

Current Transducer LT 1005-T/SP21

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

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).



Preliminary



Electrical data

I_{PN}	Primary nominal r.m.s. current	1000	A		
I_P	Primary current, measuring range @ $\pm 24 \text{ V}$	0 .. ± 2000	A		
R_M	Measuring resistance	$R_{M \min}$	$R_{M \max}$		
				with $\pm 15 \text{ V}$	@ $\pm 1000 \text{ A}_{\max}$
		@ $\pm 1500 \text{ A}_{\max}$	0	9	Ω
	with $\pm 24 \text{ V}$	@ $\pm 1000 \text{ A}_{\max}$	5	60	Ω
	@ $\pm 2000 \text{ A}_{\max}$	5	15	Ω	
I_{SN}	Secondary nominal r.m.s. current	250	mA		
K_N	Conversion ratio	1 : 4000			
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	12	kV		

Accuracy - Dynamic performance data

X_G	Overall accuracy @ $I_{PN}, T_A = 25^\circ\text{C}$	± 0.4	%
ϵ_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 - $35^\circ\text{C} \dots +75^\circ\text{C}$	± 0.25	± 0.70 mA
t_r	Response time ¹⁾ @ 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	- 35 .. + 75	$^\circ\text{C}$
T_S	Ambient storage temperature	- 45 .. + 85	$^\circ\text{C}$
R_S	Secondary coil resistance @ $T_A = 75^\circ\text{C}$	26	Ω
m	Mass	1.2	kg
	Standards	EN 50155	

Features

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

Special features

- $K_N = 1 : 4000$
- $V_d = 12 \text{ kV}$
- $T_A = -35^\circ\text{C} \dots +75^\circ\text{C}$
- Potted
- Connection to secondary circuit on UNC 8 threaded studs
- Special primary bar
- 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.

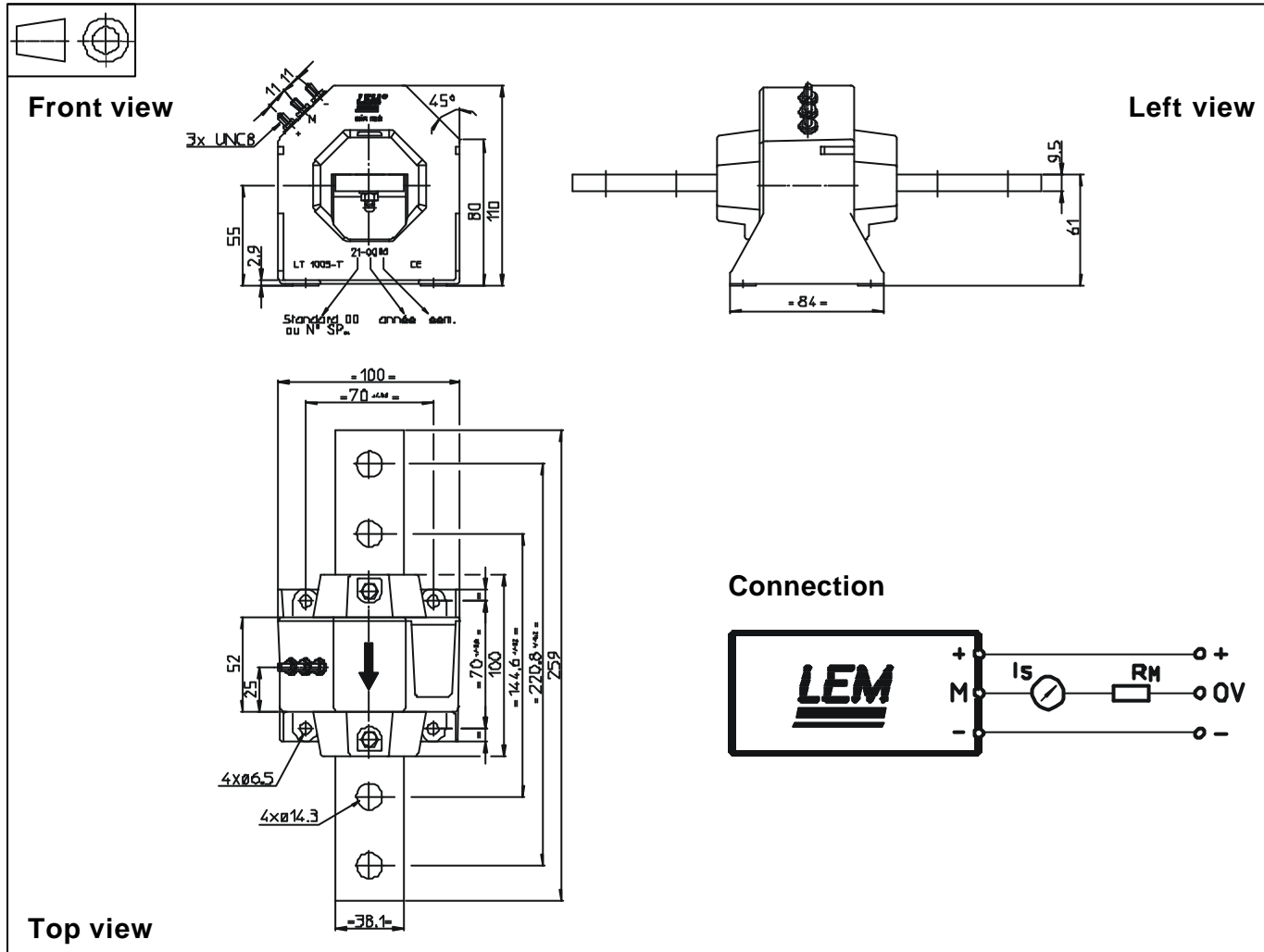
Applications

- 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.

Note : ¹⁾ With a di/dt of 100 A/ μs .

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Dimensions LT 1005-T/SP21 (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

- General tolerance ± 0.5 mm
- Transducer fastening
 - 4 holes $\varnothing 6.5$ mm
 - 4 M6 steel screws
 - Fastening torque max 5 Nm or 3.65 Lb. - Ft
- Connection of primary
 - 2 holes $\varnothing 14.3$ mm
- Connection of secondary
 - UNC 8 threaded studs

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.