Hall Effect Current Sensors

CTH Types G, 10 and 11

RECTANGULAR WINDOW (BUS BAR)

Current range is listed in dc/peak ac.
Cable Insulation ............................... 600Vac
Dielectric Test
(conductor through window/output) ... 2200Vac
Sensor size 10 & 11 above 12000A available in split-core only

CASE DIMENSIONS G, 10, 11

For Ordering Information please see page 3

Note: To take apart Type 11 units the red screws must be removed in addition to opening the latches.

CABLE LENGTHS
All units are supplied with detachable 8 foot cable
Custom cable lengths available upon request
See page 2 for cable connections

SPECIFICATIONS

Accuracy and Linearity
2500A to 20000A ........................................... ±1% F.S.
20000A to 40000A ........................................... ±2% F.S.
Excitation Current ...................................... 200mA
Temperature Range
Standard ........................................ -10°C to +40°C
Extended ........................................ -40°C to +65°C
Add suffix "T" to part number.
Temperature Effects ........................................±1% F.S.
20,000A & up Extended Range ................................±2% F.S.
Input Resistance (Ohms)
500-5000A models ...................................... 23 Ohms ±5
6000A + models ...................................... 12 Ohms ±5
Output Resistance (Ohms)
500-5000A models ...................................... 25 Ohms ±15
6000A + models ...................................... 32 Ohms ±10
Initial Offset .............................................. ±2mV

Options
Extended temperature range (-40°C to +65°C)
Add suffix "T" to model number.

For USA sales, support, service and deliveries:
Powertek US Inc., 7 1st Street Holbrook, NY 11741
Tel: +1 631 615 6279 Fax: +1 973-273-5993
Email: info@powertekus.com Website: www.powertekus.com

For UK & European, support, service and deliveries:
Powertek UK, 19 Cromwell Road, Bottlenbury, Rugby CV22 7HL, UK
Tel: 01788 519911 Fax: 0870 0940135
Int’l Tel: +44 1788 519911 Int’l Fax: +44 1788 5940135
Email: info@powertekuk.com Website: www.powertekuk.com

Powertek

Page 1 of 4

Rev-C 012907
**DESCRIPTION**

The CTH Signal Conditioner provides the excitation current (instrument power) that the CTH Hall effect sensor requires as well as amplifying the low level (mV) signal into a more typical signal. The CTH is calibrated to the output of the specific CTH Type selected for the application. Each CTH conditioner has a specific input range (mV) which corresponds to the output of the CTH Sensor.

The CTH family has two different types, Instantaneous and RMS (CTHR). Instantaneous models provide an isolated output that is directly proportional to the amplitude and frequency of the input signal. If the input signal is ac, then the output signal is ac. If the input signal is dc, then the output signal is dc. The RMS output models provide a dc output which is directly proportional to the RMS of the input signal. The output is dc regardless of whether the input is ac or dc. Each type has four output options: 1mA, 4-20mA, 4-12-20mA, 10V or 5V. DC instrument power options are available from 12 to 48Vdc along with 125Vdc, 115Vac and 230Vac, see specifications.

To select the proper CTH model you will need to refer to the ordering examples on the following page.

*Caution: Connect CTH Sensor to terminals 1, 2, 3 & 4 before applying instrument power to terminals 7 & 8.*

---

**SPECIFICATIONS**

**INPUT**

- **Frequency Range**: dc - 5000 Hz
- **Instrument Power**: 115Vac, 50 - 400Hz, 2VA
- **Option "-22"**: 230Vac, 50/60Hz, +15%

**DC Instrument Power**

- 12Vdc ................................................. 9-18Vdc
- 24Vdc .............................................. 18-36Vdc
- 48Vdc .............................................. 36-60Vdc
- 125Vdc Using external MDR PSU…… 90-250Vdc

**OUTPUT**

- **Linearity**: ± 0.1% F.S.
- **Output Ripple**: Less than 0.25% F.S.
- **Field Adjustable Gain**: 25%
- **Output Loading (Ohms)**
  - 1mA .............................................. 0 - 10K
  - 10V, 5V ............................................ 2K min.
  - 4 - 20mA .......................................... 0 - 500

**Response time (to 90%)**

- Direct models .................. 40 microseconds
- RMS models ..................... 200 milliseconds

**Temperature Effect**

(0°C to +70°C) ............ ±0.005%/°C

**CONNECTIONS**

- **SENSORS SIZE**: G, 10, 11
- **PINS**
  - A WHITE OUTPUT (-)
  - B GREEN OUTPUT (+)
  - C BLACK EXCITATION (-)
  - D RED EXCITATION (+)
  - E SHIELD SHIELD

Red dot side of CTL must face positive supply.

**CASE DIMENSIONS**

- **CASE HEIGHT**: 4.38*
- **DIA 0.38** (2 PLCS)
- **DIA 0.19** (4 PLCS)

All dimensions in inches

---

For USA sales, support, service and deliveries:
Powertek US Inc. | 7313 Street Huntington, NY 11741
Tel: +1 313 515 6279 Fax: +1 313-273-5893
Email: info@powertekus.com Website: www.powertekus.com

For UK & European support, service and deliveries:
Powertek UK, 10 Connolly Road, Bilton, Rugby, CV22 7HL UK
Tel: 01788 519911 Fax: 0870 0340135
Email: info@powertekuk.com Website: www.powertekuk.com

Page 2 of 4
CTH ORDERING EXAMPLES

Input ±0-2500Adc Output 4-20mA Split Core
Aperture size 76.2mm (3.0") x 165.1mm (6.5")
Type G Core 24V dc power
Part number = CTH/2500A/4-20/SC/24Vdc Type G

Input ±0-10000Adc Output ±0-5V Split Core
Aperture size 140mm (5.5") x 203mm (8")
Type 10 Core 24V dc power
Part number = CTH/10000A/5/SC/24Vdc Type 10

Input ±0-4000Adc Output ±0-10V Split Core
Aperture size 76.2mm (3.0") x 165.1mm (6.5")
Type G Core 12V dc power
Part number = CTH/4000A/10/SC/12Vdc Type G

Input ±0-25000Adc Output 4-12-20mA Split Core
Where 4mA = -25000A, 12mA = 0A, 20mA = +25000A
Aperture size 330mm (13") x 330mm (13")
Type 11 Core 24V dc power
Part No. = CTH/25000A/4-12-20/SC/24Vdc Type 11

Input ±0-6000Adc Output 4-12-20mA Split Core
Where 4mA = -6000A, 12mA = 0A, 20mA = +6000A
Aperture size 76.2mm (3.0") x 165.1mm (6.5")
Type G Core 24V dc power
Part No. = CTH/6000A/4-12-20/SC/24Vdc Type G

Input ±0-5000Adc Output ±0-10V Split Core
Hole size 140mm (5.5") x 203mm (8")
Type 10 Core 48V dc power
Part number = CTH/5000A/10/SC/48Vdc Type 10

Input ±0-4000Arms Output 0-10V Split Core
DC Output proportional to Arms
Aperture size 76.2mm (3.0") x 165.1mm (6.5")
Type G Core 24V dc power
Part number = CTHR/4000A/10/SC/24Vdc Type G
Hall Effect Current Sensors  CTH Types G, 10 and 11

INSTALLATION INSTRUCTIONS

1. Installation should be performed by qualified electricians only!

2. Make sure electrical service is disconnected before making any electrical connections.

3. Branch circuit protection is required to be provided in accordance with the National and Local codes of the inspection authority.

4. Route wires as required and secure to terminals per connection diagram on this sheet and on the unit.

5. Transducers are suitable for installation on 600Vac lines.

6. To prevent contact with live circuits, when installed on a bare bus bar, the transducer is required to be mounted in an enclosure that requires the use of a tool for access. When installed on an insulated cable this second enclosure is not required.

OPERATING INSTRUCTIONS

1. This unit is intended for indoor use at altitudes up to 2000 meters.

2. Transient overvoltages according to Installation Category (overvoltage category)II, pollution Degree 2.

3. If cleaning of the exterior surface is necessary, de-energize all services of supply (both measuring and instrument power circuits) and brush with a soft brush or blow off with low pressure air. Use appropriate eye protection. Not suitable for hose-down cleaning.

4. Maximum relative humidity 80 percent for temperatures up to 31°C decreasing linearly to 50 percent relative humidity at 40°C.

5. Maximum operating temperature range is -20°C to 60°C.

UL approved for USA and Canada  Both Direct (dc) and Alternating (ac) current

WARRANTY STATEMENT

Powertek, warrants this unit to be free of defects in material and workmanship for a period of five years from date of shipment. This unit must not be used in any manner other than as specified in this document.