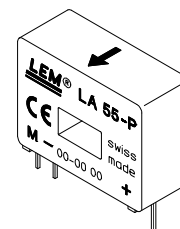


Current Transducer LA 55-P

$$I_{PN} = 50 \text{ A}$$

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	50	A					
I_P	Primary current, measuring range	0 .. ± 70	A					
R_M	Measuring resistance @	$T_A = 70^\circ\text{C}$		$T_A = 85^\circ\text{C}$				
		R_{Mmin}	R_{Mmax}	R_{Mmin}	R_{Mmax}			
		with $\pm 12 \text{ V}$	@ $\pm 50 \text{ A}_{max}$	10	100	60	95	Ω
			@ $\pm 70 \text{ A}_{max}$	10	50	60 ¹⁾	60 ¹⁾	Ω
	with $\pm 15 \text{ V}$	@ $\pm 50 \text{ A}_{max}$	50	160	135	155	Ω	
		@ $\pm 70 \text{ A}_{max}$	50	90	135 ²⁾	135 ²⁾	Ω	
I_{SN}	Secondary nominal r.m.s. current	50	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} , $T_A = 25^\circ\text{C}$	@ $\pm 15 \text{ V}$ ($\pm 5 \%$)	± 0.65	%	
		@ $\pm 12 \dots 15 \text{ V}$ ($\pm 5 \%$)	± 0.90	%	
e_L	Linearity		< 0.15	%	
I_O	Offset current @ $I_P = 0$, $T_A = 25^\circ\text{C}$	Typ	Max		
I_{OM}	Residual current ³⁾ @ $I_P = 0$, after an overload of $3 \times I_{PN}$		± 0.2	mA	
I_{OT}	Thermal drift of I_O	0 $^\circ\text{C}$.. + 70 $^\circ\text{C}$	± 0.1	± 0.5	mA
		- 25 $^\circ\text{C}$.. + 85 $^\circ\text{C}$	± 0.1	± 0.6	mA
t_{ra}	Reaction time @ 10 % of I_{Pmax}		< 500	ns	
t_r	Response time @ 90 % of I_{Pmax}		< 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 .. + 85	$^\circ\text{C}$	
T_S	Ambient storage temperature	- 40 .. + 90	$^\circ\text{C}$	
R_S	Secondary coil resistance @	$T_A = 70^\circ\text{C}$	80	Ω
		$T_A = 85^\circ\text{C}$	85	Ω
m	Mass	18	g	
	Standards ⁴⁾	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.

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.

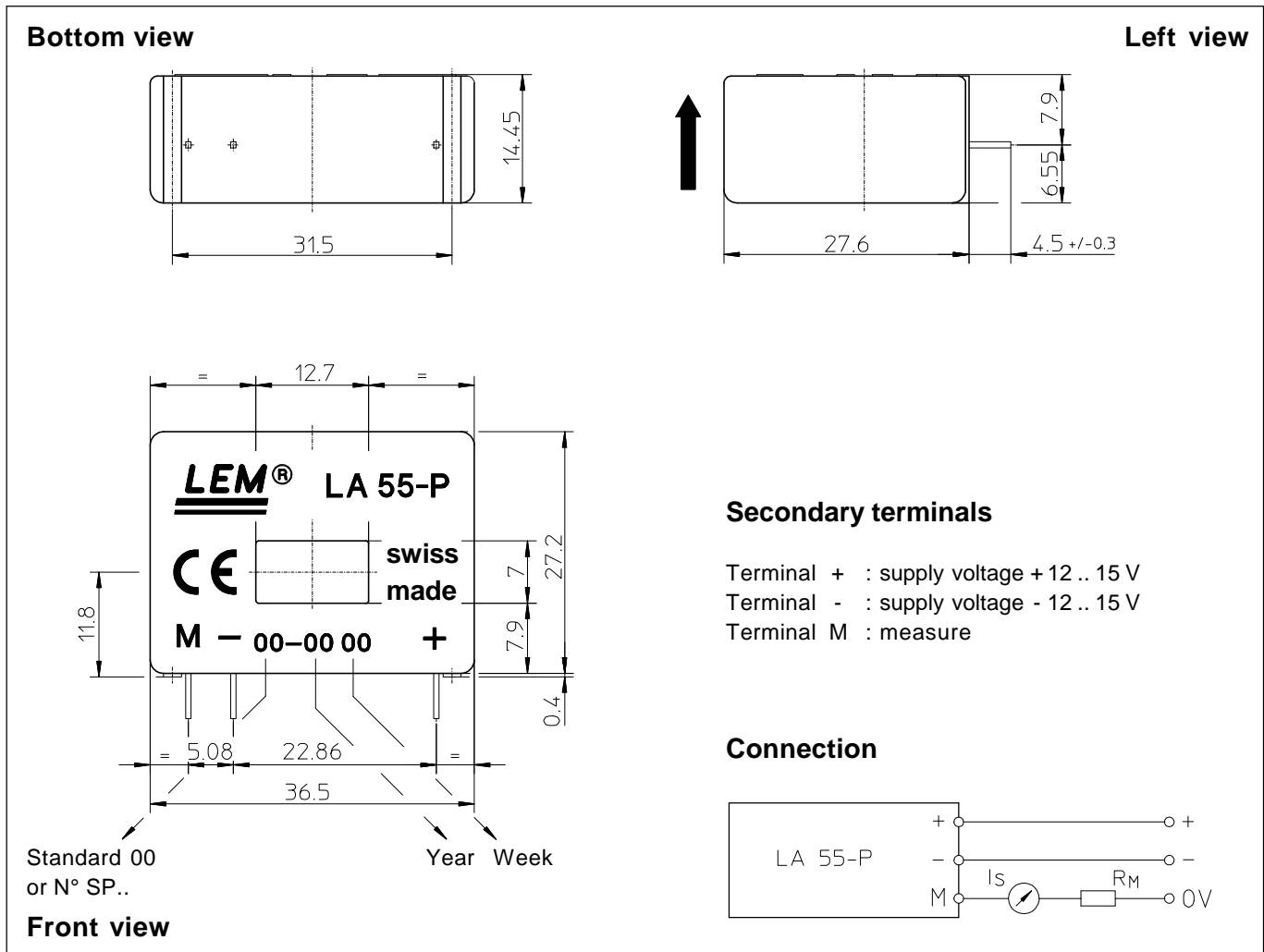
Applications

- 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) Measuring range limited to $\pm 60 \text{ A}_{max}$
 - 2) Measuring range limited to $\pm 55 \text{ A}_{max}$
 - 3) Result of the coercive field of the magnetic circuit
 - 4) A list of corresponding tests is available

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Dimensions LA 55-P (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

- | | |
|---------------------------------------|---------------|
| • General tolerance | ± 0.2 mm |
| • Primary through-hole | 12.7 x 7 mm |
| • Fastening & connection of secondary | 3 pins |
| | 0.63 x 0.56mm |
| 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 90°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.
- This is a standard model. For different versions (supply voltages, turns ratios, unidirectional measurements...), please contact us.