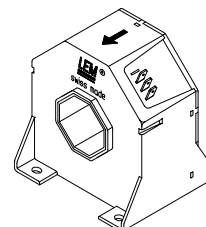


# Current Transducer LT 505-S

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

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).



## Electrical data

$I_{PN}$	Primary nominal r.m.s. current	500	A					
$I_P$	Primary current, measuring range	$0 \dots \pm 1200$	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 $\pm 15 \text{ V}$	@ $\pm 500 \text{ A}_{max}$	0	65	0	60	$\Omega$
			@ $\pm 800 \text{ A}_{max}$	0	15	0	12	$\Omega$
		with $\pm 24 \text{ V}$	@ $\pm 500 \text{ A}_{max}$	0	145	15	140	$\Omega$
	@ $\pm 1200 \text{ A}_{max}$	0	22	15	18	$\Omega$		
$I_{SN}$	Secondary nominal r.m.s. current	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					
$V_d$	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn	6	kV					
$V_b$	R.m.s. rated voltage <sup>1)</sup> , safe separation	1750	V					
		basic isolation	3500	V				

## Accuracy - Dynamic performance data

$X_G$	Overall accuracy @ $I_{PN}$ , $T_A = 25^\circ\text{C}$	$\pm 0.6$	%
$e_L$	Linearity	$< 0.1$	%
$I_O$	Offset current @ $I_P = 0$ , $T_A = 25^\circ\text{C}$	Typ	$\pm 0.4$ mA
		Max	$\pm 0.4$ mA
$I_{OT}$	Thermal drift of $I_O$ - $10^\circ\text{C} \dots + 85^\circ\text{C}$	$\pm 0.3$	mA
$t_r$	Response time <sup>2)</sup> @ 90 % of $I_{Pmax}$	$< 1$	$\mu\text{s}$
$di/dt$	$di/dt$ accurately followed	$> 50$	A/ $\mu\text{s}$
$f$	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 $\Omega$
		$T_A = 85^\circ\text{C}$	69 $\Omega$
$m$	Mass Standards <sup>3)</sup>	400	g
		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.

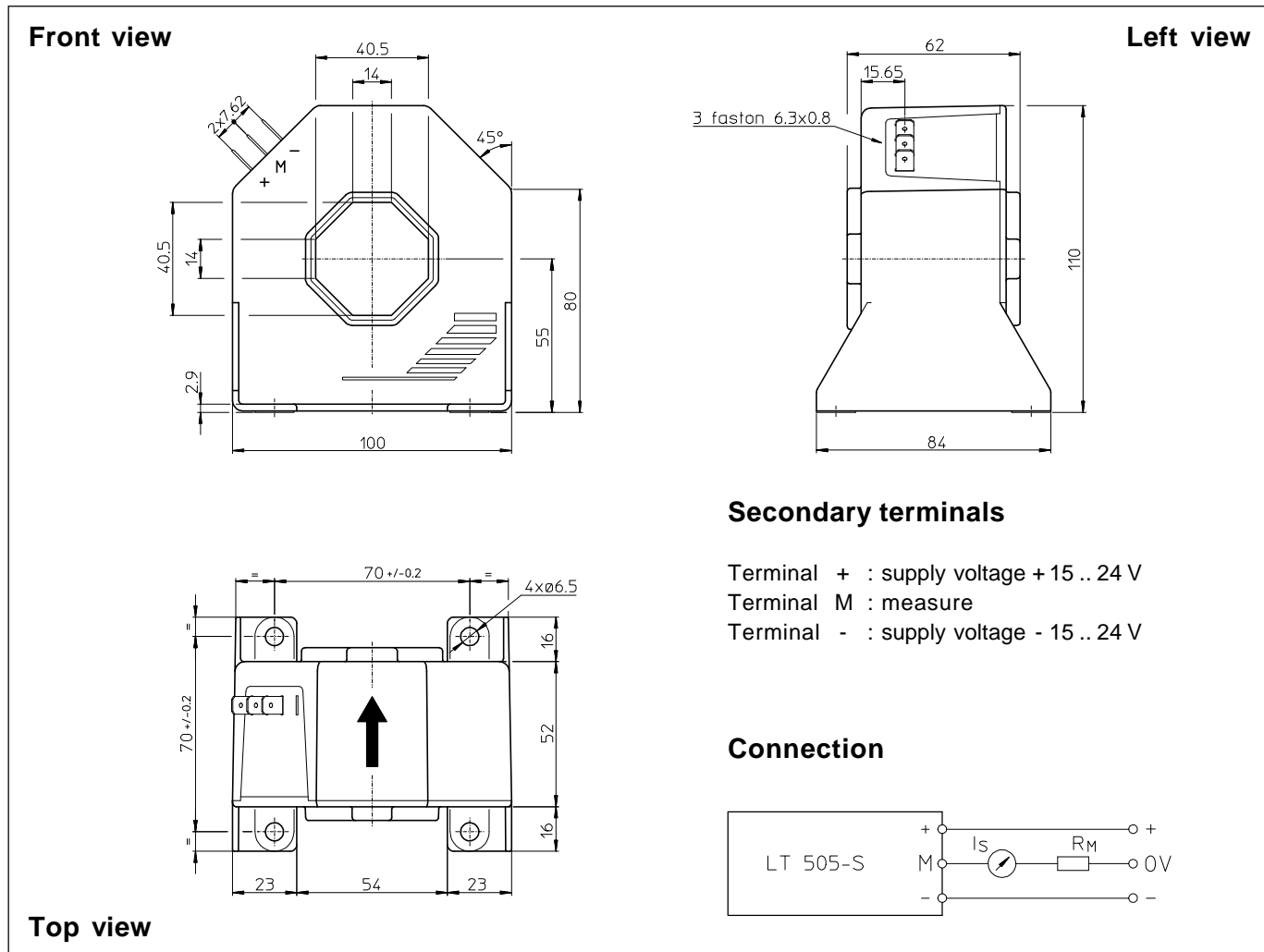
Notes : <sup>1)</sup> Pollution class 2. With a non insulated primary bar which fills the through-hole

<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 LT 505-S (in mm. 1 mm = 0.0394 inch)



## Mechanical characteristics

- General tolerance  $\pm 0.5$  mm
- Fastening 4 holes  $\varnothing 6.5$  mm
- Primary through-hole 40.5 x 40.5 mm
- 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.
- 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.