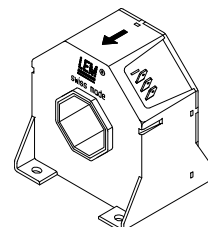


Current Transducer LT 505-S

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

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 .. ± 1200	A																																								
R_M	Measuring resistance @	<table> <tr> <th colspan="2">$T_A = 70^\circ\text{C}$</th><th colspan="2">$T_A = 85^\circ\text{C}$</th></tr> <tr> <th>R_{Mmin}</th><th>R_{Mmax}</th><th>R_{Mmin}</th><th>R_{Mmax}</th></tr> <tr> <td colspan="2">with $\pm 15 \text{ V}$</td><td colspan="2">@ $\pm 500 \text{ A}_{max}$</td></tr> <tr> <td></td><td></td><td>0</td><td>65</td></tr> <tr> <td colspan="2"></td><td colspan="2">@ $\pm 800 \text{ A}_{max}$</td></tr> <tr> <td></td><td></td><td>0</td><td>15</td></tr> <tr> <td colspan="2">with $\pm 24 \text{ V}$</td><td colspan="2">@ $\pm 500 \text{ A}_{max}$</td></tr> <tr> <td></td><td></td><td>0</td><td>145</td></tr> <tr> <td colspan="2"></td><td colspan="2">@ $\pm 1200 \text{ A}_{max}$</td></tr> <tr> <td></td><td></td><td>0</td><td>22</td></tr> </table>		$T_A = 70^\circ\text{C}$		$T_A = 85^\circ\text{C}$		R_{Mmin}	R_{Mmax}	R_{Mmin}	R_{Mmax}	with $\pm 15 \text{ V}$		@ $\pm 500 \text{ A}_{max}$				0	65			@ $\pm 800 \text{ A}_{max}$				0	15	with $\pm 24 \text{ V}$		@ $\pm 500 \text{ A}_{max}$				0	145			@ $\pm 1200 \text{ A}_{max}$				0	22
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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	< 0.1	%
I_O	Offset current @ $I_P = 0$, $T_A = 25^\circ\text{C}$	Typ	Max
I_{OT}	Thermal drift of I_O - $10^\circ\text{C} \dots + 85^\circ\text{C}$	± 0.3	± 0.5 mA
t_r	Response time ²⁾ @ 90 % of I_{Pmax}	< 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	°C
T_S	Ambient storage temperature	- 25 .. + 100	°C
R_S	Secondary coil resistance @	T_A = 70°C 65 T_A = 85°C 69	Ω Ω
m	Mass	400	g
	Standards ³⁾	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.

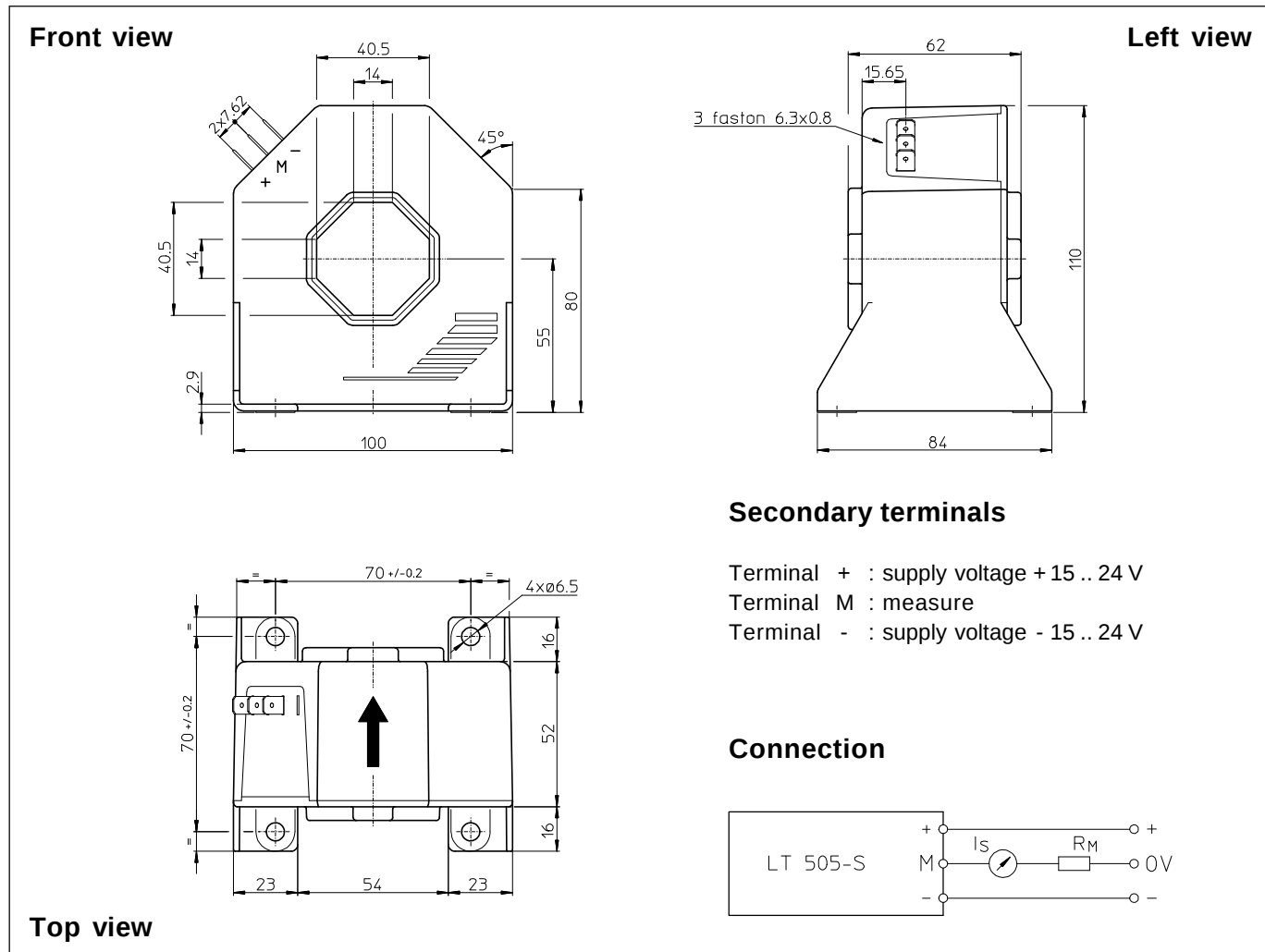
Notes : ¹⁾ Pollution class 2. With a non insulated primary bar which fills the through-hole

²⁾ With a di/dt of 100 A/ μs

³⁾ 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 ± 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.