

UZR-xx-x, UBR-xx-x, UZD-0xxX0xx-x, UBD-0xxX0xx-x

CCS Zone/Bypass Damper Assembly

Description

The Commercial Comfort System (CCS) Zone/Bypass Damper Assemblies are zone control and pressure control devices that include the damper and control components in a factory assembled configuration. The assembly includes the round or rectangular damper, configured Direct Digital Control (DDC) controller, electric actuator, pressure sensor (in the bypass damper only), National Electrical Manufacturers' Association (NEMA) Type 1 enclosure, and an optional control power transformer. The controllers are application specific, factory programmed digital controllers that communicate via the BACnet® Master Slave/Token-Passing (MS/TP) Protocol. Both the zone and bypass controllers operate as part of a larger zoning system and provide zone and pressure control for the appropriate mechanical equipment.

The zone damper modulates in response to temperature variations relative to a user defined space temperature setpoint. The bypass damper modulates to maintain supply duct static pressure setpoint.

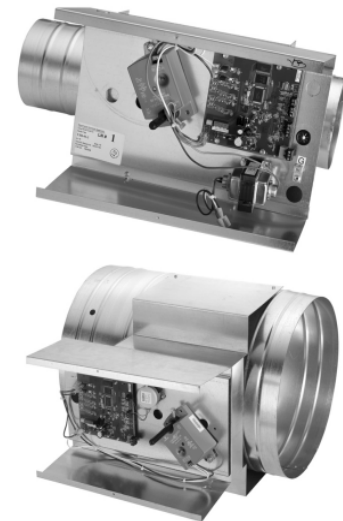
Refer to the *Commercial Comfort System (CCS) Product Bulletin (LIT-12011347)* for additional product application information.

Features

- factory mounted and wired control components reduce installation time
- fast response actuator drives the damper from full open to full closed (90) in 60 seconds to reduce commissioning time
- continuous loop tuning provided by Pattern Recognition Adaptive Control (PRAC) technologies
- available in both round and rectangular configurations
- supplemental heat for both staged and modulated damper assemblies
- variety of additional sizes available through special order

Repair Information

If the CCS Zone/Bypass Damper Assembly fails to operate within its specifications, see the *Repair Parts* table for a list of repair parts. Contact your local Johnson Controls® representative for a replacement unit.



CCS Zone/Bypass Damper Assemblies

Round Damper Assemblies

The round damper assemblies feature superior design, solid molded damper shafts, and control enclosures. The round damper assembly features both staged and modulated supplement heat options.

Superior Design

The round zone damper is a 22 gauge round unit. An automated manufacturing process produces damper blades to exact specifications. The dampers are designed for low noise operation with minimal friction loss and a tight closure seal. Air valve leakage is less than 1% of rated capacity at 3 in. wg inlet pressure.

Solid Molded Damper Shaft

The solid damper shaft is molded using a high-impact, high-strength composite material. It is designed to eliminate condensation on the extended portion that penetrates the unit casing. The shaft allows a more secure attachment to the damper actuator, since the set screws adhere to this material better than metal. The high impact material gives the shaft superior impact strain resistance compared to cast metal shafts. The damper blade is mounted on the damper shaft and connected by means of an integral molded sleeve. The shaft rotates in low friction self lubricating bearings.

Control Enclosure

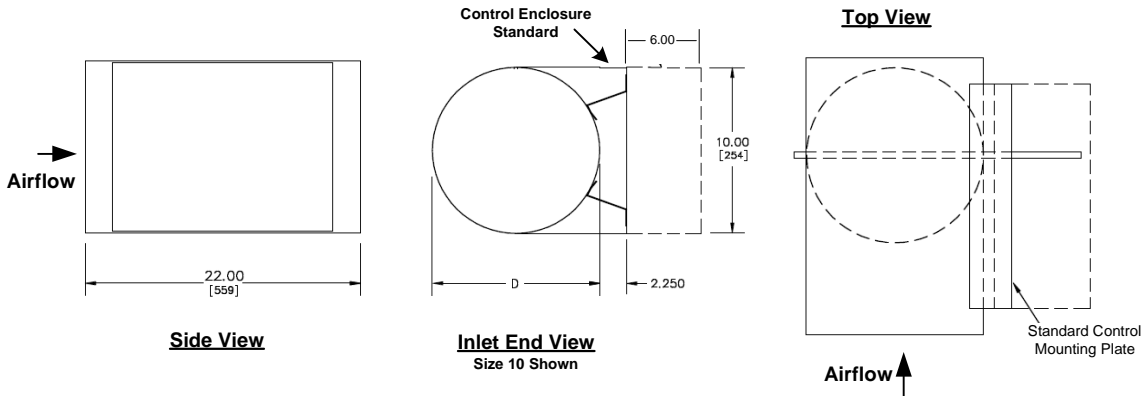
The zone and bypass damper assembly include a NEMA Type 1 galvanized steel (22 gauge) enclosure for factory mounting of the direct digital controller, damper actuator, differential pressure sensor (in bypass damper only), and an optional multi-tap primary/24 VAC secondary transformer.

Round Damper Assembly Construction Components

Damper Part	Construction Component
Frame	22-gauge galvanized steel valve body with embossed beads. Withstands 125 per hour salt spray test per ASTM B-117.
Blade	Full circular closed cell gasket secured between two pieces of 22 gauge sheet metal.
Damper Shaft	Molded solid damper shaft constructed of high-impact, high-strength composite material.
Bearing	Low friction self-lubricating bearings
Seal	Full circular closed cell gasket
Temp Limits	32 to 122°F (0 to 50°C)

CCS Zone/Bypass Damper Assembly (Continued)

Round Damper Assembly Dimensions



Unit Size	06	08	10	12	14	16
Dimension - D	5.88"	7.88"	9.88"	11.88"	13.88"	15.88"

Round Damper Assembly Dimensions

Rectangular Damper Assemblies

Superior Design

The rectangular damper offers sturdy, steel construction with interlocking frame design. The unit frame is constructed of 5 x 1 in. (127 x 25 mm) 16-gauge galvanized steel hat channel reinforced with corner braces for structural strength equal to 13-gauge (2.28 mm). For dampers under 13 in. (330 mm), low profile 3-1/2 x 3/8 in. (89 x 10 mm) 16-gauge galvanized steel channels are located on the top and bottom frame. Damper locks together without bolts, screws, or rivets that could shake loose. The frame corners are internally braced to reduce racking.

Damper Blades

Blades are 6 in. (152 mm) wide, 16 gauge (1.6 mm) galvanized steel approximately 6 in. (152 mm) on center with parallel action.

Damper Shaft

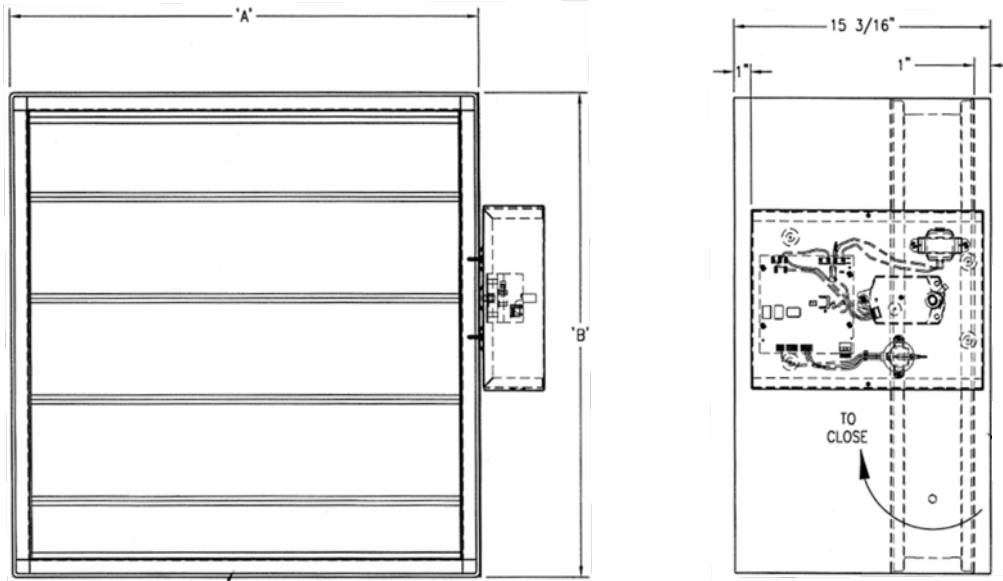
1/2-inch (13 mm) plated steel hex axles positively lock to blades without screws or welds. Non-stick, non-corrosive bearings assure long life and ease of operation. Axles and bearings combine with a shake proof linkage for low maintenance operation.

Rectangular Damper Assembly Construction Components

Damper Part	Construction Component
Frame	5 x 1 x 16 inch gauge galvanized steel hat channel reinforced with corner braces for structural strength equal to 13 gauge.
Blade	6 inches wide, 16 gauge galvanized steel approximately 6 inches on center, parallel action
Damper Shaft	1/2 inch plated steel hex axles
Bearing	Corrosion resistant, molded synthetic sleeve type
Temp Limits	32 to 122°F (0 to 50°C)

CCS Zone/Bypass Damper Assembly (Continued)

Rectangular Damper Assembly Dimensions



Zone Damper Size AxB	Bypass Damper Size AxB
8"x12"	14"x12"
8"x14"	16"x16"
8"x16"	20"x20"
10"x16"	30"x30"
10"x20"	
14"x18"	

Rectangular Damper Assembly Dimensions

Selection Charts

Round Damper Assemblies

Damper Size (Area - SqFt)	6 inch (0.188)	8 inch (0.338)	10 inch (0.532)	12 inch (0.769)	14 inch (1.05)	16 inch (1.375)
Air Velocity Through Damper (FPM)	Zone Damper Airflow - CFM					
750 FPM - Zone	141	254	399	577	788	1,031
1000 FPM - Zone	188	338	532	769	1,050	1,375
1250 FPM - Zone	235	423	665	961	1,313	1,718
1500 FPM - Bypass only	282	507	798	1,154	1,575	2,062
1750 FPM - Bypass only	329	592	931	1,346	1,838	2,405
2000 FPM - Bypass only	376	676	1,064	1,538	2,100	2,749
2250 FPM - Bypass only	423	761	1,197	1,730	2,363	3,094



CCS Zone/Bypass Damper Assembly (Continued)

Rectangular Damper Assemblies

Damper Size W x H inches (Area - SqFt)	Zone Damper Assembly					Bypass Damper Assembly				
	8 x 12 inches (0.42)	8 x 14 inches (0.5)	8 x 16 inches (0.58)	10 x 16 inches (0.77)	10 x 20 inches (1.00)	14 x 18 inches (1.33)	14 x 12 inches (0.83)	16 x 16 inches (1.36)	20 x 20 inches (2.25)	30 x 30 inches (5.44)
Air Velocity Through Damper (FPM)	Zone Damper Airflow - CFM									
750 FPM - Zone	315	375	435	578	750	998	N/A	N/A	N/A	N/A
1000 FPM - Zone	420	500	580	770	1,000	1,330	N/A	N/A	N/A	N/A
1250 FPM - Zone	525	625	725	963	1,250	1,663	N/A	N/A	N/A	N/A
1500 FPM - Bypass only	N/A	N/A	N/A	N/A	N/A	N/A	1,245	2,040	3,375	8,160
1750 FPM - Bypass only	N/A	N/A	N/A	N/A	N/A	N/A	1,453	2,380	3,938	9,520
2000 FPM - Bypass only	N/A	N/A	N/A	N/A	N/A	N/A	1,660	2,720	4,500	10,880
2250 FPM - Bypass only	N/A	N/A	N/A	N/A	N/A	N/A	1,868	3,060	5,063	12,240

Part Numbers (Part 1 of 3)

Product Code Number	Description	Weight (lb)	
Round Zone Damper Assemblies	UZR-06-0	6 in. round zone damper, actuator, controller (no transformer)	16.3
	UZR-06-1	6 in. round zone damper, actuator, controller (120/208/240-24 VAC Transformer)	18.3
	UZR-06-2	6 in. round zone damper, actuator, controller (277/480-24 VAC Transformer)	18.3
	UZR-06-3	6 in. round zone damper, Pressure Dependent (PD), actuator, controller (no transformer), staged supplemental heat (LC-ZEC110-0)	16.3
	UZR-06-4	6 in. round zone damper, PD, actuator, controller (120/208/240-24 VAC Transformer), staged supplemental heat (LC-ZEC110-0)	18.3
	UZR-06-5	6 in. round zone damper, PD, actuator, controller (277/480-24 VAC Transformer), staged supplemental heat (LC-ZEC110-0)	18.3
	UZR-06-6	6 in. round zone damper, Pressure Dependent (PD), actuator, controller (no transformer), modulated supplemental heat (LC-ZEC120-0)	16.3
	UZR-06-7	6 in. round zone damper, PD, actuator, controller (120/208/240-24 VAC Transformer), modulated supplemental heat (LC-ZEC120-0)	18.3
	UZR-06-8	6 in. round zone damper, PD, actuator, controller (277/480-24 VAC Transformer), modulated supplemental heat (LC-ZEC120-0)	18.3
	UZR-08-0	8 in. round zone damper, actuator, controller (no transformer)	18.3
	UZR-08-1	8 in. round zone damper, actuator, controller (120/208/240-24 VAC Transformer)	20.3
	UZR-08-2	8 in. round zone damper, actuator, controller (277/480-24 VAC Transformer)	20.3
	UZR-08-3	8 in. round zone damper, PD, actuator, controller (no transformer), staged supplemental heat (LC-ZEC110-0)	18.3
	UZR-08-4	8 in. round zone damper, PD, actuator, controller (120/208/240-24 VAC Transformer), staged supplemental heat (LC-ZEC110-0)	20.3
	UZR-08-5	8 in. round zone damper, PD, actuator, controller (277/480-24 VAC Transformer), staged supplemental heat (LC-ZEC110-0)	20.3
	UZR-08-6	8 in. round zone damper, PD, actuator, controller (no transformer), modulated supplemental heat (LC-ZEC120-0)	18.3
	UZR-08-7	8 in. round zone damper, PD, actuator, controller (120/208/240-24 VAC Transformer), modulated supplemental heat (LC-ZEC120-0)	20.3
	UZR-08-8	8 in. round zone damper, PD, actuator, controller (277/480-24 VAC Transformer), modulated supplemental heat (LC-ZEC120-0)	20.3
	UZR-10-0	10 in. round zone damper, actuator, controller (no transformer)	20.3
	UZR-10-1	10 in. round zone damper, actuator, controller (120/208/240-24 VAC Transformer)	22.3
UZR-10-2	10 in. round zone damper, actuator, controller (277/480-24 VAC Transformer)	22.3	
UZR-10-3	10 in. round zone damper, PD, actuator, controller (no transformer), staged supplemental heat (LC-ZEC110-0)	20.3	
UZR-10-4	10 in. round zone damper, PD, actuator, controller (120/208/240-24 VAC Transformer), staged supplemental heat (LC-ZEC110-0)	22.3	
UZR-10-5	10 in. round zone damper, PD, actuator, controller (277/480-24 VAC Transformer), staged supplemental heat (LC-ZEC110-0)	22.3	
UZR-10-6	10 in. round zone damper, PD, actuator, controller (no transformer), modulated supplemental heat (LC-ZEC120-0)	20.3	

The performance specifications are nominal and conform to acceptable industry standards. For applications at conditions beyond these specifications, consult the local Johnson Controls office. Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products. © 2011 Johnson Controls, Inc. www.johnsoncontrols.com



CCS Zone/Bypass Damper Assembly (Continued)

Part Numbers (Part 2 of 3)

Product Code Number	Description	Weight (lb)
Round Zone Damper Assemblies (Cont.)	UZR-10-7 10 in. round zone damper, PD, actuator, controller (120/208/240-24 VAC Transformer), modulated supplemental heat (LC-ZEC120-0)	20.3
	UZR-10-8 10 in. round zone damper, PD, actuator, controller (277/480-24 VAC Transformer), modulated supplemental heat (LC-ZEC120-0)	22.3
	UZR-12-0 12 in. round zone damper, actuator, controller (no transformer)	21.3
	UZR-12-1 12 in. round zone damper, actuator, controller (120/208/240-24 VAC Transformer)	23.3
	UZR-12-2 12 in. round zone damper, actuator, controller (277/480-24 VAC)	23.3
	UZR-12-3 12 in. round zone damper, PD, actuator, controller (no transformer), staged supplemental heat (LC-ZEC110-0)	21.3
	UZR-12-4 12 in. round zone damper, PD, actuator, controller (120/208/240-24 VAC Transformer), staged supplemental heat (LC-ZEC110-0)	23.3
	UZR-12-5 12 in. round zone damper, PD, actuator, controller (277/480-24 VAC Transformer), staged supplemental heat (LC-ZEC110-0)	23.3
	UZR-12-6 12 in. round zone damper, PD, actuator, controller (no transformer), modulated supplemental heat (LC-ZEC120-0)	21.3
	UZR-12-7 12 in. round zone damper, PD, actuator, controller (120/208/240-24 VAC Transformer), modulated supplemental heat (LC-ZEC120-0)	23.3
	UZR-12-8 12 in. round zone damper, PD, actuator, controller (277/480-24 VAC Transformer), modulated supplemental heat (LC-ZEC120-0)	23.3
	UZR-14-0 14 in. round zone damper, actuator, controller (no transformer)	22.3
	UZR-14-1 14 in. round zone damper, actuator, controller (120/208/240-24 VAC Transformer)	24.3
	UZR-14-2 14 in. round zone damper, actuator, controller (277/480-24 VAC Transformer)	24.3
	UZR-14-3 14 in. round zone damper, PD, actuator, controller (no transformer), staged supplemental heat (LC-ZEC110-0)	22.3
	UZR-14-4 14 in. round zone damper, PD, actuator, controller (120/208/240-24 VAC Transformer), staged supplemental heat (LC-ZEC110-0)	24.3
	UZR-14-5 14 in. round zone damper, PD, actuator, controller (277/480-24 VAC Transformer), staged supplemental heat (LC-ZEC110-0)	24.3
	UZR-14-6 14 in. round zone damper, PD, actuator, controller (no transformer), modulated supplemental heat (LC-ZEC120-0)	22.3
	UZR-14-7 14 in. round zone damper, PD, actuator, controller (120/208/240-24 VAC Transformer), modulated supplemental heat (LC-ZEC120-0)	24.3
	UZR-14-8 14 in. round zone damper, PD, actuator, controller (277/480-24 VAC Transformer), modulated supplemental heat (LC-ZEC120-0)	24.3
	UZR-16-0 16 in. round zone damper, actuator, controller (no transformer)	25.3
	UZR-16-1 16 in. round zone damper, actuator, controller (120/208/240-24 VAC Transformer)	27.3
	UZR-16-2 16 in. round zone damper, actuator, controller (277/480-24 VAC Transformer)	27.3
	UZR-16-3 16 in. round zone damper, PD, actuator, controller (no transformer), staged supplemental heat (LC-ZEC110-0)	25.3
	UZR-16-4 16 in. round zone damper, PD, actuator, controller (120/208/240-24 VAC Transformer), staged supplemental heat (LC-ZEC110-0)	27.3
	UZR-16-5 16 in. round zone damper, PD, actuator, controller (277/480-24 VAC Transformer), staged supplemental heat (LC-ZEC110-0)	27.3
	UZR-16-6 16 in. round zone damper, PD, actuator, controller (no transformer), modulated supplemental heat (LC-ZEC120-0)	25.3
	UZR-16-7 16 in. round zone damper, PD, actuator, controller (120/208/240-24 VAC Transformer), modulated supplemental heat (LC-ZEC120-0)	27.3
UZR-16-8 16 in. round zone damper, PD, actuator, controller (277/480-24 VAC Transformer), modulated supplemental heat (LC-ZEC120-0)	27.3	
Round Bypass Damper Assemblies	UBR-10-0 10 in. round zone damper, actuator, controller (no transformer)	20.6
	UBR-10-1 10 in. round zone damper, actuator, controller (120/208/240-24 VAC Transformer)	22.6
	UBR-10-2 10 in. round zone damper, actuator, controller (277/480-24 VAC Transformer)	22.6
	UBR-12-0 12 in. round zone damper, actuator, controller (no transformer)	21.6
	UBR-12-1 12 in. round zone damper, actuator, controller (120/208/240-24 VAC Transformer)	23.6
	UBR-12-2 12 in. round zone damper, actuator, controller (277/480-24 VAC Transformer)	23.6
	UBR-14-0 14 in. round zone damper, actuator, controller (no transformer)	22.6
	UBR-14-1 14 in. round zone damper, actuator, controller (120/208/240-24 VAC Transformer)	24.6
	UBR-14-2 14 in. round zone damper, actuator, controller (277/480-24 VAC Transformer)	24.6
	UBR-16-0 16 in. round zone damper, actuator, controller (no transformer)	25.6
	UBR-16-1 16 in. round zone damper, actuator, controller (120/208/240-24 VAC Transformer)	27.6
	UBR-16-2 16 in. round zone damper, actuator, controller (277/480-24 VAC Transformer)	27.6

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CCS Zone/Bypass Damper Assembly (Continued)

Part Numbers (Part 3 of 3)

Product Code Number		Description	Weight (lb)
Rectangular Zone Damper Assemblies	UZD-008X012-0	8 x 12 in zone damper with actuator, controller (no transformer)	5.3
	UZD-008X012-1	8 x 12 in. zone damper, actuator, controller (120/208/240-24 VAC Transformer)	7.3
	UZD-008X012-2	8 x 12 in. zone damper, actuator, controller (277-480-24 VAC Transformer)	7.3
	UZD-008X014-0	8 x 14 in. zone damper with actuator, controller (no transformer)	6.0
	UZD-008X014-1	8 x 14 in. zone damper, actuator, controller (120/208/240-24 VAC Transformer)	8.0
	UZD-008X014-2	8 x 14 in. zone damper, actuator, controller (277-480-24 VAC Transformer)	8.0
	UZD-008X016-0	8 x 16 in zone damper with actuator, controller (no transformer)	6.6
	UZD-008X016-1	8 x 16 in. zone damper, actuator, controller (120/208/240-24 VAC Transformer)	8.6
	UZD-008X016-2	8 x 16 in. zone damper, actuator, controller (277-480-24 VAC Transformer)	8.6
	UZD-010X016-0	10 x 16 in zone damper with actuator, controller (no transformer)	7.9
	UZD-010X016-1	10 x 16 in. zone damper, actuator, controller (120/208/240-24 VAC Transformer)	9.9
	UZD-010X016-2	10 x 16 in. zone damper, actuator, controller (277-480-24 VAC Transformer)	9.9
	UZD-010X020-0	10 x 20 in. zone damper, actuator, controller (no transformer)	9.6
	UZD-010X020-1	10 x 20 in. zone damper, actuator, controller (120/208/240-24 VAC Transformer)	11.6

Accessories

Product Code Number	Description
TE-68NT-0N00S	Wall Temperature Sensor, 1k ohm, Nickel with Temporary Occupancy Button
TE-68NT-1N00S	Wall Temperature Sensor, 1k ohm, Nickel with Temporary Occupancy Button and Warmer/Cooler Adjustment
FTG18A-600R	Static Pressure Remote Mounted Sensing Probe

Repair Parts

Product Code Number	Description
Y65T54-0	40 VA Control Power Transformer (120/208/240 - 24 VAC)
Y65F13-0	40 VA Control Power Transformer (277/480 - 24 VAC)
M9104-AGA-3S	Damper Actuator, 35 lb-in, Floating Control
263G-005-JC6	Bypass DP transducer 0.5–4.5 VDC, 0–5 in. w.c.
LC-ZEC100-0	Zone damper control board - Replacement
LC-ZEC110-0	Zone Equipment Controller with Staged Supplement Heat
LC-ZEC120-0	Zone Equipment Controller with Modulated Supplemental Heat
LC-BYP100-0	Bypass Damper Control Board - Replacement

Technical Specifications

Bypass DP Transducer	
Product Code Number	263G-005-JC6
Power Requirement	5.0 VDC
Pressure Range	0–5.0 in. W.C.
Overpressure limit	15.0 in. W.C.
Output Voltage	0.5–4.5 VDC into Load Impedance of 25,000 ohm
Accuracy	Linearity: $\pm 1.0\%$ Full Span Maximum Hysteresis: $\pm 0.05\%$ Full Span Maximum
Dimensions (Height x Width x Depth)	1 x 2-3/4 x 2-1/2 in. (25.4 x 68.8 x 63.5 mm)

Damper Actuator	
Product Code Number	M9104-AGA-3S
Power Requirement	24 VAC +25%/-20% at 50 to 60 Hz, 2.1 VA Supply, Class 2
Control Type	Floating Control without Timeout
Input Signal	24 VAC +25%/-20% at 50 to 60 Hz, 2.1 VA Supply, Class 2
Running Torque	35 lb-in
Dimensions (Height x Width x Depth)	5.2 x 2.8 x 2.3 in. (132.08 x 71.1 x 58.4 mm)