Current Transducer LT 1005-S/SP18

I_{PN} = 1000 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 .. ± 2000		A
R_M	Measuring resistance @	T_A = 70 °C		T_A = 85 °C		
		$R_{M\,min}$	$R_{M\,max}$	$R_{M\,min}$	$R_{M\,max}$	
	with ± 24 V @ ± 1000 A $_{max}$	5	70	7	68	Ω
	@ ± 2000 A $_{max}$	5	15	7	13	Ω
I_{SN}	Secondary nominal r.m.s. current			200		mA
K_N	Conversion ratio			1 : 5000		
V_C	Supply voltage (± 5 %)			± 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 [1]		kV
				1.5 [2]		kV
V_e	R.m.s. voltage for partial discharge extinction @ 10 pC			≥ 4.1 [3]		kV

Accuracy - Dynamic performance data

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

General data

T_A	Ambient operating temperature		- 40 .. + 85	°C
T_S	Ambient storage temperature		- 45 .. + 85	°C
R_S	Secondary coil resistance @	T_A = 70 °C	40	Ω
		T_A = 85 °C	42	Ω
m	Mass		0.6	kg
	Standards		EN 50155	

Features

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

Special features

- V_C = ± 24 (± 5 %) V
- V_d = 12 kV [1]
- T_A = - 40 °C .. + 85 °C
- Connection to secondary circuit on LEMO EEJ.1B.304.CYC
- Between primary and secondary Shield linked to external shield
- Customer marking
- Railway equipment.

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.

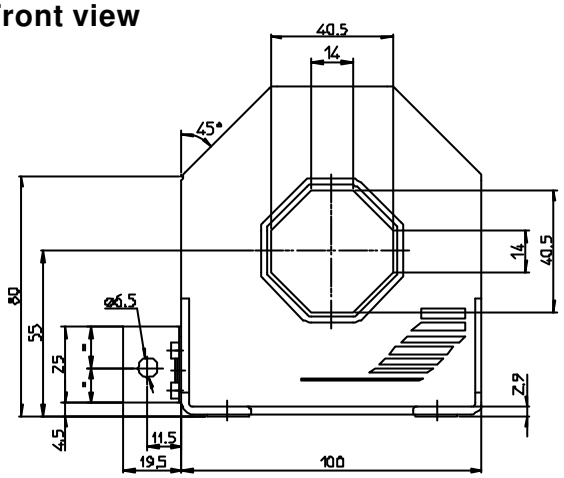
Applications

- 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.

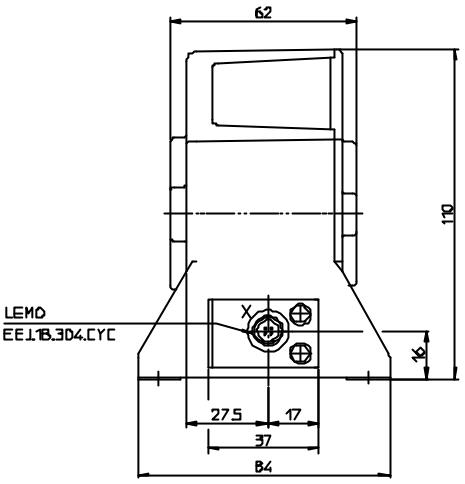
Notes : [1] Between primary and secondary + internal shield + external shield
[2] Between secondary and internal shield + external shield
[3] Test carried out with a busbar ∅ 38mm centred in the through-hole
[4] With a di/dt of 100 A/µs.

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

Front view



Left view



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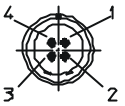
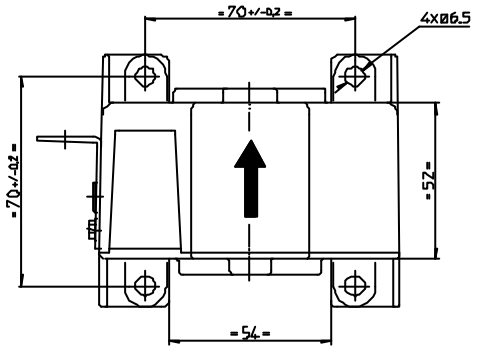


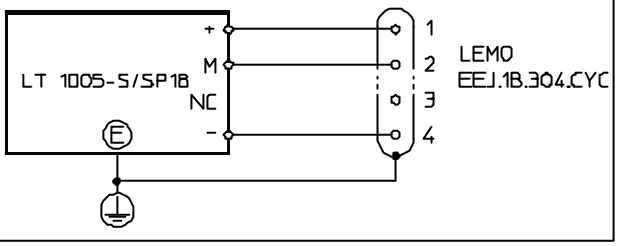


Top view

Secondary terminals

Pin	1	: supply voltage + 24 V
Pin	2	: measure
Pin	3	: NC
Pin	4	: supply voltage - 24 V
Shield		: internal shield + external

Connection



Mechanical characteristics

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