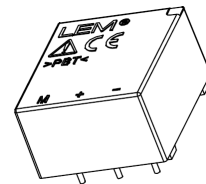


Current Transducer LA 25-NP/SP25

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



$I_{PN} = 5-6-8-12-25 \text{ At}$



Electrical data

I_{PN}	Primary nominal RMS current	25	At	
I_{PM}	Primary current, measuring range	0 ... ±36	At	
R_M	Measuring resistance with ±15 V	$R_{M \min}$ $R_{M \max}$ @ ±25 At _{max} @ ±36 At _{max}	150 325 150 190	Ω
I_{SN}	Secondary nominal RMS current	25	mA	
N_P/N_S	Turns ratio	1-2-3-4-5	: 1000	
U_C	Supply voltage (±5 %)	±15	V	
I_C	Current consumption	10 + I_S	mA	

Accuracy - Dynamic performance data

ϵ_{tot}	Total error @ I_{PN} , $T_A = 25 \text{ °C}$	±0.9	%
ϵ_L	Linearity error	< 0.2	%
I_{OE}	Electrical offset current ¹⁾ @ $I_P = 0$, $T_A = 25 \text{ °C}$	Typ ±0.05	Max ±0.15 mA
I_{OM}	Magnetic offset current ²⁾ @ $I_P = 0$ and specified R_M , after an overload of $3 \times I_{PN}$	±0.05	±0.15 mA
I_{OT}	Temperature variation of I_O -40 °C ... +85 °C	±0.25	±0.70 mA
t_{D90}	Delay time to 90 % of the final output value for I_{PN} step ³⁾ < 1		µs
BW	Frequency bandwidth (-1 dB)	DC ... 150	kHz

General data

T_A	Ambient operating temperature	-40 ... +85	°C
T_{Ast}	Ambient storage temperature	-50 ... +100	°C
R_P	Resistance of primary (winding) @ $T_A = 25 \text{ °C}$	< 1.25	mΩ
R_S	Resistance of secondary winding @ $T_A = 70 \text{ °C}$	115	Ω
R_{INS}	Insulation resistance @ 500 V, $T_A = 25 \text{ °C}$	> 1500	MΩ
m	Mass	22	g
	Standards	EN 50155: 2017 ⁴⁾ UL 508: 2010	

- Notes:**
- 1) Measurement carried out after 15 mn functioning
 - 2) The result of the coercive field of the magnetic circuit
 - 3) For a $di/dt = 50 \text{ A/}\mu\text{s}$
 - 4) Additional information available on request.

Features

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

Special features

- $U_d = 2.5 \text{ kV}$ (4 kV DC / 5 mn)
- $T_A = -40 \text{ °C} \dots +85 \text{ °C}$.

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

- Railway (fixed installations and onboard).

Current Transducer LA 25-NP/SP25

Insulation coordination

U_d	RMS voltage for AC insulation test, 50 Hz, 1 min	2.5 (4 kV DC/5 mn)	kV
U_{Ni}	Impulse withstand voltage 1.2/50 μ s	9	kV
		Min	
d_{Cp}	Creepage distance	10.63	mm
d_{Cl}	Clearance	10.63	mm
CTI	Comparative tracking index (group IIIa)	175	

Safety

This *transducer* must be used in limited-energy secondary circuits according to IEC 61010-1.



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).

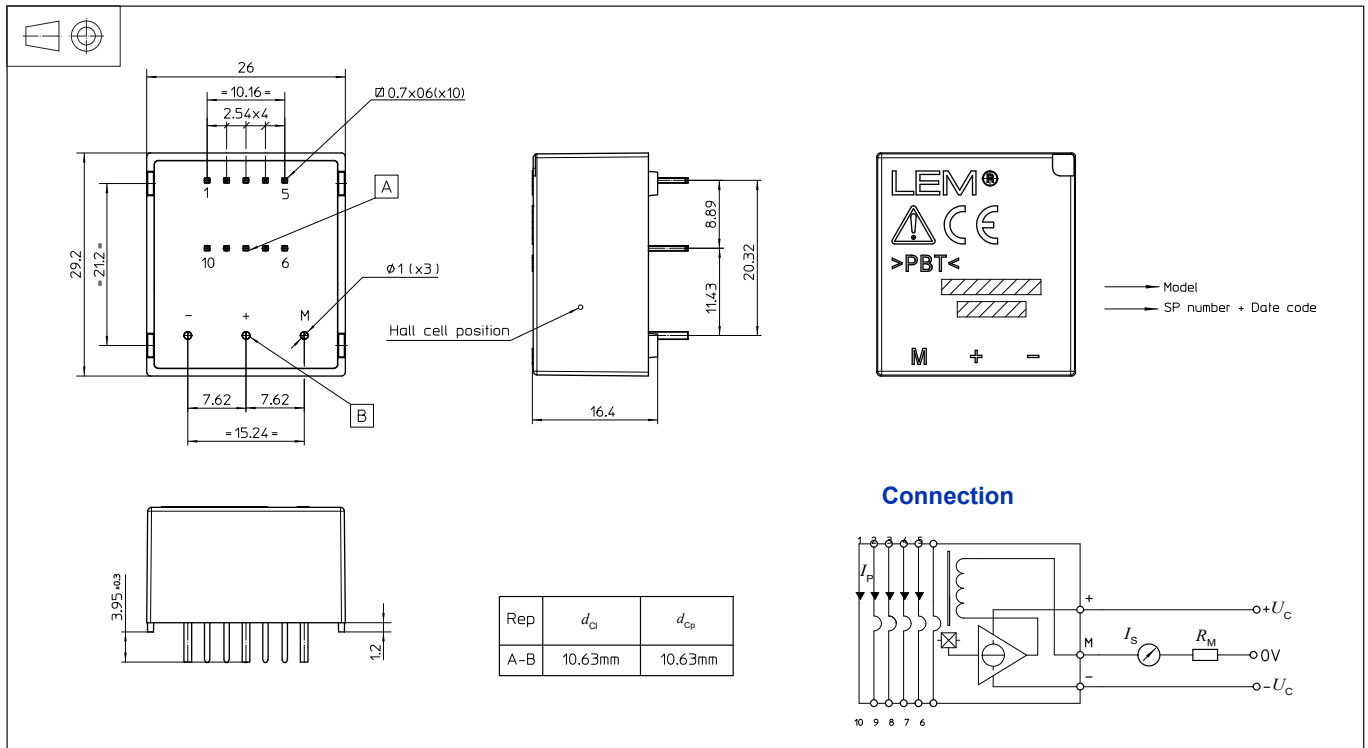
Ignoring this warning can lead to injury and/or cause serious damage.

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 LA 25-NP/SP25 (in mm)



Number of primary turns	Primary current		Nominal output current $I_{S N}$ [mA]	Turns ratio N_p/N_s	Primary resistance R_p [m Ω]	Primary insertion inductance L_p [μ H]	Recommended connections
	nominal I_{PN} [A]	maximum I_P [A]					
1	25	36	25	1 / 1000	0.3	0.023	
2	12	18	24	2 / 1000	1.1	0.09	
3	8	12	24	3 / 1000	2.5	0.21	
4	6	9	24	4 / 1000	4.4	0.37	
5	5	7	25	5 / 1000	6.3	0.58	

Mechanical characteristics

- General tolerance ± 0.2 mm
- Fastening & connection of primary 10 pins 0.7×0.6 mm
- Fastening & connection of secondary 3 pins $\varnothing 1$ mm
- Recommended PCB hole 1.2 mm

Remarks

- I_S is positive when I_P flows from terminals 1, 2, 3, 4, 5 to terminals 10, 9, 8, 7, 6.
- 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/>.