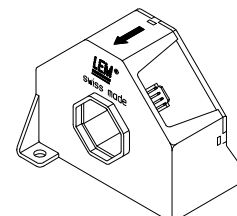


# Current Transducer LA 305-S

$I_{PN} = 300 \text{ A}$

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	300	A					
$I_P$	Primary current, measuring range	0 .. $\pm 500$	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 $\pm 12 \text{ V}$	@ $\pm 300 \text{ A}_{max}$	0	52	0	50	$\Omega$
			@ $\pm 500 \text{ A}_{max}$	0	17	0	15	$\Omega$
		with $\pm 15 \text{ V}$	@ $\pm 300 \text{ A}_{max}$	0	75	5	73	$\Omega$
	@ $\pm 500 \text{ A}_{max}$	0	31	5	29	$\Omega$		
$I_{SN}$	Secondary nominal r.m.s. current	120	mA					
$K_N$	Conversion ratio	1 : 2500						
$V_C$	Supply voltage ( $\pm 5 \%$ )	$\pm 12 \dots 15$	V					
$I_C$	Current consumption	$20 (@ \pm 15 \text{ V}) + I_S$	mA					
$V_b$	R.m.s. rated voltage <sup>1)</sup> , safe separation	1750	V					
		basic isolation	3500	V				

## Accuracy - Dynamic performance data

$X_G$	Overall accuracy @ $I_{PN}$ , $T_A = 25^\circ\text{C}$	$\pm 0.8$	%
$e_L$	Linearity	$< 0.1$	%
$I_O$	Offset current @ $I_P = 0$ , $T_A = 25^\circ\text{C}$	Typ	Max
			$\pm 0.20$ mA
$I_{OM}$	Residual current <sup>2)</sup> @ $I_P = 0$ , after an overload of $3 \times I_{PN}$		$\pm 0.40$ mA
$I_{OT}$	Thermal drift of $I_O$ - $10^\circ\text{C} \dots + 85^\circ\text{C}$	$\pm 0.12$	$\pm 0.30$ mA
$t_{ra}$	Reaction time @ 10 % of $I_{Pmax}$	$< 500$	ns
$t_r$	Response time <sup>3)</sup> @ 90 % of $I_{Pmax}$	$< 1$	$\mu\text{s}$
$di/dt$	di/dt accurately followed	$> 100$	A/ $\mu\text{s}$
$f$	Frequency bandwidth (- 3 dB)	DC .. 100	kHz

## General data

$T_A$	Ambient operating temperature	- 10 .. + 85	$^\circ\text{C}$
$T_S$	Ambient storage temperature	- 40 .. + 90	$^\circ\text{C}$
$R_S$	Secondary coil resistance @	$T_A = 70^\circ\text{C}$	35 $\Omega$
		$T_A = 85^\circ\text{C}$	37 $\Omega$
$m$	Mass	200	g
		Standards <sup>4)</sup>	EN 50178

## Features

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

## 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 :** <sup>1)</sup> Pollution class 2. With a non insulated primary bar which fills the through-hole

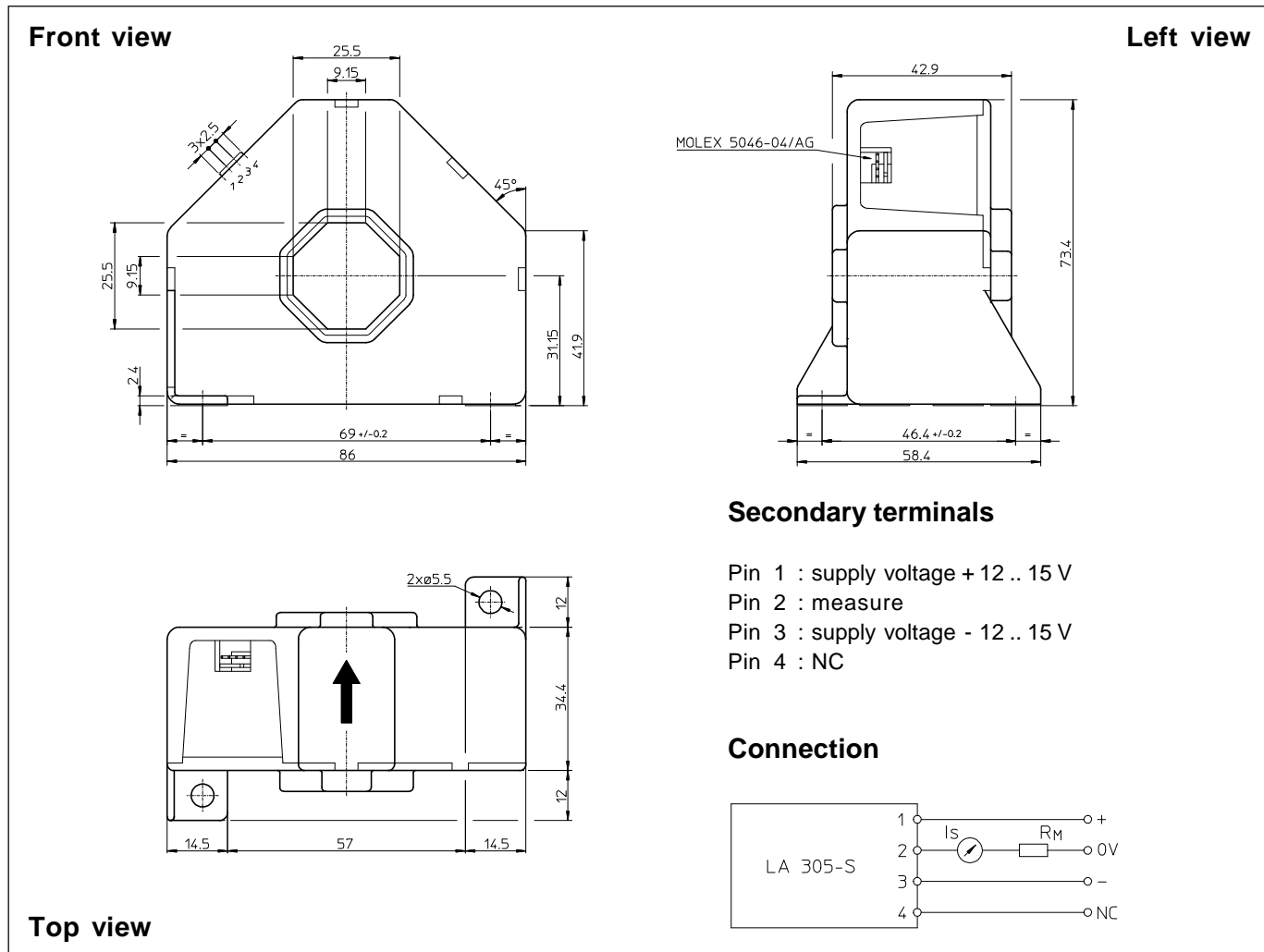
<sup>2)</sup> The result of the coercive field of the magnetic circuit

<sup>3)</sup> With a di/dt of 100 A/ $\mu\text{s}$

<sup>4)</sup> A list of corresponding tests is available

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## Dimensions LA 305-S (in mm. 1 mm = 0.0394 inch)



## Mechanical characteristics

- General tolerance  $\pm 0.5$  mm
- Fastening 2 holes  $\varnothing 5.5$  mm
- Primary through-hole 25.5 x 25.5 mm
- Connection of secondary Molex 5046-04/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.
- This is a standard model. For different versions (supply voltages, turns ratios, unidirectional measurements...), please contact us.