

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.

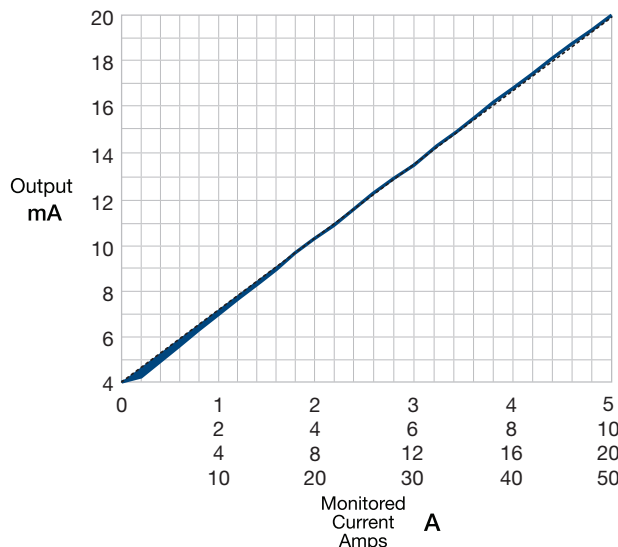
For more information see:
Appendix B, page 166, Figure 21 for dimensional drawing.
Appendix C, page 169, Figure 20 for connection diagram.

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.



Order Table:

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

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..... $\leq \pm 2\%$ 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..... $\leq 300\text{ms}$

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..... 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 / 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.

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

Approvals:   

Auxiliary Products:

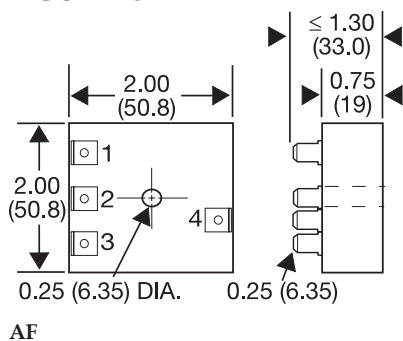
- **Female quick connect:**
P/N: P1015-64 (AWG 14/16)
- **Quick connect to screw adaptor:**
P/N: P1015-18
- **Mounting bracket:** P/N: P1023-6
- **DIN rail:** P/N: C103PM
- **DIN rail adaptor:** P/N: P1023-20

Available Models:

TCSA5
TCSA10
TCSA20
TCSA50

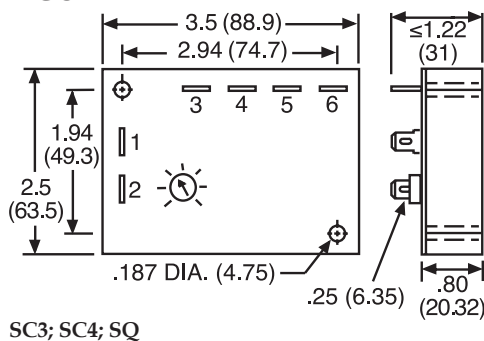
Appendix B - Dimensional Drawings

FIGURE 13



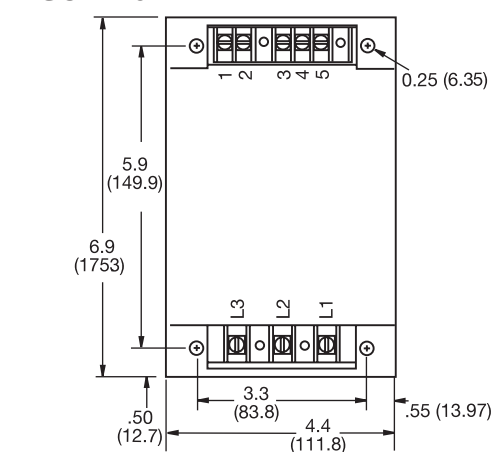
AF

FIGURE 14



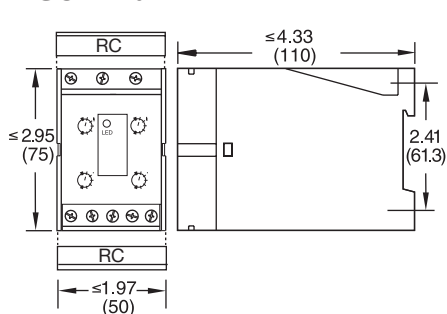
SC3; SC4; SQ

FIGURE 15



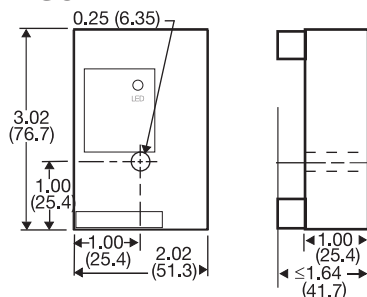
WVM

FIGURE 16



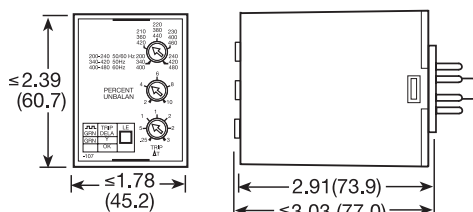
DLMU

FIGURE 17



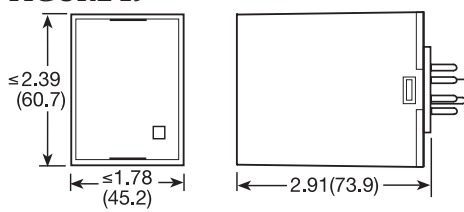
FB9L; HLMU; SCR9L

FIGURE 18



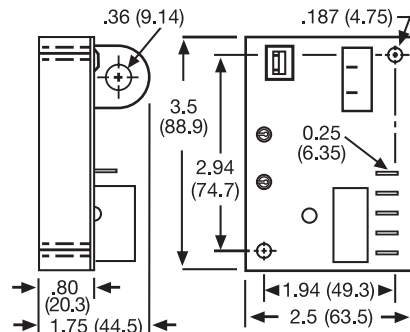
PLMU

FIGURE 19



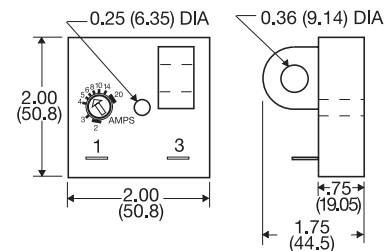
LLC4; LLC6; PLS

FIGURE 20



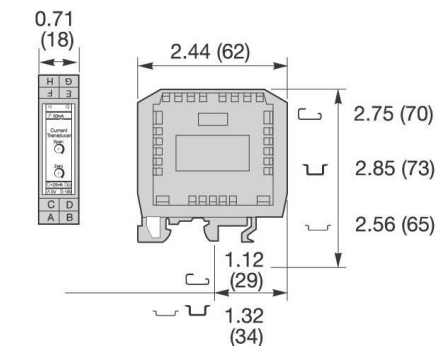
ECS; ECSW (ECS has spade connectors and ECSW has terminal board)

FIGURE 21



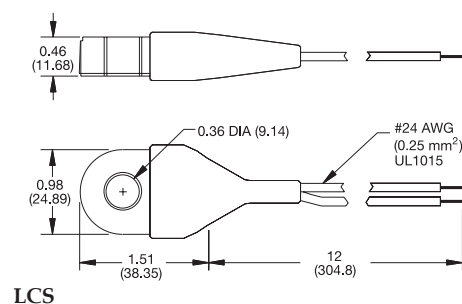
TCS; TCSA

FIGURE 22



DCSA

FIGURE 23



LCS

inches (millimeters)

FIGURE 15 - HLV Series

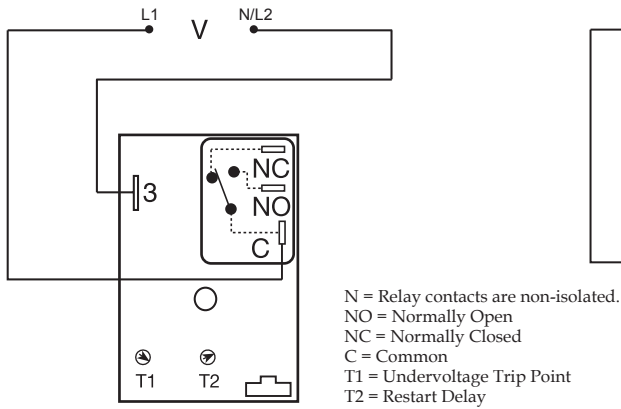


FIGURE 16 - KVM Series

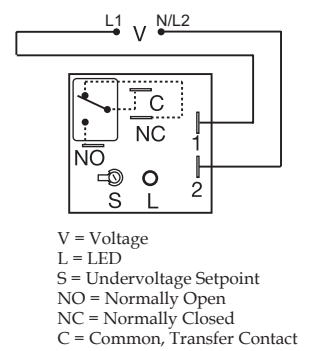


FIGURE 17 - ECS Series

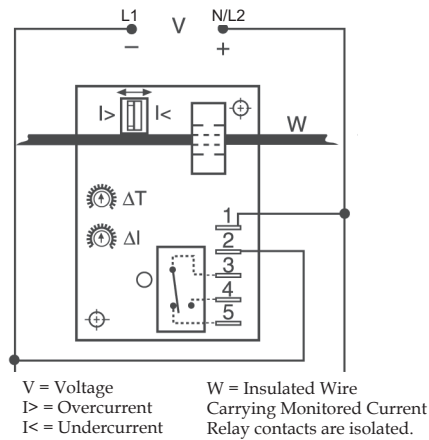


FIGURE 18 - ECSW Series

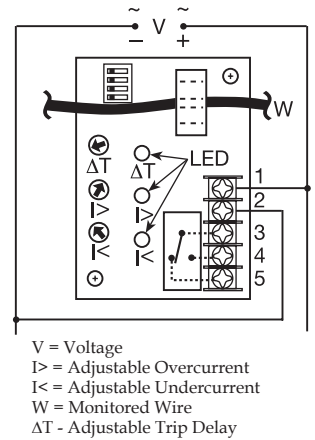
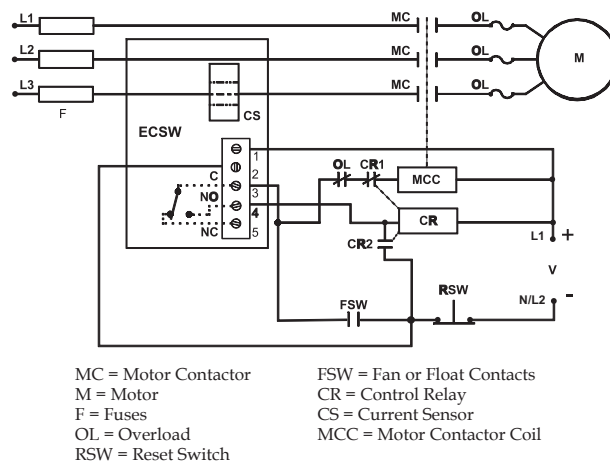


FIGURE 19 - TCS Series

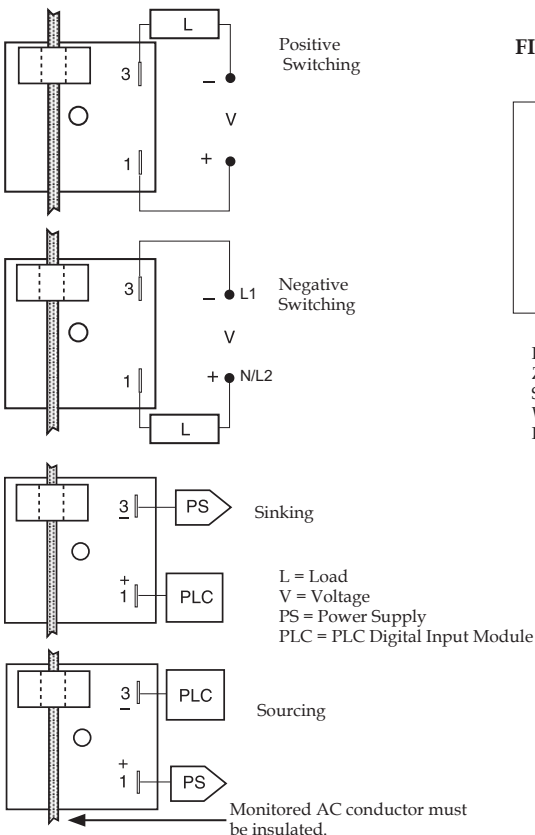


FIGURE 20 - TCSA Series

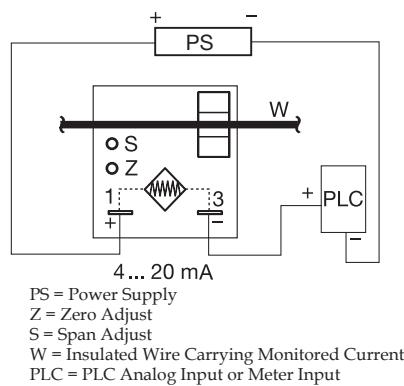


FIGURE 21 - DCSA Series

