

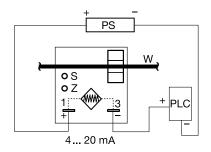
# TCSA SERIES

# **Current Transducers**





# **Wiring Diagram**



PS = Power Supply
Z = Zero Adjust
S = Span Adjust
W = Insulated Wire Carrying
Monitored Current
PLC = PLC Analog Input
or Meter Input

# **Description**The TCSA Series

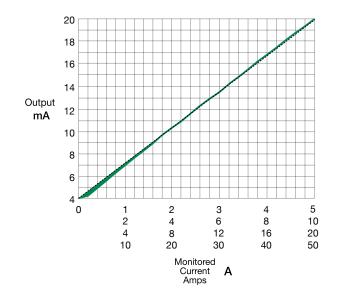
The TCSA Series is a loop-powered, linear output current transducer that provides an output that is directly proportional to the RMS AC current passing through the onboard toroid. The TCSA provides a 4 - 20mA output over a power supply range of 10 - 30VDC. Each unit is factory calibrated for monitoring 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

**Monitored AC Current** 0 - 50A

Ranges

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

**Factory Calibration** ≤±2% of full scale

**Maximum Allowable Current** Steady – 50A turns; Inrush – 300A turns for 10s Repeat Accuracy ≤±0.25% of full scale under fixed conditions

Response Time ≅ 300ms Burden  $\leq 0.5VA$ 

**AC Line Frequency** 

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

**Temperature Coefficient** ±0.05%/°C

Output

**Type: Series Connection** Current directly proportional to

monitored current

18mA - 22mA

≥ 2000V RMS terminals to mounting surface

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

Adjustment Mini-screw, 25-turn potentiometer

**Protection** 

Dielectric Breakdown

**Insulation Resistance** 

 $\geq 100~M\Omega$ Units are reverse polarity protected **Polarity** 

Mechanical

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

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

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