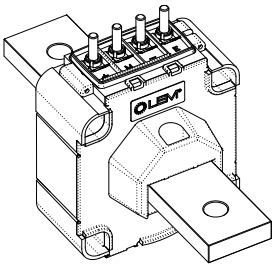
Current Transducer LTC 600-T/SP16

I_{PN} = 600 A

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



Electrical data

I_{PN}	Primary nominal RMS current			600	A
I_{PM}	Primary current, measuring range @ ±24 V			0 ... ±1500	A
$\hat{I}_P$	Maximum withstand primary peak current			10/10	kA/ms
R_M	Measuring resistance		$R_{M\,min}$	$R_{M\,max}$	
	with ±15 V	@ ±600 A_{max}	0	50	Ω
		@ ±1200 A_{max}	0	5	Ω
	with ±24 V	@ ±600 A_{max}	0	120	Ω
		@ ±1500 A_{max}	0	20	Ω
I_{SN}	Secondary nominal RMS current			120	mA
N_P/N_S	Turns ratio			1 : 5000	
U_C	Supply voltage (±5 %)			±15 ... 24	V
I_C	Current consumption			< 32 (@ ±24 V) + I_S	mA

Accuracy - Dynamic performance data

ε_S	Sensitivity error @ I_{PN}, T_A = 25 °C		< ±0.7	%
	@ I_{PN}, T_A = −40 °C ... +85 °C		< ±1.6	%
ε_L	Linearity error		< 0.1	%
			Max	
I_O	Offset current @ I_P = 0, T_A = 25 °C		±0.5	mA
I_{OT}	Temperature variation of I_O	−40 °C ... +85 °C	±1	mA
$t_{D\,90}$	Delay time [1] to 90 % of I_{PN}		< 1	µs
BW	Frequency bandwidth (−1 dB)		DC ... 100	kHz

General data

T_A	Ambient operating temperature	−40 ... +85	°C
T_S	Ambient storage temperature	−45 ... +90	°C
R_S	Resistance of secondary winding @ T_A = 85 °C	44	Ω
m	Mass	1720	g
	Standards	EN 50155: 2007	
		UL 508: 2010	

Features

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

Special features

- I_{PN} = 600 A
- Busbar dimension: 210 × 40 × 12 mm.

Advantages

- Excellent accuracy
- Very good linearity
- Low temperature drift
- Optimized response 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

- Traction.

Note: [1] For a di/dt = 100 A/µs.

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Insulation coordination

U_d	RMS voltage for AC insulation test, 50 Hz, 1 min	13.4 [1)]	kV
		1.5 [2)]	kV
U_e	Partial discharge extinction RMS voltage @ 10 pC	> 2.8	kV
		Min	
d_{Cp}	Creepage distance	80	mm
d_{Cl}	Clearance	54.4	mm
CTI	Comparative tracking index (group I)	600	

Notes: [1)] Between primary and secondary + shield
[2)] Between secondary and shield.

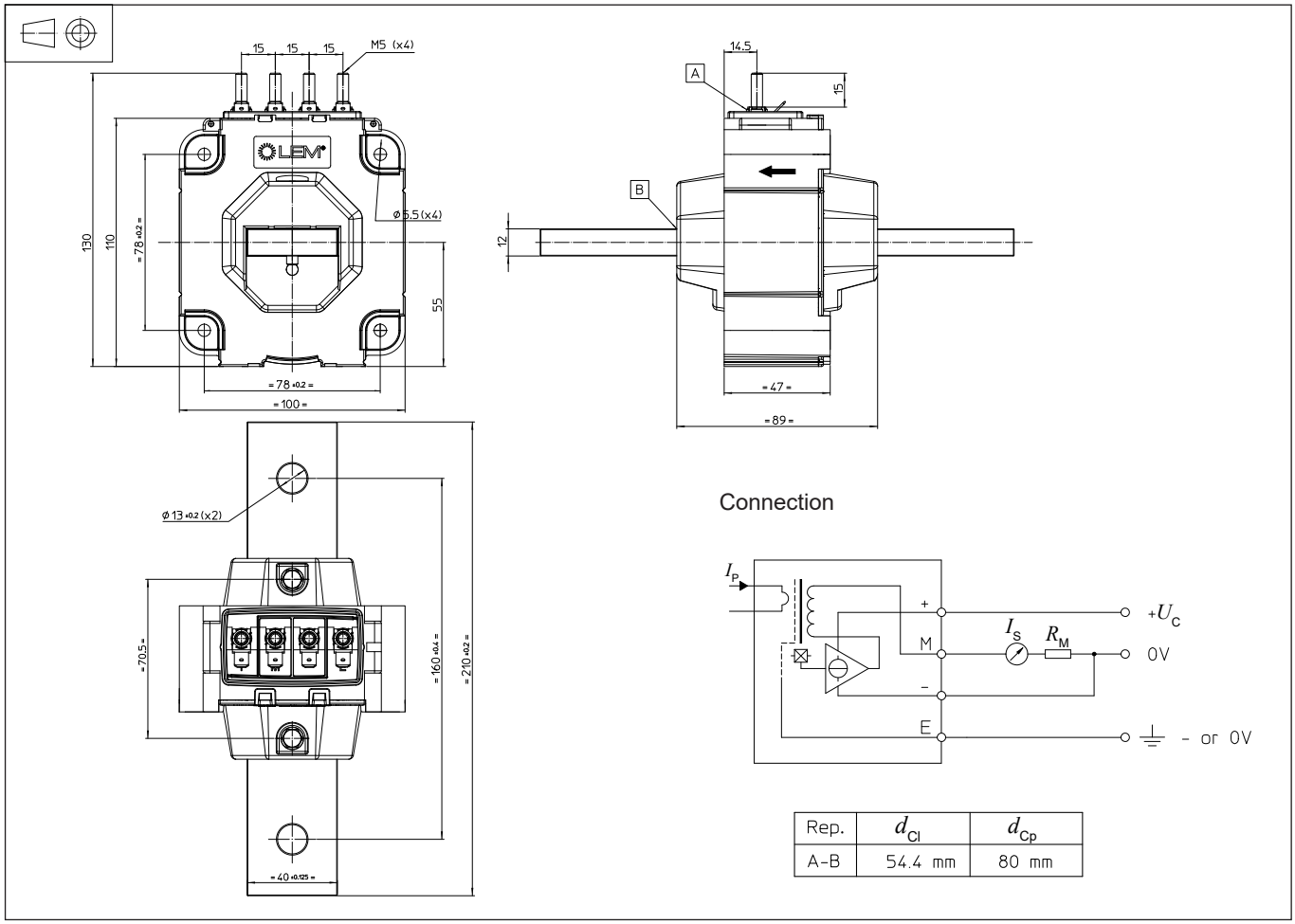
Safety

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 (eg. 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 LTC 600-T/SP16 (in mm)



Rep.	d_{Cl}	d_{Cp}
A-B	54.4 mm	80 mm

Mechanical characteristics

- General tolerance ±1 mm
- Transducer fastening
  by the primary bar 2 holes ∅ 13 mm
  2 M12 steel screws
  Recommended fastening torque 24.5 N·m
- Connection of secondary 4 M5 threaded studs
  Recommended fastening torque 2.2 N·m
  Faston 6.3 × 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.
- 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/**.
- Dynamic performances (di/dt and delay time) are best with a single bar completely filling the primary hole.