Client:	Magnetec	Magnetec P/N:	MB-2872	Magnetec A/N:	tbd
Client's P/N:	-	PS Index:	01S	PS Revision:	01
Application:	Residual current sensor				

Preliminary Datasheet: This document is strictly confidential! It is subject to change without prior notice

1. Introduction

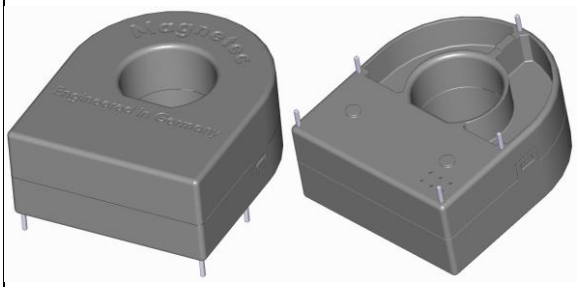
Magnetec Safeblue® residual current sensors are used for leakage current detection in EV charging applications:

- Mode 2 (In Cable Control and Protection Device)
- Mode 3 (Wallbox)
- Isolated and Non-Isolated onboard charger

Features:

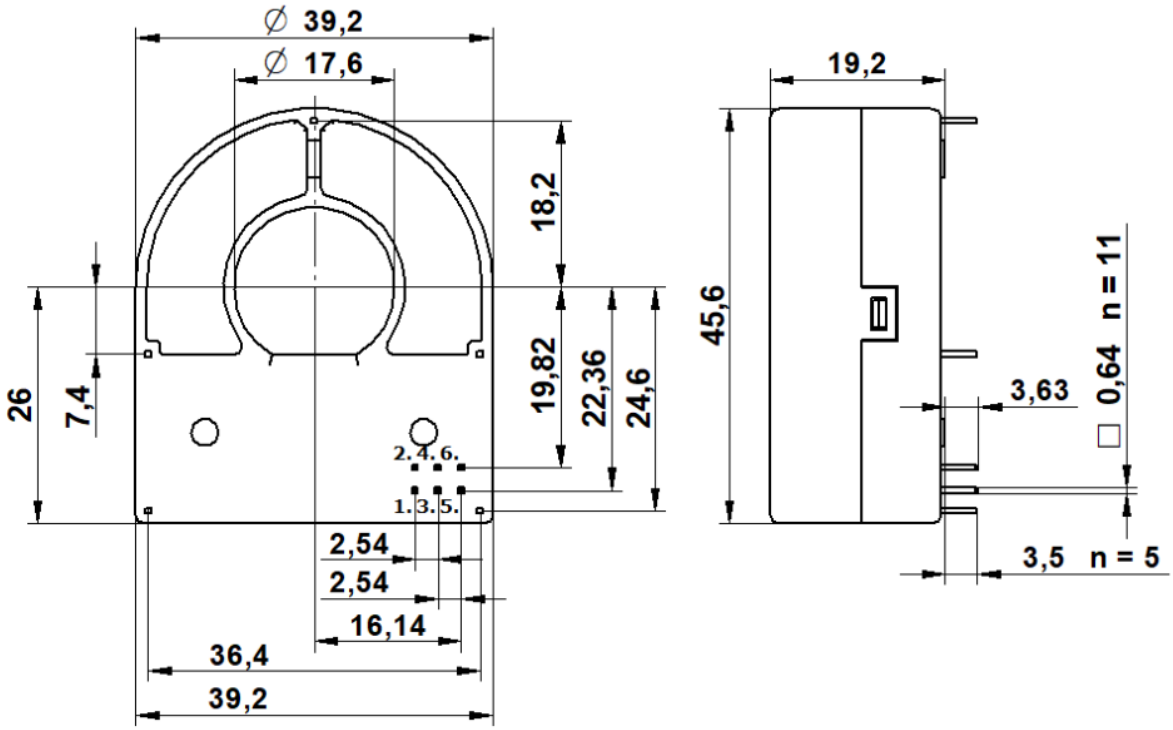
- PCB mounted design
- Accurate detection of AC & DC leakage currents
- Low temperature drift
- Self-Test

MB-2872 provides trigger characteristics according to IEC 62752 and a high inner diameter for easy installation of cables and busbars in any shape.



2. Dimensions

Samples are delivered only with the 6 active pins. The 5 inactive / dummy pins are not installed.
Pin positions will be changed for series production



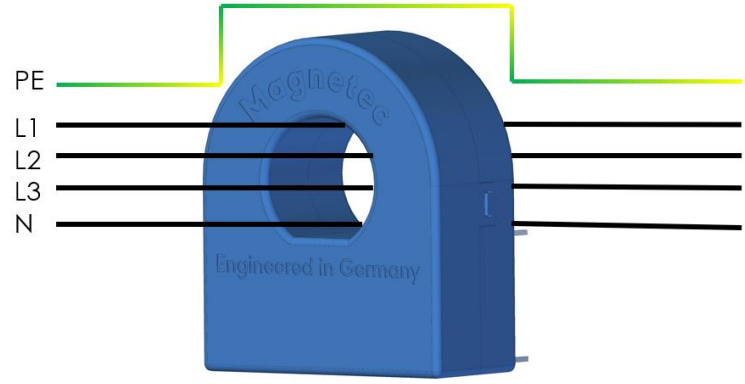
3. Pinout

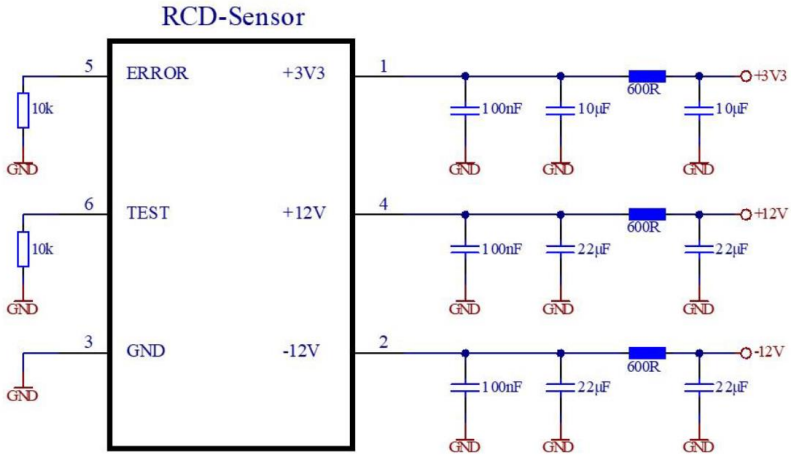
PIN No.	PIN	TYPE	DESCRIPTION
1	+3V3	INPUT	3.3V power supply (Tolerance: ±5%)
2	-12V	INPUT	-12V power supply (Tolerance: ±5%)
3	GND	OUTPUT	Ground
4	+12V	INPUT	+12V power supply (Tolerance: ±5%)
5	ERROR	OUTPUT, LOW ACTIVE	- Pin is high when no error current is detected - Pin goes low when an AC or DC error is detected - Pin goes low during self-test and calibration phase - Pin goes low during start-up phase
6	TEST	INPUT, HIGH ACTIVE	- During power up, the TEST pin must be set to LOW. - When the TEST pin is set to HIGH, for a time between 20 ms up to 800 ms, the sensor performs a self-test and calibration. Shorter or longer high times are ignored. During this phase, the error pin goes low. *Note: The power lines which are monitored should be turned OFF until the sensor is operational or when a self-test and calibration was requested. Otherwise the calibration and self-test will be improper and thereby resulting in faulty sensor functionality.*

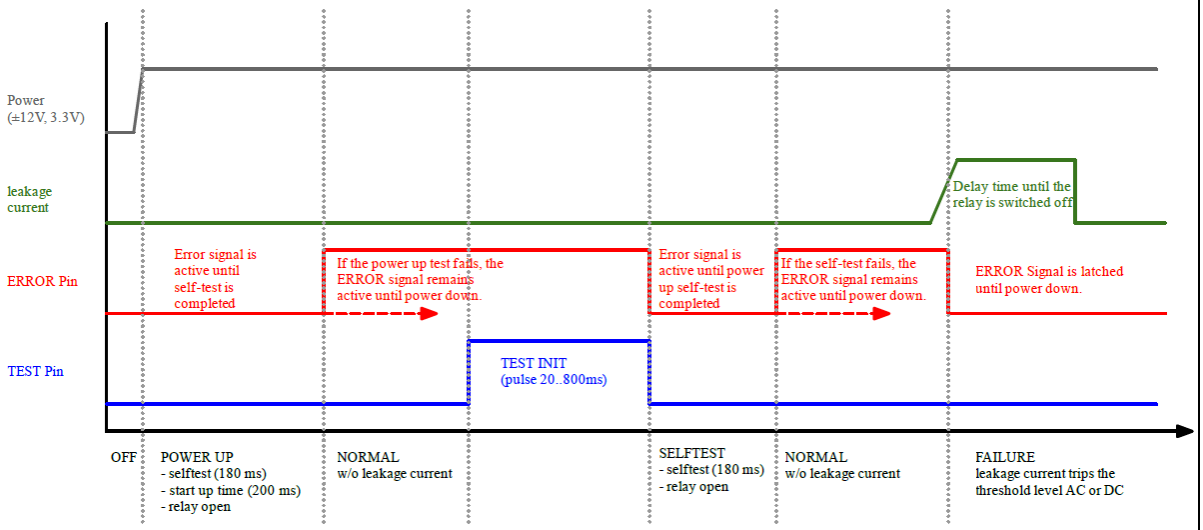
4. Characteristic data (nominal values, for information only)

Core material:	NANOPERM	Ambient temperature:	-40 ... +85 °C
Nominal voltage:	up to 480 V (Mode 2) up to 400 V (Mode3)	Storage temperature:	-40 ... +85 °C
Nominal current:	up to 3x63 A or 1x80 A (limited by the diameter of the conductors only)	Applicable standards:	IEC 62752 IEC 61851
Trigger threshold AC:	27mA	Trigger threshold DC:	4,75mA
Trigger times AC:	30mA -> 40ms 60mA -> 20ms 150mA -> 9ms	Trigger times DC:	6mA -> 40ms 60mA -> 10ms 150mA -> 7ms 300mA -> 7ms
Recommended soldering profile:	Wave soldering max 260 °C, 10s		

5. Circuit diagram







5. Materials

Case material:	PA66 GF20, UL listed
Pins 1-6:	Cu – gold plated
Pins 7-11:	CuNi18Zn20
Compliance:	Reach, ROHS

6. Traceability & Marking	
Traceability:	**tbd**
Marking & Content:	Marking method: **laser** Content: **PROTO NTE-2022xyz (xyz = serial number; this specification to be applied for serial numbers 001-110)**
Specification:	Font type: **tbd** Letter height: **tbd** **YY** = year of assembly; **WW** = week of assembly

8. Packaging			
Small carton size	**tbd** (L1 x W1 x H1 mm)	Small carton quantity (PU):	**tbd**
Pallet size	**tbd** (L2 x W2 x H2 mm)	Pallet quantity:	**tbd**

9. Comments

1. These are engineering samples and cannot be used inside an end product for sale in market.
2. The operational safety of the personnel using the RCD sensor is the sole responsibility of themselves and Magnetec holds no responsibility in the event of any accidents.
3. This sensor is a pre-sample and all functionalities are not fully tested. It cannot be ensured that all functions will be proper.

Index / Revision	Alteration	Date
01S / 01	Sample	02.11.2022

Created:	D. Toth 02.11.2022	Approved (Techn):		Approved (Quality):		Released:	