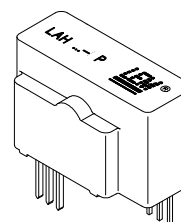


Current Transducer LAH 50-P

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

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 @	$T_A = 70^\circ\text{C}$		$T_A = 85^\circ\text{C}$			
			$R_{M \min}$	$R_{M \max}$	$R_{M \min}$	$R_{M \max}$	
		with $\pm 12 \text{ V}$	@ $I_{PN} [\pm A_{DC}]$	0	221	0	214
			@ $I_{PN} [A_{RMS}]$ ²⁾	0	115	0	108
		with $\pm 15 \text{ V}$	@ $I_{PN} [\pm A_{DC}]$	0	335	0	327
	@ $I_{PN} [A_{RMS}]$ ²⁾	0	195	0	188		
I_{SN}	Secondary nominal r.m.s. current	25	mA				
K_N	Conversion ratio	1 : 2000					
V_C	Supply voltage ($\pm 5 \%$)	$\pm 12 \dots 15$	V				
I_C	Current consumption	10 (@ $\pm 15\text{V}$) + 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				
V_w	Impulse withstand voltage 1.2/50 μs	> 12	kV				

Accuracy - Dynamic performance data

X	Accuracy ³⁾ @ I_{PN} , $T_A = 25^\circ\text{C}$	± 0.25	%
e_L	Linearity	< 0.15	%
I_O	Offset current @ $T_A = 25^\circ\text{C}$	Typ	± 0.15 mA
		Max	± 0.15 mA
I_{OM}	Residual current @ $I_P = 0$, after an overload of $5 \times I_{PN}$	± 0.10	mA
I_{OT}	Thermal drift of I_O	0°C .. + 70°C	± 0.10 mA
		- 25°C .. + 85°C	± 0.10 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	@ $T_A = 70^\circ\text{C}$	135 Ω
		@ $T_A = 85^\circ\text{C}$	142 Ω
	Insulating material group	I	
m	Mass Standards ⁵⁾		22 g
			EN 50178

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.

Notes : ¹⁾ For 10 s, with $R_M \leq 71 \Omega$ ($V_C = \pm 15 \text{ V}$)

²⁾ 50 Hz Sinusoidal

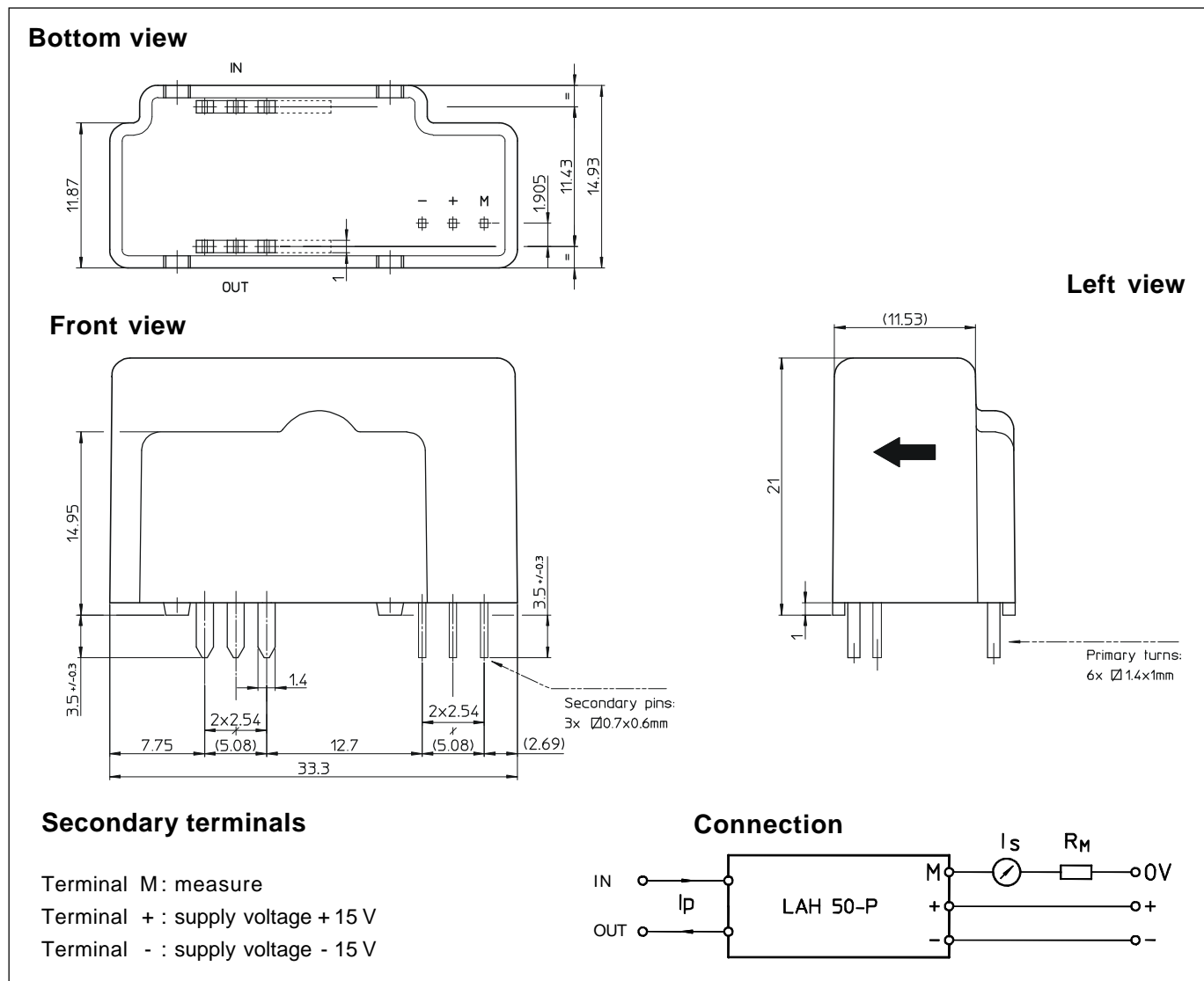
³⁾ Without I_O & I_{OM}

⁴⁾ With a di/dt of 100 A/ μs

⁵⁾ A list of corresponding tests is available.

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



Number of primary turns	Primary current		Nominal output current I_{SN} [mA]	Turns ratio K_N	Primary resistance R_p [m Ω]	Primary insertion inductance L_p [μH]
	nominal I_{PN} [A]	maximum I_p [A]				
1	50	110	25	1 : 2000	0.12	0.008

Mechanical characteristics

- General tolerance $\pm 0.2 \text{ mm}$
- Fastening & connection of primary
Recommended PCB hole 2 mm
- Fastening & connection of secondary
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.