

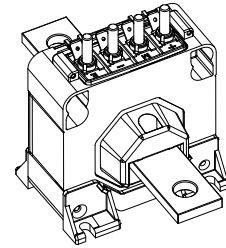
Current Transducer LTC 500-TF

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 .

Current Transducer LTC 500-TF

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).

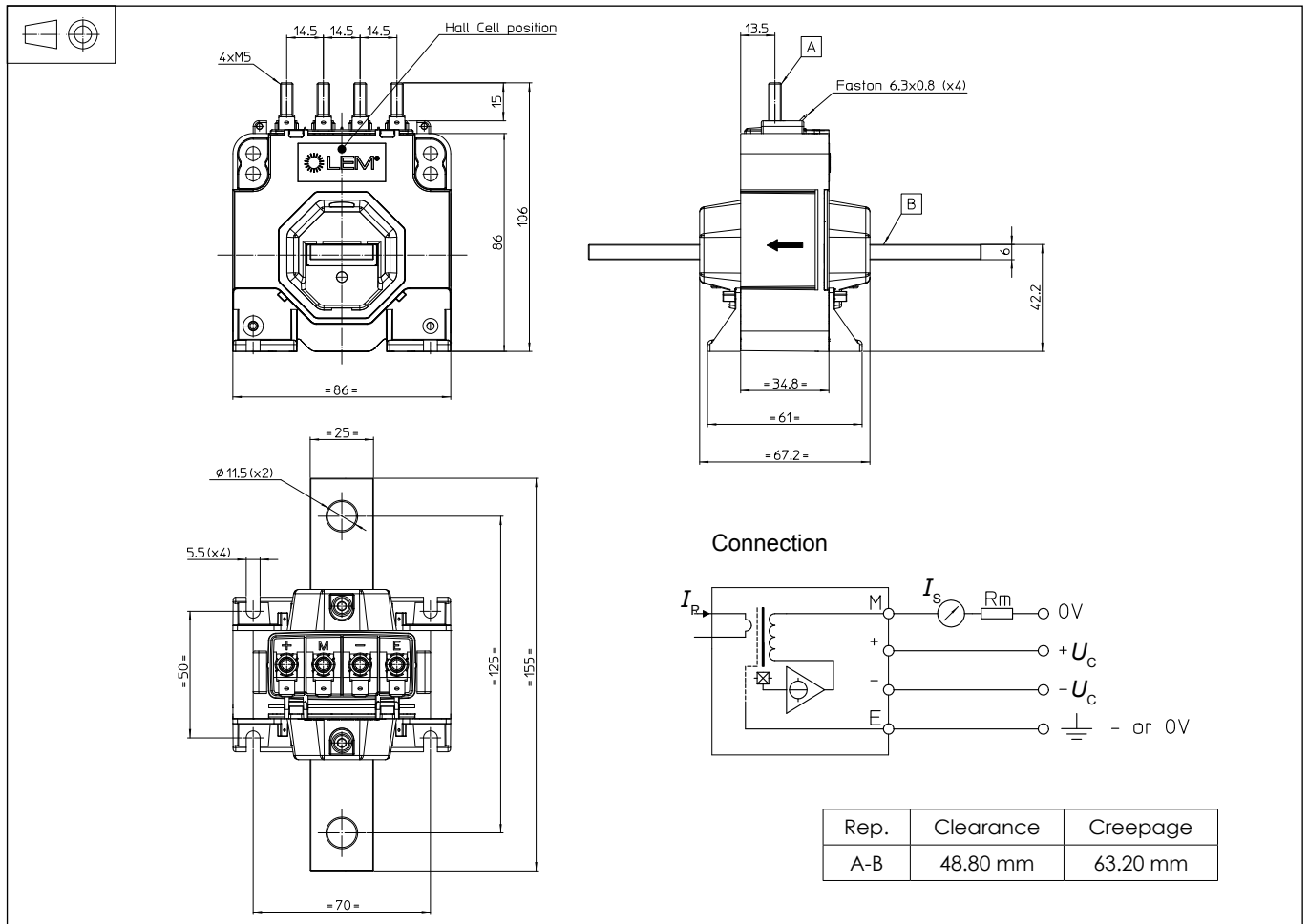
Ignoring this warning can lead to injury and/or cause serious damage.

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.