

Current Transducer LA 150-P

For the electronic measurement of currents: DC, AC, pulsed..., with galvanic isolation between the primary circuit (high power) and the secondary circuit (electronic circuit).



$$I_{PN} = 150 \text{ A}$$



Electrical data

I_{PNDC}	Primary continuous current (nominal)	150	A												
I_{PN}	Primary nominal current rms	106	A												
I_{PM}	Primary current, measuring range	0 .. ± 200	A												
R_M	Measuring resistance @ $\pm 15\text{V}$, $\pm 200 \text{ A}_{max}$	<table border="1"> <thead> <tr> <th colspan="2">$T_A = 70^\circ\text{C}$</th> <th colspan="2">$T_A = 85^\circ\text{C}$</th> </tr> <tr> <th>$R_{M min}$</th> <th>$R_{M max}$</th> <th>$R_{M min}$</th> <th>$R_{M max}$</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>30</td> <td>0</td> <td>15</td> </tr> </tbody> </table>		$T_A = 70^\circ\text{C}$		$T_A = 85^\circ\text{C}$		$R_{M min}$	$R_{M max}$	$R_{M min}$	$R_{M max}$	0	30	0	15
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$R_{M min}$	$R_{M max}$	$R_{M min}$	$R_{M max}$												
0	30	0	15												
I_S	Secondary current rms	75	mA												
I_{SN}	Secondary nominal current rms	53	mA												
K_N	Conversion ratio	1 : 2000													
V_C	Supply voltage ($\pm 5\%$)	± 15	V												
I_C	Current consumption ($\pm 1 \text{ mA}$)	$16 + I_S$	mA												
V_d	Rms voltage for AC isolation test, 50 Hz, 1 min	2.5	kV												

Features

- Closed loop (compensated) current transducer using the Hall effect
- Printed circuit board mounting
- Isolated 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.

Application domain

- Industrial.

Accuracy - Dynamic performance data

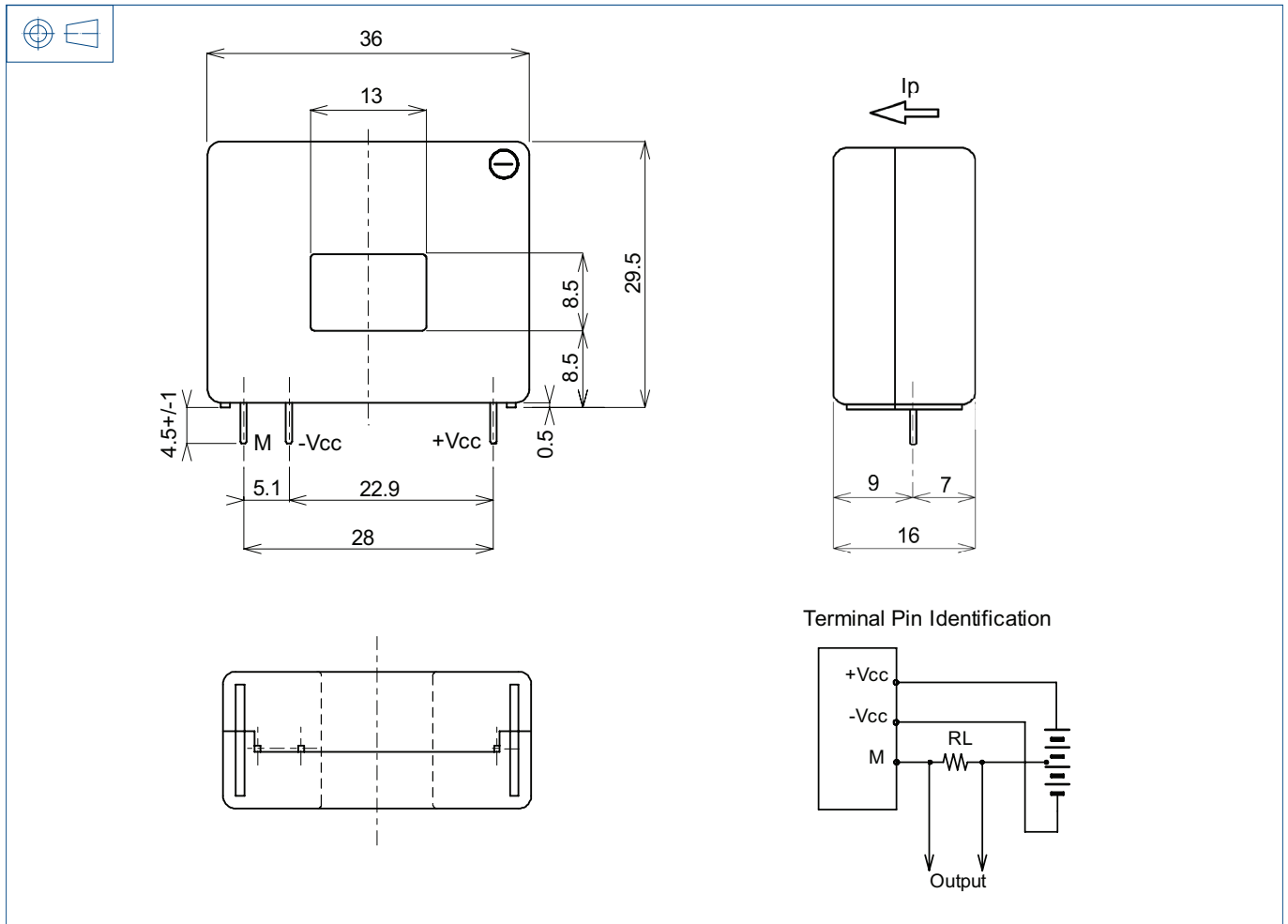
X	Accuracy @ I_{PN} , $T_A = 25^\circ\text{C}$, $\pm 15 \text{ V}$ ($\pm 5\%$)	$< \pm 1$	% of I_{PNDC}
ϵ_L	Linearity error ($0 .. \pm I_{PNDC}$)	$< \pm 0.25$	% of I_{PNDC}
I_O	Offset current @ $I_P = 0$, $T_A = 25^\circ\text{C}$	$< \pm 0.2$	mA
I_{OM}	Magnetic offset current @ $I_P = 0$ and specified R_M , after an overload of $1 \times I_{PN}$	$< \pm 0.15$	mA
I_{OT}	Temperature coefficient of I_O	$< \pm 0.005$	mA/K
t_r	Response time ¹⁾ to 90 % of I_{PN} step	< 1	μs
di/dt	di/dt accurately followed	> 100	A/ μs
BW	Frequency bandwidth (- 1 dB) ¹⁾	DC .. 150	kHz

General data

T_A	Ambient operating temperature	- 10 .. + 80	$^\circ\text{C}$
T_S	Ambient storage temperature	- 15 .. + 85	$^\circ\text{C}$
R_S	Secondary coil resistance @ $T_A = 25^\circ\text{C}$	80	Ω
m	Mass	25	g
	Standards	EN 50178: 1997	

Note: ¹⁾ Derating is needed to avoid excessive core heating at high frequency.

Dimensions LA 150-P (in mm. 1 mm = 0.0394 inch)



Mechanical characteristics

- General tolerance ± 0.2 mm
- Primary through-hole 13 x 8.5 mm
- Connection of secondary 3 pins
- Recommended PCB hole 0.7 x 0.7 mm
- Recommended PCB hole 1.0 mm

Safety



This transducer must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the manufacturer's operating instructions.



Caution, risk of electrical shock

When operating the transducer, certain parts of the module can carry hazardous voltage (eg. primary busbar, power supply). Ignoring this warning can lead to injury and/or cause serious damage.

This transducer is a build-in device, whose conducting parts must be inaccessible after installation.

A protective housing or additional shield could be used. Main supply must be able to be disconnected.