

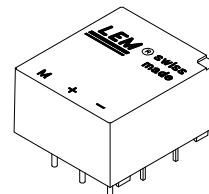
# Current Transducer LA 35-NP

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

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).



16136



## Electrical data

$I_{PN}$	Primary nominal r.m.s. current	35 <sup>1)</sup>	At
$I_P$	Primary current, measuring range	0 .. $\pm 70$	At
$R_M$	Measuring resistance	$R_{Mmin}$ $R_{Mmax}$	
	with $\pm 15 \text{ V}$	@ $\pm 35 \text{ At}_{max}$	60    150 $\Omega$
		@ $\pm 70 \text{ At}_{max}$	60    85 $\Omega$
$I_{SN}$	Secondary nominal r.m.s. current	35	mA
$K_N$	Conversion ratio	1-2-3-4-5 : 1000	
$V_C$	Supply voltage ( $\pm 5 \%$ )	$\pm 15$	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 <sup>2)</sup> , safe separation	600	V
	basic isolation	1700	V

## Accuracy - Dynamic performance data

$X$	Typical accuracy @ $I_{PN}$ , $T_A = 25^\circ\text{C}$	$\pm 0.5$	%
$e_L$	Linearity	$< 0.2$	%
$I_O$	Offset current <sup>3)</sup> @ $I_P = 0$ , $T_A = 25^\circ\text{C}$	Typ	Max
		$\pm 0.10$	$\pm 0.20$ mA
$I_{OM}$	Residual current <sup>4)</sup> @ $I_P = 0$ , after an overload of $3 \times I_{PN}$	$\pm 0.05$	$\pm 0.15$ mA
$I_{OT}$	Thermal drift of $I_O$ - $25^\circ\text{C} \dots + 70^\circ\text{C}$	$\pm 0.15$	$\pm 0.50$ mA
$t_r$	Response time <sup>5)</sup> @ 90 % of $I_{PN}$	$< 1$	$\mu\text{s}$
$di/dt$	$di/dt$ accurately followed	$> 50$	A/ $\mu\text{s}$
$f$	Frequency bandwidth (-1 dB)	DC .. 150	kHz

## General data

$T_A$	Ambient operating temperature	- 25 .. + 70	$^\circ\text{C}$
$T_S$	Ambient storage temperature	- 40 .. + 85	$^\circ\text{C}$
$R_P$	Primary resistance per turn @ $T_A = 25^\circ\text{C}$	$< 1.25$	m $\Omega$
$R_S$	Secondary coil resistance @ $T_A = 70^\circ\text{C}$	80	$\Omega$
$R_{IS}$	Isolation resistance @ 500 V, $T_A = 25^\circ\text{C}$	$> 1500$	M $\Omega$
$m$	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 :** <sup>1)</sup> In order to avoid over-heating, it is necessary that the recommended primary connections be followed (see table page 2).

<sup>2)</sup> Pollution class 2

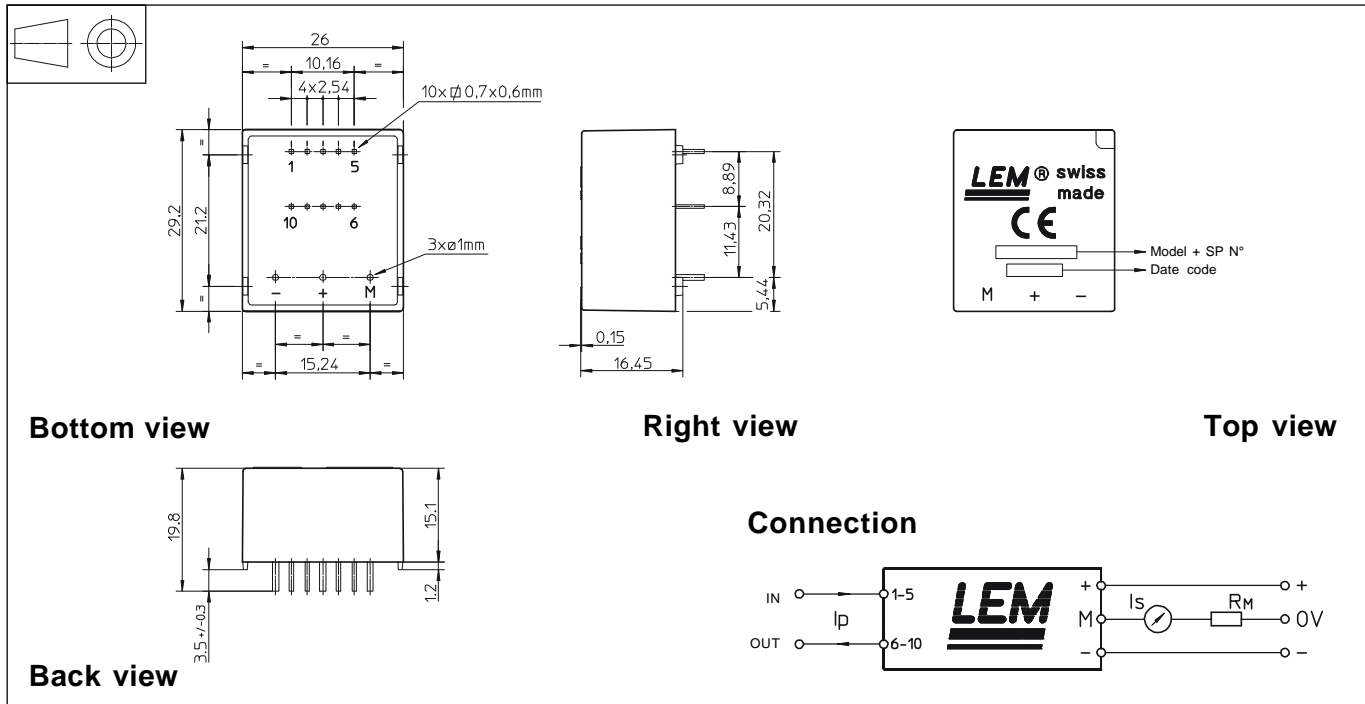
<sup>3)</sup> Measurement carried out after 15 mn functioning

<sup>4)</sup> The result of the coercive field of the magnetic circuit

<sup>5)</sup> With a  $di/dt$  of 100 A/ $\mu\text{s}$ .

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



Number of primary turns	Primary current		Nominal output current I <sub>SN</sub> [mA]	Turns ratio K <sub>N</sub>	Primary resistance R <sub>p</sub> [mΩ]	Primary insertion inductance L <sub>p</sub> [μH]	Recommended connections
	nominal I <sub>PN</sub> [A]	maximum I <sub>p</sub> [A]					
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 Ø 1 mm
- Recommended PCB hole 1.2 mm

### Remarks

- I<sub>s</sub> is positive when I<sub>p</sub> 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.