

Residual Current Monitor RCM1000V

Monitoring of AC-currents in grounded power supply systems

RCM1000V



RCM100V monitors residual currents in grounded power supply systems. Used as a current relay it monitors AC- or pulsing DC-currents for exceeding upper or lower limits.

Insulation faults can be caused by damages (mechanical, thermic or chemical) of insulations or also by humidity or pollution. At currents > app. 250 mA (at 230 V) at a location, the fault can lead to danger of fire.

Applied as current relays RCM1000V can among others monitor current in the neutral conductor. Nonlinear loads, e.g. switching power supplies in PC, printers or lights with EGC, cause harmonics in the neutral conductor: Even when the load is symmetric, the harmonics can lead to an overload in the neutral conductor. RCM1000V detect and report this overload.

Residual current monitors detect these faults in widely branched power supply systems and make a signal before additional damage develops.

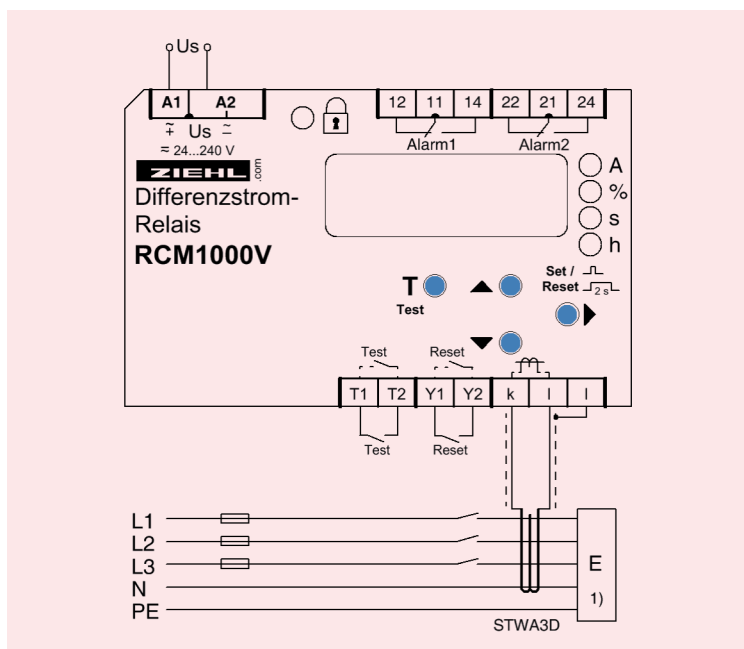
By displaying the residual current also stealthy changes can easily be detected and localized by switching on and off parts of the power supply system.

Particularly useful in monitoring in systems in which no fault current circuit breaker can or shall be used, because an immediate switching would have wide-ranging consequences, such as breakdown of computer systems or interruption of processes of sensitive goods. RCM1000V do NOT replace fault current circuit breakers for protection from electric shock but they can complement it by detection an fault in the insulation before the systems has to be shut off.


- Monitoring of residual currents
- 2 limits for alarm and trip
- Monitoring of current, 2 x under- or overcurrent or windows
- Measuring range 0,003 ... 9,999 A
- Setting range 0,010...9,999 A
- Display can be scaled
- Test-button and automatic test every 24 hours
- Input for current transformer STWA3D with monitoring of transformer
- Start-up delay to suppress alarms when switching on
- 4 digits bright LED-display for measured values and programming
- LEDs for alarms, state of relays and units
- Limit, hysteresis, switching delay and switch off delay individually programmable
- Function of relays (nc-, or no-mode) and interlocked switching or autoreset programmable
- Universal supply voltage AC/DC 24-240 V
- Housing for DIN-rail mount, 70 mm wide, mounting height 55 mm

Order-number:

S225710



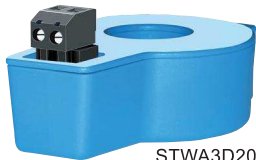
Technical Data

Rated supply voltage	AC/ DC 24V - 240V, < 1,5W, < 5 VA
Tolerance	DC 20,4 - 297 V, AC 20-264 V 50 ...500 Hz
Relays K1, K2 (alarm 1, 2)	2 x 1 co-contacts, type 2, see "general technical informations"
Monitoring of current (program 1 and 2)	
External transformer	Type STWA3D... (20, 35, 70, 125)
Cable for external transformer	≤ 10 m, single wire, ≥ 0,75 mm ²
Measuring range	0,003 A ... 9,999 A
Hysteresis alarm 1/alarm 2	10 % ... 25 %
Rated frequency range	50 ...500 Hz
Startup delay power on	adjustable 0 ... 10 s
Delay alarm on	adjustable 0,03 ... 10,0 s (Prog. 2 = 0,03 ... 500,0 s)
Delay alarm off	adjustable 0 ... 999 s
Residual current relay (program 1 only)	EN 62020
Rated residual operational current (I_{on})	Alarm 2 -> adjustable 0,010 A ... 9,999 A Alarm 1 -> adjustable 50% ... 100% of alarm 2
Switching limits for alarm 1/alarm 2	0 ... -20%
Function at loss of supply voltage U_s :	depending of configuration of relays: closed current -> relays release = alarm operating current -> relays remain released (= no alarm)
Response characteristic	type A 
Current relay (program 2 only)	EN 50178 / EN 60947-5-1
Monitoring range alarm 1 / alarm 2	0,010 A ... 9,999 A
Hysteresis alarm 1 / alarm 2	10%...25%
Accuracy 50/60 Hz	± 2%, ± 3 digit
Accuracy > 60 Hz	± 10%, ± 3 digit
Insulation	EN 60664-1
Rated impulse withstand voltage	4000 V
Rated insulation voltage (U_i)	AC 300 V
Overvoltage category	III
Contamination level	2
EMC tests	EN 62020
Emitted interference	EN 61000-6-3
Burst	EN 61000-4-4 ± 4 kV pulse 5/50 ns, f = 5 kHz, t = 15 ms, T = 300 ms
Surge	IEC 61000-4-5 ± 2 kV
Electrostatic discharge	IEC 61000-4-2 ± 3,8 kV discharge contact, ± 6 kV discharge air
Rated ambient temperature range	-20...+65 °C
Storage temperature	-20...+70 °C
Housing	
Dimension (w x h x d)	Design V4, 4 TE, mounting height 55 mm 70 x 90 x 58 mm
Protection housing/terminals	IP30/20
Installation	Snap mount on standard rail 35 mm acc. to EN 60715 or screws M4
Weight	app. 170 g

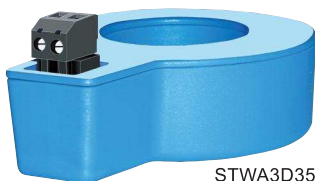
Current Transformer STWA3D

for use with RCM1000V

STWA3D



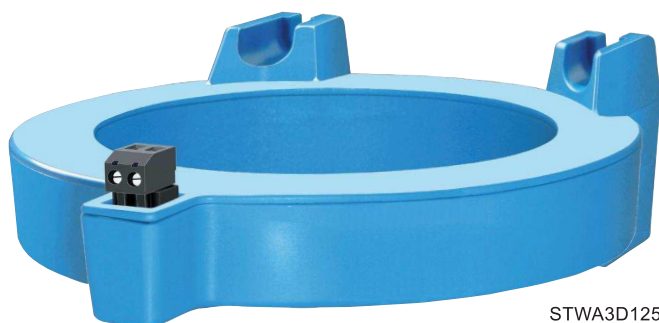
STWA3D20



STWA3D35



STWA3D70



STWA3D125

The current transformers STWA3D for use with residual current monitor RCM1000V are available with 4 different inside diameters.

STWA3D20-70 can be snapped on a DIN-rail, vertically or horizontally or be fixed with screws. The Bracket for mounting is included.

STWA3D125 can only be mounted with screws.

Bracket for mounting 20 - 70 mm



Type	Inside diameter	Order-number
STWA3D20	20 mm	S225725
STWA3D35	35 mm	S225726
STWA3D70	70 mm	S225727
STWA3D125	125 mm	S225728

Option:

Split core current transformer upon request.

Technical Data

Rated current I_n primary/secondary
Rated power
Frequency range

10 A / 0,0167 A
50 mVA (180 Ohm)
42 Hz ... 3 kHz

Rated ambient temperature range
Temperature storage

-5 °C ... +70 °C
-25 °C ... +70 °C

Rated short-time thermal current I_{th}
Rated continuous residual current
Nominal current I_{DYN}

2,4 kA / 1 s
40 A
6 kA / 40 ms

Nominal voltage
Rated impulse voltage
Contamination level

0,8 kV
8 kV
III

Dimensions	STWA3D20	STWA3D35	STWA3D70	STWA3D125
Inside diameter	20 mm	35 mm	70 mm	125 mm
X * Y * Z (mm)	53 * 49 * 87	68 * 49 * 103	103 * 49 * 137	173 * 63 * 200
Weight	120 g	160 g	290 g	910 g