

ARCT-XXX-M-MOI SERIES

ARCT-XXX-M-MOI Series is the perfect Rogowski coil CTs with a built-in integrator for both power quality revenue grade. Specifically, when used of two-loop technology, the CTs are beyond with Class Accuracy 0.5S.

Also, the patented Perfect Dual Air-core Technology dramatically reduces both the error-ratio due to the position of the measured conductor within the aperture, and the error due to the proximity of external conductors.

In addition, with its flexible design, they not only open up for easy installation around large bus bars and irregular-shaped conductor bundles, but also allow itself to fit into tight spaces where rigid CTs won't fit.

Also, since the integrator is inside of the Rogowski coil, Only a separate power supply(wide voltage 5V~30VDC) is needed.



Application

- Power quality monitoring & control systems
- Harmonics and transients monitoring
- DC ripple measurement
- Measuring devices, lab instrumentation

Standards

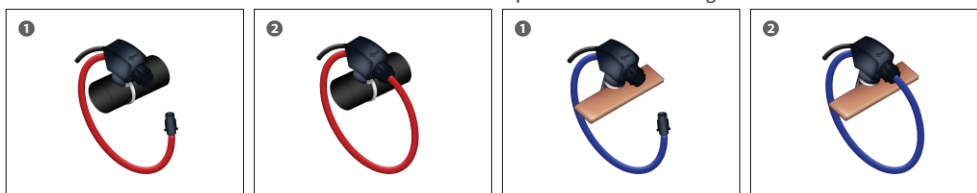
- UL/EN 61010-1, Third Edition, May 11, 2012, Revised April 29 2016
- CAN/CSA-C22.2 No. 61010-1-12, 3rd Edition, Revision dated April 29 2016
- IEC 61010-2-032: 2012(3rd Edition), UL/EN 61010-2-032 (IEC 61010-2-032:2012)
- EN61010-031, EN61010-2-031



Model	Output	Frequency	One Loop Accuracy	Two Loop Accuracy
ARCT-080-M-MOI	333 mVac	50/60 Hz	1	X
ARCT-115-M-MOI	333 mVac	50/60 Hz	1	X
ARCT-180-M-MOI	333 mVac	50/60 Hz	1	0.5S
ARCT-300-M-MOI	333 mVac	50/60 Hz	1	0.5S

Primary current (rated current) : Secondary Output 333mV/AC

How to Use



Please refer to "Rogowski coil Current Transformer Installation Guide" for further details.

1. Specifications

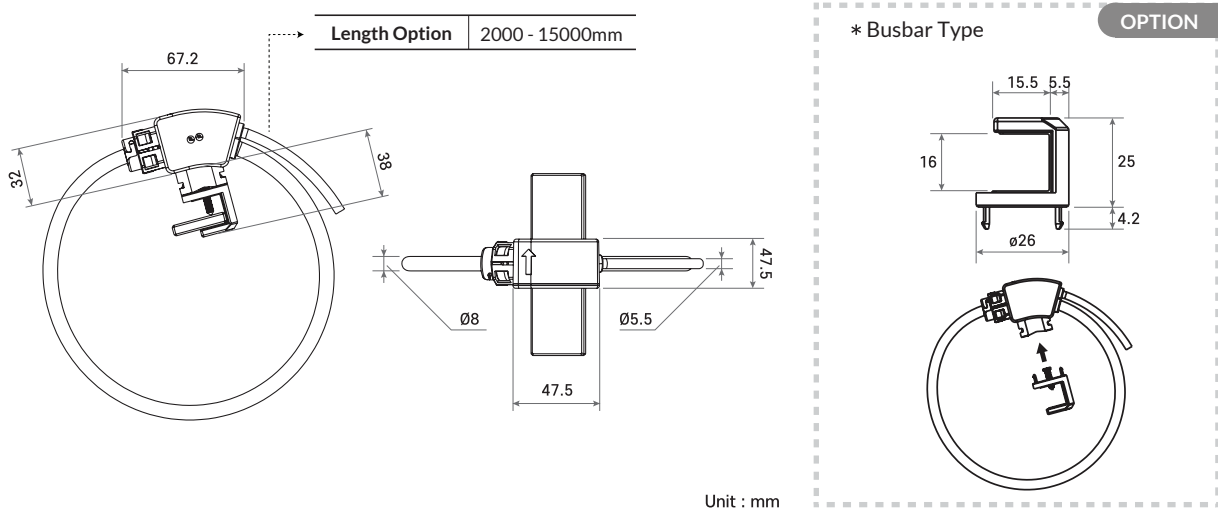
- **Rated current** : 250 A - 6 kA
- **Window size** : 80/115/180/300 mm
- **Cord diameter** : 8 ±0.2 mm
- **Weight** : 150 - 500 g
- **Coil resistance** : 70 - 900 Ohms
- **Positioning error** : One loop → < 0.8% of reading
Two loop → < 0.3% of reading

- Frequency : 50 Hz - 60 Hz
- Working voltage : 1000 V_{RMS} CAT III
600 V_{RMS} CAT IV
pollution degree 2
- Test voltage : 7400 V_{RMS} / 1 min
- Pollution degree : 2, Controlled Environment
- Insulation test voltage : 7400 V_{RMS} / 1 min
- Connection cable : RU AWM 2586 ESB 105°C 1000V VM-1 24AWGX2C KDC RoHS (Standard length:1.5m)
- Protection degree : IP67
- Altitude : up to 2000m above sea-level
- Operating temperature : from -30 °C to +80 °C
- Storage temperature : from -40 °C to +80 °C

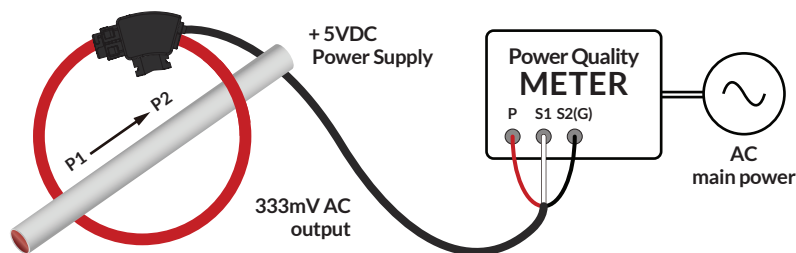
2. Output Accuracy

- Ratio Error :
Accuracy 0.5% conforms to IEC 61869-2 & IEEE/ANSI C57.13 meets the measuring range from 5% to 120% of I_n
- Phase Angle :
50/60 Hz - 0 to 0.5 degrees leading from 5% to 120% of the rated current (loop)

3. Dimensions



Connection

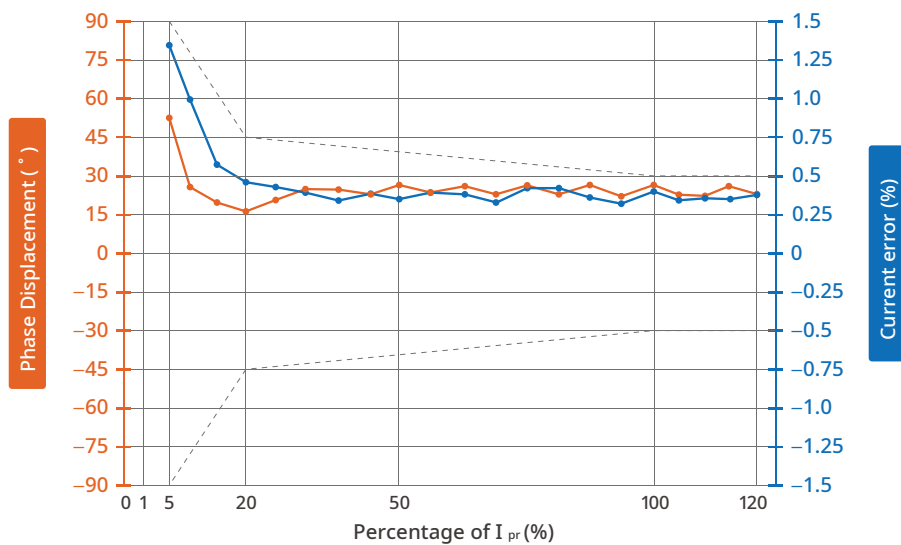


- Power source (P) : +30VDC (±5%), connected to S2 (Ground) : 15mA (Keep (P) should be under ±5% of +5VDC to avoid a damage on power supply)
- Output : S1, connected to S2 (Ground)
- P : Red OUTPUT : White
S2(G) : Black

4. Typical Accuracy

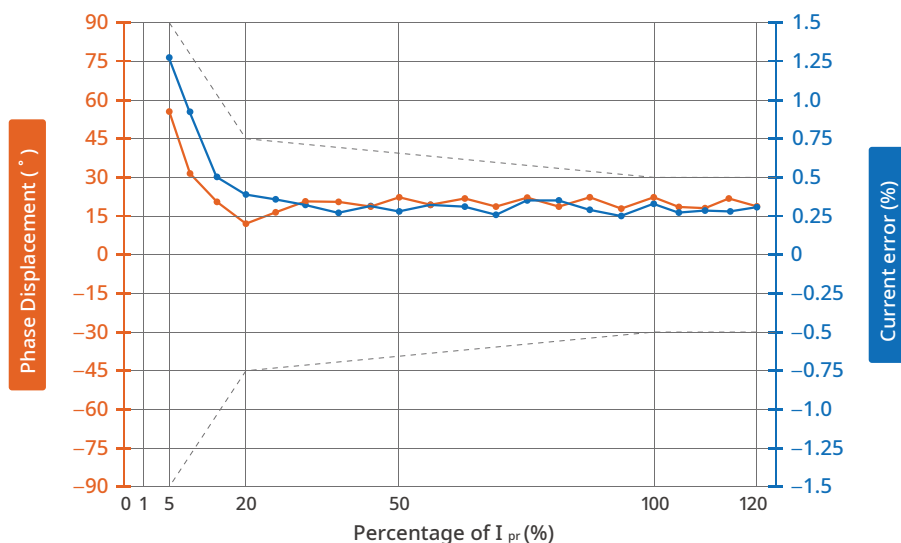
- In the following graphs, a positive phase angle error indicates that the output of the Rogowski coil CT with an integrator leads the primary current.
- Graphs show typical performance at 25°C, 50/60Hz
- Performance Graphs – The standard CT meets IEEE C57.13 class 0.6 standard & IEC 61869-2 class 1, 0.5S standard

4.1 ARCT-080-M-MOI SERIES with built in RM integrator (Rated current: 500 A / 333 mV)



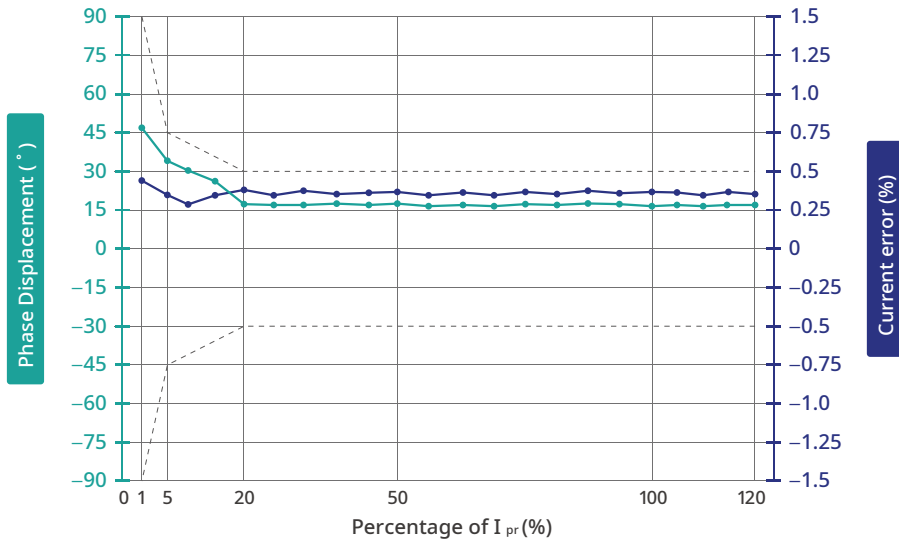
Only meets IEC 61869-2 Class 1.0 at rated currents greater than 500 A.

4.2 ARCT-115-M-MOI SERIES with built in RM integrator (Rated current: 1000 A / 333 mV)



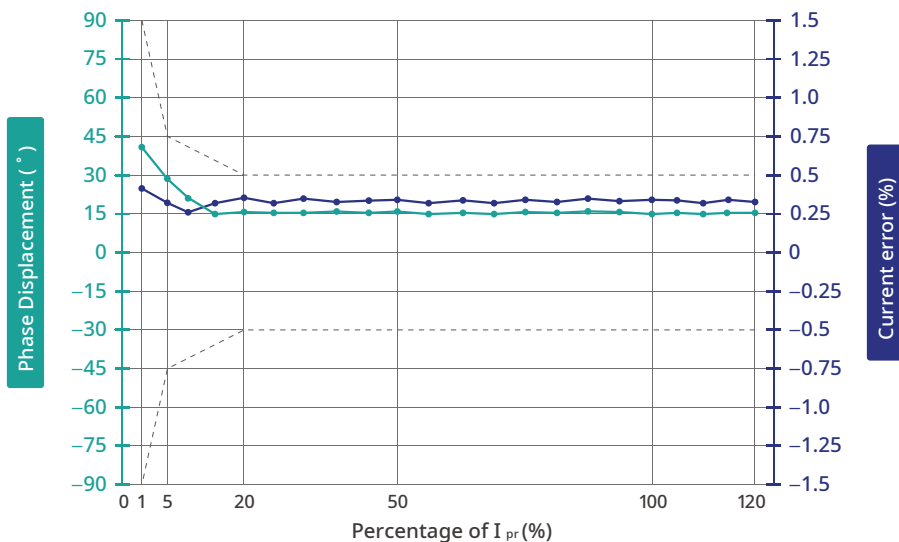
Only meets IEC 61869-2 Class 1.0 at rated currents greater than 1000 A.

4.3 ARCT-180-M-MOI SERIES
with built in RM integrator (Rated current: 2000 A / 333 mV / two-loop)



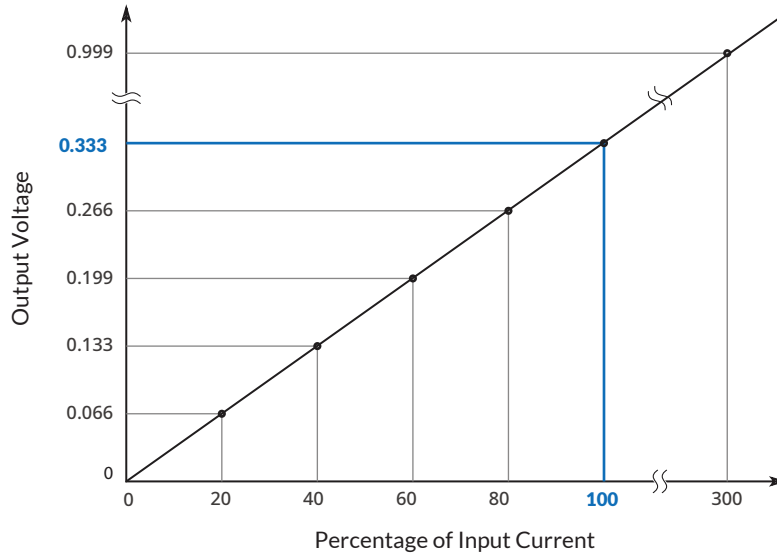
Only meets IEC 61869-2 Class 0.5S at rated currents greater than 2000 A.

4.4 ARCT-300-M-MOI SERIES
with built in RM integrator (Rated current: 3000 A / 333 mV / two-loop)



Only meets IEC 61869-2 Class 0.5S at rated currents greater than 3000 A.

4.2 OUTPUT VOLTAGE GRAPH



5. Safety

The J&D CTs are UL/EN 61010-1, CE, RoHS compliant and certified, are also conformed up to Pollution degree 2, 1000Vac CAT III, 600V CAT IV rated devices.



Please be sure that Failure to follow these instructions can result in serious injury and/or cause damage.

The Rogowski coil current transducer shall be used in electric/electronic equipment in accordance with the operating instructions of all related systems and component manufacturers with respect to applicable standards and safety requirements.

Follow corresponding national regulations and safe electrical work practices.

This equipment must only be installed and serviced by qualified personnel. And the qualified personnel is one who has skills and knowledge related to the construction and operation of this electrical equipment and installations, and has received safety training to recognize and avoid the hazards involved.

In addition, the installation and maintenance shall be done with the main power supply disconnected except if there are no hazardous live parts in or in close proximity to the system and if the applicable national regulations are fully observed.



When operating the Rogowski coil current transducer, there may be dangerous active voltages (e.g. primary conductor) in certain parts of the module. Users should make sure to take all necessary steps to protect against electric shock. The Rogowski coil current transducer is a built-in device containing conductive parts that are inaccessible after installation.

Therefore, a protective enclosure or additional insulation barrier is necessary.

Safe and trouble-free operation of this converter can only be guaranteed if transport, storage and installation are carried out correctly and operation and maintenance are carried out carefully.

6. Remark

- V_o is positive when I_p flows in the direction of the arrow. (o : output, p : primary current)
- Temperature of the primary conductor should not exceed 80°C(176°F).
- Dynamic performances (di/dt and delay time) are the best with a single bar when the primary hole is completely filled.