

Current Transducers, HY50-P

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).



Electrical data

| Primary nominal r.m.s. current I_{PN} (A) | Primary current measuring range I_p (A) | Primary conductor (mm) | Type | |
|--|--|------------------------|--------------------|------------|
| 50 | ± 150 | 1.6 x 3.5 | HY 50-P | |
| V_C | Supply voltage ($\pm 5\%$) | | ± 15 | V |
| 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 min | | 2.5 | kV |
| V_b | R.m.s. rated voltage, safe separation | | 500 ¹⁾ | V |
| R_{IS} | Isolation resistance @ 500 VDC | | > 1000 | M Ω |
| V_{OUT} | Output voltage @ $\pm I_{PN}$, $R_L = 10\text{ k}\Omega$, $T_A = 25^\circ\text{C}$ | | ± 4 | V |
| R_{OUT} | Output internal resistance | | 100 | Ω |
| R_L | Load resistance | | > 1 | k Ω |

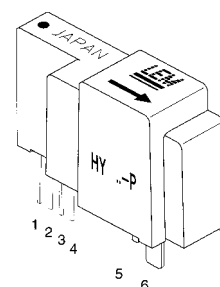
Accuracy - Dynamic performance data

| | | | | |
|--------------|--|-----|-------------|------------------|
| X | Accuracy @ I_{PN} , $T_A = 25^\circ\text{C}$ (without offset) | | $< \pm 1$ | % |
| ϵ_L | Linearity ²⁾ ($0 \dots \pm I_{PN}$) | | $< \pm 1$ | % of I_{PN} |
| V_{OE} | Electrical offset voltage, $T_A = 25^\circ\text{C}$ | | $< \pm 40$ | mV |
| V_{OH} | Hysteresis offset voltage @ $I_p = 0$ after an excursion of $1 \times I_{PN}$ | | $< \pm 15$ | 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) | | $< \pm 0.1$ | %/K |
| t_r | Response time @ 90% of I_p | | < 3 | μs |
| di/dt | di/dt accurately followed | | > 50 | A/ μs |
| f | Frequency bandwidth ³⁾ ($0 \dots -3\text{ dB}$) | | 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 ⁴⁾ | | EN50178 | |

$$I_{PN} = 50\text{ A}$$



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 savings
- Only one design for wide current ratings range
- High immunity against external interference

Applications

- General purpose inverters
- Switched-Mode Power Supplies (SMPS)
- AC motor speed control
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Power supplies for welding applications.

Notes : ¹⁾ Pollution class 2, overvoltage category III

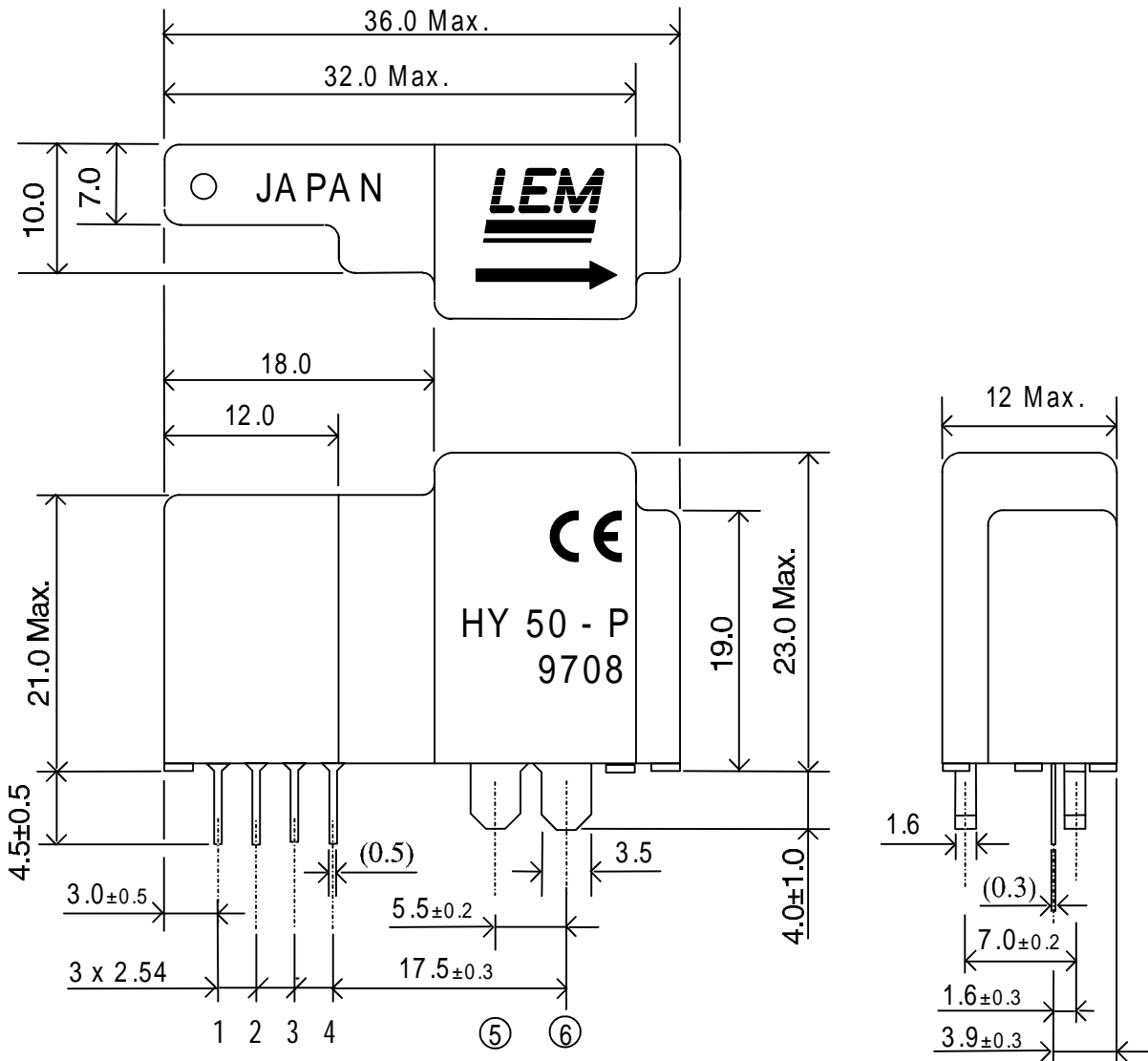
²⁾ Linearity data exclude the electrical offset.

³⁾ Please refer to derating curves in the technical file to avoid excessive core heating at high frequency

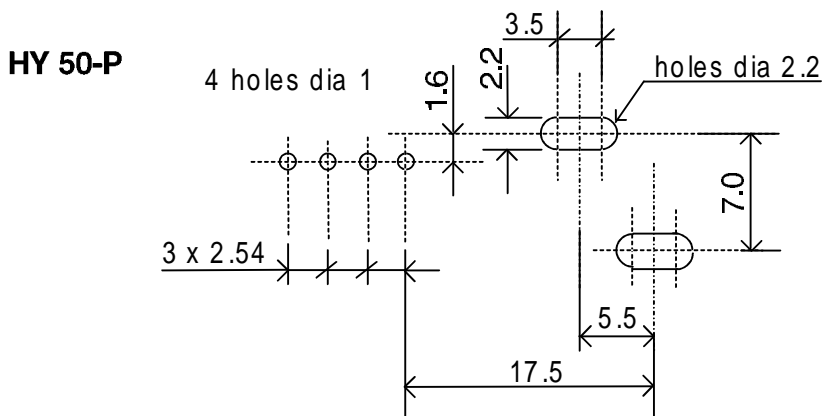
⁴⁾ Please consult characterisation report for more technical details and application advises.

HY 50-P

Dimensions (in mm)



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



PIN ARRANGEMENT

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