**Flexible opening current sensor (Rogowski coil)**

**ROGOFLEX® Option amplifier 1Aac or 5Aac output**

- **Wide dynamic range**
  From few ampere to several hundred kA
  Insensitive to overload, high linearity
- **Non-intrusive**
  no power consumption,
  no heating,
  no secondary open-circuit problem
- **Large sizes**
  Available up to 6 meter length
  (1.9 meter diameter), low weight
- **Fully shielded and sealed**
  Insensitive to external RF fields
  IP66 UV resistant
- **Option : protection enclosure**
  Outdoor application, IP54 protection rating
  connectors protection

The Rogowski sensor is a coil, without magnetic core, placed around the primary conductor in a toroidal way. The magnetic field produced by the primary current induces a voltage into the coil. The output voltage is proportional to the rate of current change (derivative). This voltage should be integrated by an electronic processing unit to produce an output signal proportional to the primary current.

**Description:**
Through to a deformable design, the sensor can be easily implemented in applications where spaces are limited. Unlike current transformers, there is safe to leave the secondary circuit open. There is no possible alteration by high overloads. The sensor is non-intrusive and is not crossed by the primary current to be measured. It is light enough to be suspended on the conductor to be measured. Using precision winding techniques, specially designed for this purpose, the coils are wound so that their outputs are not influenced by the position of the primary conductor within the toroid, and allow to reject external magnetic fields interference caused by adjacent conductors.

- The sensor sensitivity can also be increased by making several turns around the conductor to be measured, thereby improving the accuracy for low currents.
- The absence of magnetic core allows a wide frequency response, especially suited for current measurements with high harmonic content and transients.
- These sensors have their place in all applications where traditional transducers are not suitable because of their size or their weight.
- The coils are available in different sizes and can be supplied according to customer need.

**Features:**
- Flexible toroid in double sheath PTFE, 12 mm external diameter, sealed in accordance to IP66.
- Winding in enameled copper wires on internal PTFE sheath shielded by tinned copper braid (EMC screen for RF currents)
- M12 connector output (female 8 poles) or cable output
- Fast opening by sliding spring ring
- Automatic interlocking seal
- Aluminum junction tee, with 2 mounting holes
- embedded 1-Wire EEPROM from Maxim type DS2431 allowing the storage of sensor's calibration parameters, an unique 64 bits serial number.
- measuring of coil temperature via a PT100 sensor included (for compensation or monitoring)
- peak temperature range: -50 °C / +125 °C

**Version and order code:**

- **ROGOFLEX-M12F (LLL):**
  \[ \text{LLL=} \text{coil length in cm (max 600)} \]
  with 8 poles M12 female connector

- **ROGOFLEX-CG (LLL):**
  \[ \text{LLL=} \text{coil length in cm (max 600)} \]
  with 3 pairs shielded cable, 10m length and cable gland

- **ROGOFLEX-CG-M12M (LLL):**
  \[ \text{LLL=} \text{coil length in cm (max 600)} \]
  with 3 pairs shielded cable, 10m length and cable gland
  and 8 poles M12 male connector

**Options:**
- **/T:** Pt100 in the junction tee
- **/M:** DS2431 EEPROM memory included
  allowing the storage of the sensor sensitivity (Individual calibration)
- **/CAL:** sensitivity calibration saved in EEPROM
- **/P:** IP54 protection enclosure of junction tee

**Amplifier 1Aac output**

**CAL101L-ROGO**
Amplifier integrator for ROGOWSKI coil sensor
Current input measure range configurable

[http://www.loreme.fr/fichtech/CAL101L-CAL140.pdf](http://www.loreme.fr/fichtech/CAL101L-CAL140.pdf)
**SPECIFICATION**

- Typical sensitivity: 50 mV/kA@50Hz for one turn
- Background noise without primary current: <10Arms
- Sensitivity resolution: 10 µV (0.2 A)

**ENVIRONMENT**

- Operating temperature: -40...+80 °C
- Peak temperature operation: -50...+125 °C (24Hrs)
- Storage temperature: -40...+80 °C
- Influence of temperature on sensor length: +/- 2% (-40...+80°C)
- Weight: about 1kg / meter
- Protection rating: IP 66
- Dielectric strength (coil / shield): 500 Vrms continuous

**TECHNICAL SPECIFICATIONS**

- **Typical sensitivity:** 50 mV/kA@50Hz for one turn
- **Background noise without primary current:** <10Arms
- **Sensitivity resolution:** 10 µV (0.2 A)
- **Accuracy without calibration:** +/- 2%
- **Max error due to temperature without compensation:** +/- 0.5 %
- **Max error due to opening / closing operations (from the linear to the closed position):** 0.1 %
- **Temperature measure (in the tee):** 2 wires PT100 +/- 0.5 °C
- **Minimum length:** 0.8m; **minimum diameter:** 25 cm
- **Maximum length:** 6m
- **Internal resistance:** ~ 10 ohms / meter
- **Minimum output load:** 10 Kohms

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**WIRING AND OVERALL DIMENSIONS:**

- **Rogowski coil**
- **M12, 8-pin female**
- **Tinned Braid**
- **PT100**
- **Plug**
- **Tee aluminum**
- **Shield**
- **Teflon tube (PTFE) Ø 12**

**Option:** /CxMF

- **M12 male cable, tinned copper wires output.**
- **x = cable length**
- **default: x = 5 meter long**

**Option:** /CxMC

- **2 x M12 male cable**
- **x = cable length**
- **default: x = 1.6 meter long**

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Due to the constant evolution of technologies and standards, the Company reserves the right to change specifications without notice for the products listed in this document.