Current Transducer LAS 50-TP/SP1

I_{PN} = 50 A

For the electronic measurement of currents : DC, AC, pulsed, mixed, 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		50	A
I_P	Primary current, measuring range		0 .. ± 150	A
V_{OUT}	Analog output voltage @	I_P	V_{REF} ± (0.625 · I_P/I_{PN})	V
		I_P = 0	V_{REF} ± 0.025	V
V_{REF}	Reference voltage - input		2.5 ± 0.2	V
	V_{REF} Load impedance		≥ 1	MΩ
R_L	Output load resistance		≥ 2	kΩ
R_{OUT}	Output internal resistance		< 20	Ω
C_L	Max. output capacitive load		1	nF
V_C	Supply voltage (± 5 %)		5	V
I_C	Current consumption @ V_C = 5 V	typ	17	mA
V_d	R.m.s. voltage for AC isolation test, 50/60 Hz, 1 mn		5	kV
$\hat{V}_e$	R.m.s. voltage for partial discharge extinction @ 10 pC		2	kV
V_w	Impulse withstand voltage 1.2/50 µs		8	kV

Accuracy - Dynamic performance data

X	Accuracy [1] @ I_{PN}, T_A = 25°C		< ± 1		%
ε_L	Linearity error 0 .. I_{PN} [2]		< 0.7		%
			Typ	Max	
TCV_{OUT}/V_{REF}	Thermal drift of V_{OUT}/V_{REF} @ I_P = 0	- 40°C .. + 85°C	50	80	ppm/K
$TC\varepsilon_G$	Thermal drift of the gain	- 40°C .. + 85°C	150	300	ppm/K
V_{OM}	Residual voltage @ I_P = 0, after an overload of 2 x $I_{PN\,DC}$		± 5		mV
t_{ra}	Reaction time @ 10 % of I_{PN}		< 200		ns
t_r	Response time @ 90 % of I_{PN}		< 500		ns
di/dt	di/dt accurately followed		> 100		A/µs
	Output noise without external filter		< 10		mVpp
f	Frequency bandwidth (- 1 dB)		DC .. 100		kHz

General data

T_A	Ambient operating temperature	- 40 .. + 85	°C
T_S	Ambient storage temperature	- 40 .. + 100	°C
m	Mass	20	g
	Insulating material group	I	
	Standards	EN 50178 (97.10.01)	

All data are given with a R_L = 10 kΩ.

Notes : [1] Excluding electrical, magnetic offsets and linearity
[2] Including magnetic offset.

Features

- Current transducer using Eta-technology
- Unipolar voltage supply
- Insulated plastic case recognized according to UL 94-V0
- Compact design for PCB mounting
- Extended measuring range.

Special feature

- Ref IN input = external reference.

Advantages

- Excellent accuracy
- Very good linearity
- Very 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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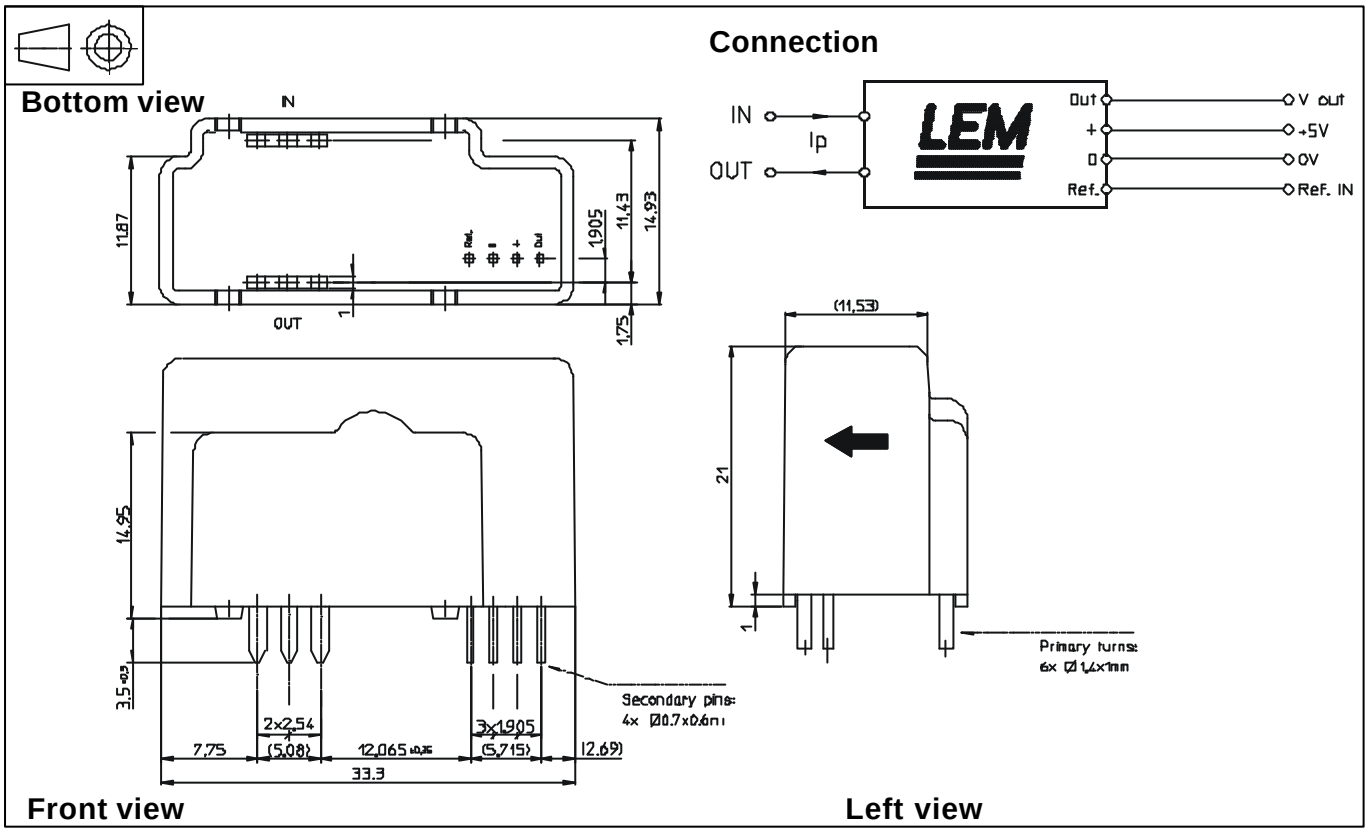
Dimensions LAS 50-TP/SP1 (in mm. 1 mm = 0.0394 inch)



Number of primary turns	Primary current		Nominal output voltage	Primary resistance	Primary insertion inductance
	Nominal	Maximal			
	I_{PN} [A]	I_P [A]	V_{OUT} [V]	R_P [mΩ]	L_P [µH]
1	50	150	V_{REF} ± 0.625	0.12	0.008

Mechanical characteristics

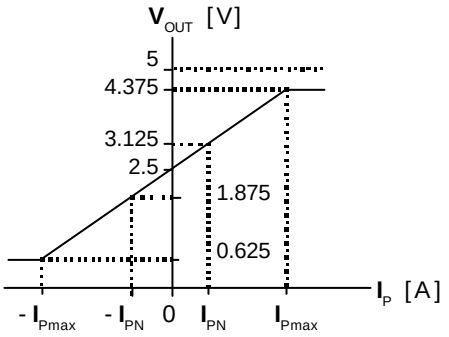
- General tolerance ± 0.2 mm
- Fastening & connection of primary 6 pins 1.4 x 1 mm
  Recommended PCB hole 2 mm
- Fastening & connection of secondary 4 pins 0.7 x 0.6 mm
  Recommended PCB hole 1.2 mm

Remarks

- V_{OUT} is positive when I_P flows from terminals "IN" to terminals "OUT".
- Temperature of the primary conductor should not exceed 100°C.

Output Voltage - Primary Current

(V_{REF} = 2.5 V in this example)



LEM reserves the right to carry out modifications on its transducers, in order to improve them, without previous notice.