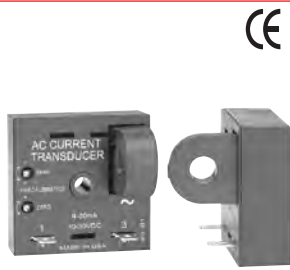




AC Current Transducer

TCSA Series

Loop Powered



- Monitors 0 ...50 A in 4 Ranges
- Loop Powered from 10 ... 30 V DC
- Linear Output from 4 ... 20 mA
- Zero and Span Adjustments
- Complete Isolation Between Sensed Current and Control Circuit

Approvals:  

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 to 20 mA output over a power supply range of 10 to 30 V DC. Each unit is factory calibrated for monitoring from 0 to 5, 0 to 10, 0 to 20, or 0 to 50 A in four ranges. The 0 to 5 A range allows the use of external current transformers so loads up to 1200 AC amps can be monitored.

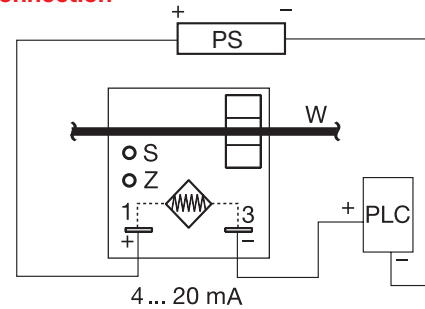
Operation

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 4 mA output and full span provides a 20 mA output. Zero and span adjustments are provided for minor calibration adjustments in the field (if required).

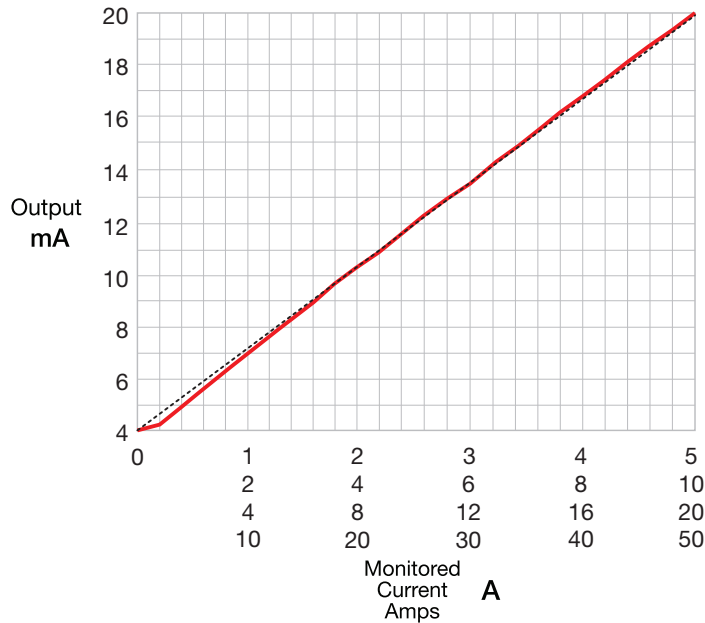
Using an External Current Transformer (CT)

Select a 2 VA, 0 to 5 A 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.

Connection



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

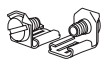


Accessories



Female quick connect P/N:

P1015-64 (AWG 14/16)



Quick connect to screw adaptor P/N: **P1015-18**



Mounting bracket P/N: **P1023-6**



DIN rail adaptor P/N: **P1023-20**

See accessory pages for specifications.

Ordering Table

Current Range	Part Number
0 ... 5 A	TCSA5
0 ... 10 A	TCSA10
0 ... 20 A	TCSA20
0 ... 50 A	TCSA50

AC Current Transducer

TCSA Series

Loop Powered

Current
Sensors &
Monitors

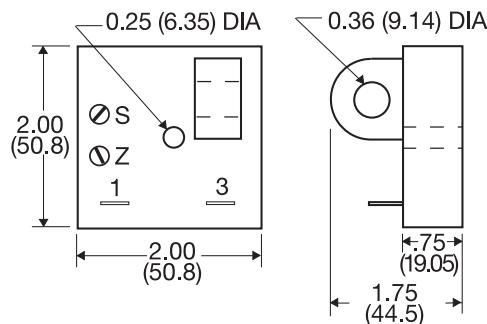
Technical Data

Sensor	
Type	Toroid, through hole wiring, alternating current (Monitored conductor must be properly insulated)
Monitored AC Current Ranges	0 ... 50 A
4 factory calibrated ranges Factory Calibration	0 ... 5A, 0 ... 10A, 0 ... 20A, or 0 ... 50A
Maximum Allowable Current	≤±2% of full scale Steady – 50 A turns Inrush – 300 A turns for 10 s
Repeat Accuracy	≤±0.25% of full scale under fixed conditions
Response Time	≅ 300 ms
Burden	≤ 0.5 VA
Frequency	0 ... 20A / 21 ... 50A 20 ... 100 Hz / 30 ... 100 Hz
Temperature Coefficient	+/-0.05%/°C
Output	
Type: Series Connection	Current directly proportional to monitored current
Range	4 ... 20 mA
Sensor Supply Voltage*	10 ... 30 V DC
Momentary Voltage	40 V DC for 1 m
Zero Adjust	≅ 3.75 ... 4.25 mA
Span Adjust	18 mA ... 22 mA
Adjustment	Mini-screw, 25 turn potentiometer
Protection	
Dielectric Breakdown	≥ 2000 V RMS terminals to mounting surface
Insulation Resistance	≥ 100 MΩ
Polarity	Units are reverse polarity protected
Mechanical	
Mounting	Surface mount with one #10 (M5 x 0.8) screw
Package	2 x 2 x 1.75 in. (50.8 x 50.8 x 44.5 mm)
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 ²) THHN wire
Environmental	
Operating Temperature	-30°C ... +60°C
Storage Temperature	-40°C ... +85°C
Humidity	95% relative, non-condensing
Weight	≅ 2.4 oz (68 g)

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

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Mechanical View



Inches (Millimeters)