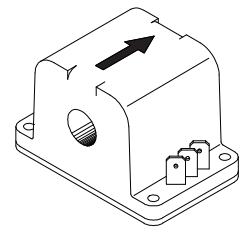


Current Transducer LT 100-S/SP30

For the electronic measurement of currents: DC, AC, pulsed..., with galvanic separation between the primary circuit and the secondary circuit.

$$I_{PN} = 100 \text{ A}$$



Electrical data

I_{PN}	Primary nominal RMS current	100	A
I_{PM}	Primary current, measuring range	0 ... ± 200	A
R_M	Measuring resistance	$R_{M \min}$ $R_{M \max}$	
	with $\pm 12 \text{ V}$ @ $\pm 100 \text{ A}_{\max}$	0 75	Ω
	@ $\pm 200 \text{ A}_{\max}$	0 25	Ω
	with $\pm 18 \text{ V}$ @ $\pm 100 \text{ A}_{\max}$	30 135	Ω
	@ $\pm 200 \text{ A}_{\max}$	30 55	Ω
I_{SN}	Secondary nominal RMS current	100	mA
N_P/N_S	Turns ratio	1 : 1000	
U_C	Supply voltage ($\pm 5 \%$)	$\pm 12 \dots 18$	V
I_C	Current consumption @ $U_C = \pm 18 \text{ V}$, @ $I_P = 0 \text{ A}$	< 28	mA

Accuracy - Dynamic performance data

ε_{tot}	Total error @ I_{PN} , $T_A = 25^\circ \text{C}$	± 0.5	%
ε_L	Linearity error	< 0.1	%
I_O	Offset current @ $I_P = 0$, $T_A = 25^\circ \text{C}$	Typ	Max
			± 0.4 mA
I_{OT}	Temperature variation of I_O	-25 $^\circ \text{C}$... +70 $^\circ \text{C}$	± 0.3 ± 0.6 mA
		-40 $^\circ \text{C}$... -25 $^\circ \text{C}$	± 0.4 ± 1.0 mA
t_{D90}	Delay time to 90 % of the final output value for I_{PN} step ¹⁾	< 1	μs
BW	Frequency bandwidth (-1 dB)	DC ... 150	kHz

General data

T_A	Ambient operating temperature	-40 ... +70	$^\circ \text{C}$
T_{Ast}	Ambient storage temperature	-50 ... +85	$^\circ \text{C}$
R_S	Resistance of secondary winding @ $T_A = 70^\circ \text{C}$	25	Ω
m	Mass	180	g
	Standards ²⁾	EN 50155: 2001 EN 50121-3-2: 2016	

Notes: ¹⁾ For a $di/dt = 100 \text{ A}/\mu \text{s}$

²⁾ Additional information available on request

Deviation of the offset during the test IEC 61000-4-6 between 1 MHz & 3 MHz.

Features

- Closed loop (compensated) current transducer using the Hall effect
- Insulating plastic case recognized according to UL 94-V0.

Special features

- $T_A = -40^\circ \text{C} \dots +70^\circ \text{C}$
- Potted.

Advantages

- Excellent accuracy
- Very good linearity
- Low temperature drift
- Optimized delay time
- Wide frequency bandwidth
- No insertion losses
- High immunity to external interference
- Current overload capability.

Applications

- Single or three phase inverters
- Propulsion and braking choppers
- Propulsion converters
- Auxiliary converters
- Battery chargers.

Application Domain

- Railway (fixed installations and onboard).

Current Transducer LT 100-S/SP30

Insulation coordination

U_d	RMS voltage for AC insulation test, 50 Hz, 1 min	5	kV
		Min	
d_{cp}	Creepage distance	37.6	mm
d_{cl}	Clearance	33.3	mm
CTI	Comparative tracking index (group IIIa)	225	

Safety



This transducer must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the manufacturer's operating instructions.



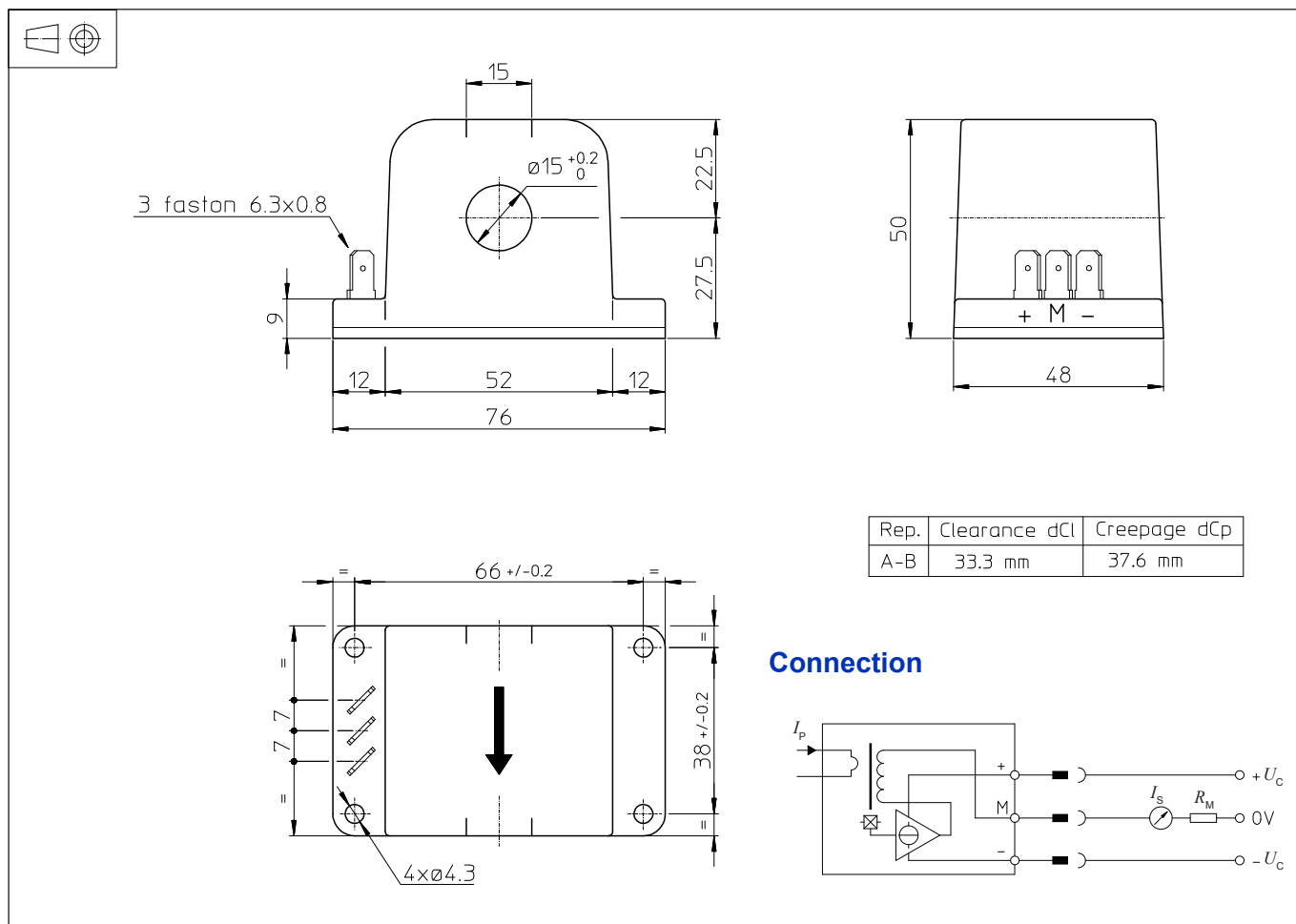
Caution, risk of electrical shock

When operating the transducer, certain parts of the module can carry hazardous voltage (e.g. primary busbar, power supply). Ignoring this warning can lead to injury and/or cause serious damage.

This transducer is a build-in device, whose conducting parts must be inaccessible after installation. A protective housing or additional shield could be used.

Main supply must be able to be disconnected.

Dimensions LT 100-S/SP30 (in mm)



Mechanical characteristics

- General tolerance ± 0.5 mm
- Transducer fastening 4 holes $\varnothing 4.3$ mm
4 M4 steel screws
- Recommended fastening torque 3.2 N·m
- Primary through-hole $\varnothing 15$ mm
- Connection of secondary 3 Faston 6.3 x 0.8 mm

Remarks

- I_S is positive when I_P flows in the direction of the arrow.
- Temperature of the primary conductor should not exceed 100 °C.
- In order to achieve the best magnetic coupling, the primary windings have to be wound over the top edge of the device.
- To measure nominal currents of less than 100 A, the optimum accuracy is obtained by having several primary turns (nominal current x number of turns = 100 At).
- Dynamic performances (di/dt and delay time) are best with a single bar completely filling the primary hole.
- Installation of the transducer must be done unless otherwise specified on the datasheet, according to LEM Transducer Generic Mounting Rules. Please refer to LEM document N°ANE120504 available on our Web site: <https://www.lem.com/en/file/3137/download/>.

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