

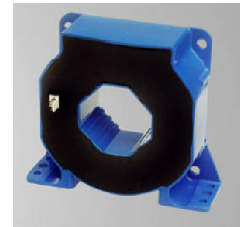
## Current Transducer LF 305-S

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

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).



Preliminary



### 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	$R_{Mmin}$	$R_{Mmax}$		
				with $\pm 12 \text{ V}$	@ $\pm 300 \text{ A}_{max}$
		@ $\pm 500 \text{ A}_{max}$	0	12	$\Omega$
	with $\pm 15 \text{ V}$	@ $\pm 300 \text{ A}_{max}$	0	58	$\Omega$
		@ $\pm 500 \text{ A}_{max}$	0	22	$\Omega$
	with $\pm 20 \text{ V}$	@ $\pm 300 \text{ A}_{max}$	15	93	$\Omega$
	@ $\pm 500 \text{ A}_{max}$	15	45	$\Omega$	
$I_{SN}$	Secondary nominal r.m.s. current	150	mA		
$K_N$	Conversion ratio	1 : 2000			
$V_C$	Supply voltage ( $\pm 5 \%$ )	$\pm 12 \dots 20$	V		
$I_C$	Current consumption	16 (@ $\pm 20 \text{ V}$ ) + $I_S$	mA		
$V_d$	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn	3	kV		

### Accuracy - Dynamic performance data

$X_G$	Overall accuracy @ $I_{PN}$ , $T_A = 25^\circ\text{C}$	$\pm 0.4$	%
$e_L$	Linearity	$< 0.1$	%
$I_O$	Offset current @ $I_P = 0$ , $T_A = 25^\circ\text{C}$	Typ	Max
			$\pm 0.20$ mA
			$\pm 0.08$ mA
$I_{OM}$	Residual current <sup>1)</sup> @ $I_P = 0$ , after an overload of $3 \times I_{PN}$	$\pm 0.1$	$\pm 0.30$ mA
$I_{OT}$	Thermal drift of $I_O$ - $10^\circ\text{C} \dots +70^\circ\text{C}$		
$t_{ra}$	Reaction time @ 10 % of $I_{PN}$	$< 500$	ns
$t_r$	Response time <sup>2)</sup> @ 90 % of $I_{PN}$	$< 1$	$\mu\text{s}$
$di/dt$	$di/dt$ accurately followed	$> 100$	A/ $\mu\text{s}$
$f$	Frequency bandwidth (- 1 dB)	DC .. 100	kHz

### 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 @ $T_A = 70^\circ\text{C}$	28	$\Omega$
$m$	Mass	95	g
	Standards <sup>3)</sup>	EN 50178	

### Features

- Closed loop (compensated) current transducer using the Hall effect
- 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.

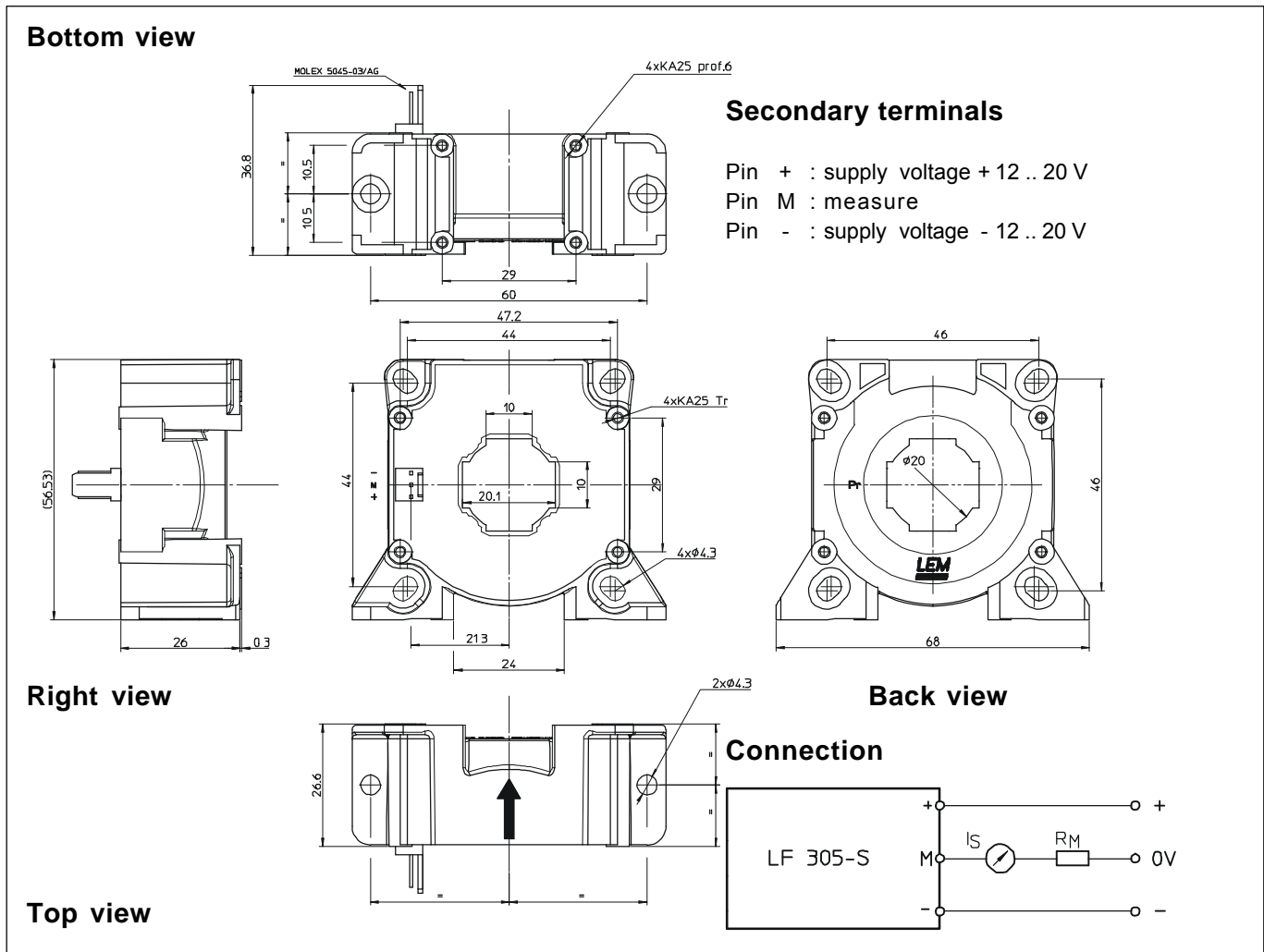
Notes : <sup>1)</sup> The result of the coercive field of the magnetic circuit

<sup>2)</sup> With a  $di/dt$  of 100 A/ $\mu\text{s}$

<sup>3)</sup> A list of corresponding tests is available

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



### Mechanical characteristics

- General tolerance  $\pm 0.5$  mm
- Fastening see drawing
- Primary through-hole  $\phi 20$  mm
- Connection of secondary Molex 5045-03/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.