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 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.

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**

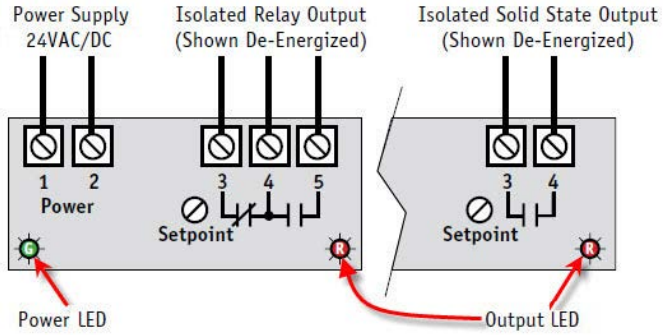
DCS100 Series DC Current Switches				
Part Number	***Description***	***Pcs/Pkg***	***Wt (lb)***	***Price***
DCS100-AE-24-F	AcuAMP DC current switch, fixed core, 5-15, 10-50, or 20-100A selectable sensing range, 5-100A adjustable trip point, 11-turn potentiometer, solid state switch, N.O. output, 0.15A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

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

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)	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), 20ms (100% above setpoint)	100ms (10% 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
Environmental	Operating Temperature: -40 to 140°F [-40 to 60°C]	Operating Temperature: -4 to 122°F [-20 to 50°C]
	Relative Humidity: 0-95% RH, non-condensing	
	Pollution Degree 2	
	Altitude to 2000 meters	
Certifications	cULus listed (E222847), CE	

DCS100 Series DC Current Switches

Wiring



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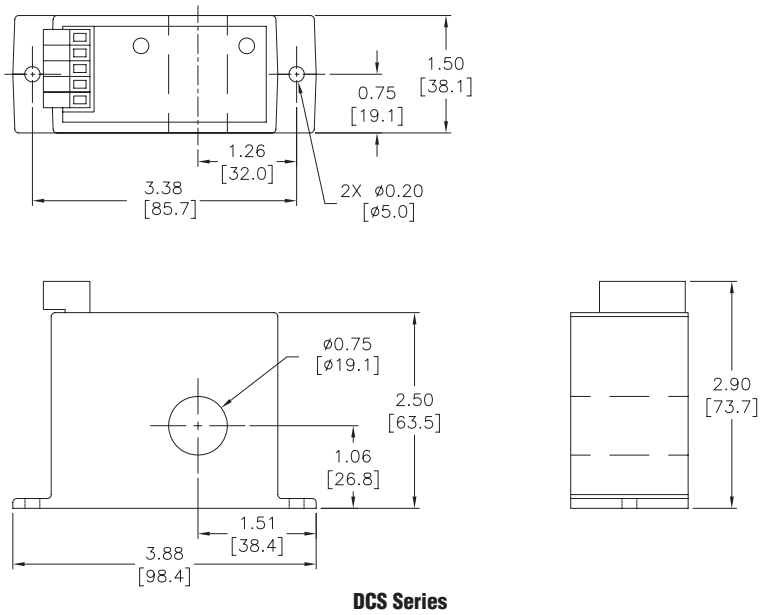
Dimensions

Inches [mm]



DCS Series

See our website _____ for complete Engineering drawings.

AcuAMP® 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	***Transducer***		***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		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		
Environmental	Operating Temperature: -4 to 122°F [-20 to 50°C]		Operating Temperature: AE = -40 to 140°F [-40 to 60°C]; 1C = -4 to 122°F [-20 to 50°C]
	Relative Humidity: 0-95% RH, Non-condensing		
	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

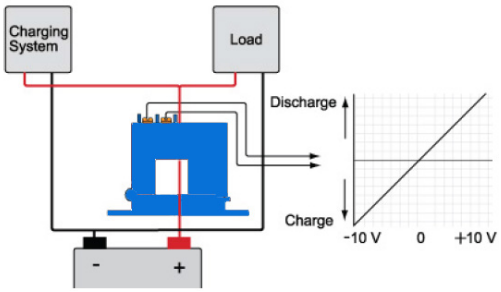
Application Guide

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.

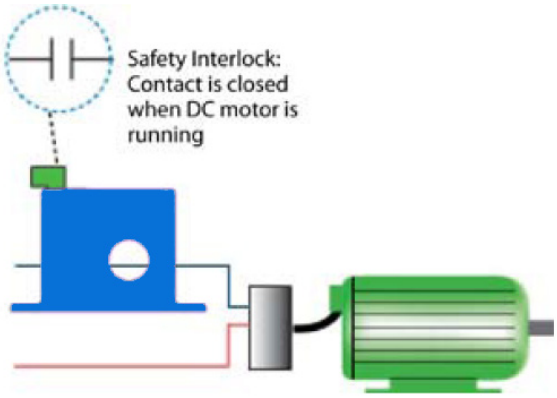
The bi-directional models allow the monitoring of batteries while they are being charged or consumed and can be used to trigger a warning if critical low levels are reached. They can also monitor the output of a photovoltaic array to make sure there is enough energy being generated to keep the process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

Transducer

Battery Charging System - Bidirectional Output

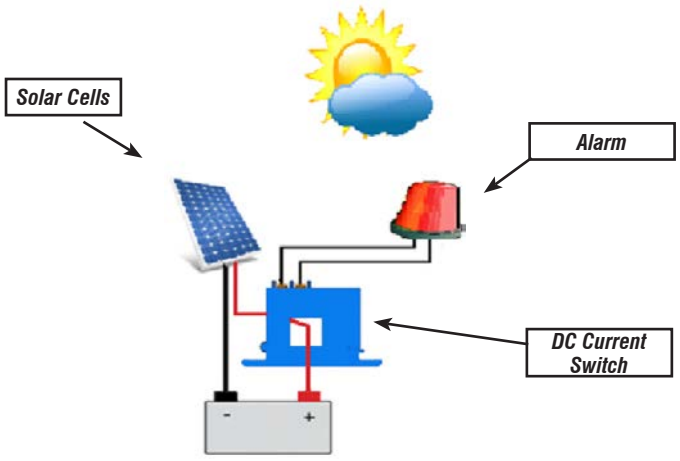


Failure Detection



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.

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