

ECSTD Series Current Switch CurrentWatch Current Sensors

Contents

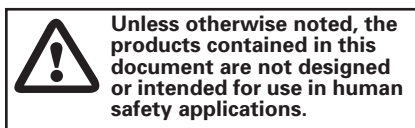
Overview	1
Model Selection, Switches	2
Model Selection, Accessories	3
Wiring Diagram	3
Specifications	4
Dimensions	5

The CurrentWatch ECSTD Series from Eaton's electrical business is a family of high performance current-operated switches with field-adjustable time delay to help minimize nuisance trips during start-up and operation. Designed for motor status applications where setpoint accuracy and repeatability are critical, the ECSTD Series offers a linear setpoint characteristic and constant hysteresis. Standard features include self-powering, jumper-selectable ranges and a choice of outputs and housing styles.

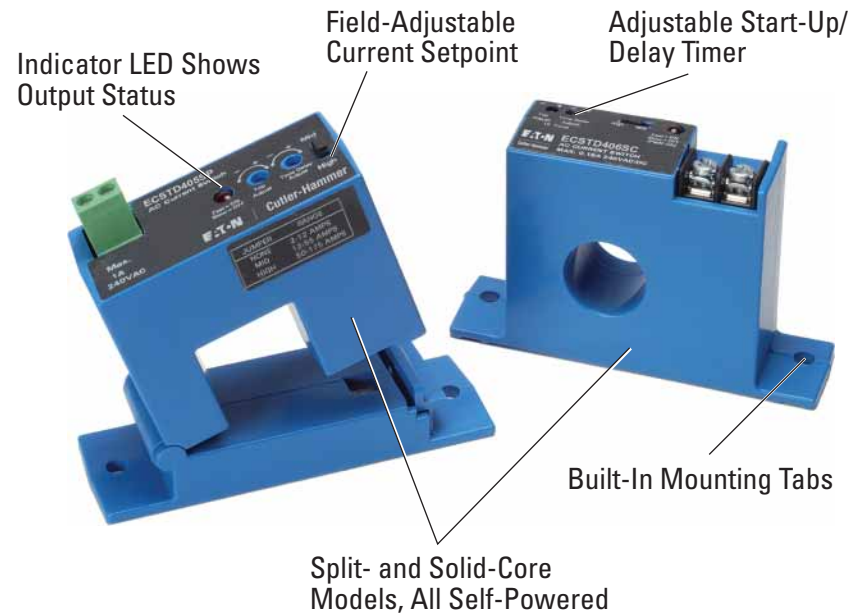
For typical applications of the Current-Watch ECSTD Series, see listing to the right.

Approvals

- UL Listed
- CE Pending



AC Current Switches with Time Delay



Product Features

- **Adjustable Start-Up/Delay Timer** — Field adjustable from 0 – 15 seconds to eliminate nuisance alarms due to start-up inrush or temporary overcurrent conditions
- **Choice of N.O./N.C. AC or Universal Outputs** — Contact ratings of 1.0A @ 240V AC or universal outputs of 0.15A @ 240V AC/DC (N.O. models) and 0.2A @ 135V AC/DC (N.C. models) for use with most standard motor control systems
- **Improved Ease of Installation and Use** — Self-powered, split-core models simplify installation, 1.0A AC rating eliminates need for time delay relay, and status LED provides visual indication of setpoint trip and contact action
- **Industrial Grade Performance** — Constant hysteresis and linear response characteristics enhance setpoint accuracy
- **Agency Approved** — UL Listed, CE pending


Typical Applications

- **Motor Protection** — Serves as an electronic proof-of-operation; detects current draw changes in motors when they encounter problems such as pumps running dry or pending bearing failure; non-intrusive and less expensive to install than differential pressure flow sensors or thermal switches; much quicker response time than Class 10 overload relays
- **High Inrush or Temporary Overload Current** — Adjustable start-up/delay timer allows 0 – 15 second delay to eliminate nuisance trips from high inrush or short overload conditions

For Customer Service in the U.S. call **1-877-ETN CARE (386-2273)**,
in Canada call **1-800-268-3578**.
For Application Assistance in the U.S. and Canada
call **1-800-426-9184**.

August 2007

Model Selection — CurrentWatch ECSTD Series

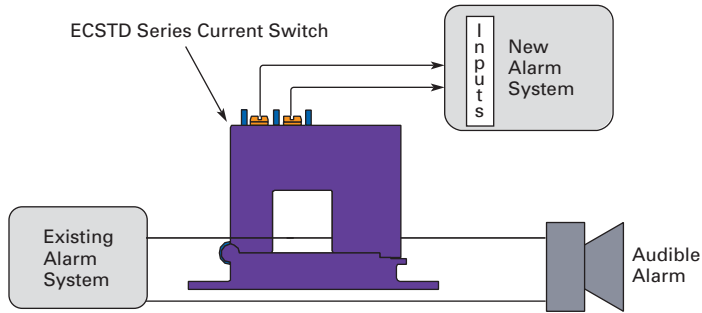
	Power Supply	Aperture Size	Output Type	Setpoint Options	Catalog Number
AC Output Switches (N.O./N.C. 1A @ 240V AC)					
Solid-Core Housings 	Self Powered (No External Power Needed)	0.75 in. (19 mm)	Normally Open	Adjustable Setpoints: 1.5 – 12, 12 – 55 or 50 – 175A	ECSTD401SC
			Normally Closed	Adjustable Setpoints: 1.5 – 12, 12 – 55 or 50 – 175A	ECSTD402SC
Split-Core Housings 		0.85 in. (21.6 mm)	Normally Open	Adjustable Setpoints: 2 – 12, 12 – 55 or 50 – 200A	ECSTD404SP
			Normally Closed	Adjustable Setpoints: 2 – 12, 12 – 55 or 50 – 200A	ECSTD405SP
AC/DC Output Switches (N.O. 0.15A @ 240V AC/DC, N.C. 0.2A @ 135V AC/DC) ①					
Solid-Core Housings 	Self Powered (No External Power Needed)	0.75 in. (19 mm)	Normally Open	Adjustable Setpoints: 1.5 – 12, 12 – 55 or 50 – 175A	ECSTD406SC
			Normally Closed	Adjustable Setpoints: 1.5 – 12, 12 – 55 or 50 – 175A	ECSTD407SC
Split-Core Housings 		0.85 in. (21.6 mm)	Normally Open	Adjustable Setpoints: 2 – 12, 12 – 55 or 50 – 200A	ECSTD408SP
			Normally Closed	Adjustable Setpoints: 2 – 12, 12 – 55 or 50 – 200A	ECSTD409SP

① Preferred for PLC inputs.

■ Stocked product, typical order quantities guaranteed in stock.

Example Application — CurrentWatch ECSTD Series

Isolated Alarm System Interfacing

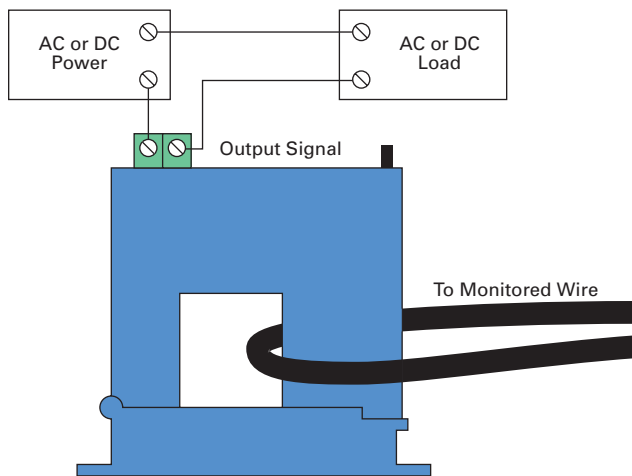


Accessories — CurrentWatch ECSTD Series

	Description	Catalog Number
	DIN Rail Mounting Kit (Sensor pictured for reference and not included in kit)	EDINKIT

■ Stocked product, typical order quantities guaranteed in stock.

Wiring Diagram — CurrentWatch ECSTD Series



NOTE: The above diagram is for Normally Open (N.O.) models.

August 2007

Specifications — CurrentWatch ECSTD Series

Description	Specification																		
Power Supply	Self-Powered — No Power Supply Needed																		
Output	Magnetically Isolated Solid-State Switch																		
Output Rating	AC Output Models: N.O./N.C. 1A @ 240V AC AC/DC Output Models: N.O. 0.15A @ 240V AC/DC N.C. 0.20A @ 135V AC/DC																		
Off-State Leakage	< 10 μ A																		
Response Time	Adjustable 0.2 to 15 sec.																		
Setpoint Range	Solid-Core: 1.5 – 12, 12 – 55 or 50 – 175A Split-Core: 2 – 12, 12 – 55 or 50 – 200A (Jumper Selectable)																		
Hysteresis	5% (constant)																		
Overload	<table border="1"> <thead> <tr> <th rowspan="2">Housing</th> <th rowspan="2">Range</th> <th colspan="3">Maximum Amps</th> </tr> <tr> <th>Continuous</th> <th>6 sec.</th> <th>1 sec.</th> </tr> </thead> <tbody> <tr> <td>Solid-Core</td> <td>1.5 – 175 A</td> <td>175 A</td> <td>400 A</td> <td>1000 A</td> </tr> <tr> <td>Split-Core</td> <td>2 – 200 A</td> <td>200 A</td> <td>400 A</td> <td>1000 A</td> </tr> </tbody> </table>	Housing	Range	Maximum Amps			Continuous	6 sec.	1 sec.	Solid-Core	1.5 – 175 A	175 A	400 A	1000 A	Split-Core	2 – 200 A	200 A	400 A	1000 A
Housing	Range			Maximum Amps															
		Continuous	6 sec.	1 sec.															
Solid-Core	1.5 – 175 A	175 A	400 A	1000 A															
Split-Core	2 – 200 A	200 A	400 A	1000 A															
Isolation Voltage	5,000V AC (tested)																		
Frequency Range	50 – 100 Hz																		
Sensing Aperture	Solid-Core Models: 0.75 in. (19 mm) dia. Split-Core Models: 0.85 in. (21.6 mm) sq.																		
Housing	UL94 V0 Flammability Rated																		
Environmental	Operating Temperature: 5 to 122°F (-15 to 50°C) Humidity: 0 – 95% RH, Non-condensing																		
Approvals	UL 508 Industrial Control Equipment (USA and Canada), CE Pending																		

LED Indication/Output Status

Monitored Amps	Output		Smart-LED (If Present)
	N.O.	N.C.	
None or Minimum	Open	Closed	Off
Below Trip Level	Open	Closed	Slow (2 sec.)
Above Trip Level	Closed	Open	Fast (0.5 sec.)

Approximate Dimensions — CurrentWatch ECSTD Series

Description	Approximate Dimensions in Inches (mm)
Solid-Core Housings	<p>Technical drawing of Solid-Core Housings showing top and side views with dimensions in inches (mm):</p> <ul style="list-style-type: none"> Top View Dimensions: <ul style="list-style-type: none"> Overall width: 2.43 (61.8) Internal width: 1.51 (38.3) Internal width: 3.53 (89.7) Internal width: 3.08 (78) Internal width: 1.5 (39) Internal width: 0.125 (3.2) Internal width: 0.967 (24.56) Internal width: 0.17 (4.5 Int. Dia.) Typical of 2 Side View Dimensions: <ul style="list-style-type: none"> Overall height: 2.18 (55.4) Internal height: 0.75 (19) Dia. Internal height: 0.125 (3.2) Internal height: 0.17 (4.5 Int. Dia.) Typical of 2 Internal height: 0.6 (15) Other Features: <ul style="list-style-type: none"> LED indicator Terminal symbols: ⊕, ⊗, ⊙, ⊚
Split-Core Housings	<p>Technical drawing of Split-Core Housings showing top and side views with dimensions in inches (mm):</p> <ul style="list-style-type: none"> Top View Dimensions: <ul style="list-style-type: none"> Overall width: 3.53 (89.7) Internal width: 3.04 (77.2) Internal width: 2.40 (31) Internal width: 0.85 (21.6) Side View Dimensions: <ul style="list-style-type: none"> Overall height: 1.18 (30) Internal height: 0.45 (11.4) Internal height: 0.85 (21.6) Internal height: 2.25 (57.2) Internal height: 0.19 (4.83) Dia. Other Features: <ul style="list-style-type: none"> LED indicator Terminal symbols: ⊕, ⊗, ⊙, ⊚