 3004
RCMS490-D-1	AC 42...460 Hz 16...72 V / DC 16...94 V	B 9405 3005
RCMS490-D4-1	AC 42...460 Hz 16...72 V / DC 16...94 V	B 9405 3011
RCMS490-D-2	DC 70...276 V AC 42...460 Hz 70...276 V	B 9405 3006
RCMS490-D4-2	DC 70...276 V AC 42...460 Hz 70...276 V	B 9405 3012
RCMS490-L-1	AC 42...460 Hz 16...72 V / DC 16...94 V	B 9405 3007
RCMS490-L-2	DC 70...276 V AC 42...460 Hz 70...276 V	B 9405 3008

RCMS460-L4 and RCMS490-L4 on request

Type	Supply voltage U _S *	Art. No.
AN 110-1 (Power supply unit)	AC 20...60 V DC 18...72 V	B 9405 3101
AN110-2 (Power supply unit)	AC 100...240 V DC 100...535 V	B 9405 3102
AN420-2 (Power supply unit for 6 x W...AB)	DC 70...276 V / AC 42...460 Hz 70...276 V	B 9405 3100
DI-1 (RS-485 repeater)	DC 10...30 V	B 9501 2015

Type	Supply voltage U _S *	Art. No.
FTC470XET (protocol converter)	DC 85...276 V / AC 50...400 Hz 85...276 V	B 9506 1001

* Absolute values

Connection cable for W...AB series measuring current transformers – RCMS and AN420 / AN110

Type	Length / m	Art. No.
WXS-100	1	B 9808 0506
WXS-250	2.5	B 9808 0507
WXS-500	5	B 9808 0508
WXS-1000	10	B 9808 0509

AC / DC sensitive measuring current transformers (Type B)

Type	Inside diameter	Art. No.
W20AB	ø 20 mm	B 9808 0008
W35AB	ø 35 mm	B 9808 0016
W60AB	ø 60 mm	B 9808 0026
W120AB	ø 120 mm	B 9808 0041
W210AB	ø 210 mm	B 9808 0040

DC sensitive measuring current transformers pulsed (Type A)

Type	Inside diameter	Art. No.
W20	ø 20 mm	B 9808 0003
W35	ø 35 mm	B 9808 0010
W60	ø 60 mm	B 9808 0018
W120	ø 120 mm	B 9808 0028
W210	ø 210 mm	B 9808 0034
WR70x175	70 x 175 mm	B 9808 0609
WR115x305	115 x 305	B 9808 0610
WS20x30	20 x 30	B 9808 0601
WS50x80	50 x 80	B 9808 0603
WS80x120	80 x 120	B 9808 0606

Other measuring current transformer types on request.

Flexible measuring current transformer

Type	Length A measuring current trans- former	Supply voltage U _S *	Art. No.
WF170-1	170 mm	DC 9.6...94 V / AC 42...460 Hz 16...72 V	B 7808 0201
WF170-2	170 mm	DC 70...300 V / AC 42...460 Hz 70...300 V	B 7808 0202
WF250-1	250 mm	DC 9.6...94 V / AC 42...460 Hz 16...72 V	B 7808 0203
WF250-2	250 mm	DC 70...300 V / AC 42...460 Hz 70...300 V	B 7808 0204
WF500-1	500 mm	DC 9.6...94 V / AC 42...460 Hz 16...72 V	B 7808 0205
WF500-2	500 mm	DC 70...300 V / AC 42...460 Hz 70...300 V	B 7808 0206
WF800-1	800 mm	DC 9.6...94 V / AC 42...460 Hz 16...72 V	B 7808 0207
WF800-2	800 mm	DC 70...300 V / AC 42...460 Hz 70...300 V	B 7808 0208
WF1200-1	1200 mm	DC 9.6...94 V / AC 42...460 Hz 16...72 V	B 7808 0209
WF1200-2	1200 mm	DC 70...300 V / AC 42...460 Hz 70...300 V	B 7808 0210

* Absolute values

Accessories

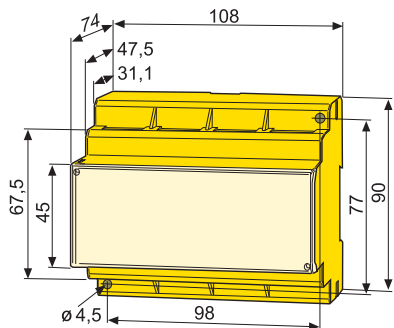
Type	Art. No.
Mounting clip for enclosure XM420 (1 piece per device)	B 9806 0008
Snap-on mounting for W20..., W35...	B 9808 0501
Snap-on mounting for W60...	B 9808 0502
XM460 mounting frame, 144 x 82 mm	B 990995

For further information about measuring current transformers, please refer to the respective data sheets.

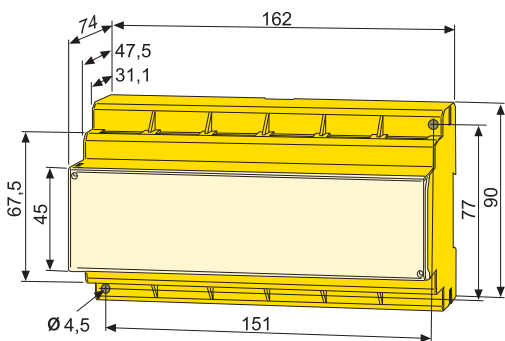
Dimension diagrams

Dimensions in mm

RCMS460-D / -L

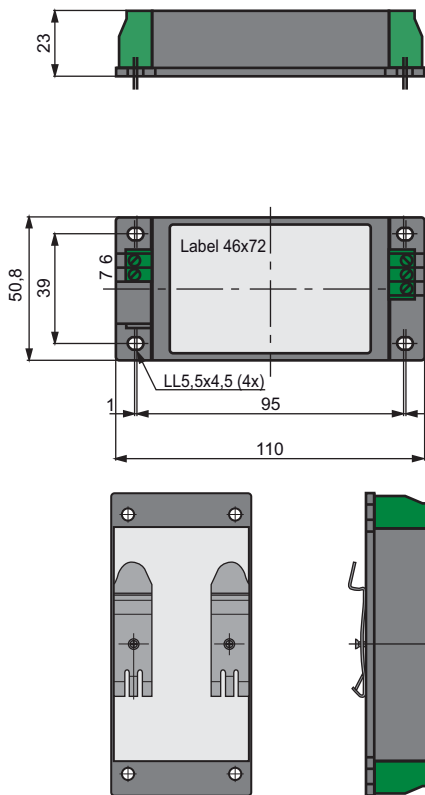


RCMS490-D / -L



Dimension diagram AN110

Dimensions in mm



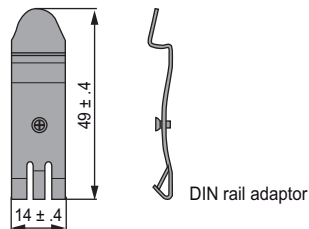
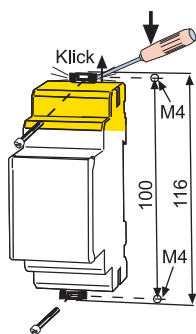
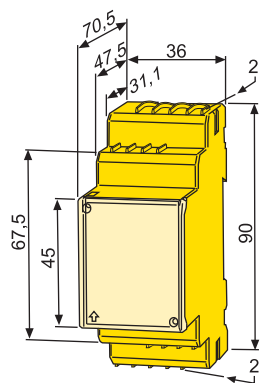
Dimension diagram AN420

Dimensions in mm

Open the front plate cover in direction of arrow!

Screw mounting

Note: The upper mounting clip must be ordered separately (see "Accessories").



4.3