



www.mars-energo.com

MARSENERGO
INSTRUMENTS FOR POWER INDUSTRY

Making energy visible

V.O. 13 Line, 6-8, office 41H
Saint-Petersburg, Russia, 199034
Tel./fax: +7 812 327-21-11, +7 812 331-87-36
E-mail: mars@mars-energo.com

Multi-range Reference Electronic Current Transformer

• EMT-100 •

Sphere of application

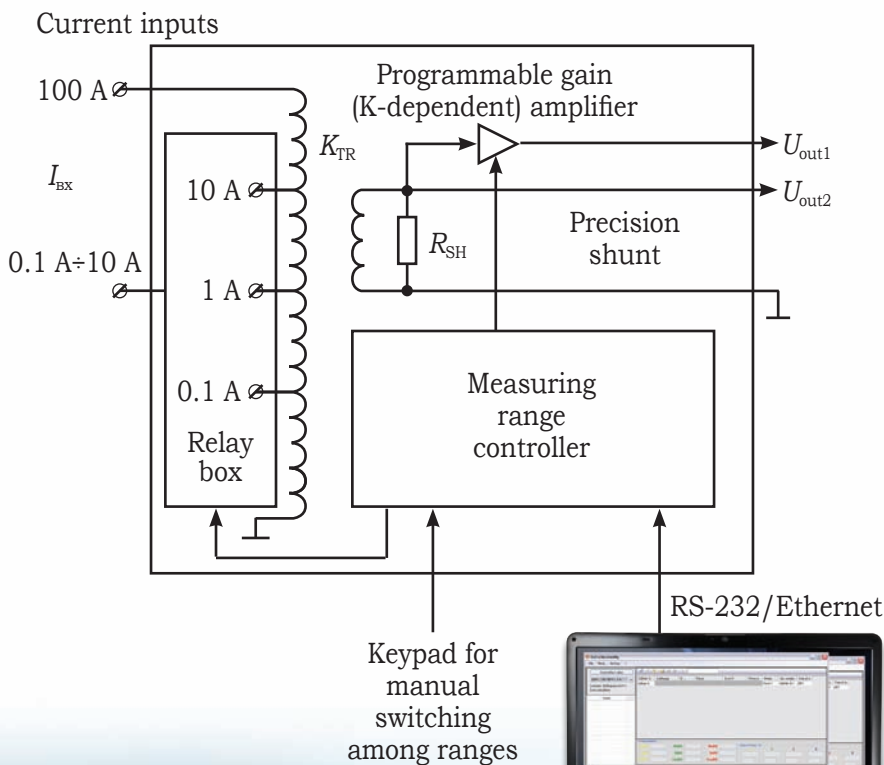
EMT-100 is a reference transformer that converts AC current on its input into output AC voltage. It can be applied as part of test and calibration setups within metrological and industrial test labs, certification bodies etc.

Features

In AC measurements, EMT-100 replaces a set of reference shunts 0.1; 0.5; 1; 5; 10; 20; 50; 100 A and offers the following advantages over the shunts:

- Current measuring ranges are switched automatically (except for the 100A range)
- Overload protection

Design and operation principle



EMT-100 can be used as part of:

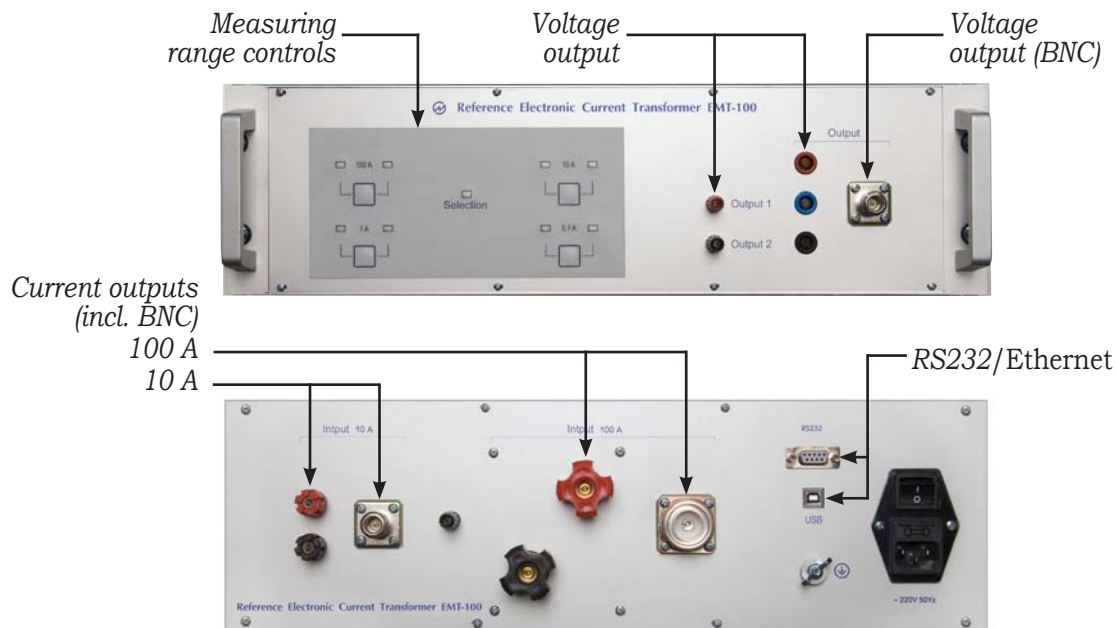
1. Power Calibration Setup PCS-ME 1.0, which is a Standard of AC power
2. Systems for calibration of digital CTs (e.g. DCS-ME 61850)
3. Systems for calibration of electronic CTs with analogue outputs

$$U_{out1} = K_{PA} U_{out2}$$

$$U_{out2} = R_{SH} (I_{in} / K_{TR})$$

K_{PA} – the gain of the programmable amplifier
 K_{TR} – the transformation ratio of the CT

Design Controls, connectors and terminals



Accuracy specifications

1. In the mode of testing electrical energy meters and voltage or power converters

Current measuring range	Measurement error within 40 ... 70 Hz		Measurement error within 25 ... 1000 Hz	
	Ratio	Angle	Ratio	Angle
0.01 ... 10 A	0.001 %	0.05 min	0.005 %	$0.05 \cdot (f/50)$ min
10 ... 120 A	0.002 %	0.1 min	0.01 %	$0.1 \cdot (f/50)$ min

2. In the mode of testing electronic current transformers

Rated input current, A	Rated output voltage of the programmable-gain amplifier, mV*			Measurement error	
	Ratio	Angle		Ratio	Angle
1; 5	333	225	150	0.01 %	0.5 min

* Rated voltages are user selectable from 22.5 mV to 10 V.

Scope of supply

- 1 Transformer EMT-100
- 2* Set of BNC cables up to 10 A; up to 100 A
- 3 Set of cables with terminal connectors up to 10 A; up to 100 A
- 4 Set of output cables with 4mm banana plugs
- 5 USB and RS-232 cables
- 6 Software (automatic control of measurement ranges)
- 7 User manual
- 8 Package

* BNC input/output connectors and cables are optional.