

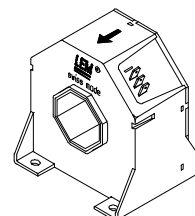
Current Transducer LT 505-S

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

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).



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Electrical data

I_{PN}	Primary nominal r.m.s. current	500	A					
I_P	Primary current, measuring range	0 .. ± 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	Ω
			@ $\pm 800 \text{ A}_{max}$	0	15	0	12	Ω
		with $\pm 24 \text{ V}$	@ $\pm 500 \text{ A}_{max}$	0	145	15	140	Ω
	@ $\pm 1200 \text{ A}_{max}$	0	22	15	18	Ω		
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 ¹⁾ , safe separation	1750	V					
		basic isolation	3500	V				

Accuracy - Dynamic performance data

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

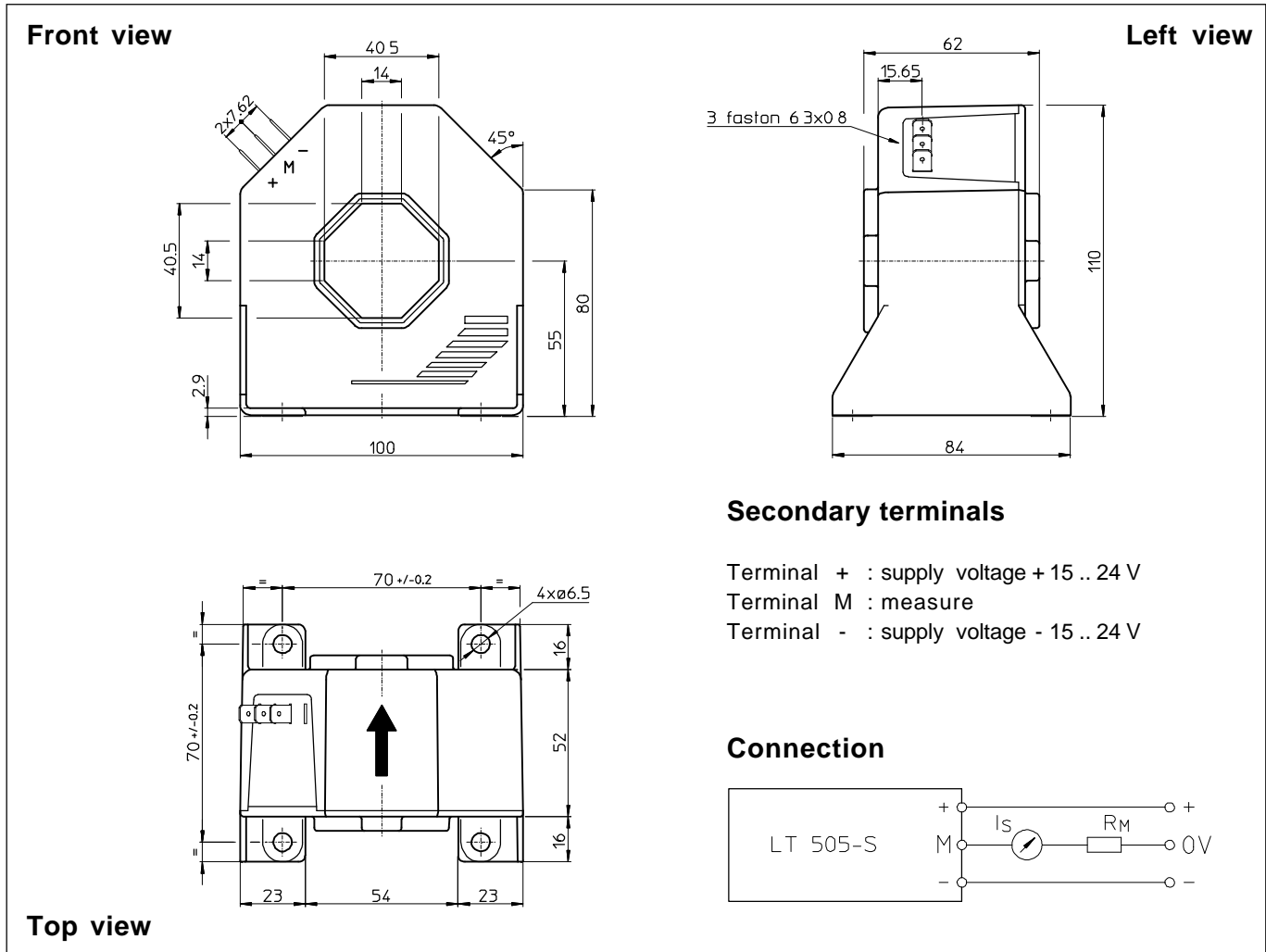
Notes : ¹⁾ Pollution class 2. With a non insulated primary bar which fills the through-hole

²⁾ With a di/dt of 100 A/ μs .

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LEM reserves the right to carry out modifications on its transducers, in order to improve them, without previous notice.

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



Mechanical characteristics

- | | |
|---------------------------|---------------------|
| • General tolerance | ± 0.5 mm |
| • Fastening | 4 holes Ø 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.