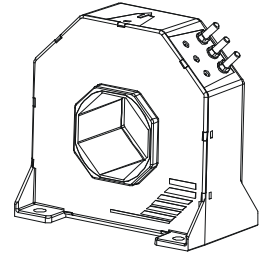


## Current Transducer LT 2005-S/SP6

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 @ $\pm 12 \text{ V}$ @ + 24 V	0 .. $\pm 2000$ 0 .. + 3000	A 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	$\Omega$
	with + 24 V   @ + 2000 A <sub>maxi</sub> @ + 3000 A <sub>maxi</sub>	5   26 5   12	$\Omega$ $\Omega$
$I_{SN}$	Secondary nominal current rms	500	mA
$K_N$	Conversion ratio	1 : 4000	
$V_C$	Supply voltage ( $\pm 5 \%$ )	$\pm 12$ or + 24	V
$I_C$	Current consumption ( $\pm 1$ )	20 (@ +24V) + $I_S$	mA

### Accuracy - Dynamic performance data

$X$	Accuracy @ $I_{PN}$ , $T_A = 25^\circ\text{C}$	$\pm 0.4$	%
$e_L$	Linearity error	< 0.1	%
$I_O$	Offset current @ $I_P = 0$ , $T_A = 25^\circ\text{C}$	Typ	Maxi
$I_{OM}$	Magnetic offset current @ $I_P = 0$ and specified $R_M$ , after an overload of $3 \times I_{PN}$		$\pm 1.00$ mA
$I_{OT}$	Temperature variation of $I_O$ - 25°C .. + 70°C	$\pm 0.25$	$\pm 0.50$ 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

### 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 @ $T_A = 70^\circ\text{C}$	17	$\Omega$
$m$	Mass	1.7	kg
	Standards	EN 50178: 1997 EN 50155: 1995	

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

### Features

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

### Special features

- $I_{PM} = 0 \dots + 3000 \text{ A}$
- $K_N = 1 : 4000$
- $V_C = \pm 12 \text{ V}$  or + 24 ( $\pm 5 \%$ ) V  
Unidirectional measurements (The customer must add two diodes in series with the measuring resistance)
- $V_d = 12 \text{ kV}$
- $T_A = - 25^\circ\text{C} \dots + 70^\circ\text{C}$

### 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-S/SP6

### Isolation characteristics

$V_d$	Rms voltage for AC isolation test, 50 Hz, 1 min	12	kV
$\hat{V}_w$	Impulse withstand voltage 1.2/50 $\mu$ s	44.7	kV
		Mini	
dCp	Creepage distance	76	mm
dCl	Clearance distance	63.5	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	6300 V	6300 V
Reinforced isolation	3200 V	3200 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

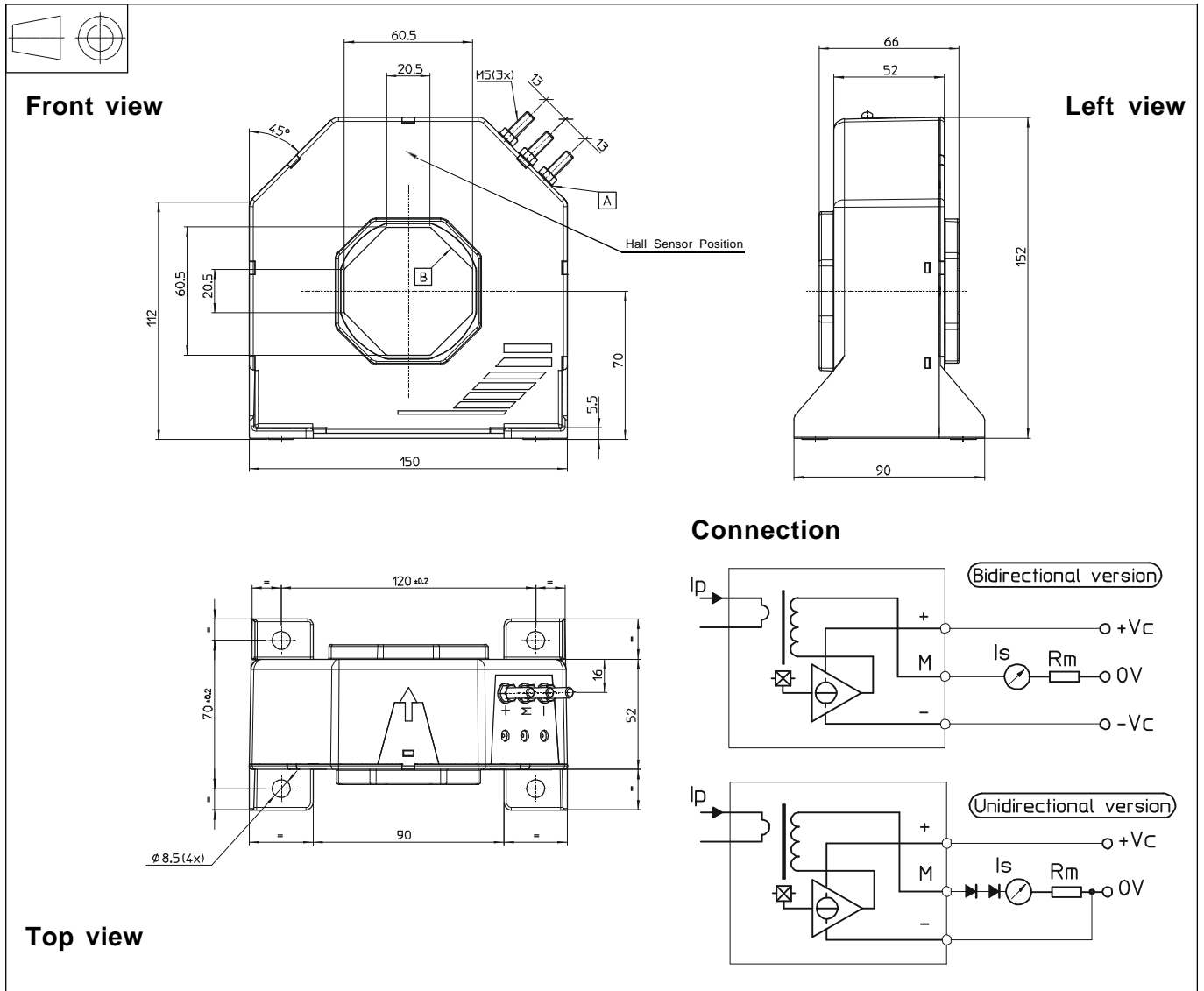
When operating the transducer, certain parts of the module can carry hazardous voltage (eg. primary busbar, power supply).

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-S/SP6** (in mm. 1 mm = 0.0394 inch)

**Mechanical characteristics**

- General tolerance  $\pm 0.5$  mm
- Transducer fastening 4 holes  $\varnothing 8.5$  mm  
4 M8 steel screws  
Recommended fastening torque 10 Nm or 7.38 Lb - Ft
- Octagonal primary through-hole for bar 60.5 x 20.5 mm  
or  $\varnothing$  maxi 56 mm
- 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.
- Dynamic performances ( $di/dt$  and response time) are best with a single bar completely filling the primary hole.