Current Transducer HAX 500..2500-S

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 current rms</th>
<th>Primary current measuring range</th>
<th>Type</th>
<th>RoHS since date code</th>
</tr>
</thead>
<tbody>
<tr>
<td>I_{PN} (A)</td>
<td>± I_{PM} (A)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>500</td>
<td>± 1500</td>
<td>HAX 500-S</td>
<td>46137</td>
</tr>
<tr>
<td>600</td>
<td>± 1800</td>
<td>HAX 600-S</td>
<td>46256</td>
</tr>
<tr>
<td>850</td>
<td>± 2550</td>
<td>HAX 850-S</td>
<td>46350</td>
</tr>
<tr>
<td>1000</td>
<td>± 3000</td>
<td>HAX 1000-S</td>
<td>46348</td>
</tr>
<tr>
<td>1500</td>
<td>± 4600</td>
<td>HAX 1500-S</td>
<td>46017</td>
</tr>
<tr>
<td>2000</td>
<td>± 6500</td>
<td>HAX 2000-S</td>
<td>46100</td>
</tr>
<tr>
<td>2500</td>
<td>± 5500</td>
<td>HAX 2500-S</td>
<td>46143</td>
</tr>
</tbody>
</table>

- **V_c**: Supply voltage (± 5 %)
- **I_c**: Current consumption ± 15 mA
- **I_p**: Overload capability 30,000 A
- **R_i**: Isolation resistance @ 500 VDC > 1000 MΩ
- **V_{OUT}**: Output voltage (Analog) @ ± I_{PN}
- **R_{OUT}**: Output internal resistance approx. 100 Ω
- **V_{OE}**: Electrical offset voltage @ T_A = 25 °C
- **V_{OH}**: Hysteresis offset voltage @ I_P = 0;
  after an excursion of 1 x I_P < ± 30 mV
- **TCV_{OE}**: Temperature coefficient of V_{OE} < ± 1 mV/K
- **TCV_{OUT}**: Temperature coefficient of V_{OUT} (% of reading) < ± 0.1 %/K
- **t_r**: Response time to 90% of I_{PN} step < 5 μs
- **di/dt**: di/dt accurately followed > 50 A/μs
- **BW**: Frequency bandwidth (-3 dB) DC .. 25 kHz

### Accuracy - Dynamic performance data

- Accuracy @ I_{PN}, T_A = 25°C (excluding offset) < ± 1 %
- Linearity error at 0 .. ± I_{PN} < ± 1 % of I_{PN}
- Hysteresis offset voltage @ I_p = 0;
  after an excursion of 1 x I_{PN} < ± 30 mV
- Temperature coefficient of V_{OE} < ± 1 mV/K
- Temperature coefficient of V_{OUT} (% of reading) < ± 0.1 %/K
- Response time to 90% of I_{PN} step < 5 μs
- di/dt accurately followed > 50 A/μs
- Frequency bandwidth (-3 dB) DC .. 25 kHz

### General data

- **T_A**: Ambient operating temperature -25 .. +85 °C
- **T_S**: Ambient storage temperature -25 .. +85 °C
- **m**: Mass approx. 450 g
- **EN 50178: 1997**

### Isolation characteristics

- **V_{i}**: Rated isolation voltage rms 500 V
- **V_{rms}**: Rms voltage for AC isolation test, 50 Hz, 1 min 5 kV
- **dCp**: Creepage distance ≥ 8.5 mm
- **Isolation material group**: IIIa

### 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 advice.
5) Operating at ±12V ≤ Vc ≤ ±15V will reduce the measuring range.

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**Features**
- Hall effect measuring principle
- Galvanic isolation between primary and secondary circuit
- Low power consumption
- Isolated plastic case recognized according to UL 94-V0

**Advantages**
- Easy installation
- Small size and space savings
- Only one design for wide current ratings range
- High immunity against external interference

**Applications**
- AC motor speed control
- Battery supplied applications
- Uninterruptible Power Supplies (UPS)
- Power supplies for welding, cable TV and telecommunication applications.

**Application domain**
- Industrial
**Dimensions HAX 500..2500-S** (in mm. 1 mm = 0.0394 inch)

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**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 (e.g. 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.

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LEM reserves the right to carry out modifications on its transducers, in order to improve them, without prior notice.

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