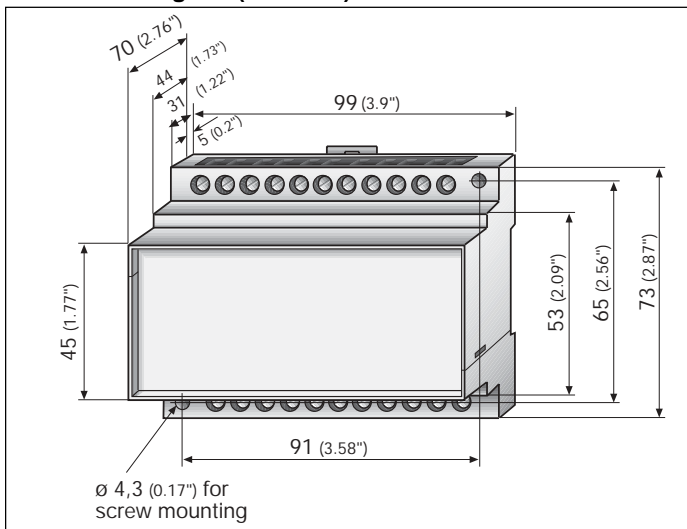


### Dimension Diagram (mm/inch)



- 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 6mA as per UL943, Class A
- Built-in 18mm current transformer
- Operation and Alarm LEDs
- Two alarm outputs (SPDT contacts)
- Combined test / reset button
- Two-year warranty

### Product Description

The BENDER RCMA476 series extends the capability of standard Ground Fault Monitors to the detection of ground fault leakage currents in all stages of power conversation 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 (except the RCMA473-33A which limits the frequency range to 50...60Hz).

The RCMA476 series is designed with a built-in 18mm current transformer. 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 setpoint is fixed at 6mA as required per UL943, Class A for personnel protection. The response of the RCMA476 series 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 it must interrupt at 25msec. The RCMA476 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 a fast reponse time at 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 RCMA476 series will alarm when a ground fault exceeds 6mA. The RCMA476 offers (2) SPDT alarm contacts.

The RCMA476 can be reset by pushing the <Test/Reset> button on the front of the unit for 1 second or by using the external reset function via the two T/R terminals (close for less than 1 second). The unit can be tested by pressing the <Test/Reset> button for greater than 2 seconds or by using the external test function via the two terminals T/R (close for greater than 2 seconds). Testing can also be done via an external test resistor which allows a test current to flow through the current transformer.

## Technical Data RCMA476 SERIES

### Insulation

Rated insulation voltage	AC 250 V
Rated impulse withstand voltage/ contamination grade	4 kV/3
Hi-pot test	3 kV
Operation class	continuous operation

### Supply Voltage

Supply voltage $U_s$	AC/DC 77...286V
Max. power consumption	4 VA

### Alarm Response Value

Alarm set-point value $I_{An1}$ (RCMA476 person. protec.)	6 mA
- Frequency range (RCMA476-33)	0...700Hz
- Frequency range (RCMA476-33A)	50...60Hz
Response time	Inverse Time Curve
Hysteresis	25% of the response value

### Measuring Circuit

Current transformer,	
- internal (18mm)	RCMA476
- external	see RCMA473

### Alarm Relay

Type	2 voltage-free SPDT contacts
Rated contact voltage	AC 250 V/DC 300 V
Rated current	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	N.D. mode
Adjustment by factory	N.D. mode

### Testing Standards

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	2kV
- 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

Internal CT opening (RCMA476)	18 mm
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.

### Ordering Guide

Model	Supply Voltage $U_s$	Setpoint	Frequency Range
RCMA476-33	AC/DC 77-264V	6mA	0...700Hz
RCMA476-33A	AC/DC 77-264V	6mA	50...60Hz

**Wiring Diagram**

