

ACUAMP® Current Sensors



Up-to-date price list:
www.automationdirect.com/pricelist

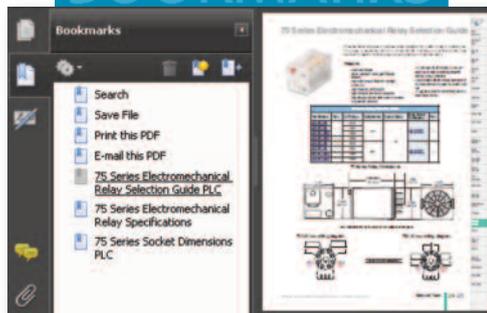
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BOOKMARKS



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Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion: Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Encoders

Sensors: Limit Switches

Sensors: Current

Sensors: Pressure

Sensors: Temperature

Sensors: Level

Sensors: Flow Switches

Pushbuttons and Lights

Stacklights

Signal Devices

Process

Relays and Timers

Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

Appendix Book 2

Terms and Conditions

ACUAMP® AC Current Switches, Transducers and Indicator

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.

ACT and ACS models have multiple input ranges (set by movable jumpers) for maximum flexibility across many current ratings. The current transducer output choices include 4 to 20mA, 24 VDC loop-powered, and 0 to 10 volt self-powered analog outputs. The Current Switch outputs are isolated solid state switches and are available in Normally Open and Normally Closed configurations.

A unit featuring field adjustable time delay is also offered in the Current Switch series. The ACL1 Current Indicator senses AC current ranging from 0.5 to 100 A and requires no power for the indicating LED.

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



ACUAMP AC Specifications by Model Type						
Specifications	Transducer	Transducer (True RMS)	Switch			Indicator
Model	ACT	ACTR	ACS150	ACS200	ACSX	ACL1
Input Range	Jumper selectable: ACT005: 0 to 2A 0 to 5A ACT050: 0 to 10A 0 to 20A 0 to 50A ACT200: 0 to 100A 0 to 150A 0 to 200A ACT750: 0 to 375A 0 to 500A 0 to 750A ACT2000: 0 to 1000A 0 to 1333A 0 to 2000A	Jumper selectable: ACTR005: 0 to 2A 0 to 5A ACTR050: 0 to 10A 0 to 20A 0 to 50A ACTR200: 0 to 100A 0 to 150A 0 to 200A ACTR750: 0 to 375A 0 to 500A 0 to 750A ACTR2000: 0 to 1000A 0 to 1333A 0 to 2000A	Normally Open: -F core: 1 to 150A -S core: 1.75 to 150A Normally Closed: -F core: 1 to 150A -S core: 1.75 to 150A	Jumper Selectable: Normally Open: -F core: 1 to 6A 6 to 40A 40 to 175A -S core: 1.75 to 6A 6 to 40A 40 to 200A Normally Closed: -F core: 1 to 6A 6 to 40A 40 to 175A -S core: 1.75 to 6A 6 to 40A 40 to 200A	Jumper Selectable: Normally Open: -F core: 1.5 to 12A 12 to 55A 55 to 175A -S core: 2 to 12A 12 to 55A 55 to 200A Normally Closed: -F core: 1.5 to 12A 12 to 55A 55 to 175A -S core: 2 to 12A 12 to 55A 55 to 200A	0.5 to 100 A
Output	-10 models: 0–10 VDC -42L models: 4–20 mA, loop-powered	4–20 mA, loop-powered true RMS	Normally Open: 0.15A @ 240 VAC or VDC Normally Closed: 0.2A @ 135 VAC or VDC	Normally Open /Normally Closed AC model: 1A @ 240 VAC Normally Open /Normally Closed DC model: 0.15A @ 30 VDC	Normally Open /Normally Closed AC model: 1A @ 240 VAC Normally Open /Normally Closed DC model: 0.2A @ 135 VAC/VDC	LED Only (flashing, red)
Frequency Range	-10 models: 50 to 60 Hz sinusoidal waveforms only -42L models: 20–100 Hz	10 to 400 Hz non-sinusoidal waveforms	6 to 100 Hz	6 to 100 Hz	50 to 100 Hz	50 - 400 Hz
Response Time	-10 models: 100 ms -42L models: 300 ms	600 ms	120 ms	40 to 120 ms	Field adjustable time delay: 0.12 to 15 seconds	N/A
Sensing Aperture	ACT005, ACT050, ACT200: -F core: 0.75 in [19 mm] dia. -S core: 0.85 in [21.6 mm] sq. ACT750, ACT2000: 3.0 in [76.2 mm] dia	ACTR005, ACTR050, ACTR200: -F core: 0.75 in [19 mm] dia. -S core: 0.85 in [21.6 mm] sq. ACTR750, ACTR2000: 3.0 in [76.2 mm] dia	-F core: 0.75 in [19 mm] dia. -S core: 0.85 in [21.7 mm] sq.	-F core: 0.55 in [13.97 mm] dia. -S core: 0.85 in [21.7 mm] sq.	-F core: 0.75 in [19 mm] dia. -S core: 0.85 in [21.7 mm] sq.	0.32 in [8.13 mm]



AC Current Sensors, Switches and Transducers Application Guide

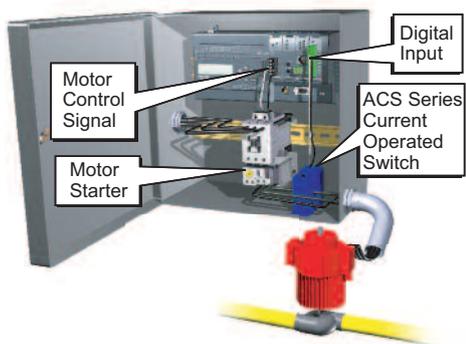
Application Guide

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

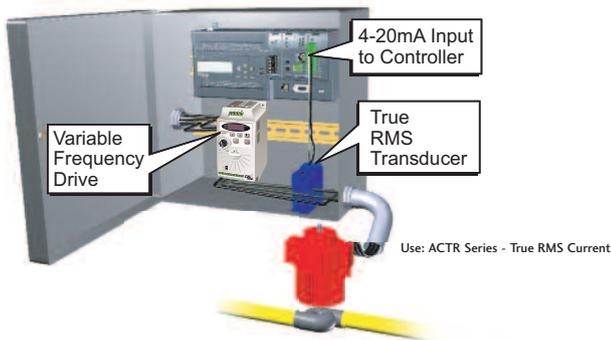
for processes ranging from monitoring loads to preventive maintenance. Models with the ability to read True RMS non-sinusoidal waveforms make it easy to monitor applications using variable frequency drives.

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

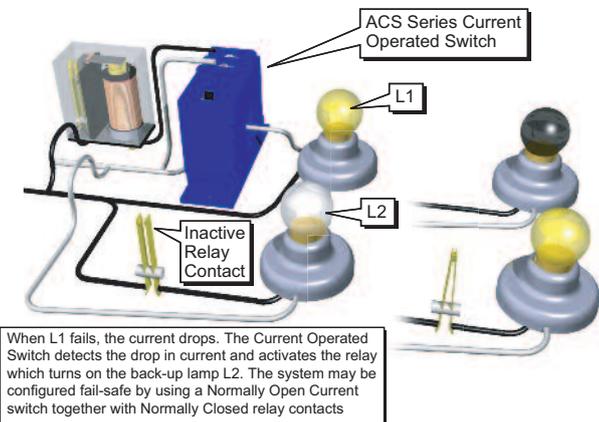
Pump Jam & Suction Loss Protection



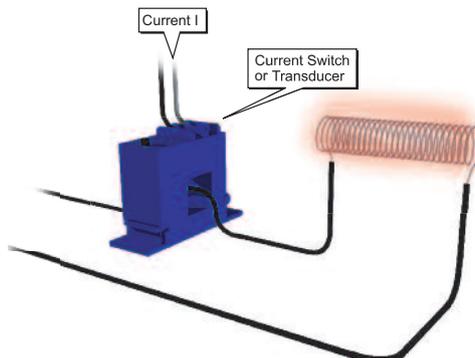
Pump Load Monitoring



Lamp Failure Detection



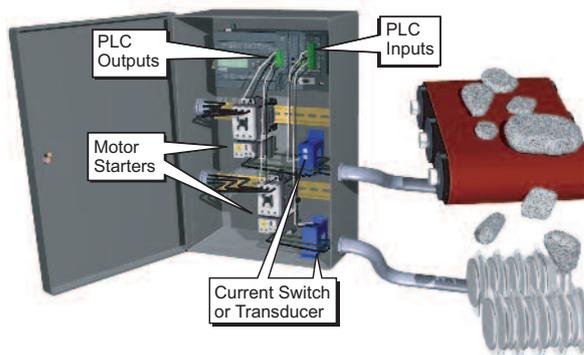
Heater Life Prediction



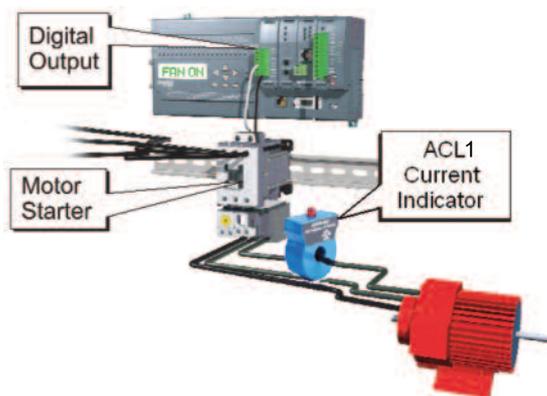
Crusher/Grinder/Shredder Motor Interlocks

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



Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion: Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

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Pneumatics: Tubing

Pneumatics: Air Fittings

Appendix Book 2

Terms and Conditions

ACUAMP[®] ACT Series AC Current Transducers



ACT current transducers combine a current transformer and signal conditioner into a single package. The ACT series has jumper-selectable current input 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. Full-scale input ranges are user-selectable from 2A to 2000A. 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 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

Features

- Five-year warranty
- 4-20 mA or 0-10 VDC outputs
- Use up to 14 AWG copper wire
- 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.
- Selectable input ranges allow end-users to tailor sensing ranges and improves the odds of having the right range for the job.
- Output is magnetically isolated from the input for safety and to eliminate voltage drop.
- Built-in feet with optional 35 mm DIN rail adapter available.

Agency Approvals

UL, cUL, CE approvals accepted worldwide

ACT Series AC Current Transducers				
Part Number	Description	Pcs/Pkg	Wt (lb)	Price
ACT050-10-F	AC current transducer, 0-10 VDC output, fixed core	1	0.30	\$85.50
ACT050-10-S	AC current transducer, 0-10 VDC output, split core	1	0.38	\$95.75
ACT200-10-F	AC current transducer, 0-10 VDC output, fixed core	1	0.30	\$90.75
ACT200-10-S	AC current transducer, 0-10 VDC output, split core	1	0.38	\$99.75
ACT005-42L-F	AC current transducer, 4-20mA output, fixed core	1	0.30	\$73.50
ACT005-42L-S	AC current transducer, 4-20mA output, split core	1	0.35	\$98.75
ACT050-42L-F	AC current transducer, 4-20mA output, fixed core	1	0.30	\$75.50
ACT050-42L-S	AC current transducer, 4-20mA output, split core	1	0.35	\$106.00
ACT200-42L-F	AC current transducer, 4-20mA output, fixed core	1	0.30	\$109.00
ACT200-42L-S	AC current transducer, 4-20mA output, split core	1	0.35	\$116.00
ACT750-42L-F	AC current transducer, 4-20mA output, fixed core	1	2.0	\$180.00
ACT2000-42L-F	AC current transducer, 4-20mA output, fixed core	1	2.0	\$237.00
Accessories				
DRA-2	DIN rail adapters, 1.69"x0.39"x0.75" (43x10x19 mm)	2	0.40	\$3.50

Maximum Input Ranges				
Model	Range	Maximum Input Amps		
		Continuous	6 Sec	1 Sec
ACT005	0 to 2A	80	125	250
	0 to 5A	100	125	250
ACT050	0 to 10A	80	125	250
	0 to 20A	110	150	300
	0 to 50A	175	215	400
ACT200	0 to 100A	200	300	600
	0 to 150A	300	450	800
	0 to 200A	400	500	1000
ACT750	0 to 375A	750	1500	3750
	0 to 500A	750	1500	3750
	0 to 750A	750	1500	3750
ACT2000	0 to 1000A	2000	4000	10k
	0 to 1333A	2000	4000	10k
	0 to 2000A	2000	4000	10k

ACT Series Specifications			
	10 Models	42L Models up to 200A	42L Models 375 to 2000A
Power Supply	Self-powered	24 VDC loop nominal, 40 VDC max	24 VDC nominal; 40 VDC maximum
Output Signal	0 to 10 VDC	4 - 20 mA, Loop-powered	4 - 20 mA, Loop-powered
Output Limit	15 VDC	32 mA	23 mA
Output Load	1M Ω minimum 100 k Ω (add 1.3% to accuracy)	600 Ω maximum @ 24 VDC	600 Ω maximum @ 24 VDC
Accuracy	1% full scale	1% full scale	1% full scale
Response Time (10-90% step change)	100 ms	300 ms	600 ms
Input Ranges	Field selectable from 0 to 200 A		Field selectable from 375 to 2000 A
Sensing Aperture	-F core: 0.74" (19 mm) diameter; -S core: 0.85" (21.6 mm) sq.		3.0" (76.2mm) diameter
Isolation Voltage	UL listed to 1,270VAC. Tested to 5,000 VAC (1 minute max)		600 VAC
Frequency Range (for sinusoidal waveforms)	50 to 60 Hz	20 to 100 Hz	50 to 60 Hz
Case	UL 94V-0 flammability rated		
Environmental	Temperature		
	-4 to 122°F (-20 to 50°C)		
	Humidity		
	0 to 95% RH, non-condensing		
Agency Listings	UL listed 508, UL file E222847, CE approved		

ACUAMP® ACT Series AC Current Transducers

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Motion: Servos and Steppers

Motor Controls

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Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

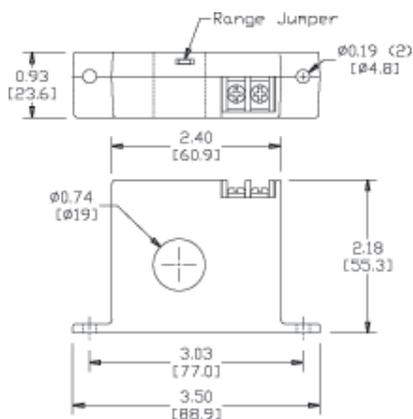
Pneumatics: Air Fittings

Appendix Book 2

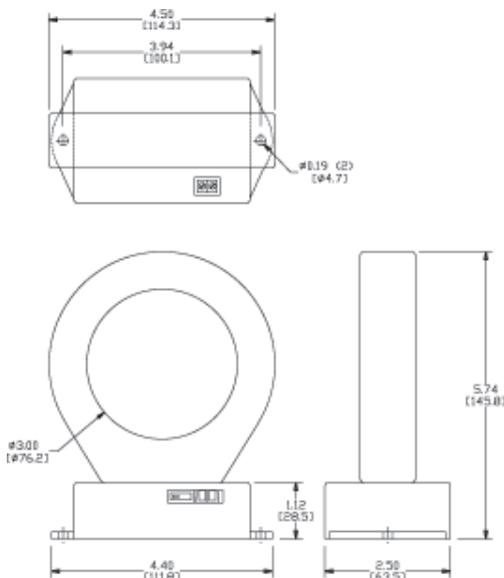
Terms and Conditions

Dimensions

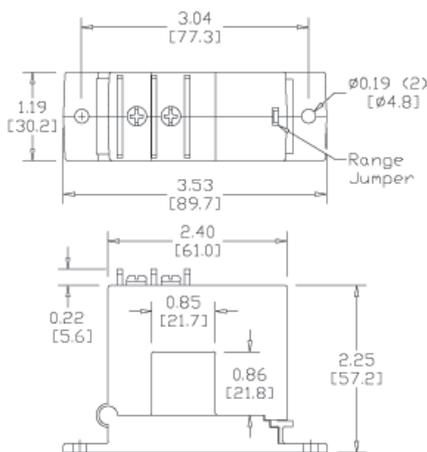
Inches [mm]



ACT Series, 2 to 200 Amp Fixed Core

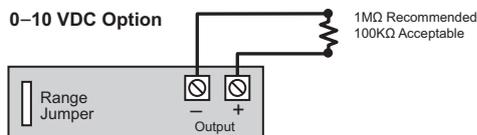
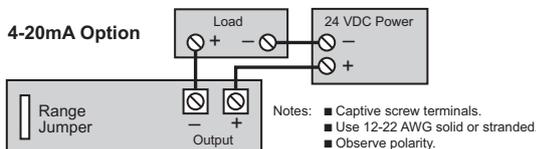


ACT Series, 200 to 2000 Amp Fixed Core



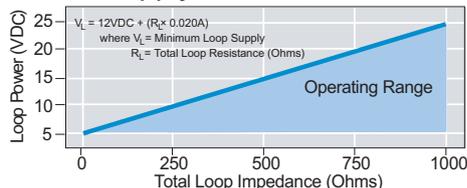
ACT Series, 2 to 200 Amp Split Core

Connections ACT Series, 0 to 200 Amp

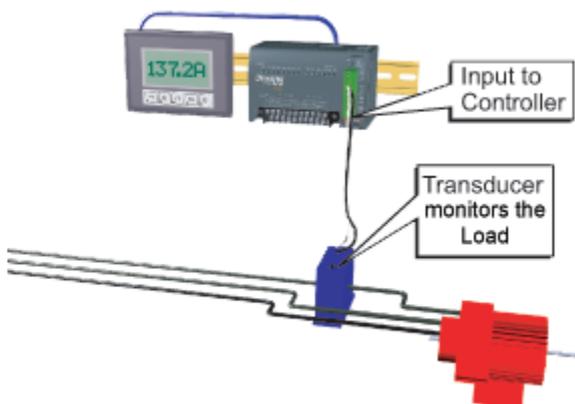
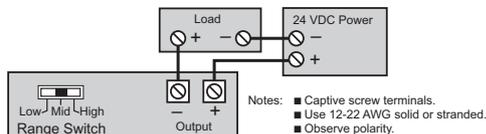


Terminals are #6 screws.

Power Supply (4-20mA output only)



Connections ACT Series, 200 to 2000 Amp





ACTR Series AC Current Transducers



Why use ACTR transducers?

The current waveform of a typical linear load is a pure sine wave. In VFD and SCR applications, however, output waveforms are rough approximations of a sine wave and are non-sinusoidal.

There are numerous spikes and dips in each cycle. 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 nonlinear 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.

Features

- Five-year warranty
- 4-20 mA output only
- True RMS technology is accurate on distorted waveforms such as VFD or SCR outputs.
- Choice of jumper-selectable ranges reduces inventory and eliminates zero and span pots.
- Output is magnetically isolated from the input for safety and eliminates voltage drop.
- Built-in feet with optional 35 mm DIN rail adapter available.

Agency Approvals

UL, cUL, CE approvals accepted worldwide

ACTR Series AC Current Transducers				
Part Number	Description	Pcs/Pkg	Wt (lb)	Price
ACTR005-42L-F	AC current transducer with true RMS, 4-20mA output, fixed core	1	0.30	\$136.00
ACTR005-42L-S	AC current transducer with true RMS, 4-20mA output, split core	1	0.36	\$155.00
ACTR050-42L-F	AC current transducer with true RMS, 4-20mA output, fixed core	1	0.30	\$126.00
ACTR050-42L-S	AC current transducer with true RMS, 4-20mA output, split core	1	0.36	\$157.00
ACTR200-42L-F	AC current transducer with true RMS, 4-20mA output, fixed core	1	0.30	\$128.00
ACTR200-42L-S	AC current transducer with true RMS, 4-20mA output, split core	1	0.36	\$160.00
ACTR750-42L-F	AC current transducer with true RMS, 4-20mA output, fixed core	1	2.00	\$207.00
ACTR2000-42L-F	AC current transducer with true RMS, 4-20mA output, fixed core	1	2.00	\$267.00
Accessories				
DRA-2	DIN rail adapters, 1.69"x0.39"x0.75" (43x10x19 mm)	2	0.40	\$3.50

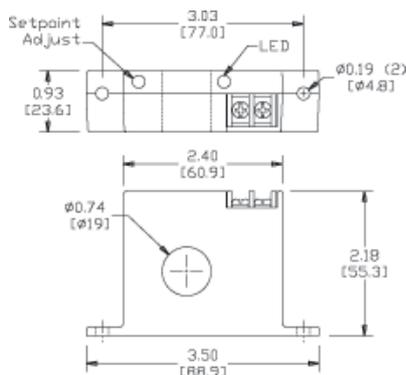
Maximum Input Ranges				
Model	Range	Maximum Input Amps		
		Continuous	6 Sec	1 Sec
ACTR005	0 to 2A	80	125	250
	0 to 5A	100	125	250
ACTR050	0 to 10A	80	125	250
	0 to 20A	110	150	300
ACTR200	0 to 50A	175	215	400
	0 to 100A	200	300	600
ACTR750	0 to 150A	300	450	800
	0 to 200A	400	500	1000
ACTR2000	0 to 375A	750	1500	3750
	0 to 500A	750		
ACTR2000	0 to 750A	750	4000	10 k
	0 to 1000A	2000		
	0 to 1333A	2000		
	0 to 2000A	2000		

ACTR Series Specifications		
	42L Models up to 200 A	42L Models 375 to 2000A
Power Supply	24 VDC nominal, (12 to 40 VDC) Loop-powered	24 VDC nominal, (40 VDC max) Loop-powered
Output Signal	4 -20 mA, loop-powered, true RMS	
Output Limit	23 mA	
Output Load	600 Ω maximum @ 24 VDC	
Accuracy	1% full scale, true RMS	
Response Time (10-90% step change)	600 ms	
Input Ranges	Field selectable from 0 to 200 A	Field selectable from 375 to 2000 A
Sensing Aperture	-F core: 0.74" (19 mm) dia. -S core: 0.85" (21.6 mm) sq.	3.0" (76.2 mm) dia.
Isolation Voltage	UL listed to 1,270VAC. Tested to 5,000 VAC (1 min. max)	UL listed to 600 VAC.
Frequency Range	10 to 400 Hz	
Case	UL 94 V-0 flammability rated	
Environmental	Temperature	-4 to 122°F (-20 to 50°C)
	Humidity	0 to 95% RH, non-condensing
Agency Listings	UL listed 508, UL file E222847, CE approved	

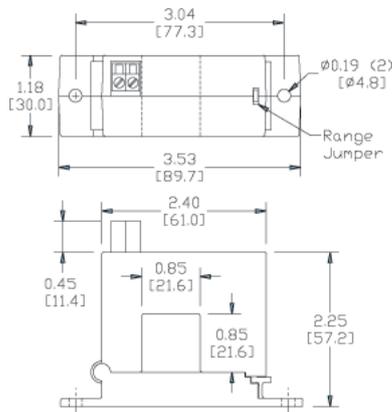
ACTR Series AC Current Transducers

Dimensions

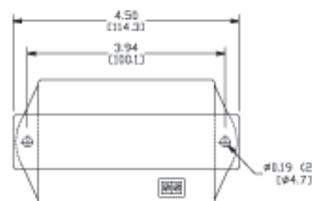
Inches [mm]



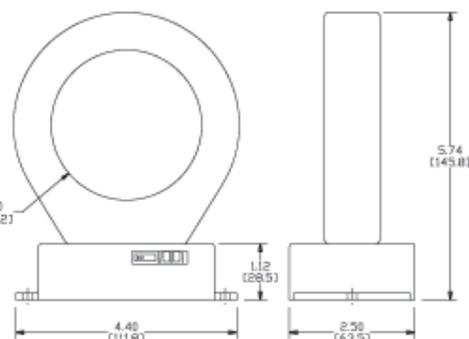
ACTR Series, 2 to 200 Amp Fixed Core



ACTR Series 2, to 200 Amp Split Core

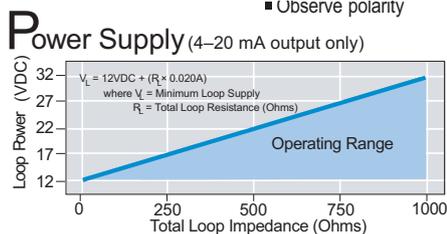
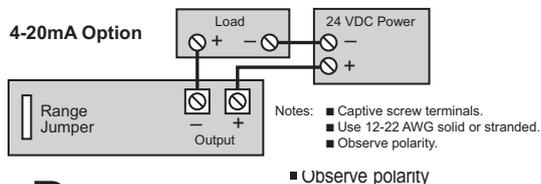


ACTR Series, 200 to 2000 Amp Fixed Core



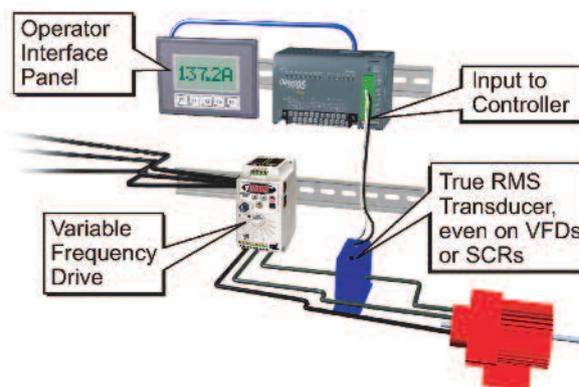
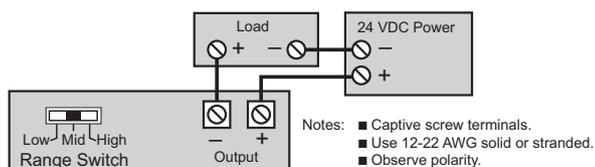
Connections

ACTR Series, 0 to 200 A



Connections

ACTR Series, 200 to 2000 A



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ACUAMP® 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, solid-state outputs, the self-powered ACS150 can be tailored to provide accurate and dependable digital indication of over-current 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

Features

- Five-year warranty
- Choose from:
N.O. 0.15 A @ 240 VAC or VDC or
N.C. 0.20 A @ 135 VAC 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 feet with optional 35 mm DIN rail adapter available.

Agency Approvals

UL, cUL, CE approvals accepted worldwide

ACS150 AC Current Operated Switches				
Part Number	Description	Pcs/Pkg	Wt (lb)	Price
ACS150-AE-F	N.O. AC/DC adjustable current switch in fixed core enclosure	1	0.30	\$63.50
ACS150-AE-S	N.O. AC/DC adjustable current switch in split core enclosure	1	0.35	\$77.50
ACS150-CE-F	N.C. AC/DC adjustable current switch in fixed core enclosure	1	0.30	\$63.50
ACS150-CE-S	N.C. AC/DC adjustable current switch in split core enclosure	1	0.35	\$77.50
Accessories				
DRA-2	DIN rail adapters, 1.69"x0.39"x0.75" (43x10x19 mm)	2	0.40	\$3.50

ACS150 Maximum Input Ranges				
Type	Range - Adjustable	Maximum Input Amps		
		Continuous	6 Sec. max	1 Sec. max
N.O. Fixed Core	1 to 150 A	150	400	1000
N.O. Split Core	1.75 to 150 A	150	400	1000
N.C. Fixed Core	1 to 150 A	150	400	1000
N.C. Split Core	1.75 to 150 A	150	400	1000

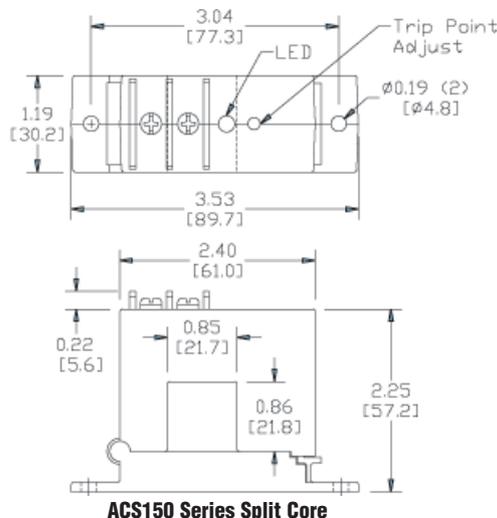
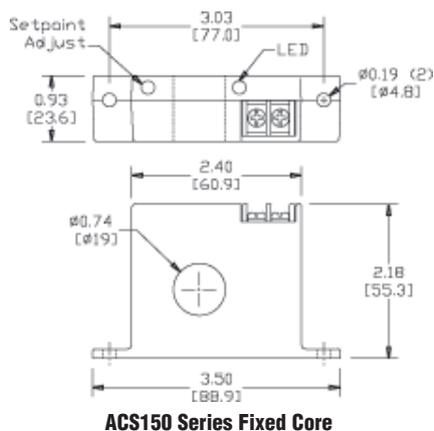
ACS150 Series Specifications		
Power Supply	None - Self-powered	
Output	Isolated solid-state switch	
Output Rating	N.O. 0.15 A @ 240 VAC or VDC N.C. 0.20 A @ 135 VAC or VDC	
Response Time	120 ms	
Off State Leakage	< 10 μ A	
Input Ranges	N.O.: Fixed-core: 1 to 150 A. Split-core: 1.75 to 150 A N.C.: Fixed-core: 1 to 150 A. Split-core: 1.75 to 150 A	
Hysteresis	5% of Setpoint	
Overload (1 second duration)	1,000 A	
Isolation Voltage	UL listed to 1,270VAC. Tested to 5,000 VAC (1 minute max)	
Frequency Range	6 to 100 Hz	
Case	UL 94V-0 flammability rated	
Environmental	Temperature	-58 to 149°F (-50 to 65°C)
	Humidity	0 to 95% RH, non-condensing
Agency Listings	UL listed 508, UL file E222847, CE approved	



ACS150 Series AC Current Switches

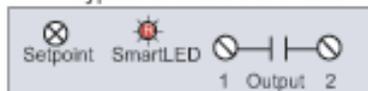
Dimensions

Inches [mm]

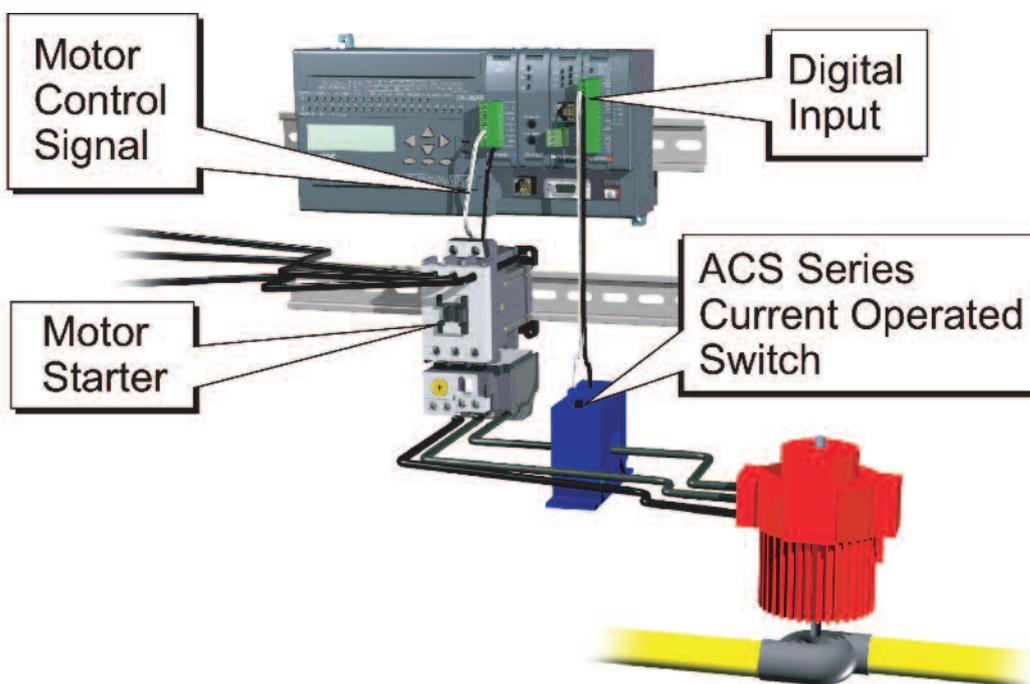
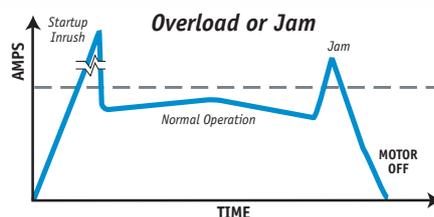
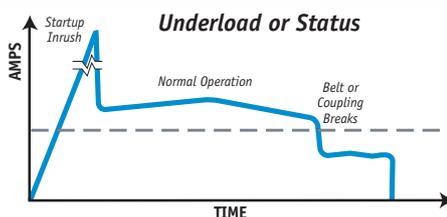


Connections

Typical of Models with LED



Terminals are #6 screws.
Use up to 14 AWG copper wire.



Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion: Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Encoders

Sensors: Limit Switches

Sensors: Current

Sensors: Pressure

Sensors: Temperature

Sensors: Level

Sensors: Flow Switches

Pushbuttons and Lights

Stacklights

Signal Devices

Process

Relays and Timers

Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

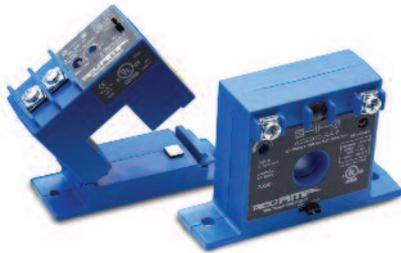
Pneumatics: Air Fittings

Appendix Book 2

Terms and Conditions



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

Features

- Five-year warranty
- N.O./N.C. universal outputs 1A @ 240 VAC or 0.15 A @ 30 VDC.
- 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 feet with optional 35 mm DIN rail adapter available.

Agency Approvals

UL, cUL, CE approvals accepted worldwide.

ACS200 AC Current Operated Switches				
Part Number	Description	Pcs/Pkg	Wt (lb)	Price
ACS200-AA-F	N.O. AC adjustable current switch, fixed core	1	0.40	\$68.50
ACS200-AA-S	N.O. AC adjustable current switch, split core	1	0.40	\$79.50
ACS200-CA-F	N.C. AC adjustable current switch, fixed core	1	0.40	\$68.50
ACS200-CA-S	N.C. AC adjustable current switch, split core	1	0.40	\$79.50
ACS200-AD-F	N.O. DC adjustable current switch, fixed core	1	0.40	\$68.50
ACS200-AD-S	N.O. DC adjustable current switch, split core	1	0.40	\$79.50
ACS200-CD-F	N.C. DC adjustable current switch, fixed core	1	0.40	\$68.50
ACS200-CD-S	N.C. DC adjustable current switch, split core	1	0.40	\$79.50
Accessories				
DRA-2	DIN rail adapters, 1.69"x0.39"x0.75" (43x10x19 mm)	2	0.40	\$3.50

Maximum Input Ranges				
Range Jumper	Range - Fixed Core	Range Split Core	Maximum Input Amps	
			6 Sec max	1 Sec max
NONE	1 to 6 A	1.75 to 6 A	400	600
MID	6 to 40 A	6 to 40 A	500	800
HIGH	40 to 175 A	40 to 200 A	800	1200

Switching Delay			
Delay	LOW Range	MID Range	HIGH Range
ON Delay	0.23 sec max	0.05 sec max	0.03 sec max
OFF Delay	0.02 sec max	0.02 sec max	0.01 sec max
Hysteresis			
	6%	4%	3%

ACS200 Series Specifications	
Power Supply	None - Self-powered
Output	Isolated solid-state switch
Output Rating	N.O./N.C. AC: 1A @ 240 VAC N.O./N.C. DC: 0.15A @ 30 VDC
Response Time	40 - 120 ms
Off State Leakage	< 10 µA
Input Ranges	Jumper selectable: N.O. Fixed core: 1 to 175 A. Split core: 1.75 to 200 A; N.C. Fixed core: 1 to 175 A. Split core: 1.5 to 200 A
Hysteresis	low: 0.15A; mid: 0.3; high: 0.9A
Overload (1 second duration)	low: 600 A; mid: 800 A; high: 1,200 A
Isolation Voltage	UL listed to 1,270VAC. Tested to 5,000 VAC (1 minute max)
Frequency Range	6 to 100 Hz
Case	UL 94V-0 flammability rated
Environmental	Temperature
	Humidity
Agency Listings	UL listed 508, UL file E222847, CE approved

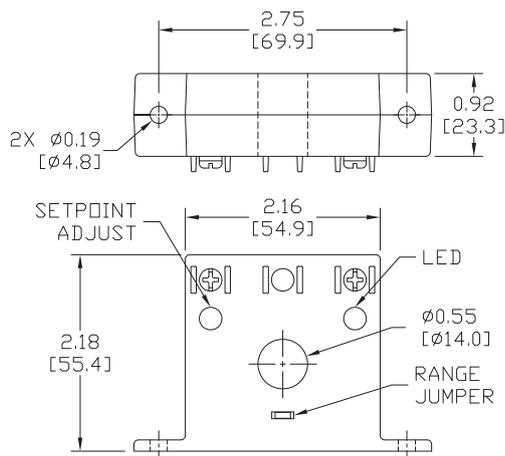
ACS200 Minimum Load	
Part Number	Minimum Load Operating Current
ACS200-AA-F	20 mA
ACS200-AA-S	20 mA
ACS200-CA-F	20 mA
ACS200-CA-S	20 mA
ACS200-AD-F	1 mA
ACS200-AD-S	1 mA
ACS200-CD-F	1 mA
ACS200-CD-S	1 mA



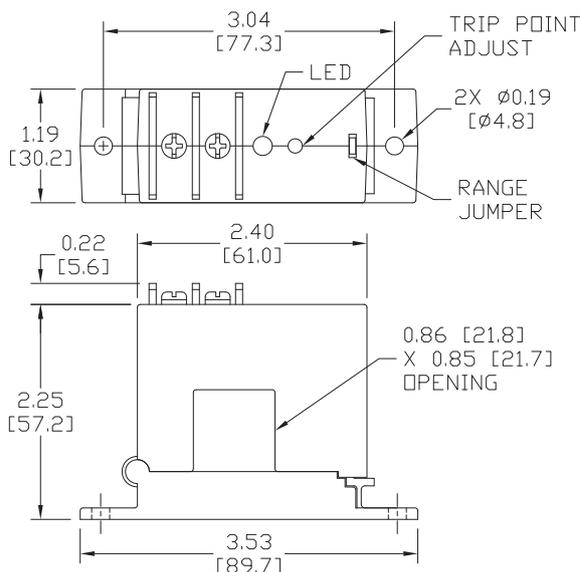
ACS200 Series AC Current Switches

Dimensions

Inches [mm]

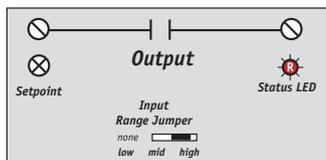


ACS200 Series Fixed Core

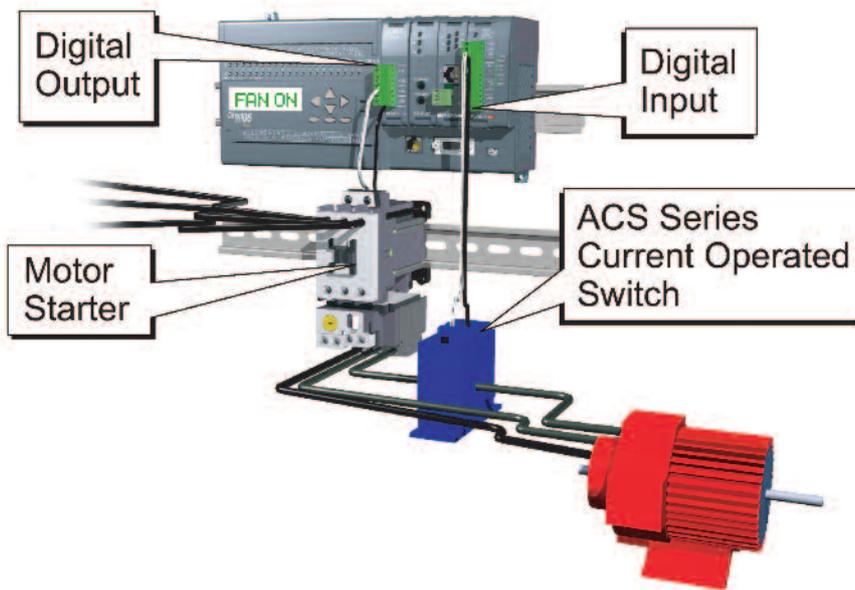
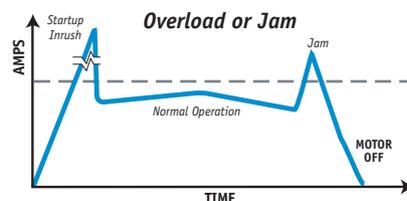
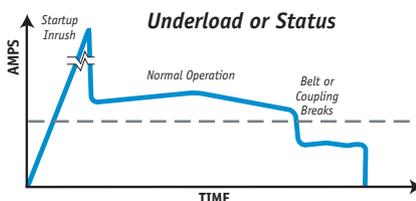


ACS200 Series Split Core

Connections



Terminals are #6 screws
Use up to 14 AWG copper wire



Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion: Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Encoders

Sensors: Limit Switches

Sensors: Current

Sensors: Pressure

Sensors: Temperature

Sensors: Level

Sensors: Flow Switches

Pushbuttons and Lights

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Signal Devices

Process

Relays and Timers

Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

Appendix Book 2

Terms and Conditions



ACSX Series AC Current Switches



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

Applications

Motor Protection

- Serves as an electronic proof-of-operation; detects current draw changes in motors when they encounter problems such as pumps running dry or impending bearing failure
- Non-intrusive; less expensive to install than differential pressure flow sensors or thermal switches
- Much quicker response time than Class 10 overload relays

High Inrush or Temporary Overload Current

- Adjustable start-up/delay timer allows 0-15 second delay to eliminate nuisance trips from high inrush or short overload conditions

Features

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

- Five-year warranty
- Potentiometer adjustable start-up/delay timer is field-adjustable from 0.2 to 15 seconds to eliminate nuisance alarms caused by start-up inrush or temporary overcurrent conditions.
- Choice of N.O./N.C. AC or AC/DC outputs: Contact ratings of 1.0A @ 240 VAC or universal outputs of 0.15A @ 240 VAC/VDC for use with most standard motor control systems.
- Improved ease of installation and use:
 - 1.0A rating eliminates need for time delay relay
 - Self-powered, split-core models simplify installation
 - Status LED provides visual indication of setpoint trip and contact action
- Industrial grade performance - constant hysteresis and linear setpoint response for greater accuracy
- Built-in feet with optional 35 mm DIN rail adapter available.

Agency Approvals

UL, cUL listed
CE approval pending

ACSX AC Current Operated Switches				
Part Number	Description	Pcs/Pkg	Wt (lb)	Price
ACSX200-AA-S	N.O. AC adjustable current switch, split core	1	0.40	\$92.75
ACSX200-CA-S	N.C. AC adjustable current switch, split core	1	0.40	\$92.75
ACSX200-AE-F	N.O. AC/DC adjustable current switch, fixed core	1	0.30	\$79.50
ACSX200-AE-S	N.O. AC/DC adjustable current switch, split core	1	0.40	\$89.75
ACSX200-CE-F	N.C. AC/DC adjustable current switch, fixed core	1	0.30	\$79.50
ACSX200-CE-S	N.C. AC/DC adjustable current switch, split core	1	0.40	\$89.75
Accessories				
DRA-2	DIN rail adapters, 1.69"x0.39"x0.75" (43x10x19 mm)	2	0.40	\$3.50

ACSX Series Specifications	
Power Supply	None - Self-powered
Output	Isolated solid-state switch
Output Rating	N.O./N.C. AC: 1A @ 240 VAC; N.O. AC/DC: 0.15 A @ 240 VAC/VDC N.C. AC/DC: 0.20 A @ 135 VAC/VDC
Response Time	Adjustable 0.2 to 15 seconds
Off State Leakage	< 10 µA
Input Ranges	Jumper Selectable: N.O. Fixed core: 1.5 to 175 A N.O. Split core: 2 to 200 A N.C. Fixed core: 1.5 to 200 A N.C. Split core: 2 to 200 A
Hysteresis	5% constant
Overload (1 second duration)	1.5 to 12 A Range: 600 A; 12 to 55 A Range: 800 A; 50 to 200 A Range: 1200 A
Isolation Voltage	UL listed to 1,270VAC. Tested to 5,000 VAC (1 minute max)
Frequency Range	50 to 100 Hz
Case	UL 94V-0 flammability rated
Environmental	Temperature
	Humidity
Agency Listings	UL listed 508, UL file E222847, CE approval pending

Type	Range - Adjustable	Maximum Input Amps		
		Continuous	6 Sec max	1 Sec max
N.O. Fixed Core	1.5-175 A	200	400	1000
N.O. Split Core	2-200 A	200	400	1000
N.C. Fixed Core	1.5-175 A	200	400	1000
N.C. Split Core	2-200 A	200	400	1000

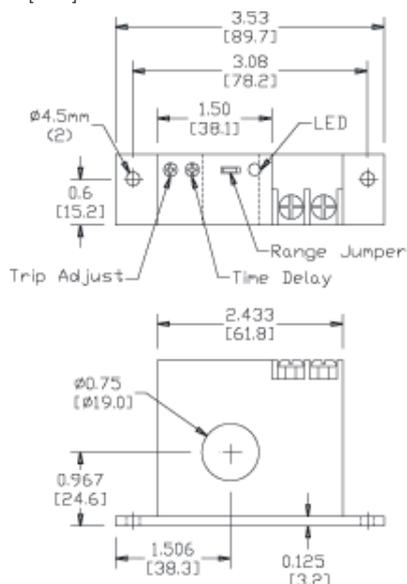
ACSX200 Minimum Load	
Part Number	Minimum Load Operating Current
ACSX200-AE-F	**
ACSX200-AE-S	**
ACSX200-CE-F	150
ACSX200-CE-S	150
ACSX200-AA-F	20 mA
ACSX200-AA-S	20 mA
ACSX200-CA-S	20 mA

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

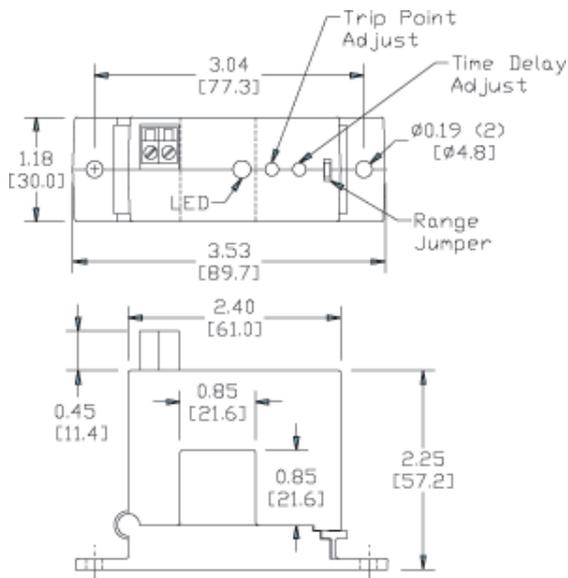
ACSX Series AC Current Switches

Dimensions

Inches [mm]

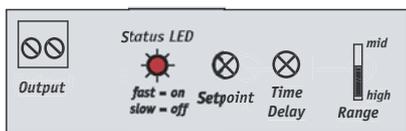


ACSX Series Fixed Core

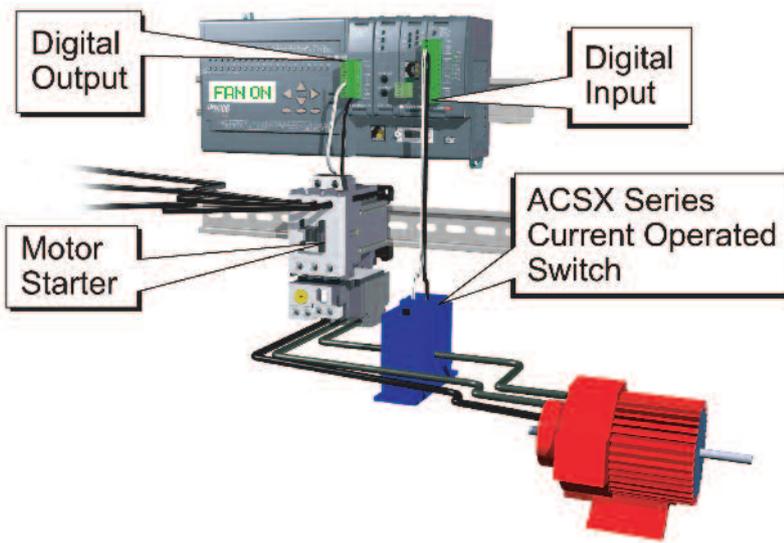
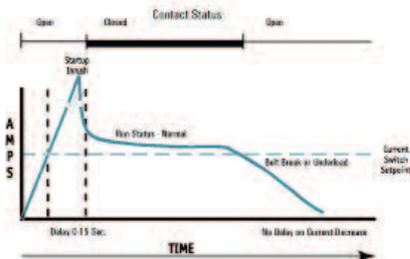
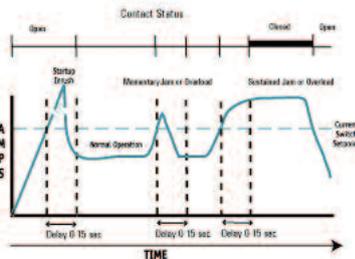


ACSX Series Split Core

Connections



Use up to 14 AWG copper wire





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

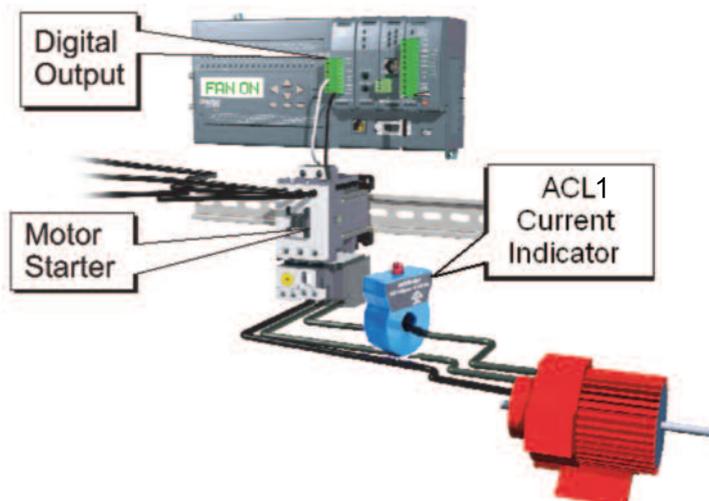
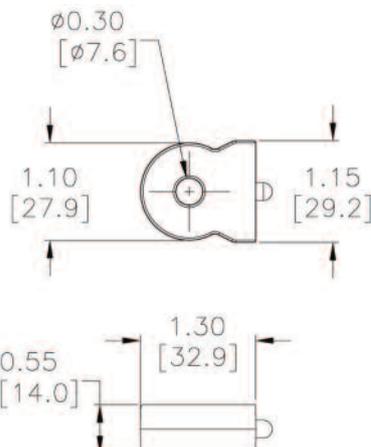
- Five-year warranty
- **Low Sensitivity Turn-On Point:** Detect currents as low as 0.5A with a single conductor pass. Eliminates the need to wrap conductors multiple times to increase sensitivity.
- **High Visibility Flashing LED:** Flashing LEDs perform better in daylight conditions and from multiple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

Agency Approvals

UL 508 listed
RoHS Compliant

ACL1 AC Current Indicator				
Part Number	Description	Pcs/Pkg	Wt (lb)	Price
\$12.00	AC Current Indicator, 0.5–100A, red flashing LED	1	0.3	\$85.50
Specifications				
Sensed Current	AC, 50–400 Hz			
Output/Indication	LED (flashing, red)			
Indicating Range	0.5–100A			
LED ON	>500 mA (factory set)			
Case	UL94-V0 Flammability Rated			
Mounting	Slides directly onto monitored conductor (can be attached with the supplied wire-tie)			
Isolation Voltage	3KV (monitored line to output)			
Environmental	Temperature	-58 to 122 °F [-50 to 50 °C]		
	Humidity	0–95% RH, non-condensing		
Sensing Aperture	0.30" (7.6 mm) dia.			
Agency Listing	UL 508 Listed File #: E222847; RoHS Compliant			

Dimensions (in [mm])





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, current switches, and ground fault sensors, all designed in a rugged industry standard feed-through package.

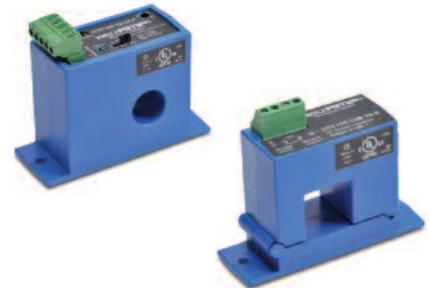
DCT and DCS100 series have multiple input ranges (set by movable jumpers) for maximum flexibility across many current ratings. DCT series include output choices of 4 to 20 mA or +/-10 VDC bidirectional models.

DCS series outputs are available in isolated solid state Normally Open and in Single Pole Double Throw (SPDT) relay configurations.

DCT 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 is available in a solid-core case with choice of relay or a universal solid-state output.

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



acuAMP DC Specifications		
Specifications	Transducer	Switch
Model	DCT	DCS100
Power Supply	20-45 VDC, 22-38 VAC	20-28 VAC/VDC
Power Consumption	2VA	2VA
Setpoints	Jumper Selectable	11-Turn Potentiometer
Output Signal	4-20 mA Sourcing +/- 10 VDC (Bidirectional models only)	N/A
Output Limit	4-20 mA: 23 mA 0-10 VDC: 11.5 VDC	N/A
Output Loading	4-20 mA: 500 Ω max 0-10 VDC: 50 KΩ min.	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 @ 240 VAC 3A Inductive @ 240 VAC 3A @ 30 VDC 1/8 HP @ 240 VAC
Off State Leakage	N/A	AE: <10 μA 1C: None
Accuracy	F core: 1% FS, S core: 2% FS	N/A
Current Ranges	DCT100-42: 0-50 A, 0-75 A, 0-100 A DCT200-42: 0-100 A, 0-150 A, 0-200 A DCT400-42: 0-200 A, 0-300 A, 0-400 A DCT100-10B: 0-100 A Bidirectional DCT200-10B: 0-200 A Bidirectional DCT300-10B: 0-300 A Bidirectional	5-15, 10-50 and 20-100 A, Jumper Selectable
Repeatability	1.0% FS	0.5% FS
Response Time	F core: 20 ms (to 90% of step change) S core: 100 ms (to 90% of step change)	100 ms (10% above setpoint), 20 ms (100% above setpoint)
Hysteresis Approx	N/A	5% of setpoint
Linearity	0.75% FS	N/A
Isolation Voltage	3KV (monitored line to output)	3KV
Frequency Range	DC	DC
Case	UL 94V-0 Flammability Rated Thermoplastic	UL 94V-0 Flammability Rated
Environmental	-4 to 122 °F (-20 to 50 °C) operating temp., 0-95% RH, Non-condensing humidity	AE = -40 to 140 °F (-40 to 60 °C) solid state output operating temp., 0-95% RH, Non-condensing humidity 1C = -4 to 122 °F (-20 to 50 °C) relay output operating temp., 0-95% RH, Non-condensing humidity
Sensing Aperture	F core: 0.75" (19.1 mm) dia. S core: 0.85" (21.6 mm) sq	0.75" (19.1 mm) dia.
Listings	UL 508 Listed, File #: E222847, CE	UL 508 Listed, File #: E222847, CE

Company
Information

Drives

Soft Starters

Motors

Power
TransmissionMotion: Servos
and Steppers

Motor Controls

Sensors:
ProximitySensors:
PhotoelectricSensors:
EncodersSensors:
Limit SwitchesSensors:
CurrentSensors:
PressureSensors:
TemperatureSensors:
LevelSensors:
Flow SwitchesPushbuttons
and Lights

Stacklights

Signal
Devices

Process

Relays and
TimersPneumatics:
Air PrepPneumatics:
Directional Control
ValvesPneumatics:
CylindersPneumatics:
TubingPneumatics:
Air FittingsAppendix
Book 2Terms and
Conditions

ACUAMP® DC Current Switches and Transducers Applications

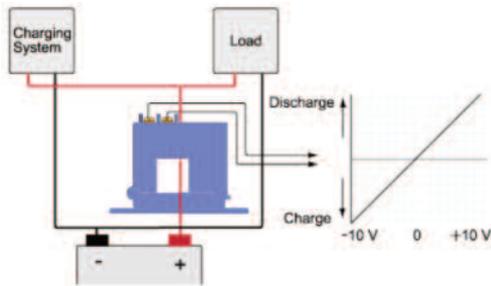
Application Guide

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.

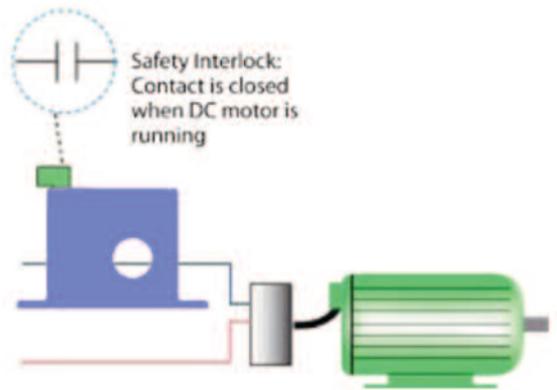
The bi-directional models allow the monitoring of batteries while they are being charged or consumed and can be used to trigger a warning if critical low levels are reached. They can also monitor the output of a photovoltaic array to make sure there is enough energy being generated to keep the process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

Transducer

Battery Charging System - Bidirectional Output

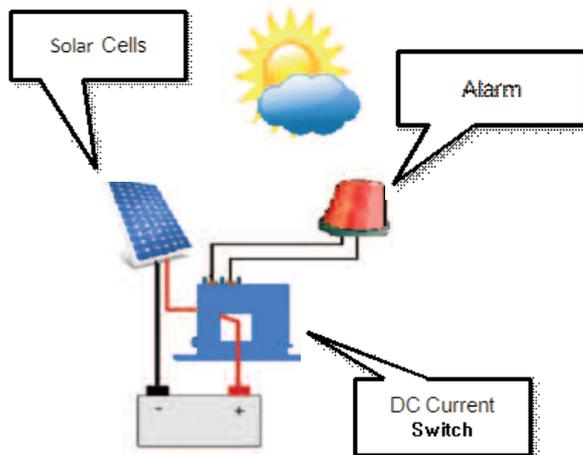


Failure Detection



Switches

Solar Panel - Current Drop



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



Applications

Battery Banks

- Monitor load current
- Monitor charging current
- Verifies operation

Transportation

- Measures traction power or auxiliary loads

Electric Heating Elements

- Monitors heater loads
- Faster response than temperature sensors

Features

- Five-year warranty
- 4-20 mA or +/-10 VDC outputs
- Use up to 14 AWG copper wire
- Built-in mounting feet with optional 35 mmDIN 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.

DCT Current Transducers combine a Hall effect sensor and signal conditioner into a single package for use in DC current applications up to 400A. The DCT series has jumper-selectable 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.

Agency Approvals

- UL 508 and CE

DCT Series DC Current Transducers

Part Number	Description	Pcs/Pkg	Wt (lb)	Price
DCT100-42-24-F	DC Current Transducer, Fixed-core, 0-50, 0-75, 0-100A, 4-20mA, 24VAC/DC	1	0.35	\$117.00
DCT200-42-24-F	DC Current Transducer, Fixed-core, 0-100, 0-150, 0-200A, 4-20mA, 24VAC/DC	1	0.35	\$117.00
DCT100-42-24-S	DC Current Transducer, Split-core, 0-50, 0-75, 0-100A, 4-20mA, 24VAC/DC	1	0.45	\$154.00
DCT200-42-24-S	DC Current Transducer, Split-core, 0-100, 0-150, 0-200A, 4-20mA, 24VAC/DC	1	0.45	\$154.00
DCT400-42-24-S	DC Current Transducer, Split-core, 0-200, 0-300, 0-400A, 4-20mA, 24VAC/DC	1	0.45	\$154.00
DCT100-10B-24-S	DC Current Transducer, Split-core, Bidirectional 100A, +/-10VDC, 24VAC/DC	1	0.45	\$177.00
DCT200-10B-24-S	DC Current Transducer, Split-core, Bidirectional 200A, +/-10VDC, 24VAC/DC	1	0.45	\$177.00
DCT300-10B-24-S	DC Current Transducer, Split-core, Bidirectional 300A, +/-10VDC, 24VAC/DC	1	0.45	\$177.00
Accessories				
DRA-2	DIN rail adapters, 1.69"x0.39"x0.75" (43x10x19 mm)	2	0.40	\$3.50

DCT Series Specifications

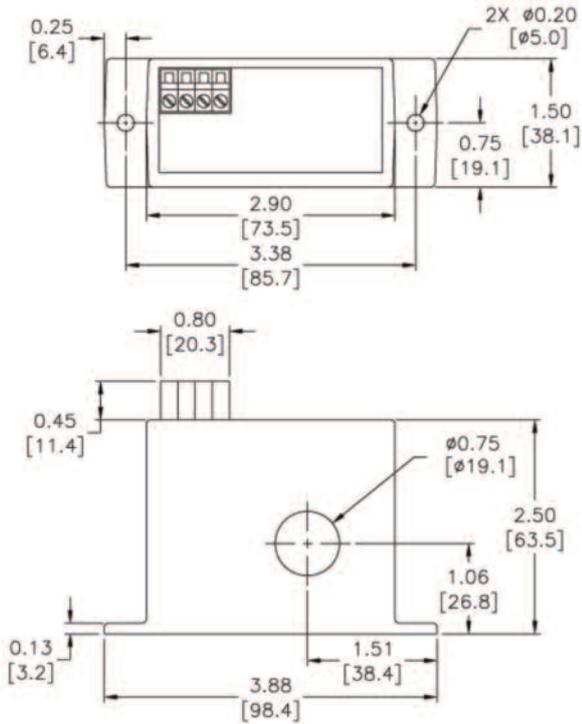
Models Available	10B	42
Power Supply	20-45 VDC, 22-38 VAC	20-45 VDC, 22-38 VAC
Power Consumption	2VA	2VA
Output Signal	+/-10 VDC	4-20 mA sourcing
Output Load	50 kΩ minimum	500 Ω maximum
Output Limit	11.5 VDC	23 mA
Accuracy	Split-core: 2% FS	Fixed-core: 1% FS Split-core: 2% FS
Response Time	Split-core: 100 ms	Fixed-core: 20 ms Split-core: 100 ms
Repeatability	1.0% FS	1.0% FS
Input Ranges	Jumper selectable from 0 to 300 A	Jumper selectable from 0 to 400 A
Linearity	0.75% FS	0.75% FS
Sensing Aperture	Split-core: .85" (21.6 mm) sq.	Fixed-core: .75" (19.1 mm) dia. Split-core: .85" (21.6 mm) sq.
Isolation Voltage	3KV (monitored line to output)	3KV (monitored line to output)
Frequency Range	DC	DC
Case	UL 94V-0 Flammability Rated	UL 94V-0 Flammability Rated
Environmental	Temperature	-4 to 122 °F (-20 to 50 °C)
	Humidity	0-95% RH, non-condensing
Agency Listings	UL 508 Listed File #: E129625, CE	UL 508 Listed File #: E129625, CE

ACUAMP® DCT Series DC Current Transducers

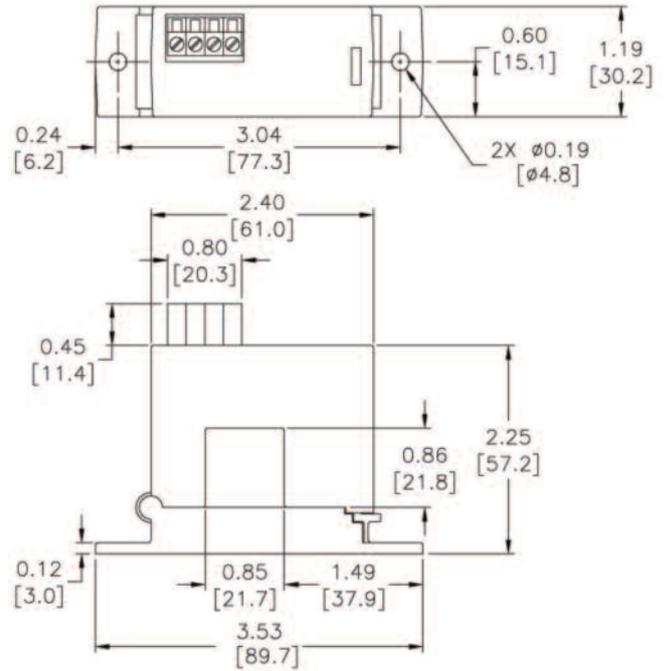
Dimensions

Inches [mm]

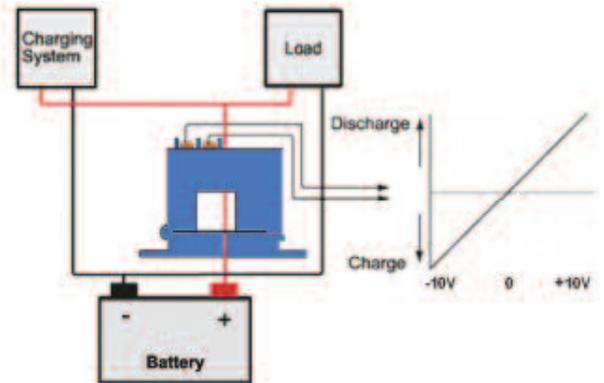
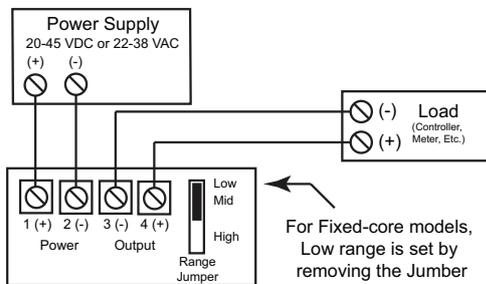
Fixed-Core



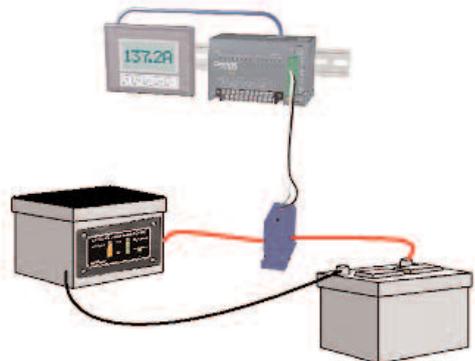
Split-Core



Connections



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





DCS100 Series DC Current Switches

Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion: Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Encoders

Sensors: Limit Switches

Sensors: Current

Sensors: Pressure

Sensors: Temperature

Sensors: Level

Sensors: Flow Switches

Pushbuttons and Lights

Stacklights

Signal Devices

Process

Relays and Timers

Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

Appendix Book 2

Terms and Conditions



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

- Five-year warranty
- 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.

Agency Approvals

- UL 508 File #: E222847, CE

DCS100 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 jumper-selectable current input ranges and your choice of Normally Open Solid-State or SPDT Relay outputs. This series is available in fixed-core models only.

DCS100 Series DC Current Switches				
Part Number	Description	Pcs/Pkg	Wt (lb)	Price
DCS100-AE-24-F	DC Current Switch, Fixed-core, 5-15, 10-50, 20-100A, N.O. AC/DC, 24VAC/DC	1	0.35	\$90.00
DCS100-1C-24-F	DC Current Switch, Fixed-core, 5-15, 10-50, 20-100A, SPDT RELAY, 24VAC/DC	1	0.35	\$93.00
Accessories				
DRA-2	DIN rail adapters, 1.69"x0.39"x0.75" (43x10x19 mm)	2	0.40	\$3.50

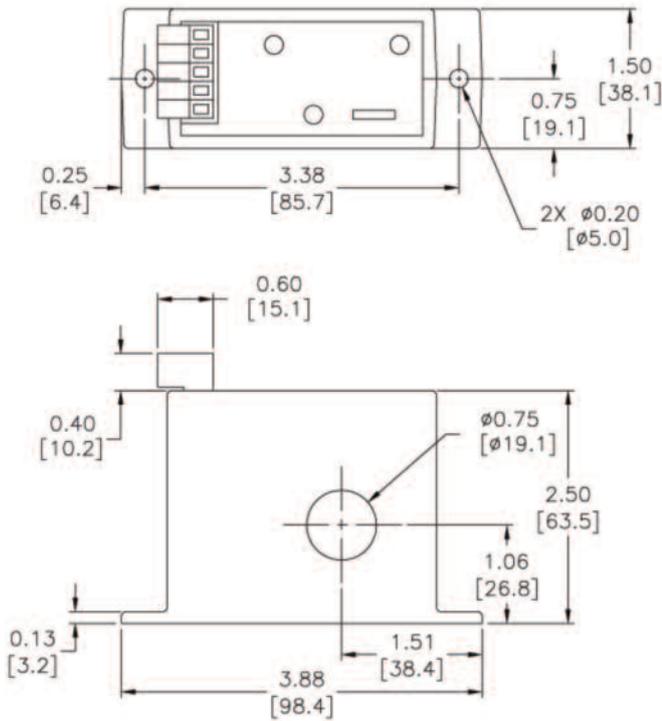
Ranges and Maximum Amps			
JUMPER POSITION	RANGE	MAXIMUM INPUT AMPS	
		CONTINUOUS	5 Seconds
LOW	5-15 A	200 A	300 A
MID	10-50 A	200 A	300 A
HIGH	20-100 A	200 A	300 A

DCS100 Series Specifications		
Models Available	AE	1C
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)	<ul style="list-style-type: none"> • SPDT (Form C) Relay • 5A General Purpose @ 240 VAC • 3A Inductive @ 240 VAC • 3A @ 30 VDC • 1/8 HP @ 240 VAC
Off State Leakage	<10 µA	None
Response Time	100 ms (10% above setpoint), 20 ms (100% above setpoint)	100 ms (10% above setpoint), 20 ms (100% above setpoint)
Hysteresis Approx	5% of setpoint	5% of setpoint
Repeatability	0.5 %	0.5%
Input Ranges	5-15, 10-50 and 20-100 A, Jumper Selectable	5-15, 10-50 and 20-100 A, Jumper Selectable
Setpoint 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
Environmental	Temperature	-40 to 140 °F (-40 to 60 °C) Operating Temperature
	Humidity	0-95% RH, non-condensing humidity
Agency Listings	UL 508 File #: E222847, CE	UL 508 File #: E222847, CE

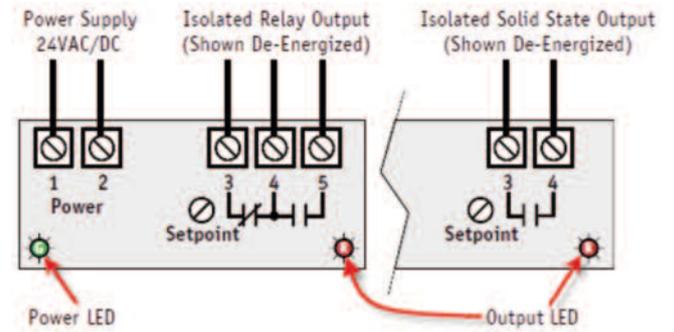
ACUAMP® DCS100 Series DC Current Switches

Dimensions

Inches [mm]



Connections





GFS Series AC Ground Fault Sensors



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.

Features

- **Five-year warranty**
- **Wide Range of Options:** Mechanical relay outputs with Auto or Manual reset. Use up to 14 AWG copper wires.
- **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 35 mm DIN rail adapter available.
- **Not compatible with VFD or SCR Outputs**

Agency Approvals

- UL 1053, CE

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 jumper-selectable setpoints of 5, 10 or 30 mA. This series is available in fixed-core models only.

GFS Series Ground Fault Sensors					
Part Number	Description	Pcs/Pkg	Wt (lb)	Price	
GFS30-M1A-24-F	Ground Fault Sensor, SPST-N.O., Manual Reset, 5/10/30 mA Trip, 24VAC/DC	1	0.5	\$200.00	
GFS30-M1B-24-F	Ground Fault Sensor, SPST-N.C., Manual Reset, 5/10/30 mA Trip, 24VAC/DC	1	0.5	\$200.00	
GFS30-D1C-24-F	Ground Fault Sensor, SPDT De-energized Auto Reset, 5/10/30 mA Trip, 24VAC/DC	1	0.5	\$136.00	
GFS30-E1C-24-F	Ground Fault Sensor, SPDT Energized Auto Reset, 5/10/30 mA Trip, 24VAC/DC	1	0.5	\$145.00	
GFS30-M1A-120A-F	Ground Fault Sensor, SPST-N.O., Manual Reset, 5/10/30 mA Trip, 120VAC	1	0.5	\$200.00	
GFS30-M1B-120A-F	Ground Fault Sensor, SPST-N.C., Manual Reset, 5/10/30 mA Trip, 120VAC	1	0.5	\$200.00	
GFS30-D1C-120A-F	Ground Fault Sensor, SPDT De-energized Auto Reset, 5/10/30 mA Trip, 120VAC	1	0.5	\$136.00	
GFS30-E1C-120A-F	Ground Fault Sensor, SPDT Energized Auto Reset, 5/10/30 mA Trip, 120VAC	1	0.5	\$145.00	
Accessories					
DRA-2	DIN rail adapters, 1.69"x0.39"x0.75" (43x10x19 mm)	2	0.40	\$3.50	

GFS Series Specifications		
Models Available	24-F	120A-F
Power Supply	24 VAC/DC (20.4-27.6 VAC or 19.2-30 VDC)	120 VAC (66-132 VAC), 50/60 Hz
Monitored Circuit	1500 VAC max, 50-400 Hz	1500 VAC max, 50-400 Hz
Output Signal	SPST or SPDT	SPST or SPDT
Output Rating	Manual: SPST Relay, 1A @ 125 VAC, 2A @ 30 VDC, Auto: SPDT Relay, 1A @ 125 VAC, 2A @ 30 VDC	Manual: SPST Relay, 1A @ 125 VAC, 2A @ 30 VDC, Auto: SPDT Relay, 1A @ 125 VAC, 2A @ 30 VDC
Off State Leakage	None	None
Power Consumption	2.5VA max	2.5VA max
Setpoints	5, 10 and 30 mA jumper select	5, 10 and 30 mA jumper select
Response Time	200 ms @ 50% above setpoint	200 ms @ 50% above setpoint
Sensing Aperture	0.75" (19.1 mm) diameter	0.75" (19.1 mm) diameter
Isolation Voltage	5KV (tested)	5KV (tested)
Frequency Range	50-400 Hz	50-400 Hz
Case	UL 94V-0 Flammability Rated	UL 94V-0 Flammability Rated
Environmental	Temperature	-4 to 122 °F (-20 to 50 °C) Operating Temperature
	Humidity	0-95% RH, non-condensing humidity
Agency Listings	UL 1053 File #: E343037, CE	UL 1053 File #: E343037, CE

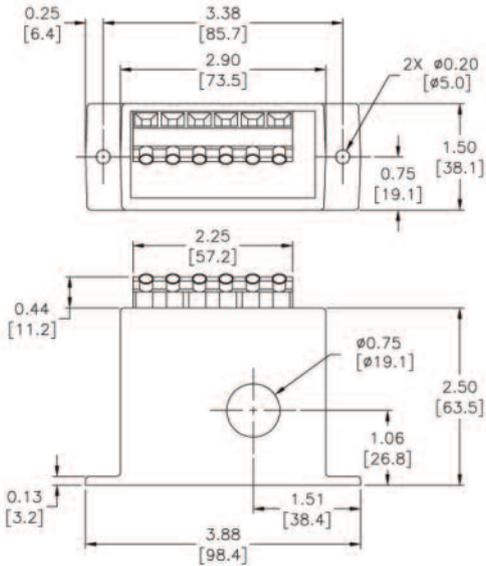


GFS Series AC Ground Fault Sensors

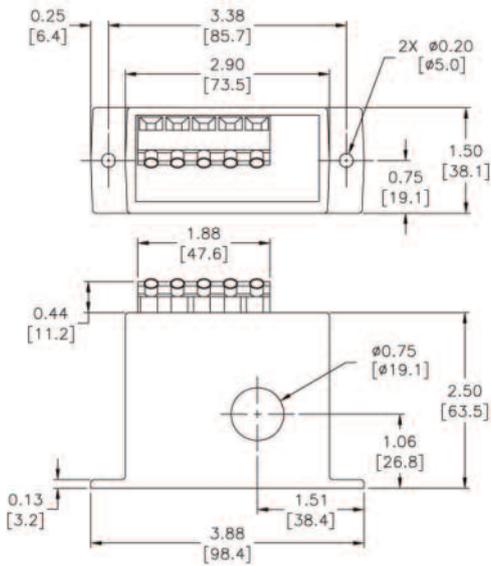
Dimensions

Inches [mm]

M1A and M1B Models

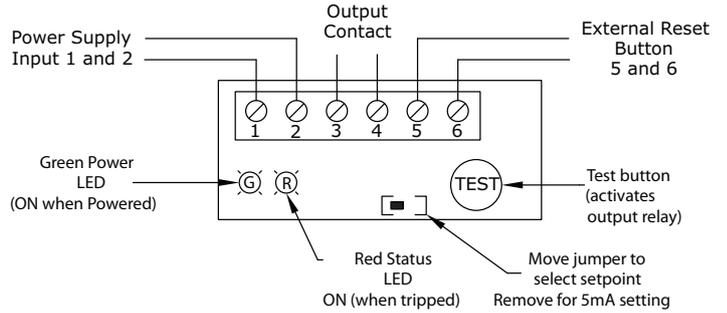


D1C and E1C Models

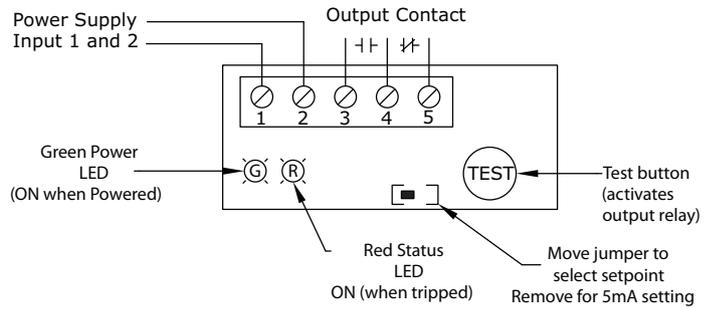


Connections

M1A and M1B Models



D1C and E1C Models



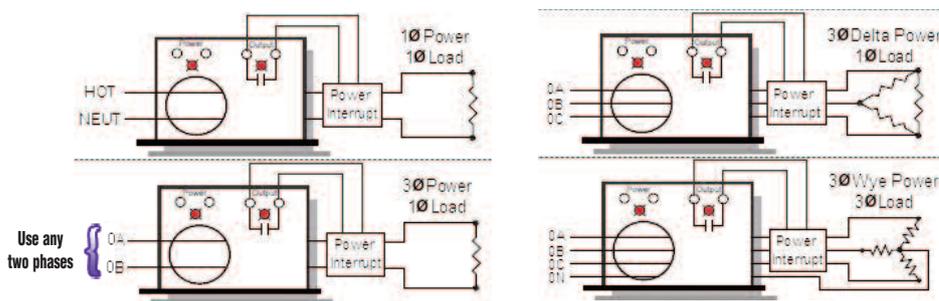
ACUAMP® Ground Fault Sensors Operation and Applications

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.



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

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

Normally De-energized Models (D1C)

- Used to detect ground faults

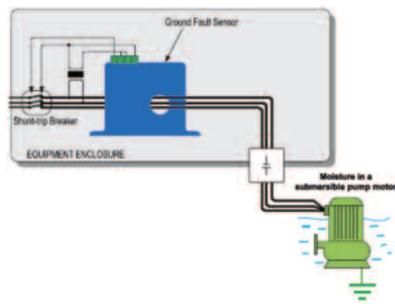
	NO POWER		CONTROL POWER APPLIED			
	Output	LED	No Fault		Fault Detected	
N.C.	Closed	OFF	Closed	OFF	Open	ON
N.O.	Open	OFF	Open	OFF	Closed	ON

Manual Reset Sensors

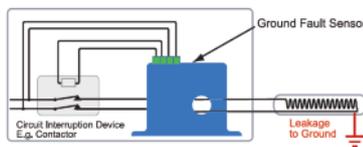
GFS Manual Reset Sensors monitor all current carrying conductors and will trip when a ground fault is sensed. When the output of these sensors trips it will latch in the tripped position even after the ground fault is cleared. If control power is removed, the sensor remains in its last output state. To reset the sensor, the ground fault condition must be removed and a momentary dry contact closed at the reset terminals (5 and 6).

- Models with M1A suffix: The contact is normally open with no ground fault condition, and closed when a ground fault is sensed.
- Models with M1B suffix: The contact is normally closed with no ground fault condition, and open when a ground fault is sensed.

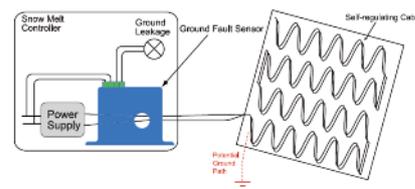
Pump Seal Failure



Insulation Breakdown Monitoring



Snow Melting or Soil Warming System



Build your control system for less!

with our everyday low prices on high-quality components

From cable to wire duct ...

Flexible **multi-conductor control cable** is suitable for wet and dry locations, and is resistant to sunlight, oil and moisture penetration.

- Conductor sizes from 18 to 10 gauge
- 3 to 41 unshielded conductors
- Available in 100, 250, 500 and 1,000-foot reels
- UL and CSA approved, RoHS compliant

Heavy-duty **multi-wire connectors** quickly and reliably connect wiring in applications such as machinery, robots, and control and signal circuits.

- Build custom connectors from components
- 3 to 108-pin configurations
- 3A to 32B sizes
- Bulkhead or surface mount housings with standard or automatic covers

Keep your wiring in order with Iboco rigid or flexible **wire duct** in a choice of styles and colors.

- Standard or thin finger slotted styles, and solid duct for special applications
- Standard duct in gray, blue and black
- Sold per 2-meter piece for convenience or in cost-saving multi-packs

Multi-Conductor Control Cable

100-foot reels start at: **\$50.00**
(V40166-100)



Wire Duct

starting at: **\$12.00**
(single piece) or **\$184.00**
(20-piece pack)



Multi-Wire Connectors

All components sold separately



Also Available

Enclosures



Wiring Devices



Terminal Blocks



Tools



Cat5e Cables



Field Wireable Connectors



Cable Ties & Accessories



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