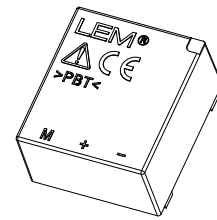


# Current Transducer LA 25-NP/SP13

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



$$I_{PN} = 0.5 \text{ A}$$



## Electrical data

$I_{PN}$	Primary nominal RMS current	0.5	A
$I_{PM}$	Primary current, measuring range	0 ... $\pm 0.72$	A
$R_M$	Measuring resistance with $\pm 15 \text{ V}$	@ $\pm 0.50 \text{ A}_{\text{max}}$	$R_{M \text{ min}}$ 100 $R_{M \text{ max}}$ 320 $\Omega$
		@ $\pm 0.72 \text{ A}_{\text{max}}$	100 190 $\Omega$
$I_{SN}$	Secondary nominal RMS current	25	mA
$N_P/N_S$	Turns ratio	50 : 1000	
$U_C$	Supply voltage ( $\pm 5 \%$ )	$\pm 15$	V
$I_C$	Current consumption	$10 + I_S$	mA

## Accuracy - Dynamic performance data

$\epsilon_{\text{tot}}$	Total error @ $I_{PN}, T_A = 25 \text{ }^\circ\text{C}$	$\pm 0.5$	%
$\epsilon_L$	Linearity error	< 0.2	%
		Typ	Max
$I_{OE}$	Electrical offset current <sup>1)</sup> @ $I_P = 0, T_A = 25 \text{ }^\circ\text{C}$	$\pm 0.05$	$\pm 0.15$ mA
$I_{OM}$	Magnetic offset current <sup>2)</sup> @ $I_P = 0$ and specified $R_M$ , after an overload of $3 \times I_{PN}$	$\pm 0.05$	$\pm 0.15$ mA
$I_{OT}$	Temperature variation of $I_O$	0 $^\circ\text{C}$ ... +70 $^\circ\text{C}$	$\pm 0.20$ $\pm 0.60$ mA
		-25 $^\circ\text{C}$ ... 0 $^\circ\text{C}$	$\pm 0.20$ $\pm 0.50$ mA
		-40 $^\circ\text{C}$ ... -25 $^\circ\text{C}$	$\pm 0.30$ $\pm 1.00$ mA
$t_{D90}$	Delay time to 90 % of the final output value for $I_{PN}$ step <sup>3)</sup> < 1		$\mu\text{s}$
$BW$	Frequency bandwidth (-1 dB)	DC ... 150	kHz

## General data

$T_A$	Ambient operating temperature	-40 ... +70	$^\circ\text{C}$
$T_{Ast}$	Ambient storage temperature	-45 ... +85	$^\circ\text{C}$
$R_P$	Resistance of primary (winding) @ $T_A = 25 \text{ }^\circ\text{C}$	< 190	m $\Omega$
$R_S$	Resistance of secondary winding @ $T_A = 70 \text{ }^\circ\text{C}$	110	$\Omega$
$L_P$	Insertion inductance	121	$\mu\text{H}$
$R_{INS}$	Insulation resistance @ 500 V, $T_A = 25 \text{ }^\circ\text{C}$	> 1500	M $\Omega$
$m$	Mass	22	g
	Standards <sup>4)</sup>	EN 50178 EN 50155:2017	

- 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) A list of corresponding tests is available.

## Features

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

## Special features

- $I_{PN} = 0.5 \text{ A}$
- $I_{PM} = 0 \dots \pm 0.72 \text{ A}$
- $N_P/N_S = 50 : 1000$
- $T_A = -40 \text{ }^\circ\text{C} \dots +70 \text{ }^\circ\text{C}$ .

## 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

- AC variable speed drives and servo motor drives
- Static converters for DC motor drives
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Switched Mode Power Supplies (SMPS)
- Power supplies for welding applications
- Single or three phase inverters
- Propulsion and braking chopper
- Propulsion converter
- Auxiliary converter
- Battery charger.

## Application domains

- Industrial
- Railway (fixed installations and onboard).

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### Insulation coordination

$U_d$	RMS voltage for AC insulation test, 50 Hz, 1 min	2.5	kV
$U_{Ni}$	Impulse withstand voltage 1.2/50 $\mu$ s	16	kV
		Min	
$d_{Cp}$	Creepage distance	19.5	mm
$d_{Cl}$	Clearance	19.5	mm
$CTI$	Comparative tracking index (group IIIa)	175	

### Applications examples

According to EN 50178 and IEC 61010-1 standards and following conditions:

- Over voltage category OV 3
- Pollution degree PD2
- Non-uniform field

	EN 50178	IEC 61010-1
$d_{Cp}, d_{Cl}, U_{Ni}$	Rated insulation voltage	Nominal voltage
Basic insulation	1700 V	1700 V
Reinforced insulation	600 V	600 V

### 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).

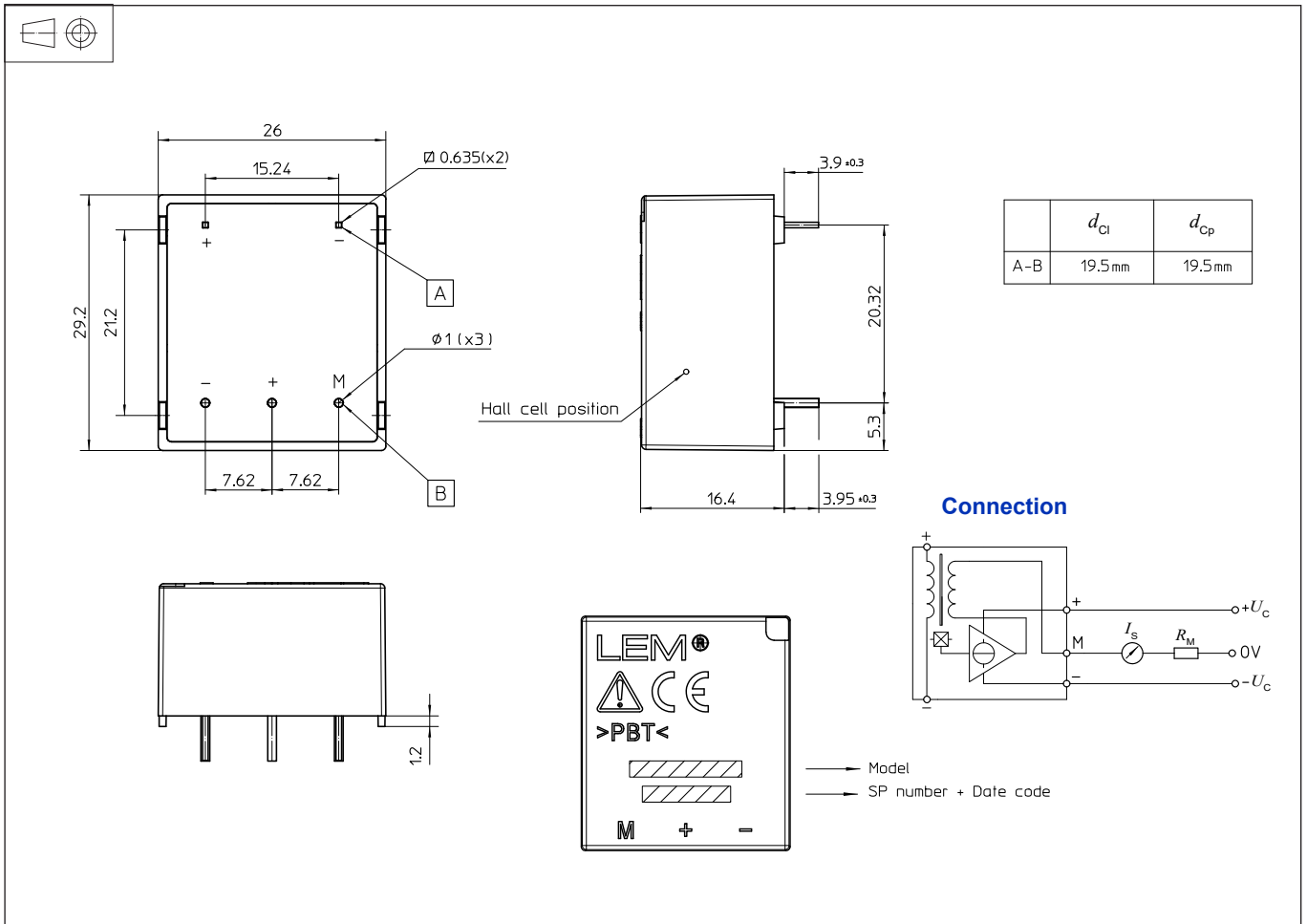
Ignoring this warning can lead to injury and/or cause serious damage.

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/SP13 (in mm)



### Mechanical characteristics

- General tolerance  $\pm 0.2$  mm
- Fastening & connection of primary 2 pins  $0.635 \times 0.635$  mm
- Fastening & connection of secondary 3 pins  $\phi 1$  mm
- Recommended PCB hole 1.2 mm

### Remark

- $I_s$  is positive when  $I_p$  flows from terminal + to terminal -.