

Current Transducers HY 50-P

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

Primary nominal current rms I_{PN} (A)	Primary current, measuring range I_{PM} (A)	Primary conductor (mm)	Type	RoHS since date code
50	± 150	1.6 x 3.5	HY 50-P	45259
V_C	Supply voltage ($\pm 5\%$)		± 15	V
I_C	Current consumption		± 10	mA
$\hat{I}_P$	Overload capability (1 ms)		$50 \times I_{PN}$	
V_d	Rms voltage for AC isolation test, 50 Hz, 1 min		2.5	kV
V_b	Rated isolation voltage rms		500 ¹⁾	V
R_{IS}	Isolation resistance @ 500 VDC		> 1000	M Ω
V_{OUT}	Output voltage (Analog) @ $\pm I_{PN}$, $R_L = 10\text{ k}\Omega$, $T_A = 25^\circ\text{C}$		± 4	V
R_{OUT}	Output internal resistance		100	Ω
R_L	Load resistance		> 1	k Ω

Accuracy - Dynamic performance data

X	Accuracy @ I_{PN} , $T_A = 25^\circ\text{C}$ (excluding offset)	$< \pm 1$	%
e_L	Linearity error ²⁾ ($0 \dots \pm I_{PN}$)	$< \pm 1$	% of I_{PN}
V_{OE}	Electrical offset voltage @ $T_A = 25^\circ\text{C}$	$< \pm 40$	mV
V_{OH}	Hysteresis offset voltage @ $I_P = 0$, after an excursion of $1 \times I_{PN}$	$< \pm 15$	mV
TCV_{OE}	Temperature coefficient of V_{OE}	typ. ± 1.5 max. ± 3	mV/K mV/K
TCV_{OUT}	Temperature coefficient of V_{OUT} (% of reading)	$< \pm 0.1$	%/K
t_r	Response time to 90% of I_{PN} step	< 3	μs
di/dt	di/dt accurately followed	> 50	A/ μs
BW	Frequency bandwidth ³⁾ (-3 dB)	DC .. 50	kHz

General data

T_A	Ambient operating temperature	-10 .. +80	$^\circ\text{C}$
T_S	Ambient storage temperature	-25 .. +85	$^\circ\text{C}$
m	Mass	< 14	g
	Standards ⁴⁾	EN 50178: 1997	

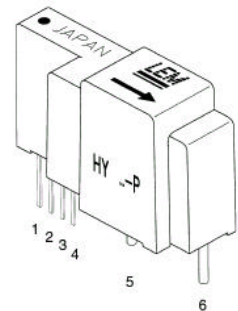
Notes : ¹⁾ Pollution class 2, overvoltage category III.

²⁾ Linearity data exclude the electrical offset.

³⁾ Please refer to derating curves in the technical file to avoid excessive core heating at high frequency.

⁴⁾ Please consult characterisation report for more technical details and application advice.

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



Features

- Hall effect measuring principle
- Galvanic isolation between primary and secondary circuit
- Isolation voltage 2500 V~
- Compact design for PCB mounting
- Low power consumption
- Extended measuring range ($3 \times I_{PN}$)
- Insulated plastic case recognized according to UL 94-V0.

Advantages

- Easy mounting
- Small size and space saving
- Only one design for wide current ratings range
- High immunity to external interference.

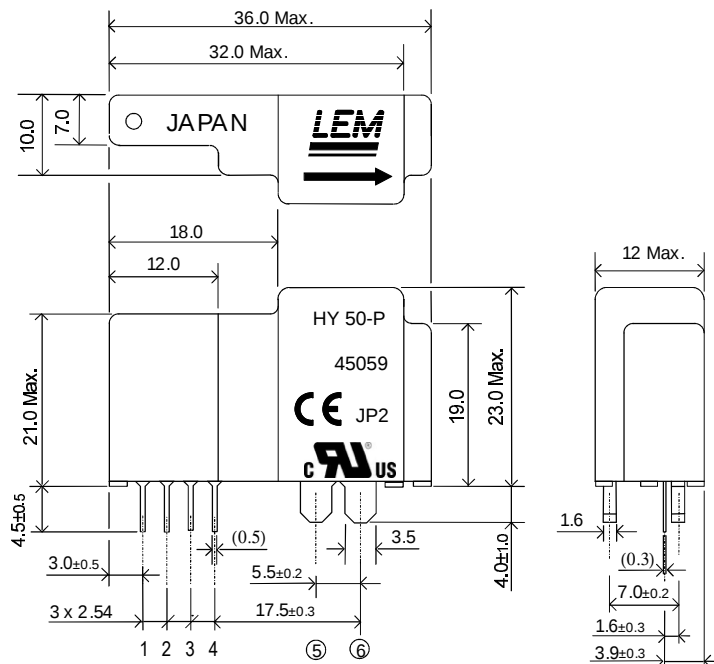
Applications

- General purpose inverters
- Switched-Mode Power Supplies (SMPS)
- AC motor speed control
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Power supplies for welding applications.

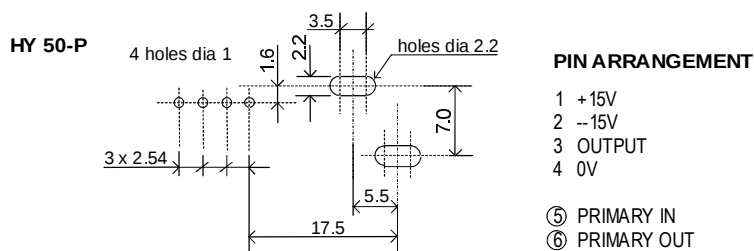
Application domain

- Industrial

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



PCB MOUNTING DIMENSIONS (in mm ± 0.1 , hole $-0, +0.2$)



Safety



This transducer must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the following 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 built-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.