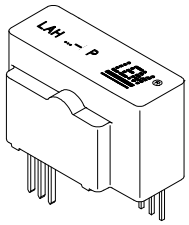
Current Transducer LAH 50-P

I_{PN} = 50 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			50			A
I_P	Primary current, measuring range [1]			0 .. 110			A
R_M	Measuring resistance @		T_A = 70°C		T_A = 85°C		
			$R_{M\,min}$	$R_{M\,max}$	$R_{M\,min}$	$R_{M\,max}$	
	with ± 12 V	@ I_{PN} [± A_{DC}]	0	221	0	214	Ω
		@ I_{PN} [A_{RMS}] [2]	0	115	0	108	Ω
	with ± 15 V	@ I_{PN} [± A_{DC}]	0	335	0	327	Ω
		@ I_{PN} [A_{RMS}] [2]	0	195	0	188	Ω
I_{SN}	Secondary nominal r.m.s. current			25			mA
K_N	Conversion ratio			1 : 2000			
V_C	Supply voltage (± 5 %)			± 12 .. 15			V
I_C	Current consumption			10 (@ ± 15V) + I_S			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
$\hat{V}_w$	Impulse withstand voltage 1.2/50 µs			> 12			kV

Accuracy - Dynamic performance data

X	Accuracy [3] @ I_{PN}, T_A = 25°C		± 0.25		%
ε_L	Linearity		< 0.15		%
			Typ	Max	
I_O	Offset current @ T_A = 25°C			± 0.15	mA
I_{OM}	Residual current @ I_P = 0, after an overload of 5 x I_{PN}		± 0.10	± 0.15	mA
I_{OT}	Thermal drift of I_O	0°C .. + 70°C	± 0.10	± 0.30	mA
		- 25°C .. + 85°C	± 0.10	± 0.40	mA
t_{ra}	Reaction time @ 10 % of I_{PN}		< 200		ns
t_r	Response time [4] @ 90 % of I_{PN}		< 500		ns
di/dt	di/dt accurately followed		> 200		A/µs
f	Frequency bandwidth (- 1 dB)		DC .. 200		kHz

General data

T_A	Ambient operating temperature		- 25 .. + 85	°C
T_S	Ambient storage temperature		- 40 .. + 90	°C
R_S	Secondary coil resistance	@ T_A = 70°C	135	Ω
		@ T_A = 85°C	142	Ω
	Insulating material group		I	
m	Mass		22	g
	Standards [5]		EN 50178	

Notes : [1] For 10 s, with $R_M \leq 71\ \Omega$ (V_C = ± 15 V)
[2] 50 Hz Sinusoidal
[3] Without I_O & I_{OM}
[4] With a di/dt of 100 A/µs
[5] A list of corresponding tests is available.

Features

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

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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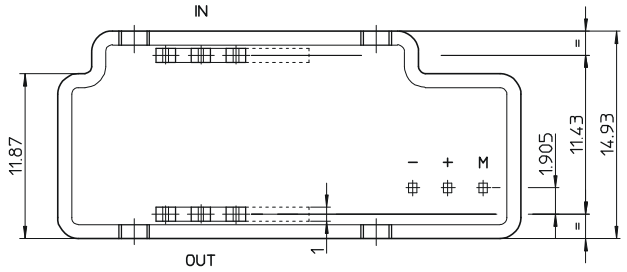
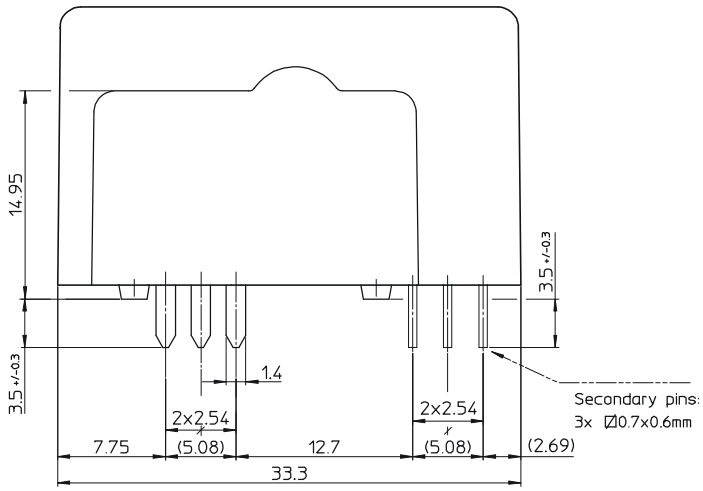
Dimensions LAH 50-P (in mm. 1 mm = 0.0394 inch)

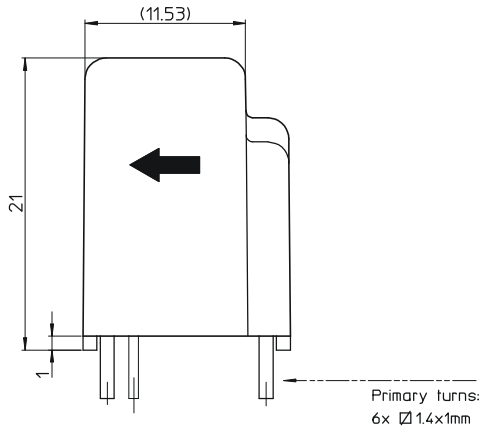
Bottom view



Front view



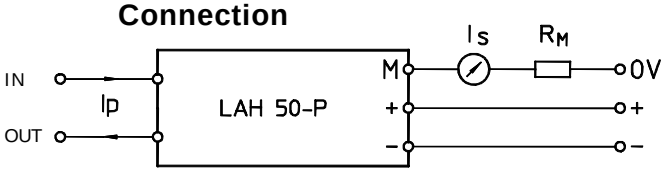
Left view



Secondary terminals

Terminal M: measure
Terminal + : supply voltage + 15 V
Terminal - : supply voltage - 15 V

Connection



Number of primary turns	Primary current nominal I_{PN} [A]	Primary current maximum I_P [A]	Nominal output current I_{SN} [mA]	Turns ratio K_N	Primary resistance R_P [mΩ]	Primary insertion inductance L_P [µH]
1	50	110	25	1 : 2000	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 3 pins 0.7 x 0.6 mm
  Recommended PCB hole 1.2 mm

Remarks

- I_S is positive when I_P flows from terminals "IN" to terminals "OUT".
- This is a standard model. For different versions (supply voltages, turns ratios, unidirectional measurements...), please contact us.