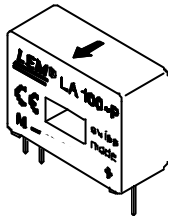
Farnell Code
3943562

Current Transducer LA 100-P/SP13

I_{PN} = 100 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 ± 12 V	@ ± 100 A_{max}	10	65	Ω
		@ ± 160 A_{max}	10	30	Ω
	with ± 15 V	@ ± 100 A_{max}	40	95	Ω
		@ ± 160 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 (± 5 %)		± 12 .. 15		V
I_C	Current consumption		10 (@±15V) + 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°C	@ ± 15 V (± 5 %)	± 0.45		%
		@ ± 12 .. 15 V (± 5 %)	± 0.70		%
e_L	Linearity		< 0.15		%
			Typ	Max	
I_O	Offset current @ I_P = 0, T_A = 25°C			± 0.2	mA
I_{OM}	Residual current[1] @ I_P = 0, after an overload of 3 x I_{PN}			± 0.3	mA
I_{OT}	Thermal drift of I_O	- 25°C .. + 70°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	°C
T_S	Ambient storage temperature	- 40 .. + 85	°C
R_S	Secondary coil resistance @ T_A = 70°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 .. ± 160 A
- K_N = 1 : 1000
- T_A = - 25°C .. + 70°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

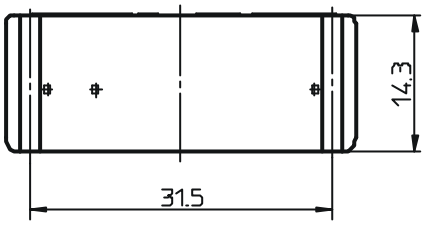
- AC variable speed drives and servo motor drives
- Static converters for DC motor drives
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Switched Mode Power Supplies (SMPS)
- Power supplies for welding applications.

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

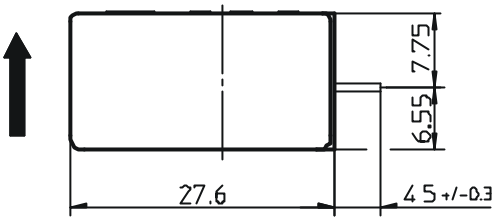
020222/0

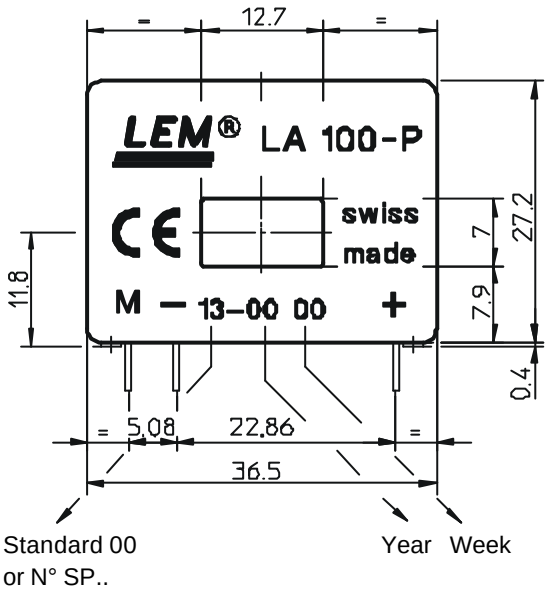
Dimensions LA 100-P/SP13 (in mm. 1 mm = 0.0394 inch)

Bottom view



Left view



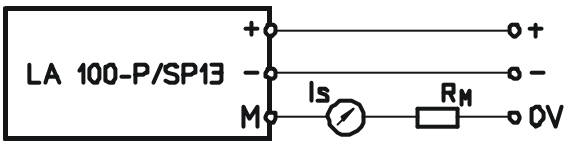


Front view

Secondary terminals

Terminal + : supply voltage + 12 .. 15 V
Terminal - : supply voltage - 12 .. 15 V
Terminal M : measure

Connection



Mechanical characteristics

• General tolerance	± 0.2 mm
• Primary through-hole	12.7 x 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.