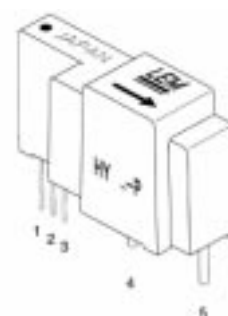


Current Transducers HY 5 to 25-P/SP1

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	± 15	$\varnothing 0.7$	HY 05-P/SP1
10	± 30	$\varnothing 1.1$	HY 10-P/SP1
12.5	± 37.5	$\varnothing 1.4$	HY 12-P/SP1
15	± 45	$\varnothing 1.4$	HY 15-P/SP1
20	± 60	$2 \times \varnothing 1.2$ ¹⁾	HY 20-P/SP1
25	± 75	$2 \times \varnothing 1.4$ ¹⁾	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		$500^{2)}$	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)		< ± 2	%
ϵ_L	Linearity ³⁾ ($0 \dots \pm I_{PN}$)		< ± 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 $1 \times I_{PN}$		< ± 10	mV
V_{OT}	Thermal drift of V_{OE}	typ	± 1.5	mV/K
		max	± 3	mV/K
TCE_G	Thermal drift of the gain (% of reading)		< ± 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 ⁴⁾ (- 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 ⁵⁾	EN 50178	

Notes : ¹⁾ Conductor terminals are soldered together.

²⁾ Pollution class 2, overvoltage category III.

³⁾ Linearity data exclude the electrical offset.

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

⁵⁾ 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

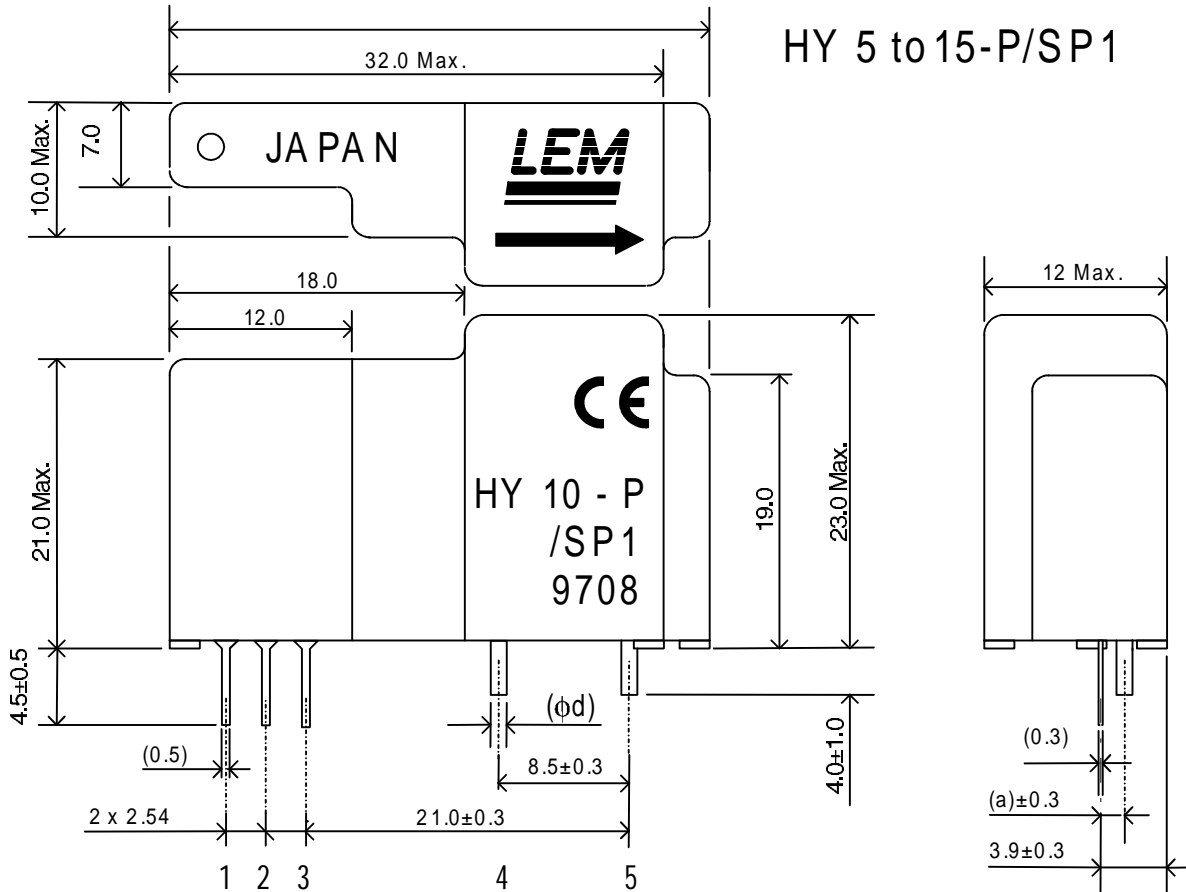
- Easy mounting
- Small size and space saving
- Only one design for wide current ratings range
- High immunity against external interference.

Applications

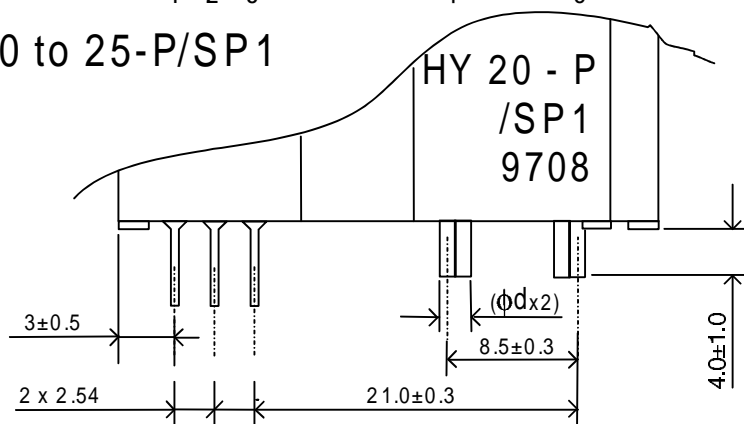
- General purpose inverters
- AC variable speed drives
- Static converters for DC motor drives
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Switched-Mode Power Supplies (SMPS).

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HY 5 to 15-P/SP1



HY 20 to 25-P/SP1



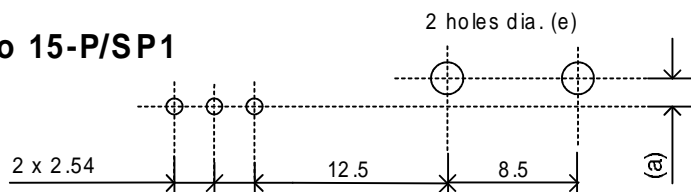
PIN ARRANGEMENT

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

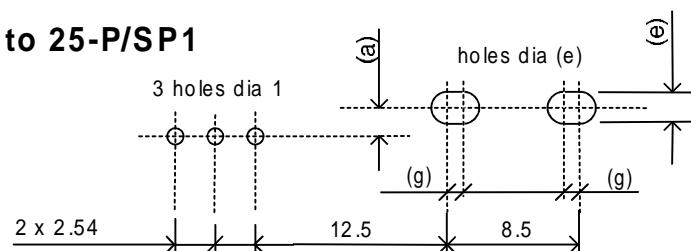
- 4 PRIMARY IN
- 5 PRIMARY OUT

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