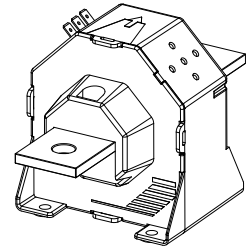


# Current Transducer LT 505-T

For the electronic measurement of currents: DC, AC, pulsed..., with 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 .. $\pm 1200$	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 $\pm 15 \text{ V}$	@ $\pm 500 \text{ A}_{\max}$	0	65	0	60
			@ $\pm 800 \text{ A}_{\max}$	0	15	0	12
		with $\pm 24 \text{ V}$	@ $\pm 500 \text{ A}_{\max}$	0	145	15	140
	@ $\pm 1200 \text{ A}_{\max}$	0	22	15	18		
$I_{SN}$	Secondary nominal current rms	100	mA				
$K_N$	Conversion ratio	1 : 5000					
$V_C$	Supply voltage ( $\pm 5\%$ )	$\pm 15 \dots 24$	V				
$I_C$	Current consumption	30 (@ $\pm 24\text{V}$ ) + $I_S$	mA				

## 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	$\pm 0.4$
		Max	$\pm 0.4$
$I_{OM}$	Magnetic offset current @ $I_P = 0$ , and specified $R_M$ , after an overload of $3 \times I_{PN}$		$\pm 0.2$
$I_{OT}$	Temperature variation of $I_O$ - $10^\circ\text{C} \dots +85^\circ\text{C}$	$\pm 0.3$	$\pm 0.5$
$t_r$	Response time <sup>1)</sup> to 90 % of $I_{PN}$ step	$< 1$	$\mu\text{s}$
$di/dt$	$di/dt$ accurately followed	$> 50$	A/ $\mu\text{s}$
<b>BW</b>	Frequency bandwidth (- 1 dB)	DC .. 150	kHz

## General data

$T_A$	Ambient operating temperature	- 10 .. + 85	$^\circ\text{C}$
$T_S$	Ambient storage temperature	- 25 .. + 100	$^\circ\text{C}$
$R_S$	Secondary coil resistance @	$T_A = 70^\circ\text{C}$	65
		$T_A = 85^\circ\text{C}$	69
$m$	Mass	850	g
	Standards	EN 50178: 1997	

## Features

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

## Application Domain

- Industrial.

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

## Current Transducer LT 505-T

### Isolation characteristics

$V_d$	Rms voltage for AC isolation test, 50 Hz, 1 min	6	kV
		Min	
<b>dCp</b>	Creepage distance	51.8	mm
<b>dCI</b>	Clearance distance	44.1	mm
<b>CTI</b>	Comparative Tracking Index (group III a)	225	

### Applications examples

According to **EN 50178** and **IEC 61010-1** standards and following conditions:

- Over voltage category OV 3
- Pollution degree PD2
- Non-uniform field

	<b>EN 50178</b>	<b>IEC 61010-1</b>
<b>dCp, dCI</b>	Rated isolation voltage	Nominal voltage
Single isolation	5000 V	5000 V
Reinforced isolation	2500 V	2500 V

### 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).

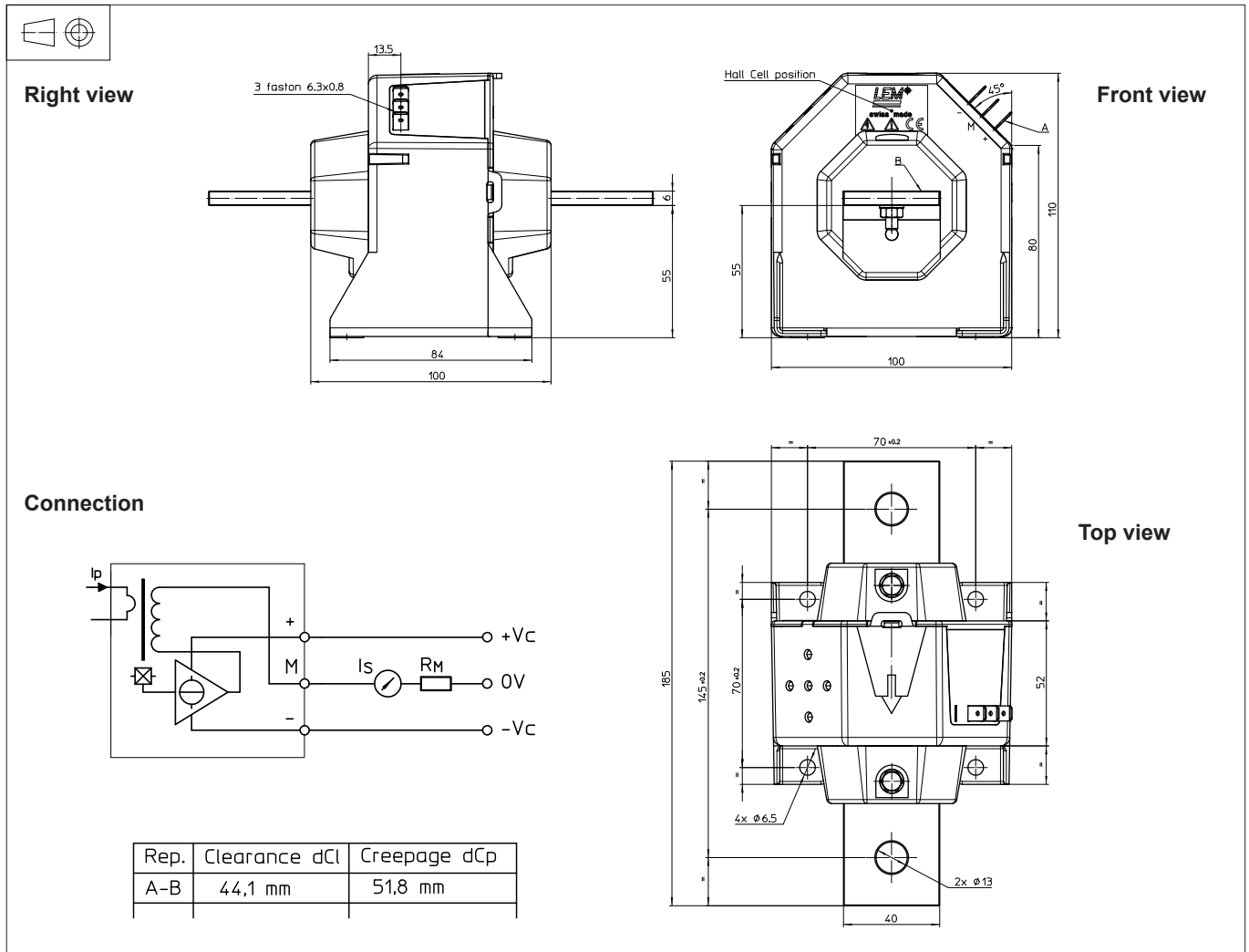
Ignoring this warning can lead to injury and/or cause serious damage.

This transducer is a build-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-T (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 4.5 Nm or 3.31 Lb.-Ft.
  - Or by the primary bar
- Connection of primary
  - 2 holes  $\varnothing 13$  mm
  - 2 steel screws M12
  - Recommended fastening torque 17 Nm or 12.53 Lb.-Ft.
- Connection of secondary
  - Faston 6.3 x 0.8 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°C.
- This is a standard model. For different versions (supply voltages, turns ratios, unidirectional measurements...), please contact us.