ECS7 Series Current Switch
CurrentWatch Current Sensors

Contents
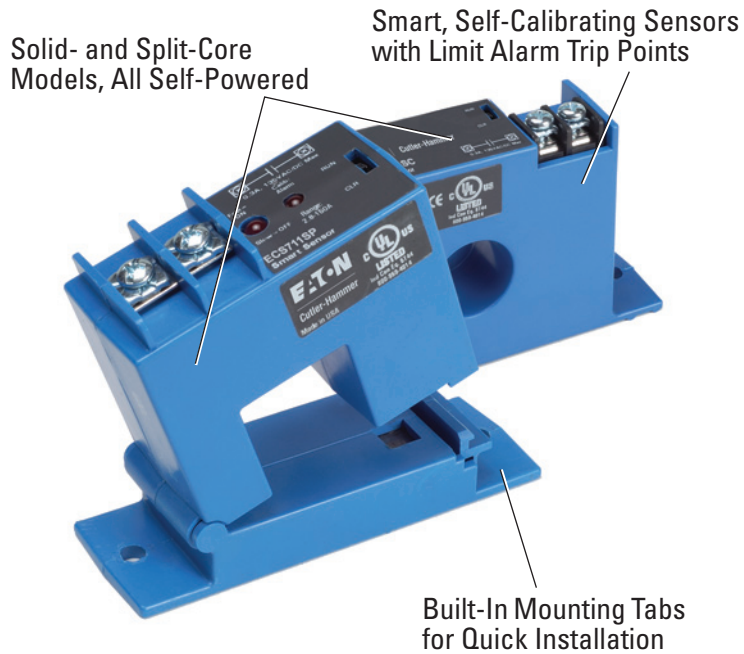
The CurrentWatch ECS7 Series load monitoring switches from Eaton's electrical business are designed for overload, underload or operating window applications. Upon sensing an average operating current, the ECS7 Series self-learns and establishes a limit-alarm trip point based on ± 15% of the average expected current draw. The ECS7 Series is available in solid- or split-core housing styles.

For typical applications of the CurrentWatch ECS7 Series, see listing to the right.

Approvals

■ UL Listed
■ C-UL Listed

CE

Self-Calibrating AC Current Switch with Solid-State Outputs

Solid- and Split-Core Models, All Self-Powered

Smart, Self-Calibrating Sensors with Limit Alarm Trip Points

Built-In Mounting Tabs for Quick Installation

Product Features

■ **Self-Powered and Self-Calibrating** — Reduces installation costs
■ **Status Monitoring, Overload and Operating Window Options** — Choose the operating style that matches your application
■ **Universal Output** — AC or DC compatibility with any automation system
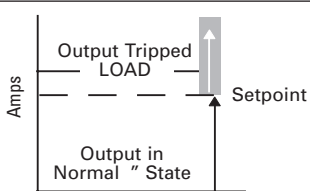■ **UL, C-UL and CE Approved** — Accepted worldwide

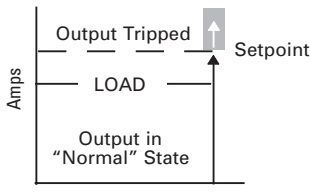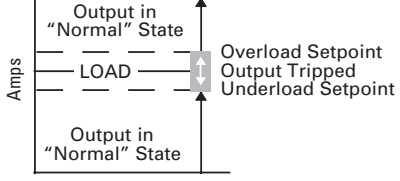## Typical Applications

■ **Conveyors** — Use current overload models to detect conveyor jams caused by scenarios such as side-by-sides
■ **Electronic Proof of Flow** — More reliable than electro-mechanical pressure or flow switches, with no need for pipe or duct penetrations
■ **Pump Protection** — Provides overload (jams) and underload (suction loss) indication

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CURRENTWATCH™ SENSORS

Model Selection — CurrentWatch ECS7 Series

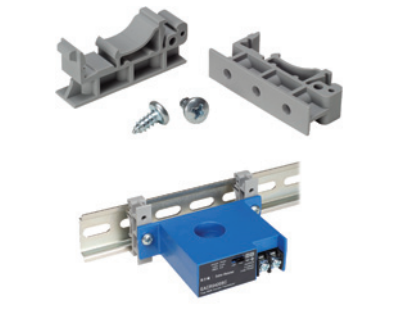|	Power Supply	Output Type	Aperture Size	Intelligent Logic	Catalog Number
Front and Top Terminal Switches					
Solid-Core Housing	Self-Powered (No External Power Needed)	Normally Open	0.74 in. (19 mm)	Over/Underload, 1.5 – 150A Self-Calibrating	**ECS701SC** ①
				Overload Only, 1.5 – 150A Self-Calibrating	**ECS700SC**
				Underload Only, 1.5 – 150A Self-Calibrating	**ECS702SC**
Split-Core Housing			0.85 in. (21.6 mm)	Over/UnderLoad, 2.8 – 150A Self-Calibrating	**ECS711SP** ①
				Overload Only, 2.8 – 150A Self-Calibrating	**ECS710SP**
				Underload Only, 2.8 – 150A Self-Calibrating	**ECS712SP**

① Output is closed when current is within ± 15% window.

▭ Stocked product, typical order quantities guaranteed in stock.

Current Switch Operation

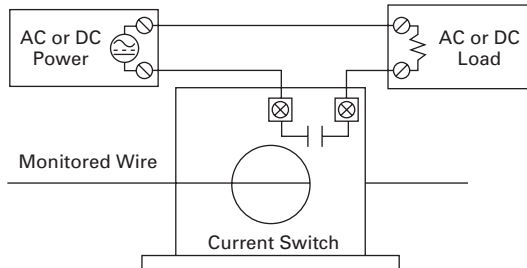| Model	Output Diagram
Underload Only Models	
Overload Only Models	
Over/Underload Models ②	

② Output is closed when current is within ±15% window.

Accessories — CurrentWatch ECS7 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 ECS7 Series

AC or DC Power

AC or DC Load

Monitored Wire

Current Switch

Specifications — CurrentWatch ECS7 Series

Description	Specification
Power Supply	Self-Powered — No Power Supply Needed
Output	Magnetically Isolated Solid-State Switch
Output Rating	Normally Open (N.O.) Models: 0.3A @ 135V AC/DC Not polarity sensitive
Off-State Leakage	< 10 µA
Response Time	200 mS
Setpoint Range	Solid-Core Models: 1.5 to 150A Split-Core Models: 2.8 to 150A
Setpoint	Overload Models: +15% of load Underload Models: -15% of load Operating Window: ± 15% of setpoint
Hysteresis	5% of setpoint
Overload	500A @ 6 sec., 1,000A @ 1 sec.
Isolation Voltage	UL Listed to 1,270V AC, tested to 5,000V AC
Frequency Range	6 – 100 Hz
Sensing Aperture	Solid-Core Models: 0.74 in. (19 mm) dia. Split-Core Models: 0.85 in. (21.6 mm) sq.
Housing	UL94 V0 Flammability Rated
Environmental	Operating Temperature: -58 to 122°F (-50 to 50°C) Humidity: 0 – 95% RH, Non-condensing
Approvals	UL 508 Industrial Control Equipment (USA and Canada), CE Certified

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CURRENTWATCH™ SENSORS

Approximate Dimensions — CurrentWatch ECS7 Series

Description	Dimensions
Solid-Core Housing	
Split-Core Housing	

Solid-Core Housing dimensions:
- 3.03 (77.0)
- 0.93 (23.6)
- 0.19 Dia. (4.8)
- 2.40 (61.0)
- 0.74 Dia. (19)
- 2.18 (55.4)
- 3.50 (88.9)

Split-Core Housing dimensions:
- 3.04 (77.2)
- 0.19 Dia. (4.8)
- 1.19 (30.2)
- 3.53 (89.7)
- 2.40 (61)
- 2.25 (57.2)
- 0.85 (21.6)
- 0.85 (21.6)