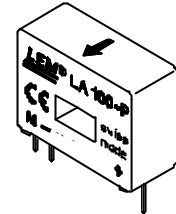


# Current Transducer LA 100-P/SP13

$$I_{PN} = 100 \text{ A}$$

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



## Electrical data

$I_{PN}$	Primary nominal r.m.s. current	100	A		
$I_P$	Primary current, measuring range	0 .. $\pm 160$	A		
$R_M$	Measuring resistance	$R_{M \text{ min}}$	$R_{M \text{ max}}$		
		with $\pm 12 \text{ V}$	@ $\pm 100 \text{ A}_{\text{max}}$	10	65
		@ $\pm 160 \text{ A}_{\text{max}}$	10	30	$\Omega$
	with $\pm 15 \text{ V}$	@ $\pm 100 \text{ A}_{\text{max}}$	40	95	$\Omega$
	@ $\pm 160 \text{ A}_{\text{max}}$	40	50	$\Omega$	
$I_{SN}$	Secondary nominal r.m.s. current	100	mA		
$K_N$	Conversion ratio	1 : 1000			
$V_C$	Supply voltage ( $\pm 5 \%$ )	$\pm 12 \dots 15$	V		
$I_C$	Current consumption	10 (@ $\pm 15 \text{ V}$ ) + $I_S$	mA		
$V_d$	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn	2.5	kV		

## Accuracy - Dynamic performance data

$X$	Accuracy @ $I_{PN}, T_A = 25^\circ\text{C}$	@ $\pm 15 \text{ V} (\pm 5 \%)$	$\pm 0.45$	%
		@ $\pm 12 \dots 15 \text{ V} (\pm 5 \%)$	$\pm 0.70$	%
$e_L$	Linearity		< 0.15	%
$I_O$	Offset current @ $I_P = 0, T_A = 25^\circ\text{C}$	Typ	Max	mA
$I_{OM}$	Residual current <sup>1)</sup> @ $I_P = 0$ , after an overload of $3 \times I_{PN}$		$\pm 0.2$	mA
$I_{OT}$	Thermal drift of $I_O$ - $25^\circ\text{C} \dots +70^\circ\text{C}$	$\pm 0.1$	$\pm 0.5$	mA
$t_{ra}$	Reaction time @ 10 % of $I_{PN}$	< 500		ns
$t_r$	Response time <sup>2)</sup> @ 90 % of $I_{PN}$	< 1		$\mu\text{s}$
$di/dt$	$di/dt$ accurately followed	> 200		A/ $\mu\text{s}$
$f$	Frequency bandwidth (-1 dB)	DC .. 200		kHz

## General data

$T_A$	Ambient operating temperature	- 25 .. + 70	$^\circ\text{C}$
$T_S$	Ambient storage temperature	- 40 .. + 85	$^\circ\text{C}$
$R_S$	Secondary coil resistance @ $T_A = 70^\circ\text{C}$	25	$\Omega$
$m$	Mass	18	g
	Standards <sup>3)</sup>	EN 50178	

## Features

- Closed loop (compensated) current transducer using the Hall effect
- Printed circuit board mounting
- Insulated plastic case recognized according to UL 94-V0.

## Special features

- $I_P = 0 \dots \pm 160 \text{ A}$
- $K_N = 1 : 1000$
- $T_A = -25^\circ\text{C} \dots +70^\circ\text{C}$ .

## 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.

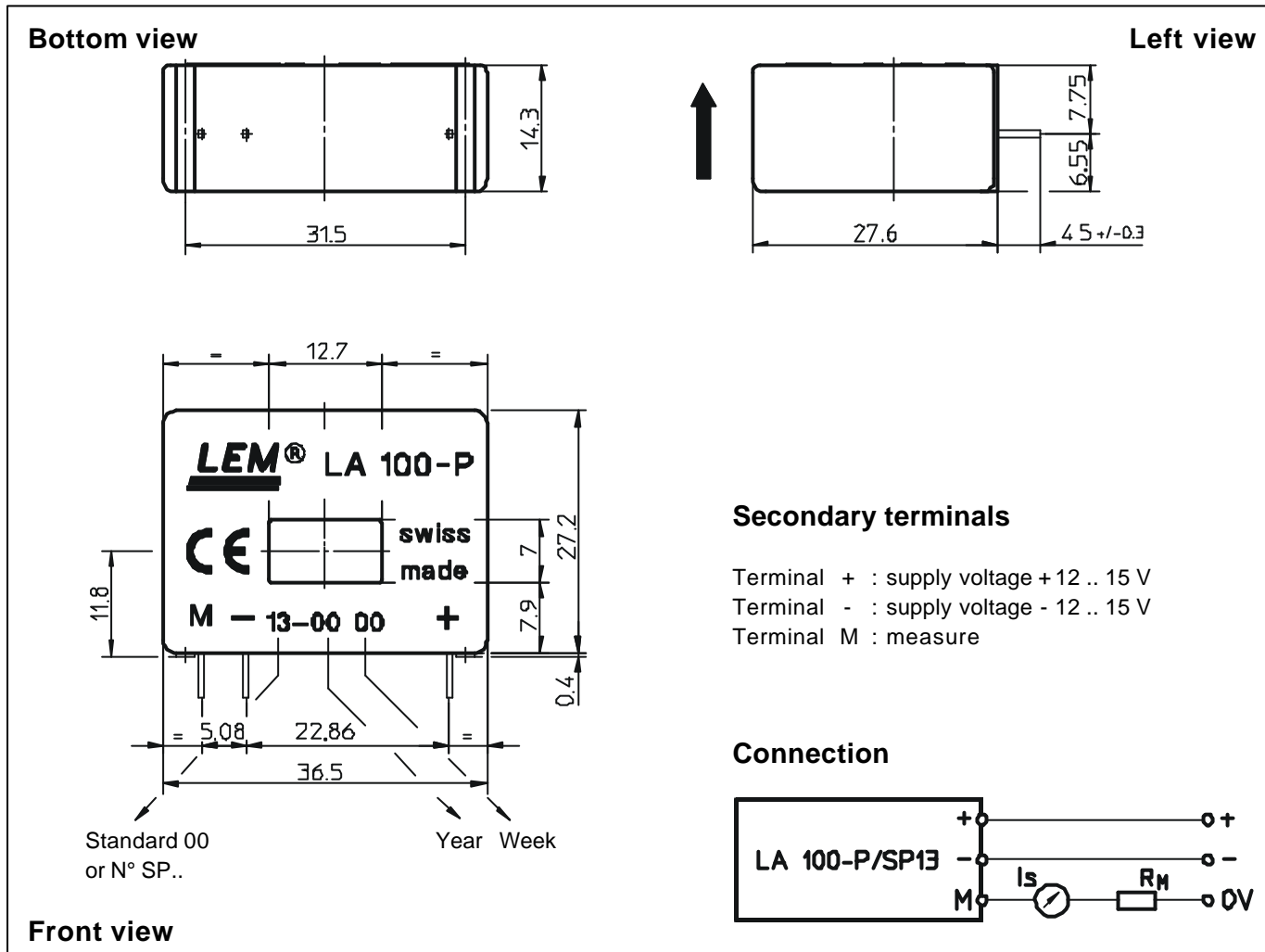
**Notes :** 1) The result of the coercive field of the magnetic circuit

2) With a  $di/dt$  of 100 A/ $\mu\text{s}$

3) A list of corresponding tests is available

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## Dimensions LA 100-P/SP13 (in mm. 1 mm = 0.0394 inch)



### Mechanical characteristics

- General tolerance  $\pm 0.2$  mm
- Primary through-hole  $12.7 \times 7$  mm
- Fastening & connection of secondary 3 pins  
 0.63 x 0.56 mm  
 Recommended PCB hole 0.9 mm

### Remarks

- $I_s$  is positive when  $I_p$  flows in the direction of the arrow.
- Temperature of the primary conductor should not exceed 100°C.
- Dynamic performances (di/dt and response time) are best with a single bar completely filling the primary hole.
- In order to achieve the best magnetic coupling, the primary windings have to be wound over the top edge of the device.