

SINEAX CAM
Dynamic measurement
solutions using Rogowski
current sensors

SINEAX CAM

Industrial strength power measurement using Rogowski current sensors

Current measurement with Rogowski coils

Rogowski coils are air-core coils. The magnetic field of the wrapped current-carrying conductors induces an alternating voltage in the coils which is proportional to the current. This is determined by integration of the voltage. For that an electronic circuit is required, which needs to be powered. Typically this is done by means of batteries. But they have to be changed quite often and so this is not a solution which complies with industrial needs. To get around this, the CAM is ready to provide this supply. There are different versions (3 V, 4.5 V, 6 V and 9 V) available to cover all the coils currently available on the market.

Applications

The great advantage of Rogowski coils is the quick and easy installation, without the need to disconnect current circuits. By means of switchable current measurement ranges almost any application may be covered without any variance. The principle also allows to measure fast current changes and harmonics a lot better than any conventional current transformer. This results in typical applications such as:

- Analysis of harmonics in power distribution
- Measurement of dynamic currents
- Current measurement in melting processes
- Test stands where test objects change often
- Mobile measurements in power mains

Limitations

Most Rogowski coils can be used for measurements in the low voltage area up to 1000 V only.

When using a CAM with Rogowski current measurement the optional I/O module 4 can no longer be used, because its power supply is used to supply the integrator of the Rogowski coils.

As for all mobile current sensors also with Rogowski coils not the same accuracy can be achieved as with conventional, fix-mounted measurement transformers. Details are available from the data sheet of the corresponding manufacturer.

Technical specifications

Rogowski coils are normally usable for multiple current ranges and at applied rated current always the same voltage, usually 3 V, results. The switching of the current range is done via rotary switch on the integrator. The configuration of the CAM for the same current range must be performed separately by means of the CB-Manager software.

Current measurement Voltage inputs with rated value 5 V AC, measurement up to maximum 10 V AC.

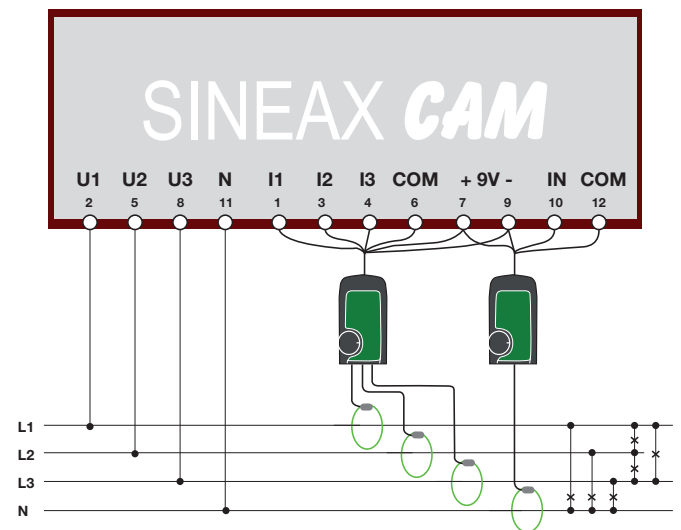
Provided power supply 3 V, 4.5 V, 6 V or 9 V DC

All further technical data and the ordering code are given in the documentation of the SINEAX CAM.

Ex-factory Rogowski current sensors

| Description | Order no. |
|---|-----------|
| Single phase, ACP FLEX 3000_5, 2m, Ø194mm, measurement ranges 30/300/3000 A, 9 V supply via CAM | 169426 |
| Three-phase, ACP FLEX 3003_5, 2m, Ø194mm, measurement ranges 30/300/3000 A, 9 V supply via CAM | 169434 |

The connection wires of these current sensors are equipped with end splices and therefore can be directly connected to the screw terminals of the CAM.



Example: ACP FLEX 300x_5 current sensors 30/300/3000 A, which need a 9 V power supply



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