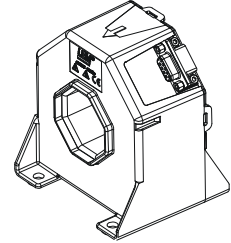


# Current Transducer LT 1005-S/SP38

**$I_{PN} = 1000 \text{ A}$**

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	1000	A			
$I_{PM}$	Primary current, measuring range	0 .. ± 1800	A			
$R_M$	Measuring resistance	$R_{M \text{ mini}}$	$R_{M \text{ maxi}}$			
		with ± 15 V	@ ± 1000 A <sub>maxi</sub>	0	22	Ω
			@ ± 1800 A <sub>maxi</sub>	0	5	Ω
$I_{SN}$	Secondary nominal current rms	333	mA			
$K_N$	Conversion ratio	1 : 3000				
$V_C$	Supply voltage (± 5 %)	± 15	V			
$I_C$	Current consumption	25 + $I_S$	mA			

## Accuracy - Dynamic performance data

$X_G$	Overall accuracy @ $I_{PN}$ , $T_A = 25^\circ\text{C}$	± 0.4	%
$e_L$	Linearity error	< 0.1	%
$I_O$	Offset current @ $I_p = 0$ , $T_A = 25^\circ\text{C}$	Maxi ± 0.7	mA
$I_{OT}$	Temperature variation of $I_O$ - 25°C .. + 70°C	± 0.7	mA
$t_r$	Response time <sup>1)</sup> to 90 % of $I_{PN}$ step	< 1	μs
$di/dt$	di/dt accurately followed	> 50	A/μs
<b>BW</b>	Frequency bandwidth (- 1 dB)	DC .. 150	kHz

## General data

$T_A$	Ambient operating temperature	- 25 .. + 70	°C
$T_S$	Ambient storage temperature	- 40 .. + 85	°C
$R_S$	Secondary coil resistance @ $T_A = 70^\circ\text{C}$	17	Ω
$m$	Mass	600	g
	Standards	EN 50178: 1997	

## Features

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

## Special features

- $I_{PM} = 0 .. \pm 1800 \text{ A}$
- $T_A = - 25^\circ\text{C} .. + 70^\circ\text{C}$
- $V_C = \pm 15 \text{ V} (\pm 5 \%)$
- Connection to secondary circuit on Sub-D 9 poles.

## 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

- Industrial.

Note : <sup>1)</sup> With a di/dt of 100 A/μs.

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### Isolation characteristics

$V_d$	Rms voltage for AC isolation test, 50 Hz, 1 min	6	kV
		Mini	
dCp	Creepage distance	43.1	mm
dCl	Clearance distance	39.6	mm
CTI	Comparative Tracking Index (Group I)	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	4000 V	4000 V
Reinforced isolation	2000 V	2000 V

### Safety



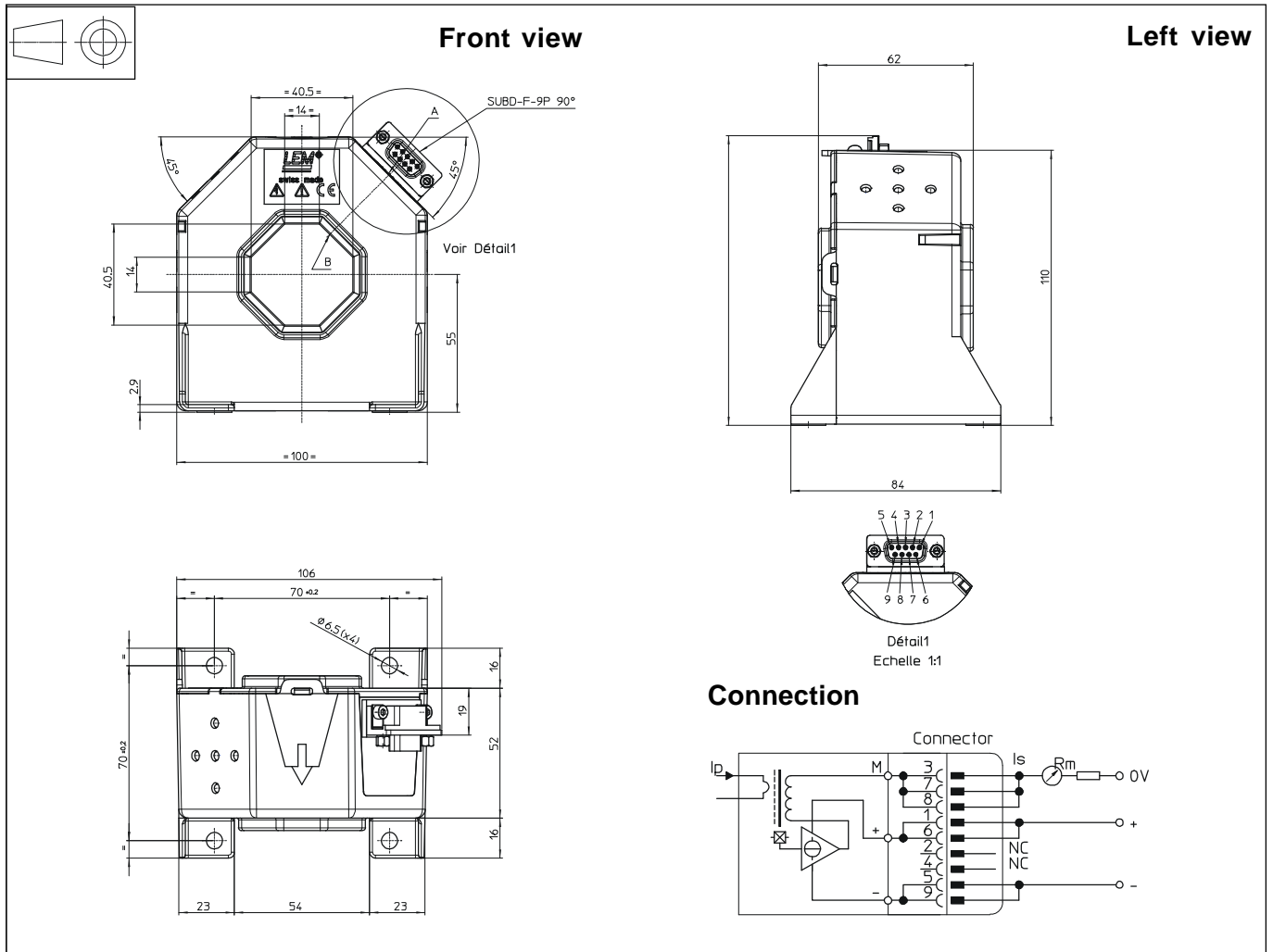
This transducer must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the manufacturer's operating instructions.



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 1005-S/SP38 (in mm. 1 mm = 0.0394 inch)



### Mechanical characteristics

- General tolerance  $\pm 0.5$  mm
- Fastening transducer 4 holes  $\varnothing 6.5$  mm  
4 M6 steel screw  
Recommended fastening torque 5 Nm or 3.69 Lb - Ft.
- Primary through-hole  $\varnothing 36$  mm  
or
- Connection of secondary Sub-D 9 poles male

### Remarks

- $I_s$  is positive when  $I_p$  flows in the direction of the arrow.
- Temperature of the primary conductor should not exceed  $100^\circ\text{C}$ .
- Dynamic performances ( $di/dt$  and response time) are best with a single bar completely filling the primary hole.