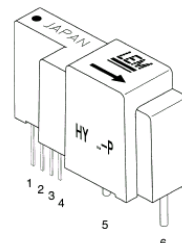


## Current Transducers HY 5 to 25-P

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).



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



### Electrical data

| Primary nominal r.m.s. current<br>$I_{PN}$ (A) | Primary current measuring range<br>$I_P$ (A) | Primary conductor (mm)          | Type    |
|------------------------------------------------|----------------------------------------------|---------------------------------|---------|
| 5                                              | $\pm 15$                                     | $\varnothing 0.7$               | HY 5-P  |
| 10                                             | $\pm 30$                                     | $\varnothing 1.1$               | HY 10-P |
| 12.5                                           | $\pm 37.5$                                   | $\varnothing 1.4$               | HY 12-P |
| 15                                             | $\pm 45$                                     | $\varnothing 1.4$               | HY 15-P |
| 20                                             | $\pm 60$                                     | $2 \times \varnothing 1.2^{1)}$ | HY 20-P |
| 25                                             | $\pm 75$                                     | $2 \times \varnothing 1.4^{1)}$ | HY 25-P |

|             |                                                                                       |                       |            |
|-------------|---------------------------------------------------------------------------------------|-----------------------|------------|
| $V_C$       | Supply voltage ( $\pm 5\%$ ) <sup>6)</sup>                                            | $\pm 12 \dots \pm 15$ | V          |
| $I_C$       | Current consumption                                                                   | $\pm 10$              | 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 $\Omega$ |
| $V_{OUT}$   | Output voltage @ $\pm I_{PN}$ , $R_L = 10 \text{ k}\Omega$ , $T_A = 25^\circ\text{C}$ | $\pm 4$               | 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)                    | $< \pm 1$                      | %                |
| $e_L$    | Linearity <sup>3)</sup> ( $0 \dots \pm I_{PN}$ )                                   | $< \pm 1$                      | % of $I_{PN}$    |
| $V_{OE}$ | Electrical offset voltage, $T_A = 25^\circ\text{C}$                                | $< \pm 40$                     | mV               |
| $V_{OH}$ | Hysteresis offset voltage @ $I_P = 0$ ;<br>after an excursion of $1 \times I_{PN}$ | $< \pm 15$                     | mV               |
| $V_{OT}$ | Thermal drift of $V_{OE}$                                                          | typ. $\pm 1.5$<br>max. $\pm 3$ | mV/K<br>mV/K     |
| $TCE_G$  | Thermal drift of the gain (% of reading)                                           | $< \pm 0.1$                    | %/K              |
| $t_r$    | Response time @ 90% of $I_P$                                                       | $< 3$                          | $\mu\text{s}$    |
| $di/dt$  | $di/dt$ 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 | $-10 \dots +80$ | $^\circ\text{C}$ |
| $T_S$ | Ambient storage temperature   | $-25 \dots +85$ | $^\circ\text{C}$ |
| $m$   | Mass                          | $< 14$          | g                |
|       | Standards <sup>5)</sup>       | 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.
  - 6) Operating at  $\pm 12\text{V} \leq V_C < \pm 15\text{V}$  will reduce measuring range.

### Features

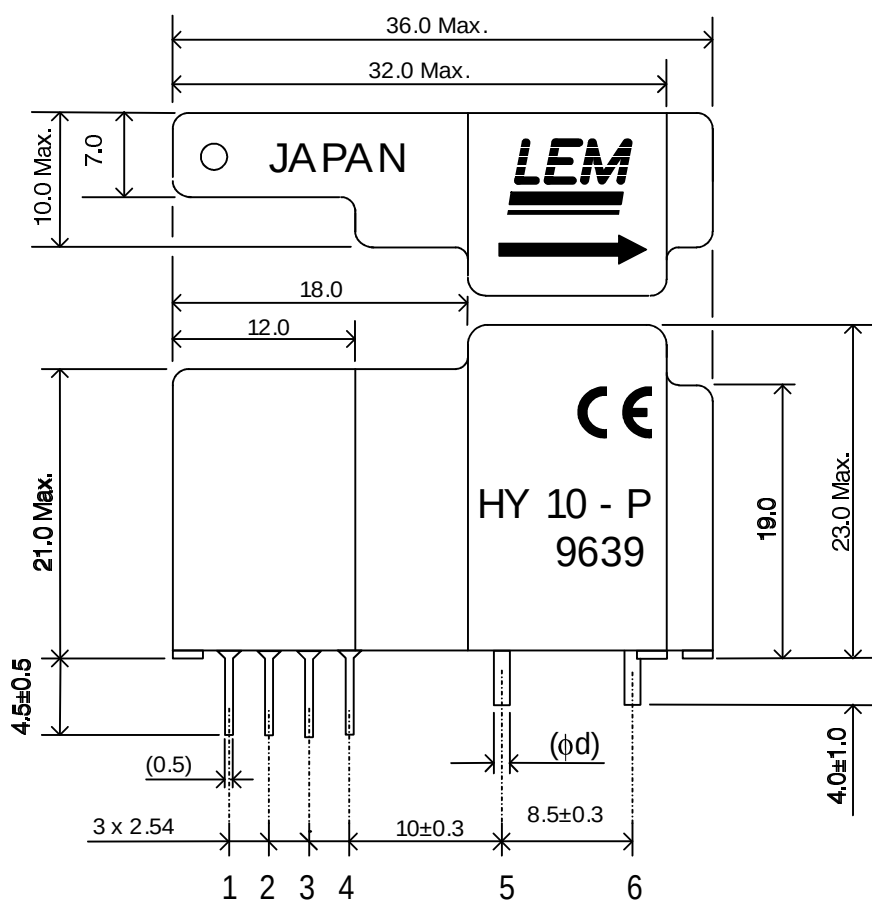
- Hall effect measuring principle
- Galvanic isolation between primary and secondary circuit
- Isolation voltage 2500 V~
- Compact design for PCB mounting
- Low power consumption
- Extended measuring range ( $3 \times I_{PN}$ )
- Insulated plastic case recognized according to UL 94-V0.

### Advantages

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

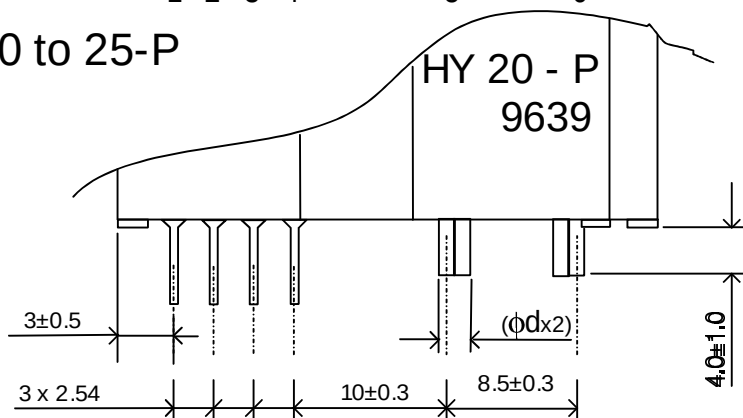
### Applications

- 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).



HY 5 to 15-P

HY 20 to 25-P

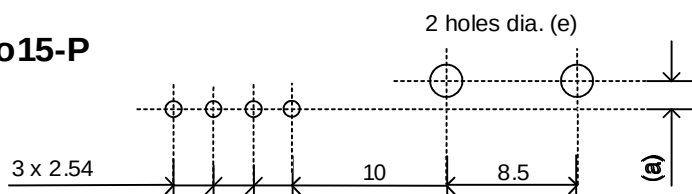


## PIN ARRANGEMENT

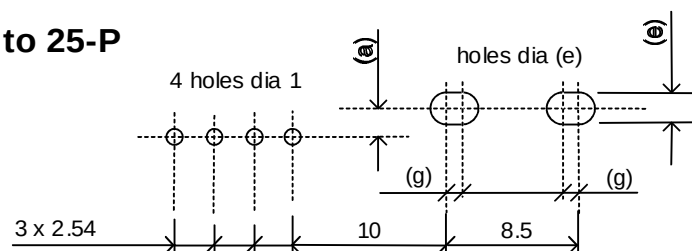
- 1 +15V
- 2 --15V
- 3 OUTPUT
- 4 0V
- 5 PRIMARY IN
- 6 PRIMARY OUT

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

HY 5 to 15-P



HY 20 to 25-P



| Type    | a<br>mm | d<br>mm | e<br>mm | g<br>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     |