Current Transducer LA 25-NP/SP14

$I_{PN} = 0.25$ A

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

CE — RoHS COMPLIANT 2002/95/EC 16094 — c � US

Electrical data

I_{PN}	Primary nominal current rms		0.25		A
I_{PM}	Primary current, measuring range		0 .. ± 0.36		A
R_M	Measuring resistance		$R_{M\ min}$	$R_{M\ max}$	
	with ± 15 V	@ ± 0.25 A $_{max}$	100	320	Ω
		@ ± 0.36 A $_{max}$	100	190	Ω
I_{SN}	Secondary nominal current rms		25		mA
K_N	Conversion ratio		100 : 1000		
V_C	Supply voltage (± 5 %)		± 15		V
I_C	Current consumption		10 + I_S		mA

Accuracy - Dynamic performance data

			Typ	Max	
X	Accuracy @ I_{PN}, T_A = 25°C		± 0.5		%
ε_L	Linearity error		< 0.2		%
			Typ	Max	
I_O	Offset current [1] @ I_P = 0, T_A = 25°C		± 0.05	± 0.15	mA
I_{OM}	Magnetic offset current [2] @ I_P = 0 and specified R_M, after an overload of 3 x I_{PN}		± 0.05	± 0.15	mA
I_{OT}	Temperature variation of I_O -10°C .. + 70°C		± 0.10	± 0.35	mA
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		- 10 .. + 70	°C
T_S	Ambient storage temperature		- 25 .. + 85	°C
R_P	Primary coil resistance	@ T_A = 25°C	< 860	mΩ
R_S	Secondary coil resistance	@ T_A = 70°C	110	Ω
L_P	Insertion inductance		496	µH
R_{IS}	Isolation resistance @ 500 V, T_A = 25°C		> 1500	MΩ
m	Mass		22	g
	Standards		EN 50178: 1997	

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

- I_{PN} = 0.25 A
- I_{PM} = 0 .. ± 0.36 A
- K_N = 100 : 1000
- T_A = - 10°C .. + 70°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.

Application domain

- Industrial.

Isolation characteristics			
V_d	Rms voltage for AC insulation test, 50 Hz, 1 min	2.5	kV
$\hat{V}_w$	Impulse withstand voltage 1.2/50 µs	16	kV
		Min	
dCp	Creepage distance	19.5	mm
dCl	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

dCp, dCl, $\hat{V}_w$	EN 50178	IEC 61010-1
	Rated insulation voltage	Nominal voltage
Basic insulation	1700 V	1700 V
Reinforced insulation	600 V	600 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).
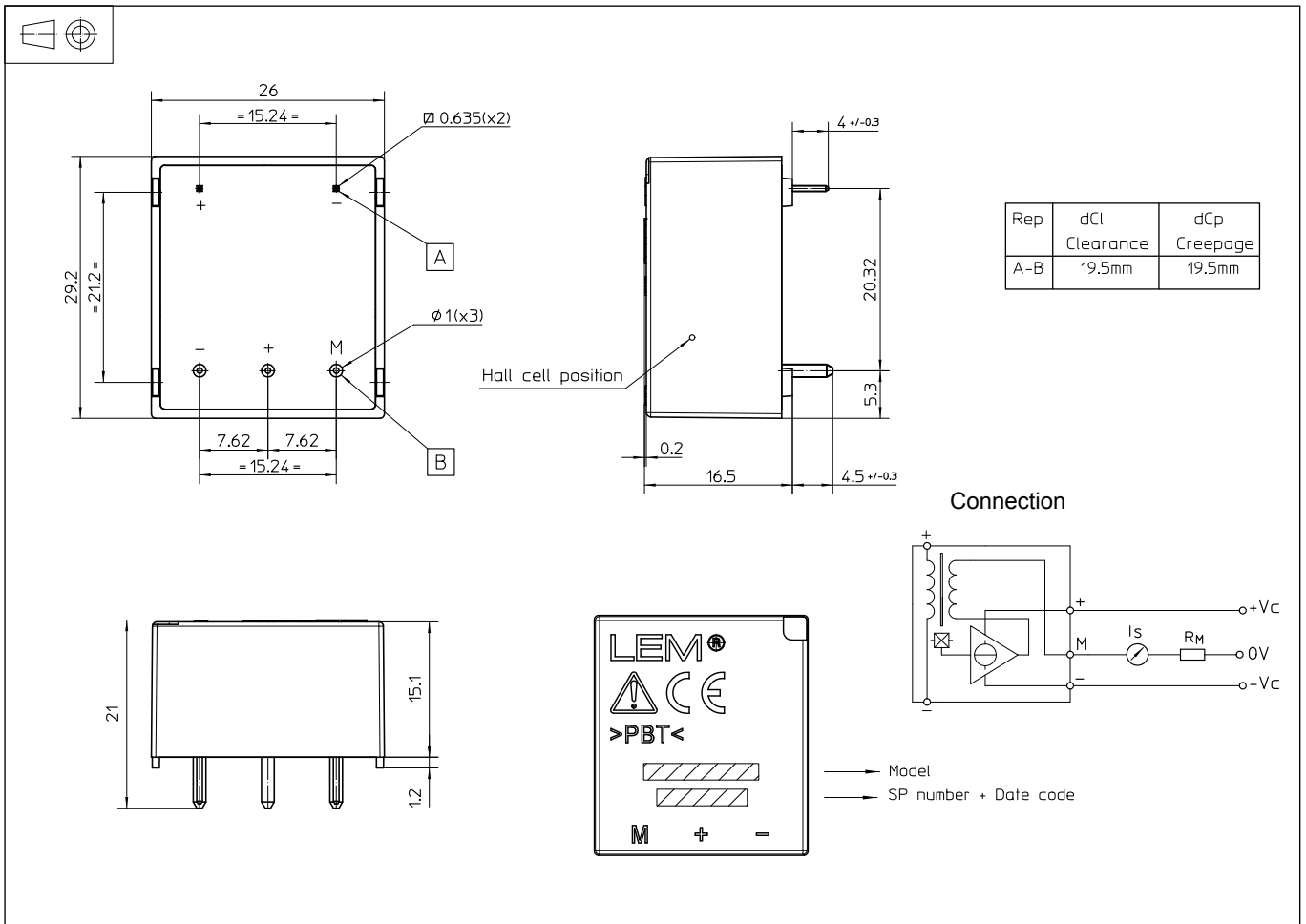Ignoring this warning can lead to injury and/or cause serious damage.
This transducer is a build-in device, whose conducting parts must be inaccessible after installation.
A protective housing or additional shield could be used.
Main supply must be able to be disconnected.

Dimensions LA 25-NP/SP14 (in mm)

Rep	dCl Clearance	dCp Creepage
A-B	19.5mm	19.5mm

Hall cell position

Connection

Model
SP number + Date code

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 Ø 1 mm
- Recommended PCB hole   1.2 mm

Remark

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