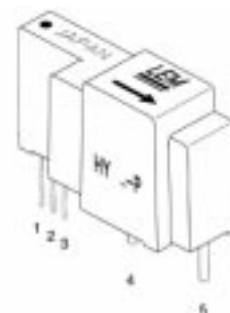


## Current Transducers HY 5 to 25-P/SP1

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) with unipolar power supply.



$$I_{PN} = 5 \dots 25 \text{ A}$$



### Electrical data

Primary nominal r.m.s. current $I_{PN}$ (A)	Primary current measuring range $I_p$ (A)	Primary conductor (mm)	Type
5	$\pm 15$	$\varnothing 0.7$	HY 05-P/SP1
10	$\pm 30$	$\varnothing 1.1$	HY 10-P/SP1
12.5	$\pm 37.5$	$\varnothing 1.4$	HY 12-P/SP1
15	$\pm 45$	$\varnothing 1.4$	HY 15-P/SP1
20	$\pm 60$	$2 \times \varnothing 1.2$ <sup>1)</sup>	HY 20-P/SP1
25	$\pm 75$	$2 \times \varnothing 1.4$ <sup>1)</sup>	HY 25-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 mn		2.5	kV
$V_b$	R.m.s. rated voltage, safe separation		$500$ <sup>2)</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>3)</sup> ( $0 \dots \pm I_{PN}$ )		< $\pm 1$	% of $I_{PN}$
$V_{OE}$	Electrical offset voltage, $T_A = 25^\circ\text{C}$		< $+ 2V \pm 25 \text{ mV}$	
$V_{OH}$	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	$\pm 1.5$	mV/K
		max	$\pm 3$	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>4)</sup> (- 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 <sup>5)</sup>	EN 50178	

Notes : <sup>1)</sup> Conductor terminals are soldered together.

<sup>2)</sup> Pollution class 2, overvoltage category III.

<sup>3)</sup> Linearity data exclude the electrical offset.

<sup>4)</sup> Please refer to derating curves in the technical file to avoid excessive core heating at high frequency.

<sup>5)</sup> Please consult characterisation report for more technical details and application advice.

### 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

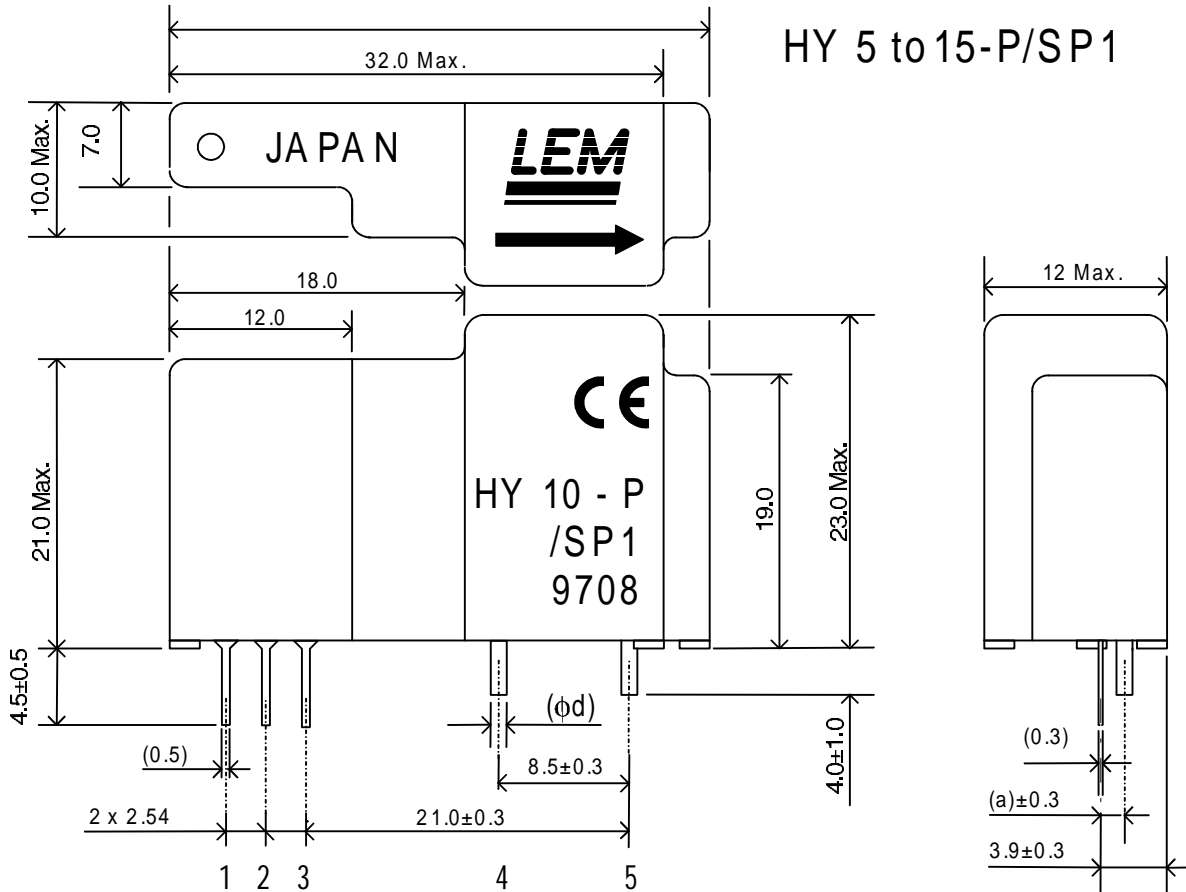
- Easy mounting
- Small size and space saving
- Only one design for wide current ratings range
- High immunity against external interference.

### Applications

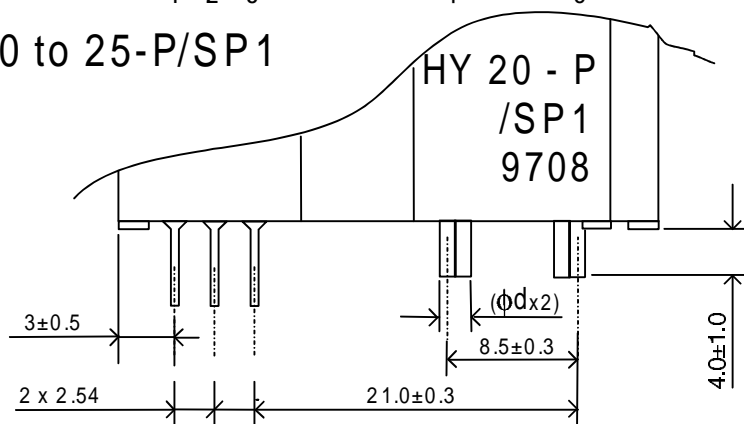
- General purpose inverters
- AC variable speed drives
- Static converters for DC motor drives
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Switched-Mode Power Supplies (SMPS).

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### HY 5 to 15-P/SP1



### HY 20 to 25-P/SP1

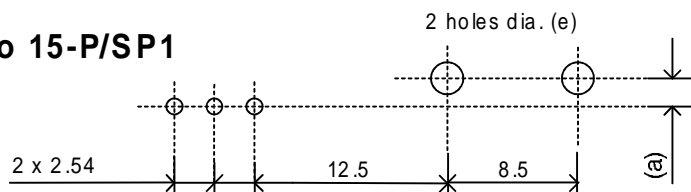


### PIN ARRANGEMENT

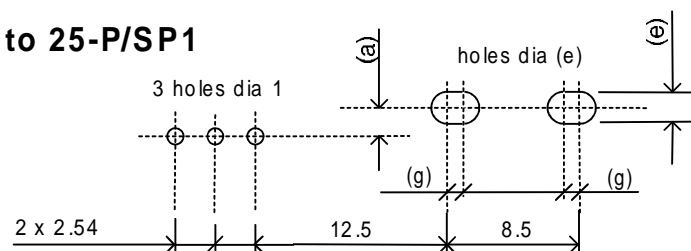
- 1 +5V
- 2 OUTPUT
- 3 0V
  
- 4 PRIMARY IN
- 5 PRIMARY OUT

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

#### HY 5 to 15-P/SP1



#### HY 20 to 25-P/SP1



Type	a mm	d mm	e mm	g mm
HY 05-P	1.1	0.7	1.2	--
HY 10-P	1.4	1.1	1.6	--
HY 12-P	1.5	1.4	2.0	--
HY 15-P	1.5	1.4	2.0	--
HY 20-P	1.4	1.2	1.8	1.4
HY 25-P	1.5	1.4	2.0	1.6