

Current Transducer LT 1005-S/SP22

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

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 (@ $\pm 24 \text{ V}$)	$0 \dots \pm 2000$	A		
R_M	Measuring resistance	$R_{M \min}$	$R_{M \max}$		
				with $\pm 15 \text{ V}$	@ $\pm 1000 \text{ A}_{\max}$
		@ $\pm 1200 \text{ A}_{\max}$	0	15	Ω
	with $\pm 24 \text{ V}$	@ $\pm 1000 \text{ A}_{\max}$	0	58	Ω
	@ $\pm 2000 \text{ A}_{\max}$	0	15	Ω	
I_{SN}	Secondary nominal r.m.s. current	250	mA		
K_N	Conversion ratio	1 : 4000			
V_C	Supply voltage ($\pm 3 \%$)	$\pm 15 \dots 24$	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		
		0.5 ²⁾	kV		

Accuracy - Dynamic performance data

X_G	Overall accuracy @ $I_{PN}, T_A = 25^\circ\text{C}$	± 0.4	%
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 - $40^\circ\text{C} \dots +70^\circ\text{C}$	± 0.3	± 0.7
t_r	Response time ²⁾ @ 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	$-40 \dots +70$	$^\circ\text{C}$
T_S	Ambient storage temperature	$-40 \dots +85$	$^\circ\text{C}$
R_S	Secondary coil resistance @ $T_A = 70^\circ\text{C}$	28	Ω
m	Mass	840	g
	Standards	EN 50155 (01.11.95)	

Notes : ¹⁾ Between primary and secondary + external shield

²⁾ Between secondary and external shield

³⁾ 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

- $K_N = 1 : 4000$
- $V_C = \pm 15 \dots 24 (\pm 3 \%) \text{ V}$
- $T_A = -40^\circ\text{C} \dots +70^\circ\text{C}$
- Connection to secondary circuit on 2 SUB-D 15 connectors
- Shield around connections of secondary
- Potted
- Hall element located at the bottom
- Railway equipment.

Advantages

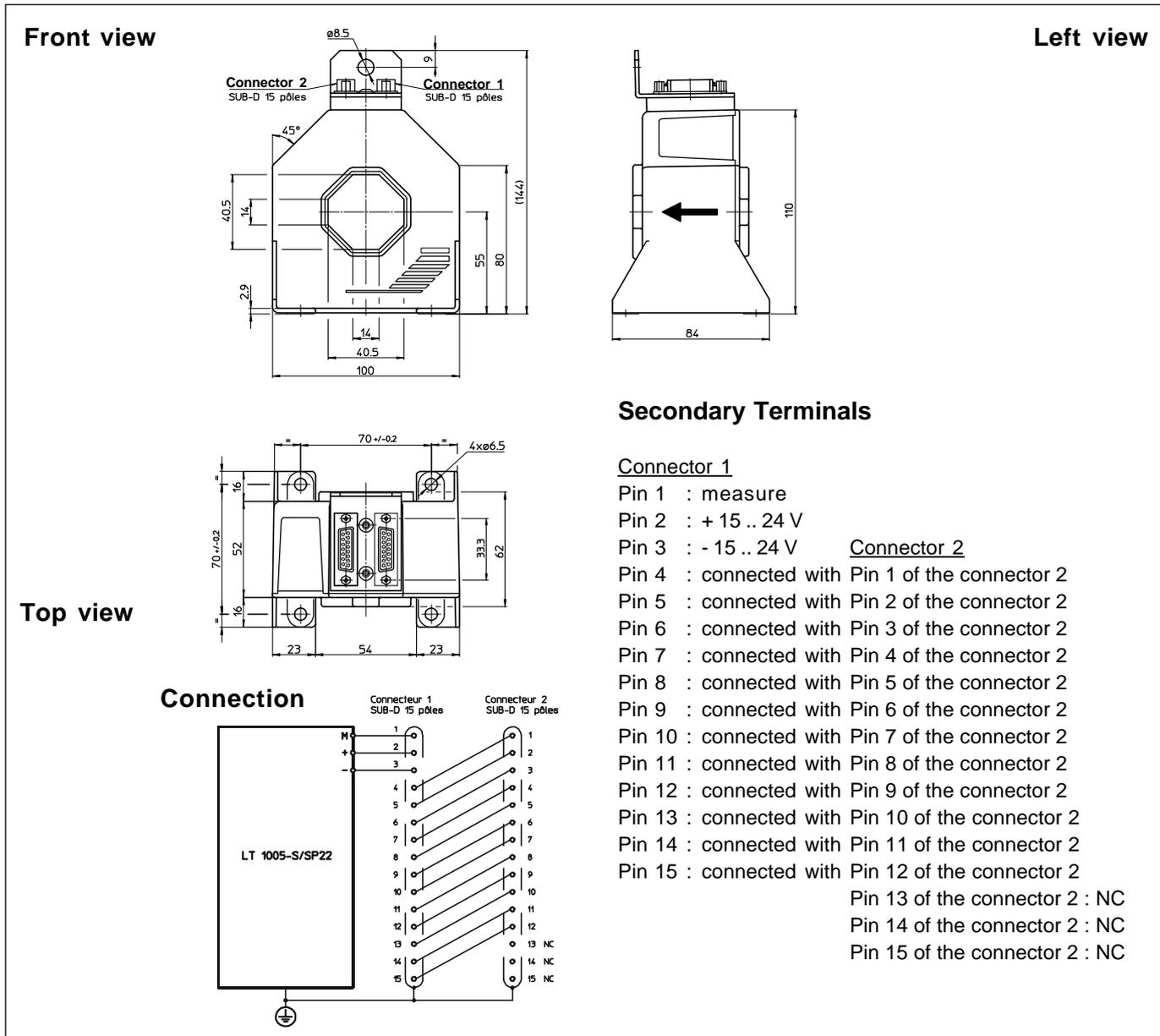
- Excellent accuracy
- Very good linearity
- Low temperature drift
- Optimized response time
- Wide frequency bandwidth
- No insertion losses
- High immunity to external interference
- Current overload capability.

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.

030527/5

Dimensions LT 1005-S/SP22 (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

- General tolerance ± 0.5 mm
- Transducer fastening
 - 4 holes $\varnothing 6.5$ mm
 - 4 M6 steelscrews
 - Fastening torque max 5 Nm or 3.69 Lb.-Ft.
- Screen fastening
 - 1 hole $\varnothing 8.5$ mm
 - 1 M8 steelscrew
 - Fastening torque 10.5 Nm or 7.75 Lb.-Ft.
- Primary through-hole 40.5 x 40.5 mm
- Connection of secondary poles : male 1, female 2

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.