Current Transducers HTB 50 .. 400-P and HTB 50 .. 100-TP

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

<table>
<thead>
<tr>
<th>Primary nominal r.m.s. current $I_{PN}$ (A)</th>
<th>Primary current measuring range $I_p$ (A)</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>±150</td>
<td>HTB 50-P, HTB 50-TP&lt;sup&gt;1)&lt;/sup&gt;</td>
</tr>
<tr>
<td>100</td>
<td>±300</td>
<td>HTB 100-P, HTB 100-TP&lt;sup&gt;1)&lt;/sup&gt;</td>
</tr>
<tr>
<td>200</td>
<td>±500</td>
<td>HTB 200-P</td>
</tr>
<tr>
<td>300</td>
<td>±600</td>
<td>HTB 300-P</td>
</tr>
<tr>
<td>400</td>
<td>±600</td>
<td>HTB 400-P</td>
</tr>
</tbody>
</table>

- **$V_C$**: Supply voltage (±5%)<sup>2)</sup>
  - ±12 .. ±15 V
- **$I_C$**: Current consumption
  - ≤±15 mA
- **$V_R$**: R.m.s. voltage for AC isolation test, 50/60 Hz, 1 mn
  - 2.5 kV
- **$R_{IS}$**: Isolation resistance @ 500 VDC
  - >500 MΩ
- **$V_{OUT}$**: Output voltage @ $±I_{PN}$, $R_L = 10$ kΩ, $T_A = 25°C$
  - ≤±4 V
- **$R_{OUT}$**: Output internal resistance
  - 100 Ω
- **$R_L$**: Load resistance
  - ≥10 kΩ

### Accuracy - Dynamic performance data

- **$X$**: Accuracy @ $I_{PN}$, $T_A = 25°C$ (without offset)
  - ±1 % of $I_{PN}$
- **$E_L$**: Linearity (0 .. ±$I_{PN}$)
  - ±1 % of $I_{PN}$
- **$V_{OE}$**: Electrical offset voltage, $T_A = 25°C$
  - ≤±30 mV
- **$V_{OH}$**: Hysteresis offset voltage @ $I_p = 0$;
  - after an excursion of 3 x $I_{PN}$
  - ±1 % of $I_{PN}$
- **$V_{OT}$**: Thermal drift of $V_{OE}$
  - HTB 50-(TP)
  - <±2.0 mV/K
  - HTB 100-(TP)..400-P
  - <±1.0 mV/K
- **$TCE_G$**: Thermal drift (% of reading)
  - ≤±0.1 %/K
- **$t_r$**: Response time @ 90% of $I_p$
  - <3 μs
- **$f$**: Frequency bandwidth (-3 dB)<sup>3)</sup>
  - DC .. 50 kHz

### General data

- **$T_A$**: Ambient operating temperature
  - -20 .. +80 °C
- **$T_S$**: Ambient storage temperature
  - -25 .. +85 °C
- **$m$**: Mass (TP version)
  - <30 (<36) g

2 pins of Ø2mm diameter are available on transducer for PCB soldering.

### Features

- Hall effect measuring principle
- Galvanic isolation between primary and secondary circuit
- Isolation voltage 2500V
- Low power consumption
- Wide power supply: ±12V to ±15V
- Primary bus bar option for 50A and 100A version for ease of connection

### Advantages

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

### Applications

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

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**Notes**:
- EN 50178 approval pending
- <sup>1)</sup> TP version is equipped with a primary bus bar.
- <sup>2)</sup> Operating at ±12V ≤ $V_C < ±15V$ will reduce measuring range.
- <sup>3)</sup> Derating is needed to avoid excessive core heating at high frequency.
LEM reserves the right to carry out modifications on its transducers, in order to improve them, without previous notice.