



553109B

# Residual Current Monitor – 6mA DC (Single Output)

## ΔEVA 01-VP / ΔEVA 01-VS

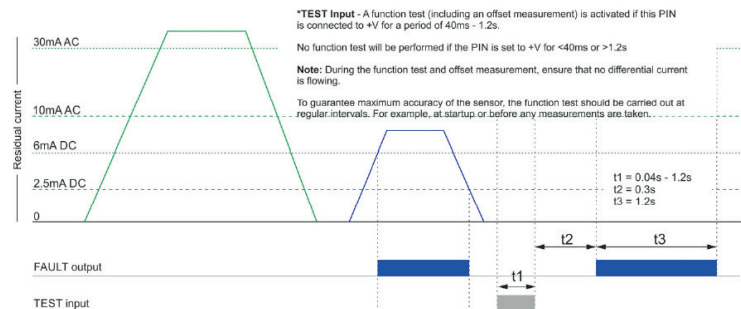


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- Designed for Mode 3 Electric Vehicle charging systems (as per IEC 62955)
- Fixed 6mA DC trip level
- 3000A surge withstand capability
- Suitable for single phase or three phase loads rated up to 32A
- Built-in current sensor with 13.5mm dia. aperture
- Universal mounting/securing options:
  - PCB using fixing screws
  - Attaching to cable using a cable tie and slots provided

- 4-way (2.54mm pitch) connector – with two options available
  - Male pin header exiting at the underside of the housing (product part no. EVA 01-VP)
  - Latching right-angle pin header exiting at the rear of the housing (product part no. EVA 01-VS)
- Operates from 5 - 12V DC
- "Test" input
- "Fault" output - Open collector

### FUNCTION DIAGRAM



### INSTALLATION

- ⚠ **Installation work must be carried out by qualified personnel.**
- BEFORE INSTALLATION, ISOLATE ALL SUPPLIES.
- Mount the device according to the preferred method of use and equipment design.
- DO NOT install the unit in close proximity to equipment generating high magnetic fields.
- Ensure the conductors that pass through the aperture are straight, and as central as possible. Ensure the conductors do not cause any undue stress on the unit itself.
- The earth connection must not pass through the aperture.

#### Applying power.

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

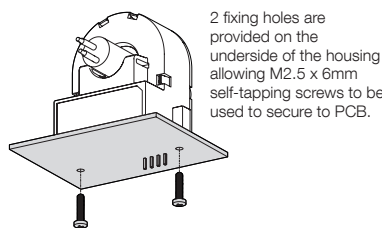
#### Troubleshooting.

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

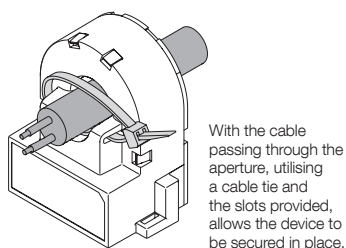
### MOUNTING OPTIONS

Depending on model variant, there are two intended methods of mounting:

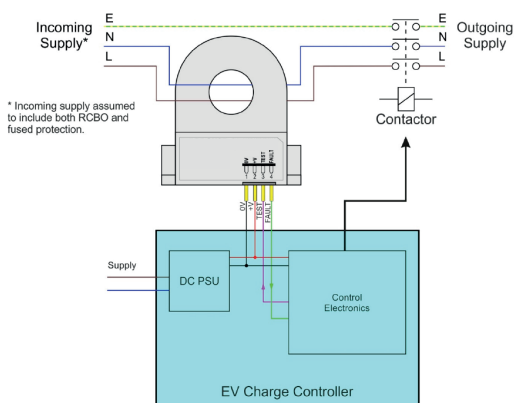
#### PCB Mounting using ΔEVA 01-VP



#### Direct to cable using ΔEVA 01-VS



### CONNECTION DIAGRAM



### TECHNICAL SPECIFICATION

| Auxiliary supply   |  |  |       |        |
|--|--|--|-------|--------|
| Rated voltage Us (1, 2)  | 5 - 12V DC (90 – 110% of Us)                           |  |       |        |
| Power consumption (max.)   | 0.6W   |  |       |        |
| Monitored circuit  |  |  |       |        |
| Rated current In   | 32A  |  |       |        |
| Rated voltage Un   | 230/400V AC  |  |       |        |
| Rated frequency  | 50/60Hz  |  |       |        |
| Trip and time delay characteristics  |  |  |       |        |
| Sensitivity/Trip level IΔn   | 6mA DC (fixed)   |  |       |        |
| Residual non-operating current   | 0.5 x IΔn  |  |       |        |
| Reset level  | 2.5mA DC   |  |       |        |
| Unit resets automatically when current drops below this level                  |  |  |       |        |
| Max. operating time (as per IEC 62955) (For suddenly applied residual current) | 6mA  | 30mA   | 60mA  | ≥150mA |
| Smooth DC  | 10s  | -  | 0.3s  | 0.1s   |
| Sinusoidal AC  | No tripping  |  | >0.3s | >0.08s |
| Accuracy   | ±10%   |  |       |        |
| Inputs/Outputs   |  |  |       |        |
| Connection type  | ΔEVA 01-VP<br>4-way pin header,<br>2.54mm pitch        | ΔEVA 01-VS<br>Latching right-angle<br>4-way pin header,<br>2.54mm pitch <sup>1</sup> |       |        |
| TEST input (3)   | Active high (internally pulled down)                   |  |       |        |
| Input voltage, high level  | > 2.5V (Max. rating 12V DC)                            |  |       |        |
| Input voltage, low level   | < 0.8V   |  |       |        |
| Test input pulse width   | 0.04 – 1.2s  |  |       |        |
| FAULT output (4)   | Open collector (Max. rating 45V DC, 100mA)             |  |       |        |
| Environmental/Other  |  |  |       |        |
| Ambient temperature  | -40 to +85°C   |  |       |        |
| Storage temperature  | -40 to +85°C   |  |       |        |
| Relative humidity  | Max. 95% @ 40°C  |  |       |        |
| Overvoltage category   | III  |  |       |        |
| Pollution degree   | 2  |  |       |        |
| Altitude   | Up to 2000m above sea level                            |  |       |        |
| Ingress protection rating  | IP20   |  |       |        |
| Housing  | Grey flame retardant Lexan UL94 V0                     |  |       |        |
| Weight   | ≈ 32g  |  |       |        |
| Mounting options   | See drawing on the left                                |  |       |        |
| Approvals  | Conforms to: IEC 62955<br>CE, UKCA, and RoHS Compliant |  |       |        |

Numbers in brackets refer to pin numbers on the connector.  
<sup>1</sup> Recommended mating connector housing – Molex KK 254 series.

### SOLDERING PROCESS

|                     |  |
|---------------------|--|
| Recommended process | Wave soldering only for the ΔEVA 01-VP |
| Heating temperature | 260°C                                  |
| Heating time        | 5s max.                                |

These products are not suitable for re-flow soldering.

### DIMENSIONS (mm) & CONNECTOR PIN-OUT

