

ECSJ Series CurrentWatch Current Switches



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ECSJ Series CurrentWatch Current Switches

Product Description

The CurrentWatch ECSJ Series current operated switches from Eaton’s electrical sector provide the same dependable indication of status offered by the CurrentWatch ECS Series, but with the added benefit of increased setpoint precision. A choice of three, jumper-selectable input ranges allows the ECSJ Series to be tailored to an application, providing more precise control through improved setpoint resolution. Self-powering, isolated solid-state outputs, 1–6A, 6–40A and 40–200A input ranges, and a choice of split- or solid-core enclosures are standard.

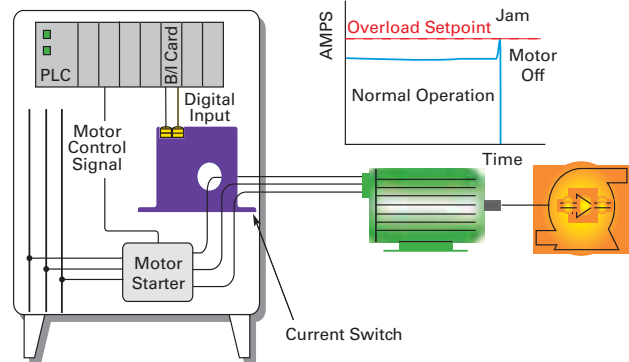
For typical applications of the CurrentWatch ECSJ Series, see listing on this page.

Application Description

Typical Applications

- **Electronic Proof of Flow**—Current operated switches eliminate the need for multiple pipe or duct penetrations and are more reliable than electro-mechanical pressure or flow switches
- **Conveyors**—Detect jams and overloads
- **Lighting Circuits**—Easier to install and more accurate than photocells
- **Fans, Pumps and Heating Elements**—Faster response than temperature sensors
- **Critical Motors**
- **Ancillary Equipment**

Example Application—  
Pump Jam and Suction Loss Protection



Features

- **Choice of NO or NC Solid-State Outputs**—
  - 1A at 240 Vac
  - 0.15A at 30 Vdc
  - 15A at 120 Vac
  - 3A at 120 Vac
  - 0.15A at 30 Vdc, dual contact
- **Self-Powered**—Cuts installation and operating costs
- **Easily Adjustable Setpoint**—Speeds start-up and reduces inventory
- **Solid- or Split-Core Housings**—Choose the appropriate version for your application
- **LED Indication**—Provides quick visual indication of output contact status
- **Built-In Mounting Feet**—Provide for a secure installation
- **UL, cUL and CE Approved**—Accepted worldwide

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.

For the most current information on this product, visit our Web site: [www.eaton.com](http://www.eaton.com)




**Standards and Certifications**

- UL Listed
- cUL Listed
- CE Certified
- UL 508 Industrial Control Equipment (USA and Canada)

**⚠ DANGER**

**THIS SENSOR IS NOT A SAFETY DEVICE AND IS NOT INTENDED TO BE USED AS A SAFETY DEVICE. This sensor is designed only to detect and read certain data in an electronic manner and perform no use apart from that, specifically no safety-related use. This sensor product does not include self-checking redundant circuitry, and the failure of this sensor product could cause either an energized or de-energized output condition, which could result in death, serious bodily injury, or property damage.**

**Product Selection****ECSJ Series CurrentWatch Current Switches****Front and Top Terminal Switches**

	Power Supply	Aperture Size	Output Type, Voltage and Rating	Setpoint and LED Configuration	Catalog Number
<b>Solid-Core Housing with Front Terminal</b> 	<b>Solid-Core Housing with Front Terminal</b>				
	Self-powered (no external power needed)	0.55 in (14 mm)	Normally open, 1A at 240 Vac	Adjustable 1–6, 6–40 or 40–175A setpoint with LED	<b>ECSJ400SC</b>
			Normally open, 15A at 120 Vac, 10A at 240 Vac	Adjustable 1–6, 6–40 or 40–175A setpoint with LED	<b>ECSJ406SC</b> ①
			Normally closed, 1A at 240 Vac	Adjustable 1–6, 6–40 or 40–175A setpoint with LED	<b>ECSJ401SC</b>
			Normally closed, 15A at 120 Vac, 10A at 240 Vac	Adjustable 1–6, 6–40 or 40–175A setpoint with LED	<b>ECSJ407SC</b> ①
			Dual contact, NO and NC, 0.15A at 30 Vdc	Adjustable 1–6, 6–40 or 40–175A setpoint without LED	<b>ECSJ430SC</b> ①
			Normally open, 0.15A at 30 Vdc	Adjustable 1–6, 6–40 or 40–175A setpoint with LED	<b>ECSJ420SC</b>
				Adjustable 1–6, 6–40 or 40–175A setpoint without LED	<b>ECSJ424SC</b>
		Normally closed, 0.15A at 30 Vdc	Adjustable 1–6, 6–40 or 40–175A setpoint with LED	<b>ECSJ421SC</b>	
<b>Solid-Core Housing with Top Terminal</b> 	<b>Solid-Core Housing with Top Terminal</b>				
	Self-powered (no external power needed)	0.74 in (19 mm)	Normally open, 3A at 120 Vac	Adjustable 1–6, 6–40 or 40–175A setpoint with LED	<b>ECSJ404SC</b>
			Normally closed, 3A at 120 Vac	Adjustable 1–6, 6–40 or 40–175A setpoint with LED	<b>ECSJ405SC</b>
<b>Split-Core Housing</b> 	<b>Split-Core Housing</b>				
	Self-powered (no external power needed)	0.85 in (21.6 mm)	Normally open, 1A at 240 Vac	Adjustable 1.75–6, 6–40 or 40–200A setpoint with LED	<b>ECSJ402SP</b>
			Normally closed, 1A at 240 Vac	Adjustable 1.75–6, 6–40 or 40–200A setpoint with LED	<b>ECSJ403SP</b>
			Normally open, 0.15A at 30 Vdc	Adjustable 1.75–6, 6–40 or 40–200A setpoint with LED	<b>ECSJ422SP</b>
		Normally closed, 0.15A at 30 Vdc	Adjustable 1.75–6, 6–40 or 40–200A setpoint with LED	<b>ECSJ423SP</b>	

**Note**

① Unit features built-in heatsink that adds to height. See dimension drawings on **Page V8-T7-14** for details.

## Accessories

DIN Rail  
Mounting KitECSJ Series CurrentWatch  
Current Switches

Description	Catalog Number
DIN rail mounting kit ①	EDINKIT

## Technical Data and Specifications

## ECSJ Series CurrentWatch Current Switches

Description	AC Solid-State Output Specification	DC Solid-State Output Specification
Power supply	Self-powered—no power supply needed	Self-powered—no power supply needed
Output	Isolated solid-state switch	Isolated solid-state switch
Output rating		
Standard models	1.0A at 240 Vac	0.15A at 30 Vdc
High current switching models	ECSJ404SC and ECSJ405SC: 3.0A at 120 Vac	ECSJ430SC: 0.15A at 30 Vdc, dual contact, NO and NC
Very high current switching models	ECSJ406SC and ECSJ407SC: 15A at 120 Vac, 10A at 240 Vac	—
Off-state leakage	NO models: <10 $\mu$ A NC models: 2.5 mA	NO models: <10 $\mu$ A NC models: 2.5 mA
Response time	40–120 ms	40–120 ms
Setpoint range (adjustable)	Solid-core models: 1–6, 6–40 and 40–175A Split-core models: 1.75–6, 6–40 and 40–200A	Solid-core models: 1–6, 6–40 and 40–175A Split-core models: 1.75–6, 6–40 and 40–200A
Hysteresis	Low: 6%; mid: 4%; high: 3%	Low: 6%; mid: 4%; high: 3%
Isolation voltage	UL listed to 1270 Vac, tested to 5000 Vac	UL listed to 1270 Vac, tested to 5000 Vac
Frequency range	6–100 Hz	6–100 Hz
Sensing aperture	Solid-core, front terminal models: 0.55 in (14 mm) Solid-core, top terminal models: 0.74 in (19 mm) Split-core models: 0.85 in (21.6 mm) sq.	Solid-core, front terminal models: 0.55 in (14 mm) Solid-core, top terminal models: 0.74 in (19 mm) Split-core models: 0.85 in (21.6 mm) sq.
Housing	UL94 V0 flammability rated	UL94 V0 flammability rated
Environmental	Operating temperature: –58° to 122°F (–50° to 50°C) Humidity: 0–95% RH, non-condensing	Operating temperature: –58° to 122°F (–50° to 50°C) Humidity: 0–95% RH, non-condensing

## Overload Ratings

Housing	Range	Maximum Amperes	
		Six Seconds	One Second
Solid-core	1–6A	400A	600A
	6–40A	500A	800A
	40–175A	800A	1200A
Split-core	1.75–6A	400A	600A
	6–40A	500A	800A
	40–200A	800A	1200A

## Note

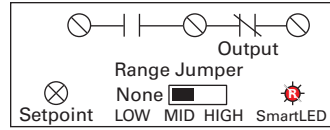
① Sensor pictured for reference and not included in kit.

#### Wiring Diagrams <sup>①②</sup>

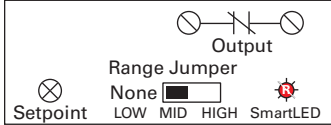
##### All Normally Open (NO) Models



##### ECSJ430SC (Dual Contact, NO and NC)



##### All Normally Closed (NC) Models

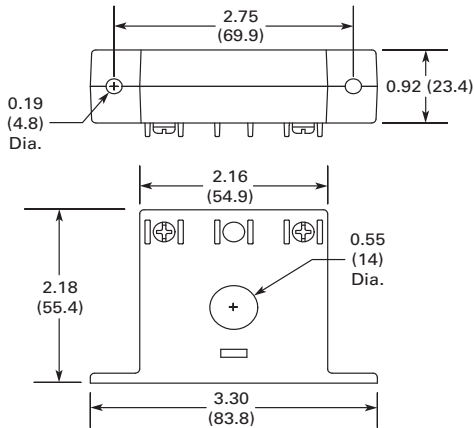


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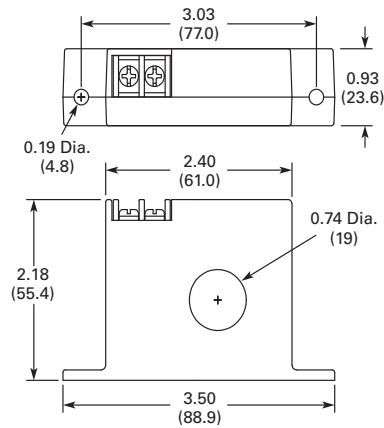
#### Dimensions

Approximate Dimensions in Inches (mm)

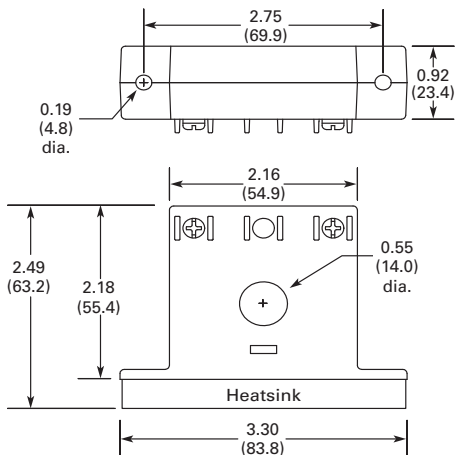
##### All Solid-Core Models with Front Terminals Except ECSJ406SC and ECSJ407SC



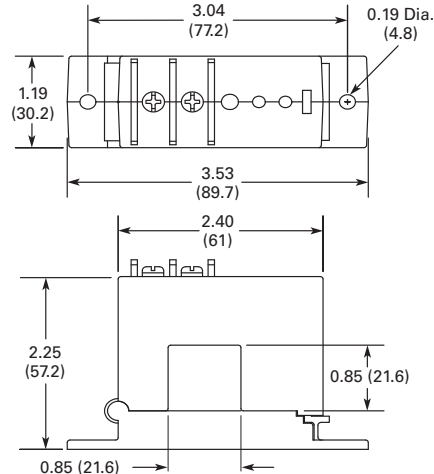
##### All Solid-Core Models with Top Terminals



##### ECSJ406SC and ECSJ407SC Solid-Core Models with Front Terminals



##### All Split-Core Models



#### Notes

- ① Terminals are #6 screws.
- ② DC contacts are polarity sensitive.