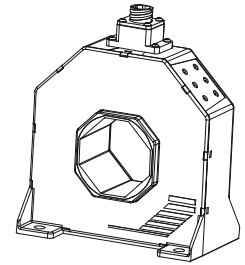


# Current Transducer LT 2005-S/SP15

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 @ $\pm 24 \text{ V}$	$0 \dots \pm 3500$	A
$R_M$	Measuring resistance with $\pm 24 \text{ V}$	$R_{M \min}$	$R_{M \max}$
		@ $\pm 2000 \text{ A}_{\max}$	5    26 $\Omega$
		@ $\pm 3500 \text{ A}_{\max}$	5    5 $\Omega$
$I_{SN}$	Secondary nominal current rms	400	mA
$K_N$	Conversion ratio	1 : 5000	
$V_C$	Supply voltage ( $\pm 10 \%$ )	$\pm 24$	V
$I_C$	Current consumption ( $\pm 1$ )	$28(@\pm 24 \text{ V}) + I_S$	mA

## 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	Max
			$\pm 0.8$ mA
$I_{OM}$	Magnetic offset current @ $I_p = 0$ and specified $R_M$ , after an overload of $3 \times I_{PN}$		$\pm 0.4$ mA
$I_{OT}$	Temperature variation of $I_O$ -25°C .. +70°C	$\pm 0.2$	$\pm 0.4$ 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 @ $T_A = 70^\circ\text{C}$	25	$\Omega$
$m$	Mass	2	kg
	Standards	EN 50155: 1995	

## Features

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

## Special features

- $I_{PM} = 0 \dots \pm 3500 \text{ A}$
- $K_N = 1 : 5000$
- $V_C = \pm 24 (\pm 10 \%) \text{ V}$
- $V_d = 10 \text{ kV}^{2)}$
- $T_A = -25^\circ\text{C} \dots +70^\circ\text{C}$
- Shield between primary and secondary
- Connection to secondary circuit on AMP CPC 11/4
- Hall cell at  $90^\circ$
- VRT Burn-in.

## 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

- Single or three phases inverter
- Propulsion and braking chopper
- Propulsion converter
- Auxiliary converter
- Battery charger.

## Application domain

- Traction.

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	10 <sup>2)</sup>	kV
		1 <sup>3)</sup>	kV
		Min	
<b>dCp</b>	Creepage distance	41	mm
<b>dCl</b>	Clearance distance	41	mm
<b>CTI</b>	Comparative Tracking Index (Group IIIa)	225	

**Notes:** <sup>2)</sup> Between primary and secondary + shield

<sup>3)</sup> Between shield and secondary.

## 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

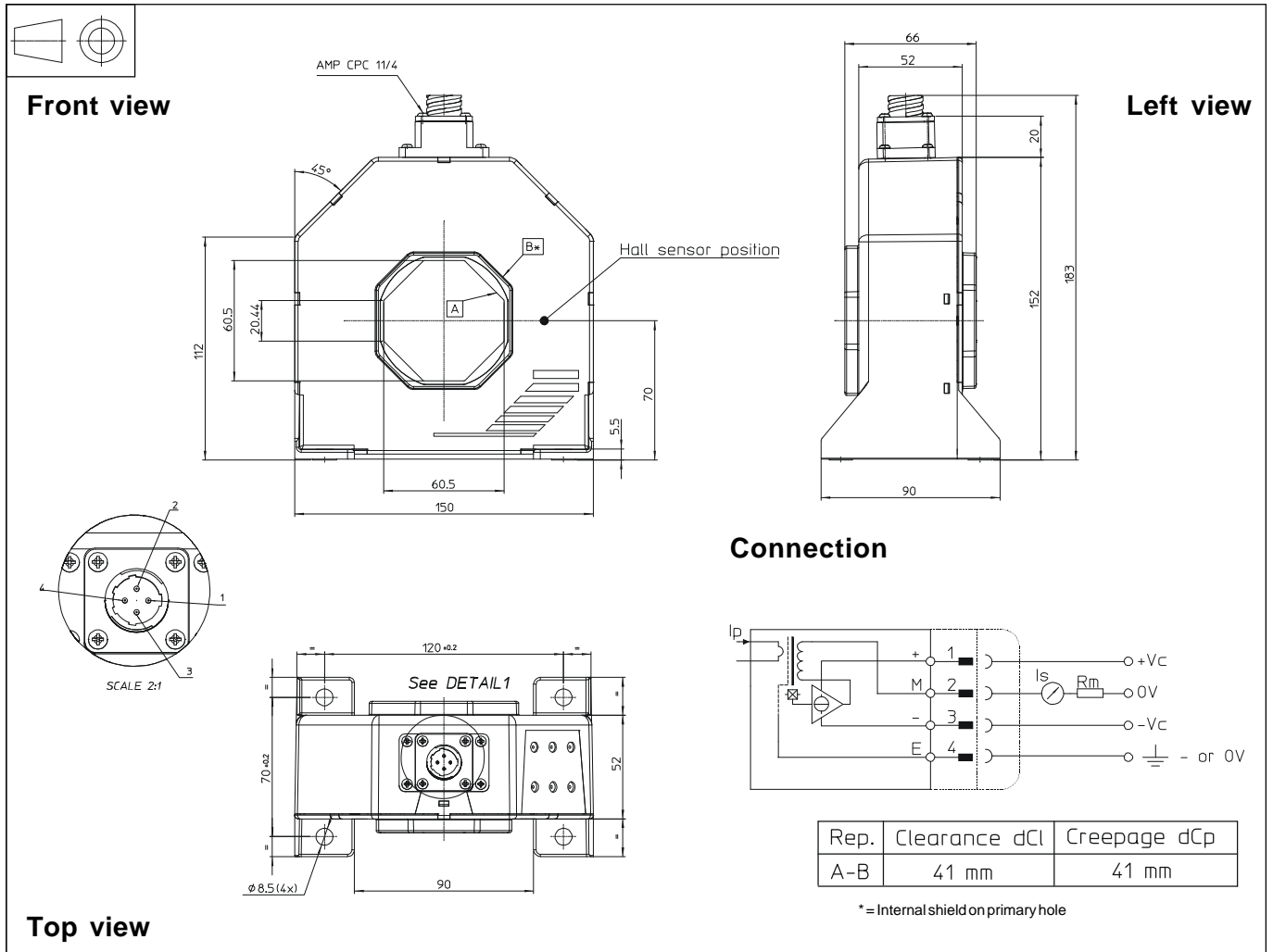
When operating the transducer, certain parts of the module can carry hazardous voltage (eg. primary busbar, power supply).

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/SP15** (in mm. 1 mm = 0.0394 inch)

**Mechanical characteristics**

- General tolerance  $\pm 0.5$  mm
- Fastening fastening 4 holes  $\varnothing 8.5$  mm  
4 M8 steel screws
- Recommended fastening torque 10 Nm or 7.38 Lb. -Ft.
- Primary through-hole For bar 60.5 x 20.5 mm  
Or  $\varnothing 56$  mm max
- Connection of secondary AMP CPC 11/4

**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.