# TECHNICAL DATA SHEET
## ECO – Line Sensors

**Phase current sensor
N030T-0U**

**Non-conventional -
instrument current transformer**

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## Description

The ECO – Line range of sensors unifies high cost efficiency with maximum. 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 headless screw.

## Features

- No calibration on site is needed
- Class 1/0,5 & 5P10 acc. IEC61869-10
- Cost efficient and robust design
- Split core for easy installation
- For cable diameters from 20 to 57mm
- Accuracy over complete lifespan
- Slim design and extended operating temperature range

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## Dimensions

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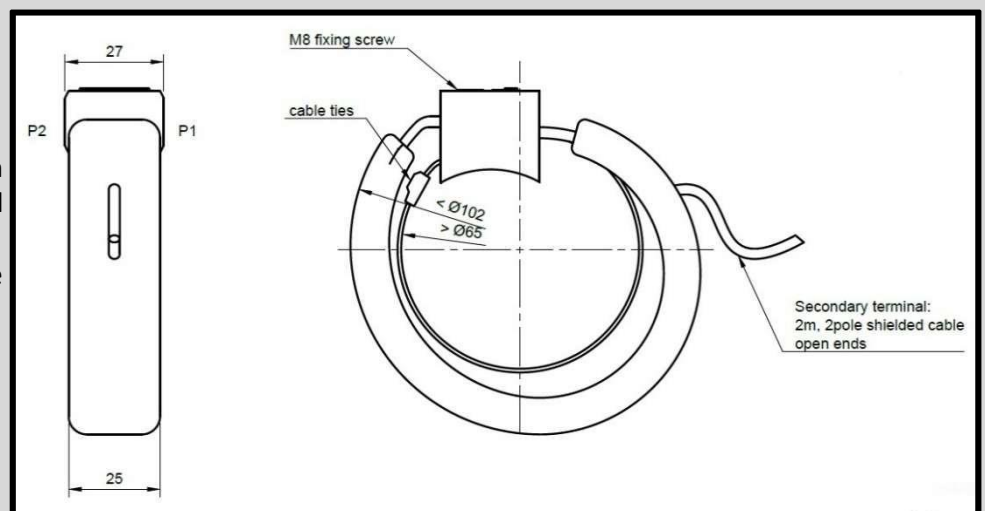
## Installation

The eco-line sensors are simple to install, the split core designs make it easy to install, where the medium voltage cable is 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)**

T-Cable connector, type C

T-Connector earthing point

Mounting area for current sensors

Cable-Shielding
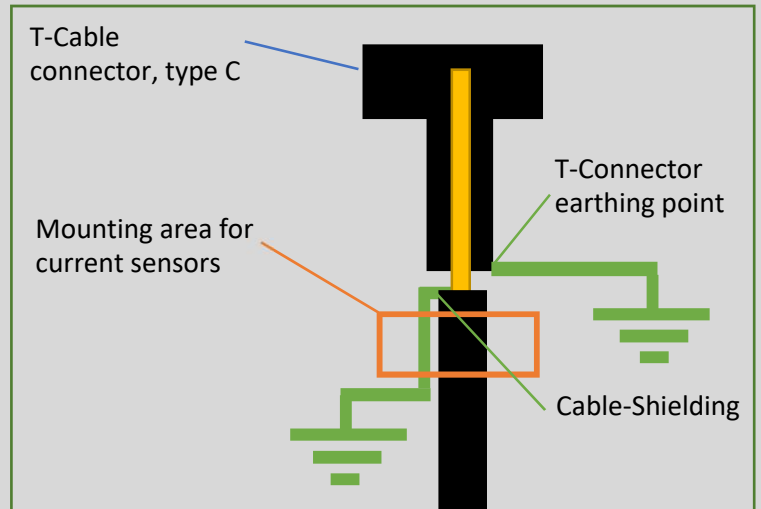
## Connection

The current sensor is directly connected to a measurement device, like the Siemens SICAM FCM. Either 2 phase sensors and one earth sensitive sensor is used or 3 phase sensors. Sensor must not be earthed to the switch-gear. Fix the current sensor with the cable tie to the medium voltage cable.

P1

FCM

S1(red)

Ip

S2(black)

P2
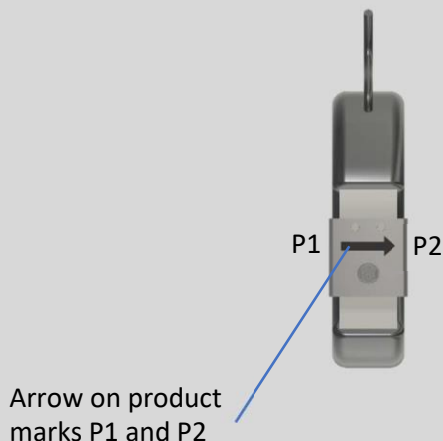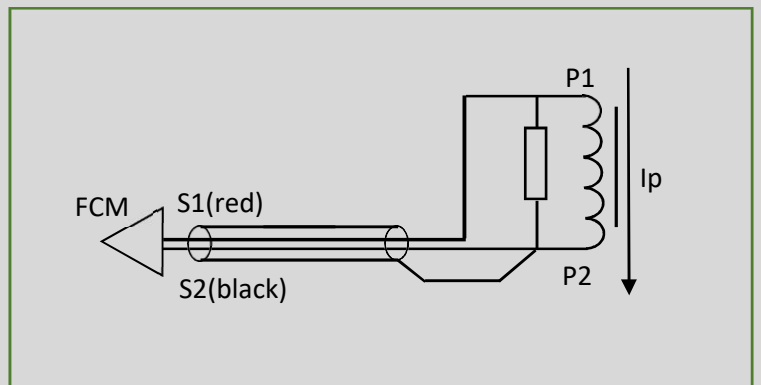
P1    P2    **Pay attention to the P1, P2 marking**

Arrow on product marks P1 and P2

## Correction factor definition

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

$$CF_I = \frac{U_{Sr}}{U_S} \qquad \text{and} \qquad \varphi_{O_{cor}} = -\varphi_s \rightarrow \text{defined at 100\% In}$$

$CF_I$... is the correction factor of the amplitude error ($U_S * CF_I$)
$\varphi_{0cor}$... is the correction factor of the phase shift error ($\varphi_S + \varphi_{0cor}$)
$U_{Sr}$... is the rated secondary voltage
$U_S$... is the measured secondary voltage according the routine test protocol
$\varphi_S$... is the measured secondary phase shift error according the routine test protocol

## Specification

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|---|---|
| Applied Standards: | IEC61869-1, IEC61869-6, IEC61869-10 |
| Primary current: | 300A, Ext. 200% |
| Secondary output: | 225mV |
| Burden: | ≥20kΩ |
| Rated short time thermal current: | 25kA, 1s |
| Isolation voltage: | 720V$_{AC}$/3kV/- |
| Accuracy class: | 1/0,5 by using correction $CF_I$ and $\varphi_{ocor}$ 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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