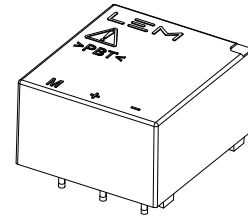# Current Transducer LA 25-NP/SP34

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

I_{PN} = 1.5 A

5 YEAR WARRANTY by LEM   c**RU**us   R☑HS

Electrical data

I_{PN}	Primary nominal RMS current		1.5		A
I_{PM}	Primary current, measuring range		0 ... ±2.2		A
R_M	Measuring resistance		$R_{M\,min}$	$R_{M\,max}$	
	with ±15 V	@ ±1.5 A $_{max}$	120	320	Ω
		@ ±2.2 A $_{max}$	120	190	Ω
I_{SN}	Secondary nominal RMS current		24		mA
N_P/N_S	Turns ratio		16 : 1000		
U_C	Supply voltage (±5 %)		±15		V
			Typ	Max	
I_C	Current consumption		$10 + I_S$	$11 + I_S$	mA

Accuracy - Dynamic performance data

ε_{tot}	Total error @ I_{PN}, T_A = 25 °C		±0.6		%
ε_L	Linearity error		< 0.2		%
			Typ	Max	
I_{OE}	Electrical 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 × I_{PN}		±0.05	±0.15	mA
I_{OT}	Temperature variation of I_O −40 °C ... +85 °C		±0.30	±0.60	mA
$t_{D\,90}$	Delay time to 90 % of the final output value for I_{PN} step [3]	< 1			µs
BW	Frequency bandwidth (−1 dB)		DC ... 150		kHz

General data

T_A	Ambient operating temperature	−40 ... +85		°C
$T_{A\,st}$	Ambient storage temperature	−45 ... +90		°C
R_P	Resistance of primary (winding) @ T_A = 25 °C	< 22.4		mΩ
R_S	Resistance of secondary winding @ T_A = 85 °C	116		Ω
L_P	Insertion inductance	13.5		µH
R_{INS}	Insulation resistance @ 500 V, T_A = 25 °C	> 1500		MΩ
m	Mass	22		g
	Standard	EN 50155: 2017 [4]		

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 A/µs

[4] Additional information available on request.

Features

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

Special features

- I_{PN} = 1.5 A
- N_P/N_S = 16 : 1000
- T_A = −40 °C ... +85 °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

- Railway (fixed installations and onboard).

Current Transducer LA 25-NP/SP34

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 µs	16 Min	kV
d_{Cp}	Creepage distance	19.5	mm
d_{Cl}	Clearance	19.5	mm
CTI	Comparative Tracking Index (group IIIa)	175	

Safety

This transducer must be used in limited-energy secondary circuits according to IEC 61010-1.
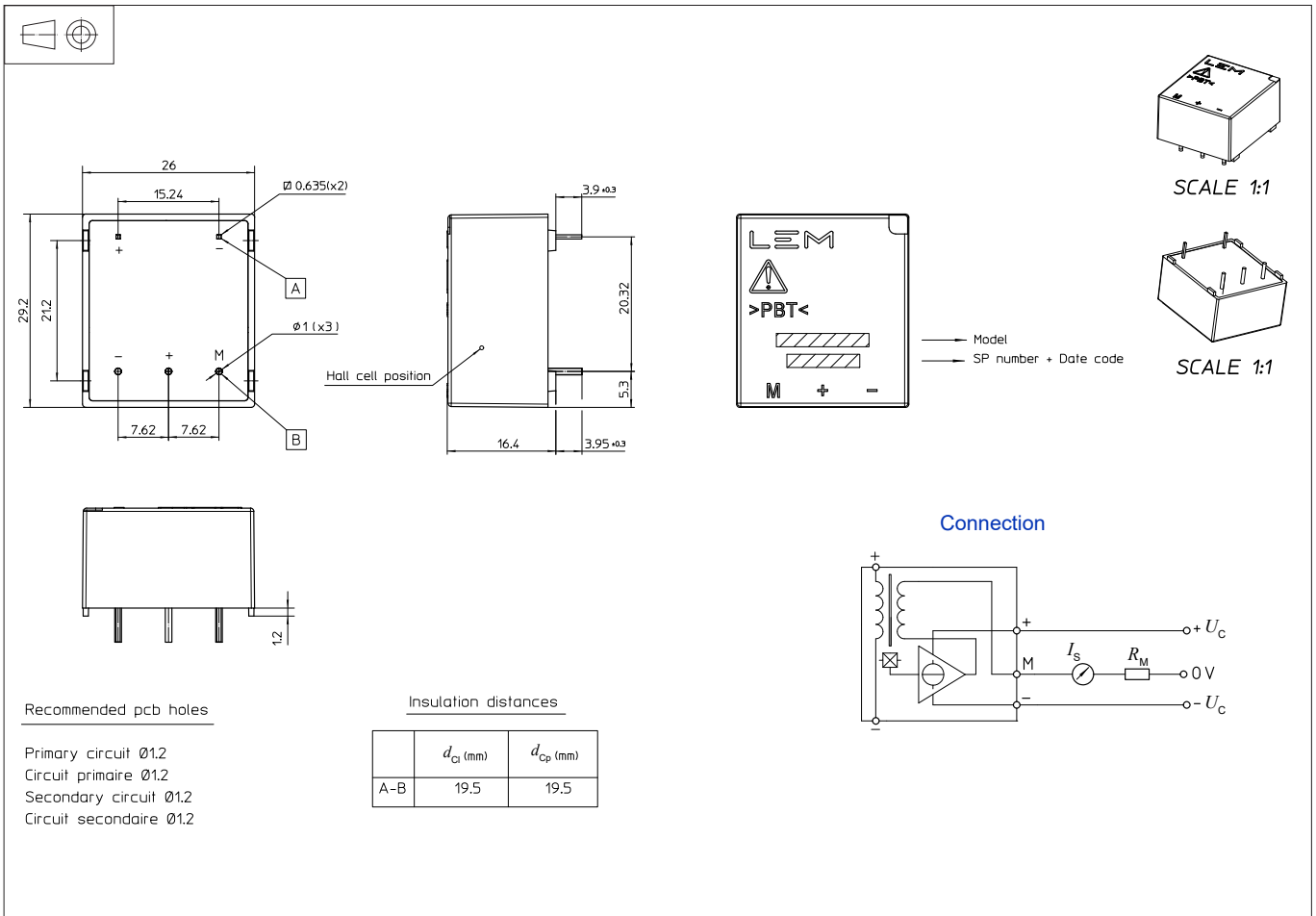
⚠️

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/SP34 (in mm)

26
15.24
Ø 0.635(x2)
29.2
21.2
+
A
Ø 1 (x3)
M
Hall cell position
−   +
7.62 **7.62**
B

3.9 ±0.3
20.32
5.3
16.4 **3.95** ±0.3

SCALE 1:1

SCALE 1:1

>PBT<
M   +   −
Model
SP number + Date code

1.2

Recommended pcb holes

Primary circuit Ø1.2
Circuit primaire Ø1.2
Secondary circuit Ø1.2
Circuit secondaire Ø1.2

Insulation distances

	$d_{CI \, (mm)}$	$d_{Cp \, (mm)}$
A−B	19.5	19.5

Connection

$+U_C$
$0\,V$
$-U_C$
I_S
R_M
M

Mechanical characteristics

- General tolerance — ±0.2 mm
- Fastening & connection of primary — 2 pins 0.635 × 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 -.