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 0-15 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.

- Five-year warranty
- Potentiometer adjustable start-up/delay timer is field-adjustable from 0.2 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 feet with optional 35mm DIN rail adapter available.

Agency Approvals

ACSX AC Current Operated Switches				
Part Number	**Description**	**Pcs/Pkg**	**Wt (lb)**	**Price**
ACSX200-AA-S	N.O. AC adjustable current switch, split core, AC switch output	1	0.40	$95.00
ACSX200-CA-S	N.C. AC adjustable current switch, split core, AC switch output	1	0.40	$95.00
ACSX200-AE-F	N.O. AC adjustable current switch, fixed core, AC/DC switch output	1	0.30	$81.00
ACSX200-AE-S	N.O. AC adjustable current switch, split core AC/DC switch output	1	0.40	$92.00
ACSX200-CE-F	N.C. AC adjustable current switch, fixed core AC/DC switch output	1	0.30	$81.00
ACSX200-CE-S	N.C. AC adjustable current switch, split core AC/DC switch output	1	0.40	$92.00
Accessories				
DRA-2B	35mm DIN rail adapters, 1.70"x0.45"x0.83" [43.7x11.4x21.0 mm]	2	0.40	$3.75

ACSX Series Specifications	
Power Supply	None - Self-powered
Output	Isolated solid-state switch
Output Rating	N.O. or N.C. AC: 1A @ 240VAC; N.O. AC/DC: 0.15 A @ 240 VAC/VDC N.C. AC/DC: 0.20 A @ 135 VAC/VDC
Response Time	Adjustable 0.2 to 15 seconds
Off State Leakage	< 10µA
Input Ranges	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
Setpoint (Trip Point) Adjust	Fixed core: 15-turn potentiometer Splite core: 4-turn potentiometer
Hysteresis	5% constant
Isolation Voltage	UL listed to 1,270VAC. Tested to 5,000VAC (1 minute max)
Frequency Range	50 to 100 Hz
Case	UL 94V-0 flammability rated
Environmental	Operating Temperature: -5 to 122°F [-15 to 50°C]
	Relative Humidity: 0-95% RH, Non-condensing
	Pollution Degree 2
	Altitude to 2000 meters
Agency Approvals*	UL/cUL (E222847), CE

Maximum Input Ranges				
Type	**Input Range**	**Maximum Input Amps**		
		Continuous	**6 Sec max**	**1 Sec max**
Fixed Core	1.5-175 A	200	400	1000
Split Core	2-200 A	200	400	1000

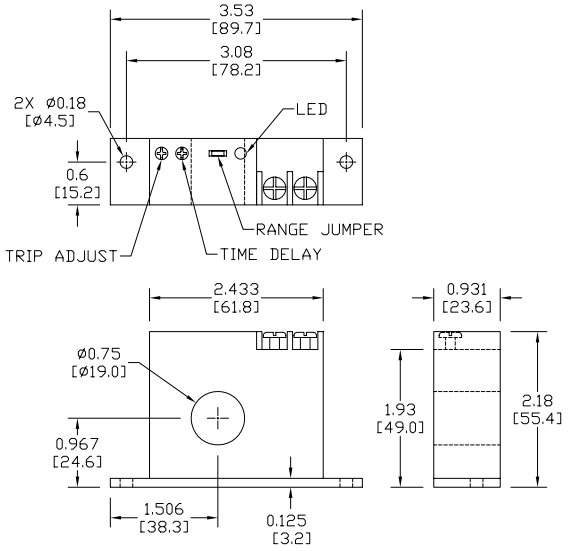
ACSX200 Minimum Load	
Part Number	**Minimum Load Operating Current**
ACSX200-AE-F	**
ACSX200-AE-S	**
ACSX200-CE-F	150
ACSX200-CE-S	150
ACSX200-AA-S	20mA
ACSX200-CA-S	20mA
** *The AC/DC switch output has no specified minimum load required to operate the output. There is a maximum resistance of 5 ohms across the output when the switch is "on."*	

** To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page at www.AutomationDirect.com*

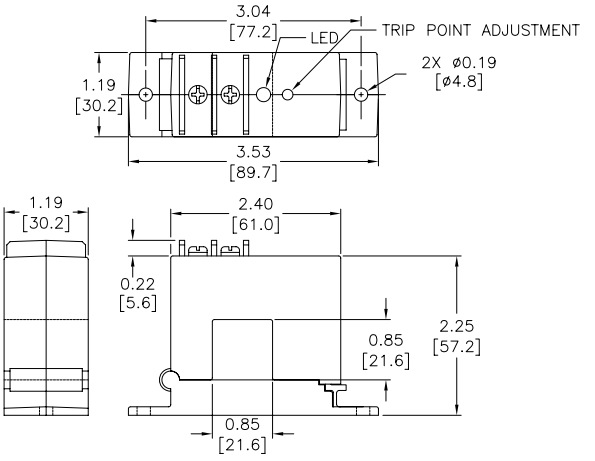
ACSX Series
AC Current Switches

Dimensions

Inches [mm]



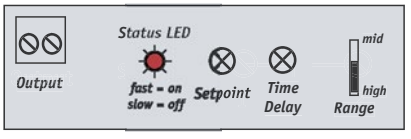
ACSX Series Fixed Core



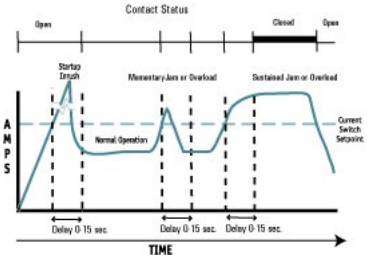
ACSX Series Split Core

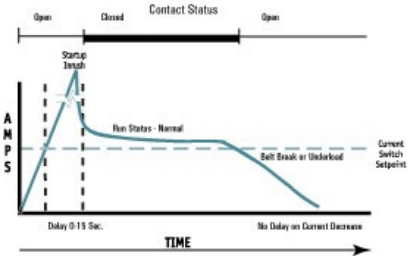
See our website www.AutomationDirect.com for complete Engineering drawings.

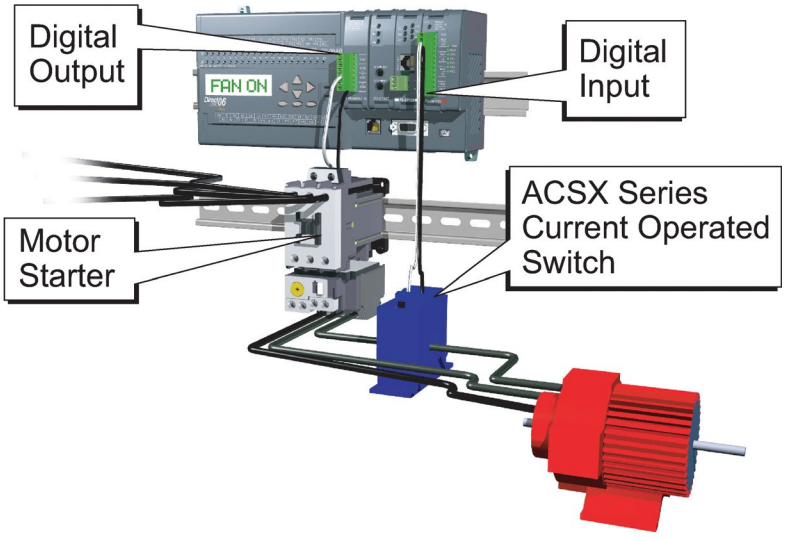
Connections



Use up to 14 AWG copper wire







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 are isolated solid state switches and are available in Normally Open and Normally Closed configurations.

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 (convenient DIN rail adapter accessory is available) or attached to the monitored conductor with a wire tie. Use the Selection Guide below to find the best sensor for your requirements.

Selection Guide

AcuAMP AC Current Transducer Specifications by Model Type		
Specifications	***Transducer***	***Transducer (True RMS)***
Model	***ACT***	***ACTR***
Input Range	Jumper 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	Jumper selectable (fixed and split core): 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 (flexible split core): ACTR500: 0 to 500A ACTR1000: 0 to 1000A ACTR2000: 0 to 2000A
Output	-10 models: 0–10 VDC, self-powered -42L models: 4–20 mA, loop-powered	4–20 mA, loop-powered true RMS
Frequency Range	-10 models: 50 to 60 Hz -42L models: 20 to 100 Hz sinusoidal waveforms only	10 to 400 Hz; (40 to 400 Hz flexible split core models) sinusoidal and non-sinusoidal waveforms
Response Time	-10 models: 100ms -42L models: 300ms	600ms
Sensing Aperture	ACT005, ACT050, ACT200: Fixed core: 0.75 in [19mm] dia. Split core: 0.85 in [21.6 mm] sq. ACT750, ACT2000: 3.0 in [76.2 mm] dia.	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: Split (flexible split core) core, 4.5 in [114.3mm] dia.

AC Current Switches, Transducers and Indicator

AcuAMP AC Current Switch Specifications by Model Type							
Specifications	**AC Current Switches**						**Indicator**
Model	**ACSN100**	**ACSN250**	**ACS150**	**ACSL**	**ACS200**	**ACSX**	**ACL1**
Input Range	0 to 100A	0 to 250A	Fixed core: 1 to 150A Split core: 1.75 to 150A	0 to 150A	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	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	0 to 100A
Setpoint (Trip Point)	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 ACSL100: 50-100A ACSL150: 100-150A Monitored load current not required to adjust setpoint	Adjustable: (4-turn potentiometer) Fixed core: 1-175A Split core: 1.75-200A Monitored load current required to adjust setpoint	Adjustable: Fixed core: 1.5-175A (15-turn potentiometer) Split core: 2-200A (4-turn potentiometer) Monitored load current required to adjust setpoint	Non-adjustable: 0.5 A
Output	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; Normally Open AC: 0.2 A @ 135VAC	Isolated solid state: Normally Open or Normally Closed AC model: 1A @ 240VAC Normally Open or Normally Closed DC model: 0.15 A @ 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	LED Only (flashing, red)
Frequency Range	50 to 400 Hz	6 to 100 Hz	6 to 100 Hz	10 to 100 Hz	6 to 100 Hz	50 to 100 Hz	50 to 400 Hz
Response Time	N/A	120ms	120ms	100ms & 2s inrush delay	40 to 120 ms	Field adjustable time delay: 0.12 to 15 seconds	N/A
Sensing Aperture	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.	Fixed core: 0.75 in [19mm] dia. Split core: 0.85 in [21.7 mm] sq.	0.30 in [8.13 mm] dia.

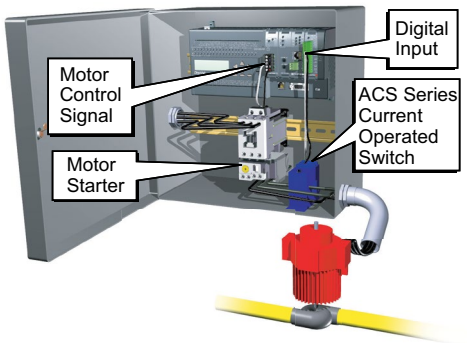
AcuAMP AC Current Sensors, Switches and Transducers Application Guide

Application Guide

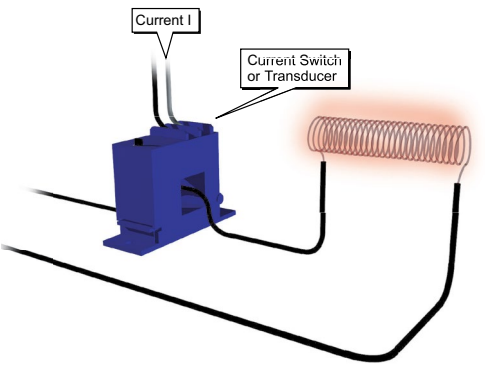
AcuAMP current sensors are a great fit for many applications including material handling, fan and pump applications, and heating systems. With current transducers, current switches and current indicators, this sensor family gives you valuable data for processes ranging from monitoring loads to preventive maintenance. Models with the ability to read True RMS non-sinusoidal waveforms make it easy to monitor applications using variable frequency drives.

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

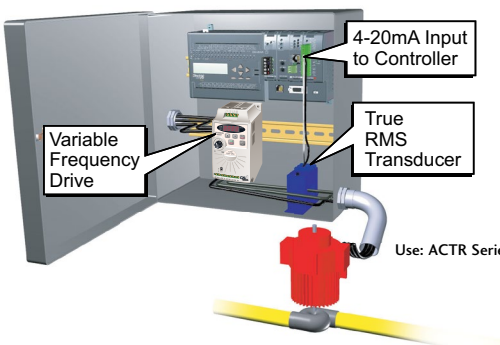
Pump Jam & Suction Loss Protection



Heater Life Prediction



Pump Load Monitoring

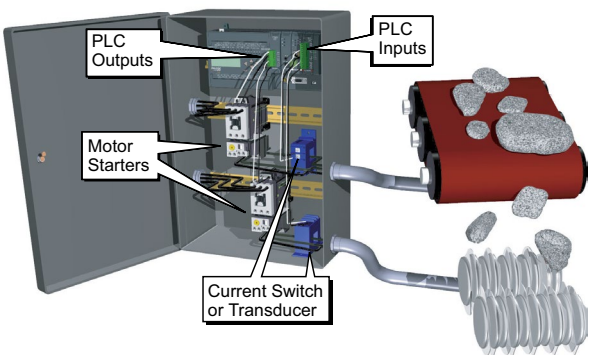


Use: ACTR Series - True RMS Current

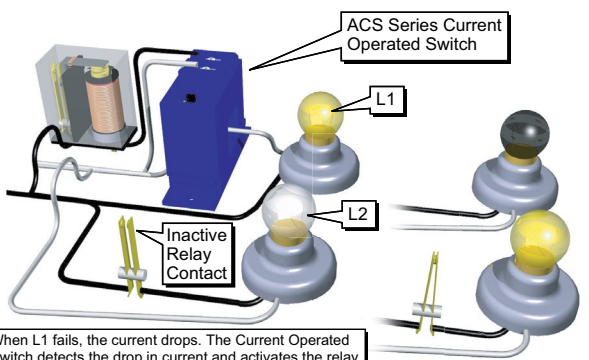
Crusher/Grinder/Shredder Motor Interlocks

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 ef ciency**



Lamp Failure Detection



When L1 fails, the current drops. The Current Operated Switch detects the drop in current and activates the relay which turns on the back-up lamp L2. The system may be configured fail-safe by using a Normally Open Current switch together with Normally Closed relay contacts

Electric Motor Load Status