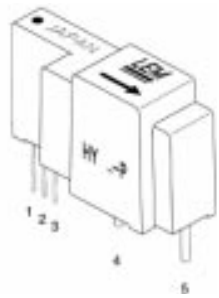
Current Transducers HY 5 to 25-P/SP1

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 .. 25 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	∅ 0.7	**HY 05-P/SP1**
10	± 30	∅ 1.1	**HY 10-P/SP1**
12.5	± 37.5	∅ 1.4	**HY 12-P/SP1**
15	± 45	∅ 1.4	**HY 15-P/SP1**
20	± 60	2 x ∅ 1.2 [1]	**HY 20-P/SP1**
25	± 75	2 x ∅ 1.4 [1]	**HY 25-P/SP1**

V_C	Supply voltage (± 5 %)	single	+ 5	V DC
I_C	Current consumption		10	mA
$\hat{I}_P$	Overload capability (1 ms)		50 x 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	MΩ
V_{OUT}	Output voltage @ + I_{PN}, R_L = 10 kΩ, T_A = 25°C		2.5	V
	Output voltage @ - I_{PN}, R_L = 10 kΩ, T_A = 25°C		1.5	V
R_{OUT}	Output internal resistance		100	Ω
R_L	Load resistance		> 1	kΩ

Accuracy - Dynamic performance data

X	Accuracy @ I_{PN}, T_A = 25°C (without offset)		< ± 2	%
ε_L	Linearity [3] (0 .. ± I_{PN})		< ± 1	% of I_{PN}
V_{OE}	Electrical offset voltage, T_A = 25°C		< + 2V ± 25	mV
V_{OH}	Hysteresis offset voltage @ I_P = 0 after an excursion of 1 x I_{PN}		< ± 10	mV
V_{OT}	Thermal drift of V_{OE}	typ	± 1.5	mV/K
		max	± 3	mV/K
$TC\varepsilon_G$	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	°C
T_S	Ambient storage temperature	- 25 .. + 85	°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 x 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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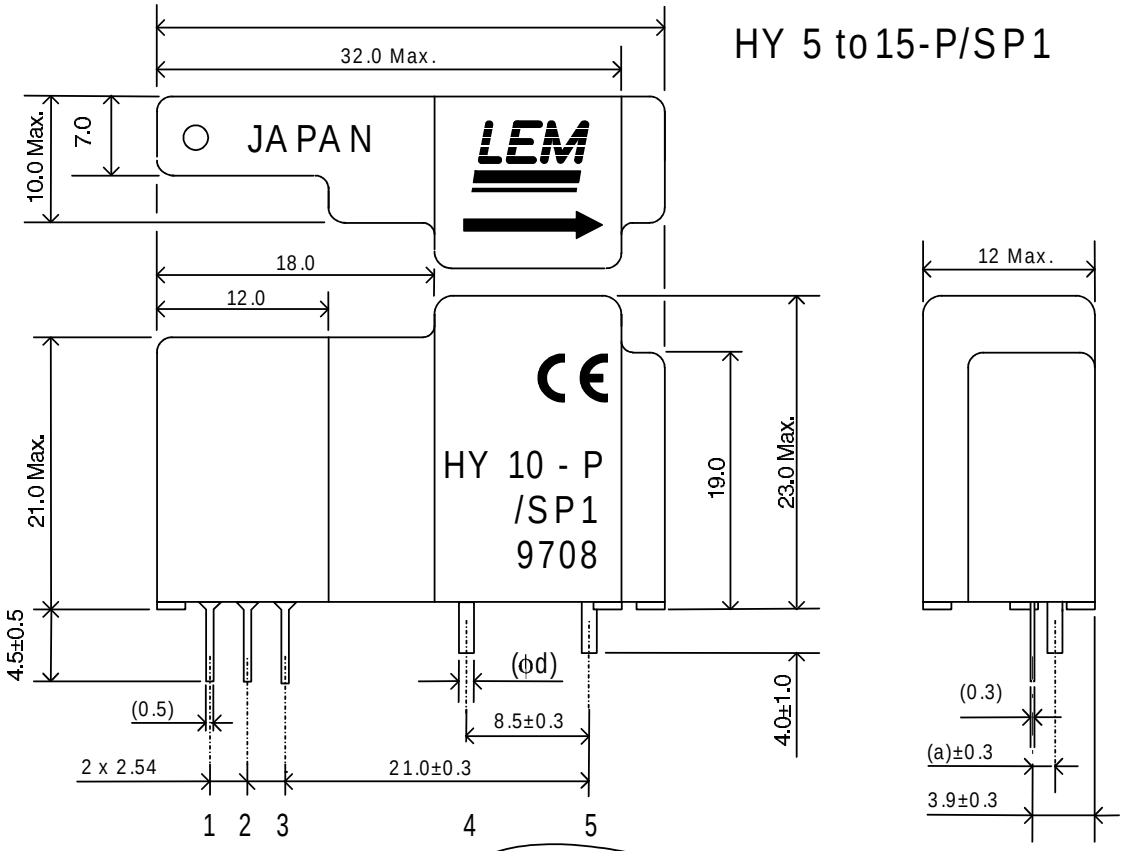
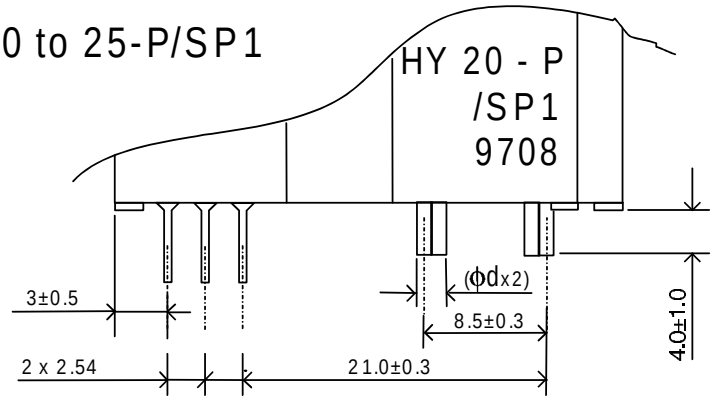
HY 5 to 15-P/SP1



HY 20 to 25-P/SP1



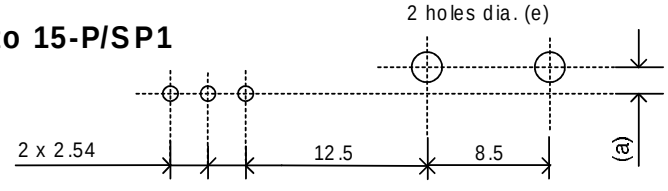
PIN ARRANGEMENT

1 +5V
2 OUTPUT
3 0V

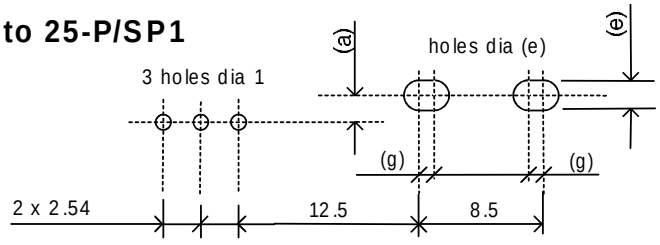
4 PRIMARY IN
5 PRIMARY OUT

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

LEM reserves the right to change limits and dimensions.