Current Transducer LA 25-NP

I_{PN} = 5-6-8-12-25 At

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

16080

Electrical data

I_{PN}	Primary nominal current rms				25		At
I_{PM}	Primary current, measuring range				0 .. ± 36		At
R_M	Measuring resistance @		T_A = 70°C		T_A = 85°C		
			$R_{M\,min}$	$R_{M\,max}$	$R_{M\,min}$	$R_{M\,max}$	
	with ± 15 V	@ ± 25 At $_{max}$	100	320	100	315	Ω
		@ ± 36 At $_{max}$	100	190	100	185	Ω
I_{SN}	Secondary nominal current rms				25		mA
K_N	Conversion ratio				1-2-3-4-5 : 1000		
V_C	Supply voltage (± 5 %)				± 15		V
I_C	Current consumption				10 + I_S		mA

Accuracy - Dynamic performance data

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	0°C .. + 25°C	± 0.06	± 0.25	mA
		+ 25°C .. + 70°C	± 0.10	± 0.35	mA
		- 25°C .. + 85°C		± 0.5	mA
		- 40°C .. + 85°C		± 1.2	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		- 40 .. + 85	°C
T_S	Ambient storage temperature		- 45 .. + 90	°C
R_P	Primary coil resistance per turn	@ T_A = 25°C	< 1.25	mΩ
R_S	Secondary coil resistance	@ T_A = 70°C	110	Ω
		@ T_A = 85°C	115	Ω
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.

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 insulation test, 50 Hz, 1 min	2.5	kV
$\hat{V}_w$	Impulse withstand voltage 1.2/50 µs	9	kV
		Min	
dCp	Creepage distance	10.63	mm
dCl	Clearance	10.63	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
dCp, dCl, $\hat{V}_w$	Rated insulation voltage	Nominal voltage
Basic insulation	1700 V	1700 V
Reinforced insulation	600 V	600 V

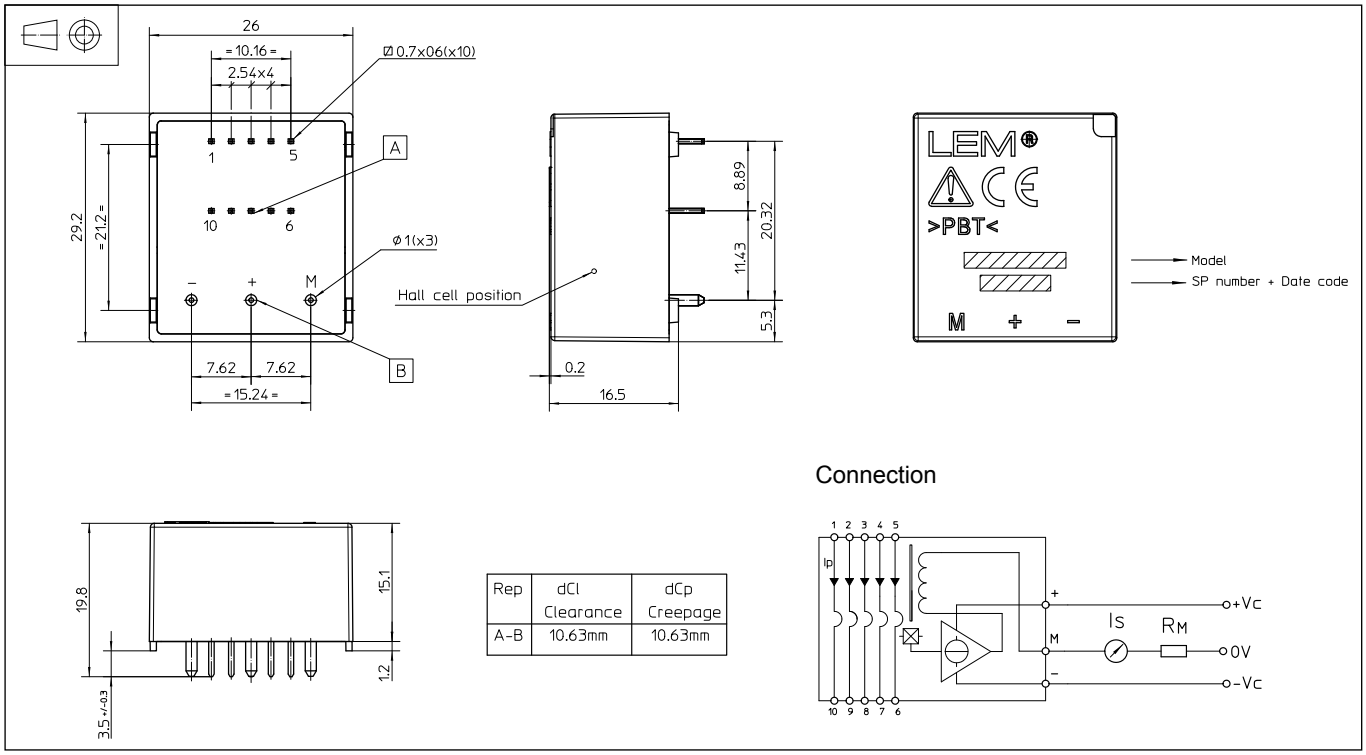
Safety

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 (in mm)



Rep	dCl Clearance	dCp Creepage
A-B	10.63mm	10.63mm

Number of primary turns	Primary current		Nominal output current I_{SN} [mA]	Turns ratio K_N	Primary resistance R_P [mΩ]	Primary insertion inductance L_P [µH]	Recommended connections
	nominal I_{PN} [A]	maximum I_P [A]					
1	25	36	25	1 / 1000	0.3	0.023	IN 5 4 3 2 1 / OUT 6 7 8 9 10
2	12	18	24	2 / 1000	1.1	0.09	IN 5 4 3 2 1 / OUT 6 7 8 9 10
3	8	12	24	3 / 1000	2.5	0.21	IN 5 4 3 2 1 / OUT 6 7 8 9 10
4	6	9	24	4 / 1000	4.4	0.37	IN 5 4 3 2 1 / OUT 6 7 8 9 10
5	5	7	25	5 / 1000	6.3	0.58	IN 5 4 3 2 1 / OUT 6 7 8 9 10

Mechanical characteristics

- General tolerance ± 0.2 mm
- Fastening & connection of primary 10 pins 0.7 x 0.6 mm
- Fastening & connection of secondary 3 pins Ø 1 mm
- Recommended PCB hole 1.2 mm

Remarks

- I_S is positive when I_P flows from terminals 1, 2, 3, 4, 5 to terminals 10, 9, 8, 7, 6.
- This is a standard model. For different versions (supply voltages, turns ratios, unidirectional measurements...), please contact us.