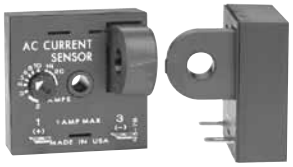
AC Current Sensor, PLC Interface Module

TCS Series
Current Sensor



- Direct Connection to a PLC Digital Input Module
- 3 ... 50 V DC, 24 ... 240 V AC in 2 Ranges
- 1 A Steady - 10 A Inrush
- Actuation Points – 2 ... 45 A (Fixed Units) 2 ... 20 A (Adjustable Units)
- Normally Open or Closed Solid State Output
- Complete Isolation Between Sensed Current & Control Circuit

Approvals:

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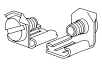
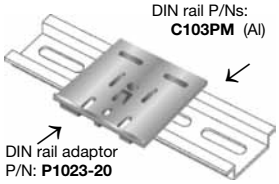
Accessories

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: **C103PM** (Al)

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

See accessory pages for specifications.

Description

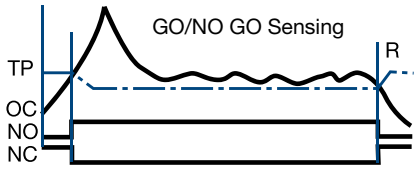
The TCS Series is a low cost method of GO/NO GO current detection. It includes a solid state output to sink or source current when connected directly to a standard PLC digital input module. Its normally open or normally closed output can also be used to control relays, lamps, valves, and small heaters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

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.

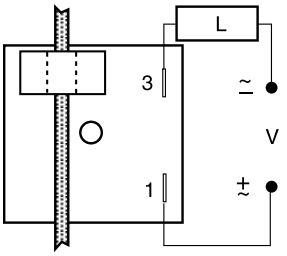
Normally Closed: When the current through the toroid is equal to or greater than the actuate current, the output opens. When the current is reduced below 95% of the actuate current, the output closes.

Function



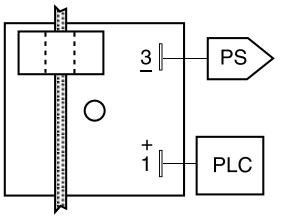
L = Load V = Voltage PS = Power Supply
PLC = PLC Digital Input Module R = Reset
TP = Trip Point OC = Monitored Current
NO = Normally Open Output
NC = Normally Closed Output

Connection

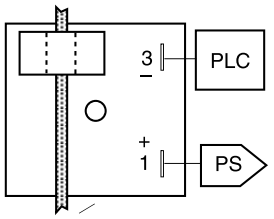


Positive Switching

Negative Switching



Sinking



Sourcing

Monitored AC conductor must be insulated.

Available Models-

- •TCSG2A
  TCSH20A
  TCSH3A
- •TCSHAA
- •TCSGAA
- •TCSH2A
  TCSH4A
- •TCSHAB
- •TCSGAB
- •TCSH2B
  TCSH5B

Don't see what you need? Call us for a minimum quantity and price quote!

Ordering Table

TCS	X	X	X
Series	**Output Voltage** **G** - 3 ... 50 V DC **H** - 24 ... 240 V AC	**Actuate Current** **A** - Adjustable 2 ... 20 A Specify Fixed - Actuate Point **2** ... **45** A in 1 A increments	**Output Form** **A** - Normally Open **B** - Normally Closed

Example P/N: **TCSGAA** Fixed – **TCSH20A**

TCS02B01 09.10

• denotes a preferred product

AC Current Sensor, PLC Interface Module
TCS Series
Current Sensor

Technical Data

Sensor	
Type	Toroid, through hole wiring, alternating current, monitored wire must be properly insulated
Current to Actuate	Adjustable Units -- 2 ... 20 A, Guaranteed Range Fixed Units -- 2 ... 45 A, +0/-20%
Reset Current	≅ 95% of the actuate current
Maximum Allowable Current	Steady -- 50 A-turns Inrush -- 300 A-turns for 10 s
Actuate Current vs. Temperature & Voltage	≤ +/-5%
Response Times	Overcurrent -- ≤ 200 ms Undercurrent -- ≤ 1 s
Burden	< 0.5 VA
Output	
Type	Solid State
Form	Normally Open or Normally Closed
Rating	1 A steady, 10 A inrush
Voltage	AC -- 24 ... 240 V AC +10/-20% DC -- 3 ... 50 V DC
Voltage Drop	AC N.O. & N.C. -- ≅ 2.5 V DC N.O. & N.C. -- ≅ 1.2 V
Protection	
Circuitry	Encapsulated
Dielectric Breakdown	≥ 2000 V RMS terminals to mounting surface
Insulation Resistance	≥ 100 MΩ
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 (2)
Sensor Hole	0.36 in. (9.14 mm) for up to #4 AWG (21.1 mm²) THHN wire
Environmental	
Operating/Storage Temperature	-20°C ... +60°C / -40°C ... +85°C
Humidity	95% relative, non-condensing
Weight	≅ 2.6 oz (74 g)

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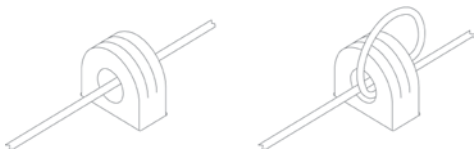
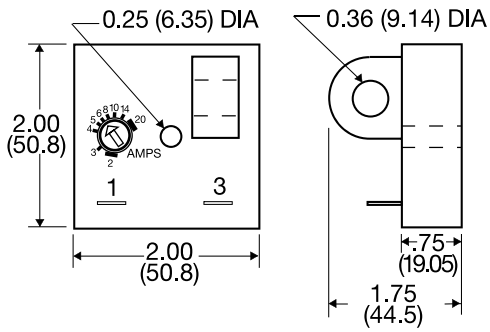


Multiple Turns To Increase Sensitivity
To increase sensitivity, multiple turns may be made through the TCS's toroidal sensor. The trip point range is divided by the number of turns through the toroidal sensor to create a new range.

Using an External Current Transformer (CT)
Select a 2 VA, 0 to 20 A output CT, rated for the current to be monitored. Pass one of the CT's secondary wire leads through the TCS's toroid. Connect the CT's secondary leads together.

Mechanical View



Inches (Millimeters)

TCS02B01 09.10

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