The High Precision Burden Resistor (HBRx) converts a current signal of a current transformer into a highly accurate voltage signal. This voltage signal can be read by a power analyser, a data acquisition system or a transient recorder. The HBRx is designed to be connected directly on the input terminals of the device it is used with. The HBRx is available with different resistance values.

**Circuit of the HBRx with the 4 lead kelvin connected precision burden resistor**

**Input: Insulated 4mm Banana**

**Output: 4mm Banana plugs**

**Mechanical Outline**

**Special features:**
- For use with all typical current transducers like LEM, Danisense....
- High accuracy of +/- 0.02% (typ.)
- Excellent Load Life Stability
- Low Temperature Coefficient (TCR)
- 4 Lead Kelvin Connected Device
- 100 kHz Usable Bandwidth (-0.1 dB)
- Phase Shift <1° @ 100 kHz
- Plug-on design for use without additional cabling
- Low Inductive design
Improper use of this HBRx can cause damage, shock, injury or death.
### Functional Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>Resistor</th>
<th>Conversion Ratio</th>
<th>Accuracy</th>
<th>Power Rating</th>
</tr>
</thead>
</table>
| HBR0.1 | 0.1 Ohm | 0.1 mV/mA | Amplitude +/- 0.05% (max)  
Temperature Coefficient +/- 5ppm / °C  
Linearity +/- 0.02% | 2.5 W Continuous Power  
3.6 W Pulse Power |
| HBR0.5 | 0.5 Ohm | 0.5 mV/mA | Amplitude +/- 0.02% (typ); +/- 0.04% (max)  
Temperature Coefficient +/- 5ppm / °C  
Linearity +/- 0.02%  
Load Life Stability +/- 0.005% (25°C, 2000h at 2.5W) | 2.0 W Continuous Power  
5.0 W Pulse Power |
| HBR1.0 | 1.0 Ohm | 1 mV/MA | Amplitude +/- 0.02% (typ); +/- 0.04% (max)  
Temperature Coefficient +/- 5ppm / °C  
Linearity +/- 0.02%  
Load Life Stability +/- 0.005% (25°C, 2000h at 2.5W) | 1.0 W Continuous Power  
2.5 W Pulse Power |
| HBR2.5 | 2.5 Ohm | 2.5 mV/A | Amplitude +/- 0.02% (typ); +/- 0.04% (max)  
Temperature Coefficient +/- 5ppm / °C  
Linearity +/- 0.02%  
Load Life Stability +/- 0.005% (25°C, 2000h at 2.5W) | 1.0 W Continuous Power  
2.5 W Pulse Power |
| HBR10 | 10 Ohm | 10 mV/MA | Amplitude +/- 0.02% (typ); +/- 0.04% (max)  
Temperature Coefficient +/- 5ppm / °C  
Linearity +/- 0.02%  
Load Life Stability +/- 0.005% (25°C, 2000h at 2.5W) | 1.0 W Continuous Power  
2.5 W Pulse Power |
| HBR25 | 25 Ohm | 25 mV/MA | Amplitude +/- 0.02% (typ); +/- 0.04% (max)  
Temperature Coefficient +/- 5ppm / °C  
Linearity +/- 0.02%  
Load Life Stability +/- 0.005% (25°C, 2000h at 2.5W) | 1.0 W Continuous Power  
2.5 W Pulse Power |

### Frequency Characteristic (typical)

| Angular Accuracy | <1° @ 150 kHz |
| Attenuation Accuracy | <0.1 dB @ 150 kHz (3dB-Bandwidth > 300kHz) |

### Maximum Voltages

| Isolation Voltage (Terminals - Earth) | 50 V AC |
| Input Voltage (Terminal-Terminal) | Limited by the power rating |

### Environmental Specifications

| Temperature Range | 0 °C to +40 °C (+32 °F to +104 °F)  
-25 °C to +70 °C (-13 °F to +158 °F) |
| Relative Humidity (operational) | 0 % to 70 %; non-condensing |
| Altitude (operational) | Maximum 2000 m |
| Protection class | IP20 |

### Harmonized Standards for CE Compliance

**Electrical Safety**

- EN 61010-1 (2010): Safety requirements for electrical equipment for measurement, control, and laboratory use - General requirements
- EN 61010-2-030 (2010): Particular requirements for testing and measuring circuits

**Electromagnetic Compatibility**

- EN 61326-1 (2013): Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics
  - Limits and methods of measurement
  - Conducted disturbance: class B; Radiated disturbance: class A
All product data, Product specifications and data are subject to change without notice. The data contained in this product data sheet is exclusively intended for technically trained staff. You and your technical departments will have to evaluate the suitability of this product for the intended application and the completeness of the product data with respect to such application. Additional information is obtainable on request.