

TECHNICAL DATA SHEET

ECO – Line Sensors

**Earth sensitive current sensor
N006E-0U**

**Non-conventional -
instrument current transformer**



Description

The ECO – Line range of sensors unifies high cost efficiency with maximum accuracy. Sensor individual correction factors at name plate enable improved accuracy class with devices e.g. SICAM FCM. The coil is covered with a heat shrink tube and the core is fixed with a single headless screw.

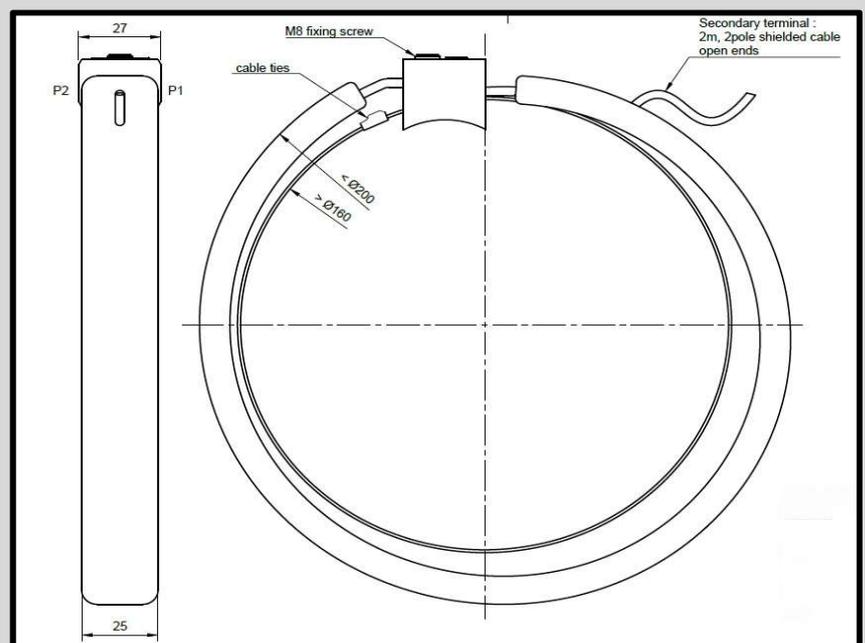
Features

- No calibration on site is needed
- Class 3/1 & 5P10 acc. IEC61869-10
- Cost efficient and robust design
- Split core for easy installation
- Wide diameter range
- Accuracy over complete lifespan
- Slim design and extended operating temperature range

Dimensions

The coil is fixed with an aluminium block, which is fixed on one side of the core. Second end of the iron core can be fixed with a headless screw.

Due to the wide range of the inner diameter, the sensor could be mounted to various 3 phase cables.



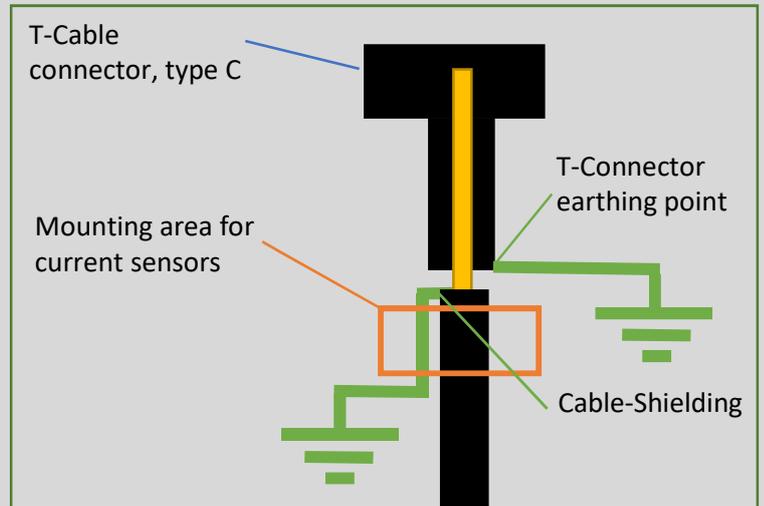
Installation

The eco-line sensors are simple to install, the split core designs make it easy to install, where the medium voltage cables are already installed.

There are some important points that must be considered during the installation process:

- Always power down before installation
- Due to the design of this product, there is no danger of high voltages, if the sensor is not short circuited or connected to a measurement device
- Only for insulated cables or insulated areas on the T-cable connector, maximum voltage 720VAC_{R.M.S}

Shield of the medium voltage cable MUST BE led through the current sensor (see graphic)

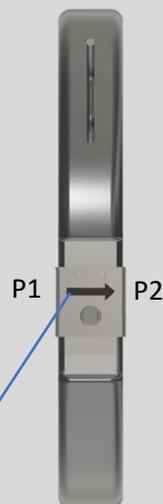
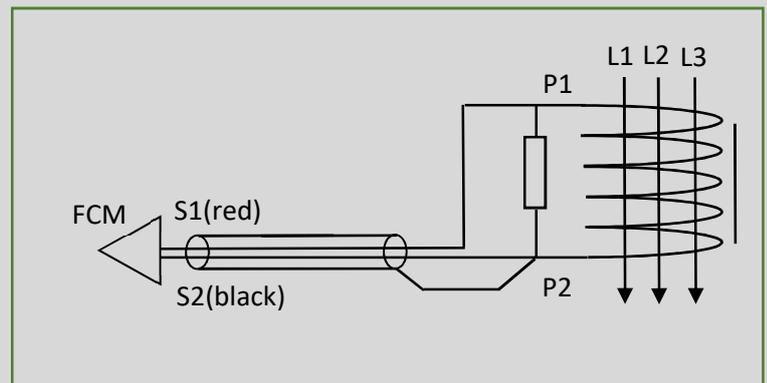


The earth sensitive current sensor must enclose all 3 Phases in the switch gear.

Connection

The current sensor is directly connected to a measurement device, like the Siemens SICAM FCM.

Sensor must not be earthed to the switch-gear. Fix the current sensor with the cable tie to the medium voltage cable.



Arrow on product marks P1 and P2

Pay attention to the P1, P2 marking

Correction factor definition

The current sensor provide individually correction factors which are defined by following rule:

$$CF_I = \frac{U_{Sr}}{U_S} \quad \text{and} \quad \varphi_{0_{cor}} = -\varphi_S \rightarrow \text{defined at 100\% In}$$

CF_I ... is the correction factor of the amplitude error ($U_S * CF_I$)

$\varphi_{0_{cor}}$... is the correction factor of the phase shift error ($\varphi_S + \varphi_{0_{cor}}$)

U_{Sr} ... is the rated secondary voltage

U_S ... is the measured secondary voltage according the routine test protocol

φ_S ... is the measured secondary phase shift error according the routine test protocol

Specification

Applied Standards:	IEC61869-1, IEC61869-6, IEC61869-10
Primary current:	60A
Secondary output:	225mV
Burden:	$\geq 20k\Omega$
Rated short time thermal current:	25kA, 1s
Isolation voltage:	720V _{AC} /3kV/-
Accuracy class:	3/1 by using correction CF_I and $\varphi_{0_{cor}}$ according IEC61869-10
Protection class:	5P10
Operating temperature range:	-25°C to +65°C
Storage temperature range:	-40°C to +80°C
Frequency:	50 or 60Hz
Cable:	2pole, shielded, twisted pair, 2m, open ends (red-S1, black-S2)

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