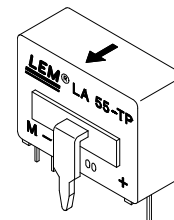


## Current Transducer LA 55-TP/SP27

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

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 .. ± 100	A		
$R_M$	Measuring resistance	$R_{M \min}$	$R_{M \max}$		
				with ± 12 V	@ ± 50 A <sub>max</sub>
			@ ± 100 A <sub>max</sub>	0	30 Ω
		with ± 15 V	@ ± 50 A <sub>max</sub>	30	320 Ω
	@ ± 100 A <sub>max</sub>	30	90 Ω		
$I_{SN}$	Secondary nominal r.m.s. current	25	mA		
$K_N$	Conversion ratio	1 : 2000			
$V_C$	Supply voltage (± 5 %)	± 12 .. 15	V		
$I_C$	Current consumption	10 (@ ± 15 V) + $I_S$	mA		
$V_d$	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn	3.6	kV		
$V_b$	R.m.s. rated voltage	600	V		

### Features

- Closed loop (compensated) current transducer using the Hall effect
- Mounted on printed circuit board
- Insulated plastic case recognized according to UL 94-V0.

### Special features

- $I_P = 0 .. ± 100 \text{ A}$
- $K_N = 1 : 2000$
- $V_d = 3.6 \text{ kV}$
- $T_A = - 40^\circ\text{C} .. + 85^\circ\text{C}$ .
- Potted.

### Accuracy - Dynamic performance data

$X$	Accuracy @ $I_{PN}, T_A = 25^\circ\text{C}$	@ ± 15 V (± 5 %)	± 0.65	%
		@ ± 12 .. 15 V (± 5 %)	± 0.90	%
$\mathcal{E}_L$	Linearity error		< 0.15	%
$I_O$	Offset current @ $I_P = 0, T_A = 25^\circ\text{C}$	Typ	± 0.1	mA
		Max	± 0.2	mA
$I_{OM}$	Residual current <sup>1)</sup> @ $I_P = 0$ , after an overload of $3 \times I_{PN}$		± 0.2	mA
$I_{OT}$	Thermal drift of $I_O$	- 25°C .. + 85°C	± 0.1	± 0.3 mA
		- 40°C .. - 25°C	± 0.2	± 0.5 mA
$t_{ra}$	Reaction time @ 10 % of $I_{PN}$		< 500	ns
$t_r$	Response time <sup>2)</sup> @ 90 % of $I_{PN}$		< 1	µs
$di/dt$	di/dt accurately followed		> 200	A/µs
$f$	Frequency bandwidth (- 1 dB)		DC .. 200	kHz

### 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

- Single or three phases inverter
- Propulsion and braking chopper
- Propulsion converter
- Auxiliary converter
- Battery charger.

### Application domain

- Traction.

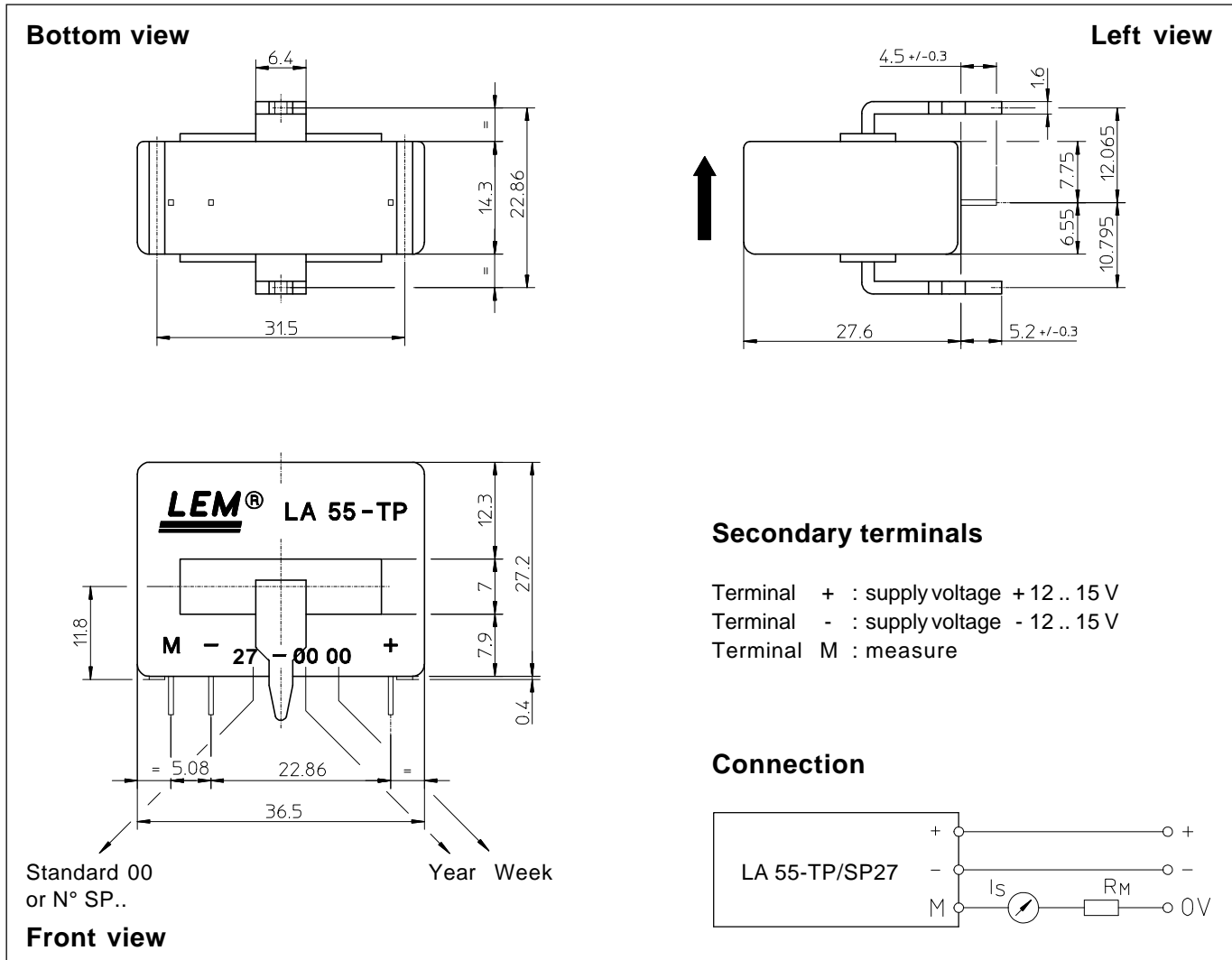
### General data

$T_A$	Ambient operating temperature	- 40 .. + 85	°C
$T_S$	Ambient storage temperature	- 50 .. + 90	°C
$R_S$	Secondary coil resistance @ $T_A = 85^\circ\text{C}$	140	Ω
$m$	Mass	35	g
	Standards	EN 50155 : 1995	

Notes : <sup>1)</sup> The result of the coercive field of the magnetic circuit

<sup>2)</sup> With a di/dt of 100 A/µs.

## Dimensions LA 55-TP/SP27 (in mm. 1 mm = 0.0394 inch)



## Mechanical characteristics

- General tolerance  $\pm 0.2$  mm
- Fastening & connection of primary bus bar 6.4 x 1.6 mm
- Recommended PCB hole 3.8 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.