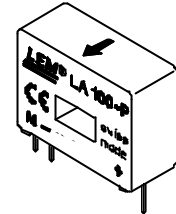


Current Transducer LA 100-P/SP13

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

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 .. ± 160	A
R_M	Measuring resistance	$R_{M \min}$ $R_{M \max}$	
	with $\pm 12 \text{ V}$	@ $\pm 100 \text{ A}_{\max}$	10 65 Ω
		@ $\pm 160 \text{ A}_{\max}$	10 30 Ω
	with $\pm 15 \text{ V}$	@ $\pm 100 \text{ A}_{\max}$	40 95 Ω
		@ $\pm 160 \text{ A}_{\max}$	40 50 Ω
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} , $T_A = 25^\circ\text{C}$	@ $\pm 15 \text{ V} (\pm 5 \%)$	± 0.45	%
		@ $\pm 12 \dots 15 \text{ V} (\pm 5 \%)$	± 0.70	%
e_L	Linearity		< 0.15	%
I_O	Offset current @ $I_P = 0$, $T_A = 25^\circ\text{C}$	Typ	Max	
I_{OM}	Residual current ¹⁾ @ $I_P = 0$, after an overload of $3 \times I_{PN}$		± 0.2	mA
I_{OT}	Thermal drift of I_O - $25^\circ\text{C} \dots 70^\circ\text{C}$	± 0.1	± 0.5	mA
t_{ra}	Reaction time @ 10 % of I_{PN}	< 500		ns
t_r	Response time ²⁾ @ 90 % of I_{PN}	< 1		μs
di/dt	di/dt accurately followed	> 200		A/ μs
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	Ω
m	Mass	18	g
	Standards ³⁾	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.

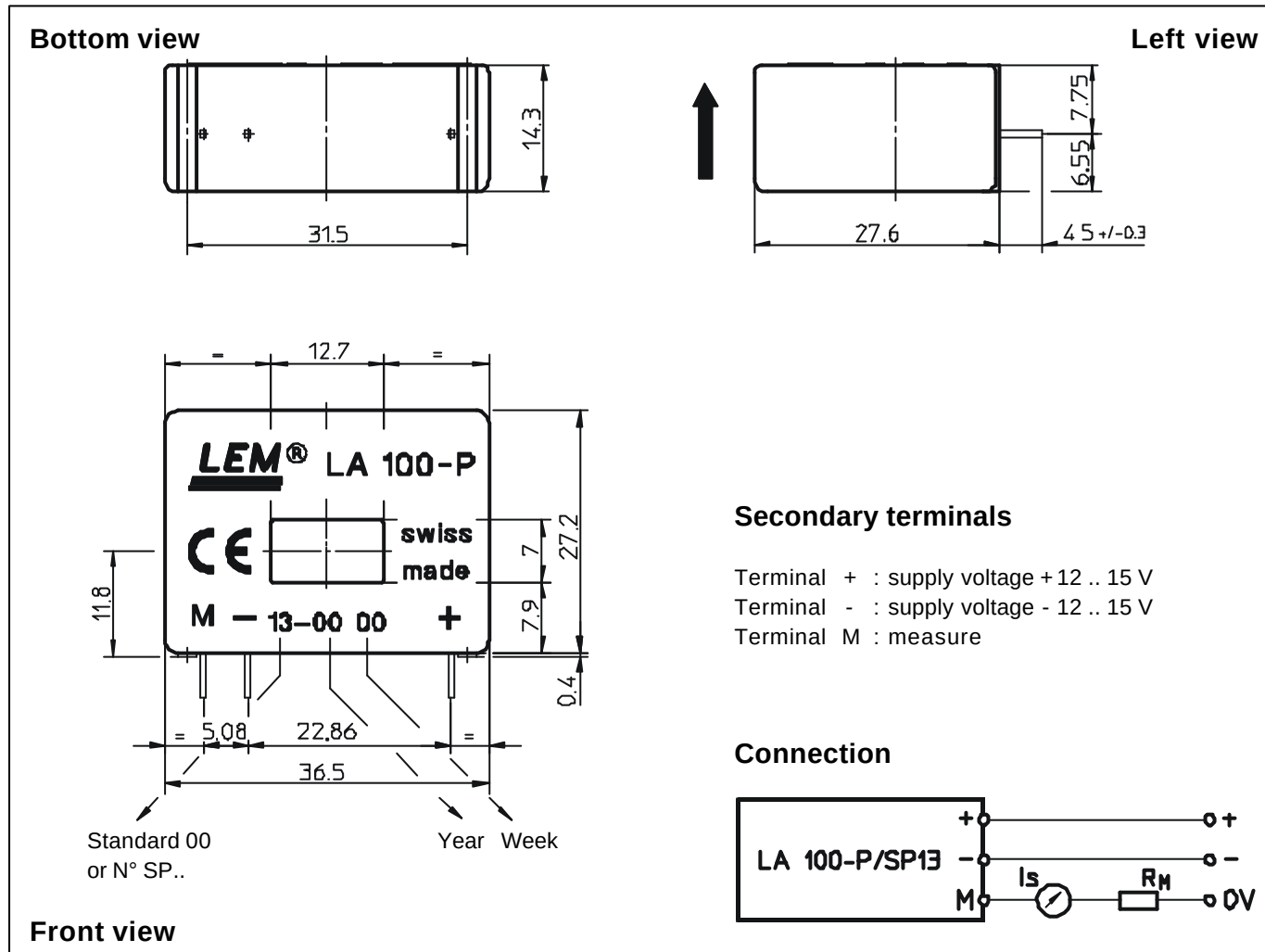
Notes : ¹⁾ The result of the coercive field of the magnetic circuit

²⁾ With a di/dt of 100 A/ μs

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 ± 0.2 mm
- Primary through-hole 12.7×7 mm
- Fastening & connection of secondary 3 pins
- Recommended PCB hole 0.63×0.56 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.