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 looppowered, 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			
Sensing Range	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 500A 0 to 750A ACTR2000: 0 to 1000A ACTR2000: 0 to 400A ACTR200: 0 to 500A ACTR600: 0 to 600A ACTR600: 0 to 600A ACTR1000: 0 to 1000A 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			
Output	-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			
Frequency Range	-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			
Sensing Aperture	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 Indicators

AcuAMP AC Current Switch Selection Guide								
Specifications				AC Cu	rrent Switches			
Series	ACSN100	ACSN250	ACS150	ACSL	ACS200	ACS050/ACS200	ACS035/ACS400	ACSX
Sensing Range	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
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 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
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	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
Frequency Range	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
Response Time	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
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.	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.

AC Current Switches, Transducers and Indicators

AcuAMP AC Current Transducer/Switch and Indicator Selection Guide							
Specifications	AC Current Transducer	AC Current Transducer/Switch	Indicator				
Series	ACTH	ACTS	ACL1				
Sensing Range	0 to 50A	1 to 200A	0 to 100A				
Setpoint (Trip Point)	Not Applicable	Adjustable: (Single turn potentiometer): ACTS050: 1-50A ACTS200: 4-200A	Non-adjustable: 0.5 A				
Output	4 -20 mA, loop-powered adaptive True RMS	4-20mA analog output and isolated solid state: Normally Open 1A @ 240VAC	LED Only (flashing, red)				
Frequency Range	40 to 400 Hz	40 to 400 Hz	50 to 400 Hz				
Response Time	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				
Sensing Aperture	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 <u>https://www.automationdirect.com/VID-CT-0001</u> for a short introductory video on the AcuAmp Current Switches, Transducers and Indicators

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



Pump Load Monitoring



Heater Life Prediction

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



Electric Motor Load Status



Lamp Failure Detection



ACT Series AC Current Transducers



ACT current transducers combine a current transformer and signal conditioner into a single package. The ACT series is available with sensed current ranges from 2A to 2000A with some models offering selectable sensing ranges and industry standard 4-20 mA or 0-10 VDC outputs. The ACT series is designed for application on 'linear' or sinusoidal AC loads and is compatible with most PLCs, data loggers and SCADA systems. This series is available in split-core or fixed core models.

Applications

Automation Systems

 Analog current reading for remote monitoring and software alarms

Data Loggers

- Self-powered 0-10VDC output transducer helps conserve data logger batteries
- Split-core enclosures make using portable data loggers easy

Panel Meters

• Simple connection displays power consumption or other motor status

- 4-20 mA or 0-10 VDC outputs
- Factory matched and calibrated single piece transducer is more accurate than traditional two-piece field installed products.
- Average responding algorithm gives an RMS output on pure sine waves; perfect for constant speed (linear) loads or ON/OFF loads.
- Models with selectable sensing ranges.
- Output is magnetically isolated from the input for safety and to eliminate voltage drop.
- Built-in mounting feet with optional DRA-2B 35mm DIN rail adapter available.
- Five-year warranty



ACT Series AC Current Transducers							
Part Number	Description	Pcs/Pkg	Wt (lb)	Price			
<u>ACT050-10-F</u>	AcuAMP AC current transducer, 1-phase, fixed core, 0-10, 0-20, or 0-50A selectable sensing range, 0-10 VDC output.	1	0.29	\$122.00			
<u>ACT050-10-S</u>	AcuAMP AC current transducer, 1-phase, split core, 0-10, 0-20, or 0-50A selectable sensing range, 0-10 VDC output.	1	0.35	\$136.00			
<u>ACT200-10-F</u>	AcuAMP AC current transducer, 1-phase, fixed core, 0-100, 0-150, or 0-200A selectable sensing range, 0-10 VDC output.	1	0.29	\$129.00			
<u>ACT200-10-S</u>	AcuAMP AC current transducer, 1-phase, split core, 0-100, 0-150, or 0-200A selectable sensing range, 0-10 VDC output.	1	0.36	\$141.00			
<u>ACT005-42L-F</u>	AcuAMP AC current transducer, 1-phase, fixed core, 0-2 or 0-5A selectable sensing range, 4-20mA output.	1	0.29	\$105.00			
<u>ACT005-42L-S</u>	AcuAMP AC current transducer, 1-phase, split core, 0-2 or 0-5A selectable sensing range, 4-20mA output.	1	0.35	\$140.00			
ACT050-42L-F	AcuAMP AC current transducer, 1-phase, fixed core, 0-10, 0-20, or 0-50A selectable sensing range, 4-20mA output.	1	0.29	\$108.00			
<u>ACT050-42L-S</u>	AcuAMP AC current transducer, 1-phase, split core, 0-10, 0-20, or 0-50A selectable sensing range, 4-20mA output.	1	0.35	\$150.00			
<u>ACT200-42L-F</u>	AcuAMP AC current transducer, 1-phase, fixed core, 0-100, 0-150, or 0-200A selectable sensing range, 4-20mA output.	1	0.29	\$153.00			
<u>ACT200-42L-S</u>	AcuAMP AC current transducer, 1-phase, split core, 0-100, 0-150, or 0-200A selectable sensing range, 4-20mA output.	1	0.36	\$164.00			
<u>ACT400-42L-S</u>	AcuAMP AC current transducer, 1-phase, split core, 0-400A sensing range, 4-20mA output.	1	1.22	\$267.00			
<u>ACT600-42L-S</u>	AcuAMP AC current transducer, 1-phase, split core, 0-600A sensing range, 4-20mA output.	1	1.36	\$267.00			
<u>ACT750-42L-F</u>	AcuAMP AC current transducer, 1-phase, fixed core, 0-375, 0-500, or 0-750A selectable sensing range, 4-20mA output.	1	1.51	\$255.00			
<u>ACT800-42L-S</u>	AcuAMP AC current transducer, 1-phase, split core, 0-800A sensing range, 4-20mA output.	1	1.37	\$267.00			
<u>ACT1200-42L-S</u>	AcuAMP AC current transducer, 1-phase, split core, 0-1200A sensing range, 4-20mA output.	1	2.59	\$347.00			
<u>ACT2000-42L-F</u>	AcuAMP AC current transducer, 1-phase, fixed core, 0-1000, 0-1333, or 0-2000A selectable sensing range, 4-20mA output.	1	1.17	\$336.00			
	Accessories						
DRA-2B	35mm DIN rail adapters, 1.70"x0.45"x0.83" [43.7x11.4x21.0 mm]	2	0.40	\$6.00			

Sensed Current Limits							
Medel	Donno	Amps					
model	Ralige	Continuous	6 Sec	1 Sec			
	0 to 2A	80	125	250			
ACTU05	0 to 5A	100	125	250			
	0 to 10A	80	125	250			
ACT050	0 to 20A	110	150	300			
	0 to 50A	175	215	400			
	0 to 100A	200	300	600			
ACT200	0 to 150A	300	450	800			
	0 to 200A	400	500	1000			
ACT400	0 to 400A	1600	1920	6400			
ACT600	0 to 600A	1600	1920	6400			
	0 to 375A	750	1500	3750			
ACT750	0 to 500A	750	1500	3750			
	0 to 750A	750	1500	3750			
ACT800	0 to 800A	1600	1920	6400			
ACT1200	0 to 1200A	1600	1920	6400			
	0 to 1000A	2000	4000	10k			
ACT2000	0 to 1333A	2000	4000	10k			
	0 to 2000A	2000	4000	10k			

ACT Series AC Current Transducers

ACT Series Specifications							
Specifications	-10- Models up to 200A	-42L- Models up to 200A	-42L- Models 750A and 2000A	-42- Models 400 600, 800, 1200A			
Power Supply	Self-powered	24VDC nominal, 5 to 40VDC max	24VDC nominal, 5 to 40VDC max	24VDC nominal, 12 to 32VDC max			
Output Signal	0 to 10 VDC	4 - 20 mA, Loop powered	4 - 20 mA, Loop powered	4 - 20 mA, Loop powered			
Output Limit	15VDC	32mA	23mA	23mA			
Output Impedance	1MΩminimum 100kΩ (add 1.3% to accuracy)	600Ω maximum @ 24VDC	600Ω maximum @ 24VDC	600Ω maximum @ 24VDC			
Accuracy			1% full scale				
Response Time (10-90% step change)	100ms 300ms		600ms	600ms			
Sensing Range	Selectable from 2 to 200A ba	used on part number	Selectable from 375 to 2000A based on part number	Selectable from 400 to 1200A based on part number			
Sensing Aperture	Fixed core: 0.74" [19mm] dia mm] sq.	meter; Split core: 0.85" [21.6	3.0" [76.2 mm] diameter	2.22 X 1.19 in [56.3 X 30.2 mm] ACT1200: 3.44 x 2.31 in [87.3 x 58.8 mm]			
Isolation Voltage	UL listed to 1,270VAC. Tester	d to 5,000VAC (1 minute max)	600VAC	UL tested to 2200VAC			
Frequency Range (for sinusoidal waveforms)	50 to 60 Hz	20 to 100 Hz	50 to 60 Hz	50 to 60 Hz			
Case	UL 94V-0 flammability rated thermoplastic						
	Operating Temperature: -4 to 122°F [-20 to 50°C]						
Environmental		Relative Humidi	ty: 0-95% RH, Non-condensing				
Liiviioinnentai		Pollution Degree 2					
		Altit	ude to 2000 meters				
Certifications		cULus	listed (E222847), CE				

Dimensions







ACT Series, Up to 200 Amp Split Core



ACT Series, 750 and 2000 Amp Fixed Core



See our website <u>www.AutomationDirect.com</u> for complete Engineering drawings.

ACT Series AC Current Transducers

Dimensions

Inches [mm]





ACT Series, 1200 Amp Split Core Large Aperture



See our website <u>www.AutomationDirect.com</u> for complete Engineering drawings.



Wiring

ACT Series, Up to 200 Amp



Terminals are #6 screws.

ACT Series, 750 and 2000 Amp



ACT Series, 400, 600, 800, 1200 Amp



Output Loop Impedance (4-20mA output only)



Total Loop Impedance (Ohms)

GCUFIC 3ACT/3ACTR Series 3-Phase AC **Current Transducers**



The 3ACT/3ACTR Series AC 3-Phase Current Transducers are designed for monitoring three-phase loads, motors, machines or buildings. The large triple-aperture fixed core design allows for a quick and easy installation. The transducer outputs are powered from an excitation voltage of 24 VAC or DC, isolated from the monitored circuit. Average responding and True RMS models are available with three outputs that are proportional to the AC current in each phase and a fourth output represents the average of the three. The transducer can be mounted on a back panel or a DIN rail using the integral mounting clips and is designed to accommodate wire sizes for loads up to 200 amps.

Applications

Monitor Large Machines

 Detect over or undercurrent conditions before they cause break downs or interlock one process with another.

Water Delivery and Treatment

- Detect open discharge lines.
- · Sense clogged filters or blocked intake to pumps.
- · Measure increased current to show failing bearings or pump impeller cavitation.

Generators

• Shed noncritical loads when demand reaches a set level.

Load Imbalance

• Monitor motor current draw which should be nearly equal in all three phases.

- Average responding and True RMS models with analog 4-20mA output signals proportional to AC current
- Compatible with most automation and control systems.
- · Three separate outputs represent the current in each phase. A fourth output produces a signal proportional to the
- average of the current in all three phases. • Fixed core Case
- Current sensing ranges up to 200A
- Sensing windows provide ample space for single or multiple conductors per phase.
- Snap onto DIN rail using integral mounting clips or attach with screws to a panel for secure mounting.
- · Five-year warranty



3ACT/3ACTR Series 3-Phase AC Current Transducers							
Part Number	nber Description						
3ACT030-42-24-F	AcuAMP AC current transducer, 3-phase, fixed core, 0-10, 0-15, or 0-30A selectable sensing range, 4-20mA output.	1	1.0	\$396.00			
3ACT100-42-24-F	AcuAMP AC current transducer, 3-phase, fixed core, 0-30, 0-50, or 0-100A selectable sensing range, 4-20mA output.	1	1.0	\$396.00			
3ACT200-42-24-F	AcuAMP AC current transducer, 3-phase, fixed core, 0-100, 0-150, or 0-200A selectable sensing range, 4-20mA output.	1	1.0	\$396.00			
3ACTR030-42-24-F	AcuAMP AC current transducer, 3-phase, fixed core, 0-10, 0-15, or 0-30A selectable sensing range, True RMS, 4-20mA output.	1	1.0	\$429.00			
3ACTR100-42-24-F	AcuAMP AC current transducer, 3-phase, fixed core, 0-30, 0-50, or 0-100A selectable sensing range, True RMS, 4-20mA output.	1	1.0	\$429.00			
<u> 3ACTR200-42-24-F</u>	AcuAMP AC current transducer, 3-phase, fixed core, 0-100, 0-150, or 0-200A selectable sensing range, True RMS, 4-20mA output.	1	1.0	\$429.00			

Specifications					
Power Supply 24 VAC/DC (+/- 10%), Intended for use with a Class 2 source with the secondary fus limit power to a maximum of 100 VA Note: Power Supply and output signal ARE NOT isolated. Do not connect the negativ terminals to a common point.					
Power Consumption	< 6.0 VA				
Output Signals 4-20mA Four outputs, three proportional to the current in that phase, one an average					
Output Limit	20.8 mA				
Output Impedance	500Ω maximum				
Accuracy	1.0% FS				
Response Time	220ms (90% step change)				
Frequency Range	3ACT: 50/60Hz, Average Responding 3ACTR: 30-100Hz, True RMS				
Sensed Current Limit	1.1x range continuous 3x range for 6 seconds 6x range for 1 second				
Isolation Voltage	UL tested to 1240VAC				
Sensing Apertures	0.86 in (21.8 mm) dia.				
Case	UL 94V-0 Flammability rated thermoplastic				
Environmental -Temp -4 to 122°F (-20 to 50°C) -Humidity 0-95% RH, Non-condensing -Pollution degree 2 -Altitude 2000 meters					
Certifications	cULus listed E197592 CE				

ACU FINE 3ACT Series AC Current Transducers

Wiring 3ACT/3ACTR Series



Top View

lote: Power supply and output signal ARE NOT isolated. Do not
connect the negative terminals to a common point.

Dimensions Inches [mm]



Submersible Pump Application



ACTR Series AC Current Transducers



Why use ACTR transducers?

The current waveform of a typical linear load is a pure sine wave. However, in VFD and SCR applications the output waveforms are rough approximations of a sine wave and are non-sinusoidal. Each cycle will contain numerous spikes and dips.

The ACTR transducers use a mathematical algorithm called "True RMS," which integrates the actual waveform over time. The output is the amperage component of the true power (heating value) of the AC current waveform. True RMS is the only way to accurately measure distorted AC waveforms. Select ACTR transducers for non-linear loads or in "noisy" power environments.



Applications

VFD Controlled Loads

• VFD output indicates how the motor and attached load are operating.

SCR Controlled Loads

 Accurate measurement of phase angle fired SCRs. Current measurement gives faster response than temperature measurement.

Switching Power Supplies and Electronic Ballasts

 True RMS sensing is the most accurate way to measure power supply or ballast input power.

- 4-20 mA output
- True RMS technology is accurate on distorted waveforms such as VFD or SCR outputs.
- Models with selectable sensing ranges
- Output is magnetically isolated from the input for safety and eliminates voltage drop.
- Built-in mounting feet with optional or integral 35mm DIN rail adapter depending on part number.
- Five-year warranty



	ACTR Series AC Current Transducers			
Part Number	Description	Pcs/ Pkg	Wt (lb)	Price
<u>ACTR005-42L-F</u>	AcuAMP AC current transducer, 1-phase, fixed core, 0-2 or 0-5A selectable sensing range, True RMS, 4-20mA output.	1	0.30	\$193.00
<u>ACTR005-42L-S</u>	AcuAMP AC current transducer, 1-phase, split core, 0-2 or 0-5A selectable sensing range, True RMS, 4-20mA output.	1	0.36	\$221.00
<u>ACTR050-42L-F</u>	AcuAMP AC current transducer, 1-phase, fixed core, 0-10, 0-20, or 0-50A selectable sensing range, True RMS, 4-20mA output.	1	0.30	\$178.00
<u>ACTR050-42L-S</u>	AcuAMP AC current transducer, 1-phase, split core, 0-10, 0-20, or 0-50A selectable sensing range, True RMS, 4-20mA output.	1	0.36	\$223.00
<u>ACTR200-42L-F</u>	AcuAMP AC current transducer, 1-phase, fixed core, 0-100, 0-150, or 0-200A selectable sensing range, True RMS, 4-20mA output.	1	0.30	\$180.00
<u>ACTR200-42L-S</u>	AcuAMP AC current transducer, 1-phase, split core, 0-100, 0-150, or 0-200A selectable sensing range, True RMS, 4-20mA output.	1	0.36	\$227.00
<u>ACTR400-42L-S</u>	AcuAMP AC current transducer, 1-phase, split core, 0-400A sensing range, True RMS, 4-20mA output.	1	1.22	\$308.00
<u>ACTR500-42L-S</u>	AcuAMP AC current transducer, flexible split core, 0-500A sensing range, True RMS, 4-20mA output.	1	0.60	\$417.00
<u>ACTR600-42L-S</u>	AcuAMP AC current transducer, 1-phase, split core, 0-600A sensing range, True RMS, 4-20mA output.	1	1.37	\$308.00
<u>ACTR750-42L-F</u>	AcuAMP AC current transducer, 1-phase, fixed core, 0-375, 0-500, or 0-750A selectable sensing range, True RMS, 4-20mA output.	1	2.00	\$292.00
<u>ACTR800-42L-S</u>	AcuAMP AC current transducer, 1-phase, split core, 0-800A sensing range, True RMS, 4-20mA output.	1	1.38	\$308.00
<u>ACTR1000-42L-S</u>	AcuAMP AC current transducer, flexible split core, 0-1000A sensing range, True RMS, 4-20mA output.	1	0.60	\$454.00
<u>ACTR1200-42L-S</u>	AcuAMP AC current transducer, 1-phase, split core, 0-1200A sensing range, True RMS, 4-20mA output.	1	2.61	\$382.00
ACTR2000-42L-F	AcuAMP AC current transducer, 1-phase, fixed core, 0-1000, 0-1333, or 0-2000A selectable sensing range, True RMS, 4-20mA output.	1	2.00	\$380.00
ACTR2000-42L-S	AcuAMP AC current transducer, flexible split core, 0-2000A sensing range, True RMS, 4-20mA output.	1	0.60	\$454.00
	Accessories			
DRA-2B	35m DIN rail adapters, 1.70"x0.45"x0.83" [43 7x11 4x21 0 mm]	2	0.40	\$6.00

Se	ensed C	urrent Li	mits		
Madal	Dongo	Amps			
mouer	папуе	Continuous	6 Sec	1 Sec	
	0 to 2A	80	125	250	
ACTRUUS	0 to 5A	100	125	250	
	0 to 10A	80	125	250	
ACTR050	0 to 20A	110	150	300	
	0 to 50A	175	215	400	
	0 to 100A	200	300	600	
ACTR200	0 to 150A	300	450	800	
	0 to 200A	400	500	1000	
ACTR400	0 to 400A	1600	1920	6400	
ACTR500	0 to 500A	4000	4400	5000	
ACTR600	0 to 600A	1600	1920	6400	
	0 to 375A	750		3750	
ACTR750	0 to 500A	750	1500		
	0 to 750A	750			
ACTR800	0 to 800A	1600	1920	6400	
ACTR1000	0 to 1000A	4000	4400	5000	
ACTR1200	0 to 1200A	1600	1920	6400	
	0 to 1000A	2000			
ACTR2000 Fixed core	0 to 1333A	2000	4000	10 k	
	0 to 2000A	2000			
ACTR2000 Split core	0 to 2000A	4000	4400	5000	

ACTR Series AC Current Transducers

	ACTR Series Specifications							
Specifications	-42L- Models up to 200 Amp	-42L-F Models 750 & 2000 Amp	-42L-S Models 500, 1000, 2000 Атр	-42L- Models 400, 600, 800, 1200A				
Power Supply	24VDC nominal, (12 to 40 VDC max) loop powered	24VDC nominal, (12 to 40 VDC max) loop powered	24VDC Nominal, 22-36 Volts Use Class 2 power supply or limitied power supply only	24VDC nominal, 12 to 32VDC max				
Output Signal		4 -20 mA	, loop powered, True RMS					
Output Limit		112% of star	ndard output range maximum					
Output Impedance	600Ω @	24VDC	500Ω maximum	600Ω @ 24VDC				
Accuracy		1.0%	FS (10-100% of range)					
Response Time			600ms					
Sensing Range	Selectable from 2 to 200A based on part number	Selectable from 375 to 2000A based on part number	500, 1000 or 2000A based on part number	400, 600, 800 or 1200A based on part number				
Sensing Aperture	Fixed core: 0.74" [19mm] dia. Split core: 0.85" [21.6 mm] sq.	Fixed core: 3.0" [76.2 mm] dia.	4.5 in [114.3 mm] dia.	2.22 X 1.19 in [56.3 X 30.2 mm] ACT1200: 3.44 x 2.31 in [87.3 x 58.8 mm]				
Isolation Voltage	UL listed to 1,270VAC, Tested to 5,000VAC (1 min. max)	UL listed to 600V	UL listed to 3,500VAC	UL tested to 2200VAC				
Frequency Range	10 to 4	400 Hz	40 to 400 Hz	20 to 400 Hz				
Case		UL 94 V-0 fla	mmability rated thermoplastic					
Mounting	Built-in mounting feet or opti ada	onal DRA-2B 35mm DIN rail pter	Built-in 35mm DIN rail adapter Built-in mounting feet or 35mm DIN ra adapter					
	Operating Temperature: -4 to 122°F [-20 to 50°C]							
Environmental		Relative Humic	idity: 0-95% RH, Non-condensing					
Linvironmentar		F	Pollution Degree 2					
		Alti	tude to 2000 meters	1				
Certifications	cULus listed (E222847), CE	cULus listed (E197592), CE					





3.04 [77.3] _2X Ø0.19 [Ø4.8] 1.18 [30.0 RANGE JUMPER 3.53 2.40 [61.0] - 0.85 [21.6] 0.45 [11.4] ł 2.25 [57.2] 0.85 [21.6] Τ'n Ω.

ACTR Series, Up to 200 Amp Fixed Core







ACTR Series, 750 & 2000 Amp Fixed Core Large Aperture



ACTR Series 500, 1000 & 2000 Amp Base & Flexible Split Core Loops

ACTR Series, 1200 Amp Split

1.35 [34.3]

3.77 [95.7]

[37.8]

Core Large Aperture

ACTR Series AC Current Transducers

Dimensions Inches [mm]















ACTR Series, 750 & 2000 Amp





24 VDC Power





Application Example



ACTH Series AC Current Transducers



Monitoring the current controlled by silicon-controlled rectifiers (SCRs) can be a challenge, especially the current used by heaters. Zero-crossing burst fired controls allow current to flow to the circuit for as short of a time period as one cycle, and off for several cycles. Most current sensors will not work well when there is no current present.

When used to monitor zero-crossing burst fired SCRs, the ACTH series uses an innovative time integration adaptive True RMS measurement method that will provide an output signal directly proportional to the RMS amperage even when the SCR controller is providing power in one cycle increments.

Applications

Electrical Heaters

- Zero-crossing burst fired SCR controllers
- Faster response than temperature sensors.
- Simplest method to monitor pulsed waveforms.

Features

- 4–20 mA output
- Compatible with most automation systems.
- Split core models powered with 24 VAC or DC
- Factory Calibrated, no need for zero and span adjustment potentiometers.
- RMS Output accurate measurement of sinusoidal or pulsed current wave shapes.
- Built-in mounting feet with optional DRA-2B 35mm DIN rail adapter available.
- Five-year warranty



ACTH Series AC Current Transducers						
Part Number	Description	Pcs/Pkg	Wt (lb)	Price		
<u>ACTH005-42-24-S</u>	AcuAMP AC current transducer, 1-phase, split core, 0-2, 0-5A selectable, with time integration sensing range, True RMS, 4-20mA output.	1	0.35	\$227.00		
<u>ACTH050-42-24-S</u>	AcuAMP AC current transducer, 1-phase, split core, 0-10, 0-20, 0-50A selectable, with time integration sensing range, True RMS, 4-20mA output.	1	0.35	\$227.00		
	Accessories					
<u>DRA-2B</u>	35mm DIN rail adapters, 1.70"x0.45"x0.83" [43.7x11.4x21.0 mm]	2	0.40	\$6.00		

Specifications					
Power Supply 24 VAC/DC (+/-10%) Intended for use with a Class 2 source with the secondary fused to limit power to a maximum of 100 VA					
Power Consumption < 2VA					
Output Signal	4-20 mA				
Output Limit	100% of standard output range maximum value				
Frequency Range	40-400 Hz, Adaptive True RMS				
Response Time	400ms at 100% duty cycle, or duty cycle period plus 40ms				
Accuracy 1.0% Full Scale					
Output Impedance 500Ω maximum					
Isolation Voltage	UL tested to 1240VAC				
Case	UL 94V-0 Flammability rated thermoplastic				
Environmental	-Temp -4 to 122°F (-20 to 50°C) -Humidity 0-95% RH, Non-condensing -Pollution degree 2 -Altitude 2000 meters				
Certifications	cULus listed E197592				

Sensed Current Limit					
Model	Range	Max. 6 Seconds	Max.1 Second		
ACTUOR	0 - 2A	125	250		
ACTHUUS	0 - 5A	125	250		
	0 - 10A	125	250		
ACTH050	0 - 20A	150	300		
	0 - 50A	215	400		

ACTH Series AC Current Transducers

Wiring

ACTH Series





See our website <u>www.AutomationDirect.com</u> for complete Engineering drawings.

Application Example

Burst-Fired Heating Controls



ACTH Series AC current transducers will produce a signal proportional to the current used even when the controller is supplying power in one cycle increments.

ACTS Series AC Current Transducer/ Switch



The ACTS Series AC Current Sensors combine a current operated switch and transducer into a single package. In addition to an analog output over the sensed current range, the sensor also provides a solid-state switched output which will change state when the current exceeds an adjustable setpoint or falls below the normal running current. The ACTS features a digital display that gives visual indication of the switch setpoint allowing for a much easier and precise adjustment. The display flashes on and off when current has exceeded the setpoint. This combination switch and transducer unit results in reduced installation time, plus the option to have local control of a starter coil while also sending the analog signal back to a controller housed in a separate cabinet.

Applications

Electronic Proof of Operation

• Current operated switches eliminate the need for multiple pipe or duct penetrations and are more reliable than electromechanical pressure or flow switches.

Conveyors

- Detect jams and overloads.
- Interlock multiple conveyor sections.

Pump Control

 Provides signal to measure current and shuts down the pump if the current rises over the setpoint.

Cooling Towers

• Analog monitors time of use and contact opens if a filter clogs.

- N.O. solid-state switch for control circuits up to 240 VAC.
- 4-20mA Analog Output
- Compatible with most automation systems.
- Easily Adjustable and Precise Setpoint using digital display
- Display flashes on and off when current has exceeded the setpoint.
- Built-in mounting feet with optional DRA-2B 35mm DIN rail adapter available.
- Five-year warranty



ACTS Series AC Current Transducer/Switch					
Part Number	Description	Pcs/Pkg	Wt (lb)	Price	
<u>ACTS050-42AA-24-FD</u>	AcuAMP AC current transducer/switch, 1-phase, fixed core, 0-50A sensing range, 1-50A adjustable trip point, single-turn potentiometer with trip point display, 4-20 mA or solid state switch, N.O. output, 1A @ 240 VAC output rating.	1	0.39	\$165.00	
<u>ACTS200-42AA-24-FD</u>	AcuAMP AC current transducer/switch, 1-phase, fixed core, 0-200A sensing range, 4-200A adjustable trip point, single-turn potentiometer with trip point display, 4-20 mA or solid state switch, N.O. output, 1A @ 240 VAC output rating.	1	0.39	\$165.00	
Accessories					
DRA-2B	35mm DIN rail adapters 1 70"x0 45"x0 83" [43 7x11 4x21 0 mm]	2	0 40	\$6.00	

ACTS Series Specifications				
Power Required	24 VAC/DC (+/-10%)			
Power Consumption	< 2VA			
Outputs	Solid state switch, N.O. and analog output			
Switch Rating	1A @ 240VAC maximum			
Offstate Leakage	< 10µA			
Switch Response Time	0.50 sec. 5% over set point, 0.20 sec. 50% over set point, 0.15 sec. 100% over set point			
Switch Hystersis	5% of setpoint			
Switch Setpoint Range	1-50 Amps (ACTS050), 4-200 Amps (ACTS200)			
Switch Setpoint Adjust	Single turn potentiometer, Setpoint displayed on sensor			
Sensed Current Limit	1.1x range continuous, 3x range for 6 seconds, 5x range for 1 second			
Analog Output Signal	4-20mA			
Analog Output Impedance	500Ω max			
Analog Output Response	< 0.30 sec. 90% step change, < 0.40 sec. 100% step change			
Accuracy	1% Full Scale			
Isolation Voltage	UL508, UL tested to 1480VAC			
Frequency Range	40-400 Hz, Average Responding			
Sensing Aperture	0.75 in (19mm) dia.			
Environmental	-Temp -4 to 122°F (-20 to 50°C) -Humidity 0-95% RH, Non-condensing -Pollution degree 2 -Altitude 2000 meters			
Case	UL 94V-0 Flammability rated thermoplastic			
Certifications	cULus listed E222847			

ACTS Series AC Current Transducers

Wiring

ACTS Series



Dimensions Inches [mm]

2X [.....]



Application Example

Pump Jam & Suction Loss Protection



See our website <u>www.AutomationDirect.com</u> for complete Engineering drawings.



ACSN100 Series AC Current Switch



ACSN100 series compact case current sensing switch is a compact, inexpensive, easy-to-use ring which slips onto a conductor to give a solid-state contact for indication of current flow. Ideal for use in control panels or wherever confirmation of current flow is desired, the ACSN100 current sensing switch is a cost-effective way to detect live conductors and see current flow to fans, heaters, pumps, lighting or other AC powered devices.

Applications

Electronic proof of flow

• Current sensing switches eliminate the need for multiple pipe or duct penetrations and is more reliable than electromechanical pressure or flow switches.

Electric Motors

• Quick reporting of load status.

Electrical Heaters

• Faster response than temperature sensors.

Lighting Circuits

• Easier to install and more accurate than photocells.

Features

- N.O. solid-state switch for control circuits up to 120 VAC/VDC.
- No adjustment needed for "Go/No Go" status indication.
- Detects currents as low as 0.5 A with a single conductor pass, eliminates the need to wrap conductors multiple times to increase sensitivity.
- No moving parts provide a nearly unlimited number of operations, and powered from the monitored circuit.
- Normally open connection. Connect the 24 inch leads to a local controller or to a terminal block for remote operation.
- Five-year warranty

Application Example



ACSN100 AC Current Switch						
Part Number		Description			Price	
<u>ACSN100-AE-F</u>	AcuAMP AC current switch, fixed core, 0-100A sensing range, 0.5A non-adjustable trip point, solid state switch, N.O. output. 0.15A @ 120 VAC/VDC output rating.		1	0.07	\$42.00	
	ACSI	100 Series Specification	18			
Monitored	Circuit	0-100A, 600VAC line-to-line max				
Frequency	Range	50-400 Hz				
Output Switch Solid-state, normally open, 150mA, 120 VAC		C/DC (not polarity sensitive)				
Off State Leakage		<10µA				
Setpoint (Trip Point)		Non-adjustable, 0.5 A (reset point ~0.475 A)				
Sensing Aperture		0.30" ID				
Case		UL94V-0 Flammability Rating				
Mounti	ng	Slides directly onto monitored conductor				
Isolation V	oltage	3kV (monitored line to output)				
		Operating temperature: -4 to 122°F [-20 to 50°C]				
Environmental		Relative humidity: 0-95% RH, Non-condensing				
		Pollution Degree 2				
		Altitude to 2000 meters				
Certificat	Certifications cULus listed (E222847), CE					

Sensed Current LimitsContinuous6 Sec.1 Sec.1004001000

Dimensions Digital Output Inches [mm] ø0.30 [ø7.6] LEADS 18 AWG X 24.0 INCHES Motor 1.30 LEADS 18 AWG X 24.0 INCHES Starte [32.9] 0.55 1 10 1 15 [14.0] [29.2] [27.9]

See our website <u>www.AutomationDirect.com</u> for complete Engineering drawings. ASCN100

Current

1-800-633-0405



ACSN250 Series AC Current Switches



The ACSN250 series current switches combine a current transformer, signal conditioner and limit alarm into a single package for use in status monitoring or proof of operation applications. Offering universal, solid-state outputs, the self-powered non-adjustable setpoint ACSN250 series can provide digital indication across a broad range of applications. Models are available in a fixed-core or split-core case to maximize ease of installation.

Applications

Electronic proof of flow

 Current sensing switches eliminate the need for multiple pipe or duct penetrations and is more reliable than electromechanical pressure or flow switches.

Conveyors

- Detects jams and overloads.
- Interlocks multiple conveyor sections.

Lighting Circuits

• Easier to install and more accurate than photocells.

Electrical Heaters

• Faster response than temperature sensors.

- N.O. solid-state switch for control circuits up to 240 VAC/VDC.
- No adjustment needed for "Go/No Go" status indication.
- Self-powered operation cuts installation time and operating costs.
- Choose fixed core or split core enclosure style. Split core allows easy installation on existing systems; fixed core offers a more compact package for OEM or new installations.
- Built-in mounting feet with optional DRA-2B 35mm DIN rail adapter available.
- Five-year warranty



ACSN250 AC Current Operated Switches					
Part Number	Description	Pcs/Pkg	Wt (lb)	Price	
ACSN250-AE-F	AcuAMP AC current switch, fixed core, 0-250A sensing range, 0.75A non-adjustable trip point, solid state switch, N.O. output, 0.15A @ 240 VAC/VDC output rating.	1	0.25	\$64.00	
<u>ACSN250-AE-S</u>	AcuAMP AC current switch, split core, 0-250A sensing range, 1.25A non-adjustable trip point, solid state switch, N.O. output, 0.15A @ 240 VAC/VDC output rating.	1	0.30	\$78.00	
Accessories					
DRA-2B	35mm DIN rail adapters, 1.70"x0.45"x0.83" [43.7x11.4x21.0 mm]	2	0.40	\$6.00	

ACSN250 Series Specifications			
Power Required	None - self powered		
Output Switch	Isolated solid-state switch, normally open		
Switch Rating	0.15 A, 240 VAC/VDC		
Off State Leakage	<10µA		
Response Time	120ms		
Hysteresis	Approximately 5% of setpoint		
Setnoint (Trin Point)	Fixed core: 0.75 A max		
	Split core: 1.25 A max		
Setpoint Adjust	Non-adjustable		
Isolation Voltage UL Listed to 1,270VAC			
Monitored Circuit	600VAC line-to-line, 0-250A		
Frequency Range	6-100 Hz		
Aperture	Fixed core: 0.75" [19mm] ID		
Аренине	Split core: 0.85" [21.7 mm] ID		
Case	UL94V-0 Flammability Rating		
	Operating temperature: -4 to122°F [-20 to 50°C]		
Environmontal	Relative humidity: 0-95% RH, Non-condensing		
Environmental	Pollution Degree 2		
	Altitude to 2000 meters		
Certifications	cULus listed (E222847), CE		

Sensed Current Limits					
Amps					
Type Rai	Kange	Continuous	6 Sec.	1 Sec.	
Fixed Core	0-250A	250	400	1000	
Split Core	0-250A	250	400	1000	



ACSN250 Series AC Current Switches

Dimensions

Inches [mm]



See our website <u>www.AutomationDirect.com</u> for complete Engineering drawings.

Wiring

ACSN250 Series



Application Example



ecu AMP*

ACS050/ACS200 Series AC Current **Switches**



The ACS050/ACS200 Series Current Sensing Switches monitor AC current and provide a switched output when the monitored current reaches a setpoint. The series features a digital display that gives visual indication of the switch setpoint allowing for an easy and precise adjustment using the single turn potentiometer. The setpoint can be set before the sensor is installed or the monitored circuit is energized. The display flashes on and off when current has exceeded the setpoint.

Applications

Electronic Proof of Operation • Current operated switches eliminate the need for multiple pipe or duct penetrations and are more reliable than electromechanical pressure or flow switches.

Conveyors

- Detects jams and overloads.
- Interlocks multiple conveyor sections.

Pump Control

• Output contact is adjusted so it is closed during normal operation, opening if the pump runs dry or there is a loss of head pressure for any reason.

Cooling Towers

Monitor for overcurrent conditions caused by open duct access doors or undercurrent from a broken drive belt or coupling.

Features

- N.O. solid-state switch for control circuits up to 240 VAC.
- Compatible with most automation systems.
- Easily Adjustable and Precise Setpoint
- Improves the safety by allowing the trip point adjustment with no power through the sensing window.
- LED Display provides quick visual indication of where the contact changes. When current exceeds the setpoint, the display flashes on and off.
- Built-in mounting feet with optional DRA-2B 35mm DIN rail adapter available.
- Five-year warranty



ACS050/ACS200 Series AC Current Switches					
Part Number	Description	Pcs/Pkg	Wt (lb)	Price	
<u>ACS050-AA-24-FD</u>	AcuAMP AC current switch, fixed core, 1-50A sensing range, 1-50A adjustable trip point, single-turn potentiometer with trip point display, solid state switch, N.O. output, 1A @ 240 VAC output rating.	1	0.38	\$124.00	
ACS200-AA-24-FD AcuAMP AC current switch, fixed core, 4-200A sensing range, 4-200A adjustable trip point, single-turn potentiometer with trip point display, solid state switch, N.O. output, 1A @ 240 VAC output rating.		1	0.38	\$124.00	
Accessories					
<u>DRA-2B</u>	35mm DIN rail adapters, 1.70"x0.45"x0.83" [43.7x11.4x21.0 mm]	2	0.40	\$6.00	

Spe	Specifications				
Power Supply	24VAC/DC (+/- 10%)				
Power Consumption	< 2VA				
Output	Solid-state switch, normally open				
Switch Rating	1A @ 240VAC maximum				
Response Time	0.50 sec. 5% over set point 0.20 sec. 50% over set point 0.15 sec. 100% over set point				
Offstate leakage	<10µA				
Hysteresis	5% of setpoint				
Setpoint Ranges	1-50 Amps (ACS050) 4-200 Amps (ACS200)				
Setpoint Adjust	Single-turn potentiometer Setpoint displayed on sensor				
Sensed Current Limit	1.1x range continuous 3x range for 6 seconds 5x range for 1 second				
Accuracy	+/-1%				
Isolation Voltage	UL508, UL tested to 1480VAC				
Frequency Range	40 to 100 Hz				
Sensing Aperture	0.75 in (19.1 mm) dia.				
Environmental	-Temp -4 to 122°F (-20 to 50°C) -Humidity 0-95% RH, Non-condensing -Pollution degree 2 -Altitude 2000 meters				
Case	UL 94V-0 Flammability rated thermoplastic				
Certifications	CULus listed E222847				

For the latest prices, please check AutomationDirect.com

ACS050/ACS200 Series AC Current **Switches**

Wiring

ACS050/ACS200 Series



Dimensions

Inches [mm]



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

ACS035/ACS400 Series AC Current Switches



The ACS035/ACS400 Series Current Sensing Switches allow two separate trip points to detect overcurrent and undercurrent conditions. The sensor outputs are dual, single-pole, doublethrow relays, so they can control either AC or DC circuits and provide an alarm if the monitored circuit draws too little or too much current. One sensor means less installation time and less panel space required. The Status LEDs indicate if the monitored circuit current is under or over each of the trip points.

Applications

Electronic Proof of Operation • Current operated switches eliminate

 Current operated switches eliminate the need for multiple pipe or duct penetrations and are more reliable than electromechanical pressure or flow switches.

Conveyors

- Detect jams and overloads.
- · Interlocks with safety equipment.

Pump Control

 Output contact is adjusted so it is closed during normal operation, opening if the pump runs dry or there is a loss of head pressure for any reason.

Cooling Towers

 Monitor for overcurrent conditions caused by open duct access doors or undercurrent from a broken drive belt or coupling.

Features

- Two Electromechanical Relay Outputs
- Access to both the N.O. and N.C. contacts at independent setpoints.
- Because relay outputs are floating they can be wired in parallel or in series for a two-wire over/under switch.
- Easily Adjustable and Precise Setpoint
- Single turn potentiometer: point the arrow at the current value where you need the output to change
- Improves the safety by allowing the trip point adjustment with no setpoint power through the sensing window.
- Fixed core Case
- Sensing window provides ample space for bus bar, single or multiple conductors.
- Snap onto DIN rail using integral mounting clips or attach with screws to a panel for secure mounting.
- Five-year warranty



ACS035/ACS400 Series AC Current Switches						
Part Number	Description	Pcs/Pkg	Wt (lb)	Price		
<u>ACS035-2C-24-F</u>	AcuAMP AC current switch, fixed core, 2-35A sensing range, (2) 2-35A adjustable trip point, (2) single- turn potentiometers, (2) SPDT relays output, 1A @ 120 VAC, 2A @ 30 VDC output rating.	1	0.8	\$237.00		
<u>ACS400-2C-24-F</u>	AcuAMP AC current switch, fixed core, 25-400A sensing range, (2) 25-400A adjustable trip point, (2) single-turn potentiometers, (2) SPDT relays output, 1A @ 120 VAC, 2A @ 30 VDC output rating.	1	0.8	\$237.00		

	Specifications
Power Supply	24VAC/DC (+/- 8.3%)
Power Consumption	< 2VA
Output	(2) Independent Single Pole, Double Throw mechanical Relays
Contact Rating	1A @ 120VAC, 2A 30VDC
Response Time	40 - 120ms
Hysteresis	4% of setpoint
Setpoint Ranges	2-35 Amps (ACS035) 25-400 Amps (ACS400)
Setpoint Adjust	Two 3/4-turn potentiometers
Sensed Current Limit	1.1x range continuous 3x range for 6 seconds 5x range for 1 second
Isolation Voltage	UL508, UL tested to 1240VAC
Frequency Range	40-65 Hz
Sensing Aperture	1.31 in (33.3 mm) dia.
Environmental	-Temp -4 to 122°F (-20 to 50°C) -Humidity 0-95% RH, Non-condensing -Pollution degree 2 -Altitude 2000 meters
Case	UL 94V-0 Flammability rated thermoplastic
Certifications	cULus listed E222847 CE

ACS035/ACS400 Series AC Current Switches

Wiring ACS035/ACS400 Series

NO (closes to Common on Current Rise) Common C (Opens to Common on Current Rise) C

Application Examples

Series Over/Under Current Window (AND wiring) Example





Closed at Normal Open at Low Current Control circuit is open at either over or under normal current conditions.

Parallel Connection Current Alarm (OR wiring) Example



Open at Normal Closed at Low Current Control circuit is closed at either over or under current conditions.



Dimensions



See our website <u>www.AutomationDirect.com</u> for complete Engineering drawings.

ACS150 Series AC Current Switches



ACS150 Series current operated switches combine a current transformer, signal conditioner and limit alarm into a single package for use in monitoring or proof of operation applications. Offering an adjustable setpoint range of 1 to 150 amps and universal, solidstate outputs, the self-powered ACS150 can be tailored to provide accurate and dependable digital indication of overcurrent conditions across a broad range of applications. The ACS150 is available in fixed-core and split-core models.

Applications

Electronic Proof of Flow

- Current operated switch eliminates the need for multiple pipe or duct penetrations.
- More reliable than electromechanical pressure or flow switches.

Conveyors

• Detect jams and overloads; useful when interlocking multiple conveyor sections

Heating Circuits

• Detect ON/OFF status; faster response times than with temperature sensors.

Loss of Load Detective

- Detect belt or coupling breaks with fast response times
- **Lighting Circuits**
- Easier and faster than photocells

- Choose from: N.O. 0.15 A @ 240VAC or VDC or N.C. 0.20 A @ 135VAC or VDC output options.
- Status LED provides visual indication of setpoint trip and contact action.
- Self-powered operation cuts installation time and operating costs.
- Potentiometer-adjustable trip points speed start-up and allow for tailored operation.
- Choose either split core or fixed core enclosure style. Split core packages allow easy installation on existing systems; fixed core enclosures offer more compact package for OEM or new installations.
- Built-in mounting feet with optional 35mm DIN rail adapter available.
- Five-year warranty



ACS150 AC Current Operated Switches					
Part Number	Description	Pcs/Pkg	Wt (lb)	Price	
ACS150-AE-F	AcuAMP AC current switch, fixed core, 1-150A sensing range, 1-150A adjustable trip point, 15-turn potentiometer, solid state switch, N.O. output, 0.15A @ 240 VAC/VDC output rating.	1	0.30	\$86.00	
<u>ACS150-AE-S</u>	AcuAMP AC current switch, split core, 1.75-150A sensing range, 1.75-150A adjustable trip point, 4-turn potentiometer, solid state switch, N.O. output, 0.15A @ 240 VAC/VDC output rating.	1	0.35	\$106.00	
<u>ACS150-CE-F</u>	AcuAMP AC current switch, fixed core, 1-150A sensing range, 1-150A adjustable trip point, 15-turn potentiometer, solid state switch, N.C. output, 0.2A @ 135 VAC/VDC output rating.	1	0.30	\$86.00	
<u>ACS150-CE-S</u>	AcuAMP AC current switch, split core, 1.75-150A sensing range, 1.75-150A adjustable trip point, 4-turn potentiometer, solid state switch, N.C. output, 0.2A @ 135 VAC/VDC output rating.	1	0.35	\$106.00	
	Accessories				
DRA-2B	35mm DIN rail adapters. 1.70"x0.45"x0.83" [43.7x11.4x21.0 mm]	2	0.40	\$6.00	

ACS150 Series Specifications				
Power Supply	None - Self-powered			
Output	Isolated solid-state switch			
Output Rating	N.O. 0.15 A @ 240VAC or VDC N.C. 0.20 A @ 135VAC or VDC			
Response Time	120ms			
Off State Leakage	<10µA			
Setpoint (Trip Point)	Fixed core: 1 to 150A. Split core: 1.75 to 150A			
Hysteresis	5% of Setpoint			
Setpoint (Trip Point) Adjust	Fixed core: 15-turn potentiometer.; Split core: 4-turn potentiometer			
Isolation Voltage	UL listed to 1,270VAC. Tested to 5,000VAC (1 minute max)			
Frequency Range	6 to 100 Hz			
Case	UL 94V-0 flammability rated			
	Operating Temperature: -58 to 149°F [-50 to 65°C]			
Environmentel	Relative Humidity: 0-95% RH, Non-condensing			
Environmental	Pollution Degree 2			
	Altitude to 2000 meters			
Certifications	cULus listed (E222847), CE			

ACS150 Sensed Current Limits				
	Innut	A	mps	
Туре	Range	Continuous	6 Sec. max	1 Sec. max
Fixed Core	1 to 150A	150	400	1000
Split Core	1.75 to 150A	150	400	1000

TRIP POINT Adjust

3.04 [77.3]

LED

ACS150 Series AC Current Switches

Dimensions

Inches [mm]



ACSL Series AC Current Switches



The ACSL series current sensing switches provide a current operated solid-state contact powered from the monitored circuit. The trip point adjustment uses a single turn potentiometer, allowing the installer to set the trip point without the monitored load present. The sensor installs over the conductor.

Applications

AC motor loads

- Set the contact to close at normal running current level and it will open if the drive belt breaks or comes off the sheaves.
- Monitor up to 150A loads.

Critical lighting loads

• Monitor security lighting and water navigational indicators.

Heating loads

- Receive independent verification that an element is working properly.
- Monitor drying and curing processes remotely.

- Single-turn potentiometer setpoint selection with trip point indicated on the labeling
- Setpoint can be set without monitored load present
- Two second delay before contact action on initial energization allowing the output to ignore motor inrush current.
- Status LED provides visual indication of setpoint trip and contact action.
- Self-powered operation cuts installation time and operating costs.
- Output is magnetically isolated from the input for safety.
- Choose either split-core or fixed core enclosure style. Split core packages allow easy installation on existing systems; fixed core enclosures offer a more compact package for OEM or new installations.
- Built-in feet with optional 35mm DIN rail adapter available.
- Five-year warranty



ACSL AC Current Operated Switches					
Part Number	Description	Trip Range Adjustment	Pcs/Pkg	Wt (lb)	Price
<u>ACSL010-AE-F</u>	AcuAMP AC current switch, fixed core, 0-150A sensing range, 1-10A adjustable trip point, single-turn scaled potentiometer, solid state switch, N.O. output, 0.15A @ 240 VAC/VDC output rating.	1-10A	1	0.25	\$94.00
<u>ACSL020-AE-S</u>	AcuAMP AC current switch, split core, 0-150A sensing range, 2-20A adjustable trip point, single-turn scaled potentiometer, solid state switch, N.O. output, 0.15A @ 240 VAC/VDC output rating.	2-20A	1	0.30	\$109.00
ACSL050-AE-F	AcuAMP AC current switch, fixed core, 0-150A sensing range, 10-50A adjustable trip point, single-turn scaled potentiometer, solid state switch, N.O. output, 0.15A @ 240 VAC/VDC output rating.	10-50A	1	0.25	\$94.00
ACSL050-AE-S	AcuAMP AC current switch, split core, 0-150A sensing range, 20-50A adjustable trip point, single-turn scaled potentiometer, solid state switch, N.O. output, 0.15A @ 240 VAC/VDC output rating.	20-50A	1	0.30	\$109.00
Accessories					
DRA-2B	35mm DIN rail adapters, 1.70"x0.45"x0.83" [43.7x11.4x21.0 mm]		2	0.40	\$6.00

ACSL Series Specifications		
Power Supply	None - self powered	
Output Switch	Solid state, normally open	
Switch Rating	0.15 A @ 240 VAC/VDC	
Off State Leakage	<10µA	
Response Time	100ms	
Inrush Delay	2 second delay before output changes state upon first energization	
Hysteresis	Minimum 3% of setpoint	
Setpoint (Trip Point) Ranges	Ranges from 1-50A	
Setpoint (Trip Point) Adjust	3/4-turn potentiometer	
Isolation Voltage	UL Tested to 3,000VAC	
Monitored Circuit	600VAC line-to-line max. 0-150A	
Frequency Range	50-60 Hz	
Sensing Aperture	0.55" (14mm) fixed core, 0.85" [21.6 mm] split core	
Case	UL94V-0 Flammability Rating	
	Operating Temperature: -4 to 122°F [-20 to 50°C]	
Environmental	Relative Humidity: 0-95% RH, Non-condensing	
	Pollution Degree 2	
	Altitude to 2000 meters	
Certifications	cULus listed (E222847), CE	

Sensed Current Limits					
	Setpoint Amps				
Туре	(Trip Point) Ranges	Continuous	6 Sec.	1 Sec.	
Fixed	1-10A	150	400	1000	
Core	10-50A	150	400	1000	
Split	2-20A	150	400	1000	
Core	20-50A	150	400	1000	

ACSL Series AC Current Switches â

2.25

[57.2]

0.85

[21.6] 4

Dimensions

Inches [mm]







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

0.85 ----

[21.6]

ACSL Series Split Core

0.45

[11.4]

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ACS200 Series AC Current Switches



ACS200 series current operated switches provide the same dependable status indication as the ACS150 series, but with added resolution. A choice of three jumper-selectable input ranges allows the ACS200 to be tailored to an application and provides more precision in setpoint adjustment. Self-powered, isolated solid-state relay outputs and multiple input ranges are standard features.

Applications

Electronic Proof of Flow

- Current operated switch eliminates the need for multiple pipe or duct penetrations, lowering installed costs.
- Solid-state technology more reliable than electromechanical pressure or flow switches

Conveyors

• Detect jams and overloads; useful when interlocking multiple conveyor sections

Lighting, Heating Circuits

 Detect ON/OFF status, easier to install and less expensive than photocell or temperature sensor alternatives

- N.O. or N.C. outputs 1A @ 240VAC or 0.15 A @ 30VDC.
- One model offers N.O. output rated for 3A
 @ 120VAC
- Status LED provides visual indication of setpoint trip and contact action.
- Self-powered operation cuts installation time and operating costs.
- Potentiometer-adjustable trip points speed start-up and allow for tailored operation.
- Choose fixed core or split core enclosure style. Split core allows easy installation on existing systems; fixed core offers more compact package for OEM or new installations.
- Built-in mounting feet with optional 35mm DIN rail adapter available.
- Five-year warranty



	ACS200 AC Current Operated Switches			
Part Number	Description	Pcs/Pkg	Wt (lb)	Price
<u>ACS200-AA-F</u>	AcuAMP AC current switch, fixed core, 1-6, 6-40, or 40-175A selectable sensing range, 1-175A adjustable trip point, 4-turn potentiometer, solid state switch, N.O. output, 1A @ 240 VAC output rating.	1	0.3	\$93.00
<u>ACS200-AA-FT</u>	AcuAMP AC current switch, fixed core, 1-6, 6-40, or 40-175A selectable sensing range, 1-175A adjustable trip point, 15-turn potentiometer, solid state switch, N.O. output, 1A @ 240 VAC output rating.	1	0.29	\$93.00
<u>ACS200-AA3-FT</u>	AcuAMP AC current switch, fixed core, 1-6, 6-40, or 40-175A selectable sensing range, 1-175A adjustable trip point, 15-turn potentiometer, solid state switch, N.O. output, 3A @ 120 VAC output rating.	1	0.3	\$109.00
<u>ACS200-AA-S</u>	AcuAMP AC current switch, split core, 1.75-6, 6-40, or 40-200A selectable sensing range, 1.75-200A adjustable trip point, 4-turn potentiometer, solid state switch, N.O. output, 1A @ 240 VAC output rating.	1	0.36	\$109.00
<u>ACS200-CA-F</u>	AcuAMP AC current switch, fixed core, 1-6, 6-40, or 40-175A selectable sensing range, 1-175A adjustable trip point, 4-turn potentiometer, solid state switch, N.C. output, 1A @ 240 VAC output rating.	1	0.3	\$93.00
<u>ACS200-CA-FT</u>	AcuAMP AC current switch, fixed core, 1-6, 6-40, or 40-175A selectable sensing range, 1-175A adjustable trip point, 15-turn potentiometer, solid state switch, N.C. output, 1A @ 240 VAC output rating.	1	0.29	\$93.00
<u>ACS200-CA-S</u>	AcuAMP AC current switch, split core, 1.75-6, 6-40, or 40-200A selectable sensing range, 1.75-200A adjustable trip point, 4-turn potentiometer, solid state switch, N.C. output, 1A @ 240 VAC output rating.	1	0.35	\$109.00
<u>ACS200-AD-F</u>	AcuAMP AC current switch, fixed core, 1-6, 6-40, or 40-175A selectable sensing range, 1-175A adjustable trip point, 4-turn potentiometer, solid state switch, N.O. output, 0.15A @ 30 VDC output rating.	1	0.31	\$93.00
<u>ACS200-AD-S</u>	AcuÃMP AC current switch, split core, 1.75-6, 6-40, or 40-200A selectable sensing range, 1.75-200A adjustable trip point, 4-turn potentiometer, solid state switch, N.O. output, 0.15A @ 30 VDC output rating.	1	0.36	\$109.00
<u>ACS200-CD-F</u>	AcuÃMP AC current switch, fixed core, 1-6, 6-40, or 40-175A selectable sensing range, 1-175A adjustable trip point, 4-turn potentiometer, solid state switch, N.C. output, 0.15A @ 30 VDC output rating.	1	0.3	\$93.00
<u>ACS200-CD-S</u>	AcuÃMP AC current switch, split core, 1.75-6, 6-40, or 40-200A selectable sensing range, 1.75-200A adjustable trip point, 4-turn potentiometer, solid state switch, N.C. output, 0.15A @ 30 VDC output rating.	1	0.35	\$109.00
	Accessories			
DRA-2B	35mm DIN rail adapters, 1.70"x0.45"x0.83" [43.7x11.4x21.0 mm]	2	0.40	\$6.00

ACS200 Series AC Current Switches

Specifications			
Power Supply	None - self powered		
Output	Isolated solid-state switch		
Switch Rating	DC Output Type: 0.15A @ 30VDC AC Output Type: 1.0A @ 240VAC. -AA3- model: 3A @ 120VAC		
Off State Leakage	<10µA AC or DC N.O., 2.5mA AC N.C., 1.4mA DC N.C.		
Response Time	40 to 250 ms		
Hysteresis	5%		
Innut Donnoo	Fixed core: 1-6, 6-40 & 40-175 A		
Input Kanges	Split core: 1.75-6, 6-40 & 40-200 A		
Setpoint Adjust	4 Turn potentiometer, 15 Turn potentiometer -FT Case Style		
Isolation Voltage	UL tested to 1480VAC		
Frequency Range	6 to 100 Hz		
Sensing Aperture	-F Case Style: 0.55 in (14mm) dia. -S Case Style: 0.85 in (21.7 mm) sq. -FT Case Style: 0.75 in (19mm) dia.		
Case	UL 94V-0 Flammability rated thermoplastic		
Environmental	-Temp -4 to 122°F (-20 to 50°C), 104°F (40°C) max for model ending in -03 -Humidity 0-95% RH, Non-condensing -Pollution degree 2 -Altitude 2000 meters		
Certifications	cULus listed E222847 CF		

Sensed Current Limit					
Range Jumper	Range Fixed Core	Range Split Core	Continuous	Max. 6 Seconds	Max.1 Second
None	1 - 6A	1.75 - 6A	200A	400A	600A
Mid	6 - 40A	6 - 40A	200A	500A	800A
High	40 - 175A	40 - 200A	200A	800A	1200A

Dimensions

Inches [mm]



ACS200 Series Fixed Core, Side Terminals



ACS200 Series Fixed Core, Top Terminals



See our website <u>www.AutomationDirect.com</u> for complete Engineering drawings.

ACS200 Series AC Current Switches

Wiring



Application Example



ACSX Series AC Current Switches



The ACSX series high-performance current-operated switch has a fieldadjustable time delay feature that minimizes nuisance trips during startup 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-ofoperation; 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 selfpowering, 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 Switche	S		
Part Number	Description	Pcs/ Pka	Wt (lb)	Price
<u>ACSX200-AA-S</u>	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	\$127.0
<u>ACSX200-AA-F</u>	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	\$126.0
<u>ACSX200-CA-S</u>	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	\$127.0
<u>ACSX200-AE-F</u>	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	\$109.0
<u>ACSX200-AE-S</u>	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	\$122.0
<u>ACSX200-CE-F</u>	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	\$109.0
<u>ACSX200-CE-S</u>	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	\$122.0
	Accessories			
DRA-2B	35mm DIN rail adapters, 1,70"x0,45"x0,83" [43,7x11,4x21,0 mm]	2	0.40	\$6.00

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ACSX200 N	Ainimum 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 h	as no specified minimum load		
required to operate the output. There is a maximum resistance of 5 ohms across the output when the switch is			

Sensed Current Limit					
Type Range Continuous 6 Seconds 1 Second					
Fixed Core	1.5 - 175 A	2004	4004	1000 4	
Split Core	2 - 200A	200A	400A	1000A	

ACSX Series AC Current Switches

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

Wiring



Use up to 14 AWG copper wire



Dimensions



See our website <u>www.AutomationDirect.com</u> for complete Engineering drawings.

ACL1 AC Current Indicator



The ACL1 Current Indicator is a small, inexpensive, simple LED ring which slides over a conductor to give a flashing indication of current flow. This unit is ideal for use in control panels, or wherever you need to substantiate current flow. The ACL1 current indicator is a cost-effective way to detect live conductors and see current flow to fans, heaters, pumps, lighting or other powered devices.

Applications

Monitoring Loads

 Provides indication of current draw on monitored loads in a panel

Operation Confirmation

Provides confirmation of operation for critical lighting equipment

Identifying Open Circuits

· Quickly identify open heater circuit connection

Features

- · Low Sensitivity Turn-On Point: Detect currents as low as 0.5A with a single conductor pass. Eliminates the need to wrap conductors multiple times to increase sensitivity.
- High Visibility Flashing LED: Flashing LEDs perform better in daylight conditions and from multiple angles than constant on LEDs.
- Five-year warranty





ACL1 AC Current Indicator Part Number Description Pcs/Pka Wt (lb) Price AcuAMP AC current indicator, fixed core, 0.5-100A ACL1 0.3 \$23.00 1 sensing range, 0.5A non-adjustable trip point. Specifications Sensed Current AC. 50–400 Hz **Output/Indication** LED (flashing, red) Indicating Range 0.5–100A LED ON >500mA (factory set) Case UL94-V0 Flammability Rated Slides directly onto monitored conductor (can be attached with the supplied Mounting wire-tie) Isolation Voltage Max. Primary Circuit Voltage, 300VAC Operating Temperature: -58 to 122°F [-50 to 50°C] Relative Humidity: 0-95% RH, Non-condensing Environmental Pollution Degree 2 Altitude 2000 meters 0.30" [7.6 mm] dia Sensing Aperture

cULus listed (E222847). CE

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

Dimensions





Certifications



DC Current Switches and Transducers

Overview

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

DCT and DCS100 series have multiple input ranges (set by movable jumpers) for maximum flexibility across many current ratings. DCT series include output choices of 4 to 20 mA or +/-10 VDC bidirectional models. DCS series outputs are available in isolated solid state Normally Open and in Single Pole Double Throw (SPDT) relay configurations.

DCT series current transducers combine a Hall Effect sensor and signal conditioner into a single package for use in DC current applications up to 400A. DCT series are available in split-core or fixed-core enclosures.

DCS100 series combine a Hall effect sensor, signal conditioner and a limit alarm into a single package. DCS100 series models are available in a fixed core case with the choice of a relay or universal solid-state output.

All models are panel-mountable; convenient DIN-rail adapter accessories are available. Use the Selection Guide below to find the best sensor for your requirements.



Selection Guide

AcuAMP DC Current Sensors Specifications by Model Type			
Specifications	Tran	sducer	Switch
Model	DCT	DCT 500 to 750A Large Aperture	DCS100
Power Supply	20-45 VDC*, 22-38 VAC	24 VAC/DC, Use Class 2 power supply	20-28 VAC/VDC
Power Consumption		2VA	
Setpoint (Trip point)	N/A	N/A	11-Turn Potentiometer
Output Signal	4-20 mA Sourcing +/- 10VDC (Bidirectional models only)	4-20 mA Sourcing	N/A
Output Limit	4-20 mA: 23mA 0-10 VDC: 11.5 VDC	23mA	N/A
Output Loading	4-20 mA: 500Ω max 0-10 VDC: 50kΩ min.	500Ω max	N/A
Output Switch		N/A	AE models: Normally Open Solid State 1C models: Single Pole Double Throw (SPDT) Relay
Switch Rating		N/A	AE models: Solid State N.O. (0.15 A @ 240 VAC/ VDC) 1C models: SPDT (Form C) Relay 5A General Purpose @ 240VAC 3A Inductive @ 240VAC 3A @ 30VDC 1/8 HP @ 240VAC
Off State Leakage	N/A	1	AE: <10µA; 1C: None
Accuracy	Fixed core: 1% FS, Split core: 2% FS	2% FS	N/A
Current Ranges	Jumper Selectable: DCT100-42: 0-50A, 0-75A, 0-100A DCT200-42: 0-100A, 0-150A, 0-200A DCT400-42: 0-200A, 0-300A, 0-400A DCT500-42: 0-500A Fixed: DCT100-10B: 0-100A Bidirectional DCT200-10B: 0-200A Bidirectional DCT300-10B: 0-300A Bidirectional	Fixed: DCT500-42: 0-500A DCT750-42: 0-750A	5-15, 10-50 and 20-100 A, Jumper Selectable
Repeatability	1% FS	1% FS	0.5% FS
Response Time	Fixed core: 20ms (to 90% of step change) Split core: 100ms (to 90% of step change)	100ms (to 90% of step change)	100ms (10% above setpoint), 20ms (100% abive setpoint)
Hysteresis Approx		N/A	5% of setpoint
Isolation Voltage		3KV	
Frequency Range		DC	
Case		UL 94V-0 Flammability Rated	Operating Temperature: $A = 40 \text{ to } 140^{\circ} = 10 \text{ to}$
Fnvironmental	Operating Temperature	: -4 to 122°F [-20 to 50°C]	60°C]; 1C = -4 to 122°F [-20 to 50°C]
2000 0000000		Relative Humidity: 0-95% RH, Non-cond	lensing
		Pollution Degree 2	
	Altitude to 2000 meters		
Sensing Aperture	Fixed core: 0.75" [19.1 mm] dia. Split core: 0.85" [21.6 mm] sq	1.77" [45mm] dia.	0.75" [19.1 mm] dia.

* DC only for -10B Bidirectional models

DC Current Switches and Transducers Applications

Application Guide

AcuAMP DC current sensors are a great fit for many applications, including battery charge systems, solar panels, and Uninterruptible Power Systems. With both current transducers and current switches, this sensor family gives you valuable data for processes ranging from monitoring loads to preventive maintenance.

The bi-directional models allow the monitoring of batteries while they are being charged or consumed and can be used to trigger a warning if critical low levels are reached. They can also monitor the output of a photovoltaic array to make sure there is enough energy being generated to keep the process running.

Transducer



Battery Charging System - Bidirectional Output

When the sun is blocked, the current drops. The Current Operated Switch detects the drop in current and activates the relay which turns on the alarm light.

DCT Series DC Current Transducers



DCT series current transducers combine a Hall effect sensor and signal conditioner into a single package for use in DC current applications up to 750A. The DCT series offers jumperselectable or fixed current input ranges and industry standard 4-20 mA or +/-10 VDC outputs. The DCT series is designed to be compatible with most PLCs, data loggers and SCADA systems. Full-scale input ranges are jumper selectable to 400A (depending on model). This series is available in split-core or fixed-core models.

Applications

Battery Banks

- Monitor load current
- Monitor charging currentVerifies operation

Transportation

• Measures traction power or auxiliary loads

Wind and Solar Generated Power

- Measure the current produced or consumed.
- Detect mechanical problems before failure occurs.

Electric Heating Elements

- Monitors heater loads
- Faster response than temperature sensors

Monitor DC Powered Motors

• Monitor current of cranes, saws, sorters and positioning equipment.

Click on the thumbnail or go to

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

- 4-20 mA or +/-10 VDC outputs
- Built-in mounting feet with optional 35mm DIN rail adapter available
- Factory matched and calibrated single piece transducer is more accurate than traditional two-piece field installed products.
- Selectable input ranges allow end users to tailor sensing ranges, improve the odds of having the right range for the job and reduces setup time.
- Output is magnetically isolated from the input for safety and to eliminate voltage drop.
- Reduced installation costs
- Split core models make installation a snap.
- Five-year warranty





	DCT Series DC Current Transducers				
Part Number	Description	Pcs/Pkg	Wt (lb)	Price	
DCT100-42-24-F	AcuAMP DC current transducer, fixed core, 0-50, 0-75, or 0-100A selectable sensing range, 4-20mA output.	1	0.35	\$166.00	
<u>DCT200-42-24-F</u>	AcuAMP DC current transducer, fixed core, 0-100, 0-150, or 0-200A selectable sensing range, 4-20mA output.	1	0.35	\$166.00	
<u>DCT100-42-24-S</u>	AcuAMP DC current transducer, split core, 0-50, 0-75, or 0-100A selectable sensing range, 4-20mA output.	1	0.45	\$220.00	
<u>DCT200-42-24-S</u>	AcuAMP DC current transducer, split core, 0-100, 0-150, or 0-200A selectable sensing range, 4-20mA output.	1	0.45	\$220.00	
<u>DCT400-42-24-S</u>	AcuAMP DC current transducer, split core, 0-200, 0-300, or 0-400A selectable sensing range, 4-20mA output.	1	0.45	\$220.00	
<u>DCT500-42-24-F</u>	AcuAMP DC current transducer, large aperture fixed core, 0-500A sensing range, 4-20mA output.	1	0.75	\$292.00	
<u>DCT750-42-24-F</u>	AcuAMP DC current transducer, large aperture fixed core, 0-750A sensing range, 4-20mA output.	1	0.75	\$301.00	
<u>DCT100-10B-24-S</u>	AcuAMP DC current transducer, split core, bi-directional 0-100A sensing range, bi-polar +/- 0-10 VDC output.	1	0.45	\$251.00	
<u>DCT200-10B-24-S</u>	AcuAMP DC current transducer, split core, bi-directional 0-200A sensing range, bi-polar +/- 0-10 VDC output.	1	0.45	\$251.00	
<u>DCT300-10B-24-S</u>	AcuAMP DC current transducer, split core, bi-directional 0-300A sensing range, bi-polar +/- 0-10 VDC output.	1	0.45	\$251.00	
	Accessories				
DRA-2B	35mm DIN rail adapters, 1.70"x0.45"x0.83" [43.7x11.4x21.0 mm]	2	0.40	\$6.00	

DCT Series DC Current Transducers

DCT Series Specifications				
Models Available	10B	42		
Power Supply	20-45 VDC	20-45 VDC, 22-38 VAC; Units 500A and over 24 VAC/DC - use Class 2 power supply, Power and signal are isolated.		
Power Consumption		2VA		
Output Signal	+/-10VDC	4-20 mA sourcing		
Output Load	50kΩ minimum	500Ω maximum		
Output Limit	11.5 VDC	23mA		
Accuracy	Split-core: 2% FS	Fixed-core: 1% FS; Split-core: 2% FS		
Response Time	Split-core: 100ms	Fixed-core: 20ms; Units 500A and over 100ms Split-core: 100ms		
Repeatability	1.0% FS	1.0% FS		
Input Ranges	Fixed 0-100A, 0-200A & 0-300A	Jumper selectable from 0 to 400A; Fixed ranges on units 500A and over		
Sensing Aperture	Split-core: 0.85" [21.6 mm] sq.	Fixed-core: 0.75" [19.1 mm] dia.; Units 500A and over 1.77" [45mm] dia. Split-core: 0.85" [21.6 mm] sq.		
Isolation Voltage		3kV (monitored line to output)		
Frequency Range		DC		
Case		UL 94V-0 Flammability Rated		
	Operating	Temperature: -4 to 122°F [-20 to 50°C]		
Environmentel	Relative	Humidity: 0-95% RH, non-condensing		
Environmentar	Pollution Degree 2			
		Altitude to 2000 meters		
Certifications		cULus listed (E197592), CE		

Wiring

Connection for units up to 400A



Our Bi-Directional DC Current Sensors provide an excellent means to monitor battery charging circuits by providing feedback during charging and during battery operation.



Connection for units 500A and over





Current Transducers DC Current Transducers

Dimensions

Inches [mm]



DCT Series Fixed-Core - Units 500A and over

See our website <u>www.AutomationDirect.com</u> for complete Engineering drawings.

DCS100 Series DC Current Switches



DCS100 series current switches combine a Hall effect sensor, signal conditioner and limit alarm into a single package for use in DC current applications up to 100A. The DCS100 series has jumperselectable current input ranges and your choice of Normally Open Solid-State or SPDT Relay outputs. This series is available in fixed core models only.

Applications

Welders

Indication of equipment status

Power Supplies

• Prevent equipment failures due to over-current conditions.

Battery Systems

• Monitor the state of critical backup batteries.

Features

- Compact, one-piece design
- Built-in mounting feet with optional 35 mm DIN rail adapter available.
- Removable terminal blocks that accept up to 12 AWG solid or stranded wire
- Adaptive hysteresis is 5% of setpoint, allowing closer control.
- Selectable input ranges allow end users to tailor sensing ranges and improves the odds of having the right range for the job.
- Not polarity sensitive; can measure positive or negative current.
- Output is magnetically isolated from the input for safety and to eliminate voltage drop.
- Five-year warranty



DCS100 Series DC Current Switches					
Part Number	Description	Pcs/Pkg	Wt (lb)	Price	
<u>DCS100-AE-24-F</u>	AcuAMP DC current switch, fixed core, 5-15, 10- 50, or 20-100A selectable sensing range, 5-100A adjustable trip point, 11-turn potentiometer, solid state switch, N.O. output, 0.15A @ 240 VAC/VDC output rating.	1	0.35	\$124.00	
<u>DCS100-1C-24-F</u>	AcuAMP DC current switch, fixed core, 5-15, 10- 50, or 20-100A selectable sensing range, 5-100A adjustable trip point, 11-turn potentiometer, relay, SPDT output, 5A @ 240 VAC or 3A @ 30 VDC output rating.	1	0.35	\$130.00	
Accessories					
<u>DRA-2B</u>	35mm DIN rail adapters, 1.70"x0.45"x0.83" [43.7x11.4x21.0 mm]	2	0.40	\$6.00	

Ranges and Maximum Amps			
Jumper Range Maximum Input Amps			
Position	naliye	Continuous	5 Seconds
Low	5-15A	200A	300A
Mid	10-50A	200A	300A
High	20-100A	200A	300A

DCSTUU Series Specifications				
Models Available	AE	10		
Power Supply	20-28 VAC/DC	20-28 VAC/DC		
Power Consumption	2VA	2VA		
Switch Rating	Solid State, N.O. (0.15 A @ 240 VAC/DC)	SPDT (Form C) Relay 5A General Purpose @ 240VAC 3A Inductive @ 240VAC 3A @ 30VDC 1/ ₈ HP @ 240VAC		
Off State Leakage	<10µA	None		
Response Time	100ms (10% above setpoint), 100ms (10% above setpoint) 20ms (100% above setpoint) 20ms (100% above setpoint)			
Hysterisis Approx	5% of setpoint 5% of setpoint			
Repeatability	0.5 %	0.5%		
Input Ranges	5-15, 10-50 and 20-100A, Jumper Selectable	5-15, 10-50 and 20-100A, Jumper Selectable		
Setpoint (Trip Point) Adjust	11-turn Potentiometer	11-turn Potentiometer		
Sensing Aperture	0.75" [19.1 mm] diameter	0.75" [19.1 mm] diameter		
Isolation Voltage	3KV	3KV		
Frequency Range	DC	DC		
Case	UL 94V-0 Flammability Rated	UL 94V-0 Flammability Rated		
	Operating Temperature: -40 to 140°F [-40 to 60°C]	Operating Temperature: -4 to 122°F [-20 to 50°C]		
Environmental	Relative Humidity: 0-95% RH, non-condensing			
	Pollution	Degree 2		
	Altitude to	2000 meters		
Certifications	cULus listed (E222847), CE			

CCS100 Series DC Current Switches

Wiring





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

Dimensions

Inches [mm]







See our website <u>www.AutomationDirect.com</u> for complete Engineering drawings.

ACU FINIT VACT Series AC Voltage Transducers



VACT series AC voltage transducers are high-performance True RMS transducers for sensing voltage in single-phase installations. Applicable on circuits of 120V, 208V, 240V, 277V, and 480V, the VACT series models provide a fully isolated, 4-20 mA output proportional to rated voltage in both sinusoidal and non-sinusoidal (variable frequency) situations. Housed in a slim, compact, easy-to-install DIN rail mounted enclosure, the VACT series comes in a variety of voltage ranges and use four wire terminal block connections.

Applications

True RMS Voltage Monitoring

- Detect below normal or "brown out" voltage conditions; protect against possible motor overheating.
- Identify phase loss conditions by detecting voltage reduction in one or more phase of three-phase motor.
- Monitor over voltage conditions associated with regenerative voltage to help in diagnosing/avoiding motor drive issues.
- Detect voltage conditions which may cause stress in or damage to soft starter components (SCRs).

- True RMS Output: Allows for use in situations where power supplied is non-sinusoidal, poor power quality installations or other electrically harsh/ challenging environments.
- Standard 4-20 mA Loop Powered Output: Industry standard output makes use with existing controllers, data loggers and SCADA equipment easy and reliable.
- **Input/Output Isolation:** Input and output circuitry electrically isolated for improved safety of use.
- **Compact DIN rail Mount Enclosure:** Space saving 35mm wide enclosure makes installation quick and easy.
- Five-year warranty



VACT Series AC Voltage Transducers				
Part Number	Description	Pcs/Pkg	Wt (lb)	Price
<u>VACT150-42L</u>	AcuAMP AC voltage transducer, 0-150 VAC sensing range, True RMS, 4-20mA output.	1	0.25	\$190.00
VACT500-42L	AcuAMP AC voltage transducer, 0-500 VAC sensing range, True RMS, 4-20mA output.	1	0.25	\$190.00

VACT Series Specifications		
Power Supply	24VDC (22VDC-40VDC), Use Class 2 power supply only	
Voltage Measurement	150V (for monitoring 120VAC) and 500V (for monitoring 208, 240, 277, 480 VAC), not to exceed 600VAC RMS	
Output	4-20 mA proportional;loop powered (sinking), capped at 24mA max	
Response Time	250ms (to 90% value)	
Accuracy	<1%	
Linearity <0.5%		
Output Impedance	500Ω maximum	
Isolation Voltage	2500 Volts per UL	
Frequency Range	40-100 Hz	
Case	UL94V-0 Flammability Rating	
	Operating temperature: -4 to122°F (-20 to 50°C)	
Environmontal	Relative humidity: 0-95% RH, Non-condensing	
Environnientai	Pollution Degree 2	
	Altitude to 2000 meters	
Certifications	cULus listed (E222847), CE	

ACURANE VACT Series AC Voltage Transducers



Dimensions

Inches [mm]







VACT Series

See our website <u>www.AutomationDirect.com</u> for complete Engineering drawings.

GCUFICT Series DC Voltage Transducers



The VDCT series DC voltage transducers are high-performance transducers for sensing voltage in DC powered installations. Applicable on circuits up to 50VDC, the VDCT series models provide a fully isolated, 4-20 mA output proportional to rated nominal voltage in DC circuits. Housed in a slim, compact, easy-to-install DIN rail mounted enclosure, the VDCT series comes in two different nominal voltage ranges.

Applications

- Detect below normal or "brown out" voltage conditions; protect against possible motor overheating.
- Monitor over voltage conditions associated with regenerative voltage to help in diagnosing/avoiding motor drive issues.
- Detect voltage conditions which may cause stress in or damage to soft starter components (SCRs).

- Accurate Output: Two ranges available for your application, up to 50VDC
- Standard 4-20 mA Output: Industry standard output makes use with existing controllers, data loggers and SCADA equipment easy and reliable.
- **Input/Output Isolation:** Input and output circuitry electrically isolated for improved safety of use.
- **Compact DIN rail Mount Enclosure:** Space saving 35mm wide enclosure makes installation quick and easy.
- Five-year warranty



VDCT Series DC Voltage Transducers				
Part Number Description			Wt (lb)	Price
VDCT015-42-24	AcuAMP DC voltage transducer, 0-15 VDC sensing range, 4-20mA output.	1	0.25	\$190.00
VDCT050-42-24	AcuAMP DC voltage transducer, 0-50 VDC sensing range, 4-20mA output.	1	0.25	\$190.00

VDCT Series Specifications				
Power Supply	24 VAC/DC External Power (20-45 VDC), <2VA Use Class 2 power supply			
Input	15V (for monitoring 12VDC) and 50V (for monitoring 24, 36, 48 VDC), not to exceed 600VDC			
Output	4-20mA proportional; capped at 24mA max			
Response Time	250ms (to 90% value)			
Accuracy <1%				
Linearity	<0.5%			
Output Impedance	500Ω maximum			
Isolation Voltage	2500 Volts per UL			
Frequency Range	DC			
Case	UL94V-0 Flammability Rating			
	Operating temperature: -4 to122°F (-20 to 50°C)			
Environmental	Relative humidity: 0-95% RH, Non-condensing			
Environmental	Pollution Degree 2			
	Altitude to 2000 meters			
Certifications	cULus listed (E222847), CE			

Preu FIMIP→ VDCT Series DC Voltage Transducers

Wiring



Dimensions Inches [mm]





VDCT Series

See our website <u>www.AutomationDirect.com</u> for complete Engineering drawings.

ACU AMP*

VADT Series AC/DC Voltage Transducers



VADT series AC/DC voltage transducers are high-performance True RMS sensing for AC voltage in single-phase or 3-phase installations and DC voltage sensing in DC powered installations. Applicable on AC circuits of 120V, 208V, 240V, 277V, and 480V, or DC circuits of 12V, 24V, 48V, 120V, the VADT series models provide a 4-20 mA output proportional to rated voltage in both sinusoidal and non-sinusoidal (variable frequency) situations and DC voltage. Housed in a slim, compact, easy-to-install DIN rail mounted enclosure, the VADT series comes in a variety of voltage ranges.

Applications

True RMS or DC Voltage Monitoring

- Detect below normal or "brownout" voltage conditions; protect against possible motor overheating.
- Identify phase loss conditions by detecting voltage reduction in one or more phase of three-phase motor.
- Monitor over voltage conditions associated with regenerative voltage to help in diagnosing/avoiding motor drive issues.
- Detect voltage conditions that may cause stress or damage to soft starter components (SCRs).

- Zero to 5 KHz Measurement
- Allows for use in situations where power supplied is non-sinusoidal such as VFD applications, poor power quality installations or other electrically harsh/ challenging environments.
- Industry standard 4-20mA compatible with controllers, data loggers and SCADA
- Compact DIN Rail Mount Case
- Space saving enclosure mounts quickly on 35mm DIN rail with integral mounting clips
- Five-year warranty



VADT Series AC/DC Voltage Transducers							
Part Number	Pcs/Pkg	Wt (lb)	Price				
<u>VADT015-42-24</u>	AcuAMP AC/DC voltage transducer, 0-15 VAC/VDC sensing range, True RMS, 4-20mA output.	1	0.27	\$190.00			
<u>VADT050-42-24</u>	AcuAMP AC/DC voltage transducer, 0-50 VAC/VDC sensing range, True RMS, 4-20mA output.	1	0.27	\$190.00			
VADT150-42-24	AcuAMP AC/DC voltage transducer, 0-150 VAC/VDC sensing range, True RMS, 4-20mA output.	1	0.27	\$190.00			
VADT500-42-24	AcuAMP AC/DC voltage transducer, 0-500 VAC/VDC sensing range, True RMS, 4-20mA output.	1	0.27	\$190.00			

Specifications				
Power Supply	24 VAC/DC (+/-8.3%) External Power (Note: Output and power supply negatives are not isolated.)			
Power Consumption	< 2VA			
Voltage Measurement	15, 50, 150, and 500 VAC or DC			
Frequency Range	0 - 5KHz			
Output	4 - 20 mA			
Output Limit	31mA			
Response Time	500 ms (90% step change)			
Accuracy	<1% Full Scale			
Output Impedance	< 400Ω			
Isolation Voltage	UL tested to 2200VAC			
Case	UL 94V-0 Flammability rated thermoplastic			
Environmental	-Temp -4 to 122°F (-20 to 50°C) -Humidity 0-95% RH, Non-condensing -Pollution degree 2 -Altitude 2000 meters			
Certifications	cULus listed E222847, CE			

1-800-633-0405

VADT Series AC/DC Voltage

Wiring



Dimensions

Inches [mm]







VADT Series

See our website <u>www.AutomationDirect.com</u> for complete Engineering drawings.

GFS/GFSL Series AC Ground Fault Sensors



Ground fault sensors help protect people, products, and processes from damage that can be caused by ground fault conditions. The GFS series monitors all current-carrying conductors in grounded single and three-phase delta or wye systems.

GFS series sensors offer jumperselectable setpoints of 5, 10 or 30 mA. The GFS models come in a fixed core case with a 0.75" sensing aperture and are UL Recognized. The GFSL models come in a fixed core case with a large 1.87" sensing aperture and are UL Listed.

Applications

Personnel Protection

- (typically 5mA)
- Detects sensitive ground fault conditions, which may be injurious to personnel and processes
- Functions as sensor and alarm trigger when part of an overall ground fault protection system

Equipment Protection

(typically 10mA or 30mA) For applications where personal protection is not the primary concern, higher setpoint capability helps eliminate nuisance tripping while still providing adequate ground fault detection to protect machine electronics.

Regulatory

Meets requirements as stipulated by governmental and industrial regulatory groups for ground fault sensing.

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

Features

- Wide Range of Options: Mechanical relay outputs with Auto or Manual reset.
- Setpoint Options: Field selectable 5mA, 10mA or 30mA setpoints makes user adjustments fast, sure and convenient.
- **Compatible with Standard Equipment:** Applicable on single- and three-phase systems. Ideal for use with shunt trip breakers. Magnetically isolated from monitored circuit and control power.
- Built-in feet with optional 35mm DIN rail adapter available. Large aperture version has integral 35mm DIN rail mounting.
- Not compatible with VFD or SCR Outputs
- Five-year warranty



GFS & GFSL Series Ground Fault Sensors							
Part Number	ber Description						
<u>GFS30-M1A-24-F</u>	AcuAMP ground fault sensor, fixed core, 5, 10, or 30 mA selectable trip point, relay, SPST-N.O., manual reset output, 24 VAC/VDC operating voltage.	1	0.50	\$283.00			
<u>GFS30-M1B-24-F</u>	AcuAMP ground fault sensor, fixed core, 5, 10, or 30 mA selectable trip point, relay, SPST-N.C., manual reset output, 24 VAC/VDC operating voltage.	1	0.50	\$283.00			
<u>GFS30-D1C-24-F</u>	AcuAMP ground fault sensor, fixed core, 5, 10, or 30 mA selectable trip point, relay, SPDT normally de-energized, automatic reset output, 24 VAC/VDC operating voltage.	1	0.50	\$193.00			
<u>GFS30-E1C-24-F</u>	AcuAMP ground fault sensor, fixed core, 5, 10, or 30 mA selectable trip point, relay, SPDT normally energized, automatic reset output, 24 VAC/VDC operating voltage.	1	0.50	\$205.00			
<u>GFS30-M1A-120A-F</u>	AcuAMP ground fault sensor, fixed core, 5, 10, or 30 mA selectable trip point, relay, SPST-N.O., manual reset output, 120 VAC operating voltage.	1	0.50	\$283.00			
<u>GFS30-M1B-120A-F</u>	AcuAMP ground fault sensor, fixed core, 5, 10, or 30 mA selectable trip point, relay, SPST-N.C., manual reset output, 120 VAC operating voltage.	1	0.50	\$283.00			
<u>GFS30-D1C-120A-F</u>	AcuAMP ground fault sensor, fixed core, 5, 10, or 30 mA selectable trip point, relay, SPDT normally de-energized, automatic reset output, 120 VAC operating voltage.	1	0.50	\$193.00			
<u>GFS30-E1C-120A-F</u>	AcuAMP ground fault sensor, fixed core, 5, 10, or 30 mA selectable trip point, relay, SPDT normally energized, automatic reset output, 120 VAC operating voltage.	1	0.50	\$205.00			
<u>GFSL30-M1A-120A-F</u>	AcuAMP ground fault sensor, large aperture fixed core, 5, 10, or 30 mA selectable trip point, relay, SPST-N.O., manual reset output, 120 VAC operating voltage.	1	0.50	\$326.00			
<u>GFSL30-M1B-120A-F</u>	AcuAMP ground fault sensor, large aperture fixed core, 5, 10, or 30 mA selectable trip point, relay, SPST-N.C., manual reset output, 120 VAC operating voltage.	1	0.50	\$326.00			
Accessories							
DRA-2B	35mm DIN rail adapters, 1.70"x0.45"x0.83" [43.7x11.4x21.0 mm]	2	0.40	\$6.00			

GFS/GFSL Series AC Ground Fault Sensors

GFS & GFSL Series Specifications						
Models Available	GFS	GFSL				
Power Supply	Model 24-F: 24 VAC/DC (20.4-27.6 VAC or 19.2-30 VDC) Model 120A-F: 120VAC (66-132 VAC), 50/60 Hz	120 VAC (66-132 VAC), 50/60 Hz				
Monitored Circuit	1500 VAC max, 50-400 Hz	600VAC line-to-line max., 50/60 Hz				
Output Signal	SPST or SPDT	SPST (normally open or normally closed)				
Output Rating	Manual: SPST Relay, 1A @ 125VAC, 2A @ 30VDC, Auto: SPDT Relay, 1A @ 125VAC, 2A @ 30VDC	Manual Reset: SPST Relay, 1A @ 125VAC, 2A @ 30VDC				
Off State Leakage	None	None				
Power Consumption	2.5 VA max	2.5 VA max				
Setpoint (Trip Point)	5, 10 and 30 mA jumper select	5, 10 and 30 mA jumper select				
Response Time	200ms @ 5% above setpoint	200ms @ 5% over setpoint 60ms @ 50% over setpoint 15ms @ 500% over setpoint				
Sensing Aperture	0.75" [19.1 mm] diameter 1.82" [46mm] diameter					
Isolation Voltage	5kV (tested)	UL tested to 1,048VAC				
Case	UL 94V-0 Flammability Rated	UL 94V-0 Flammability Rated				
	Operating temperatu	rre: -4 to122°F (-20 to 50°C)				
Environmontal	Relative humidity: 0-95% RH, Non-condensing					
Elivii Ulillelitai	Pollution Degree 2					
	Altitude to 2000 meters					
Certifications	URus recognized 1053 (E343037), CE	cULus listed 508 (E222847), CE				

Wiring

GFS M1A and M1B Models





GFS/GFSL Series AC Ground Fault **Sensors**

Dimensions

Inches [mm]



GFS M1A and M1B Models

GFSL M1A and MIB Models





GFS D1C and E1C Models

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

Ground Fault Sensors Operation and Applications

Principle of Operation

"Zero Sum" Operating Principle: In three-phase delta and wye systems, under normal conditions current in the 'hot' leg of a two-wire load is equal in magnitude but opposite in sign to the current in the neutral leg. As a result, the electromagnetic fields surrounding these two conductors cancel each other, producing a "zero sum current." As soon as current leaks to ground (fault condition), the two currents become imbalanced and a net magnetic field results. GFS Series sensors monitor this field and trip alarm contacts when the leakage rises above setpoint.

the ground fault is cleared. If control

sensor, the ground fault condition

terminals

is sensed.

is sensed.

must be removed and a momentary

dry contact closed at the external reset

Models with M1A suffix: The contact is

condition, and closed when a ground fault

normally open with no ground fault

Models with M1B suffix: The contact is

normally closed with no ground fault

condition, and open when a ground fault

power is removed, the sensor remains in its last output state. To reset the



Operation/Setup

Auto Reset Sensors (E1C and D1C) GFS Auto Reset sensors monitor all current carrying conductors and will trip when a ground fault is sensed. The output of these sensors will automatically reset when the ground fault condition is cleared. Select from three factory calibrated setpoints by moving the setpoint jumper to the desired position.

- 5mA setpoint: Detect sensitive ground fault conditions that may be injurious to personnel or processes.
- 10 mA and 30 mA setpoints: These higher setpoints help eliminate nuisance tripping while still providing adequate ground fault protection for machine electronics.

Normally Energized Models (E1C)

Used to detect both ground faults and loss of control power

Application Examples

Pump Seal Failure



Normally De-energized Models (D1C) • Used to detect ground faults

Manual Reset Sensors

	NO		CONTROL POWER APPLIED				
	POW	'ER	No Fault		Fault Detected		
	Output	LED	Output	LED	Output	LED	
N.C.	Closed	OFF	Open	OFF	Closed	ON	
N.O.	Open	OFF	Closed	OFF	Open	ON	

(M1A and M1B)

GFS Manual Reset Sensors monitor all current carrying conductors and will trip when a ground fault is sensed. When the output of these sensors trips it will latch in the tripped position even after

	NO POWER		CONTROL POWER APPLIED				
			No Fault		Fault Detected		
	Output	LED	Output	LED	Output	LED	
N.C.	Closed	OFF	Closed	OFF	Open	ON	
N.O.	Open	OFF	Open	OFF	Closed	ON	

Ground Fault Sensor

Insulation Breakdown Monitoring

Snow Melting or

Soil Warming System

