

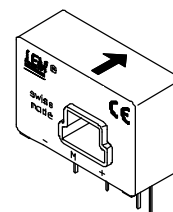
Current Transducer LA 125-P

$$I_{PN} = 125 \text{ A}$$

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).



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Electrical data

I_{PN}	Primary nominal r.m.s. current	125				A
I_P	Primary current, measuring range	0 .. ± 200				A
R_M	Measuring resistance @	$T_A = 70^{\circ}\text{C}$		$T_A = 85^{\circ}\text{C}$		
		$R_{M \min}$	$R_{M \max}$	$R_{M \min}$	$R_{M \max}$	
	with $\pm 12 \text{ V}$					
	@ $\pm 125 \text{ A}_{\max}$	5	52	14	50	Ω
	@ $\pm 200 \text{ A}_{\max}$	5	20	14	18	Ω
	with $\pm 15 \text{ V}$					
	@ $\pm 125 \text{ A}_{\max}$	25	74	40	72	Ω
	@ $\pm 200 \text{ A}_{\max}$	25	34	40 ¹⁾	40 ¹⁾	Ω
I_{SN}	Secondary nominal r.m.s. current	125				mA
K_N	Conversion ratio	1 : 1000				
V_C	Supply voltage ($\pm 5 \%$)	$\pm 12 \dots 15$				V
I_C	Current consumption	16 (@ $\pm 15 \text{ V}$) + I_s				mA
V_d	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn	3				kV

Accuracy - Dynamic performance data

X	Accuracy @ I_{PN} , $T_A = 25^\circ\text{C}$	@ $\pm 15 \text{ V}$ ($\pm 5 \%$)	± 0.60	%
		@ $\pm 12 \dots 15 \text{ V}$ ($\pm 5 \%$)	± 0.80	%
e_L	Linearity error		< 0.15	%
I_O	Offset current @ $I_P = 0$, $T_A = 25^\circ\text{C}$	Typ	Max	mA
I_{OM}	Residual current ²⁾ @ $I_P = 0$, after an overload of $3 \times I_{PN}$		± 0.50	mA
I_{OT}	Thermal drift of I_O	0 $^\circ\text{C}$.. +70 $^\circ\text{C}$	± 0.15	mA
		-40 $^\circ\text{C}$.. +85 $^\circ\text{C}$	± 0.30	mA
t_{ra}	Reaction time @ 10 % of I_{PN}	< 500	ns	
t_r	Response time ^{3) 4)} @ 90 % of I_{PN}	< 1	μs	
di/dt	di/dt accurately followed ⁴⁾	> 200	A/ μs	
f	Frequency bandwidth ⁴⁾ (-1 dB)	DC .. 100	kHz	

General data

T_A	Ambient operating temperature	-40 .. +85	$^\circ\text{C}$
T_S	Ambient storage temperature	-40 .. +90	$^\circ\text{C}$
R_S	Secondary coil resistance @	$T_A = 70^\circ\text{C}$	32 Ω
		$T_A = 85^\circ\text{C}$	33.5 Ω
m	Mass	40	g
	Standards	EN 50178 : 1997	

- Notes :**
- ¹⁾ Measuring range limited to $\pm 180 \text{ A}_{\max}$
 - ²⁾ The result of the coercive field of the magnetic circuit.
 - ³⁾ With a di/dt of 100 A/ μs
 - ⁴⁾ The primary conductor is best filling the through-hole and/or the return of the primary conductor is above the top of the transducer.

Features

- Closed loop (compensated) 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

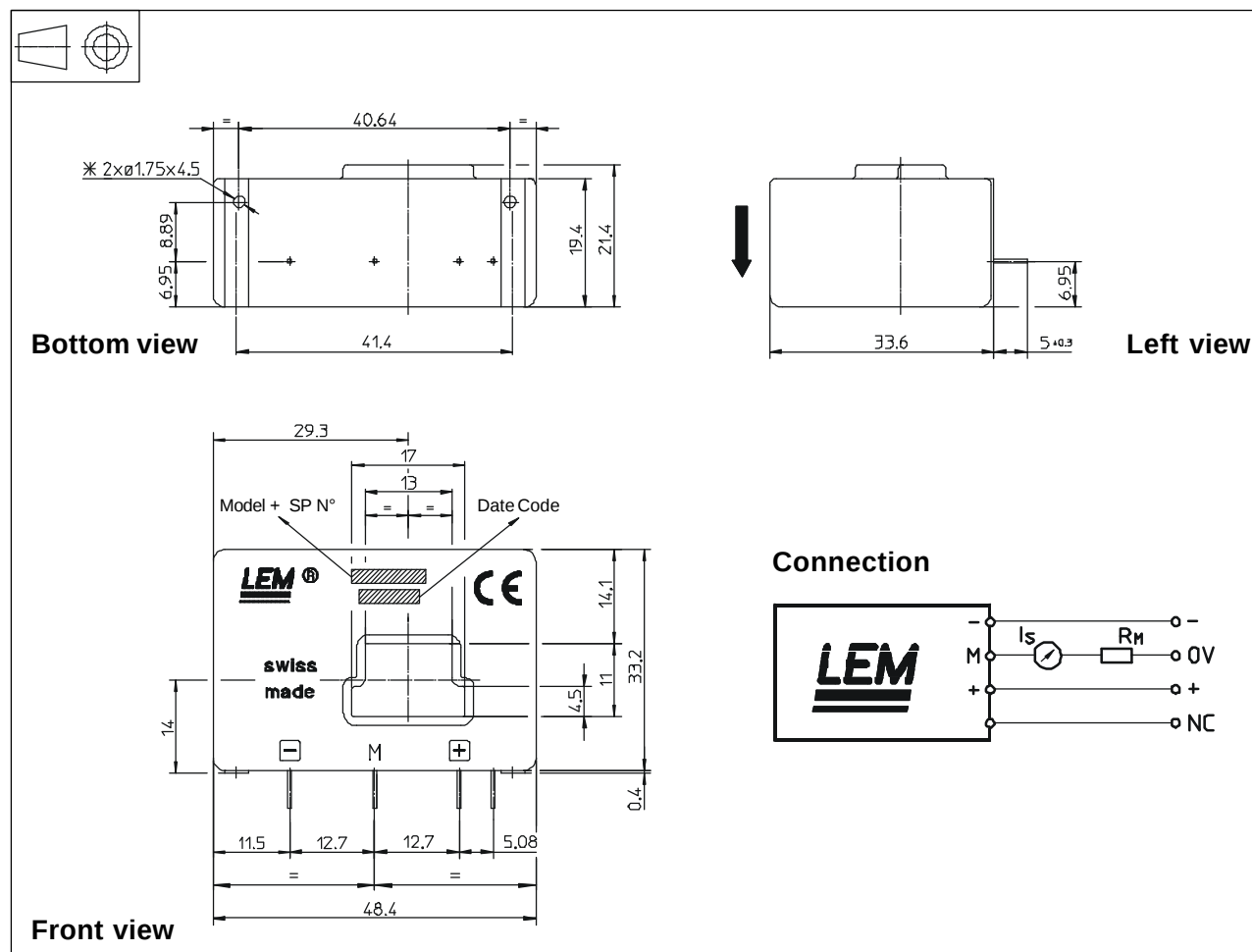
- AC variable speed drives and servo motor drives
- Static converters for DC motor drives
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Switched Mode Power Supplies (SMPS)
- Power supplies for welding applications.

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LEM reserves the right to carry out modifications on its transducers, in order to improve them, without previous notice.

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Dimensions LA 125-P (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

- General tolerance ± 0.2 mm
- Primary through-hole 17 x 11 mm
- Fastening & connection of secondary 4 pins 0.63 x 0.56 mm
- Recommended PCB hole 0.9 mm
- Supplementary fastening 2 holes $\varnothing 1.75$ mm
- Recommended PCB hole 2.4 mm
- Recommended screws PT KA 22 x 6
- Fastening torque, max. 0.5 Nm or .37 Lb. - Ft.

Remarks

- I_s is positive when I_p flows in the direction of the arrow.
- Temperature of the primary conductor should not exceed 90°C.
- Dynamic performances (di/dt and response time) are best with a primary bar in low position in the through-hole.
- In order to achieve the best magnetic coupling, the primary windings have to be wound over the top edge of the device.
- This is a standard model. For different versions (supply voltages, turns ratios, unidirectional measurements...), please contact us.

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