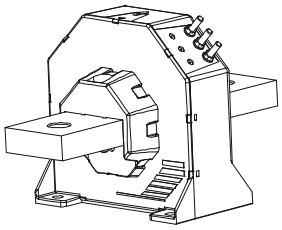
Current Transducer LT 2005-T/SP6

I_{PN} = 2000 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).



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		$R_{M\,mini}$	$R_{M\,maxi}$	
	with ± 12 V	@ ± 2000 A $_{maxi}$	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 (± 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°C		± 0.4		%
ε_L	Linearity error		< 0.1		%
			Typ	Maxi	
I_O	Offset current @ I_P = 0, T_A = 25°C			± 1.0	mA
I_{OM}	Magnetic offset current @ I_P = 0 and specified R_M, after an overload of 3 x 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	°C
T_S	Ambient storage temperature	- 40 .. + 85	°C
R_S	Secondary coil resistance @ T_A = 85°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 = ± 12 V or + 24 (± 5 %) V
  Unidirectional measurements (The customer must add two diodes in series with the measuring resistance).
- T_A = - 25°C .. + 70°C
- V_d = 12 k V

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

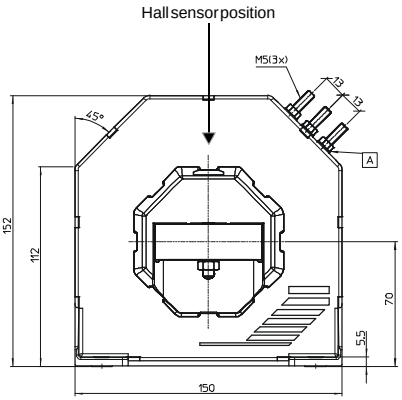
This transducer must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the manufacturer's operating instructions.

Caution, risk of electrical shock

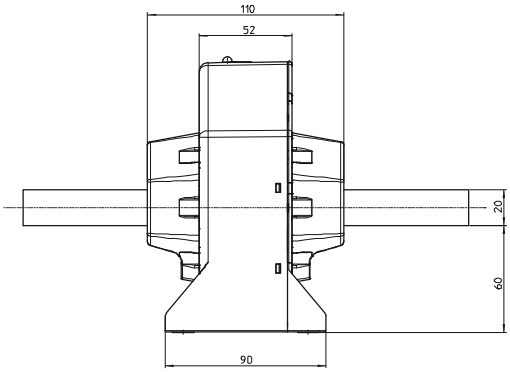
When operating the transducer, certain parts of the module can carry hazardous voltage (eg. primary busbar, power supply).
Ignoring this warning can lead to injury and/or cause serious damage.
This transducer is a built-in device, whose conducting parts must be inaccessible after installation.
A protective housing or additional shield could be used.
Main supply must be able to be disconnected.

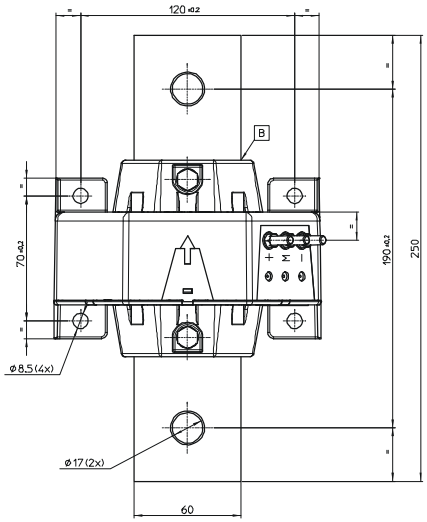
Dimensions LT 2005-T/SP6 (in mm. 1 mm = 0.0394 inch)

Front view



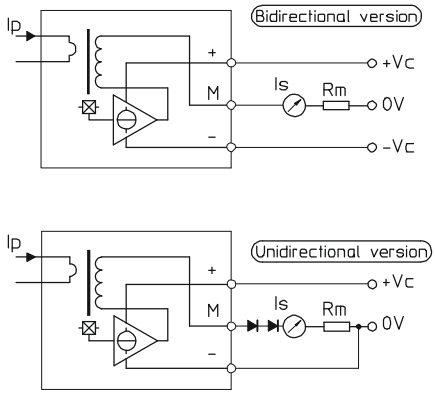
Left view





Top view

Connection



Mechanical characteristics

• General tolerance	± 0.5 mm
• Transducer fastening	4 holes ∅ 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 ∅ 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.