AC/DC Current transducer DHR-C10

The transducer for the electronic measurement DC & distorted AC waveforms current, with galvanic isolation between the primary (High power) and the secondary circuits (Electronic circuit). True RMS 0-10V voltage output.

### Electrical data

<table>
<thead>
<tr>
<th>DC &amp; AC Current</th>
<th>Primary Nominal</th>
<th>Primary AC Current</th>
<th>Analogue Output Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>$I_{PN}$ (A.t.RMS)</td>
<td>$I_{PN}$ (A)</td>
<td>$V_{OUT}$ (VDC)</td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>600</td>
<td>0-10</td>
<td>DHR 100 C10</td>
</tr>
<tr>
<td>200</td>
<td>600</td>
<td>0-10</td>
<td>DHR 200 C10</td>
</tr>
<tr>
<td>300</td>
<td>1000</td>
<td>0-10</td>
<td>DHR 300 C10</td>
</tr>
<tr>
<td>400</td>
<td>1000</td>
<td>0-10</td>
<td>DHR 400 C10</td>
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<tr>
<td>500</td>
<td>1800</td>
<td>0-10</td>
<td>DHR 500 C10</td>
</tr>
<tr>
<td>600</td>
<td>1800</td>
<td>0-10</td>
<td>DHR 600 C10</td>
</tr>
<tr>
<td>1000</td>
<td>1800</td>
<td>0-10</td>
<td>DHR 1000 C10</td>
</tr>
</tbody>
</table>

- **$R_L$**: Load resistance
- **$V_C$**: Supply voltage
- **$I_C$**: Current Consumption
  - Limitation of voltage output (0-10V): $< 14$ V
  - Overloaded input current (Ampere Turns): 30000 At

### Accuracy-Dynamic performance data

- **$X$**: Accuracy @ $I_{PN}$, $T_a = 25^\circ$C (without offset)
  - $< \pm 1$ % of $I_{PN}$
- **$E_L$**: Linearity (1% of $I_{PN}$...$\pm I_{PN}$)
  - $< \pm 1.0$ % of $I_{PN}$
- **$V_{OE}$**: Electrical offset voltage, $T_a = 25^\circ$C
  - $< \pm 1$ mV/K
  - $(\pm 2.0$ mV/K)
- **$TCE_o$**: Thermal drift of the gain (% of reading)
  - $< \pm 0.1$ %/K
- **$t_r$**: Response time @ 90% of $I_p$
  - $< 150$ ms
- **$f$**: Frequency bandwidth (±1%)
  - DC 20...6000Hz

### General data

- **$T_a$**: Ambient operating temperature
  - $-40 .. +70$ °C
- **$T_s$**: Ambient storage temperature
  - $-40 .. +85$ °C
- **$m$**: Mass
  - 260 g
- **Protection type**
  - IP20
- **UL94 classification**
  - V0

### Notes
- Installation and maintenance should be done with power supply disconnected.
- The operator must have accreditation to install this material.
- The users must take care of all protection guarantee against electrical shock.

$IP_{PN} = 100..1000$ A

### Features
- VFD and SCR waveforms current measurement
- True RMS output
- Panel mounting
- Eliminates insertion loss

### Advantages
- Large aperture for cable up to Ø32mm
- High isolation between primary and secondary circuits
- Easy to mount

### Applications
- **VFD Controlled Loads**: VFD output indicates how the motor and attached load are operating.
- **SCR Controlled Loads**: Acurate measurement of phase angle fired or burst fired (time proportioned) SCRs. Current measurement gives faster response than temperature measurement.
- **Switching Power Supplies and Electronic Ballasts**: True RMS sensing is the most accurate way to measure power supply or ballast input power.
Current Transducer DHR-C10

<table>
<thead>
<tr>
<th>Isolation characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>$V_b$</td>
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<tr>
<td>$V_d$</td>
</tr>
<tr>
<td>dCp</td>
</tr>
<tr>
<td>dCl</td>
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<tr>
<td>CTI</td>
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</tbody>
</table>

Notes:

Output polarity with DC input

Output in V

![Graph showing output voltage for DC input](image-url)
**Mechanical characteristics**

- General tolerance: ±1 mm
- Primary aperture: ∅ 32.0 mm
- Panel mounting: 4 holes ∅ 4.6 mm
- Distance between holes: 70.0 mm & 78 mm

(see above dimensions)

For panel mounting, replace M4 screws by new one (not supplied) with appropriate length to panel’s thickness.

**Connections**

- Wires up to 2 mm ∅

**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.