



Dims*:
W. 34mm
H. 30mm (inc. insulator plug)
D. 49mm

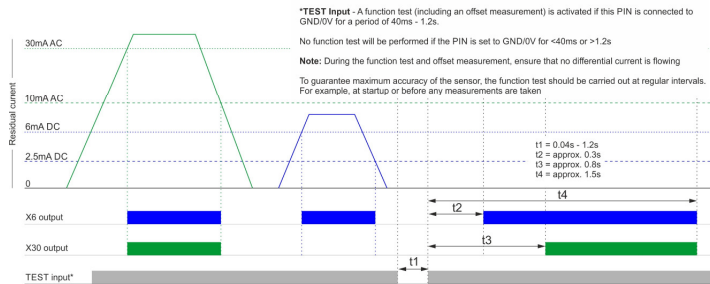
*exc. any pins

- ❑ Designed for **Mode 2** and **Mode 3** Electric Vehicle charging systems
- ❑ Detects AC and DC fault currents according to IEC 62752
- ❑ **Fixed** 6mA DC and 30mA AC trip levels
- ❑ 3000A surge withstand capability
- ❑ Suitable for single phase or three phase loads rated up to 32A
- ❑ Built-in current sensor and 4 integral primary conductors provide a convenient easy to fit solution
- ❑ Designed for direct mounting on to PCB
- ❑ 2 x 4-way male pin header connector exiting on the underside of housing
- ❑ Operates from 5 - 12V DC
- ❑ "Test" input
- ❑ 3 Open collector outputs – "6mA", "30mA" and "Fault"
- ❑ PWM output for monitoring purposes
- ❑ Auto-resets when fault removed



ISO 9001:2015
Cert. No. 14125771

FUNCTION DIAGRAM



INSTALLATION

- BEFORE INSTALLATION, ISOLATE ALL SUPPLIES.
- DO NOT install the unit in close proximity to equipment generating high magnetic fields.
- For safety reasons the insulator plug must be fitted before applying power.

Applying power.

- There are no visual indicators or user adjustments. As soon as power is applied the device will begin monitoring for leakage current.

Troubleshooting.

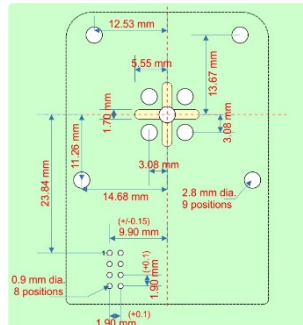
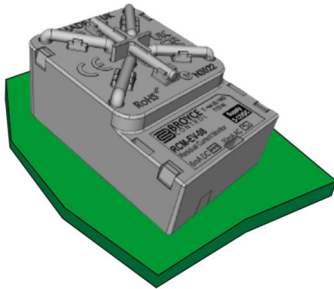
- If the unit fails to operate correctly check that all wiring and connections are good.



Installation work must be carried out by qualified personnel.

MOUNTING & PCB FOOTPRINT

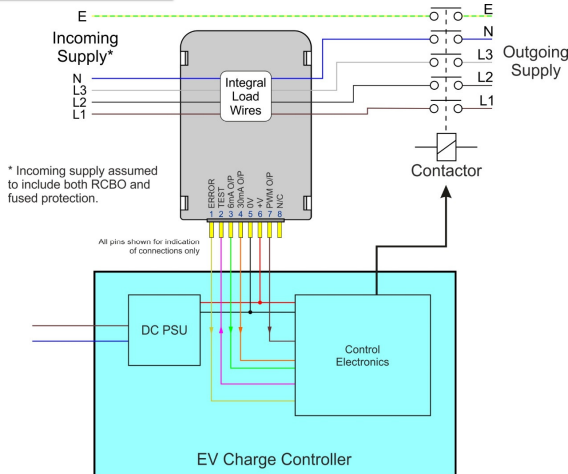
The RCM-EV-08 is designed solely for mounting on a PCB.



Note: Careful attention to the PCB track design (i.e. thickness and width) must be taken in to consideration since the primary conductors can influence each other due to self-heating and thermal exchanges. The EV charging equipment manufacturer remains responsible for the thermal design.

CONNECTION DIAGRAM

Typical connection example for a 3-phase EV supply



TECHNICAL SPECIFICATION

Auxiliary supply:	
Rated voltage Us [5, 6]:	5 - 12V DC (90 – 110% of Us)
Power consumption (max.):	0.6W
Monitored circuit:	
Rated current In:	32A ¹
Rated voltage Un:	230/400V AC
Rated frequency:	50/60Hz
Trip and time delay characteristics:	
Sensitivity/Trip level IΔn:	6mA DC / 30mA AC (fixed)
Residual non-operating current:	0.5 x IΔn
Reset level:	2.5mA DC / 10mA AC Unit resets automatically when current drops below this level
Max. operating time for suddenly applied residual current (as per IEC 62752)	
Sinusoidal AC:	IΔn 2 x IΔn 5 x IΔn
	0.3s 0.15s 0.04s ¹
Smooth DC:	6mA 60mA 0.3A
	10s ² 0.3s 0.04s ¹
¹ actual operating time ≤ 0.025s ² actual operating time ≤ 0.5s	
Accuracy:	
±10%	
Inputs/Outputs:	
Connection type:	2 x 4-way pin header
TEST input (2):	Active low (internally pulled to +V)
Test input pulse width:	0.04 – 1.2s
ERROR output (1):	Open collector
6mA output (3):	(Max. rating 45V DC, 100mA)
30mA output (4):	
PWM output (7):	Internally pulled to 3.3V
PWM Function:	Output proportional to smooth DC residual current
PWM Frequency:	8kHz ±200Hz
PWM Duty cycle change:	3.3%/mA i.e. 20% duty cycle @ IΔdc = ±6mA
Environmental/General:	
Ambient operating temperature:	-40 to +85°C ⁴
Storage temperature:	-40 to +85°C ⁴
Relative humidity:	Max. 75% @ 40°C
Overvoltage category:	III
Pollution degree:	2
Dielectric strength:	4kV rms (between primary conductors and LV pin header)
Altitude:	Up to 2000m above sea level
Ingress protection rating:	IP20
Housing:	Grey flame retardant Lexan UL94 V0
Weight:	≈ 45g
Mounting:	PCB
Approvals:	Conforms to: IEC 62752 CE, UKCA and RoHS Compliant.

Numbers in brackets refer to pin numbers on the connector

³Temperature of integrated primary conductors should not exceed 105°C.

SOLDERING PROCESS

Recommended process:	Wave soldering only
Heating temperature:	260°C
Heating time:	5s max.

Note:

The detachable insulator plug (see drawing below) must be removed prior to soldering.

These products **are not** suitable for re-flow soldering.

DIMENSIONS & CONNECTOR PIN-OUT

