

# Current Transducer LA 100-S/SP1

$$I_{PN} = 100 \text{ A}$$

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).



0629

## Electrical data

$I_{PN}$	Primary nominal r.m.s. current	100	A
$I_P$	Primary current, measuring range	0 .. $\pm 200$	A
$R_M$	Measuring resistance with $\pm 15 \text{ V}$	$R_{M \min}$ $R_{M \max}$	
		@ $\pm 100 \text{ A}_{\max}$	0   180 $\Omega$
		@ $\pm 200 \text{ A}_{\max}$	0   50 $\Omega$
$I_{SN}$	Secondary nominal r.m.s. current	50	mA
$K_N$	Conversion ratio	1 : 2000	
$V_C$	Supply voltage ( $\pm 5 \%$ )	$\pm 15$	V
$I_C$	Current consumption	$22 + I_S$	mA
$V_d$	R.m.s. voltage for AC isolation test, 50 Hz, 1 min	3	kV

## Features

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

## Special features

- $I_P = 0 .. \pm 200 \text{ A}$
- $K_N = 1 : 2000$

## Accuracy - Dynamic performance data

$X_G$	Overall accuracy @ $I_{PN}, T_A = 25^\circ\text{C}$	$\pm 0.5$	%
$e_L$	Linearity error	$< 0.1$	%
$I_O$	Offset current @ $I_P = 0, T_A = 25^\circ\text{C}$	Typ	$\pm 0.1$ mA
		Max	$\pm 0.1$ mA
$I_{OT}$	Thermal drift of $I_O$ - 10 °C .. + 70 °C	$\pm 0.2$	mA
$t_t$	Response time <sup>1)</sup> @ 90 % of $I_{PN}$	$< 1$	$\mu\text{s}$
$di/dt$	$di/dt$ accurately followed	$> 50$	A/ $\mu\text{s}$
$f$	Frequency bandwidth (- 1 dB)	DC .. 150	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.

## General data

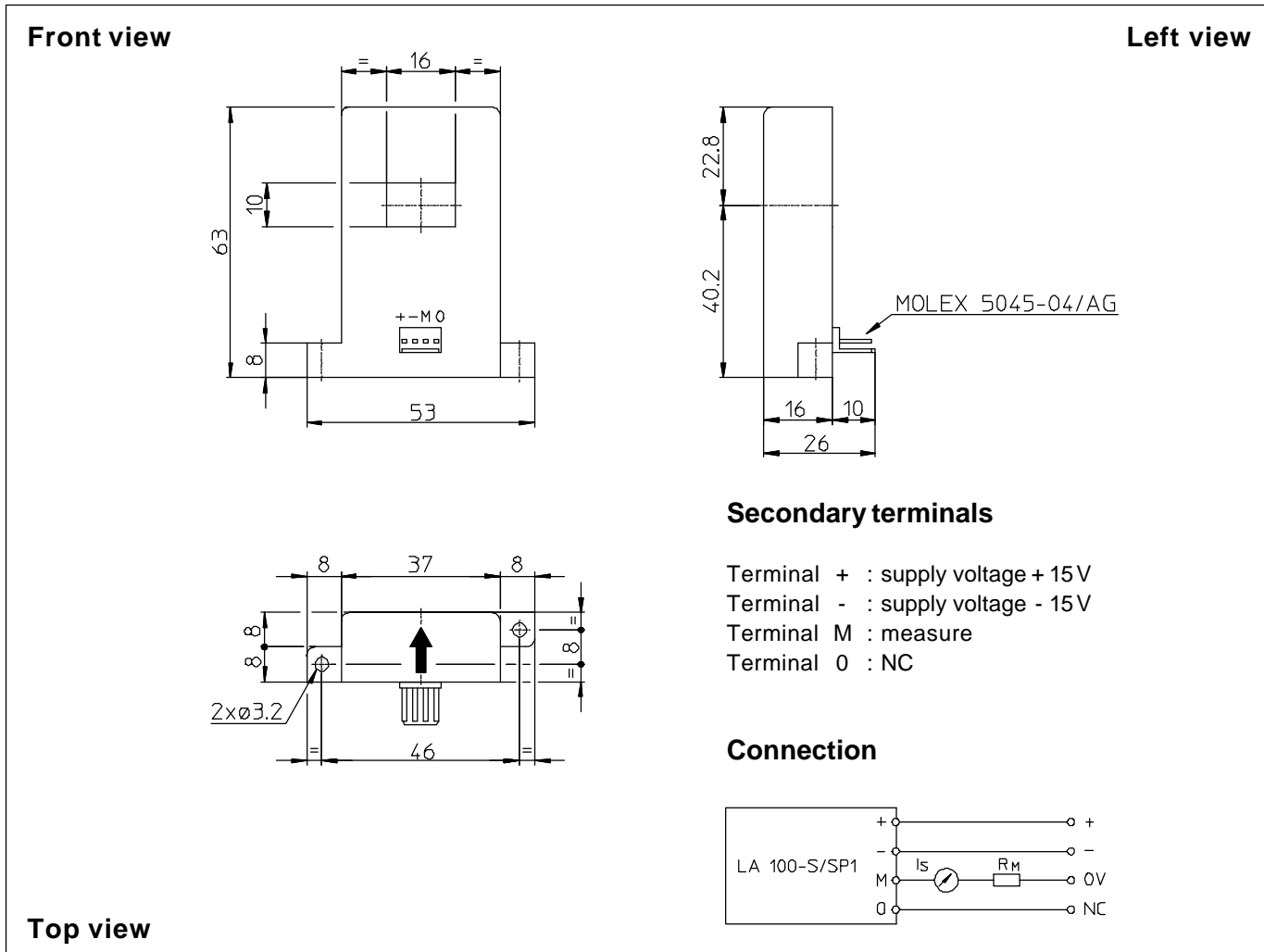
$T_A$	Ambient operating temperature	- 10 .. + 70	$^\circ\text{C}$
$T_S$	Ambient storage temperature	- 25 .. + 85	$^\circ\text{C}$
$R_S$	Secondary coil resistance @ $T_A = 70^\circ\text{C}$	85	$\Omega$
$m$	Mass	65	g
	Standards <sup>2)</sup>	EN 50178	

## 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 : <sup>1)</sup> With a  $di/dt$  of 50 A/ $\mu\text{s}$   
<sup>2)</sup> A list of corresponding tests is available.

## Dimensions LA 100-S/SP1 (in mm. 1 mm = 0.0394 inch)



### Mechanical characteristics

- General tolerance  $\pm 0.3$  mm
- Fastening 2 holes  $\varnothing 3.2$  mm
- Primary through-hole 16 x 10 mm
- Connection of secondary Molex 5045-04/AG

### 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.
- To measure nominal currents of less than 100 A, the optimum accuracy is obtained by having several primary turns (nominal current x number of turns < 100 At).