

# Current Transducer LT 1005-S/SP18

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

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).



16256

## Electrical data

$I_{PN}$	Primary nominal r.m.s. current	1000	A			
$I_P$	Primary current, measuring range	0 .. $\pm 2000$	A			
$R_M$	Measuring resistance @	$T_A = 70^\circ\text{C}$	$T_A = 85^\circ\text{C}$			
				$R_{M \min}$ $R_{M \max}$	$R_{M \min}$ $R_{M \max}$	
		with $\pm 24 \text{ V}$	@ $\pm 1000 \text{ A}_{\max}$	5 70	7 68	$\Omega$
			@ $\pm 2000 \text{ A}_{\max}$	5 15	7 13	$\Omega$
$I_{SN}$	Secondary nominal r.m.s. current	200	mA			
$K_N$	Conversion ratio	1 : 5000				
$V_C$	Supply voltage ( $\pm 5 \%$ )	$\pm 24$	V			
$I_C$	Current consumption	$30 + I_S$	mA			
$V_d$	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn	12 <sup>1)</sup>	kV			
		1.5 <sup>2)</sup>	kV			
$V_e$	R.m.s. voltage for partial discharge extinction @ 10 pC	$\geq 4.1$ <sup>3)</sup>	kV			

## Features

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

## Special features

- $V_C = \pm 24 (\pm 5 \%) \text{ V}$
- $V_d = 12 \text{ kV}^{1)}$
- $T_A = -40^\circ\text{C} \dots +85^\circ\text{C}$
- Connection to secondary circuit on LEMO EEJ.1B.304.CYC
- Between primary and secondary Shield linked to external shield
- Customer marking
- Railway equipment.

## Accuracy - Dynamic performance data

$X_G$	Overall accuracy @ $I_{PN}, T_A = 25^\circ\text{C}$	$\pm 0.5$	%
$e_L$	Linearity error	$< 0.1$	%
$I_O$	Offset current @ $I_P = 0, T_A = 25^\circ\text{C}$	Typ	Max
			$\pm 0.4$ mA
$I_{OT}$	Thermal drift of $I_O$	-25°C .. +70°C	$\pm 0.2$ mA
		-40°C .. +85°C	$\pm 0.8$ mA
$t_r$	Response time <sup>4)</sup> @ 90 % of $I_{PN}$	$< 1$	$\mu\text{s}$
$di/dt$	di/dt accurately followed	$> 50$	A/ $\mu\text{s}$
$f$	Frequency bandwidth (-1 dB)	DC .. 150	kHz

## 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.

## General data

$T_A$	Ambient operating temperature	-40 .. +85	$^\circ\text{C}$
$T_S$	Ambient storage temperature	-45 .. +85	$^\circ\text{C}$
$R_S$	Secondary coil resistance @	$T_A = 70^\circ\text{C}$	40 $\Omega$
		$T_A = 85^\circ\text{C}$	42 $\Omega$
$m$	Mass	0.6	kg
	Standards	EN 50155	

## 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.

**Notes :** 1) Between primary and secondary + internal shield + external shield

2) Between secondary and internal shield + external shield

3) Test carried out with a busbar  $\varnothing 38\text{mm}$  centred in the through-hole

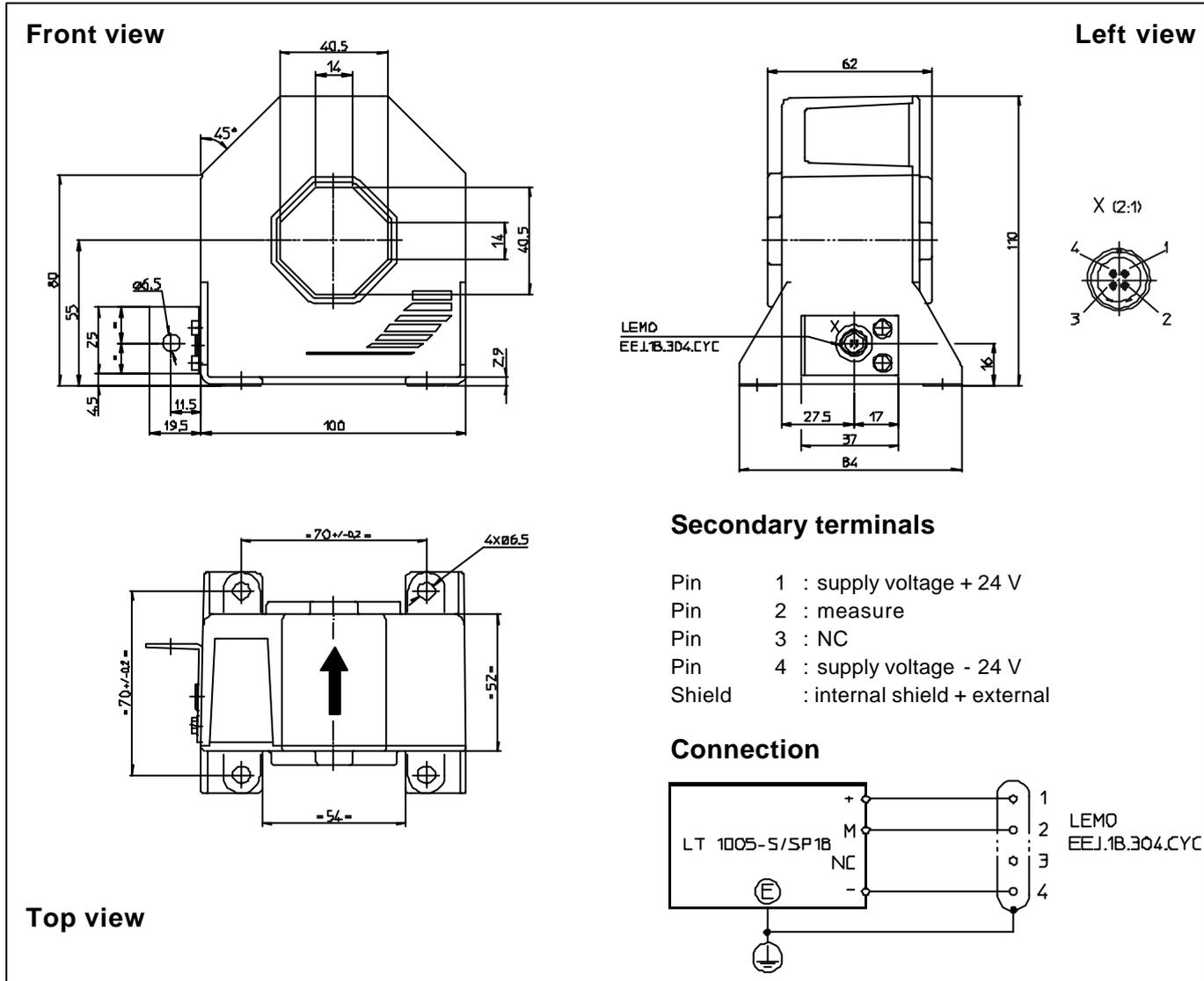
4) With a di/dt of 100 A/ $\mu\text{s}$ .

LEM reserves the right to carry out modifications on its transducers, in order to improve them, without previous notice.

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## Dimensions LT 1005-S/SP18 (in mm. 1 mm = 0.0394 inch)



## Mechanical characteristics

- General tolerance  $\pm 0.5$  mm
- Transducer fastening
  - 4 holes  $\varnothing 6.5$  mm
  - 4 M6 steel screws
  - Fastening torque, maxi 5 Nm or 3.65 Lb. - Ft.
- Primary through-hole 40.5 x 40.5 mm
- Connection of secondary LEMO EEJ.1B.304.CYC
- Connection internal and external shields holes  $\varnothing 6.5$  mm

## 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.