Current Transducer LTC 1000-SF/SP4

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).

Preliminary

Electrical data

I_{PN}	Primary nominal r.m.s. current		1000		A
I_P	Primary current, measuring range @ ± 24 V		0 .. ± 3000		A
R_M	Measuring resistance		$R_{M\,min}$	$R_{M\,max}$	
	with ± 15 V	@ ± 1000 A $_{max}$	0	20	Ω
		@ ± 1200 A $_{max}$	0	10	Ω
	with ± 24 V	@ ± 1000 A $_{max}$	2	60	Ω
		@ ± 3000 A $_{max}$	2	2	Ω
I_{SN}	Secondary nominal r.m.s. current		250		mA
K_N	Conversion ratio		1 : 4000		
V_C	Supply voltage (± 5 %)		± 15 .. 24		V
I_C	Current consumption		<31 (@±24V)+I_S		mA
V_d	R.m.s. voltage for AC isolation test, 50 Hz, 1 mn		13.4		kV
V_e	R.m.s. voltage for partial discharge extinction @ 10 pC		2.8		kV

Accuracy - Dynamic performance data

X_G	Overall accuracy @ I_{PN}, T_A = 25°C		< ± 0.4	%
ε_L	Linearity error		< 0.1	%
			Max	
I_O	Offset current @ I_P = 0, T_A = 25°C		± 0.5	mA
I_{OT}	Thermal drift of I_O	- 40°C .. + 85°C	± 1	mA
t_r	Response time [8] @ 90 % of I_{PN}		< 1	µs
di/dt	di/dt accurately followed		> 100	A/µs
f	Frequency bandwidth (- 1 dB)		DC .. 100	kHz

General data

T_A	Ambient operating temperature	- 40 .. + 85	°C
T_S	Ambient storage temperature	- 50 .. + 90	°C
R_S	Secondary coil resistance @ T_A = 85°C	26	Ω
m	Mass	900	g
	Standards	EN 50155 (20.12.01)	

Note : [1] 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
- Railway equipment.

Special features

- I_P = 0 .. ± 3000 A
- K_N = 1 : 4000
- Connection to secondary circuit on 10-24 UNC threaded studs
- Mounting feet compatible with LT 1000-SI/SP66.

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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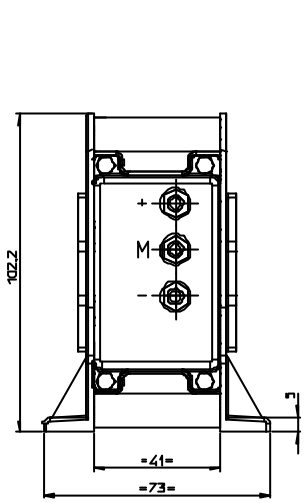
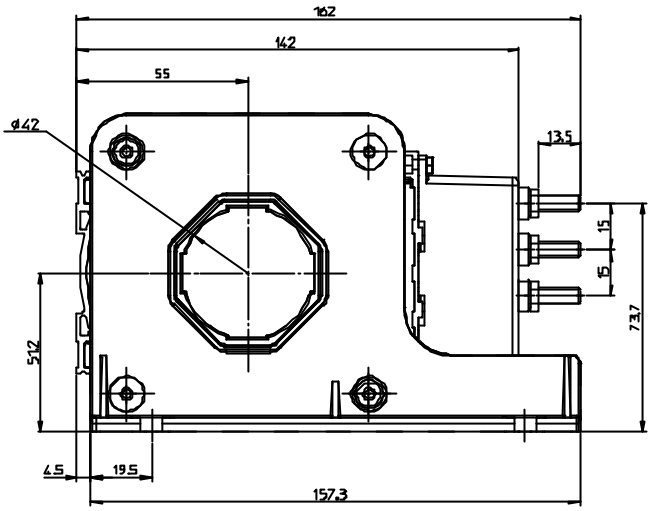
Dimensions LTC 1000-SF/SP4 (in mm. 1 mm = 0.0394 inch)

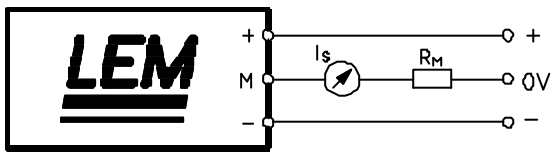
Front view

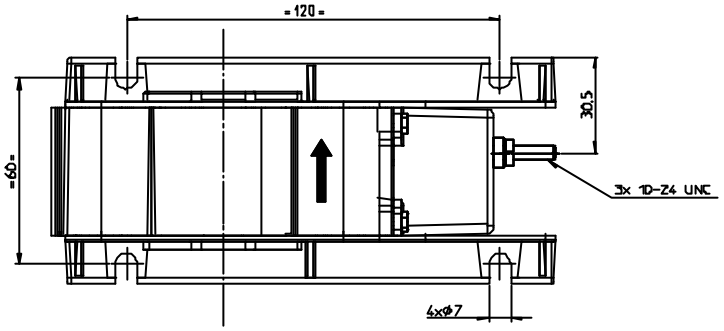


Left view



Connection





Top view

Mechanical characteristics

• General tolerance	± 1 mm
• Transducer fastening	4 slots ∅ 7 mm 4 x M6 steel screws
Recommended fastening torque	5 Nm or 3.69 Lb - Ft.
• Primary through-hole	∅ 42 mm
• Connection of secondary	10-24 UNC threaded studs
Recommended fastening torque	2.2 Nm or 1.62 Lb - Ft. Faston 6.3 x 0.8 mm

Remarks

- $\mathbf{I}_S$ is positive when $\mathbf{I}_P$ 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.