

Powertek

Technical data and instructions for the ATH3PH dc and ac current sensor

The ATH3PH current sensor converts dc or ac current to a low level isolated voltage or current loop output – refer to label for input and output configuration. The available ATH3PH models cover the range from 50mV to 500Vrms, operating with a fast response capability, the Model CTH3PHR offers true rms conversion DC-10kHz. ATH3PH sensors are available in ac only or dc + ac configurations. 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 AC/DC drives, pumps, fans, PV, EV, process control, rail transportation and circuit breaker trip coils. For all products, NIST/NPL/UKAS traceable calibration certificates and certificates of conformance are available. All models are CE/ CA marked and are CAT IV 600V.



1	2	3	4	5	6	7	8	9	10	11	12
L3	L3+	L2	L2+	L1	L1+					-	+
10Arms	10Arms	10Arms	10Arms	10Arms	10Arms						24Vdc

Powertek Serial no. 13637 Conforms UL 600V CAT IV **CE**

CTH3ph/10A/4-20/24Vdc 3ph Current Transducer; Max 600V to ground
 Inputs: 3 x 10Arms / Inst. Outputs: 3 x 4-20mA / Inst. Power: 24Vdc
 Scaling +14.142A = 20mA / -14.142A = 4mA / 0A = 12mA
 >> Warning! use fused inputs, ensure output LOs are earthed <<

4-20mA outputs isolated						Voltage outputs isolated					
PH1 mA	PH2 mA	PH3 mA				V1	V2	V3			
Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo
13	14	15	16	17	18	19	20	21	22	23	24

Powertek Serial no. 13638 Conforms UL 600V CAT IV **CE**

CTH3ph/10A/4-20/24Vdc 3ph Current Transducer; Max 600V to ground
 Inputs: 3 x 10Arms / Inst. Outputs: 3 x 4-20mA / Inst. Power: 24Vdc
 Scaling +14.142A = 20mA / -14.142A = 4mA / 0A = 12mA
 >> Warning! use fused inputs, ensure output LOs are earthed <<

4-20mA outputs isolated						Voltage outputs isolated					
PH1 mA	PH2 mA	PH3 mA				V1	V2	V3			
Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo
13	14	15	16	17	18	19	20	21	22	23	24

Specifications

<ul style="list-style-type: none"> ❑ Available input ranges of 50mA / 100mA / 200mA / 1A / 2A / 5A / 10A ac or ac+dc. Operational from 10% - 125% of range 	<ul style="list-style-type: none"> ❑ Internal gain calibration controls ❑ Based on isolated single ended input amplifier (measures ac & dc)
<ul style="list-style-type: none"> ❑ Outputs: Zero to 100mV, 1V, 5V, 10V (ac or dc amps input). 0-20mA or 4-20mA outputs available (dc amps input only). All bipolar / instantaneous 	<ul style="list-style-type: none"> ❑ Working temperature range 0°C - 50°C ❑ Functional temp range -10°C - 70°C (see below for details)
<ul style="list-style-type: none"> ❑ Auxiliary power input options 12/24/48/110/230 Vdc or Vac. Max current draw 24Vdc 70mA max 	<ul style="list-style-type: none"> ❑ Rated working voltage insulation 1.0kVpk, flash tested 2.5kV for 1 minute
<ul style="list-style-type: none"> ❑ Fast response time <200uS (no filtering). Standard frequency range is DC-10kHz 	<ul style="list-style-type: none"> ❑ Screw terminal input/output connections IP30
<ul style="list-style-type: none"> ❑ Certified accuracy better than <1.0% at +23°C ±5°C, traceable to NIST/NPL (5 minute warm up) 	<ul style="list-style-type: none"> ❑ Din rail mounting with retractable 3mm/no. 6 screws fixings tabs
<ul style="list-style-type: none"> ❑ CE Marked ❑ UL94V0, IEC1010 cat II, IEC348, DIN 57411 ❑ Case IP50, terminals IP30 complies with IEC529 	<ul style="list-style-type: none"> ❑ 1 year warranty



Powertek UK Limited
 Unit 13B, Southview Park, Marsack
 St. Reading, Berkshire, RG4 5AF, UK
 Email: Info@powertekuk.com
 Phone: +44 (0)118 370 2004

Powertek US Inc
 7 3rd St, Holbrook,
 NY 11741 USA
 Email: Info@powertekus.com
 Phone: +1 631 824 4666



Important Safety and working practice when using the ATH3PH Current probe

General safety summary

1. Users should always work in pairs, both parties should be trained and familiar with medical procedures in the event of electric shock
2. Ensure that all personnel connecting and configuring the VTH3PH are fully trained and conversant with electric shock and fire hazards associated with electricity supplies
3. The ATH3PH should be installed in a protected metal cabinet to shield the users from accidental hazardous contact
4. Ensure that the storage and operating conditions are clean and dry, do not use where there is risk of explosion
5. During installation, avoid all mechanical stress to the ATH3PH probe terminals
6. Do not use the probe with the case open
7. Ensure the specifications on the rating label align with PO and expected performance and scaling are understood.
8. Ensure the circuit under test is switched off and isolated before connection
9. Only use shrouded safety type cables for connections to the ATH3PH 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
10. Ensure input cables are fused (100mA)
11. Ensure that the ATH3PH 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
12. Ensure that the maximum differential input voltage (1000Vpk) and input voltage to ground (1000Vpk) are not exceeded
13. Ensure the circuit test is protected with over current protection

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

ATH3PH / current range / output / power input

Order code examples

ATH3PH / 10A / 4-20 / 24Vdc

3 x 10A input, 3 x 4-20mA output with 24V aux power input

Calibrated at 0-10A

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



Powertek UK Limited
Unit 13B, Southview Park, Marsack
St. Reading, Berkshire, RG4 5AF, UK
Email: Info@powertekuk.com
Phone: +44 (0)118 370 2004

Powertek US Inc
7 3rd St, Holbrook,
NY 11741 USA
Email: Info@powertekus.com
Phone: +1 631 824 4666

