# Current Transducer LA 100-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).

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### Electrical data

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(I_{PN})</td>
<td>Primary nominal r.m.s. current</td>
<td>100 A</td>
</tr>
<tr>
<td>(I_P)</td>
<td>Primary current, measuring range</td>
<td>0 .. ± 150 A</td>
</tr>
<tr>
<td>(R_m)</td>
<td>Measuring resistance @ (T_A) = 70°C</td>
<td>(R_{m\ min}) 0 Ω, (R_{m\ max}) 42 Ω</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(T_A) = 85°C</td>
</tr>
<tr>
<td></td>
<td>with ± 12 V</td>
<td>(I_{P\ max}) 100 A, (I_{P\ min}) 0 A</td>
</tr>
<tr>
<td></td>
<td>with ± 15 V</td>
<td>(I_{P\ max}) 150 A, (I_{P\ min}) 0 A</td>
</tr>
<tr>
<td>(I_{SN})</td>
<td>Secondary nominal r.m.s. current</td>
<td>50 mA</td>
</tr>
<tr>
<td>(K_N)</td>
<td>Conversion ratio</td>
<td>1 : 2000</td>
</tr>
<tr>
<td>(V_s)</td>
<td>Supply voltage (± 5 %)</td>
<td>± 12 .. 15 V</td>
</tr>
<tr>
<td>(I_C)</td>
<td>Current consumption</td>
<td>± 100 mA @ ± 15 V</td>
</tr>
<tr>
<td>(V_d)</td>
<td>R.m.s. voltage for AC isolation test, 50 Hz, 1 mn</td>
<td>2.5 kV</td>
</tr>
</tbody>
</table>

### Accuracy - Dynamic performance data

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(X)</td>
<td>Accuracy @ (I_{PN}), (T_A) = 25°C</td>
<td>± 0.45 % @ ± 15 V (± 5 %)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>± 0.70 % @ ± 12 .. 15 V (± 5 %)</td>
</tr>
</tbody>
</table>
| \(\varepsilon_L\) | Linearity | < 0.15%

### Features

- Closed loop (compensated) current transducer using the Hall effect
- Printed circuit board mounting
- Insulated plastic case recognized according to UL 94-V0.

### Advantages

- Excellent accuracy
- Very good linearity
- Low temperature drift
- Optimized response time
- Wide frequency bandwidth
- No insertion losses
- High immunity to external interference
- Current overload capability.

### Applications

- AC variable speed drives and servo motor 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

1) The result of the coercive field of the magnetic circuit
2) With a \(di/dt\) of 100 A/μs
3) A list of corresponding tests is available

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**LEM Components**

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980717/6
Dimensions LA 100-P (in mm. 1 mm = 0.0394 inch)

Bottom view

Left view

Secondary terminals

Terminal + : supply voltage + 12 .. 15 V
Terminal - : supply voltage - 12 .. 15 V
Terminal M : measure

Connection

Remarks

• $I_p$ is positive when $I_s$ flows in the direction of the arrow.
• Temperature of the primary conductor should not exceed 100°C.
• Dynamic performances (di/dt and response time) are best with a single bar completely filling the primary hole.
• In order to achieve the best magnetic coupling, the primary windings have to be wound over the top edge of the device.
• This is a standard model. For different versions (supply voltages, turns ratios, unidirectional measurements...), please contact us.

Mechanical characteristics

- General tolerance ± 0.2 mm
- Primary through-hole 12.7 x 7 mm
- Fastening & connection of secondary 3 pins
- Fastening & connection of secondary 0.63 x 0.56 mm
- Recommended PCB hole 0.9 mm

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