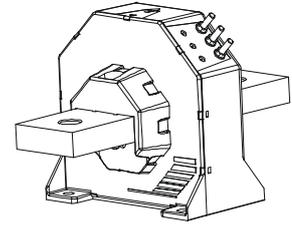


Current Transducer LT 2005-T/SP6

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).

$I_{PN} = 2000 \text{ A}$



Electrical data

| | | | |
|----------|---|--------------------------------------|--------------------|
| I_{PN} | Primary nominal current rms | 2000 | A |
| I_{PM} | Primary current, measuring range @ + 24 V | 0 .. + 3000 | A |
| R_M | Measuring resistance | $R_{M\text{mini}}$ | $R_{M\text{maxi}}$ |
| | with $\pm 12 \text{ V}$ | @ $\pm 2000 \text{ A}_{\text{maxi}}$ | 0 3 Ω |
| | with + 24 V | @ + 2000 A _{maxi} | 5 26 Ω |
| | | @ + 3000 A _{maxi} | 5 12 Ω |
| I_{SN} | Secondary nominal current rms | 500 | mA |
| K_N | Conversion ratio | 1 : 4000 | |
| V_C | Supply voltage ($\pm 5 \%$) | ± 12 or + 24 | V |
| I_C | Current consumption (± 1) | 20(@ + 24 V) + I_S | mA |

Accuracy - Dynamic performance data

| | | | |
|----------|--|------------|------------------|
| X | Accuracy @ $I_{PN}, T_A = 25^\circ\text{C}$ | ± 0.4 | % |
| e_L | Linearity error | < 0.1 | % |
| I_O | Offset current @ $I_p = 0, T_A = 25^\circ\text{C}$ | Typ | Maxi |
| | | | ± 1.0 mA |
| I_{OM} | Magnetic offset current @ $I_p = 0$ and specified R_M , after an overload of $3 \times I_{PN}$ | | ± 0.4 mA |
| I_{OT} | Temperature variation of I_O - 25°C .. +70°C | ± 0.25 | ± 0.5 mA |
| t_r | Response time ¹⁾ to 90 % of I_{PN} step | < 1 | μs |
| di/dt | di/dt accurately followed | > 50 | A/ μs |
| BW | Frequency bandwidth (- 1 dB) | DC .. 100 | kHz |

General data

| | | | |
|-------|--|----------------------------------|------------------|
| T_A | Ambient operating temperature | - 25 .. + 70 | $^\circ\text{C}$ |
| T_S | Ambient storage temperature | - 40 .. + 85 | $^\circ\text{C}$ |
| R_S | Secondary coil resistance @ $T_A = 85^\circ\text{C}$ | 17 | Ω |
| m | Mass | 4.4 | kg |
| | Standards | EN 50178: 1997 EN 50155: 1995 | |

Note: ¹⁾ With a di/dt of 100 A/ μs .

Features

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

Special features

- $K_N = 1 : 4000$
- $V_C = \pm 12 \text{ V}$ or + 24 ($\pm 5 \%$) V Unidirectional measurements (The customer must add two diodes in series with the measuring resistance).
- $T_A = - 25^\circ\text{C} \dots + 70^\circ\text{C}$
- $V_d = 12 \text{ kV}$

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.

Application domain

- Industrial
- Traction.

Current Transducer LT 2005-T/SP6

Isolation characteristics

| | | | |
|-------|---|------|----|
| V_d | Rms voltage for AC isolation test, 50 Hz, 1 min | 12 | kV |
| | | Mini | |
| dCp | Creepage distance | 89 | mm |
| dCl | Clearance distance | 73 | mm |
| CTI | Comparative Tracking Index (Group IIIa) | 225 | |

Application examples

According to EN 50178 and IEC 61010-1 standards and following conditions:

- Over voltage category OV 3
- Pollution degree PD2
- Non-uniform field

| | EN 50178 | IEC 61010-1 |
|----------------------|-------------------------|-----------------|
| dCp, dCl | Rated isolation voltage | Nominal voltage |
| Single isolation | 6000 V | 8000 V |
| Reinforced isolation | 3000 V | 4000 V |

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

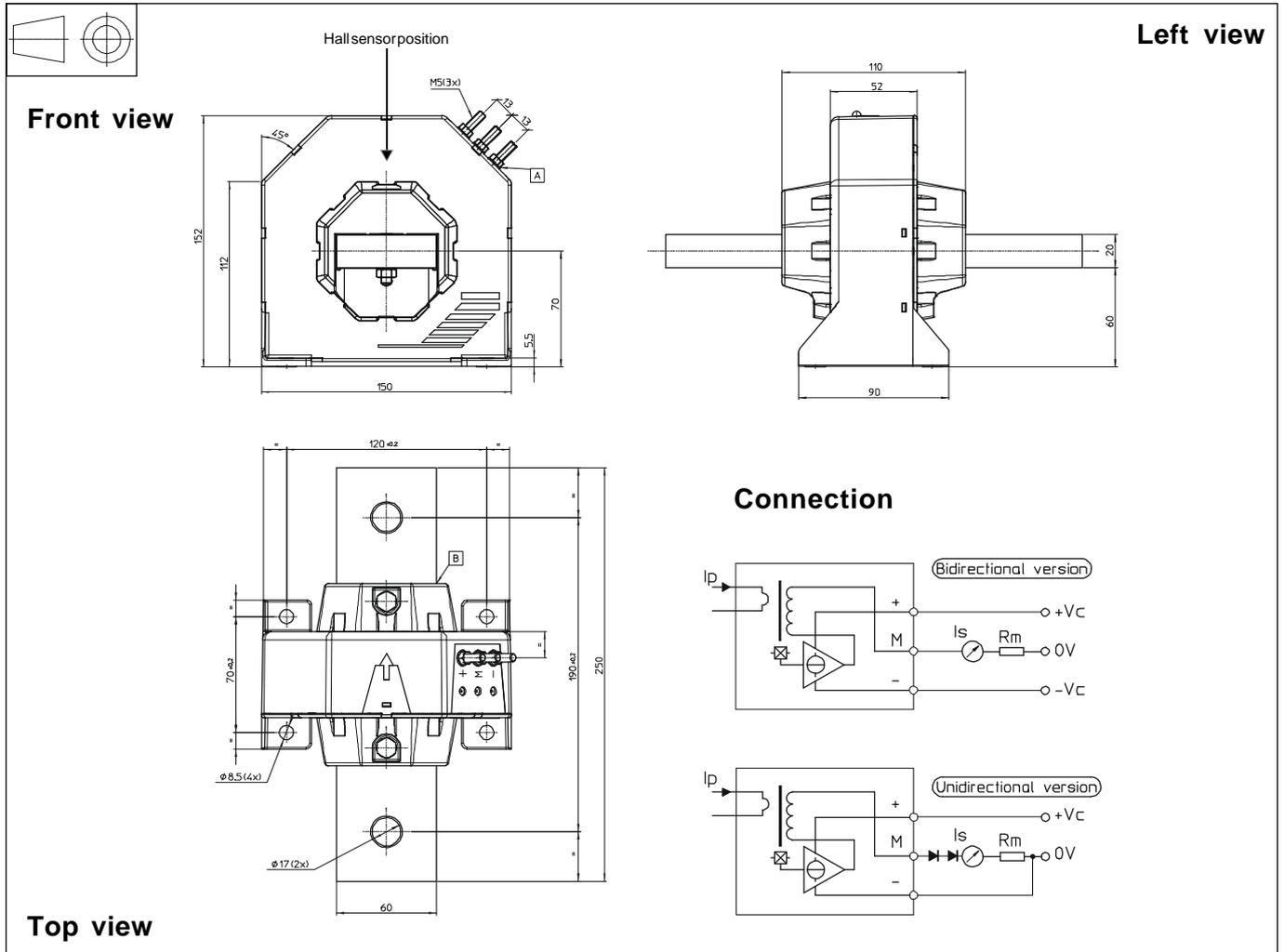
When operating the transducer, certain parts of the module can carry hazardous voltage (eg. primary busbar, power supply).

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

This transducer is a built-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 LT 2005-T/SP6 (in mm. 1 mm = 0.0394 inch)

Mechanical characteristics

- General tolerance ± 0.5 mm
- Transducer fastening
 - 4 holes $\varnothing 8.5$ mm
 - 4 M8 steel screws
 - Recommended fastening torque 10 Nm or 7.38 Lb - Ft
 - or by the primary bar
- Connection of primary
 - 2 holes $\varnothing 17$ mm
 - 2 M16 steel screws
 - Recommended fastening torque 32 Nm or 23.70 Lb - Ft
- Connection of secondary
 - M5 threaded studs
 - Recommended fastening torque 2.2 Nm or 1.62 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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