

## EAC Series CurrentWatch Current Sensors



7

## EAC Series CurrentWatch Current Sensors

## Product Description

The CurrentWatch EAC Series from Eaton's Electrical Sector combines a current transformer and signal conditioner into a single package. The EAC Series has jumper-selected current input ranges and industry standard outputs: 4–20 mA, 0–5 Vdc or 0–10 Vdc. This family of sensors is designed for application on "linear" or sinusoidal AC loads. Available in split-core or solid-core housings.

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

## Application Description

## Typical Applications

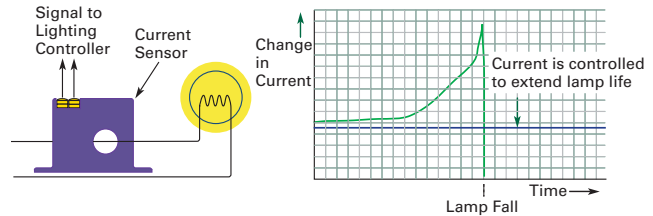
- **Automation Equipment**—Analog current reading for remote monitoring and software alarms
- **Data Loggers**—Self-powered sensor helps conserve data logger batteries
- **Panel Meters**—Simple connection displays power consumption

## Contents

## Description

## Page

EAC Series CurrentWatch Current Sensors	
Standards and Certifications	V8-T7-27
Product Selection	V8-T7-27
Accessories	V8-T7-28
Technical Data and Specifications	V8-T7-28
Wiring Diagrams	V8-T7-29
Dimensions	V8-T7-29

Example Application—  
Preventative Maintenance of a Critical Lighting System

## Features

- **Highly Accurate**—Factory matched and calibrated single-piece sensor is more accurate than traditional two-piece, field-installed solutions
- **Average Responding**—"Average Responding" algorithm gives an RMS output on pure sine waves, perfect for constant speed (linear) loads
- **Jumper Selectable Ranges**—The ability to change input ranges reduces inventory and eliminates zero and span
- **Isolation**—Output is magnetically isolated from the input for safety and elimination of insertion loss (voltage drop)
- **UL, cUL and CE Approved**—Accepted worldwide

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

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.

**Standards and Certifications** ①

- 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**

**EAC Series CurrentWatch Current Sensors**

**Top Terminal Current Sensors**

	Power Supply	Aperture Size	Output Signal	Current Range	Catalog Number
<b>Solid-Core Housing</b> 	<b>Solid-Core Housings</b>				
	Self-powered (no external power needed)	0.74 in (19 mm)	0–5 Vdc	10, 20 or 50A	<b>EAC105SC</b>
				100, 150 or 200A	<b>EAC205SC</b>
			0–10 Vdc	10, 20 or 50A	<b>EAC110SC</b>
	100, 150 or 200A	<b>EAC210SC</b>			
	24 Vdc loop-powered	4–20 mA	2 or 5A	<b>EAC0420SC</b>	
10, 20 or 50A			<b>EAC1420SC</b>		
100, 150 or 200A			<b>EAC2420SC</b>		
<b>Split-Core Housing</b> 	<b>Split-Core Housings—Self-Powered and 24 Vdc</b>				
	Self-powered (no external power needed)	0.85 in (21.6 mm)	0–5 Vdc	10, 20 or 50A	<b>EAC105SP</b>
				100, 150 or 200A	<b>EAC205SP</b>
			0–10 Vdc	10, 20 or 50A	<b>EAC110SP</b>
	100, 150 or 200A	<b>EAC210SP</b>			
	24 Vdc loop-powered	4–20 mA	2 or 5A	<b>EAC0420SP</b>	
10, 20 or 50A			<b>EAC1420SP</b>		
100, 150 or 200A			<b>EAC2420SP</b>		
<b>Split-Core Housing</b> 	<b>Split-Core Housings—120 Vac and 24 Vac/dc</b>				
	120 Vac	0.85 in (21.6 mm)	4–20 mA	2 or 5A	<b>EACP0420120SP</b> ②
				10, 20 or 50A	<b>EACP1420120SP</b> ②
				100, 150 or 200A	<b>EACP2420120SP</b> ②
	24 Vac/dc	4–20 mA	2 or 5A	<b>EACP042024USP</b> ②	
			10, 20 or 50A	<b>EACP142024USP</b> ②	
100, 150 or 200A			<b>EACP242024USP</b> ②		

**Notes**

- ① EACP models not listed.
- ② Not UL listed.

## Accessories

DIN Rail  
Mounting Kit

## EAC Series CurrentWatch Current Sensors

Description	Catalog Number
DIN rail mounting kit ①	EDINKIT

## 7

## Technical Data and Specifications

## EAC Series CurrentWatch Current Sensors

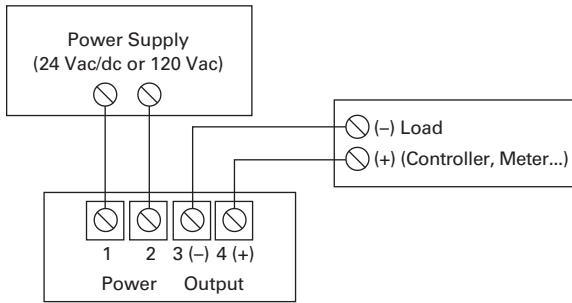
Description	Models with 0–5 Vdc Output Specification	Models with 0–10 Vdc Output Specification	Models with 4–20 mA Output Specification	EACP Series Only Specification
Power supply	Self-powered—no power supply needed	Self-powered—no power supply needed	12–40 Vdc loop-powered	Models ending -OSP: 120 Vac Models ending -USP: 24 Vac/dc (40V maximum)
Output signal	0–5 Vdc	0–10 Vdc	4–20 mA	4–20 mA
Output limit	8.2 Vdc	15 Vdc	23 mA	22.4 mA
Accuracy	1.0% FS	1.0% FS	1.0% FS	1% FS
Response time	100 ms	100 ms	300 ms	100 ms
Frequency range	50–60 Hz	50–60 Hz	20–100 Hz	40–100 Hz
Loading	1M ohm minimum rated accuracy 100 kohms, add 1.3% error	1M ohm minimum rated accuracy 100 kohms, add 1.3% error	See power supply above	50 kohms minimum 500 kohms maximum
Isolation voltage	UL listed to 1270 Vac (tested to 5kV)	UL listed to 1270 Vac (tested to 5kV)	UL listed to 1270 Vac (tested to 5kV)	UL listed to 1270 Vac (tested to 5kV)
Input ranges	Field selectable ranges from 0–200A ③	Field selectable ranges from 0–200A ③	Field selectable ranges from 0–200A ③	0–200A jumper selectable
Sensing aperture	Solid-core: 0.74 in (19 mm) dia. Split-core: 0.85 in (21.6 mm) sq.	Solid-core: 0.74 in (19 mm) dia. Split-core: 0.85 in (21.6 mm) sq.	Solid-core: 0.74 in (19 mm) dia. Split-core: 0.85 in (21.6 mm) sq.	0.85 in (21.6 mm)
Housing	UL94 V0 flammability rated	UL94 V0 flammability rated	UL94 V0 flammability rated	UL94 V0 flammability rated
Environmental	Operating temperature: –4° to 122°F (–20° to 50°C) Humidity: 0–95% RH, non-condensing	Operating temperature: –4° to 122°F (–20° to 50°C) Humidity: 0–95% RH, non-condensing	Operating temperature: –4° to 122°F (–20° to 50°C) Humidity: 0–95% RH, non-condensing	Operating temperature: –4° to 122°F (–20° to 50°C) Humidity: 0–95% RH, non-condensing

## Notes

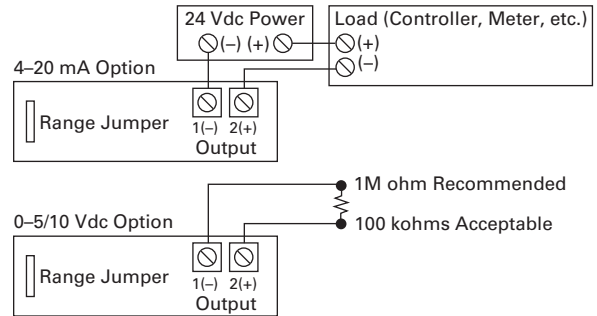
- ① Sensor pictured for reference and not included in kit.
- ② Does not apply to EACP series.
- ③ Additional custom ranges available from factory.

**Wiring Diagrams**

**EACP Models**



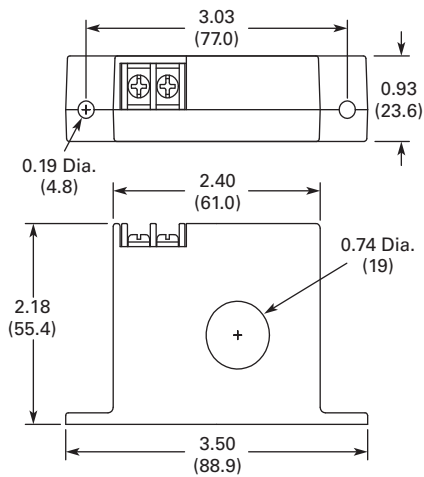
**All Other Models** ①



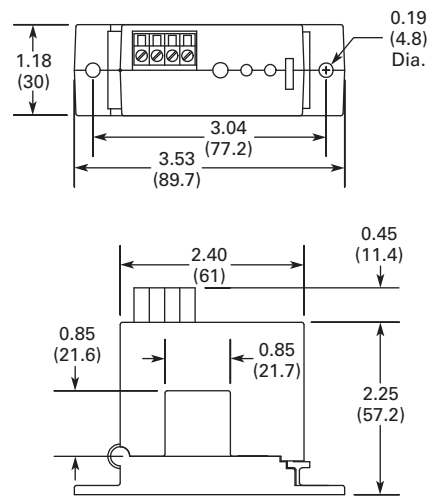
**Dimensions**

Approximate Dimensions in Inches (mm)

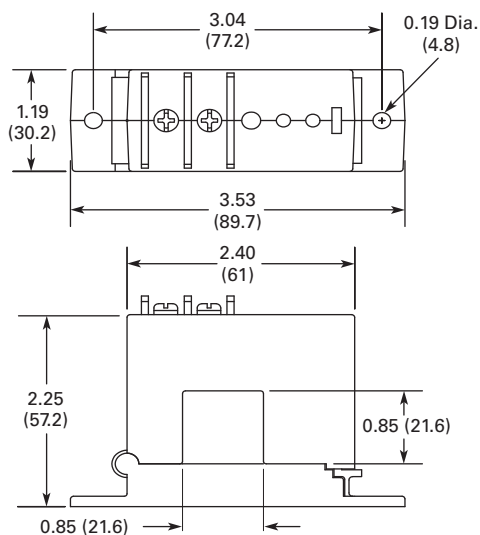
**Solid-Core Housing**



**EACP Series**



**All Other Models**



**Note**

- ① Pressure plate screw terminals. 12-22 AWG solid or stranded. Field adjustable setpoint.