



# ACSX Series AC Current Switches



The ACSX series high-performance current-operated switch has a field-adjustable time delay feature that minimizes nuisance trips during start-up and operation. These switches are designed for motor status applications where setpoint accuracy and repeatability are critical and offer a linear setpoint characteristic and constant hysteresis.

## 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 impending bearing failure
- Non-intrusive; 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 0.12-15 second delay to eliminate nuisance trips from high inrush or short overload conditions

## Features

Standard features include self-powering, jumper-selectable ranges and a choice of outputs and core styles.

- Potentiometer adjustable start-up/delay timer is field-adjustable from 0.12 to 15 seconds to eliminate nuisance alarms caused by start-up inrush or temporary overcurrent conditions.
- Choice of N.O. or N.C. AC or AC/DC outputs for use with most standard motor control systems.
- Improved ease of installation and use:
  - Adjustable time delay feature eliminates need for separate time delay relay
  - Self-powered, split-core models simplify installation
  - Status LED provides visual indication of setpoint trip and contact action
- Industrial grade performance - constant hysteresis and linear setpoint response for greater accuracy
- Built-in mounting feet with optional 35mm DIN rail adapter available.
- Five-year warranty



ACSX AC Current Operated Switches					
Part Number	Description	Pcs/Pkg	Wt (lb)	Price	
ACSX200-AA-S	AcuAMP AC current switch, split core, 2-12, 12-55, or 55-200A selectable sensing range, 2-200A adjustable trip point, 4-turn potentiometer, solid state switch, N.O., adjustable time delay output, 1A @ 240 VAC output rating.	1	0.40	\$98.00	
ACSX200-AA-F	AcuAMP AC current switch, fixed core, 1.5-12, 12-55, or 50-175A selectable sensing range, 1.5-175A adjustable trip point, 15-turn potentiometer, solid state switch, N.O., adjustable time delay output, 1A @ 240 VAC output rating.	1	0.29	\$87.00	
ACSX200-CA-S	AcuAMP AC current switch, split core, 2-12, 12-55, or 55-200A selectable sensing range, 2-200A adjustable trip point, 4-turn potentiometer, solid state switch, N.C., adjustable time delay output, 1A @ 240 VAC output rating.	1	0.40	\$98.00	
ACSX200-AE-F	AcuAMP AC current switch, fixed core, 1.5-12, 12-55, or 55-175A selectable sensing range, 1.5-175A adjustable trip point, 15-turn potentiometer, solid state switch, N.O., adjustable time delay output, 0.15A @ 240 VAC/VDC output rating.	1	0.30	\$84.00	
ACSX200-AE-S	AcuAMP AC current switch, split core, 2-12, 12-55, or 55-200A selectable sensing range, 2-200A adjustable trip point, 4-turn potentiometer, solid state switch, N.O., adjustable time delay output, 0.15A @ 240 VAC/VDC output rating.	1	0.40	\$95.00	
ACSX200-CE-F	AcuAMP AC current switch, fixed core, 1.5-12, 12-55, or 55-175A selectable sensing range, 1.5-175A adjustable trip point, 15-turn potentiometer, solid state switch, N.C., adjustable time delay output, 0.2A @ 135 VAC/VDC output rating.	1	0.30	\$84.00	
ACSX200-CE-S	AcuAMP AC current switch, split core, 2-12, 12-55, or 55-200A selectable sensing range, 2-200A adjustable trip point, 4-turn potentiometer, solid state switch, N.C., adjustable time delay output, 0.2A @ 135 VAC/VDC output rating.	1	0.40	\$95.00	
Accessories					
DRA-2B	35mm DIN rail adapters, 1.70"x0.45"x0.83" [43.7x11.4x21.0 mm]	2	0.40	\$3.75	

Sensed Current Limit				
Type	Range	Continuous	6 Seconds	1 Second
Fixed Core	1.5 - 175 A	200A	400A	1000A
Split Core	2 - 200A			

ACSX200 Minimum Load	
Part Number	Minimum Load Operating Current
ACSX200-AE-F	**
ACSX200-AE-S	**
ACSX200-CE-F	150
ACSX200-CE-S	150
ACSX200-AA-S	20mA
ACSX200-AA-F	20mA
ACSX200-CA-S	20mA

**\*\* The AC/DC switch output has no specified minimum load required to operate the output. There is a maximum resistance of 5 ohms across the output when the switch is "on."**

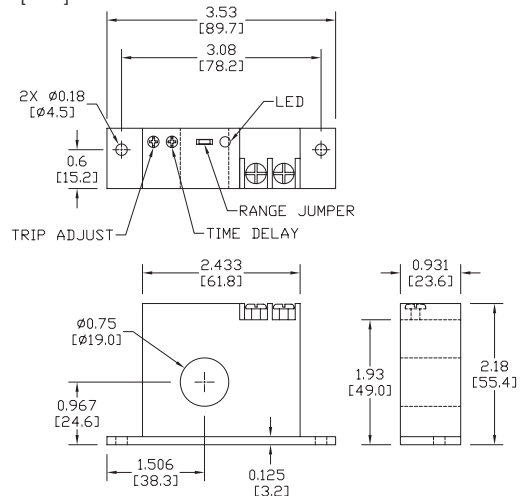


# ACSX Series AC Current Switches

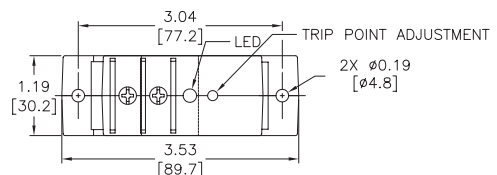
Specifications	
<b>Power Supply</b>	None - self powered
<b>Output</b>	Isolated solid-state switch
<b>Switch Rating</b>	N.O. or N.C. AC only: 1.0A @ 240VAC N.O. AC/DC: 0.15A @ 240 VAC/VDC N.C. AC/DC: 0.20A @ 135 VAC/VDC
<b>Off State Leakage</b>	<10µA, 2.5mA, N.C. AC only output
<b>Response Time</b>	0.12 to 15 seconds, adjustable
<b>Hysteresis</b>	5% of setpoint, constant
<b>Input Ranges</b>	Fixed core: 1.5-12, 12-55 and 50-175 A Split core: 2-12, 12-55 and 50-200 A
<b>Setpoint Adjust</b>	Fixed core: 15-Turn potentiometer Split core: 4-Turn potentiometer
<b>Isolation Voltage</b>	UL tested to 1480VAC
<b>Frequency Range</b>	50 to 100 Hz
<b>Sensing Aperture</b>	Fixed core: 0.75 in (19mm) dia. Split core: 0.85 in (21.7 mm) sq.
<b>Case</b>	UL 94V-0 Flammability rated thermoplastic
<b>Environmental</b>	-Temp -4 to 122°F (-20 to 50°C) -Humidity 0-95% RH, Non-condensing -Pollution degree 2 -Altitude 2000 meters
<b>Certifications</b>	cULus listed E222847, CE

## Dimensions

Inches [mm]

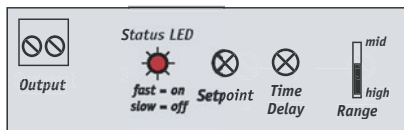


ACSX Series Fixed Core

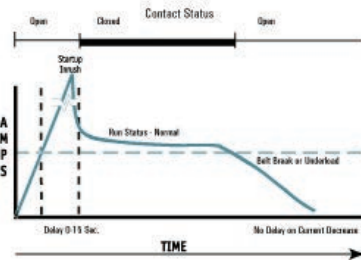
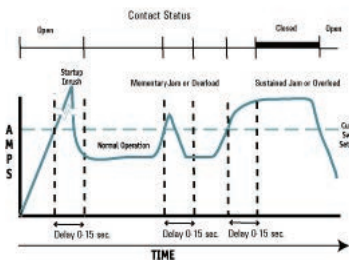


ACSX Series Split Core

## Wiring

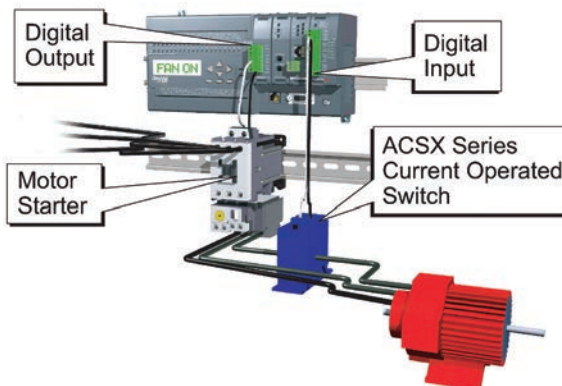


Use up to 14 AWG copper wire



See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete Engineering drawings.

## Application Example



# ACUAMP® AC Current Switches, Transducers and Indicators

## Overview

The AcuAMP series of AC current sensors is a family of high-performance current sensors offering outstanding features, flexibility, and durability at an incredible Price. Choose from a wide selection of current transducers, switches and indicators, all designed in a rugged industry-standard feed-through package, including both fixed core and split core models.

AcuAMP current sensors are available with a broad selection of input sensing ranges for maximum flexibility across many current ratings. The current transducer output choices include 4-20 mA, 24VDC loop-powered, and 0 to 10 volt self-powered analog outputs. The Current Switch outputs include isolated solid state switches available in Normally Open and Normally Closed configurations or SPDT relays.

Models with output time delay are also offered in the Current Switch series. The ACL1 Current Indicator senses AC current ranging from 0.5 to 100A and requires no power for the indicating LED.

These current sensors can be mounted in a panel or attached to the monitored conductor with a wire tie. Use the Selection Guide below to find the best sensor for your requirements.



**AcuAMP AC Current Transducer Selection Guide**

Specifications	Single-Phase Transducer	Single-Phase Transducer (True RMS)	3-Phase Transducer	3-Phase Transducer (True RMS)
Series	ACT	ACTR	3ACT	3ACTR
<b>Sensing Range</b>	Selectable: ACT005: 0 to 2A 0 to 5A ACT050: 0 to 10A 0 to 20A 0 to 50A ACT200: 0 to 100A 0 to 150A 0 to 200A ACT750: 0 to 375A 0 to 500A 0 to 750A ACT2000: 0 to 1000A 0 to 1333A 0 to 2000A Fixed range: ACT400 0 to 400A ACT600 0 to 600A ACT800 0 to 800A ACT1200 0 to 1200A	Selectable: ACTR005: 0 to 2A 0 to 5A ACTR050: 0 to 10A 0 to 20A 0 to 50A ACTR200: 0 to 100A 0 to 150A 0 to 200A ACTR750: 0 to 375A 0 to 500A 0 to 750A ACTR2000: 0 to 1000A 0 to 1333A 0 to 2000A Fixed range: ACTR400: 0 to 400A ACTR500: 0 to 500A ACTR600: 0 to 600A ACTR800: 0 to 800A ACTR1000: 0 to 1000A ACTR1200: 0 to 1200A ACTR2000: 0 to 2000A	Selectable: 3ACT030: 0 to 10A 0 to 15A 0 to 30A 3ACT100: 0 to 30A 0 to 50A 0 to 100A 3ACT200: 0 to 100A 0 to 150A 0 to 200A	Selectable: 3ACTR030: 0 to 10A 0 to 15A 0 to 30A 3ACTR100: 0 to 30A 0 to 50A 0 to 100A 3ACTR200: 0 to 100A 0 to 150A 0 to 200A
<b>Output</b>	-10 models: 0-10 VDC, self-powered -42L models: 4-20 mA, loop-powered	4-20 mA, loop-powered True RMS	4 -20 mA, loop-powered	4-20 mA, loop-powered True RMS
<b>Frequency Range</b>	-10 models: 50 to 60 Hz -42L models up to 200A: 20 to 100 Hz -42L models 400, 600, 800, 1200A: 50 to 60 Hz sinusoidal waveforms only	20 to 400 Hz; (40 to 400 Hz flexible split core models) sinusoidal and non-sinusoidal waveforms	50 to 60 Hz sinusoidal waveforms only	30 to 100 Hz sinusoidal and non-sinusoidal waveforms
<b>Sensing Aperture</b>	ACT005, ACT050, ACT200: Fixed core: 0.75 in [19mm] dia. Split core: 0.85 in [21.6 mm] sq. ACT750, ACT2000: Fixed core: 3.0 in [76.2 mm] dia. ACT400, ACT600, ACT800: Split core: 2.22 X 1.19 in [56.3 X 30.2 mm] ACT1200 Split core: 3.44 X 2.31 in [87.3 X 58.8 mm]	ACTR005, ACTR050, ACTR200: Fixed core: 0.75 in [19mm] dia. Split core: 0.85 in [21.6 mm] sq. ACTR750, ACTR2000: Fixed core: 3.0 in [76.2 mm] dia. ACTR500, ACTR1000, ACTR2000: Flexible split core: 4.5 in [114.3 mm] dia. ACTR400, ACTR600, ACTR800: Split core: 2.22 X 1.19 in [56.3 X 30.2 mm] ACTR1200 Split core: 3.44 X 2.31 in [87.3 X 58.8 mm]	3x - Fixed core: 0.86 in [21.8 mm] dia.	3x - Fixed core: 0.86 in [21.8 mm] dia.



# AC Current Switches, Transducers and Indicator

AcuAMP AC Current Switch Selection Guide								
Specifications	AC Current Switches							
Series	ACSN100	ACSN250	ACS150	ACSL	ACS200	ACS050/ ACS200	ACS035/ ACS400	ACSX
<b>Sensing Range</b>	0 to 100A	0 to 250A	Fixed core: 1 to 150A Split core: 1.75 to 150A	0 to 50A	Jumper Selectable: Fixed core: 1 to 6A 6 to 40A 40 to 175A Split core: 1.75 to 6A 6 to 40A 40 to 200A	1 to 200A	2 to 400A	Jumper Selectable: Fixed core: 1.5 to 12A 12 to 55A 55 to 175A Split core: 2 to 12A 12 to 55A 55 to 200A
<b>Setpoint (Trip Point)</b>	Non-adjustable: 0.5 A	Non-adjustable: Fixed core: 0.75A Split core: 1.25A	Adjustable: Fixed core: 1-150 A (15-turn potentiometer) Split core: 1.75-150 A (4-turn potentiometer) Monitored load current required to adjust setpoint	Adjustable (3/4-turn potentiometer): ACSL010: 1-10A ACSL020: 2-20A ACSL050: 10-50A Monitored load current not required to adjust setpoint	Adjustable: (4-turn or 15-turn potentiometer) Fixed core: 1-175A Split core: 1.75-200A Monitored load current required to adjust setpoint	Adjustable: (Single turn potentiometer): ACS050: 1-50A ACS200: 4-200A	Adjustable: (3/4-turn potentiometer): ACS035: 2-35A ACS400: 25-400A	Adjustable: Fixed core: 1.5-175A (15-turn potentiometer) Split core: 2-200A (4-turn potentiometer) Monitored load current required to adjust setpoint
<b>Output</b>	Isolated solid state: Normally Open 0.15 A @ 120VAC or VDC	Isolated solid state: Normally Open 0.15 A @ 240VAC or VDC	Isolated solid state: Normally Open 0.15 A @ 240VAC or VDC Normally Closed 0.2 A @ 135VAC or VDC	Isolated solid state: Normally Open AC: 0.15 A @ 240VAC	Isolated solid state: Normally Open or Normally Closed AC model: 1A @ 240VAC Normally Open AC model: 3A @ 120VAC Normally Open or Normally Closed DC model: 0.15 A @ 30VDC	Isolated solid state: Normally Open 1A @ 240VAC	Two Independent Single Pole, Double Throw electro-mechanical relays AC: 1A @ 120VAC DC: 2A @ 30VDC	Isolated solid state: Normally Open or Normally Closed AC model: 1A @ 240VAC Normally Open AC/DC model: 0.15 A @ 240 VAC/ VDC Normally Closed AC/DC model: 0.2 A @ 135 VAC/ VDC
<b>Frequency Range</b>	50 to 400 Hz	6 to 100 Hz	6 to 100 Hz	10 to 100 Hz	6 to 100 Hz	40 to 100 Hz	40 to 65 Hz	50 to 100 Hz
<b>Response Time</b>	N/A	120ms	120ms	100ms & 2s inrush delay	40 to 250 ms	0.50 sec. 5% over set point 0.20 sec. 50% over set point 0.15 sec. 100% over set point	40 - 120ms	Field adjustable time delay: 0.12 to 15 seconds
<b>Sensing Aperture</b>	0.30 in [8.13 mm] dia.	Fixed core: 0.75 in [19mm] dia. Split core: 0.85 in [21.7 mm] sq.	Fixed core: 0.75 in [19mm] dia. Split core: 0.85 in [21.7 mm] sq.	Fixed core: 0.55 in [13.97 mm] dia. Split core: 0.85 in [21.7 mm] sq.	Fixed core: 0.55 in [13.97 mm] dia. Split core: 0.85 in [21.7 mm] sq.	0.75 in [19mm] dia.	1.31 in [33.3 mm] dia.	Fixed core: 0.75 in [19mm] dia. Split core: 0.85 in [21.7 mm] sq.

# ACUAMP® AC Current Switches, Transducers and Indicator

<b>AcuAMP AC Current Transducer/Switch and Indicator Selection Guide</b>			
<b>Specifications</b>	<b>AC Current Transducer</b>	<b>AC Current Transducer/ Switch</b>	<b>Indicator</b>
<b>Series</b>	<b>ACTH</b>	<b>ACTS</b>	<b>ACL1</b>
<b>Sensing Range</b>	0 to 50A	1 to 200A	0 to 100A
<b>Setpoint (Trip Point)</b>	Not Applicable	Adjustable: (Single turn potentiometer): ACTS050: 1-50A ACTS200: 4-200A	Non-adjustable: 0.5 A
<b>Output</b>	4 -20 mA, loop-powered adaptive True RMS	4-20mA analog output and isolated solid state: Normally Open 1A @ 240VAC	LED Only (flashing, red)
<b>Frequency Range</b>	40 to 400 Hz	40 to 400 Hz	50 to 400 Hz
<b>Response Time</b>	400ms at 100% duty cycle, or duty cycle period plus 40ms	Switch: 0.50 sec. 5% over set point 0.20 sec. 50% over set point 0.15 sec. 100% over set point  Analog: < 0.30 sec. 90% step change < 0.40 sec. 100% step change	N/A
<b>Sensing Aperture</b>	0.86 in [21.9 mm] sq.	0.75 in [19mm] dia.	0.30 in [7.6 mm] dia.



Click on the thumbnail or go to  
<https://www.automationdirect.com/VID-CT-0001>  
 for a short introductory video on the AcuAmp  
 Current Switches, Transducers and Indicators

# ACUAMP® AC Current Sensors, Switches and Transducers Application Guide

## Application Guide

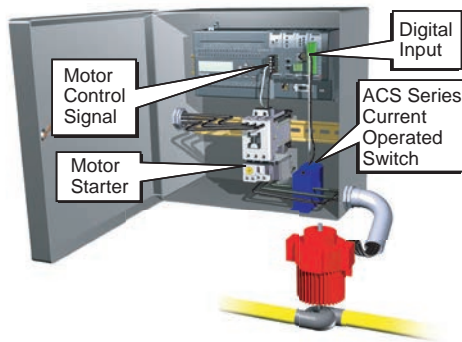
ACUAMP current sensors are a great fit for many applications including material handling, fan and pump applications, and heating systems. With current

transducers, current switches and current indicators, this sensor family gives you valuable data for processes ranging from monitoring loads to preventive maintenance. Models with the ability to read True RMS non-sinusoidal wave-

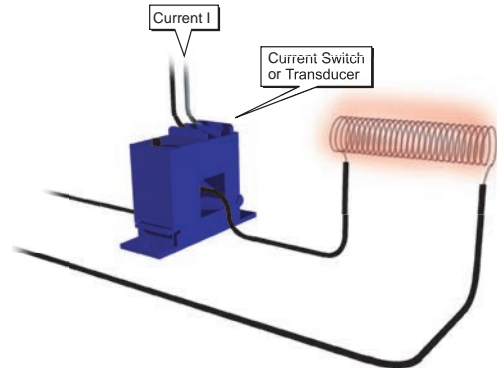
forms make it easy to monitor applications using variable frequency drives.

Use the application examples to help choose the best sensor model for your application.

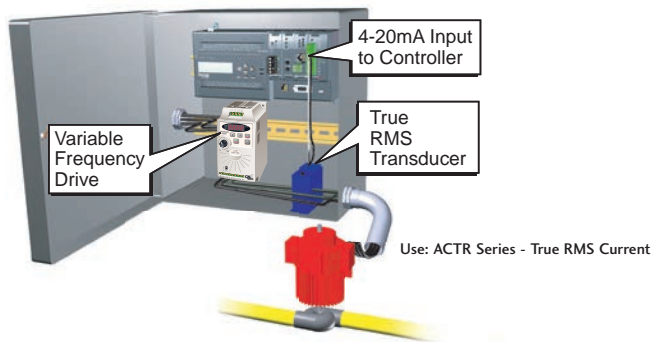
### Pump Jam & Suction Loss Protection



### Heater Life Prediction

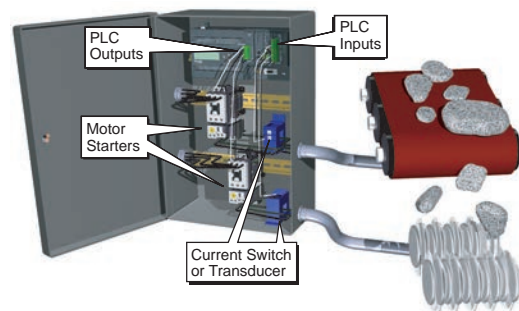


### Pump Load Monitoring

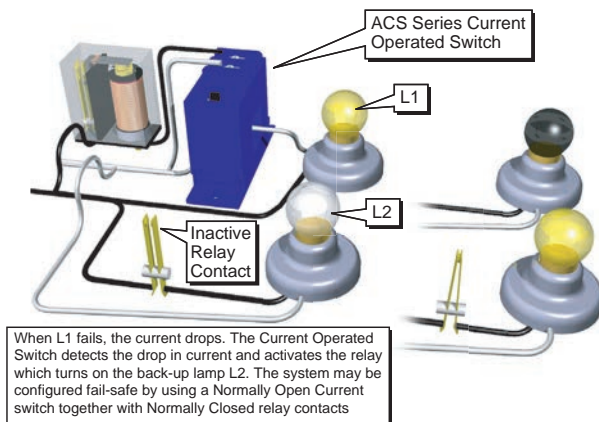


### Crusher/Grinder/Shredder Motor Interlocks

- The performance of size reduction equipment like crushers or grinders can be optimized by controlling the in-feed in order to:
- Help prevent jamming
  - Improve the uniformity of the resultant product
  - Enhance overall production efficiency



### Lamp Failure Detection



### Electric Motor Load Status

