



GROUND FAULT MONITOR

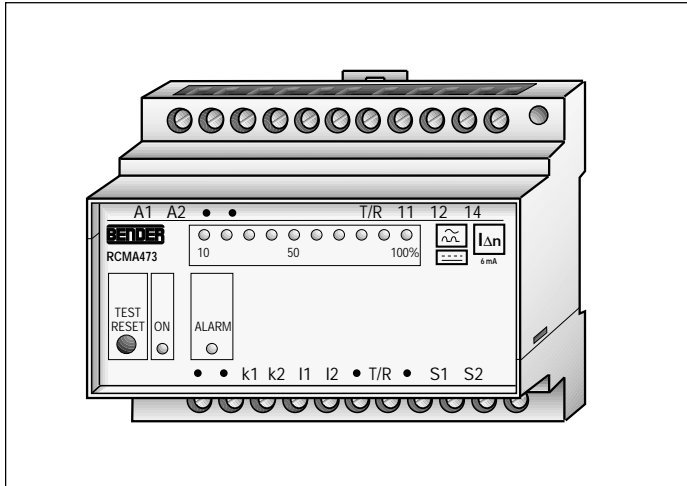
UL943 - Class A GFCI Module

RCMA473L6

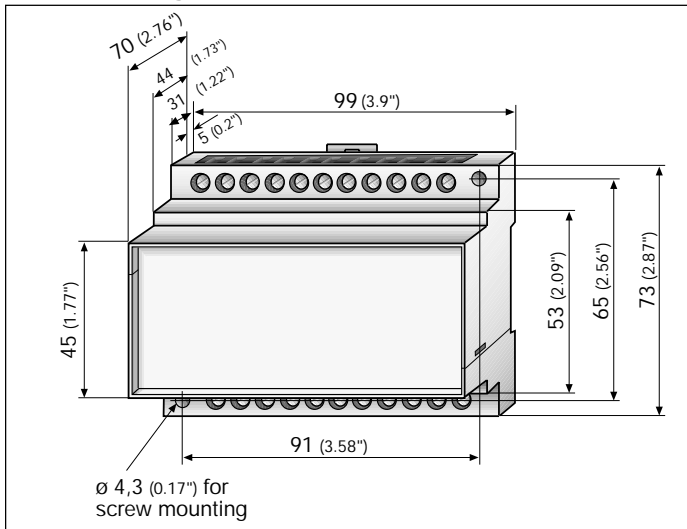
W2-A62B



VDE IEC



Dimension Diagram mm (inch)



- For grounded and high-resistance grounded 1-phase and 3-phase AC, DC and AC/DC systems including systems with variable frequency drives
- Offers the highest degree of personnel protection available today
- Alarm set-point value is 6mA as per UL943, Class A
Optional 20mA setpoint, UL943, Class C
- For use with BENDER external current transformer
Model: W2-A62B
- Operation LED, Alarm LED and built-in 10-100% LED meter display
- Two alarm outputs for remote indication and quick power interruption

Product Description

The BENDER RCMA473L6 extends the capability of standard Ground Fault Monitors to the detection of ground fault leakage currents in all stages of power conversion equipment from simple rectifiers to sophisticated variable frequency drives and brushless DC motor controllers, with signal content extending from pure DC to the low kHz range.

The RCMA473L6 is designed to work with the BENDER W2-A62B Current Transformer. The W2-A62B current transformer has a 62mm (2.45") internal diameter. All power conductors to be monitored must go through the current transformer including the neutral if line-to-neutral loads are to be monitored. The equipment grounding conductor (ground wire) should never go through the current transformer.

When installed with our special contactors, these devices are listed per UL943, as Class A GFCI for personnel protection and can protect single-phase and three-phase AC systems, with or without neutral conductors and DC systems.

The alarm set-point value $I_{\Delta n}$ is fixed at 6mA as required per UL943 for personnel protection. The response of the RCMA473L6 to hazardous fault currents, is related to the UL943 standard, which requires an alarm response to follow an inverse time curve. For example, at 6mA, UL943 requires the GFCI to interrupt within 5594msec (5.6 seconds), at 10mA it must interrupt within 2694msec (2.4 seconds), at 25mA it must interrupt at 726msec (0.73 seconds) and at 250mA is must interrupt at 25msec. The RCMA473L6 follows this UL943 time curve, unlike any GFCI on the market today. This allows a longer response time for lower fault currents, while still maintaining the fast response time at the higher fault currents.

The monitor is designed for mounting in control and distribution panels using DIN 35/15 rail according to DIN EN 50 022 or for screw mounting.

Operational Information

The green LED indicates that the monitor is operating. The yellow LED indicates the unit is in ALARM. The RCMA473L6 offers a built-in meter from goes from 10% to 100% where 100% is the 6mA alarm setpoint. The RCMA473L6 will alarm when the ground fault current exceeds this 6mA alarm set-point. For fast fault response as required by UL943, the RCMA473L6 offers an electronic switch via terminals S1 and S2 and a special SPDT relay contact via terminals 11, 12 and 14.

The RCMA473L6 can be reset by pushing the <Reset> button on the front of the unit or by using the external reset function via terminals R1 and R2, but only if the ground leakage current has dropped at least 25% below the alarm set-point value. Testing is via an external test resistor which allows a test current to flow through the current transformer.

Technical Data - RCMA473L6-33

Insulation

Rated insulation voltage	AC 600 V
Rated impulse withstand voltage/ noise level	4 kV/3
Hi-pot test	3 kV
Operation class	continuous operation

Supply Voltage

Supply voltage U_S	AC/DC 77...264V
Operating range of U_S AC	0.85 ... 1.1 x U_S
Frequency range for AC	50 ... 60 Hz
Max. power consumption	3.5 VA

Alarm Response Values

Alarm set-point value $I_{\Delta n1}$ (RCMA473L6, Class A)	6 mA
- Frequency range	0...150 Hz
Response time	Inverse time curve as per UL943
Hysteresis	25% of the response value

Measuring Circuit

Current transformer, external	W2-A62B
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Alarm Relay

Type	1 electronic switch & 1 SPDT contact
Rated contact voltage	AC 250 V/DC 300 V
Rated current for SPDT contact	UC 5 A
Breaking capacity:	
- AC 230 V and p.f. = 0.4	AC 2 A
- DC 220 V and L/R = 0.04 s	DC 0.2 A
Operating mode	Normally Energized (S1/S2)

Testing

EMI test:	
- Electrical disturbance test	EN 50082-2
- ESD	IEC 801-2/EN 60801-2
- EM field	IEC 801-3
- Burst	IEC 801-4
- Surge	IEC 801-5
Dielectric test:	
- Test voltage	2 kV
- Impulse voltage test	IEC 255, Class III
- Electrical disturbance test	IEC 255
Disturbance transmission	EN 50081-1
Emission	EN 55011 / CISPR II
Shock resistance	IEC 41B(CO)38 class I
Bumping	IEC 68-2-29
Vibration amplitude	IEC TC41B class I

Environmental Conditions

Ambient temperature, during operation	-10°C ... +55°C
Storage temperature range	-40°C ... +70°C
Climate class according to IEC 721	3K5, without condensation

General Data

Type of connection	screw terminals
Wire size	
- solid	14 AWG
- stranded	16 AWG
Rapid mounting	DIN #3 rail EN50022
Screw mounting	90.7 x 64.8 mm centered
Protection class acc. to DIN 40050	
- Internal components	IP30
- Terminals	IP20
Type of housing	X470
Weight approx.	1 lb

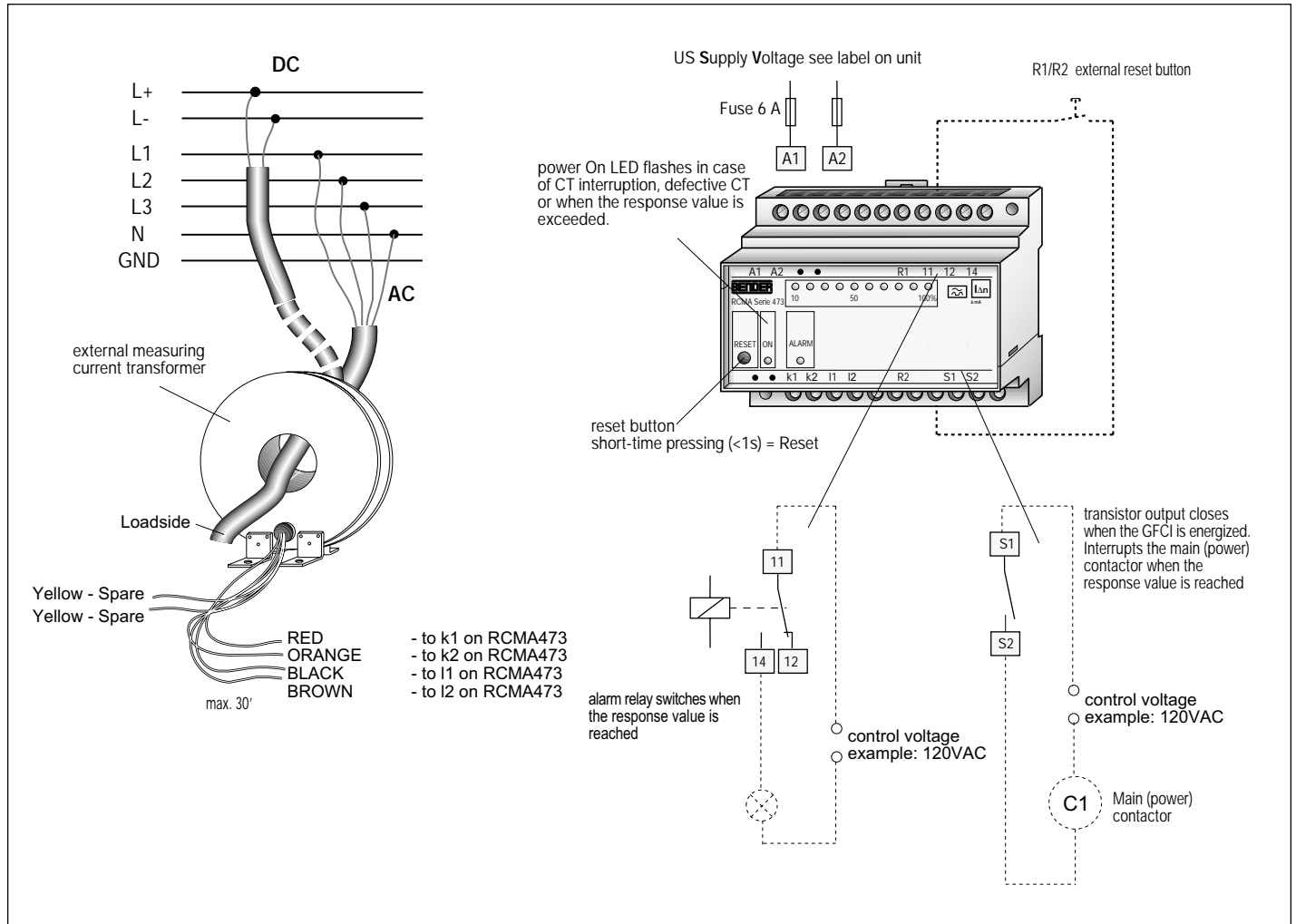
PLEASE NOTE: Check the label for correct supply voltage before applying power to the unit. The ground conductor must not be passed through the current transformer unless the ground conductor is to be monitored by itself. Before starting the operation, it is recommended to carry out a functional test by applying a ground fault via a suitable resistance. Electrical equipment should only be installed by qualified personnel and in compliance with current safety regulations. The RCMA473L6-33 has an internal DIP switch which allows the user to change the setpoint to 20mA (Class C). This option may be used in systems where 6mA setpoint is not possible.

Ordering Information:

RCMA473L6-33	Article No. 94042040
W2-A62B	Article No. 911758

Other supply voltages are available on request

Wiring Diagram



W2-A62B Current Transformer Dimensions

