AC Current Transducer TT 50-SD

I_{PN} = 50 A

Split-core transducer for the electronic measurement of AC waveform currents, with galvanic separation between the primary circuit and the secondary circuit.



Electrical data

I_{PN}	Primary nominal RMS current		50	At
I_{out}	Output current		16.66	mA
U_{SZ}	Output clamping voltage		7.5	V
$\hat{I}_P$	Overload capability	- continuous	100	A
		- 1 min	1200	A

Performance data

ε_{tot}	Total error @ I_{PN}, T_A = 25 °C	< ±1	% of I_{PN}
ε_L	Linearity error	0.1	% of I_{PN}
TCI_{out}	Temperature coefficient of I_{out}	60	ppm/K
$\Delta\varphi$	Phase shift	1.5° ±1°	
BW	Frequency bandwidth (±1 dB)	50/60	Hz

General data

T_A	Ambient operating temperature	−25 … +70	°C
T_{Ast}	Ambient storage temperature	−30 … +90	°C
RH	Relative humidity (non-condensing) [1]	≤ 85	%
	Altitude above sea level	2000	m
		Indoor use only	
m	Mass	80	g
IPxx	Protection degree	IP 40	

Note: [1] Long term exposure to high humidity environment may affect to product reliability.

Features

- Split-core type
- ⌀ 8 mm sensing aperture for non-contact measurement
- Cable output (1 m)
- Insulating plastic case recognized according to UL 94-V0.

Advantages

- High total error and low phase shift
- High insulation between primary and secondary circuits
- Compact case
- Cost-effective solution
- Easy installation.

Applications

- **Power metter**
  Current measurement for active power calculation
- **Energy sub-meters**
  For energy efficiency monitoring, consumption analysis and costs allocation
- **Power quality monitoring**
- **Conditions monitoring**
  (e.g. motor leads such as conveyers, pumps or HVAC)
- **Distributed measurement systems.**

Application Domains

- Energy
- Automation.

9November2022/version 7

LEM reserves the right to carry out modifications on its transducers, in order to improve them.

LEM International SA
Route du Nant-d'Avril, 152
1217 Meyrin
www.lem.com

Current Transducer TT 50-SD

Insulation coordination

U_d	RMS voltage for AC insulation test [1], 50 Hz, 1 min	3.5	kV
U_{Ni}	Impulse withstand voltage 1.2/50 µs	6.5	kV
d_{Cp}	Creepage distance	6	mm
d_{Cl}	Clearance	6	mm
CTI	Comparative tracking index (group I)	600	

Applications examples

According to IEC 61010-1 standard and following conditions:

- Reinforced insulation [2]
- Over voltage category OV 3
- Pollution degree PD2
- Heterogeneous.

	IEC 61010-1
d_{Cp}, d_{Cl}, U_{Ni}	Nominal voltage
Reinforced insulation	300 V

Notes: [1] Between primary (completely filling the hole) and secondary

[2] If insulated cable is used for the primary circuit, the voltage category could be improved according to the primary cable insulation category (please refer to the cable manufacter's indications).

LEM reserves the right to carry out modifications on its transducers, in order to improve them.

LEM International SA
Route du Nant-d'Avril, 152
1217 Meyrin
www.lem.com

Safety and warning notes

In order to guarantee safe operation of the transducer and to be able to make proper use of all features and functions, please read these instructions thoroughly! Safe operation can only be guaranteed if the transducer is used for the purpose it has been designed for and within the limits of the technical specifications. Ensure you get up-to-date technical information that can be found in the latest associated datasheet under www.lem.com.



Caution! Risk of danger

Ignoring the warnings can lead to serious injury and/or cause damage!
The electric measuring transducer may only be installed and put into operation by qualified personnel that have received an appropriate training.
The corresponding national regulations shall be observed during installation and operation of the transducer and any electrical conductor.
The transducer shall be used in electric/electronic equipment with respect to applicable standards and safety requirements and in accordance with all the related systems and components manufacturer' operating instructions.



Caution, Risk of electrical shock

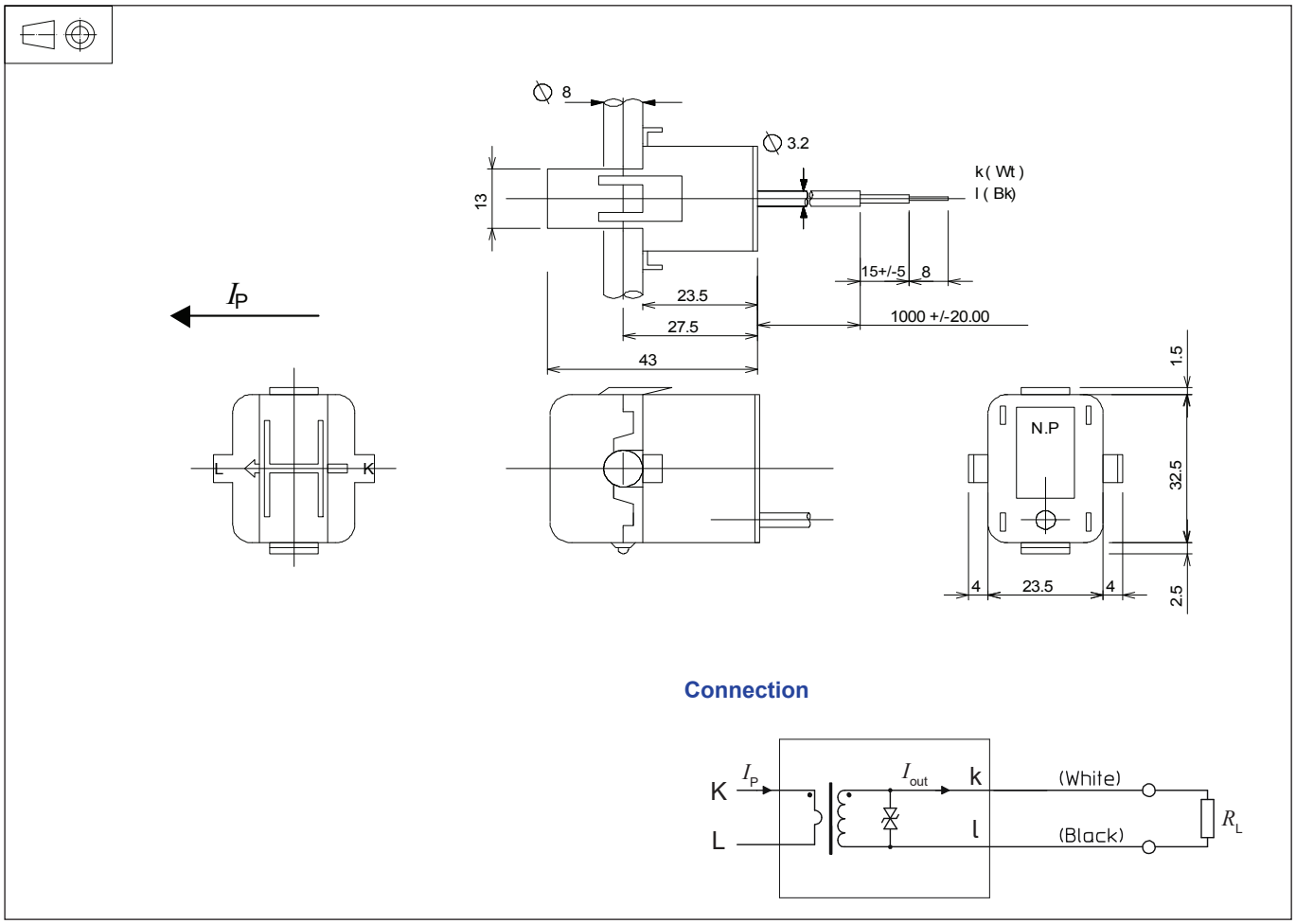
When operating the transducer, certain parts of the module may carry hazardous live voltage (eg. primary conductor, power supply).
The user shall ensure to take all measures necessary to protect against electrical shock. The transducer is a build-in device containing conducting parts that shall not be accessible after installation.
A protective enclosure or additional insulation barrier may be necessary.
The transducer shall not be put into operation if the jaw opening is open (split core version) or the installation is not completed.
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.

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

LEM reserves the right to carry out modifications on its transducers, in order to improve them.

LEM International SA
Route du Nant-d'Avril, 152
1217 Meyrin
www.lem.com

Dimensions TT 50-SD (in mm)



Connection

Mechanical characteristics

- General tolerance ±1 mm
- Primary aperture ⌀ 8 mm
- Fastening Cable tie
- Output cable length 1000 m

Remark

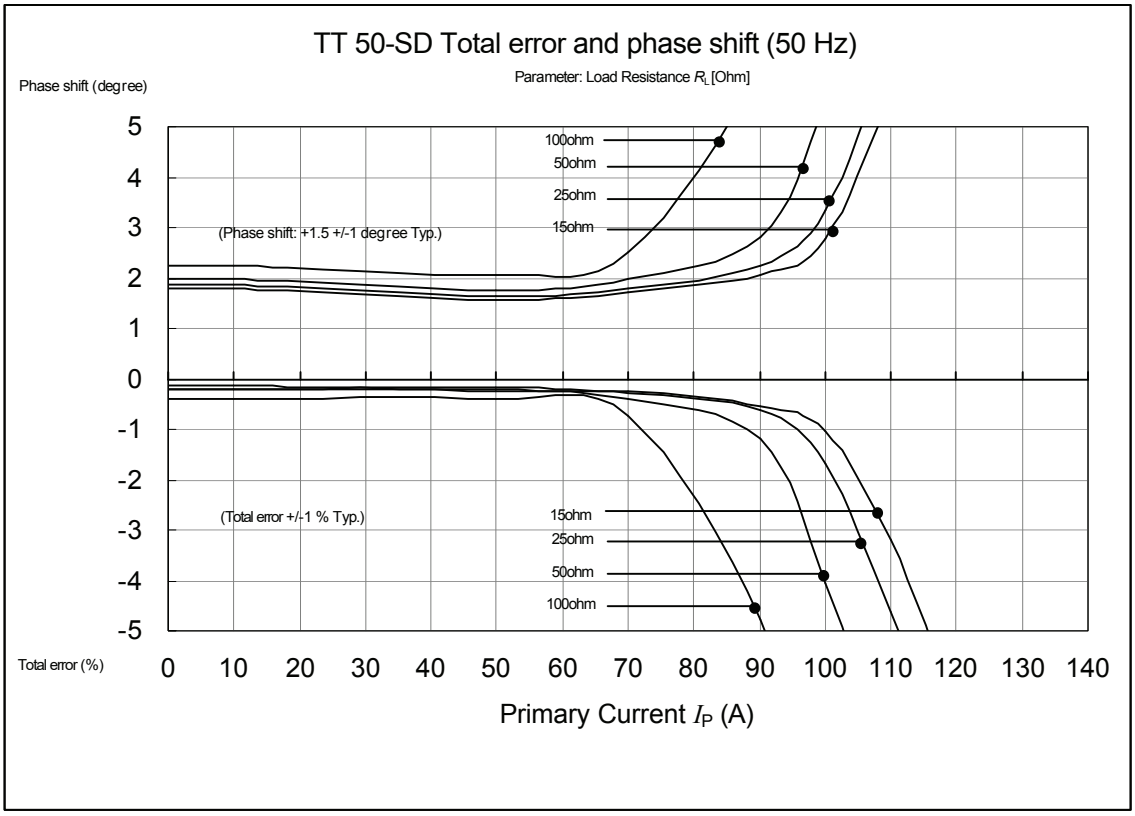
- **Attention**: contact areas (air gap) must be kept clean (particle free) to ensure proper performance.

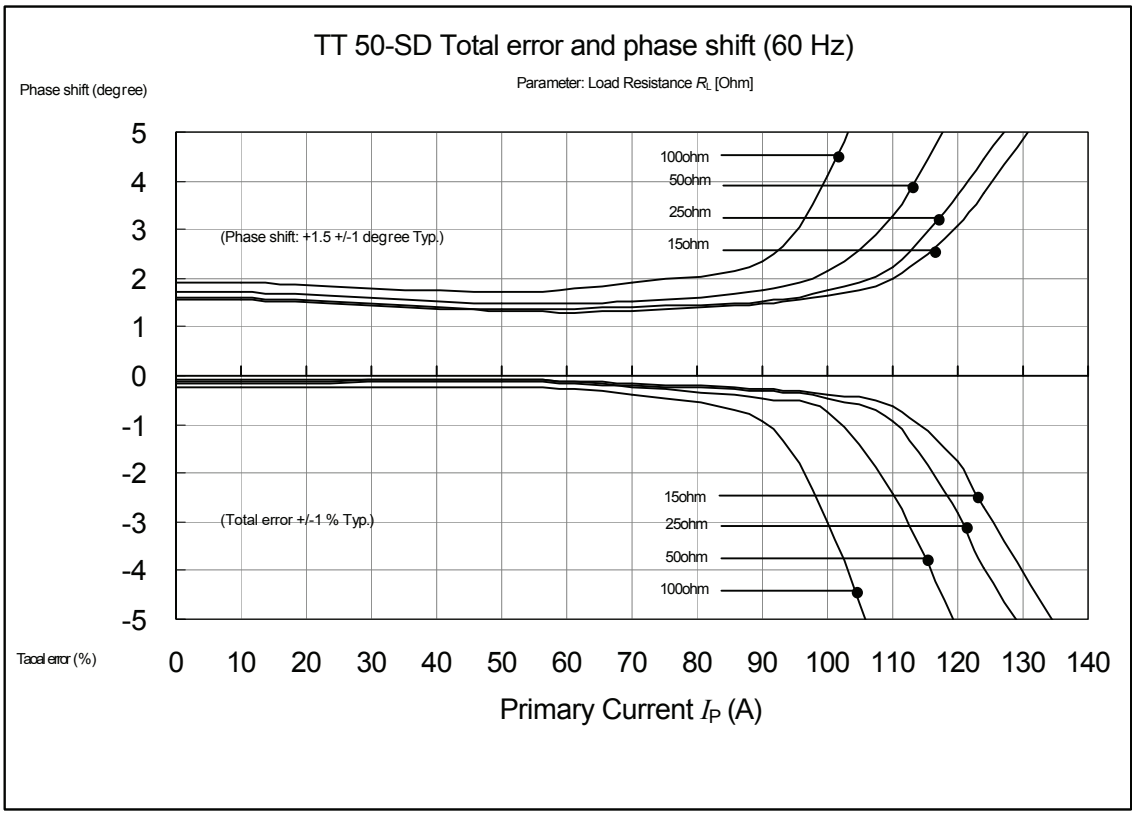
9November2022/version 7

LEM reserves the right to carry out modifications on its transducers, in order to improve them.

LEM International SA
Route du Nant-d'Avril, 152
1217 Meyrin
www.lem.com

Electrical output characteristics TT 50-SD





LEM reserves the right to carry out modifications on its transducers, in order to improve them.

LEM International SA
Route du Nant-d'Avril, 152
1217 Meyrin
www.lem.com