# Current Transducer LT 1005-T/SP3

# $I_{PN}$ = 1000 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).

16149

## Electrical data

| | | | | | |
|---|---|---|---|---|---|
| $I_{PN}$ | Primary nominal r.m.s. current | | 1000 | | A |
| $I_P$ | Primary current, measuring range | | 0 .. ± 1800 | | A |
| $R_M$ | Measuring resistance | | $R_{M\,min}$ | $R_{M\,max}$ | |
| | with ± 15 V | @ ± 1000 $A_{max}$ | 0 | 22 | Ω |
| | | @ ± 1800 $A_{max}$ | 0 | 5 | Ω |
| $I_{SN}$ | Secondary nominal r.m.s. current | | 333 | | mA |
| $K_N$ | Conversion ratio | | 1 : 3000 | | |
| $V_C$ | Supply voltage (± 5 %) | | ± 15 | | V |
| $I_C$ | Current consumption | | 25 + $I_S$ | | mA |
| $V_d$ | R.m.s. voltage for AC isolation test, 50 Hz, 1 mn | | 6 [1] | | kV |
| $V_b$ | R.m.s. rated voltage [2], | safe separation | 1750 | | V |
| | | basic isolation | 3500 | | V |

## Accuracy - Dynamic performance data

| | | | | | |
|---|---|---|---|---|---|
| $X_G$ | Overall accuracy @ $I_{PN}$, $T_A$ = 25°C | | ± 0.4 | | % |
| $\varepsilon_L$ | Linearity error | | < 0.1 | | % |
| | | | Typ | Max | |
| $I_O$ | Offset current @ $I_P$ = 0, $T_A$ = 25°C | | | ± 0.7 | mA |
| $I_{OT}$ | Thermal drift of $I_O$ | - 25°C .. + 70°C | ± 0.3 | ± 0.7 | mA |
| $t_r$ | Response time [3] @ 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 | | - 25 .. + 70 | °C |
| $T_S$ | Ambient storage temperature | | - 40 .. + 85 | °C |
| $R_S$ | Secondary coil resistance @ $T_A$ = 70°C | | 17 | Ω |
| m | Mass | | 1.1 | kg |
| | Standards | | EN 50155 : 1995 | |

Notes : [1] Between primary and secondary + shield

[2] Pollution class 2. With a non insulated primary bar which fills the through-hole.

[3] With a di/dt of 100 A/µs.

## Features

- Closed loop (compensated) current transducer using the Hall effect
- Insulated plastic case recognized according to UL 94-V0.

## Special features

- $I_P$ = 0 .. 1800 A
- $K_N$ = 1 : 3000
- $V_C$ = ± 15 (± 5 %) V
- $T_A$ = - 25°C .. + 70°C
- Connection to secondary circuit on M4 threaded studs
- Potted
- Railway equipment.

## Advantages

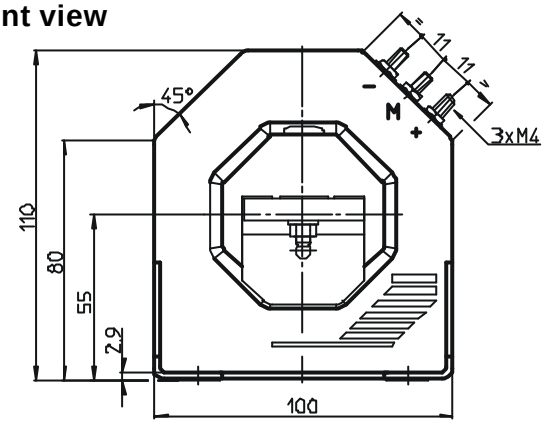
- Excellent accuracy
- Very good linearity
- Low temperature drift
- Optimized response time
- Wide frequency bandwidth
- No insertion losses
- High immunity to external interference
- Current overload capability.

## Applications

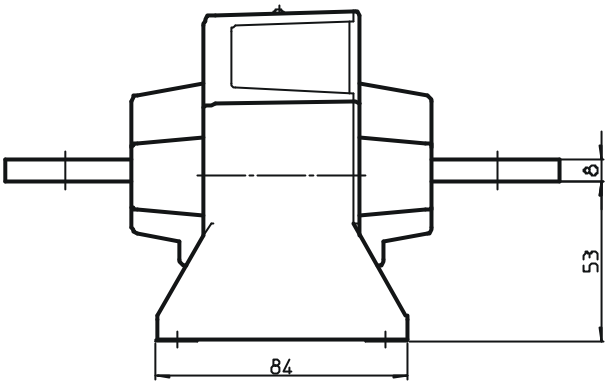
- AC variable speed drives and servo motor drives
- Static converters for DC motor drives
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Switched Mode Power Supplies (SMPS)
- Power supplies for welding applications.

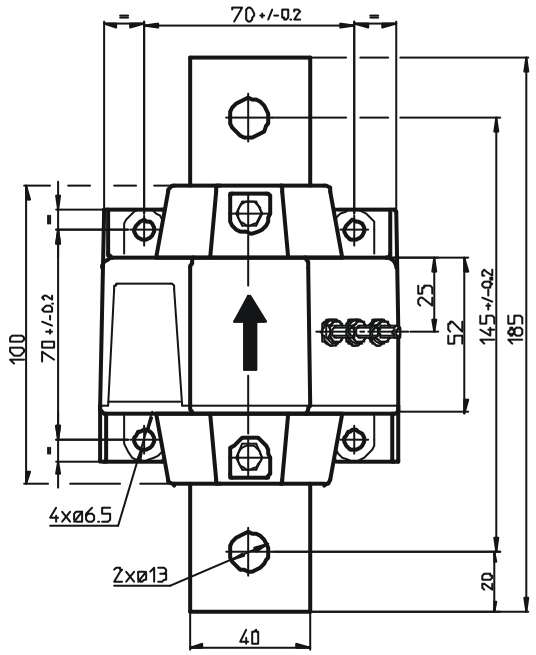
## Dimensions LT 1005-T/SP3 (in mm. 1 mm = 0.0394 inch)

**Front view**




**Left view**



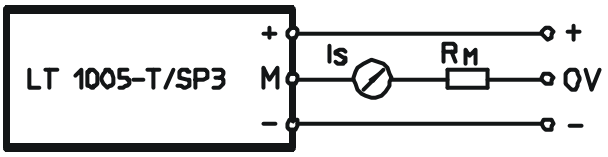




**Top view**

### Secondary terminals

Terminal + : supply voltage + 15 V
Terminal M : measure
Terminal - : supply voltage - 15 V

### Connection




### Mechanical characteristics

| | |
|---|---|
| • General tolerance | ± 0.5 mm |
| • Transducer fastening | 4 holes ∅ 6.5 mm<br>4 M6 steel screws |
| Recommended fastening torque | 5 Nm or 3.7 Lb. - Ft. |
| Or | |
| • Connection of the primary | 2 holes ∅ 13 mm |
| • Connection of secondary | M4 threaded studs |
| Recommended fastening torque | 1.2 Nm or .88 Lb-Ft |

### 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.

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