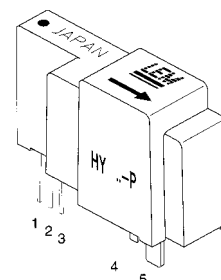


Current Transducers, HY 50-P/SP1

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).



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



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/SP1
V_C	Supply voltage ($\pm 5\%$)	single	+ 5 V DC
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 @ $+I_{PN}$, $R_L = 10 \text{ k}\Omega$, $T_A = 25^\circ\text{C}$		2.5 V
	Output voltage @ $-I_{PN}$, $R_L = 10 \text{ k}\Omega$, $T_A = 25^\circ\text{C}$		1.5 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)	$< \pm 2$	%
ϵ_L	Linearity ²⁾ ($0 \dots \pm I_{PN}$)	$< \pm 1$	% of I_{PN}
V_{OE}	Electrical offset voltage, $T_A = 25^\circ\text{C}$	$< +2 \text{ V} \pm 25 \text{ mV}$	
V_{OH}	Hysteresis offset voltage @ $I_P = 0$ after an excursion of $1 \times I_{PN}$	$< \pm 10$	mV
V_{OT}	Thermal drift of V_{OE}	typ ± 1.5 max ± 3	mV/K mV/K
$TC\epsilon_G$	Thermal drift of the gain (% of reading)	$< \pm 0.1$	%/K
t_r	Response time @ 90% of I_P	< 5	μs
di/dt	di/dt accurately followed	> 50	A/ μs
f	Frequency bandwidth ³⁾ ($0 \dots 3 \text{ dB}$)	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⁾	EN50178	

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.

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

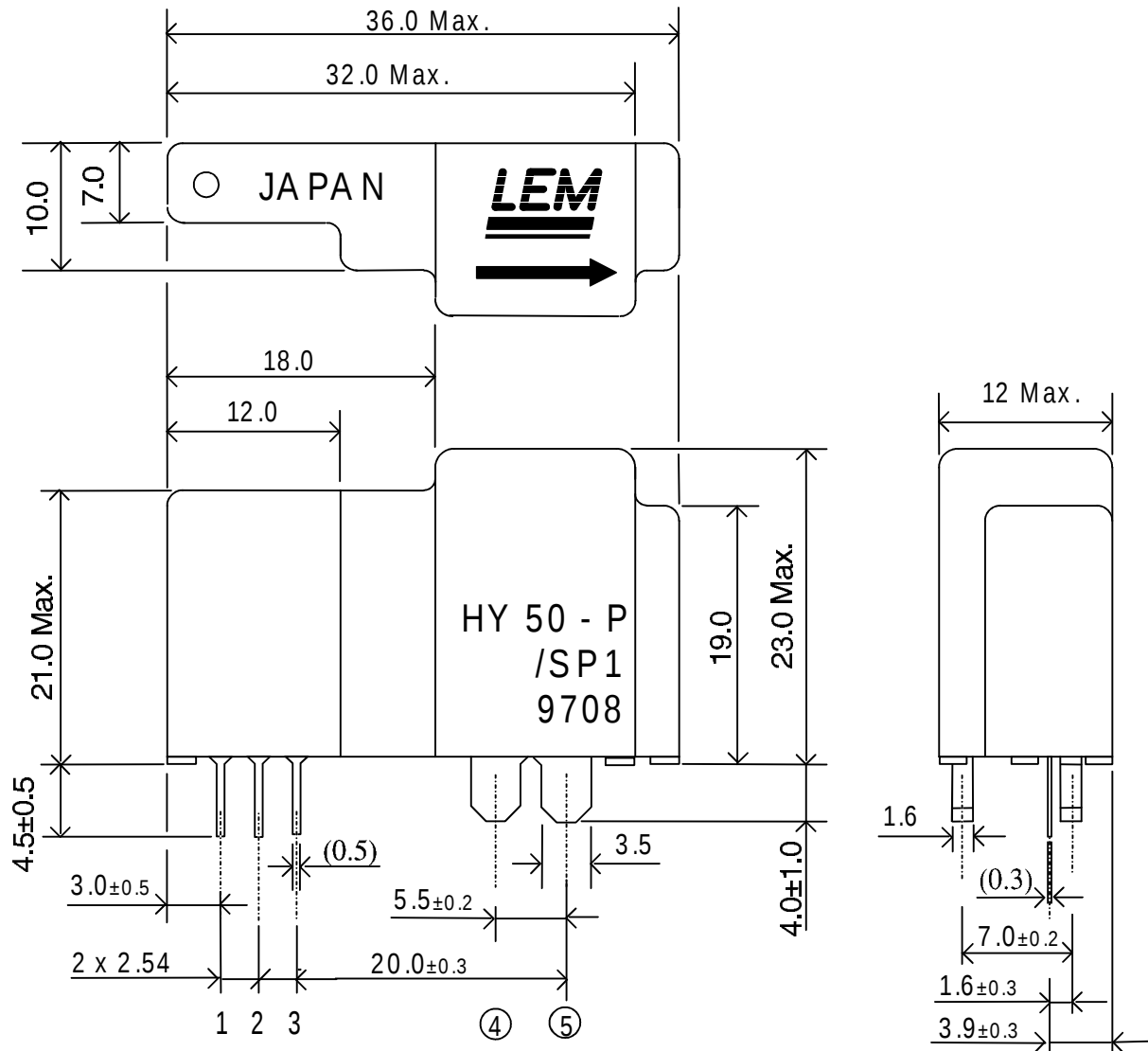
Applications

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

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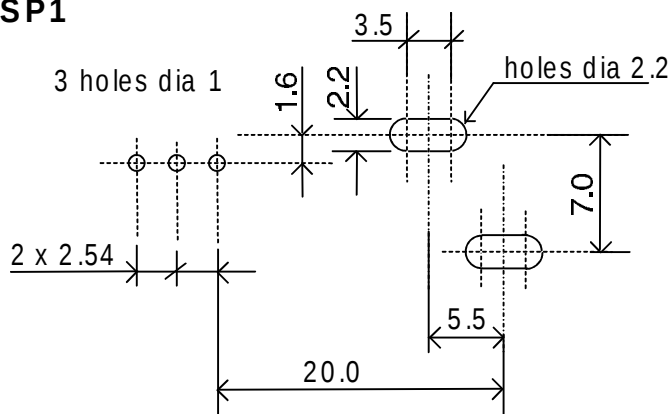
HY 50-P/SP1

Dimensions (in mm)



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

HY 50-P/SP1



PIN ARRANGEMENT

- 1 +5V
- 2 OUTPUT
- 3 0V

- ④ PRIMARY IN
- ⑤ PRIMARY OUT