Current Transducer 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

<table>
<thead>
<tr>
<th>Primary nominal r.m.s. current</th>
<th>Primary current measuring range</th>
<th>Primary conductor (mm)</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>I_{PN} (A)</td>
<td>±150</td>
<td>1.6 x 3.5</td>
<td>HY 50-P</td>
</tr>
</tbody>
</table>

- **V_C**: Supply voltage (± 5 %) ±15 V
- **I_C**: Current consumption ±10 mA
- **I_P**: Overload capability (1 ms) 50 x I_{PN}
- **V_A**: R.m.s. voltage for AC isolation test, 50/60Hz, 1 min 2.5 kV
- **V_R**: R.m.s. rated voltage, safe separation 5001 V
- **V_{OUT}**: Output voltage @ ± I_{PN}, R_L = 10 kΩ, T_A = 25°C ±4 V
- **R_{OUT}**: Output internal resistance 100 Ω

### Accuracy - Dynamic performance data

| X | Accuracy @ I_{PN}, T_A = 25°C (without offset) | < ±1 % |
| E_l | Linearity a) (0..±I_{PN}) | < ±1 % of I_{PN} |
| V_{OE} | Electrical offset voltage, T_A = 25°C | < ±40 mV |
| V_{OH} | Hysteresis offset voltage @ I_P = 0; after an excursion of 1 x I_{PN} | < ±15 mV |
| V_{OT} | Thermal drift of V_{OE} typ. max. | ± 1.5 mV/K ± 3 mV/K |
| TCE | Thermal drift of the gain (% of reading) | < ±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 b) (−3 dB) | DC..50 kHz |

### 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 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.

### General data

| T_A | Ambient operating temperature | -10..+80 °C |
| T_S | Ambient storage temperature | -25..+85 °C |
| m | Mass | < 14 g |

### Notes:
- a) Pollution class 2, overvoltage category III
- b) Linearity data exclude the electrical offset.
- c) Please refer to derating curves in the technical file to avoid excessive core heating at high frequency
- d) Please consult characterisation report for more technical details and application advice.
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

LEM reserves the right to change limits and dimensions.