

Specifications	
Power Required	20-28 VAC/DC, 2 VA
Output Switch	AE: Normally Open Solid State Switch 1C: Single pole Double Throw (SPDT) Relay
Switch Rating	AE: Solid State N.O. (0.15A @ 240 VAC/VDC) 1C: SPDT (Form C) Relay 5A General Purpose @ 240 VAC 3A Inductive @ 240 VAC 3A @ 30 VDC 1/8 HP @ 240 VAC
Off State Leakage	AE: <10 µA 1C: None
Response Time	100 ms (10% above setpoint), 20 ms (100% above setpoint)
Hysteresis Approx	5% of setpoint
Repeatability	0.5%
Input Ranges	5-15, 10-50 and 20-100 A, Jumper Selectable
Setpoint Adjust	11 Turn potentiometer
Isolation Voltage	3KV
Frequency Range	DC
Sensing Aperture	0.75" (19 mm) diameter
Case	UL 94V-0 Flammability Rated
Environmental	AE = -40 to 140 °F (-40 to 60 °C) Solid State Output operating temperature, 0-95% RH, Non-condensing humidity 1C = -4 to 122 °F (-20 to 50 °C) Relay Output operating temperature, 0-95% RH, Non-condensing humidity
Listings	UL 508, UL File E222847, CE

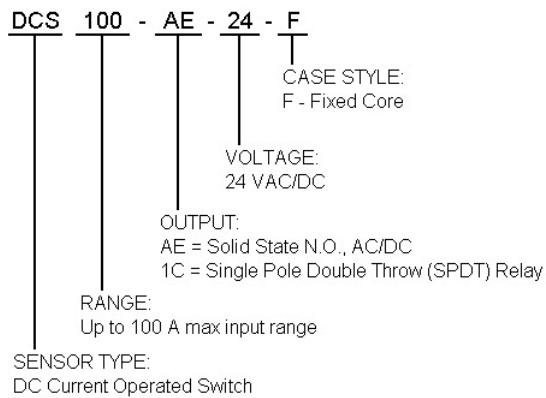
Ranges & Maximum Amps

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

Switching 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

Part Number Key



DCS100 SERIES INSTALLATION INSTRUCTIONS



Quick Start Guide

- Run the wire to be monitored through aperture. Current direction does not matter.
- Mount the sensor.
- Connect power and output wiring.
 - Ensure power supply matches specifications.
 - Ensure load matches the output shown on the sensor label.
- Adjust Setpoint
 - Choose correct range by positioning the Range jumper.
 - Use the potentiometer to adjust setpoint.



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Description

DCS100 Series are 24 volt powered, solid-state current operated switches that trigger when the current level sensed through the aperture exceeds the adjusted setpoint. Both solid state and relay output contacts can switch AC or DC.

Installation

Run wire to be monitored through the opening in the sensor. DCS100 switches work in the same environment as motors, contactors, heaters, pull-boxes, and other electrical enclosures.

They can be mounted in any position or hung directly on wires with a wire tie. Leave at least one inch distance between sensor and other magnetic devices. Direction of current flow is not important.

Power Wiring

Connect 24 VAC or 24 VDC power to Terminals 1 and 2. Tighten to 4.5 inch-pounds torque. The connection is not polarity sensitive.

Terminals are removable to make wiring easy. Be sure to seat the terminal properly in the location marked "Power".

Output Wiring

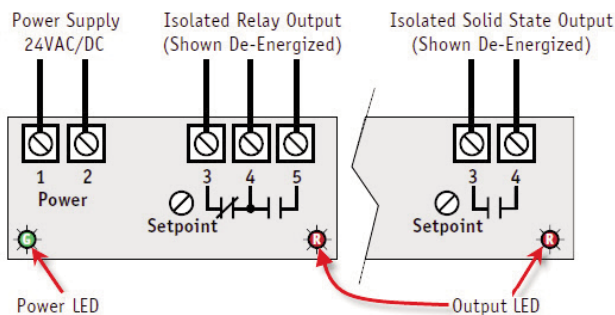
Connect control or monitoring wires to the sensor. Use up to 12-22 AWG copper wire and tighten terminals to 4.5 inch-pounds torque. Be sure the output load does not exceed the switch rating.



CAUTION: INCANDESCENT LAMPS CAN HAVE "COLD FILAMENT INRUSH" CURRENT OF UP TO 10 TIMES THEIR RATED AMPERAGE. USE CAUTION WHEN SWITCHING LAMPS ON AND OFF.



CAUTION: Do NOT CONNECT OUTPUT TERMINALS UNDER LOAD.



Setpoint Adjustment

DCS100 series switches setpoint is adjusted with a 11-turn potentiometer. The potentiometer is shipped factory-set to the lowest setpoint, fully counter-clockwise (CCW). Turning the potentiometer clockwise (CW) will increase the setpoint. The potentiometer has a slip-clutch to prevent damage at either end of its rotation. To determine where the adjustment is, turn the potentiometer all the way counter-clockwise (CCW). This will return it to the minimum setpoint.

Adjustment Notes:

- Units with solid-state outputs (AE): Check output status by applying voltage to the contacts and reading the voltage drop across the contacts. An ohmmeter set on "Continuity" will give misleading results.
- Units with relay output (1C) are mechanical and can be tested with an ohm meter.
- It is recommended that setpoint be adjusted to allow for voltage variations of 10-15%.

Monitored Amps	Output Type		Output LED
	N.O.	N.C.	
None or less than minimum	OPEN	CLOSED	OFF
Below Trip level	OPEN	CLOSED	OFF
Above Trip level	CLOSED	OPEN	ON

Typical Adjustment

- Make sure all wiring is correct, all terminals are tight and that power is ON (green power LED).
- Move the jumper to the desired range. Turn the pot to minimum setpoint (11 turns CCW).
- Have normal operating current running through sensor. The output should be tripped and red output LED should be ON.
- Turn the pot CW until the unit output changes state. This is indicated by the LED turning OFF and by the changing of the output switch status.
- Now turn the pot CCW slowly until the unit trips again. It is now set at the current monitored level.
 - To Set UNDERLOAD: Turn the pot about 1/8 turn CCW.
 - To Set OVERLOAD: Turn the pot about 1/8 turn CW.

Troubleshooting

- Sensor is always tripped
 - The jumper may be set in a range that is too low for current being monitored.
Move jumper to the correct range.
 - The setpoint may be too low.
Turn pot CW to increase setpoint.
 - Switch has been overloaded and contacts are burned out.
Check the output load, remembering to include inrush on inductive loads (coils, motors, ballasts).
- Sensor will not trip
 - Unit is not powered.
Check power supply and power wiring.
 - The jumper may be set in a range that is too high for current being monitored.
Move jumper to the correct range.
 - Monitored current is below minimum required.
Loop the monitored wire several times through the aperture until the "sensed" current rises above minimum.
 - Sensed Amps = (Actual Amps) x (Number of Loops).
Count loops on the inside of the aperture.
 - Switch has been overloaded and contacts are burned out.
Check the output load, remembering to include inrush on inductive loads (coils, motors, ballasts).