

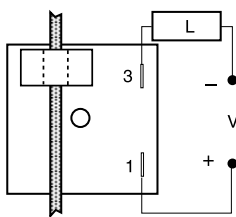
TCS SERIES

Current Sensor

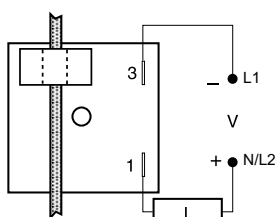


Wiring Diagram

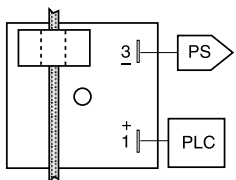
POSITIVE SWITCHING



NEGATIVE SWITCHING

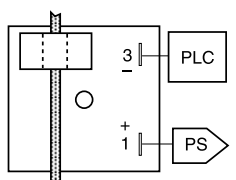


SINKING



L = Load
V = Voltage
PS = Power Supply
PLC = PLC Digital Input Module

SOURCING



Monitored AC conductor must be insulated.

Description

The TCS Series is a low cost method of go/no go current detection. It includes a solid-state output to sink or source current when connected directly to a standard PLC digital input module. Its normally open or normally closed output can also be used to control relays, lamps, valves, and small heaters rated up to 1A steady, 10A inrush. The TCS is self-powered (no external power required to operate the unit) and available with an adjustable actuation range of 2 - 20A or factory fixed actuation points from 2 - 45A.

Operation

Normally Open: When a current equal to or greater than the actuate current is passed through the toroidal sensor, the output closes. When the current is reduced to 95% of the actuate current or less, the output opens.

Normally Closed: When the current through the toroid is equal to or greater than the actuate current, the output opens. When the current is reduced below 95% of the actuate current, the output closes. To increase sensitivity, multiple turns may be made through the TCS's toroidal sensor. The trip point range is divided by the number of turns through the toroidal sensor to create a new range. When using an external CT, select a 2VA, 0-20A output CT rated for the current to be monitored. Select TCS adjustment range 0. Pass one secondary wire lead through the TCS' toroid and connect the secondary leads together.

Features & Benefits

FEATURES	BENEFITS
Self powered	No control voltage is required to operate the unit
Totally solid state and encapsulated	No moving parts to arc and wear out over time and encapsulated to protect against shock, vibration, and humidity
Can connect directly to PLC	Solid state output to sink or source current can be connected directly to a standard PLC digital input module
1A steady, 10A inrush solid-state output	Provides 100 million operations in typical conditions
Complete isolation between sensed current and control circuit	Allows you to monitor a load in a separate electrical system

Ordering Information

MODEL	OUTPUT VOLTAGE	ACTUATE CURRENT	OUTPUT FORM	MODEL	OUTPUT VOLTAGE	ACTUATE CURRENT	OUTPUT FORM
TCSG2A	3 to 50VDC	Fixed, 2A	Normally open	TCSH2B	24 to 240VAC	Fixed, 2A	Normally closed
TCSGAA	3 to 50VDC	2-20A adjustable	Normally open	TCSH5B	24 to 240VAC	Fixed, 5A	Normally closed
TCSGAB	3 to 50VDC	2-20A adjustable	Normally closed	TCSHAA	24 to 240VAC	2-20A adjustable	Normally open
TCSH2A	24 to 240VAC	Fixed, 2A	Normally open	TCSHAB	24 to 240VAC	2-20A adjustable	Normally closed

If you don't find the part you need, call us for a custom product 800-843-8848

TCS 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.



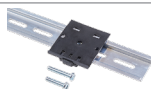
P1015-18 Quick Connect to Screw Adapter

Screw adapter terminal designed for use with all modules with 0.25 in. (6.35 mm) male quick connect terminals.



C103PM (AL) DIN Rail

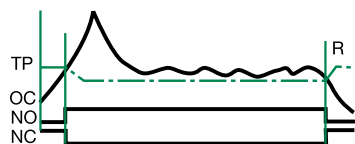
35 mm aluminum DIN rail available in a 36 in. (91.4 cm) length.



P1023-20 DIN Rail Adapter

Allows module to be mounted on a 35 mm DIN type rail with two #10 screws.

Function Diagram



TP = Trip Point
OC = Monitored Current
NO = Normally Open Output
NC = Normally Closed Output
R = Reset

Specifications

Sensor Type

Toroid, through hole wiring, alternating current, monitored wire must be properly insulated

Current to Actuate

Adjustable: - 2 - 20A, guaranteed range
Fixed: - 2 - 45A, +0/-20%

Reset Current

≅ 95% of the actuate current

Maximum Allowable Current

Steady - 50A turns
Inrush - 300A turns for 10s

Actuate Current vs. Temp. & Voltage

≤ ±5%

Response Times

Overcurrent - ≤ 200ms

Undercurrent - ≤ 1s

< 0.5VA

Burden Output Type

Solid state

Form

NO or NC

Rating

1A steady, 10A inrush

Voltage

AC - 24 to 240VAC +10/-20%

DC - 3 to 50VDC

Voltage Drop

AC NO & NC - ≅ 2.5V

DC NO & NC - ≅ 1.2V

Protection

Circuitry

Encapsulated

Dielectric Breakdown

≥ 2000V RMS terminals to mounting surface

Insulation Resistance

≥ 100 MΩ

Mechanical

Mounting

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

Dimensions

H 50.8 mm (2"); **W** 50.8 mm (2");

D 44.5 mm (1.75")

Termination

0.25 in. (6.35 mm) male quick connect terminals (2)

Sensor Hole

0.36 in. (9.14 mm) for up to #4 AWG (21.1 mm²) THHN wire

Environmental

Operating/Storage

Temperature

-20° to 60°C / -40° to 85°C

Humidity

95% relative, non-condensing

Weight

≅ 2.6 oz (74 g)

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Littelfuse:

[TCSGAB](#) [TCSGAA](#) [TCSH2A](#) [TCSHAB](#) [TCSHAA](#) [TCSH2B](#) [TCSH5B](#) [TCSG2ATCS](#) [TCSG2A](#)