

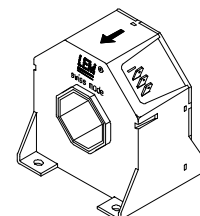
Current Transducer LT 1005-S

$$I_{PN} = 1000 \text{ A}$$

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).



0623



Electrical data

| | | | | | | | | |
|----------|--|---------------------------------|-------------------------------|--------------------------|--------------|--------------|------|----------|
| I_{PN} | Primary nominal r.m.s. current | 1000 | A | | | | | |
| I_P | Primary current, measuring range | 0 .. ± 2000 | A | | | | | |
| R_M | Measuring resistance @ | $T_A = 70^\circ\text{C}$ | | $T_A = 85^\circ\text{C}$ | | | | |
| | | | $R_{M \min}$ | $R_{M \max}$ | $R_{M \min}$ | $R_{M \max}$ | | |
| | | with $\pm 15 \text{ V}$ | @ $\pm 1000 \text{ A}_{\max}$ | 0 | 22.5 | 0 | 18.5 | Ω |
| | | | @ $\pm 1200 \text{ A}_{\max}$ | 0 | 11 | 0 | 8 | Ω |
| | | with $\pm 24 \text{ V}$ | @ $\pm 1000 \text{ A}_{\max}$ | 0 | 65 | 0 | 62 | Ω |
| | | | @ $\pm 2000 \text{ A}_{\max}$ | 0 | 10 | 0 | 7 | Ω |
| I_{SN} | Secondary nominal r.m.s. current | 200 | 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} , $T_A = 25^\circ\text{C}$ | ± 0.4 | % | |
| e_L | Linearity | < 0.1 | % | |
| I_O | Offset current @ $I_P = 0$, $T_A = 25^\circ\text{C}$ | Typ | Max | |
| | | | ± 0.4 | mA |
| 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 @ | $T_A = 70^\circ\text{C}$ | 43 | Ω |
| | | $T_A = 85^\circ\text{C}$ | 46 | Ω |
| m | Mass | | 550 | 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

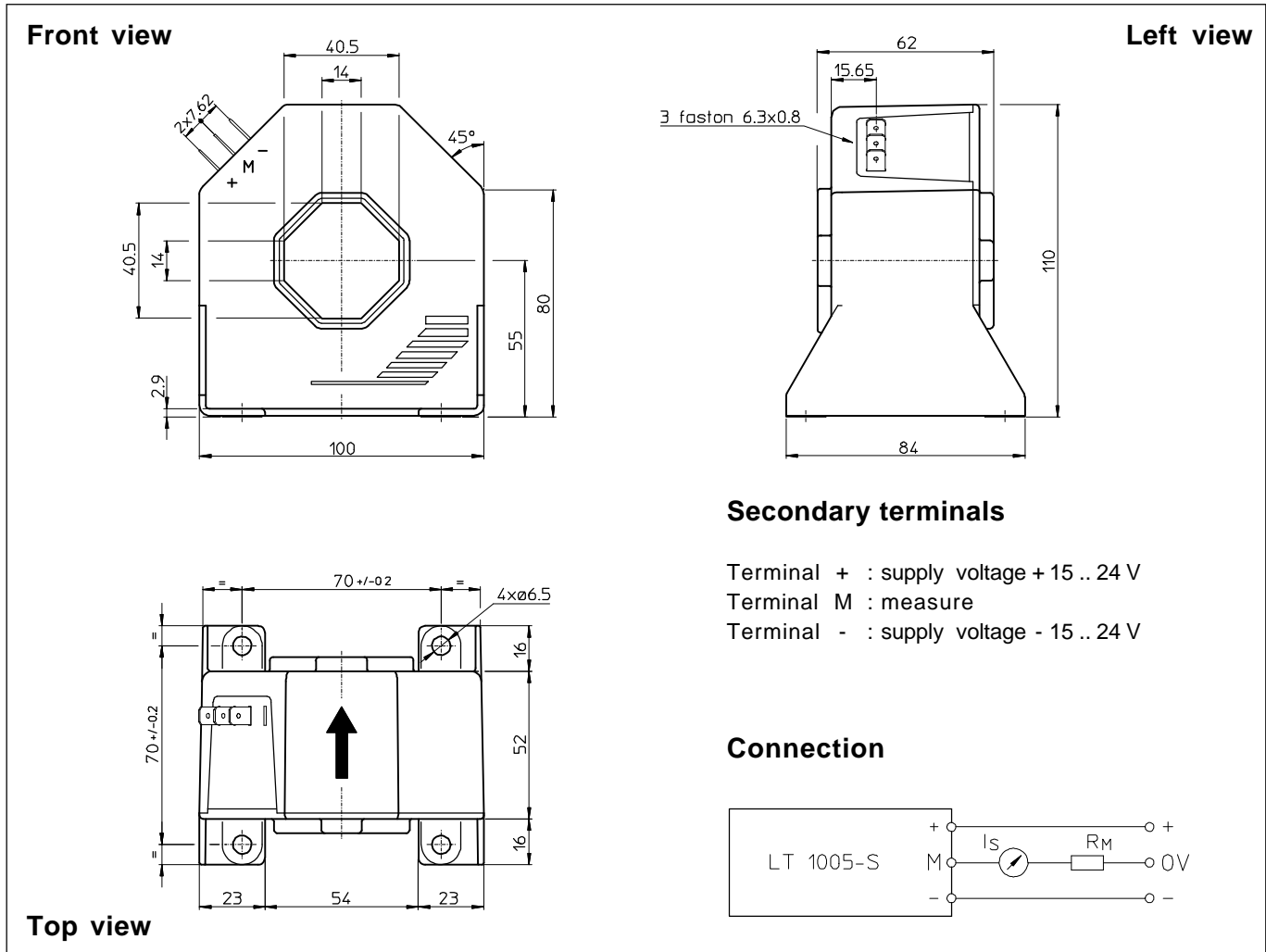
- AC variable speed drives and servo motor drives
- Static converters for DC motor drives
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Switched Mode Power Supplies (SMPS)
- Power supplies for welding applications.

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 .

070807/7

Dimensions LT 1005-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.