Current Transducer LT 100-P/SP55

I_{PN} = 100 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		100		A
I_P	Primary current, measuring range		0 .. ± 120		A
R_M	Measuring resistance		$R_{M\,min}$	$R_{M\,max}$	
	with ± 12 V	@ ± 100 A_{max}	30	60	Ω
		@ ± 120 A_{max}	30	50	Ω
I_{SN}	Secondary nominal r.m.s. current		100		mA
K_N	Conversion ratio		1 : 1000		
V_C	Supply voltage (± 5 %)		± 12		V
I_C	Current consumption		10 + I_S		mA
V_d	R.m.s. voltage for AC isolation test, 50 Hz, 1 min		3		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 .. + 85°C	± 0.4	± 1	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		- 25 .. + 85	°C
T_S	Ambient storage temperature		- 40 .. + 100	°C
R_S	Secondary coil resistance @ T_A = 85°C		30	Ω
m	Mass		50	g

Note : [1] With a di/dt of 50 A/µs.

Features

- Closed loop (compensated) current transducer using the Hall effect
- Insulated self-extinguishing plastic case.

Special features

- I_P = 0 .. ± 120 A
- V_C = ± 12 (± 5 %) V
- T_A = - 25°C .. + 85°C.

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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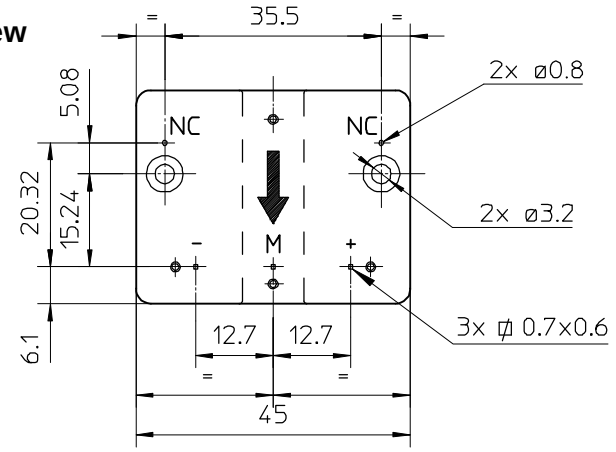
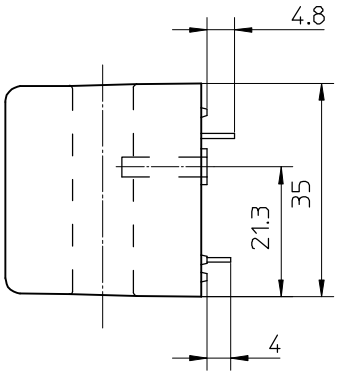
Dimensions LT 100-P/SP55 (in mm. 1 mm = 0.0394 inch)

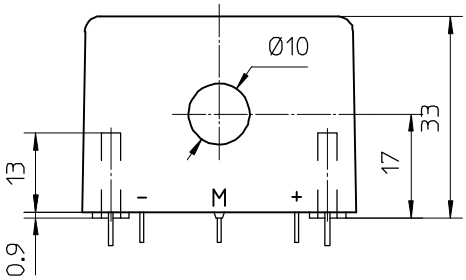
Front view



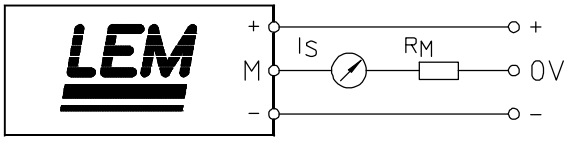
Left view



Top view



Connection



Mechanical characteristics

• General tolerance	± 0.3 mm
• Primary through-hole	∅ 10 mm
• Transducer fastening	2 pins ∅ 0.8 mm
Recommended PCB hole	0.9 mm
Or	
• Supplementary fastening	2 holes ∅ 3.2 mm
	2 PT KA 35 screws
	long. 12 mm
Recommended fastening torque	1.1 Nm or 0.81 Lb. -Ft.
• Connection of secondary	3 pins ⊄ 0.7 x 0.6 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.
- In order to achieve the best magnetic coupling, the primary windings have to be wound over the top edge of the device.