

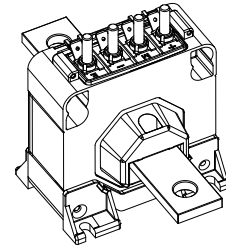
Current Transducer LTC 500-TF

For the electronic measurement of currents: DC, AC, pulsed..., with galvanic separation between the primary circuit and the secondary circuit.



RoHS

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



Electrical data

I_{PN}	Primary nominal rms current	500	A			
I_{PM}	Primary current, measuring range @ $\pm 24 \text{ V}$	0 .. ± 1200	A			
R_M	Measuring resistance	$R_{M \min}$ $R_{M \max}$	with $\pm 15 \text{ V}$	@ $\pm 500 \text{ A}_{\max}$	0 50	Ω
			@ $\pm 900 \text{ A}_{\max}$	0 7	Ω	
		with $\pm 24 \text{ V}$	@ $\pm 500 \text{ A}_{\max}$	0 110	Ω	
			@ $\pm 1200 \text{ A}_{\max}$	0 20	Ω	
I_{SN}	Secondary nominal rms current	125	mA			
K_N	Conversion ratio	1 : 4000				
U_C	Supply voltage ($\pm 5 \%$)	$\pm 15 \dots 24$	V			
I_C	Current consumption	$< 35 (@ \pm 24 \text{ V}) + I_S$	mA			

Accuracy - Dynamic performance data

X_G	Overall accuracy @ I_{PN} , $T_A = 25 \text{ }^\circ\text{C}$	$< \pm 0.6$	%
ϵ_L	Linearity error	< 0.1	%
		Max	
I_O	Offset current @ $I_P = 0$, $T_A = 25 \text{ }^\circ\text{C}$	± 0.5	mA
I_{OT}	Temperature variation of I_O - $40 \text{ }^\circ\text{C} \dots + 85 \text{ }^\circ\text{C}$	± 0.8	mA
t_r	Step response time ¹⁾ to 90 % of I_{PN}	< 1	μs
di/dt	di/dt accurately followed	> 100	A/ μs
BW	Frequency bandwidth (- 1 dB)	DC .. 100	kHz

General data

T_A	Ambient operating temperature	- 40 .. + 85	$^\circ\text{C}$
T_S	Ambient storage temperature	- 45 .. + 90	$^\circ\text{C}$
R_S	Secondary coil resistance @ $T_A = 85 \text{ }^\circ\text{C}$	47	Ω
m	Mass	650	g
	Standards	EN 50155: 2007	
		EN 50121-3-2: 2006	

Features

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

- Single or three phase inverter
- Propulsion and braking chopper
- Propulsion converter
- Auxiliary converter
- Battery charger.

Application Domain

- Traction.

Note: ¹⁾ With a di/dt of 100 A/ μs .

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Isolation characteristics

U_d	Rms voltage for AC insulation test, 50 Hz, 1 min	12 ¹⁾	kV
		1.5 ²⁾	kV
		Min	
d_{cp}	Creepage distance	63.2	mm
d_{cl}	Clearance	48.8	mm
CTI	Comparative Tracking Index (group I)	600	

Notes: ¹⁾ Between primary and secondary + shield

²⁾ Between secondary and 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).

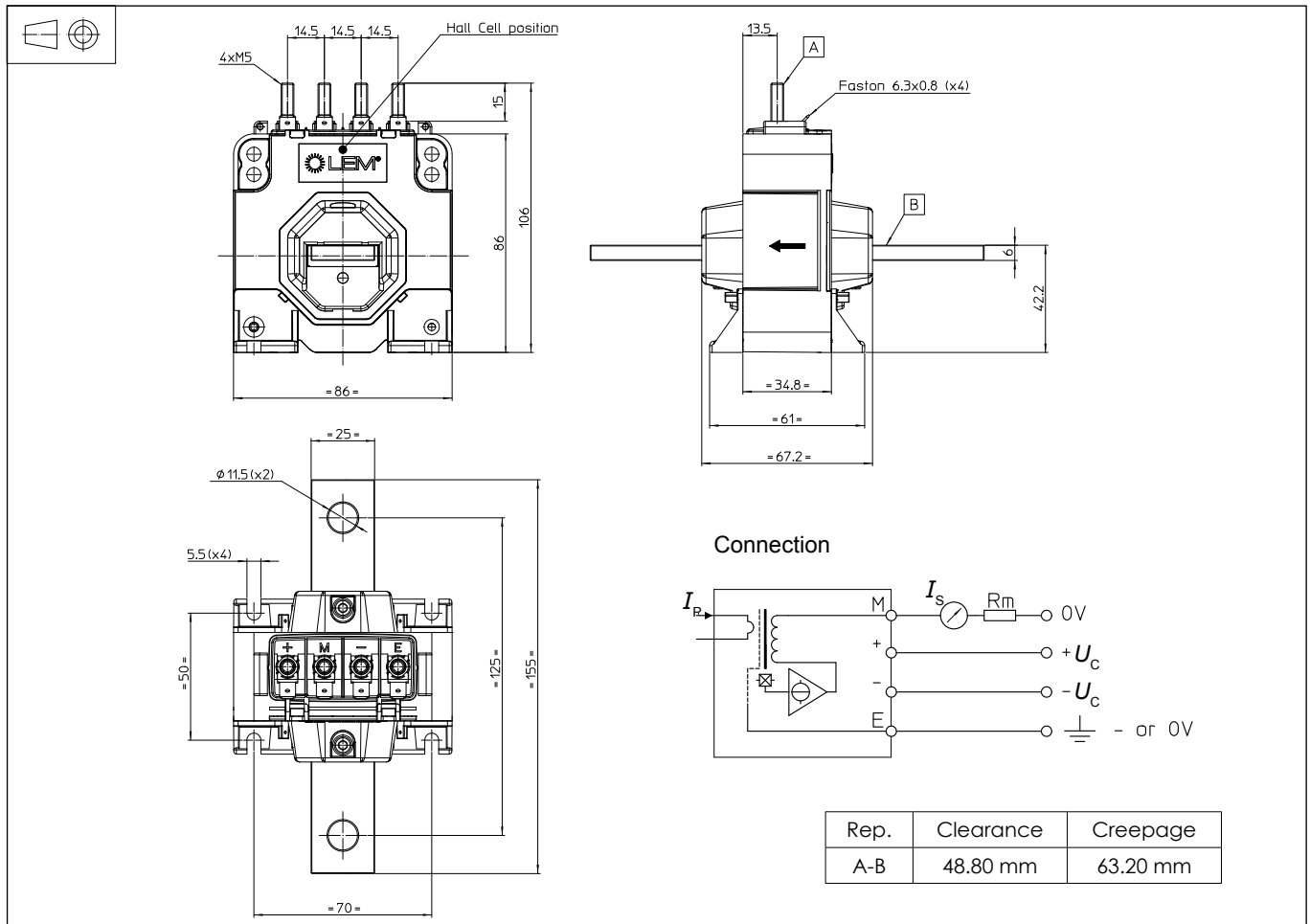
Ignoring this warning can lead to injury and/or cause serious damage.

This transducer is a 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 LTC 500-TF (in mm)



Mechanical characteristics

- General tolerance ± 1 mm
- Transducer fastening
 - By the primary 2 holes $\varnothing 11.5$ mm
 - Or by the feet 4 slots $\varnothing 5.5$ mm
 - 4 M5 steel screws
 - Recommended fastening torque 2.2 N·m
- Primary through-hole $\varnothing 27.5$ mm
- Connection of secondary 4 M5 threaded studs
 - Recommended fastening torque 2.2 N·m
 - 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.