

# Powertek

## Technical data for ATH dc and ac current sensors

The ATH current sensor range converts dc or ac current to an isolated voltage or current loop output. The ATH sensors are direct connecting, meaning they connect in the circuit under test eliminating shunt or CT error. The available ATH models cover the range from 0-100mA to 0-5Arms, operating with a fast response capability. ATH are instantaneous conversion, the ATHR are rms converting where the ATHR device will give true rms conversion even with distorted waveforms, over DC-10kHz range. The sensor power input is designed to operate over a wide range associated with process control and sub-station auxiliary dc supply systems. Some typical applications are current monitoring in industrial control, ac/dc drives, process control, rail transportation and circuit breaker trip coils. For all products, a USA NIST, UK NPL traceable calibration certificate and certificate of conformance are available. ATH sensors are available in ac only or dc + ac configurations.



### Specifications

<ul style="list-style-type: none"> <li>❑ Available input ranges 100mA / 200mA / 1A / 2A / 5A rms ac or dc. Operational from 10% - 125% of range</li> </ul>	<ul style="list-style-type: none"> <li>❑ Internal gain calibration controls</li> <li>❑ Based on differential input amplifier (measures ac &amp; dc)</li> </ul>
<ul style="list-style-type: none"> <li>❑ Outputs: Zero to 100mV, 1V, 5V, 10V (ac or dc amps input). 4-12-20mA or 4-20mA outputs available (dc amps input only). Unipolar or bipolar configuration</li> </ul>	<ul style="list-style-type: none"> <li>❑ Working temperature range 0°C - 50°C</li> <li>❑ Functional temp range -10°C - 70°C (see below for details )</li> </ul>
<ul style="list-style-type: none"> <li>❑ Auxiliary power input 5V/9-36V/48/110/230 Vdc or Vac. Max current draw 24Vdc 50mA max</li> </ul>	<ul style="list-style-type: none"> <li>❑ Rated working voltage insulation 1.0kVpk, flash tested 2.5kV for 1 minute</li> </ul>
<ul style="list-style-type: none"> <li>❑ Fast response time &lt;200uS (no filtering). Standard frequency range is DC-10kHz</li> </ul>	<ul style="list-style-type: none"> <li>❑ Screw terminal input/output connections IP30</li> </ul>
<ul style="list-style-type: none"> <li>❑ Certified accuracy better than &lt;1.0% at +23°C ±5°C, traceable to NIST/NPL (5 minute warm up)</li> </ul>	<ul style="list-style-type: none"> <li>❑ 3.5 mm fixing holes</li> </ul>
<ul style="list-style-type: none"> <li>❑ CE Marked</li> <li>❑ UL94V0, IEC1010 cat II, IEC348, DIN 57411</li> <li>❑ Case IP50, terminals IP30 complies with IEC529</li> </ul>	<ul style="list-style-type: none"> <li>❑ 1 year warranty</li> </ul>

## **Safety and good working practice when using the ATH Differential probe**

### **General safety summary**

1. Ensure that all personnel connecting and configuring the ATH are fully trained and conversant with electric shock and fire hazards associated with electricity supplies.
2. Ensure the circuit under test is switched off and isolated before connection
3. Only use safety type cables for connections to the ATH probe. These cables are typically fitted with a 4mm safety type banana connector on either end. All connections should be insulated to prevent human contact
4. Ensure that the ATH output (Io terminal) is connected to a grounded point on the scope/data logger/measurement system. Ensure it is a true ground and not just signal low.
5. Ensure that the maximum differential input voltage of (1000Vpk) and input voltage to ground (1000Vpk) are not exceeded
6. Users should always work in pairs, both parties should be trained and familiar with medical procedures in the event of electric shock
7. Ensure the circuit test is protected with over current protection
8. During installation, avoid all mechanical stress to the ATH probe terminals
9. Do not use the probe with the case open
10. Ensure that the storage and operating conditions are clean and dry, do not use where there is risk of explosion

**Note: Powertek shall not be liable for any consequential damages, injuries, losses, costs or expenses arising from the use or misuse of this product however caused.**

### **Current transducer order codes**

ATH / current range / freq / output / power input

#### **Order code examples**

ATH / 5A / dc / 4-20 / 24Vdc

5Adc input, 4-20mA output with 24V aux power input

Calibrated 0-5Adc

#### **Order code examples**

ATH / 1A / ac + dc / 10 / 24Vdc

1Adc input, 0-10V output with 24V aux power input

Calibrated 0-1Adc

#### **Order code examples (rms converting)**

ATHR / 1A / ac+dc / 4-20 / 24Vdc

1Aac or dc input, 4-20mA output with 24V aux power input

Calibrated 0-1Arms

#### **Order code examples (rms converting)**

ATHR / 1A / ac / 4-20 / 24Vdc

1Aac input, 4-20mA output with 24V aux power input

Calibrated 0-1Arms (ac only)

**Unless specified, the upper cut off frequency will be 10kHz**

**Options - Environmental**

Self extinguishing case to UL94V0 is available

Extended temperature range -25°C - 70°C (not available for all sensor types)

**Options – noise rejection**

User can specify upper or lower –3db point

External dc offset nulling control

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