**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**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>CURRENT RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCSA5</td>
<td>0-5A</td>
</tr>
<tr>
<td>TCSA10</td>
<td>0-10A</td>
</tr>
<tr>
<td>TCSA20</td>
<td>0-20A</td>
</tr>
<tr>
<td>TCSA50</td>
<td>0-50A</td>
</tr>
</tbody>
</table>

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
## 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
  - ≤±0.25% of full scale under fixed conditions
- **Response Time**: ≅ 300ms
- **Burden**: ≤ 0.5VA
- **AC Line Frequency**
  - 0 - 20A / 21 - 50A
  - 20 - 100Hz / 30 - 100Hz
- **Temperature Coefficient**: ±0.05%/°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
- **Span Adjust**: 18mA - 22mA
- **Adjustment**: Mini-screw, 25-turn potentiometer

### Protection
- **Dielectric Breakdown**: ≥ 2000V 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
- **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 mm²) THHN wire

### Environmental
- **Operating/Storage**
  - Temperature: -30° to 60°C / -40° to 85°C
  - Humidity: 95% relative, non-condensing
  - Weight: ≅ 2.4 oz (68 g)

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