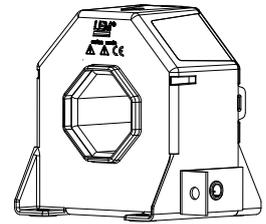


## Current Transducer LT 505-S/SP24

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).



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



### Electrical data

$I_{PN}$	Primary nominal current rms	500	A			
$I_{PM}$	Primary current, measuring range	0 .. ± 1000	A			
$R_M$	Measuring resistance @	$T_A = 70^\circ\text{C}$		$T_A = 85^\circ\text{C}$		
		$R_{M \min}$	$R_{M \max}$	$R_{M \min}$	$R_{M \max}$	
		with ± 15 V @ ± 500 A <sub>max</sub>	0	60	0	58
		@ ± 1000 A <sub>max</sub>	0	17	0	15
					Ω	
$I_{SN}$	Secondary nominal current rms	143	mA			
$K_N$	Conversion ratio	1 : 3500				
$V_C$	Supply voltage (± 5 %)	± 15	V			

### Accuracy - Dynamic performance data

$I_C$	Current consumption	$30 + I_S$	mA
$X_G$	Overall accuracy @ $I_{PN}$ , $T_A = 25^\circ\text{C}$	± 0.6	%
$\varepsilon_L$	Linearity error	< 0.1	%
$I_O$	Offset current @ $I_P = 0$ , $T_A = 25^\circ\text{C}$	Typ	Max
			± 0.6
$I_{OT}$	Temperature variation of $I_O$ - 25°C .. + 85°C	± 0.3	± 0.8
$t_r$	Response time <sup>1)</sup> to 90 % of $I_{PN}$ step	< 1	μs
$di/dt$	di/dt accurately followed	> 50	A/μs

### General data

<b>BW</b>	Frequency bandwidth (- 1 dB)	DC .. 150	kHz
$T_A$	Ambient operating temperature	- 25 .. + 85	°C
$T_S$	Ambient storage temperature	- 40 .. + 90	°C
$R_S$	Secondary coil resistance @	$T_A = 70^\circ\text{C}$	25
		$T_A = 85^\circ\text{C}$	27
$m$	Mass	850	g
	Standards	EN 50155: 1995	

**Note:** <sup>1)</sup> With a di/dt of 100 A/μs.

### Features

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

### Special features

- $I_{PM} = 0 \dots \pm 1000 \text{ A}$
- $K_N = 1 : 3500$
- $V_C = \pm 15 (\pm 5 \%) \text{ V}$
- $T_A = - 25^\circ\text{C} \dots + 85^\circ\text{C}$
- Connection to secondary circuit on LEMO EGJ.0B.303.CLA
- Potted
- Between primary and secondary shield linked to external shield
- Customer marking.

### 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.

## Current Transducer LT 505-S/SP24

### Isolation characteristics

$V_d$	Rms voltage for AC isolation test, 50 Hz, 1 min	6 <sup>2)</sup>	kV
		1 <sup>3)</sup>	kV
<b>dCp</b>	Creepage distance	37.9	mm
<b>dCI</b>	Clearance distance	32.9	mm
<b>CTI</b>	Comparative Tracking Index (group III)	225	

**Notes:** <sup>2)</sup> Between primary and secondary + shields

<sup>3)</sup> Between secondary and internal shield + external shield  
The internal shield is connected to external shield.

### Safety



This transducer must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the manufacturer's operating instructions.



Caution, risk of electrical shock

When operating the transducer, certain parts of the module can carry hazardous voltage (eg. primary busbar, power supply).

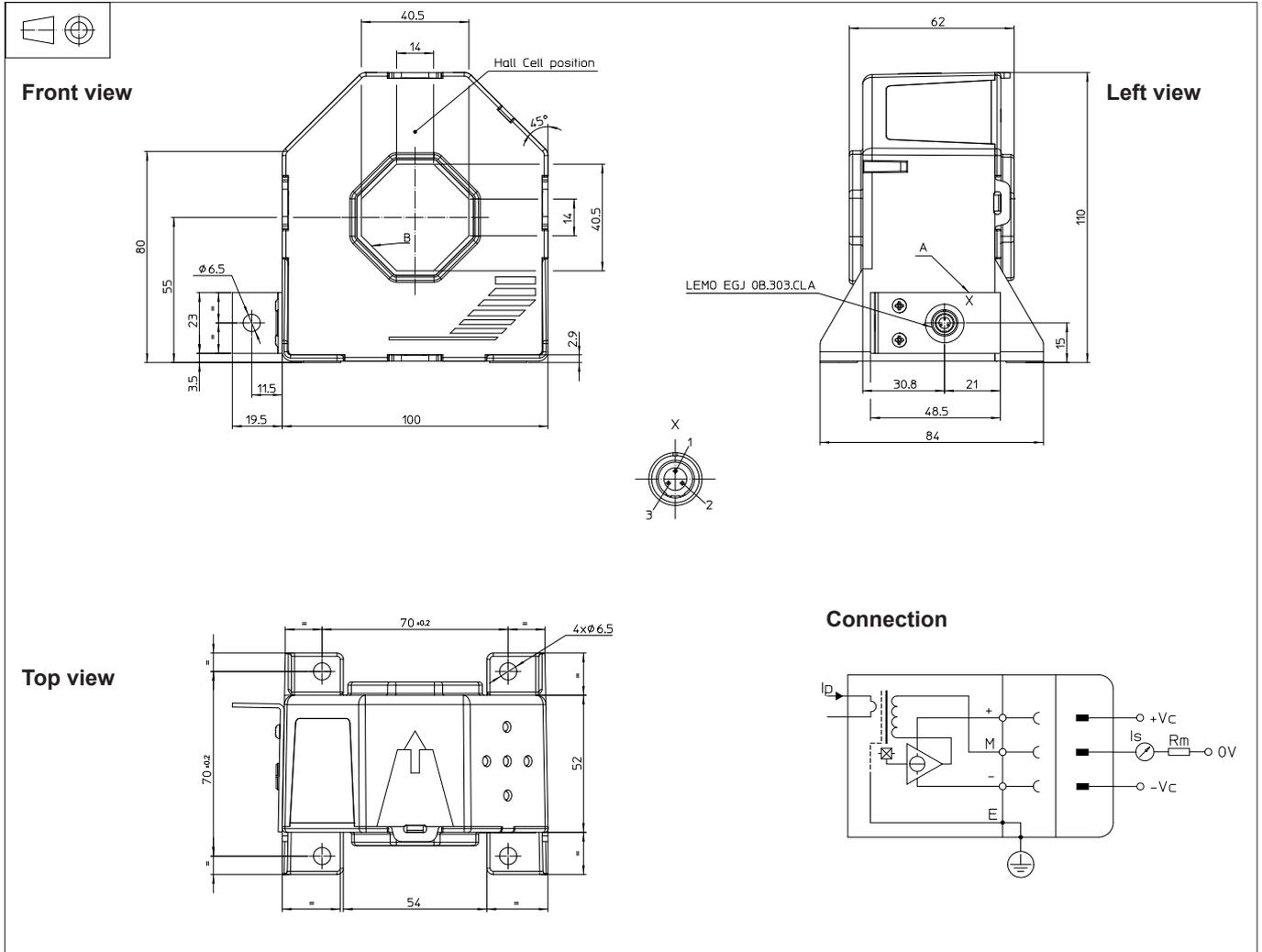
Ignoring this warning can lead to injury and/or cause serious damage.

This transducer is a built-in device, whose conducting parts must be inaccessible after installation.

A protective housing or additional shield could be used.

Main supply must be able to be disconnected.

## Dimensions LT 505-S/SP24 (in mm. 1 mm = 0.0394 inch)



### Mechanical characteristics

- General tolerance  $\pm 0.5$  mm
- Transducer fastening
  - 4 holes  $\varnothing 6.5$  mm
  - 4 steel screws M6
- Recommended fastening torque 4.20 Nm or 3.10 Lb.-Ft.
- Primary through-hole
  - 40.5 x 14 mm
  - or
  - 36 mm max.
- Connection of secondary LEMO EGJ 0B.303.CLA
- Connection internal and external shields
  - holes  $\varnothing 6.5$  mm

### Remarks

- $I_s$  is positive when  $I_P$  flows in the direction of the arrow.
- Temperature of the primary conductor should not exceed  $100^\circ\text{C}$ .
- Dynamic performances ( $di/dt$  and response time) are best with a single bar completely filling the primary hole.

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