

WARB5100C/PME3 Phase PME Fault Detection unit

The WARB5100C/PME is a 3 phase EV distribution board that will completely disconnect all phases and earth if a PME fault is detected. It provides customers with a safer and compliant electrical vehicle charging solution. There is no need for an earth rod if this distribution board is used. It is suitable for EV (electric vehicle) chargers with integral DC leakage protection but no PME fault detection.

This unit is suitable for an individual 3 Phase Charger.

Main features

- 1) Automatically monitors the supply voltage on 400V.
- 2) Completed with one 5 pole circuit breaker with built-in PME fault detection.
- 3) Following an under-voltage isolation, it will automatically reset when normal operating range is restored.
- 4) Following an over-voltage isolation, on the grounds of safety, this will need to be reset by pressing the **RED** "RESET" button of the WP9.

WARNING

This product must be installed by a qualified electrician in accordance with IET wiring regulations BS7671 (18th edition or later) and current building regulations. Ensure the electrical supply is disconnected before installation, or removing the cover of the unit. Once installed, the unit has a live main supply (400V or higher) within the enclosure. The cover must not be removed until the supply to the unit has been isolated or disconnected.

Safety advice

The unit must be installed in a dry ventilated location; It must never be covered or have restricted ventilation. Before powering up the circuit, ensure all connections are Torqued.

Loose connections cause fires!!!

Connection of Main incoming device

1) Cut and dress the main incoming cables and connect them into the appropriate terminals.

2) Tighten the main incoming terminals securely. Recommended Torque: 2.5Nm for isolator, MCB, SPD & RCBO.

RCBO Test

The WFD is manufactured in accordance with the IEC 61009-1 and must be tested to this specification using a calibrated test meter.

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| 0.5I Δ n | RCBO will not trip |
| 1I Δ n | RCBO must trip within 300ms |
| 5I Δ n | RCBO must trip within 40m |

| Main technical Data | |
|---------------------------------------|-------------------------------|
| Standard | BS EN 61439-3, BS7671 |
| Number of modules | 8 |
| Rated Voltage | 400V |
| Operation | 207-253(4 seconds) each phase |
| Rated current of Main switch | 100A |
| Rated current of RCBO | 40A |
| Frequency | 50Hz |
| Cable entry | Selection of knockouts |
| Terminal type | Cage clamp |
| IP rating | IP40 |
| Surge protection | Type 2 |
| Visual indication of surge protection | Green = Good, Red = Replace |
| Device mounting | 35mm din rail |
| Ambient temperature | -25°C....+55°C |

Operation instructions

With the incoming main switch isolator closed, the unit will monitor the incoming supply. After the incoming main switch isolator is closed, the WARB breaker with built-in PME fault detection will detect the supply voltage for 5 seconds and determines if the voltage is without normal operating limits. (No differentiation is necessary between 400Vac or 415Vac supply.

If any phase is out of limits the PME fault detection device is activated. To clear, the supply must return within normal operating limits, and may also require a power off/on cycle should the cause have been an over-voltage condition.

If each phase is within limits, PME fault detection device allows connection of live, neutral and earth to the vehicle, and continues to monitor the supply.

If the voltage of any phase drops below 207Vac and does not return for up to 5 seconds, a PEN fault condition is tripped and live, neutral and earth connections are removed from the vehicle.

However, a voltage dip could also cause the same fault condition. Therefore, the PME fault detection device continuously monitors the supply health and if it returns to within normal operating range, automatically allows re-connection of live, neutral and earth to the vehicle.

If the voltage of any phase rises above 253Vac and does not return for up to 5 seconds, a PEN fault condition is tripped and live, neutral and earth connections are removed from the vehicle.

The PME fault detection device continues to monitor the supply earth but if it returns to within normal operating limits the fault condition is not cleared without manual intervention to power cycle. Under this condition the EV driver is made aware of the high-voltage applied to the vehicle and can then perform safety checks before driving the vehicle.

In summary functions

Automatically monitors the supply voltage on both 400 & 415V supplies without the need for any manual dip switch settings. Within 5 seconds in the event of an under-voltage of any phase less than 207V or an over-voltage of any phase more than 253V, live, neutral and earth will be isolated. Following an under-voltage, isolation will automatically reset when normal operating range is restored. Following an over-voltage, isolation, on the grounds of safety, will require a manual reset. (press the red button of the WP9 to reset.)

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| WARB5100C/PME | 100A MCB+PME RELAY |
| WARB5100C/PMESP | 100A MCB+PME RELAY SPD |
| WARB5100C/PME40R | 100A MCB+PME RELAY 40A RCBO |
| WARB5100C/PME40RSP | 100A MCB+PME RELAY 40A RCBO/SPD |

WARB5100C/PME
5P 100A MCB+PME RELAY



WARB5100C/PMESP
5P 100A MCB+PME RELAY
AND SPD

