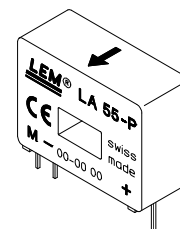


# Current Transducer LA 55-P

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

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 .. $\pm 70$	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 $\Omega$
			@ $\pm 70 \text{ A}_{max}$	10	50	60 <sup>1)</sup>	60 <sup>1)</sup> $\Omega$
	with $\pm 15 \text{ V}$	@ $\pm 50 \text{ A}_{max}$	50	160	135	155 $\Omega$	
		@ $\pm 70 \text{ A}_{max}$	50	90	135 <sup>2)</sup>	135 <sup>2)</sup> $\Omega$	
$I_{SN}$	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

<b>X</b>	Accuracy @ $I_{PN}$ , $T_A = 25^\circ\text{C}$	@ $\pm 15 \text{ V}$ ( $\pm 5 \%$ )	$\pm 0.65$	%
		@ $\pm 12 \dots 15 \text{ V}$ ( $\pm 5 \%$ )	$\pm 0.90$	%
<b>e<sub>L</sub></b>	Linearity		< 0.15	%
$I_O$	Offset current @ $I_P = 0$ , $T_A = 25^\circ\text{C}$	Typ	Max	mA
$I_{OM}$	Residual current <sup>3)</sup> @ $I_P = 0$ , after an overload of $3 \times I_{PN}$		$\pm 0.3$	mA
$I_{OT}$	Thermal drift of $I_O$	0 $^\circ\text{C}$ .. + 70 $^\circ\text{C}$	$\pm 0.1$	$\pm 0.5$ mA
		- 25 $^\circ\text{C}$ .. + 85 $^\circ\text{C}$	$\pm 0.1$	$\pm 0.6$ mA
$t_{ra}$	Reaction time @ 10 % of $I_{Pmax}$		< 500	ns
$t_r$	Response time @ 90 % of $I_{Pmax}$		< 1	$\mu\text{s}$
<b>di/dt</b>	di/dt accurately followed		> 200	A/ $\mu\text{s}$
<b>f</b>	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 $\Omega$
		$T_A = 85^\circ\text{C}$	85 $\Omega$
<b>m</b>	Mass	18	g
	Standards <sup>4)</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.

## 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.

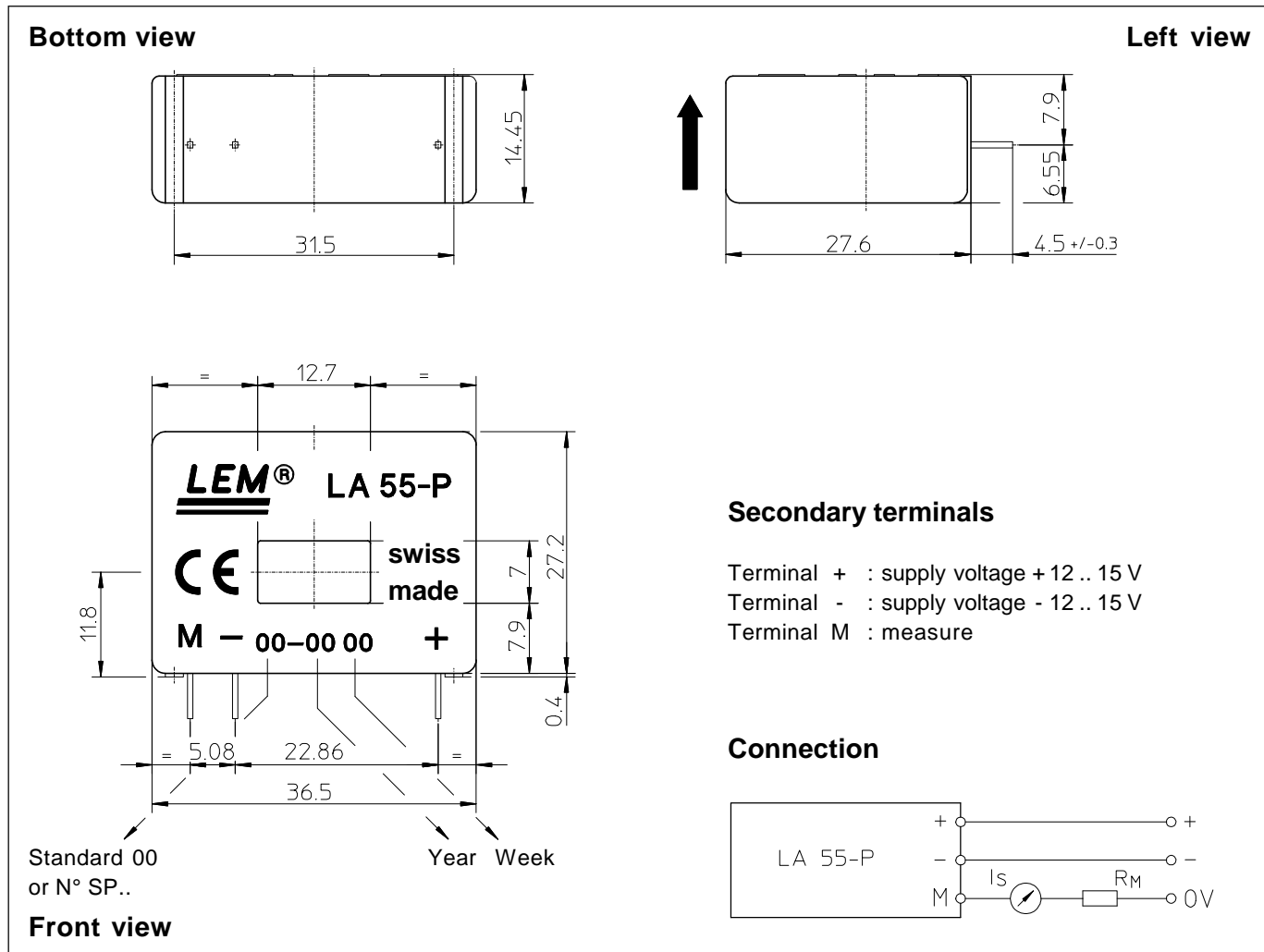
## Applications

- 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.