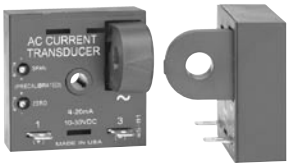
AC Current Transducer
TCSA Series
Loop Powered



- 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

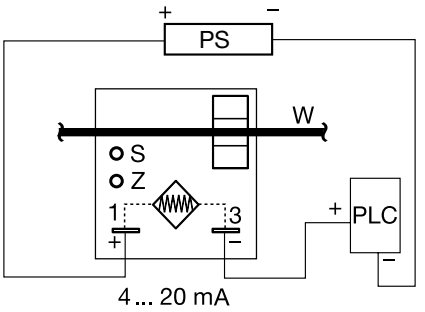
Approvals:

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.

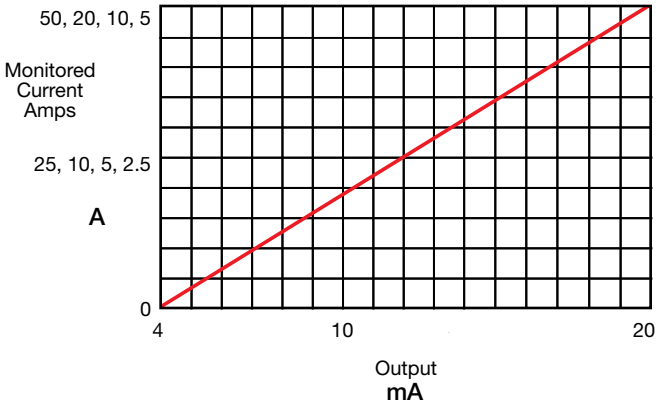
Operation
The TCSA varies the effective resistance of its output in direct proportion to the current flowing in the monitored conductor. The unit is factory calibrated so that 0 amps provides a 4 mA output and full span provides a 20 mA output. Zero and span adjustments are provided for minor calibration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

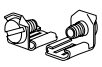


Ordering Table

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

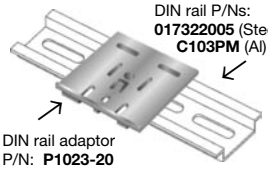
Accessories

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 P/Ns:
017322005 (Steel)
C103PM (Al)

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

See accessory pages for specifications.

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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		0 ... 5A, 0 ... 10A, 0 ... 20A, or 0 ... 50A
Factory Calibration		+/-0.5% of full scale
Maximum Allowable Current		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 mm²) 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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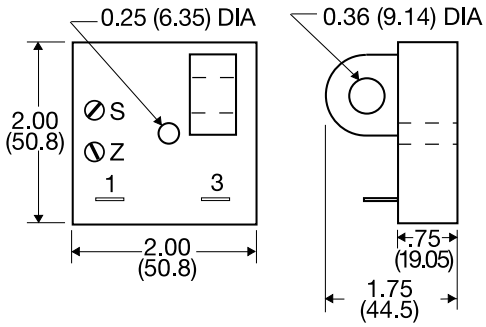
Mechanical View



Inches (Millimeters)