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

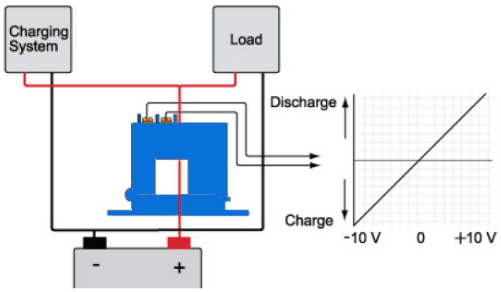
Application Guide

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.

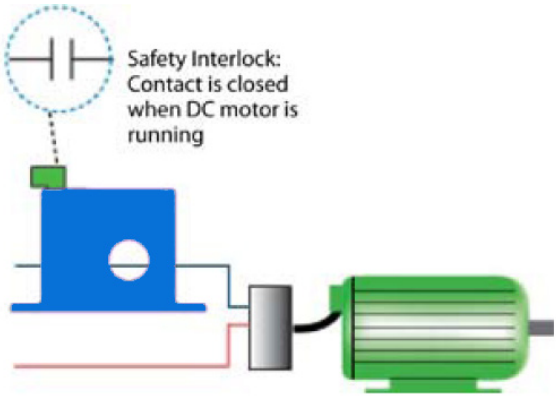
The bi-directional models allow the monitoring of batteries while they are being charged or consumed and can be used to trigger a warning if critical low levels are reached. They can also monitor the output of a photovoltaic array to make sure there is enough energy being generated to keep the process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

Transducer

Battery Charging System - Bidirectional Output

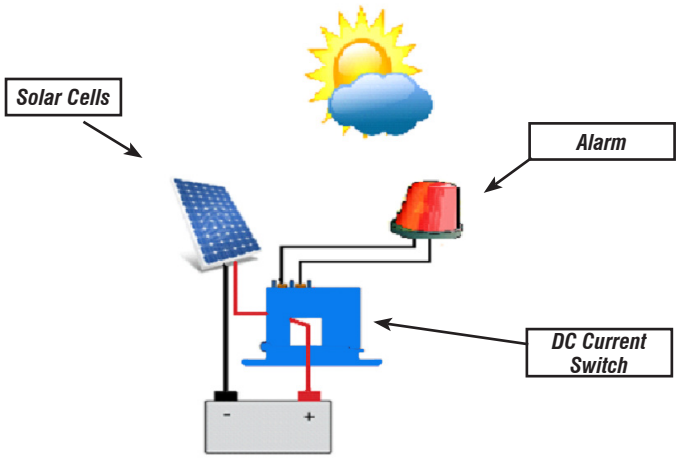


Failure Detection

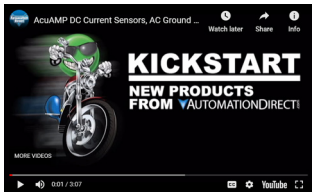


Switches

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.



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