

Current Transducer LT 1005-S/SP30

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

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 r.m.s. current	1000	A					
I_P	Primary current, measuring range	0 .. ± 2200	A					
R_M	Measuring resistance @	$T_A = 70^\circ\text{C}$	$T_A = 85^\circ\text{C}$	$R_{M \min}$ $R_{M \max}$				
		with $\pm 15 \text{ V}$	@ $\pm 1100 \text{ A}_{\max}$	0	16	0	14	Ω
			@ $\pm 1200 \text{ A}_{\max}$	0	12	0	10	Ω
			@ $\pm 1300 \text{ A}_{\max}$	0	8	0	6	Ω
		with $\pm 24 \text{ V}$	@ $\pm 2000 \text{ A}_{\max}$	0	12.5	3	10.5	Ω
@ $\pm 2100 \text{ A}_{\max}$	0		10	3	8	Ω		
@ $\pm 2200 \text{ A}_{\max}$	0		7	3	5	Ω		
I_{SN}	Secondary nominal r.m.s. current	200	mA					
K_N	Conversion ratio	1 : 5000						
V_C	Supply voltage ($\pm 5 \%$)	$\pm 15 \dots 24$	V					
I_C	Current consumption	$30 (@ \pm 24 \text{ V}) + I_S$	mA					
V_d	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn	6 ¹⁾	kV					
		1.5 ²⁾	kV					
V_e	R.m.s. voltage for partial discharge extinction @ 10pC	4.1	kV					

Accuracy - Dynamic performance data

X_G	Overall accuracy @ $I_{PN}, T_A = 25^\circ\text{C}$	± 0.5	%	
\mathcal{E}_L	Linearity	< 0.1	%	
I_O	Offset current @ $I_P = 0, T_A = 25^\circ\text{C}$	Typ	Max	
I_{OT}	Thermal drift of I_O	- $40^\circ\text{C} \dots + 85^\circ\text{C}$	± 0.25	mA
			± 0.1	± 0.50
t_r	Response time ³⁾ @ 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	- $40 \dots + 85$	$^\circ\text{C}$	
T_S	Ambient storage temperature	- $50 \dots + 85$	$^\circ\text{C}$	
R_S	Secondary coil resistance @	$T_A = 70^\circ\text{C}$	40	Ω
		$T_A = 85^\circ\text{C}$	42	Ω
m	Mass Standards ⁴⁾	700	g	
		EN 50155		

Notes : ¹⁾ Between primary and secondary + internal shield + screened cable

²⁾ Between secondary and internal shield + screened cable

³⁾ With a di/dt of 100 A/ μs

⁴⁾ A list of corresponding tests is available.

Features

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

Special features

- $I_P = 0 \dots \pm 2200 \text{ A}$
- $V_C = \pm 15 \dots 24 (\pm 5 \%) \text{ V}$
- $T_A = - 40^\circ\text{C} \dots + 85^\circ\text{C}$
- Secondary connection on cable and Phoenix 4 poles MSTB 2.5/4-STZ-5.08 connector
- Shield between primary and secondary connected to the cable screening and 4 pin of connector
- Railway equipment
- Mounting plate
- Customer marking.

Advantages

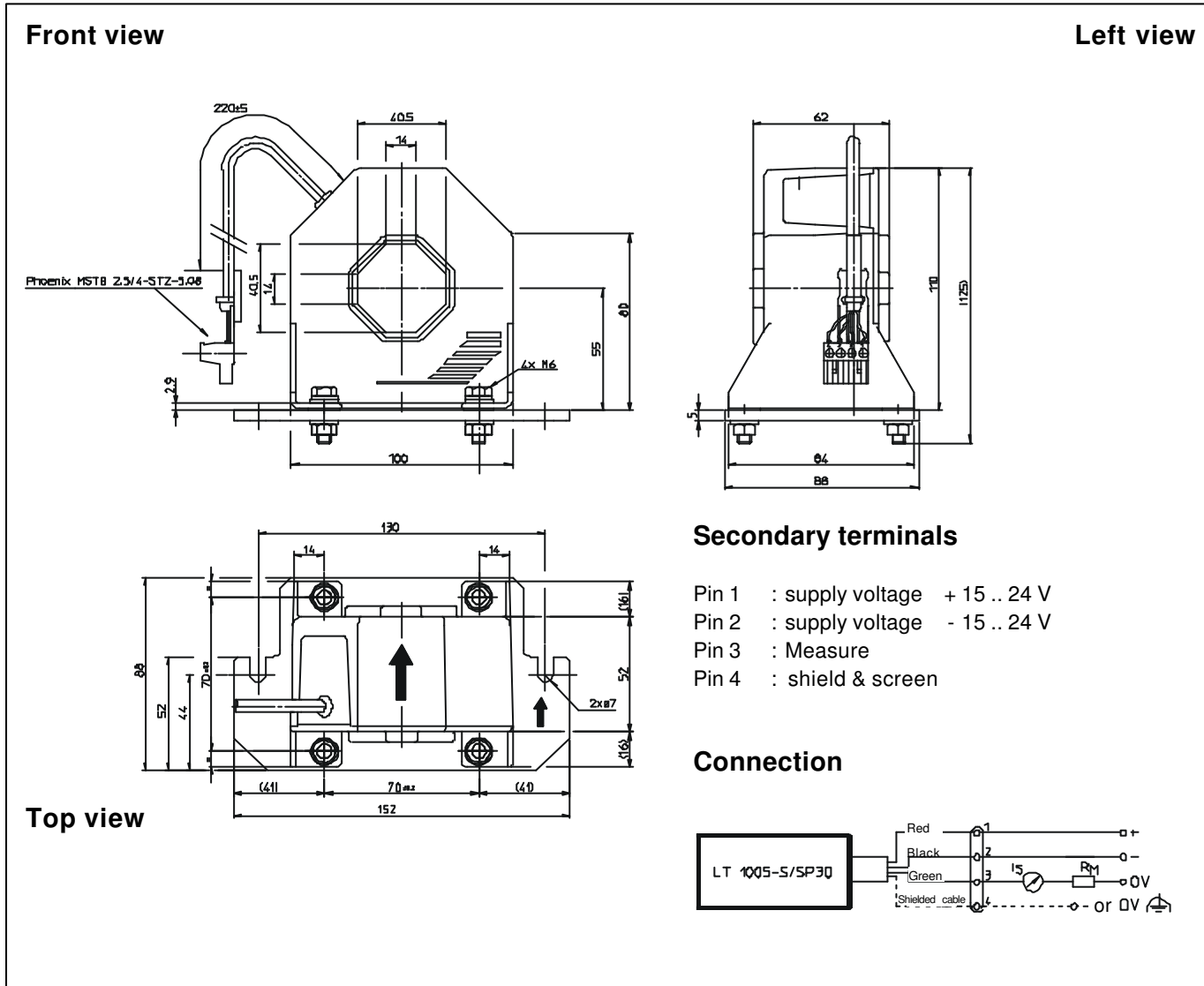
- Excellent accuracy
- Very good linearity
- Low temperature drift
- Optimized response time
- Wide frequency bandwidth
- No insertion losses
- High immunity to external interference
- Current overload capability.

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.

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Dimensions LT 1005-S/SP30 (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

- General tolerance ± 0.5 mm
- Fastening 4 holes Ø 6.5 mm
- Primary through-hole 40.5 x 40.5 mm
- Connection of secondary Phoenix 4 poles MSTB 2.5/4-STZ-5.08 connector

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.