

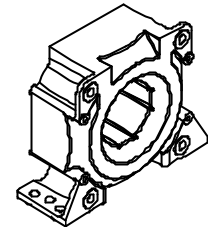
# Current Transducer LF 505-S/SP15

$$I_{PN} = 500 \text{ A}$$

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).



16157



## Electrical data

$I_{PN}$	Primary nominal r.m.s. current	500	A			
$I_p$	Primary current, measuring range	0 .. $\pm 800$	A			
$R_M$	Measuring resistance	with $\pm 15 \text{ V}$	@ $\pm 500 \text{ A}_{max}$	$R_{M min}$	$R_{M max}$	
			@ $\pm 800 \text{ A}_{max}$	0	60	$\Omega$
		with $\pm 18 \text{ V}$	@ $\pm 500 \text{ A}_{max}$	0	11	$\Omega$
			@ $\pm 800 \text{ A}_{max}$	0	92	$\Omega$
		with $\pm 24 \text{ V}$	@ $\pm 500 \text{ A}_{max}$	0	30	$\Omega$
			@ $\pm 800 \text{ A}_{max}$	5	149	$\Omega$
$I_{SN}$	Secondary nominal r.m.s. current	100	m A			
$K_N$	Conversion ratio	1 : 5000				
$V_C$	Supply voltage ( $\pm 5 \%$ )	$\pm 15 \dots 24$	V			
$I_C$	Current consumption	24 (@ $\pm 18 \text{ V}$ ) + $I_S$	m A			
$V_d$	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn	3	k V			

## Features

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

## Special features

- Connection to secondary circuit on Molex Minifit Jr., 5566 with gold pins.

## 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.

## Accuracy - Dynamic performance data

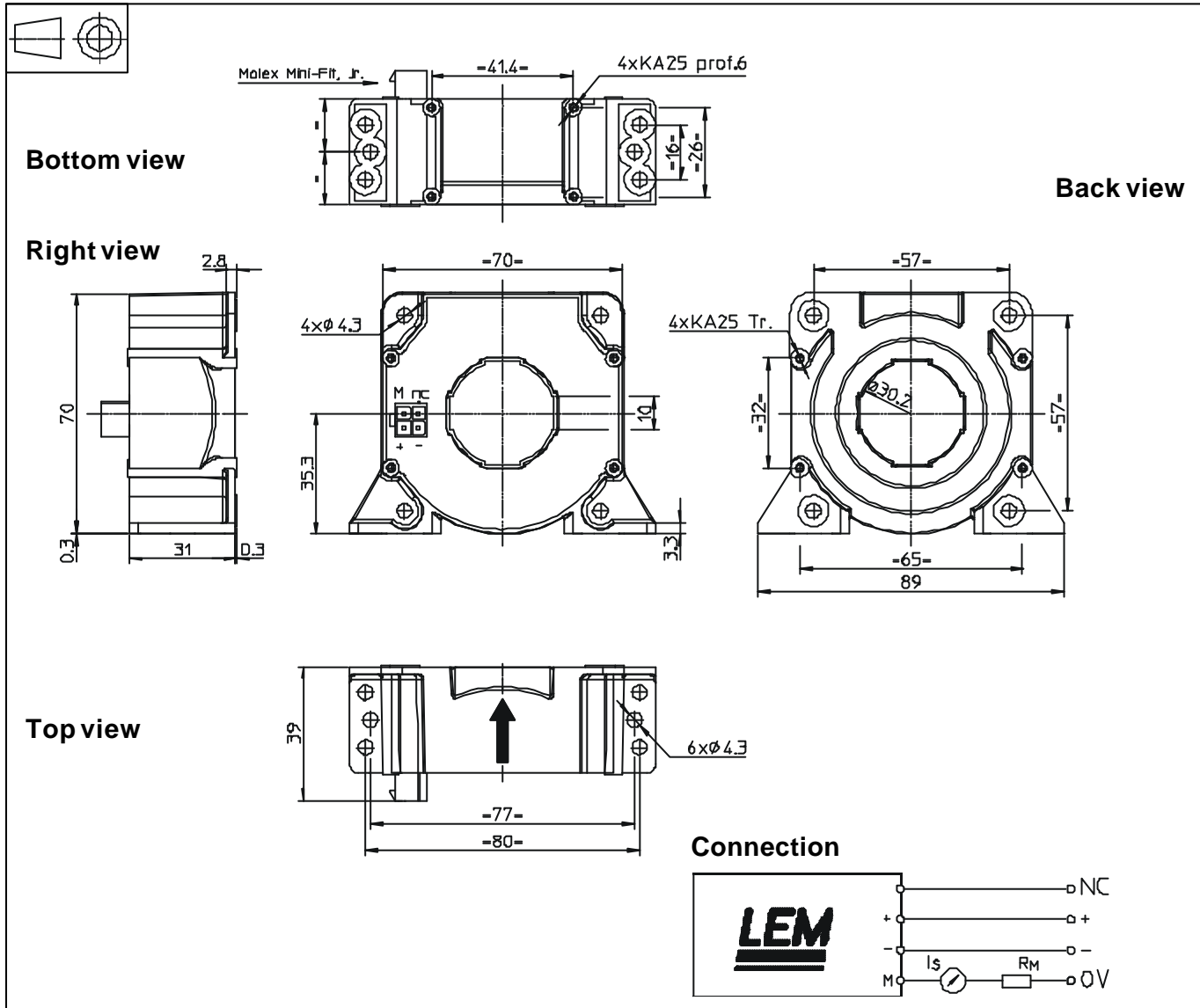
$X_G$	Overall accuracy @ $I_{PN}, T_A = 25^\circ\text{C}$	$\pm 0.6$	%
$\epsilon_L$	Linearity error	$< 0.1$	%
$I_o$	Offset current @ $I_p = 0, T_A = 25^\circ\text{C}$	Typ	Max
			$\pm 0.4$ m A
$I_{OT}$	Thermal drift of $I_o$ - $10^\circ\text{C} \dots + 70^\circ\text{C}$	$\pm 0.3$	$\pm 0.5$ m A
$t_r$	Response time <sup>1)</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 @ $T_A = 70^\circ\text{C}$	70	$\Omega$
$m$	Mass	230	g
	Standards	EN 50178: 1997	

**Note :** <sup>1)</sup> With a  $di/dt$  of 100 A/ $\mu\text{s}$ .

## Dimensions LF 505-S/SP15 (in mm. 1 mm = 0.0394 inch)



### Mechanical characteristics

- General tolerance  $\pm 0.5$  mm
- Transducer fastening
  - Vertical or flat lying position 4 or 6 holes  $\varnothing 4.3$  mm
  - 4 or 6 steel screws M4
  - Recommended fastening torque 2.36 Lb.-Ft.
  - Or vertical position 4 holes  $\varnothing 1.9$  mm, depth : 6 mm
  - 4 screws PTKA 25, length: 6 mm
  - Recommended fastening torque 0.52 Lb.-Ft.
  - Or flat lying position 4 holes  $\varnothing 1.9$  mm, crossing
  - 4 screws PTKA 25, length:10 mm
  - Recommended fastening torque 0.55 Lb.-Ft.
- Primary through-hole  $\varnothing 30.2$  mm
- Secondary connection on Molex Mini-Fit Jr.  
5566 gold-plated pins.

### 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.