

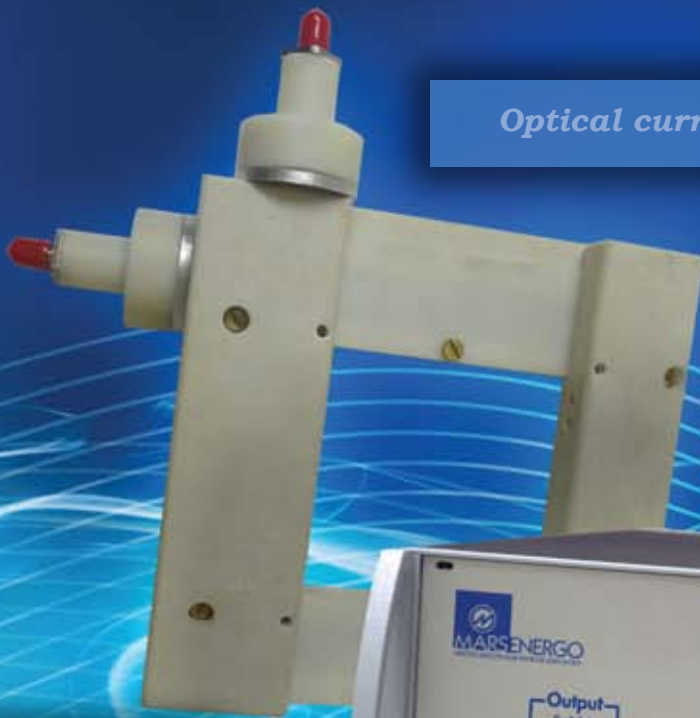


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MARSENERGO
INSTRUMENTS FOR POWER INDUSTRY

Making energy visible

Magneto-optical instrument current transducer for Digital Substation applications MOT-ME-5



Optical current sensor 5 kA



Optoelectronic unit



Patent N 149253

Project status: Research & Development; investment offer
Result: testing and adjustment of prototype

Mars-Energo

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Purpose

- Designed to convert primary AC or pulse current into secondary current (analogue or digital signal) with the established scaling factor (current ratio).

Field of application

- Automatic substation control and relay protection systems.

Operating principle

- Magneto-optical (Faraday) effect.

Features and benefits. Особенности

- No magnetizing and magnetic saturation effects.

Components

- Optical sensor of current;
- Optoelectronic unit (the desired current signal is taken from its output) + Merging Unit (for Digital Substation applications).

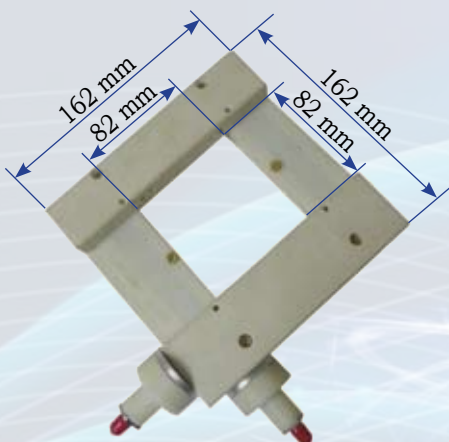
Design for DSS applications

- IEC 61850-9-2LE compliant output.

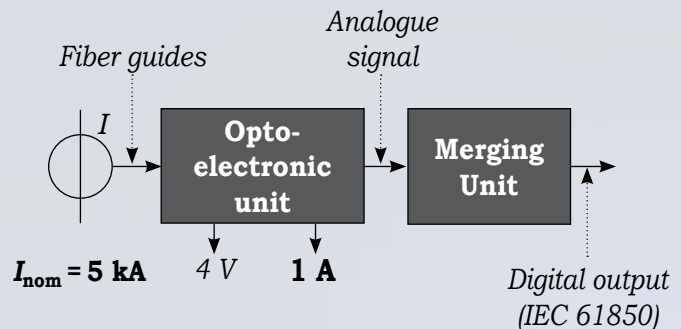
Equipment for testing and calibration

- Test Sets produced by Mars-Energo.

Overall dimensions of the optical sensor



Block diagram



- The prototype is designed for current carrying lines of up to 80 mm
- The optical sensor is designed for mounting / dismounting from the line without brealing into current circuits.

Basic specifications (to be provided)

Parameter	Value
Operating voltage range	0.4 ... 35 kV
Frequency range	10 ... 6000 Hz
Nominal primary current	100 ... 5000 A
Accuracy classes	0.2S; 0.5S
Thermal and electrodynamic withstand	100; 150 kA
Output signal:	
• Analogue	1 A; 4 V
• Digital	According to IEC 61850-9-2LE
Fiber guide length between the optical sensor and optoelectronic unit	up to 200 m
Dimensions and weight, no more than	
• Optical sensor	162 × 162 mm, 1 kg
• Optoelectronic unit	134 × 215 × 450 mm; 3 kg
Power supply (optoelectronic unit)	220 V; 50 Hz