

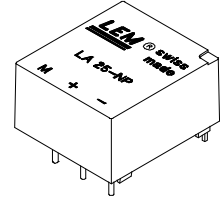
# Current Transducer LA 25-NP/SP7

$$I_{PN} = 2.5 \text{ A}$$

For the electronic measurement of currents : DC, AC, pulsed, mixed, with a galvanic isolation between the primary circuit (high power) and the secondary circuit (electronic circuit).



16160



## Electrical data

$I_{PN}$	Primary nominal current rms	2.5	A			
$I_{PM}$	Primary current, measuring range	0 .. $\pm 3.6$	A			
$R_M$	Measuring resistance	$R_{M \text{ mini}}$	$R_{M \text{ maxi}}$			
		with $\pm 15 \text{ V}$	@ $\pm 2.5 \text{ A}_{\text{maxi}}$	100	320	$\Omega$
			@ $\pm 3.6 \text{ A}_{\text{maxi}}$	100	190	$\Omega$
$I_{SN}$	Secondary nominal current rms	25	mA			
$K_N$	Conversion ratio	10 : 1000				
$V_C$	Supply voltage ( $\pm 5 \%$ )	$\pm 15$	V			
$I_C$	Current consumption	10 + $I_S$	mA			

## Features

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

## Special features

- $I_{PN} = 2.5 \text{ A}$
- $I_{PM} = 0 .. \pm 3.6 \text{ A}$
- $K_N = 10 : 1000$ .

## Accuracy - Dynamic performance data

$X$	Typical accuracy @ $I_{PN}, T_A = 25^\circ\text{C}$	$\pm 0.5$	%	
$e_L$	Linearity error	< 0.2	%	
$I_O$	Offset current <sup>2)</sup> @ $I_p = 0, T_A = 25^\circ\text{C}$	Typ	Maxi	
		$\pm 0.05$	$\pm 0.15$	mA
$I_{OM}$	Magnetic offset current <sup>3)</sup> @ $I_p = 0$ , after an overload of $3 \times I_{PN}$	0°C .. + 25°C	$\pm 0.05$ / $\pm 0.15$	mA
		+ 25°C .. + 70°C	$\pm 0.10$ / $\pm 0.35$	mA
$I_{OT}$	Temperature variation of $I_O$	$\pm 0.06$ / $\pm 0.25$	mA	
$t_r$	Response time <sup>4)</sup> to 90 % of $I_{PN}$ step	< 1	$\mu\text{s}$	
<b>BW</b>	Frequency bandwidth (-1 dB)	DC .. 150	kHz	

## 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.

## General data

$T_A$	Ambient operating temperature	0 .. + 70	$^\circ\text{C}$
$T_S$	Ambient storage temperature	- 25 .. + 85	$^\circ\text{C}$
$R_P$	Primary coil resistance @ $T_A = 25^\circ\text{C}$	< 8.5	m $\Omega$
$R_S$	Secondary coil resistance @ $T_A = 70^\circ\text{C}$	110	$\Omega$
$L_P$	Insertion inductance	5.5	$\mu\text{H}$
$R_{IS}$	Isolation resistance @ 500 V, $T_A = 25^\circ\text{C}$	> 1500	M $\Omega$
$m$	Mass	22	g
	Standards	EN 50178: 1997	

## 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.

## Application Domain

- Industrial.

- Notes:
- 1) Pollution class 2
  - 2) Measurement carried out after 15 mn functioning
  - 3) The result of the coercive field of the magnetic circuit
  - 4) With a di/dt of 100 A/ $\mu\text{s}$ .

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### Isolation characteristics

$V_d$	Rms voltage for AC isolation test, 50 Hz, 1 min	2.5	kV
$\hat{V}_w$	Impulse withstand voltage 1.2/50 $\mu$ s	16	kV
		Mini	
dCp	Creepage distance	19.5	mm
dCl	Clearance distance	19.5	mm
CTI	Comparative Tracking Index (Group IIIa)	175	

### Application 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
dCp, dCl, $\hat{V}_w$	Rated isolation voltage	Nominal voltage
Single isolation	1600 V	1600 V
Reinforced isolation	800 V	800 V

### 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).

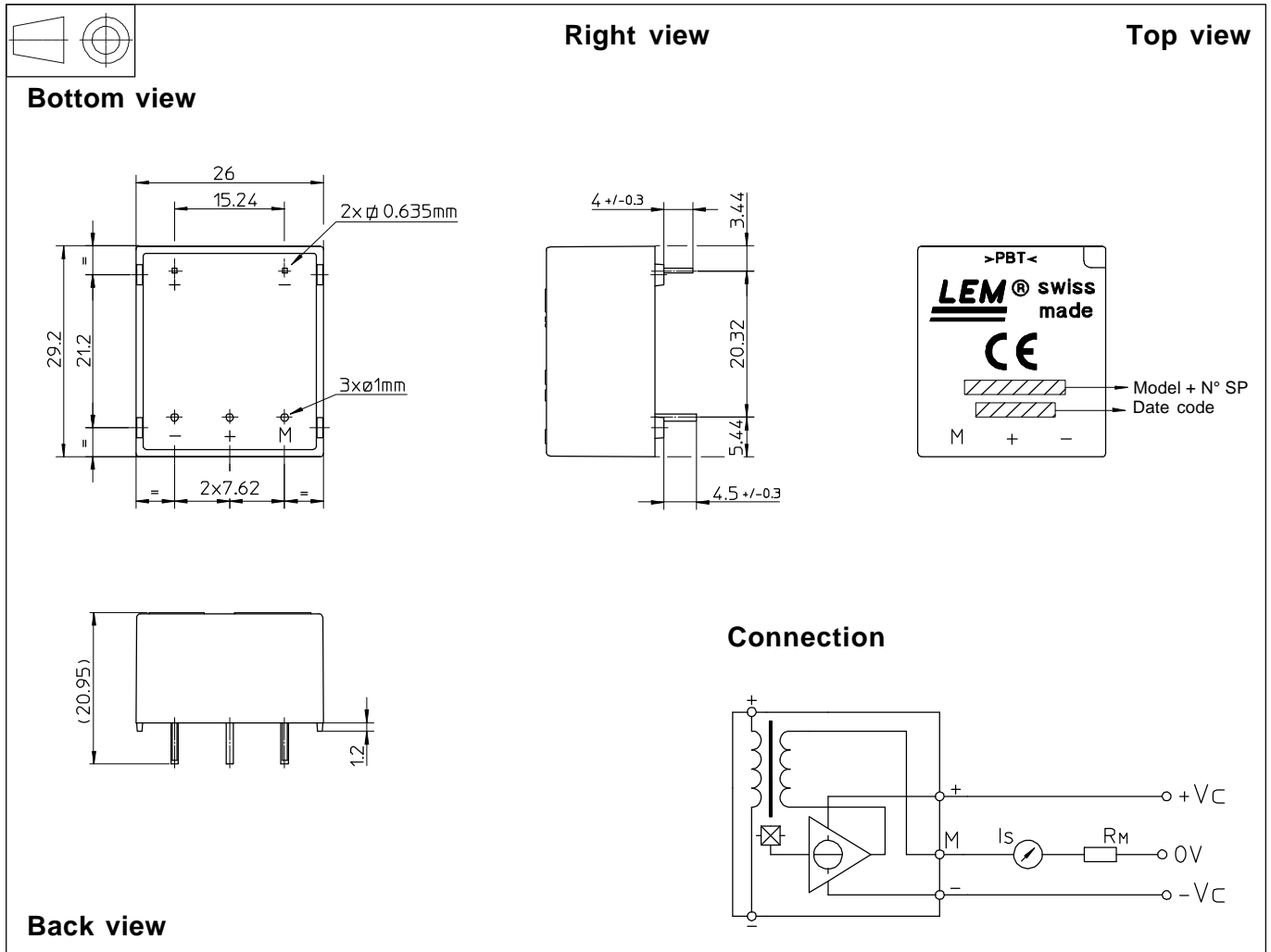
Ignoring this warning can lead to injury and/or cause serious damage.

This transducer is a built-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/SP7 (in mm. 1 mm = 0.0394 inch)



### Mechanical characteristics

- General tolerance  $\pm 0.2\text{ mm}$
- Fastening & connection of primary 2 pins  
0.635 x 0.635 mm
- Fastening & connection of secondary 3 pins  $\varnothing 1\text{ mm}$
- Recommended PCB hole 1.2 mm

### Remark

- I<sub>S</sub> is positive when I<sub>p</sub> flows from terminal + to terminal -.