

Current Transducers, HY50-P

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

Primary nominal r.m.s. current I_{PN} (A)	Primary current measuring range I_p (A)	Primary conductor (mm)	Type
50	± 150	1.6 x 3.5	HY 50-P
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	R.m.s. voltage for AC isolation test, 50/60Hz, 1 min		2.5 kV
V_b	R.m.s. rated voltage, safe separation		500 ¹⁾ V
R_{IS}	Isolation resistance @ 500 VDC		> 1000 M Ω
V_{OUT}	Output voltage @ $\pm I_{PN}$, $R_L = 10$ k Ω , $T_A = 25^\circ\text{C}$		± 4 V
R_{OUT}	Output internal resistance		100 Ω
R_L	Load resistance		> 1 k Ω

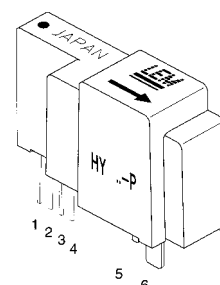
Accuracy - Dynamic performance data

X	Accuracy @ I_{PN} , $T_A = 25^\circ\text{C}$ (without offset)	$< \pm 1$	%
ϵ_L	Linearity 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
V_{OT}	Thermal drift of V_{OE}	typ ± 1.5 max ± 3	mV/K mV/K
TCE_G	Thermal drift of the gain (% of reading)	$< \pm 0.1$	%/K
t_r	Response time @ 90% of I_p	< 3	μs
di/dt	di/dt accurately followed	> 50	A/ μs
f	Frequency bandwidth ³⁾ ($0 \dots -3$ 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 Standards ⁴⁾	< 14	g
		EN50178	

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



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 savings
- Only one design for wide current ratings range
- High immunity against 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.

Notes : ¹⁾ Pollution class 2, overvoltage category III

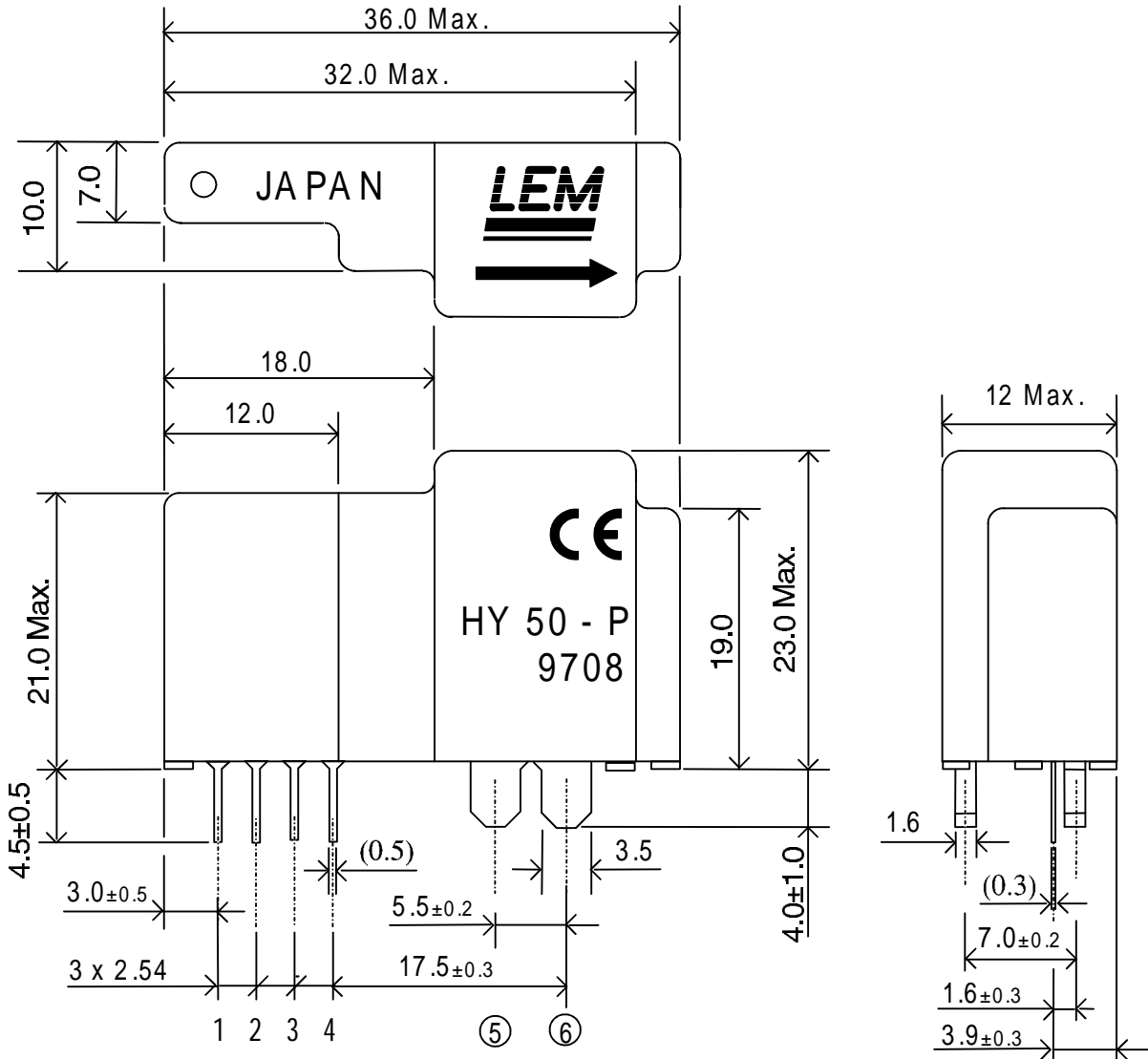
²⁾ Linearity data exclude the electrical offset.

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

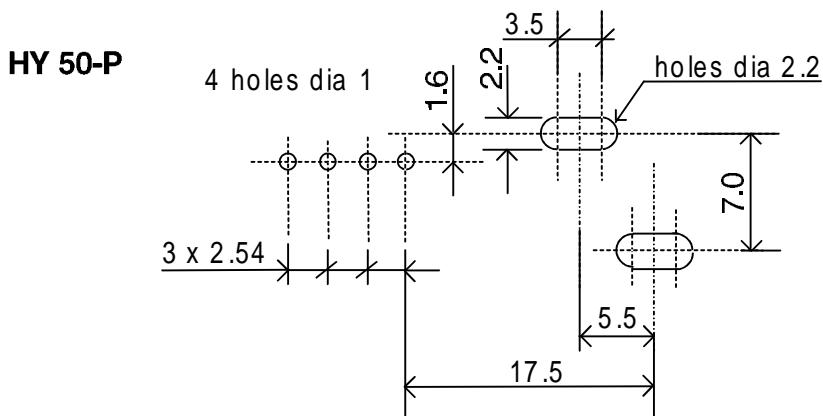
⁴⁾ Please consult characterisation report for more technical details and application advises.

HY 50-P

Dimensions (in mm)



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



PIN ARRANGEMENT

- 1 +15V
- 2 --15V
- 3 OUTPUT
- 4 0V
- ⑤ PRIMARY IN
- ⑥ PRIMARY OUT