

Current Transducer LAS 50-TP

$$I_{PN} = 50 \text{ A}$$

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 @ $I_P = 0$	$V_{REF} \pm (0.625 \cdot I_{PN})$ $V_{REF} \pm 0.025$	V
V_{REF}	Reference voltage - Output	2.5 \pm 0.025	V
V_{REF}	Load impedance	≥ 1	M Ω
R_L	Output load resistance	≥ 2	k Ω
R_{OUT}	Output internal resistance	< 20	Ω
C_L	Max. output capacitive load	1	nF
V_C	Supply voltage ($\pm 5\%$)	5	V
I_C	Current consumption @ $V_C = 5 \text{ V}$	typ 17	mA
V_d	R.m.s. voltage for AC isolation test, 50/60 Hz, 1 mn	5	kV
V_e	R.m.s. voltage for partial discharge extinction @ 10 pC	2	kV
V_w	Impulse withstand voltage 1.2/50 μ s	8	kV

Accuracy - Dynamic performance data

X	Accuracy ¹⁾ @ I_{PN} , $T_A = 25^\circ\text{C}$	< ± 1	%
e_L	Linearity error 0 .. I_{PN} ²⁾	< 0.7	%
TCV_{OUT}	Thermal drift of V_{OUT} @ $I_P = 0$	-40 $^\circ\text{C}$.. +85 $^\circ\text{C}$	Typ 80 120 ppm/K
TCV_{OUT}/V_{REF}	Thermal drift of V_{OUT}/V_{REF} @ $I_P = 0$	-40 $^\circ\text{C}$.. +85 $^\circ\text{C}$	Typ 50 80 ppm/K
TCE_G	Thermal drift of the gain	-40 $^\circ\text{C}$.. +85 $^\circ\text{C}$	Typ 150 300 ppm/K
V_{OM}	Residual voltage @ $I_P = 0$, after an overload of $2 \times I_{PNDC}$	± 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/ μ s
	Output noise without external filter	< 10	mVpp
f	Frequency bandwidth (-1 dB)	DC .. 100	kHz

General data

T_A	Ambient operating temperature	-40 .. +85	$^\circ\text{C}$
T_S	Ambient storage temperature	-40 .. +100	$^\circ\text{C}$
m	Mass	20	g
	Insulating material group	I	
	Standards	EN 50178 (97.10.01)	

All Data are given with a $R_L = 10 \text{ k}\Omega$

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.

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.

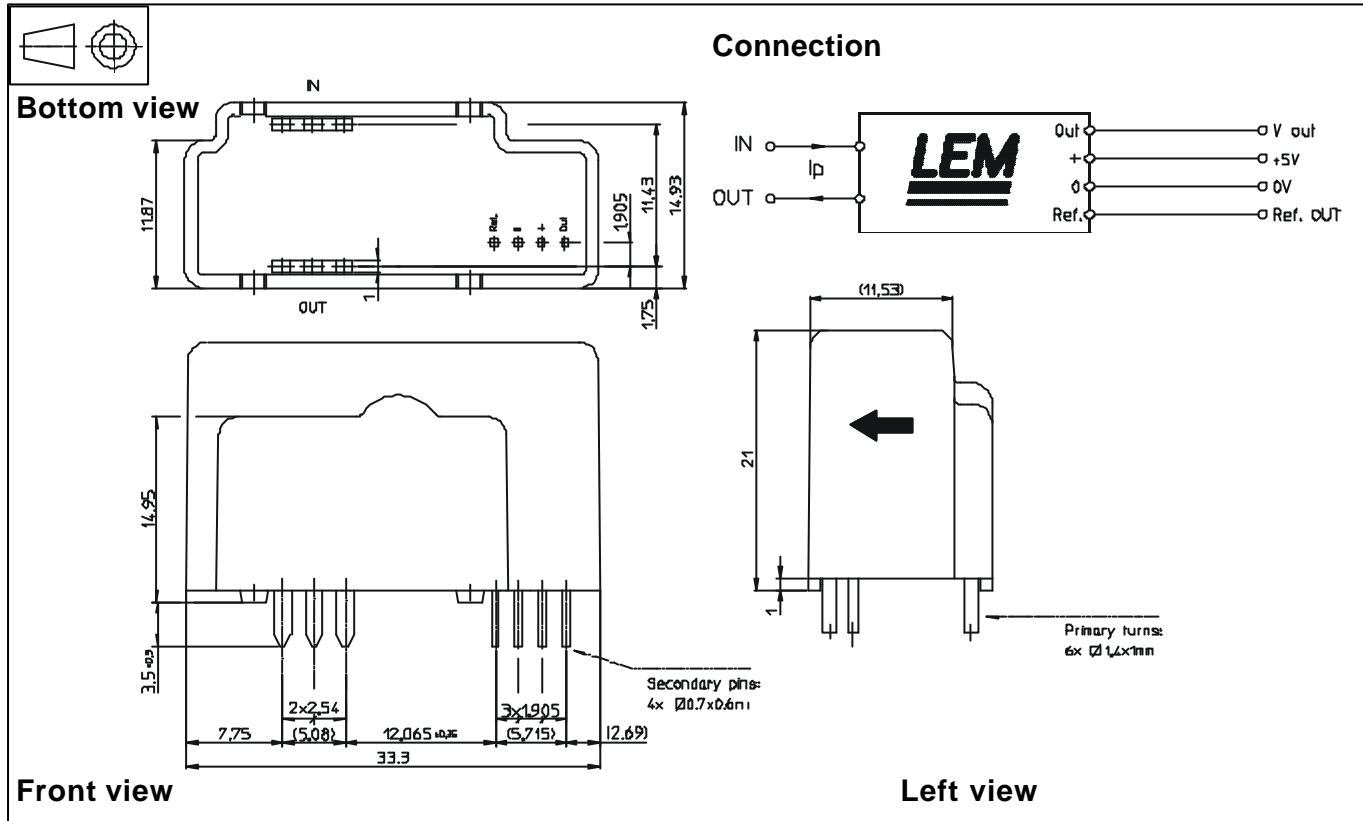
Applications

- 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 (in mm. 1 mm = 0.0394 inch)



Number of primary turns	Primary current		Nominal output voltage	Primary resistance	Primary insertion inductance
	Nominal I_{PN} [A]	Maximal I_P [A]			
1	50	150	$V_{REF} \pm 0.625$	0.12	0.008

Mechanical characteristics

- General tolerance $\pm 0.2 \text{ mm}$
- Fastening & connection of primary 6 pins $1.4 \times 1 \text{ mm}$
Recommended PCB hole 2 mm
- Fastening & connection of secondary 4 pins $0.7 \times 0.6 \text{ mm}$
Recommended PCB hole 1.2 mm

Remarks

- V_{OUT} is positive when I_p flows from terminals "IN" to terminals "OUT".
- This is a standard model. For different versions please contact us
- Temperature of the primary conductor should not exceed 100°C .

Output Voltage - Primary Current

