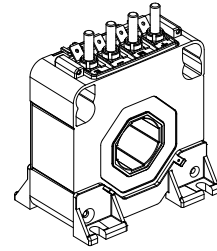


Current Transducer LTC 500-SF

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



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



Electrical data

I_{PN}	Primary nominal current rms	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
		with $\pm 24 \text{ V}$	@ $\pm 900 \text{ A}_{\max}$	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 current rms	125	mA			
K_N	Conversion ratio	1 : 4000				
V_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} , $T_A = 25^\circ\text{C}$	$< \pm 0.6$	%
\mathcal{E}_L	Linearity error	< 0.1	%
		Max	
I_O	Offset current @ $I_p = 0$, $T_A = 25^\circ\text{C}$	± 0.5	mA
I_{OT}	Temperature variation of I_O - $40^\circ\text{C} \dots + 85^\circ\text{C}$	± 0.8	mA
t_r	Response time ¹⁾ to 90 % of I_{PN} step	< 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 @ $T_A = 85^\circ\text{C}$	47	Ω
m	Mass	400	g
	Standard	EN 50155: 2001	

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

- 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 .

Current Transducer LTC 500-SF

Isolation characteristics

V_d	Rms voltage for AC insulation test, 50 Hz, 1 min	12 ¹⁾	kV
		1.5 ²⁾	kV
\hat{V}_w	Impulse withstand voltage 1.2/50 μ s	41	kV
dCp	Creepage distance	50	mm
dCI	Clearance	44	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).

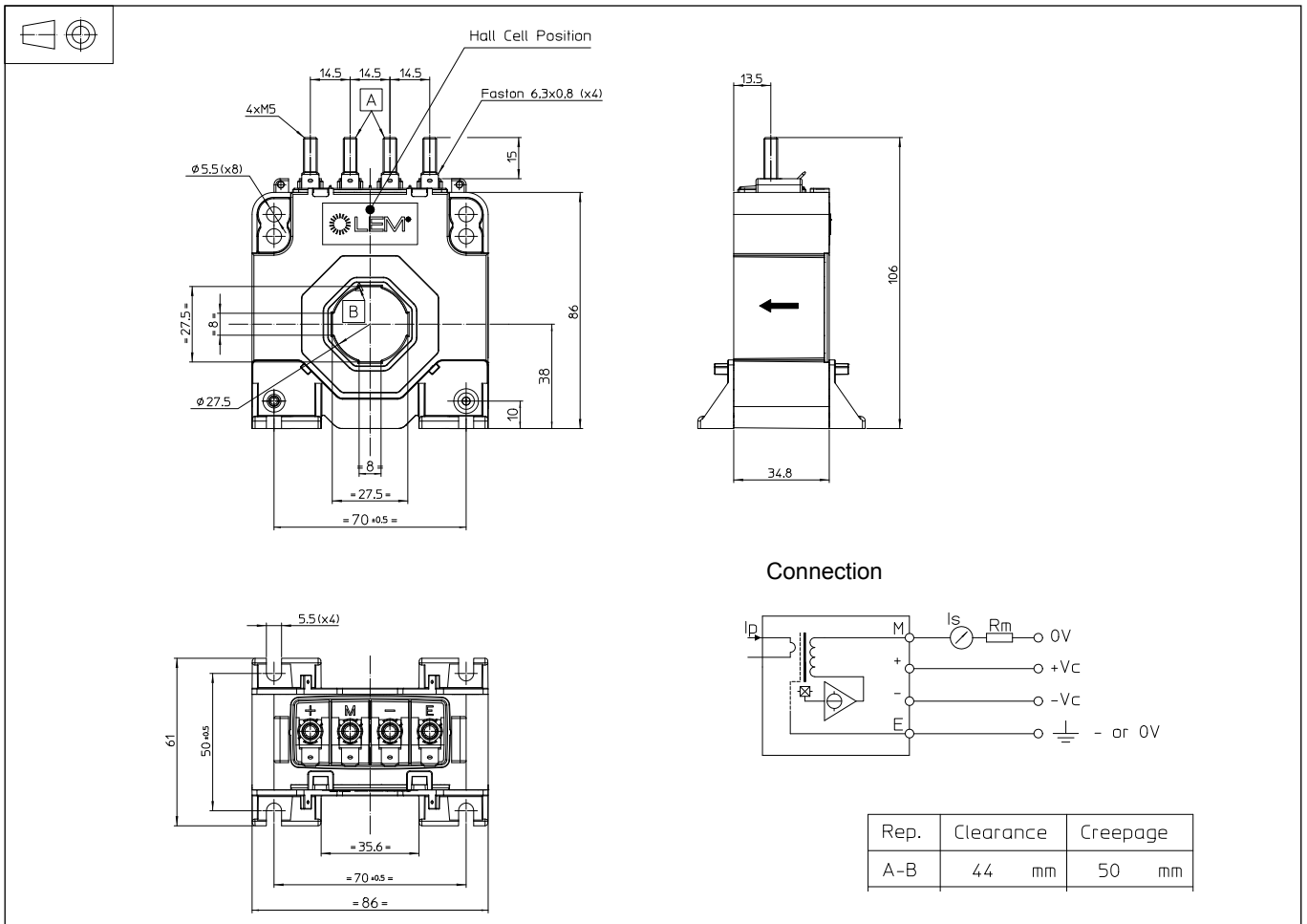
Ignoring this warning can lead to injury and/or cause serious damage.

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-SF (in mm)



Mechanical characteristics

- General tolerance ± 1 mm
- Transducer fastening
 - 4 slots $\phi 5.5$ mm
 - 4 M5 steel screws
 - Recommended fastening torque 2.2 Nm
- Primary through-hole $\phi 27.5$ mm
- Connection of secondary
 - 4 M5 threaded studs
 - Recommended fastening torque 2.2 Nm
 - 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.