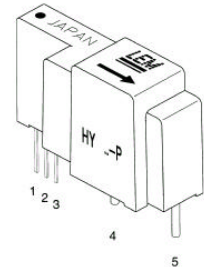


# Current Transducers HY 5..25-P/SP1

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

For the electronic measurement of currents : DC, AC, pulsed, mixed, with a galvanic isolation between the primary circuit (high power) and the secondary circuit (electronic circuit).



## Electrical data

| Primary nominal current rms<br>$I_{PN}$ (A) | Primary current measuring range<br>$I_{PM}$ (A) | Primary conductor (mm)  | Type               | RoHS since date code |
|---|---|-------------------------|--------------------|----------------------|
| 5   | ± 15  | ∅ 0.7                   | <b>HY 5-P/SP1</b>  | planned              |
| 10  | ± 30  | ∅ 1.1                   | <b>HY 10-P/SP1</b> | 45309                |
| 12.5  | ± 37.5  | ∅ 1.4                   | <b>HY 12-P/SP1</b> | 45330                |
| 15  | ± 45  | ∅ 1.4                   | <b>HY 15-P/SP1</b> | 46044                |
| 25  | ± 75  | 2 x ∅ 1.4 <sup>1)</sup> | <b>HY 25-P/SP1</b> | 45278                |

|             |  |                   |    |
|-------------|--|-------------------|----|
| $V_C$       | Supply voltage (± 5 %)   | + 5               | V  |
| $I_C$       | Current consumption  | ± 10              | mA |
| $\hat{I}_P$ | Overload capability (1 ms)   | 50 x $I_{PN}$     |    |
| $V_d$       | Rms voltage for AC isolation test, 50 Hz, 1 min  | 2.5               | kV |
| $V_b$       | Rated isolation voltage rms  | 500 <sup>2)</sup> | V  |
| $R_{IS}$    | Isolation resistance @ 500 VDC   | > 500             | MΩ |
| $V_{OUT}$   | Output voltage (Analog) @ + $I_{PN}$ , $R_L = 10 \text{ k}\Omega$ , $T_A = 25^\circ\text{C}$ | 2.5               | V  |
|             | @ - $I_{PN}$ , $R_L = 10 \text{ k}\Omega$ , $T_A = 25^\circ\text{C}$                         | 1.5               | V  |
| $R_{OUT}$   | Output internal resistance   | 100               | Ω  |
| $R_L$       | Load resistance  | > 1               | kΩ |

## Accuracy - Dynamic performance data

|                          |   |                        |               |
|--------------------------|---|------------------------|---------------|
| <b>X</b>                 | Accuracy @ $I_{PN}$ , $T_A = 25^\circ\text{C}$ (excluding offset)             | < ± 2                  | %             |
| <b>e<sub>L</sub></b>     | Linearity error <sup>3)</sup> (0 .. ± $I_{PN}$ )                              | < ± 1                  | % of $I_{PN}$ |
| <b>V<sub>OE</sub></b>    | Electrical offset voltage @ $T_A = 25^\circ\text{C}$                          | + 2 V ± 25             | mV            |
| <b>V<sub>OH</sub></b>    | Hysteresis offset voltage @ $I_P = 0$ ,<br>after an excursion of 1 x $I_{PN}$ | < ± 10                 | mV            |
| <b>TCV<sub>OE</sub></b>  | Temperature coefficient of $V_{OE}$   | typ. ± 1.5<br>max. ± 3 | mV/K<br>mV/K  |
| <b>TCV<sub>OUT</sub></b> | Temperature coefficient of $V_{OUT}$ (% of reading)                           | < ± 0.1                | %/K           |
| <b>t<sub>r</sub></b>     | Response time to 90 % of $I_{PN}$ step  | < 5                    | μs            |
| <b>di/dt</b>             | di/dt accurately followed   | > 50                   | A/μs          |
| <b>BW</b>                | Frequency bandwidth <sup>4)</sup> (- 3 dB)(small signal)                      | DC .. 25               | kHz           |

## General data

|                      |                               |                |    |
|----------------------|-------------------------------|----------------|----|
| <b>T<sub>A</sub></b> | Ambient operating temperature | - 10 .. + 75   | °C |
| <b>T<sub>S</sub></b> | Ambient storage temperature   | - 25 .. + 85   | °C |
| <b>m</b>             | Mass                          | < 14           | g  |
|                      | Standard                      | EN 50178: 1997 |    |

**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.

## 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  $I_{PN}$ )
- Isolated plastic case recognized according to UL 94-V0.

## Special feature

- Single power supply + 5 V

## Advantages

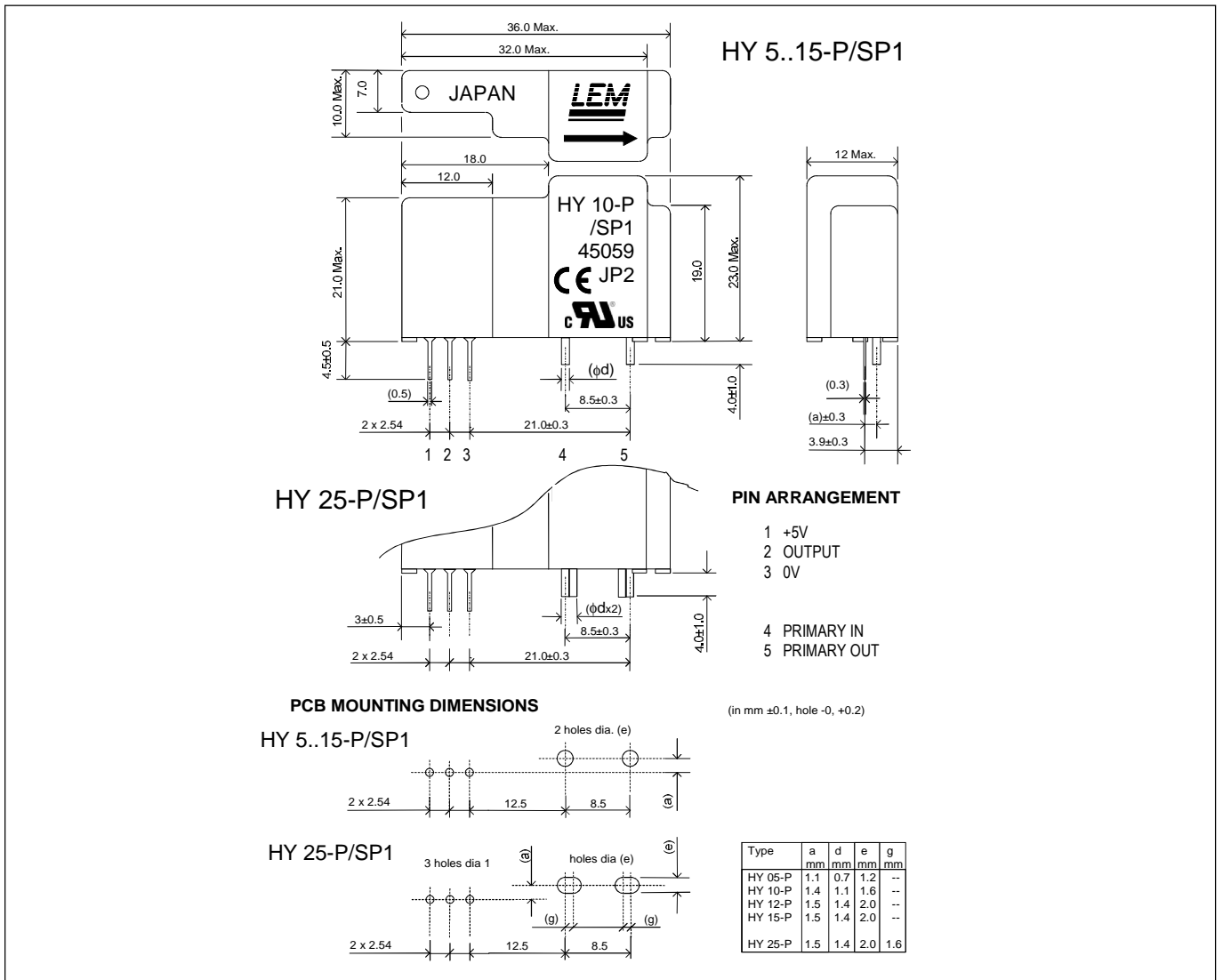
- Easy installation
- Small size and space saving
- Only one design for wide current ratings range
- High immunity to external interference.

## Applications

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

## Application domain

- Industrial

**Dimensions HY 5..25-P/SP1 (in mm. 1 mm = 0.0394 inch)**

**Safety**


This transducer must be used in electric/electronic equipment with respect to applicable standards and safety requirements in accordance with the following manufacturer's operating instructions.



Caution, risk of electrical shock

When operating the transducer, certain parts of the module can carry hazardous voltage (eg. primary busbar, power supply). Ignoring this warning can lead to injury and/or cause serious damage.

This transducer is a built-in device, whose conducting parts must be inaccessible after installation.

A protective housing or additional shield could be used.

Main supply must be able to be disconnected.