

Current Transducer LA 25-NP/SP25

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

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



16154



Electrical data

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

Accuracy - Dynamic performance data

X_G	Overall accuracy @ I_{PN} , $T_A = 25^\circ\text{C}$	± 0.9	%
ε_L	Linearity error	< 0.2	%
I_O	Offset current ¹⁾ @ $I_P = 0$, $T_A = 25^\circ\text{C}$	Typ	Max
		± 0.05	± 0.15
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
		± 0.25	± 0.70
I_{OT}	Temperature variation of I_O - $40^\circ\text{C} \dots +85^\circ\text{C}$	± 0.25	± 0.70
t_r	Response time ³⁾ to 90 % of I_{PN} step	< 1	μs
di/dt	di/dt accurately followed	> 50	A/ μs
BW	Frequency bandwidth (-1 dB)	DC .. 150	kHz

General data

T_A	Ambient operating temperature	- 40 .. + 85	$^\circ\text{C}$
T_S	Ambient storage temperature	- 50 .. + 100	$^\circ\text{C}$
R_P	Primary coil resistance per turn @ $T_A = 25^\circ\text{C}$	< 1.25	m Ω
R_S	Secondary coil resistance @ $T_A = 70^\circ\text{C}$	115	Ω
R_{IS}	Isolation resistance @ 500 V, $T_A = 25^\circ\text{C}$	> 1500	M Ω
m	Mass	22	g
	Standards	EN 50155	

- Notes:** ¹⁾ Measurement carried out after 15 mn functioning
²⁾ The result of the coercive field of the magnetic circuit
³⁾ With a di/dt of 100 A/ μs .

Features

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

Special features

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

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 chopper
- Propulsion converter
- Auxiliary converter
- Battery charger.

Application Domain

- Traction.

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Isolation characteristics

V_d	Rms voltage for AC insulation test, 50 Hz, 1 min	2.5 (4 kV DC/5 mn)	kV
\hat{V}_w	Impulse withstand voltage 1.2/50 μ s	9	kV
		Min	
dCp	Creepage distance	10.63	mm
dCI	Clearance	10.63	mm
CTI	Comparative Tracking Index (group IIIa)	175	

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).

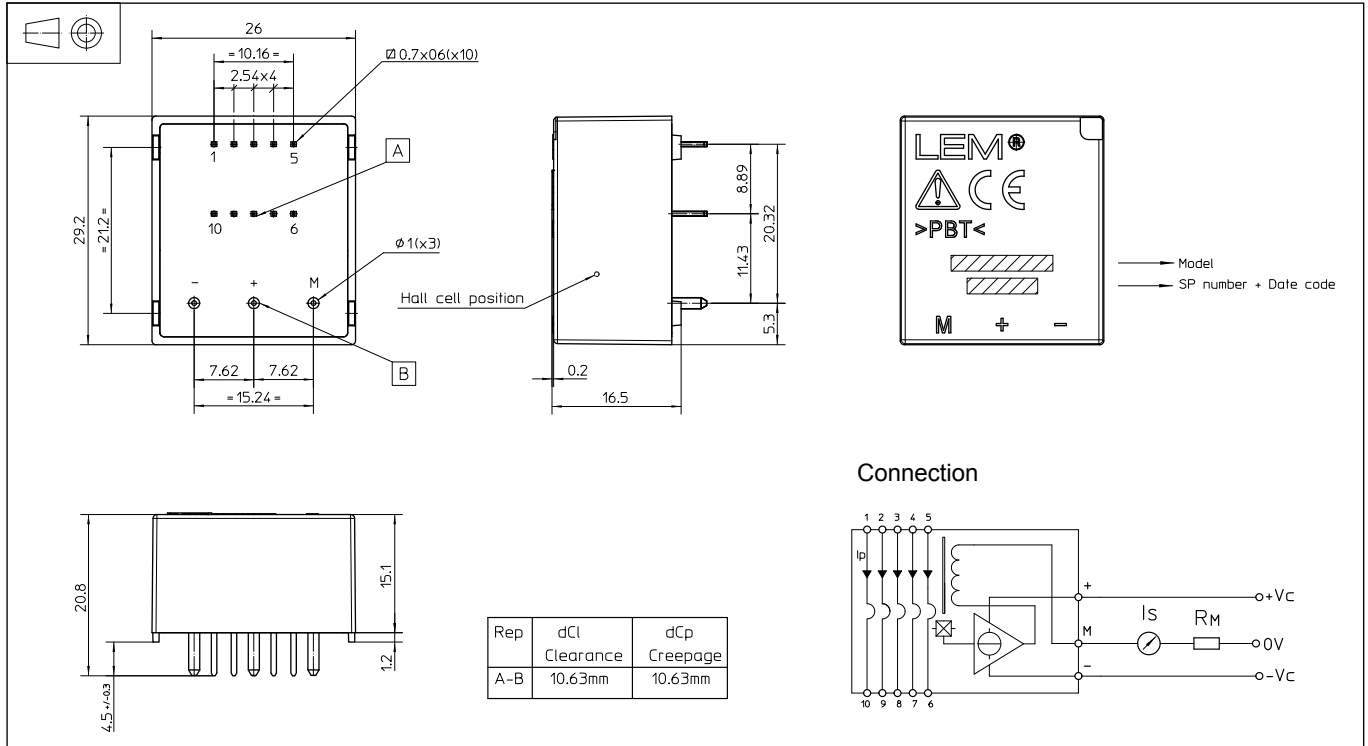
Ignoring this warning can lead to injury and/or cause serious damage.

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 LA 25-NP/SP25 (in mm)



Number of primary turns	Primary current		Nominal output current I_{SN} [mA]	Turns ratio K_N	Primary resistance R_p [$m\Omega$]	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 x 0.6 mm
- Fastening & connection of secondary 3 pins $\varnothing 1$ mm
- Recommended PCB hole 1.2 mm

Remark

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