

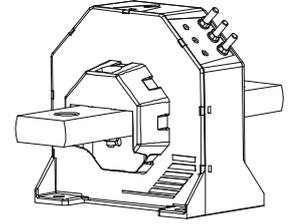
# Current Transducer LT 2005-T/SP18

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).

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



17029



## Electrical data

$I_{PN}$	Primary nominal current rms	2000	A		
$I_{PM}$	Primary current, measuring range @ $\pm 24 \text{ V}$	0 .. $\pm 3000$	A		
$R_M$	Measuring resistance	$R_{M \text{ mini}}$	$R_{M \text{ maxi}}$		
				with $\pm 15 \text{ V}$	@ $\pm 2000 \text{ A}_{\text{maxi}}$
		@ $\pm 2200 \text{ A}_{\text{maxi}}$	0	4	$\Omega$
	with $\pm 24 \text{ V}$	@ $\pm 2000 \text{ A}_{\text{maxi}}$	5	27.5	$\Omega$
	@ $\pm 3000 \text{ A}_{\text{maxi}}$	5	10	$\Omega$	
$I_{SN}$	Secondary nominal current rms	400	mA		
$K_N$	Conversion ratio	1 : 5000			
$V_C$	Supply voltage ( $\pm 5 \%$ )	$\pm 15 \dots 24$	V		
$I_C$	Current consumption ( $\pm 1$ )	28 (@ $\pm 24 \text{ V}$ ) + $I_S$	mA		

## Features

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

## Special features

- $V_d = 15 \text{ kV}$
- Special primary bar.

## 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.

## Accuracy - Dynamic performance data

$X$	Accuracy @ $I_{PN}, T_A = 25^\circ\text{C}$	$\pm 0.3$	%
$e_L$	Linearity error	$< 0.1$	%
$I_O$	Offset current @ $I_p = 0, T_A = 25^\circ\text{C}$	Typ	$\pm 0.8$ mA
		Maxi	$\pm 0.4$ mA
$I_{OM}$	Magnetic offset current @ $I_p = 0$ and specified $R_M$ , after an overload of $3 \times I_{PN}$	$\pm 0.2$	$\pm 0.3$ mA
$I_{OT}$	Temperature variation of $I_O$ $0^\circ\text{C} \dots +70^\circ\text{C}$	$\pm 0.2$	$\pm 0.3$ mA
$t_r$	Response time <sup>1)</sup> to 90 % of $I_{PN}$ step	$< 1$	$\mu\text{s}$
$di/dt$	di/dt accurately followed	$> 50$	A/ $\mu\text{s}$
$BW$	Frequency bandwidth (-1 dB)	DC .. 100	kHz

## 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.

## General data

$T_A$	Ambient operating temperature	0 .. +70	$^\circ\text{C}$
$T_S$	Ambient storage temperature	-25 .. +85	$^\circ\text{C}$
$R_S$	Secondary coil resistance @ $T_A = 70^\circ\text{C}$	25	$\Omega$
$m$	Mass	4.47	kg
	Standards	EN 50178: 1997	

## Application domain

- Industrial.

Note: <sup>1)</sup> With a di/dt of 100 A/ $\mu\text{s}$ .

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### Isolation characteristics

$V_d$	Rms voltage for AC isolation test, 50 Hz, 1 min	15	kV
$\hat{V}_w$	Impulse withstand voltage 1.2/50 $\mu$ s	48	kV
		Mini	
$V_e$	Partial discharge extinction voltage rms @ 10pC	$\geq 6.5$	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, $\hat{V}_w$	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

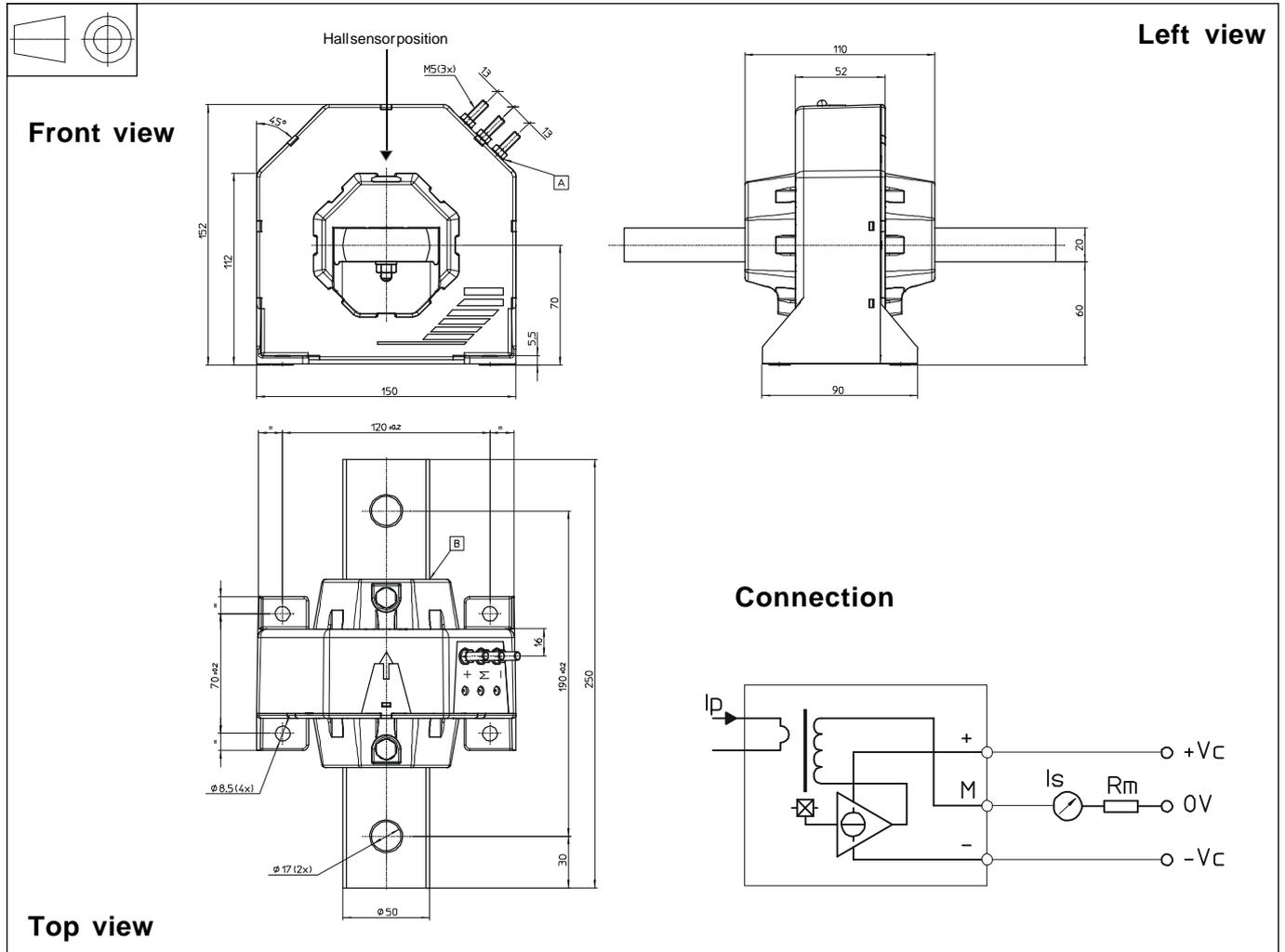
When operating the transducer, certain parts of the module can carry hazardous voltage (eg. primary busbar, power supply).

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/SP18** (in mm. 1 mm = 0.0394 inch)

**Mechanical characteristics**

- General tolerance  $\pm 0.5$  mm
- Transducer fastening
  - 4 holes  $\phi 8.5$  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  $\phi 17$  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.