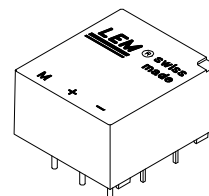# Current Transducer LA 35-NP

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).

I_{PN} = 7-8-11-17-35 A

LEM

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CE

RoHS COMPLIANT 2002/95/EC
16136

Electrical data

I_{PN}	Primary nominal r.m.s. current		35 [1]		At
I_P	Primary current, measuring range		0 .. ± 70		At
R_M	Measuring resistance		$R_{M\,min}$	$R_{M\,max}$	
	with ± 15 V	@ ± 35 At $_{max}$	60	150	Ω
		@ ± 70 At $_{max}$	60	85	Ω
I_{SN}	Secondary nominal r.m.s. current		35		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
V_d	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn		2.5		kV
V_b	R.m.s. rated voltage [2], safe separation		600		V
	basic isolation		1700		V

Accuracy - Dynamic performance data

			Typ	Max	
X	Typical accuracy @ I_{PN}, T_A = 25°C		± 0.5		%
e_L	Linearity		< 0.2		%
I_O	Offset current [3] @ I_P = 0, T_A = 25°C		± 0.10	± 0.20	mA
I_{OM}	Residual current [4] @ I_P = 0, after an overload of 3 x I_{PN}		± 0.05	± 0.15	mA
I_{OT}	Thermal drift of I_O — 25°C .. + 70°C		± 0.15	± 0.50	mA
t_r	Response time [5] @ 90 % of I_{PN}		< 1		µs
di/dt	di/dt accurately followed		> 50		A/µs
f	Frequency bandwidth (- 1 dB)		DC .. 150		kHz

General data

T_A	Ambient operating temperature	- 25 .. + 70	°C
T_S	Ambient storage temperature	- 40 .. + 85	°C
R_P	Primary resistance per turn @ T_A = 25°C	< 1.25	mΩ
R_S	Secondary coil resistance @ T_A = 70°C	80	Ω
R_{IS}	Isolation resistance @ 500 V, T_A = 25°C	> 1500	MΩ
m	Mass	22	g
	Standards	EN 50178 : 1997	

Features

- Closed loop (compensated) multi-range current transducer using the Hall effect
- Printed circuit board mounting
- Insulated 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.

Notes : [1] In order to avoid over-heating, it is necessary that the recommended primary connections be followed (see table page 2).
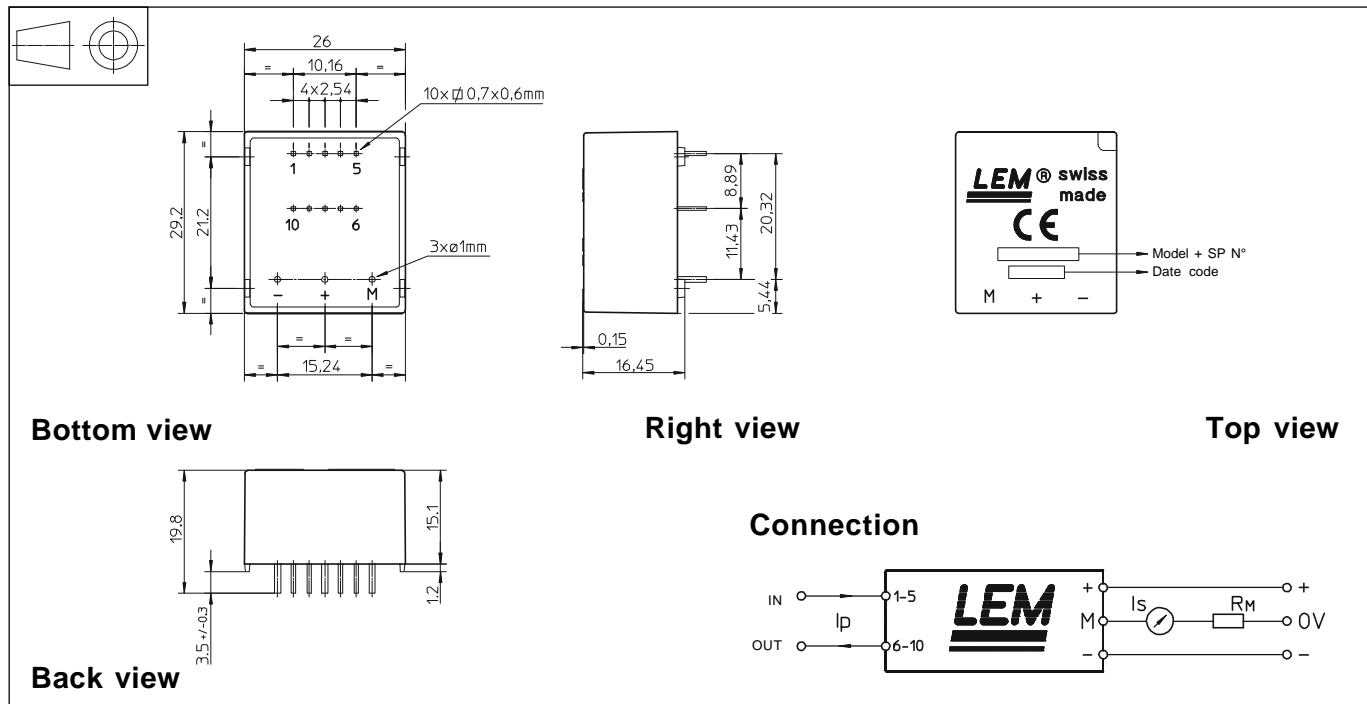[2] Pollution class 2
[3] Measurement carried out after 15 mn functioning
[4] The result of the coercive field of the magnetic circuit
[5] With a di/dt of 100 A/µs.

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Dimensions LA 35-NP (in mm. 1 mm = 0.0394 inch)

Bottom view

Right view

Top view

Connection

Back view

Number of primary turns	Primary current		Nominal output current	Turns ratio	Primary resistance	Primary insertion inductance	Recommended connections
	nominal I_{PN} [A]	maximum I_P [A]	I_{SN} [mA]	K_N	R_P [mΩ]	L_P [µH]	
1	35	70	35	1 / 1000	0.3	0.023	5 4 3 2 1 IN / OUT 6 7 8 9 10
2	17	34	34	2 / 1000	1.1	0.09	5 4 3 2 1 IN / OUT 6 7 8 9 10
3	11	22	33	3 / 1000	2.5	0.21	5 4 3 2 1 IN / OUT 6 7 8 9 10
4	8	16	32	4 / 1000	4.4	0.37	5 4 3 2 1 IN / OUT 6 7 8 9 10
5	7	14	35	5 / 1000	6.3	0.58	5 4 3 2 1 IN / 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 ⌀ 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.