CSD Series Current Devices Catalog Page

LIT-1900454

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Description

The Current Switch Device (CSD) Series of digital output current switches are non-intrusive devices designed to detect current flowing through a cable or wire. A cost-effective solution for monitoring on and off status or proof of operation, these units are ideal for monitoring very small current loads on motors driving fans and blowers, pumps, heating coils, and lighting.

The CSD models with command relays not only monitor the current flowing through the cable but also facilitate the start and stopping of the motor.

These units also provide a universalsolid-state output and do not require a power supply. Completely self-powered, these units draw their power from current induced from the cable or line being monitored.

CSD Series Current Devices are available in the following types:

- solid core, setpoint fixed
- solid core, setpoint adjustable
- solid core with command relay, setpoint adjustable
- split core, setpoint fixed
- split core, setpoint adjustable
- split core with command relay, setpoint fixed
- split core with command relay, setpoint adjustable
- 12 VAC/VDC and 24 VAC/VDC accessory command relays

Refer to the *CSD Series Current Devices Product Bulletin (LIT-12011292)* for important product application information.

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Features

- dual function — monitors current and motor start and stop
- 100% solid-state output — has no moving parts to fail
- polarity insensitive output — provides easier wiring
- snap-in mounting bracket — simplifies installation
- small size — fits in tight enclosures

Fixed Setpoint Models

CSD-SF0C0-1 (solid core)

- Setpoint fixed at 0.25 A
- Current range — 0.25 to 200 A

CSD-CF0A0-1 (split core)

- Setpoint fixed at 0.15 A
- Current range — 0.15 to 200 A

CSD-CF0J0-1 (split core)

- Setpoint fixed at 1.5 A
- Current range — 1.5 to 200 A

CSD-CF0J1-1 (split core with 24 V command relay)

- Relay Single Pole, Single Throw (SPST), Normally Open (N.O.), 10 A at 260 VAC,5 A at 30 VDC
- Actuation coil — 20–30 VAC/DC,40–85 mA maximum
- Setpoint fixed at 1.5 A
- Current range — 1.5 to 200 A

Adjustable Setpoint Models

CSD-SA1E0-1 (solid core)

- Multi-turn potentiometer — adjust setpoint for application
- Adjustable setpoint — wide range from 1.0 to 135 A
- Two status Light-Emitting Diodes (LEDs) — provide visual indication of off and on status

CSD-SA1E1-1 (solid core with 24 V command relay)

- Multi-turn potentiometer — adjust setpoint for application
- Adjustable setpoint — wide range from 1.00 to 135 A
- Relay SPST, N.O., 10 A at 260 VAC,5 A at 30 VDC
- Actuation coil — 20–30 VAC/DC,40–85 mA maximum
- Two Status LEDs — provide visual indication of off and on status

CSD-CA1G0-1 (split core)

- Multi-turn potentiometers — adjust setpoint for application
- Two status LEDs — provide visual indication of off and on status
- Adjustable setpoint — wide range from 1.25 to 135 A

CSD-CA1G1-1 (split core with 24 V command relay)

- Multi-turn potentiometers — adjust setpoint for application
- Adjustable setpoint — wide range from 1.25 to 135 A
- Relay SPST, N.O., 10 A at 260 VAC, 5 A at 30 VDC
- Actuation coil — 20–30 VAC/VDC,40–85 mA maximum
- Two status LEDs — provide visual indication of off and on status

CSD-SA1E2-1 (solid core with 12 V command relay

- Multi-turn potentiometers — adjust setpoint for application
- Adjustable setpoint — wide range from 1.00 to 135 A
- Relay SPST, N.O., 10 A at 260 VAC, 5 A at 30 VDC
- Actuation coil — 10–14 VAC/VDC,25–45 mA maximum
- Two status LEDs — provide visual indication of off and on status

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Repair Information

If the CSD Series Current Device fails to operate within its specifications, replace the unit. For a replacement CSD Series Current Device, contact the nearest Johnson Controls® representative.

Selection Chart

Table 1: Selection Chart

Code Number	Core Type	Setpoint Threshold	LED Display	Low Setpoint (Amperes)	Output Relay
CSD-SF0C0-1	Solid	Fixed	No	0.25	No
CSD-SA1E0-1	Solid	Adjustable	Yes	1.00	No
CSD-SA1E1-1	Solid	Adjustable	Yes	1.00	24 V SPST, N.O. 10 A at 260 VAC, 5 A at 30 VDC
CSD-SA1E2-1	Solid	Adjustable	Yes	1.00	12 V SPST, N.O. 10 A at 260 VAC, 5 A at 30 VDC
CSD-CF0A0-1	Clamp/Split	Fixed	No	0.15	No
CSD-CF0J0-1	Clamp/Split	Fixed	No	1.5	No
CSD-CA1G0-1	Clamp/Split	Adjustable	Yes	1.25	No
CSD-CF0J1-1	Clamp/Split	Fixed	No	1.5	24 V SPST, N.O. 10 A at 260 VAC, 5 A at 30 VDC
CSD-CA1G1-1	Clamp/Split	Adjustable	Yes	1.25	24 V SPST, N.O. 10 A at 260 VAC, 5 A at 30 VDC

Accessories (Order Separately)

Table 2: Accessories

Code Number	Description
CR-01200-0[1]	12 VAC/VDC SPST, N.O. Relay
CR-02400-0[1]	24 VAC/VDC SPST, N.O. Relay

1 Refer to the *Command Relay Installation Instructions (Part No.24-10345-50)* for more information regarding the command relays.

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Technical Specifications

Table 3: CSD Series Current Devices - Solid Core Models technical specifications

		CSD-SF0C0-1	CSD-SA1E0-1	CSD-SA1E1-1	CDS-SA1E2-1
Amperage Range		0.25–200 A	1.00–135 A	1.00–135 A	1.00–135 A
Switch Setpoint		Fixed	Adjustable	Adjustable	Adjustable
Output Relay		No	No	24 V SPST, N.O. 10 A at 260 VAC, 5 A at 30 VDC	12 V SPST, N.O. 10 A at 260 VAC, 5 A at 30 VDC
Actuation Coil		No	No	20–30 VAC/VDC,40–85 mA Maximum	10–14 VAC/VDC,25–45 mA Maximum
Switch LED Indication		No	Yes	Yes	Yes
Relay LED Indication		No	No	Yes	Yes
Trip Setpoint Value		0.25 A	1.00 A	1.00–135 A	
Current Switching Mode		Under Current Sensing	Over/Under Current Sensing	Over/Under Current Sensing	
Sensor Supply Voltage		Induced from power conductor cable.			
Wire Size		2.1–0.6 mm (12–22 AWG) Diameter			
Status Output		Switch normally open.			
Switch Load Capacity		1 A at 30 VAC/42 VDC Maximum			
Isolation Voltage		600 VAC rms			
Temperature Range		-15 to 60°C (5 to 140°F)			
Frequency Range		50/60 Hz			
Humidity Range		0–95% Noncondensing			
Screw Torque		0.5 N·m (4 lb·in.)			
Dimensions		65 x 47 x 25 mm (2-9/16 x 1-7/8 x 1 in.)		65 x 65 x 40 mm (2-9/16 x 2-9/16 x 1-19/32 in.)	
Aperture (Sensing Hole) Size		18 mm Diameter (0.71 in. Diameter)			
Compliance	United States	UL Listed, File E310692, CCN NRNT, Under UL 508, Industrial Control Equipment			
	Canada	UL Listed, File E310692, CCN NRNT7, Under CAN/CSA C22.2 No. 14-M91Industrial Control Equipment			
CE	Europe	CE Mark – Johnson Controls, Inc., declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC Directive 2004/108/EC and the Low Voltage Directive 2006/95/EC.			
Shipping Weight		0.16 kg (0.35 lb)			

Table 4: CSD Series Current Devices - Split Core Models technical specifications

	CSD-CF0A0-1/CSD-CF0J0-1	CSD-CA1G0-1	CSD-CF0J1-1	CSD-CA1G1-1
Amperage Range	0.15–200 A/1.5–200 A	1.25–135 A	1.5–200 A	1.25–135 A
Switch Setpoint	Fixed	Adjustable	Fixed	Adjustable
Output Relay	No	No	24 V SPST, N.O. 10 A at260 VAC, 5 A at 30 VDC	24 V SPST, N.O. 10 A at 260 VAC, 5 A at 30 VDC
Actuation Coil	No	No	20–30 VAC/VDC,40–85 mA Maximum	20–30 VAC/VDC,40–85 mA Maximum
Switch LED Indication	No	Yes	No	Yes
Relay LED Indication	No	No	Yes	Yes
Trip Setpoint Value	0.15 A/1.5 A	1.25–135 A	1.5 A	1.25–135 A
Current Switching Mode	Under Current Sensing	Over/Under Current Sensing	Under Current Sensing	Over/Under Current Sensing
Sensor Supply Voltage	Induced from power conductor cable.			
Wire Size	2.1–0.6 mm (12–22 AWG) Diameter Recommended			
Status Output	Switch normally open.			
Switch Load Capacity	1 A at 30 VAC/42 VDC Maximum			

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Table 4: CSD Series Current Devices - Split Core Models technical specifications

		CSD-CF0A0-1/CSD-CF0J0-1	CSD-CA1G0-1	CSD-CF0J1-1	CSD-CA1G1-1
Isolation Voltage		600 VAC rms			
Temperature Range		-15 to 60°C (5 to 140°F)			
Frequency Range		50/60 Hz			
Humidity Range		0–95% Noncondensing			
Screw Torque		0.5 N·m (4 lb·in.)			
Dimension		69 x 65 x 27 mm (2-23/32 x 2-9/16 x 1-1/16 in.)		69 x 65 x 44 mm (2-23/32 x 2-9/16 x 1-3/4 in.)	
Aperture (Sensing Hole) Size		18 x 20 mm Diameter (0.72 x 0.78 in. Diameter)			
Compliance	United States	UL Listed, File E310692, CCN NRNT, Under UL 508, Industrial Control Equipment			
	Canada	UL Listed, File E310692, CCN NRNT7, Under CAN/CSA C22.2 No. 14-M91Industrial Control Equipment			
CE	Europe	CE Mark – Johnson Controls, Inc., declares that this product is in compliance with the essential requirements and other relevant provisions of the EMC Directive 2004/108/EC and the Low Voltage Directive 2006/95/EC.			
Shipping Weight		0.16 kg (0.35 lb)			

Product warranty

This product is covered by a limited warranty, details of which can be found at www.johnsoncontrols.com/buildingswarranty.

Software terms

Use of the software that is in (or constitutes) this product, or access to the cloud, or hosted services applicable to this product, if any, is subject to applicable end-user license, open-source software information, and other terms set forth at www.johnsoncontrols.com/techterms. Your use of this product constitutes an agreement to such terms.

Patents

Patents: https://jcipat.com

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