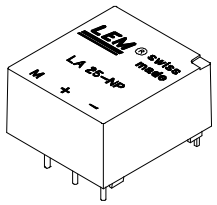
Current Transducer LA 25-NP/SP7

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

Accuracy - Dynamic performance data

X	Typical accuracy @ I_{PN} , T_A = 25°C		± 0.5		%
ε_L	Linearity error		< 0.2		%
			Typ	Maxi	
I_O	Offset current [2] @ I_P = 0, T_A = 25°C		± 0.05	± 0.15	mA
I_{OM}	Magnetic offset current [3] @ I_P = 0, after an overload of 3 x I_{PN}		± 0.05	± 0.15	mA
I_{OT}	Temperature variation of I_O	0°C .. + 25°C	± 0.06	± 0.25	mA
		+ 25°C .. + 70°C	± 0.10	± 0.35	mA
t_r	Response time [4] to 90 % of I_{PN} step		< 1		µs
BW	Frequency bandwidth (- 1 dB)		DC .. 150		kHz

General data

T_A	Ambient operating temperature		0 .. + 70	°C
T_S	Ambient storage temperature		- 25 .. + 85	°C
R_P	Primary coil resistance @ T_A = 25°C		< 8.5	mΩ
R_S	Secondary coil resistance @ T_A = 70°C		110	Ω
L_P	Insertion inductance		5.5	µH
R_{IS}	Isolation resistance @ 500 V, T_A = 25°C		> 1500	MΩ
m	Mass		22	g
	Standards		EN 50178: 1997	

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/µs.

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 A
- I_{PM} = 0 .. ± 3.6 A
- K_N = 10 : 1000.

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.

Application Domain

- Industrial.

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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 µs	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.

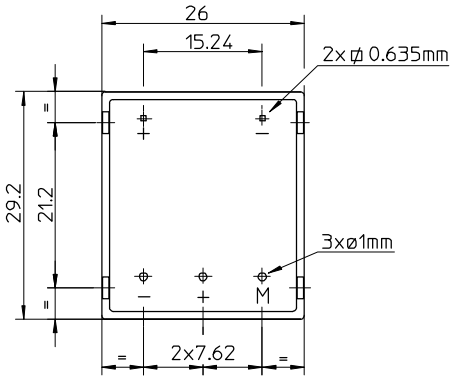
Caution, risk of electrical shock

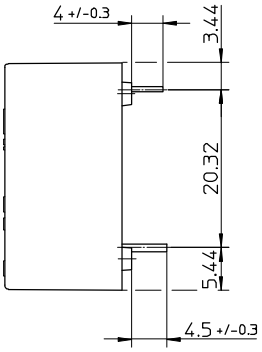
When operating the transducer, certain parts of the module can carry hazardous voltage (eg. primary busbar, power supply).
Ignoring this warning can lead to injury and/or cause serious damage.
This transducer is a built-in device, whose conducting parts must be inaccessible after installation.
A protective housing or additional shield could be used.
Main supply must be able to be disconnected.

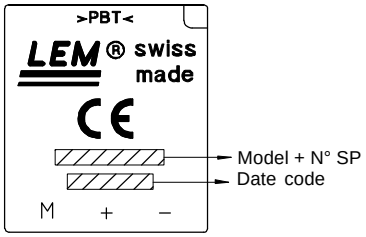
Dimensions LA 25-NP/SP7 (in mm. 1 mm = 0.0394 inch)

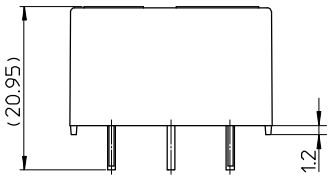
Right view **Top view**

Bottom view

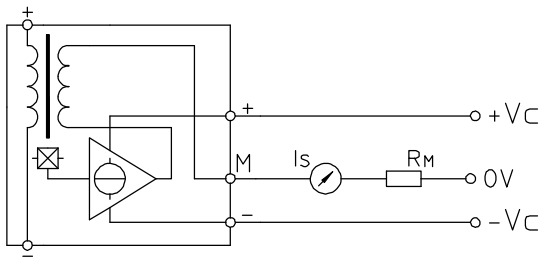








Connection



Back view

Mechanical characteristics

• General tolerance	± 0.2 mm
• Fastening & connection of primary	2 pins 0.635 x 0.635 mm
• Fastening & connection of secondary	3 pins ∅ 1 mm
• Recommended PCB hole	1.2 mm

Remark

- I_S is positive when I_P flows from terminal + to terminal -.