
Datasheet

CTA3ph Series

Flexible current sensing transformers with 0-5A output

Allowing fast metering installs and upgrades without the disruption of reconfiguring busbars and feeder cables

5VA rated output drives long cables up to 50ft/15.2m, model from 0-100A right up to 0-10000A

Flexible Rogowski current sensor

Uses the latest Flexible Core 5A output Rogowski Coil sensing technology

Compact high accuracy sensors

Current Sensors will fit in tight spaces

Split core clip-together for fast install

Quick fitting reduces installation shut down period. Live installs possible with care

5VA, optional 7.5VA rating

Capable of driving over 15.2m (50ft) of 16 AWG / 2.5mm sq copper cable

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Company Profile

Powertek has two divisions; Powertek US Inc Holbrook NY USA, Powertek UK Ltd Reading United Kingdom. These offices support a network of worldwide service centers, distributors and representatives.

Powertek specializes in the design and manufacture of electrical power, voltage and current measuring instrumentation: Measurement Transducers, Current Probes, Wattmeters, Power Analyzers, phase measuring measurement equipment along with multifunction calibration standards. The Sensor Division offers a range of ac/dc current/voltage sensors, current shunts, wideband current probes, current transformers and ac/dc power related transducers. PC based software solutions allow the Powertek measuring instruments and transducers to be controlled via Ethernet, RS232, RS485 and IEEE-488 interfaces. Various display and storage options are available to suit the customer need. An "in house" software customization service is available.

Powertek's customer base includes heavy industrial plants, avionics, positional control, military systems, power electronics & power conversion (inverters, switching power supplies, UPS, variable speed motor drives), single/three phase ac motors, ac generators, power transformers, electrical process control equipment, office and household appliance testing, electrical supply utilities and calibration.

All Powertek products are supplied CE marked with measurement uncertainties traceable to UKAS (UK) or NIST (USA) in accordance with ISO9001 2008. Our support includes application support, technical advice, servicing, repair and calibration. Flexible Current Sensing Rogowski coils with 5A output in accordance with ISO9001 2015, Z540, ISO/IEC 17025.

Powertek US Inc is a CAGE coded Military supplier, Cage code 4S5P4. Read more about our activities with US Defense on <https://www.sam.gov>

About the CTA3ph 0-5A flexible current transformers

The CTA3ph 0-5A flexible current transformers are the world's first flexible 'clip-on' current probe with a 0-5A 5VA output, allowing compatibility with existing 5A metering circuits. Unlike conventional CTs, there are no open circuit hazards (open secondary) - ideal for retrospective metering projects and installations in confined spaces where installation of conventional iron core CTs is not possible. The CTA3ph 5A output Rogowski Coil current sensing, simplifies installation and eliminates the need for expensive LV/MV plant shutdowns. In addition, the CTA modules can be used to convert any voltage output current measuring device to a 1A or 5A secondary.

The CTA3ph flexible current transformers convert ac current to an isolated 0-5A current with available ranges from 100A to 10,000A. Because the current sensors are flexible split core, installation is possible without shutting down the LV electrical supply, avoiding expensive down-time costs. Typical applications are retrospective energy monitoring including shopping centres, malls, hospitals, banks, offices buildings, where reporting of Energy usage, demand and current monitoring is important. For all CTA3ph current sensor models, a NIST/NPL (UKAS) traceable calibration certificate and certificate of conformance is supplied. All CTA3ph sensors use UL94V0 or CSA approved materials. The CTA3ph flexible current sensors are suited to permanent or semi permanent installation. The coil sensor is durable, lightweight, flexible and will easily clip-around a power cable - even in confined spaces. The 5A output from the CTA3ph current sensor connects direct to installed metering, including legacy rotary metering or current transducers.

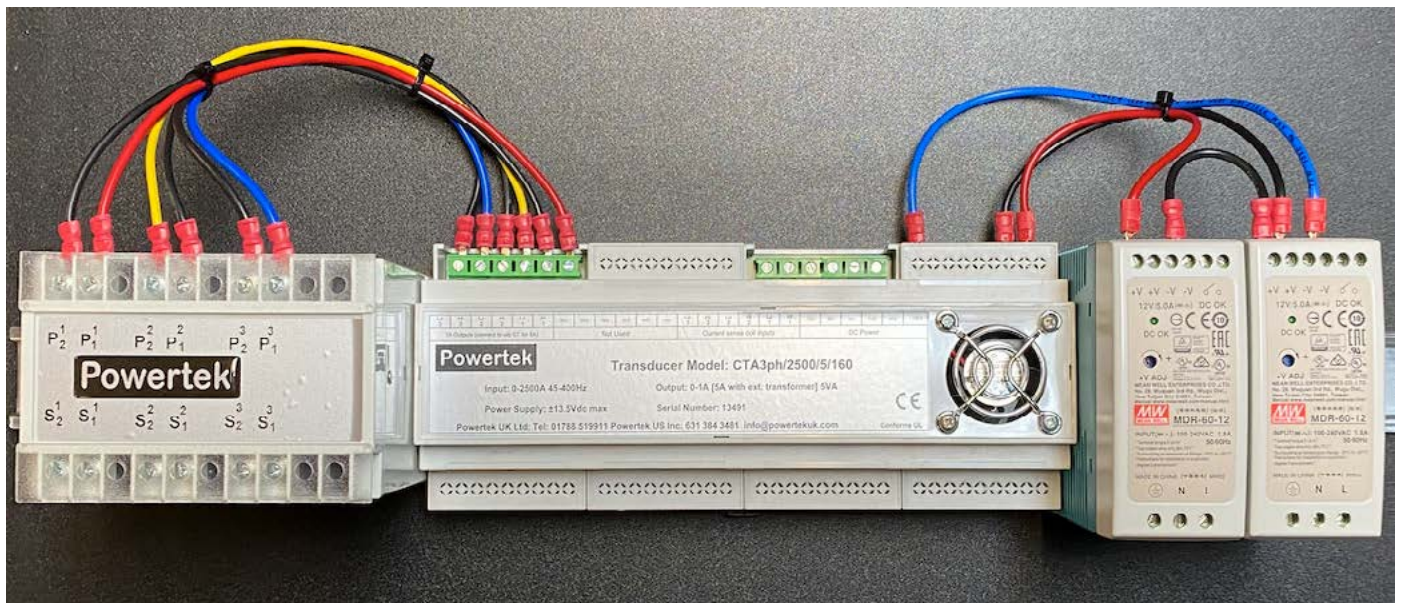
CTA3ph facts and important application information

- Uses the latest 5A output Rogowski Coil current sensing technology
- Suitable for single, split phase or three phase systems
- Available sense coil diameters 100mm, 150mm, 200mm, 300mm
- Isolated measurement output
- 0-5Arms metering compatible output at 5VA (0.2 ohm burden max)
- 1kV insulation continuous (tested 7.4kV)
- Available in 0.5%, 1% and 3% accuracy class
- Wide measurement range from 1% to 125% of range
- Flat frequency response from 25Hz to 500Hz
- 110Vac-240Vac power supply, optional 24Vdc, 48Vdc or 125Vdc
- Operating range -20°C to +45°C, sensors rated 80°C
- UL resistant versions
- Safety EN61010-1 1000Vac CATIII, 600Vac CATIV CE marked, UL94V0 flame retardant
- Options for Energy Monitoring and Power Quality Analysis
- Enables live install - based on the recommended procedures
Accreditation certificate and calibration data available

CTA3ph Metering applications

- Live installs are possible, no open circuit voltage CT hazards
- Install without shutting down the LV electrical supply, avoiding expensive down-time costs
- Retrospective energy monitoring include shopping centres, malls, hospitals, banks, server farms, maritime/shipping
- Allowing compatibility between Energy Management Systems and older legacy metering
- Power, energy and current monitoring on renewables
- Fast response feedback signal for active harmonic filters
- The CTA3ph flexible current sensors are suited to permanent or semi permanent installation
- The coil sensor is durable, lightweight, flexible and will easily clip-around a busbar or power cable
- Great for installation in confined spaces

CTA3ph flexible “rope-type” current transformer, sensing current from 100A to 10,000A with 5A secondary Capable of driving 50ft of 16 AWG cable Capable of driving 32ft of 18 AWG cable Not frequency sensitive



CTA3ph Din Rail Assembly: Output transformer / Conditioner -amplifier / Power Supplies

CTA3ph Models and order codes - based on 150mm diameter

CTA3ph/100/5A/3/200	CTA3ph/1600/5A/3/200
CTA3ph/200/5A/3/200	CTA3ph/1800/5A/3/200
CTA3ph/300/5A/3/200	CTA3ph/2000/5A/3/200
CTA3ph/400/5A/3/200	CTA3ph/2500/5A/3/200
CTA3ph/500/5A/3/200	CTA3ph/3000/5A/3/200
CTA3ph/600/5A/3/200	CTA3ph/3500/5A/3/200
CTA3ph/700/5A/3/200	CTA3ph/4000/5A/3/200
CTA3ph/800/5A/3/200	CTA3ph/5000/5A/3/200
CTA3ph/900/5A/3/200	CTA3ph/6000/5A/3/200
CTA3ph/1000/5A/3/200	CTA3ph/7000/5A/ 3/200
CTA3ph/1200/5A/3/200	CTA3ph/8000/5A/3/200
CTA3ph/1500/5A/3/200	CTA3ph/10000/5A/3/200

Cable lengths from sensor to conditioner, available up to 15m 49.2ft

CTA3ph / Arms current / 5A output / cable length / coil diameter mm / Accuracy Class

Optional voltage input versions (no sensor) TA3ph/5V-5A and TA1ph/5V-5A

CTA3ph 0-5A output “Rope Type” Flexible Current Sensor Specifications

The Powertek CTA3ph flexible sensor & conditioning module are supplied as calibrated sets with a traceable calibrated 0-5Arms 5VA output.

In addition, these modules can be configured to convert any voltage output current measuring device to a 1A or 5A secondary.

Current Sense coil

Diameters: 100mm/3.85” or 160mm/6.2”, 220mm/8.6”, and 300mm/11.7” clip-around sensor, split core construction

Thickness: 8mm / 0.31”

Material: Flexible Thermoplastic rubber, flame retardant UL94V0

Working voltage: 1000V at 50/60Hz CAT III, tested 7400V 50/60Hz 1 minute

Cable

1000V UL style 20940, 5mm dia, 3metre length

Conditioner-amplifier

Casing: Din Rail module UL94V0 and CSA approved flame retardant polycarb, 250mm total length

Fundamental Frequency: 20Hz to 500Hz

Bandwidth: 40Hz-500Hz CTA3ph 5A

Bandwidth: 20Hz-2500Hz CTA3ph 1A

Output rating: 5VA (0.2 ohm burden)

Phase shift: 0.04° at 50/60/400Hz

Accuracy: <1.0% accuracy (special at 0.25%)

Input impedance: 100kohm (applies to TA3ph/5V-5A and only)

Accurate with waveform crest factors of 1:5 peak, max output current 7.0A_{pk}

Input ranges: From 0-100A to 0-10,000Arms

Power: 110Vac-240Vac power, optional 24Vdc, 48Vdc and 125Vdc

Includes: Din Rail, PSU and output CT (5A)

Environmental

Operational range -20°C to +45°C

CTA specifications



Available sensor styles from 100mm to 1000mm dia
All products have UL, CSA, CE, IEC, EN, ASME or BS approvals

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