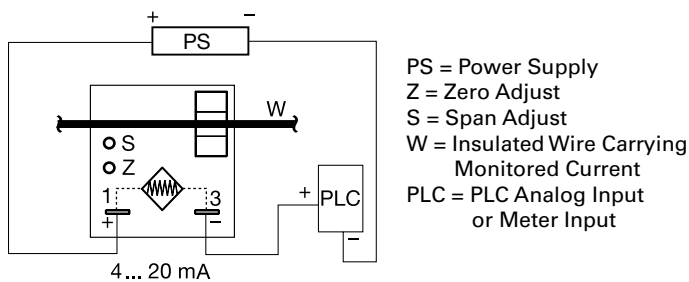


# TCSA SERIES

## Current Transducers



### Wiring Diagram



### Description

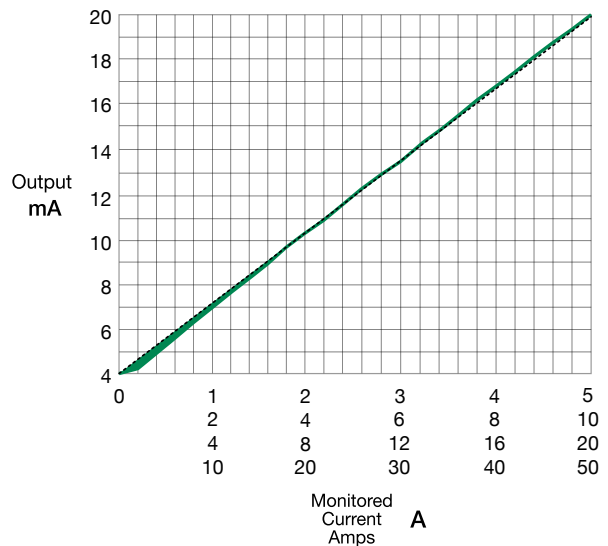
The TCSA Series is a loop-powered, linear output current transducer that provides an output that is directly proportional to the RMS AC current passing through the onboard toroid. The TCSA provides a 4 - 20mA output over a power supply range of 10 - 30VDC. Each unit is factory calibrated for monitoring in one of four ranges; 0-5, 0-10, 0-20, or 0-50A. The 0 - 5A range allows the use of external current transformers so loads up to 1200AC amps can be monitored.

### Operation

The TCSA varies the effective resistance of its output in direct proportion to the current flowing in the monitored conductor. The unit is factory calibrated so that 0 amps provides a 4mA output and full span provides a 20mA output. Zero and span adjustments are provided for minor calibration adjustments in the field (if required).

### Using an External Current Transformer (CT)

Select a 2VA, 0 to 5A output CT, rated for the current to be monitored. Select TCSA5. Pass one of the CT's secondary wire leads through the TCSA's toroid. Connect the CT's secondary leads together.



### Ordering Information

MODEL	CURRENT RANGE
TCSA5	0-5A
TCSA10	0-10A
TCSA20	0-20A
TCSA50	0-50A

If you don't find the part you need, call us for a custom product 800-843-8848

### Features

- Monitors 0 - 50A in 4 ranges
- Loop powered from 10 to 30VDC
- Linear output from 4 - 20mA
- Zero & span adjustments
- Complete isolation between sensed current & control circuit

## TCSA SERIES

### Accessories



**P1023-6 Mounting bracket**  
The 90° orientation of mounting slots makes installation/removal of modules quick and easy.



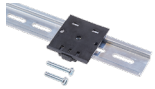
**P1015-64 (AWG 14/16) Female Quick Connect**  
These 0.25 in. (6.35 mm) female terminals are constructed with an insulator barrel to provide strain relief.



**P1015-18 Quick Connect to Screw Adapter**  
Screw adapter terminal designed for use with all modules with 0.25 in. (6.35 mm) male quick connect terminals.



**C103PM (AL) DIN Rail**  
35 mm aluminum DIN rail available in a 36 in. (91.4 cm) length.



**P1023-20 DIN Rail Adapter**  
Allows module to be mounted on a 35 mm DIN type rail with two #10 screws.

### Specifications

#### Sensor Type

Toroid, through hole wiring, alternating current, monitored conductor must be properly insulated  
0 - 50A

#### Monitored AC Current Ranges

**4 Factory Calibrated Ranges** 0 - 5A, 0 - 10A, 0 - 20A, or 0 - 50A

**Factory Calibration**  $\leq \pm 2\%$  of full scale

**Maximum Allowable Current** Steady - 50A turns; Inrush - 300A turns for 10s

**Repeat Accuracy**  $\leq \pm 0.25\%$  of full scale under fixed conditions

**Response Time**  $\approx 300\text{ms}$

**Burden**  $\leq 0.5\text{VA}$

#### AC Line Frequency

**0 - 20A / 21 - 50A** 20 - 100Hz / 30 - 100Hz

**Temperature Coefficient**  $\pm 0.05\%/^{\circ}\text{C}$

#### Output

##### Type: Series Connection

Current directly proportional to monitored current

**Range** 4 - 20mA

**Sensor Supply Voltage\*** 10 to 30VDC

**Momentary Voltage** 40VDC for 1m

**Zero Adjust**  $\approx 3.75 - 4.25\text{mA}$

**Span Adjust** 18mA - 22mA

**Adjustment** Mini-screw, 25-turn potentiometer

#### Protection

**Dielectric Breakdown**  $\geq 2000\text{V RMS}$  terminals to mounting surface

**Insulation Resistance**  $\geq 100\text{M}\Omega$

**Polarity** Units are reverse polarity protected

#### Mechanical

**Mounting** Surface mount with one #10 (M5 x 0.8) screw

**Dimensions** **H** 50.8 mm (2.0"); **W** 50.8 mm (2.0");

**D** 44.5 mm (1.75")

**Termination** 0.25 in. (6.35 mm) male quick connect terminals

**Sensor Hole** 0.36 in. (9.14 mm) for up to #4 AWG (21.1 mm<sup>2</sup>)

THHN wire

#### Environmental

##### Operating/Storage

**Temperature** -30° to 60°C/-40° to 85°C

**Humidity** 95% relative, non-condensing

**Weight**  $\approx 2.4\text{ oz (68 g)}$

\*Minimum loop-power supply voltage equals the minimum sensor voltage 10VDC plus the voltage drop developed across all the other loop devices at 20mA.