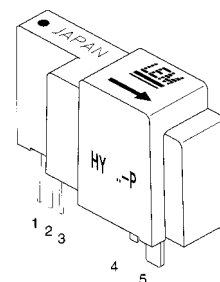


## Current Transducers, HY 50-P/SP1

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	$\pm 150$	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 <sup>1)</sup> V
$R_{IS}$	Isolation resistance @ 500 VDC		> 1000 M $\Omega$
$V_{OUT}$	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 $\Omega$
$R_L$	Load resistance		> 1 k $\Omega$

### Accuracy - Dynamic performance data

$X$	Accuracy @ $I_{PN}$ , $T_A = 25^\circ\text{C}$ (without offset)	< $\pm 2$	%
$\epsilon_L$	Linearity <sup>2)</sup> ( $0 \dots \pm I_{PN}$ )	< $\pm 1$	% of $I_{PN}$
$V_{OE}$	Electrical offset voltage, $T_A = 25^\circ\text{C}$	< + 2V $\pm$ 25 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 $\pm 1.5$ max $\pm 3$	mV/K mV/K
$TCE_G$	Thermal drift of the gain (% of reading)	< $\pm 0.1$	%/K
$t_r$	Response time @ 90% of $I_P$	< 5	$\mu\text{s}$
$di/dt$	$di/dt$ accurately followed	> 50	A/ $\mu\text{s}$
$f$	Frequency bandwidth <sup>3)</sup> ( $0 \dots -3 \text{ dB}$ )	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 <sup>4)</sup>	EN50178	

Notes : <sup>1)</sup> Pollution class 2, overvoltage category III

<sup>2)</sup> Linearity data exclude the electrical offset.

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

<sup>4)</sup> 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

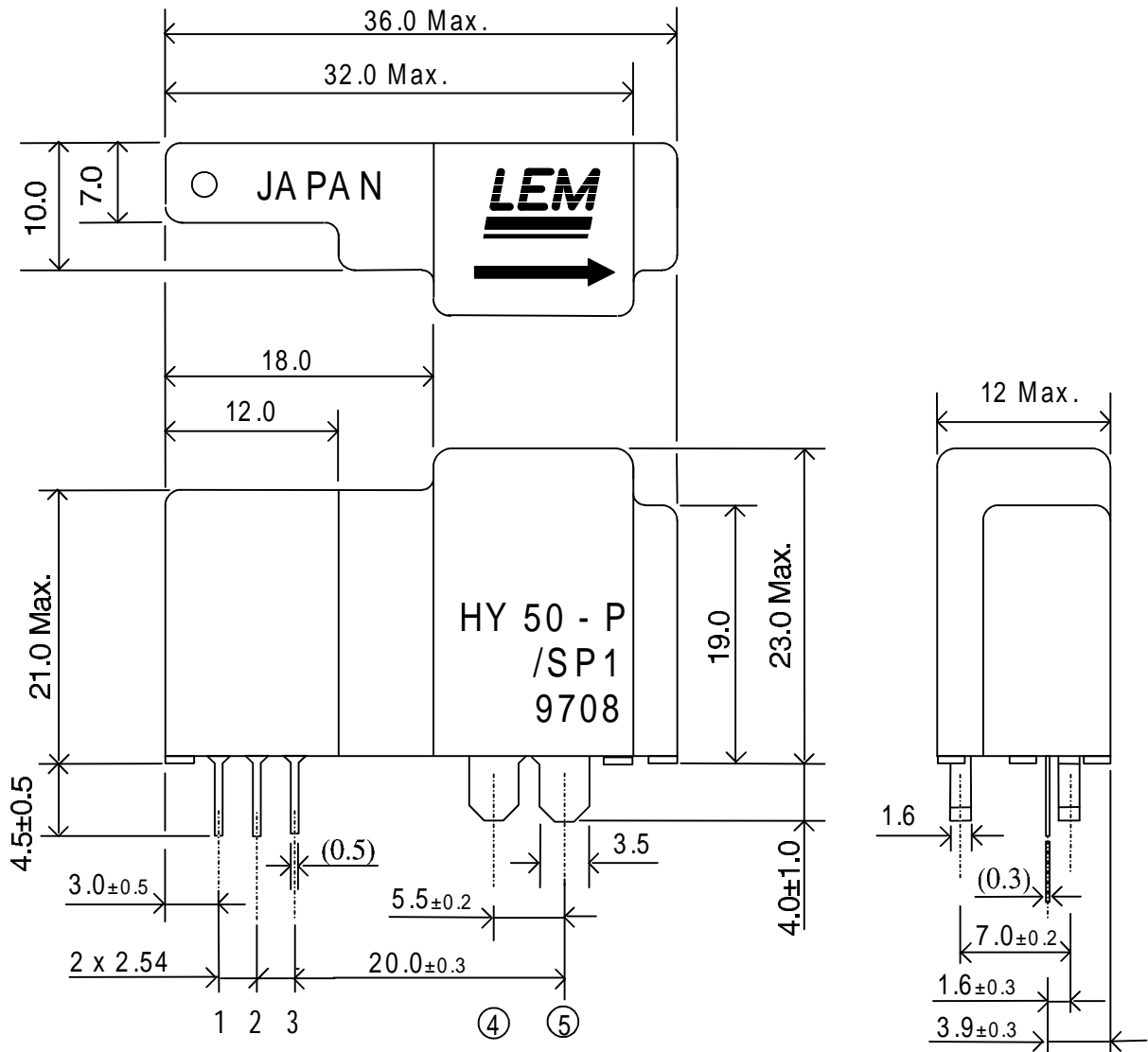
- Easy mounting
- Small size and space savings
- Only one design for wide current ratings range
- High immunity against external interference

### 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.

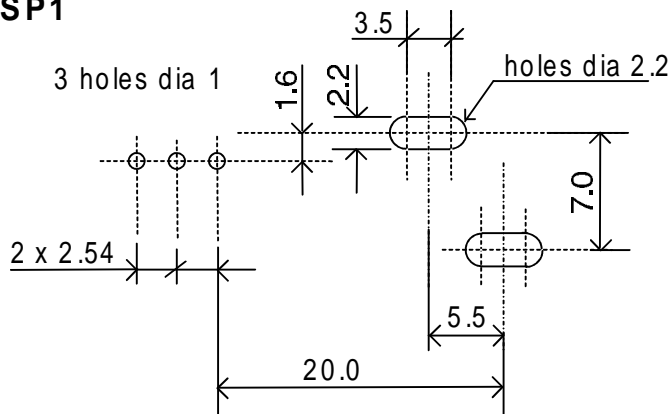
# HY 50-P/SP1

Dimensions (in mm)



## PCB MOUNTING DIMENSIONS (in mm $\pm 0.1$ , hole $-0, +0.2$ )

### HY 50-P/SP1



## PIN ARRANGEMENT

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

- ④ PRIMARY IN
- ⑤ PRIMARY OUT