



553111B

Residual Current Monitor c/w Primary Conductors – 6mA DC ΔEVA 02-HP

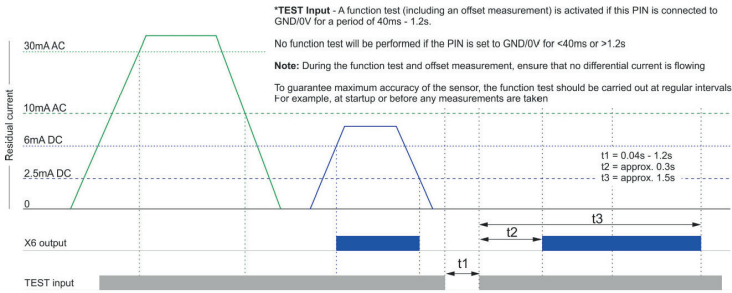
- Designed for Mode 3 Electric Vehicle charging systems (as per IEC 62955)
- Fixed 6mA DC trip level
- 3000A surge withstand capability
- Suitable for single phase or three phase loads rated up to 32A
- Built-in current sensor and 4 integral primary conductors provide a convenient easy to fit solution
- Designed for direct mounting on to PCB



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- 2 x 4-way male pin header connector exiting on the underside of housing
- Operates from 5 - 12V DC
- "Test" input
- Open collector outputs – "6mA" and "Fault"
- PWM output for monitoring purposes
- Auto-resets when fault removed

FUNCTION DIAGRAM



INSTALLATION

⚠ Installation work must be carried out by qualified personnel.

- 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.

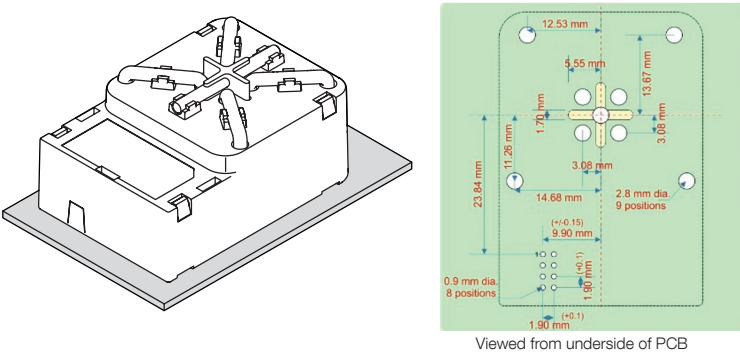
- There are no visual indicators or user adjustments. As soon as power is applied the device will begin monitoring for leakage current.

Troubleshooting.

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

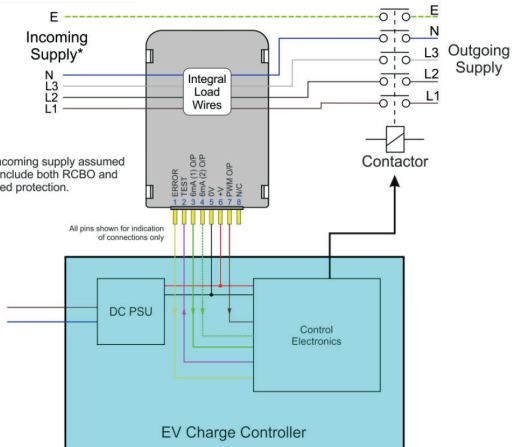
MOUNTING & PCB FOOTPRINT

The ΔEVA 02-HP is designed solely for mounting on a PCB.



CONNECTION DIAGRAM

Typical connection example for a three 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 (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 for suddenly applied residual current (as per IEC 62955)	6mA	60mA	0.2A
Smooth DC	10s	0.3s	0.1s
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 "X6" output (3), (4)	(Max. rating 45V DC, 100mA)		
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/Other			
Ambient temperature	-40 to +85°C		
Storage temperature	-40 to +85°C		
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 4000m above sea level		
Ingress protection rating	IP20		
Housing	Grey flame retardant Lexan UL94 V0		
Weight	≈ 45g		
Mounting	PCB		
Approvals	Conforms to: IEC 62955 CE, UKCA, and RoHS Compliant		

Numbers in brackets refer to pin numbers on the connector
¹Temperature 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 (mm) & CONNECTOR PIN-OUT

