Current Transducer LT 1005-S/SP28

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).

16135

Electrical data

I_{PN}	Primary nominal r.m.s. current				1000			A
I_P	Primary current, measuring range				0 .. ± 2400			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 ± 15 V @ ± 1300 A $_{max}$	0	10	@ ± 1250 A [1]	0	10		Ω
	@ ± 1400 A $_{max}$	0	7		0	5		Ω
	@ ± 1500 A $_{max}$	0	4	@ ± 1450 A [1]	0	3		Ω
	with ± 24 V @ ± 2200 A $_{max}$	0	10	@ ± 2100 A [1]	3	10		Ω
	@ ± 2300 A $_{max}$	0	7		3	5		Ω
	@ ± 2400 A $_{max}$	0	5		3	3		Ω
I_{SN}	Secondary nominal r.m.s. current				200			mA
K_N	Conversion ratio				1 : 5000			
V_C	Supply voltage (± 5 %)				± 15 .. 24			V
I_C	Current consumption				30 (@ ± 24 V) + I_S			mA
V_d	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn				12 [2]			kV
					1.5 [3]			kV
V_e	R.m.s. voltage for partial discharge extinction @ 10 pC				4.1			kV

Accuracy - Dynamic performance data

X_G	Overall accuracy @ I_{PN}, T_A = 25°C			± 0.5		%
ε_L	Linearity error			< 0.1		%
				Typ	Max	
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
		- 50°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 (-50) .. + 85	°C
T_S	Ambient storage temperature		- 50 .. + 85	°C
R_S	Secondary coil resistance @	T_A = 70°C	40	Ω
		T_A = 85°C	42	Ω
m	Mass		700	g
	Standards		EN 50155	

Notes : [1] $I_{P\,max}$ @ +85°C & customer measuring resistance. [2] Between primary and secondary + internal shield + screened cable. [3] Between secondary and internal shield + screened cable. [4] With a di/dt of 100 A/µs.

Features

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

Special features

- I_P = 0 .. ± 2400 A
- V_C = ± 15 .. 24 V (± 5 %)
- V_d = 12 kV
- T_A = - 40°C (-50°C) .. + 85°C
- Secondary connection on screened cable 3 x 0.5 mm²
- Shield between primary and secondary connected to the cable screening
- Railway equipment
- Customer marking
- Reinforced mounting feet.

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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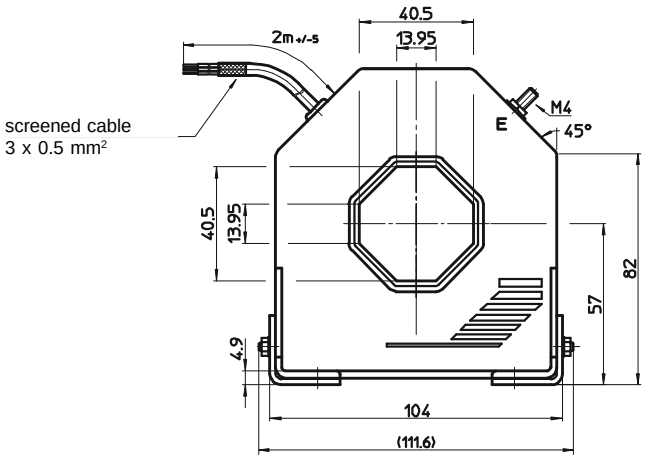
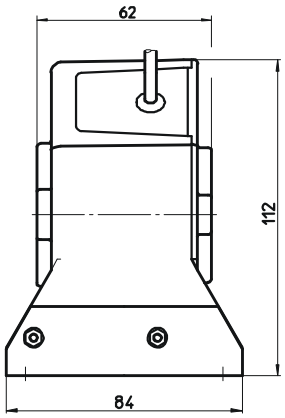
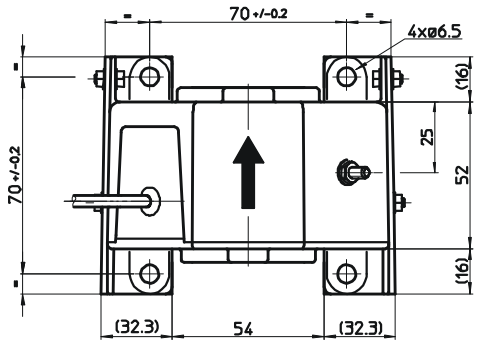
Dimensions LT 1005-S/SP28 (in mm. 1 mm = 0.0394 inch)

Front view



Left view



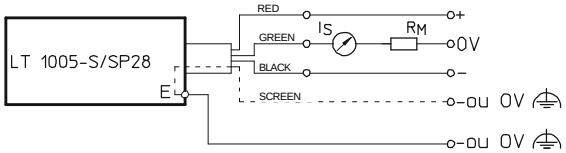


Top view

Secondary terminals

Red cable : supply voltage + 15 .. 24 V
Green cable : measure
Black cable : supply voltage - 15 .. 24 V
Terminal E : shield & screen

Connection



Mechanical characteristics

• General tolerance	± 0.5 mm
• Fastening	4 holes ∅ 6.5 mm
• Primary through-hole	40.5 x 40.5 mm
• Connection of secondary	screened cable 3 x 0.5 mm²
• Connection to terminal E	M4 threaded stud
Fastening torque	1.2 Nm or .88 Lb. - Ft.

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.