

3-Way Directional Valves with Placement Monitor

Effective: April 2023
K-85-3006 Rev AF

FEATURES

- UL Listed and ULC Listed for use with systems listed below in the Table, “COMPATIBILITY”, on page 2.
- Cost-Effective Option for Protecting Multiple Hazards
- Pneumatic Operation Using Nitrogen Pilot Cylinder
- 3-Way Valve Comes Pre-Assembled with Pneumatic Actuator
- Nickel Plated Carbon Steel
- Low Loss Three Port Design
- UL Listed, File Number 4674

P/N: 85-22003X-X0X

The 3-Way Directional Valves (UL Listed) are used for applications where a single bank of cylinders are used to protect multiple hazards. The directional valves have a factory installed pneumatic, spring loaded actuator and range in sizes from 1/2” to 4”. The directional valves can be installed in the network, provided that they are accounted for in the software calculation. See Table 1, Table 2, Table 3 and Figure 1-1 for more information.

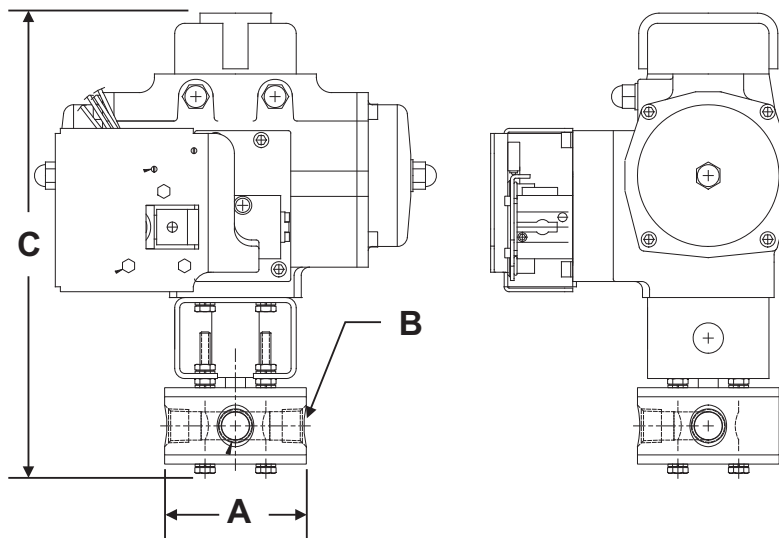


Figure 1-1. 3-Way Directional Valve (UL Listed) (P/N 85-2200XX-X0X)

COMPATIBILITY

Series	DIOM P/N	Approvals
Kidde Fire Systems ECS-500™ System	06-237585-001	UL, ULC, FM
Kidde Fire Systems ADS™ for use with Fluoroketone Fire Suppression Agents	06-237256-001	UL, ULC, FM
Kidde Fire Systems ECS™ 360 for use with Fluoroketone Fire Suppression Agents	06-236553-001	UL, ULC, FM
Kidde Fire Systems ADS™ with HFC-227ea Agent	06-236068-001	UL, ULC, FM

Table 1: 3-Way Directional Valve (UL Listed) Specifications

Part Number with Solenoid	Part Number with Explosion Proof Solenoid	Nominal Size	Dimensions			Valve Working Pressure	Breakaway Torque
			A*	B	C*		
85-220030-001	85-220030-100	1/2"	3.50 in.	0.688	11.23 in.	400 PSIG	200 in.-lb.
85-220030-002	85-220030-200	3/4"	4.00 in.	0.824	12.13 in.	400 PSIG	250 in.-lb.
85-220030-003	85-220030-300	1"	4.00 in.	1.000	12.13 in.	400 PSIG	250 in.-lb.
85-220031-001	85-220031-100	1 1/4"	6.00 in.	1.380	13.69 in.	400 PSIG	500 in.-lb.
85-220031-002	85-220031-200	1 1/2"	6.00 in.	1.500	13.69 in.	400 PSIG	500 in.-lb.
85-220031-003	85-220031-300	2"	7.25 in.	2.000	15.66 in.	400 PSIG	800 in.-lb.
85-220032-001	85-220032-100	3"	11.00 in.	3.000	21.44 in.	400 PSIG	3000 in.-lb.
85-220032-002	85-220032-200	4"	13.38 in.	4.000	24.68 in.	400 PSIG	4300 in.-lb.

*Note: Dimensions are approximate for the entire assembly. Explosive proof variants do not alter the specifications.

Table 2: 3-Way Directional Valve (UL Listed) Specifications

Part Number with Solenoid	Part Number with Explosion Proof Solenoid	Nominal Size	Material	Inlets	Port	T-Flow Equivalent Length	L-Flow Equivalent Length
85-220030-001	85-220030-100	1/2"	ENP Carbon Steel	NPT	Full	0.19 ft.	1.83 ft.
85-220030-002	85-220030-200	3/4"	ENP Carbon Steel	NPT	Full	0.37 ft.	3.61 ft.
85-220030-003	85-220030-300	1"	ENP Carbon Steel	NPT	Full	1.48 ft.	9.31 ft.
85-220031-001	85-220031-100	1 1/4"	ENP Carbon Steel	NPT	Full	1.19 ft.	11.65 ft.
85-220031-002	85-220031-200	1 1/2"	ENP Carbon Steel	NPT	Full	1.77 ft.	12.08 ft.
85-220031-003	85-220031-300	2"	ENP Carbon Steel	NPT	Full	1.82 ft.	13.75 ft.
85-220032-001	85-220032-100	3"	ENP Carbon Steel	Grooved	Full	5.00 ft.	26.01 ft.
85-220032-002	85-220032-200	4"	ENP Carbon Steel	Grooved	Full	7.73 ft.	32.42 ft.

Note: Explosive proof variants do not alter the specifications.

Table 3: Pneumatic Actuator Specifications

Part Number with Solenoid	Part Number with Explosion Proof Solenoid	Actuator Mechanism	Actuator Type	Actuator Volume	Actuator Torque	Working Pressure	Maximum Pressure
85-220030-001	85-220030-100	Rack and Pinion	Spring Return	30 cu. in.	865 in.-lb.	115 PSIG	145 PSIG
85-220030-002	85-220030-200	Rack and Pinion	Spring Return	30 cu. in.	865 in.-lb.	115 PSIG	145 PSIG
85-220030-003	85-220030-300	Rack and Pinion	Spring Return	30 cu. in.	865 in.-lb.	115 PSIG	145 PSIG
85-220031-001	85-220031-100	Rack and Pinion	Spring Return	61 cu. in.	1877 in.-lb.	115 PSIG	145 PSIG
85-220031-002	85-220031-200	Rack and Pinion	Spring Return	61 cu. in.	1877 in.-lb.	115 PSIG	145 PSIG
85-220031-003	85-220031-300	Rack and Pinion	Spring Return	61 cu. in.	1877 in.-lb.	115 PSIG	145 PSIG
85-220032-001	85-220032-100	Rack and Pinion	Spring Return	189 cu. in.	4887 in.-lb.	115 PSIG	145 PSIG
85-220032-002	85-220032-200	Rack and Pinion	Spring Return	299 cu. in.	8288 in.-lb.	115 PSIG	145 PSIG

Note: Explosive proof variants do not alter the specifications.

EXPLOSION PROOF PNEUMATIC SOLENOID (P/N 06-118384-001)

The explosion proof pneumatic solenoid is a cost-effective component that is used with the pneumatic actuators and 3-Way Directional Valves (UL Listed) (P/N 85-2200XX-X0X). The solenoid is factory set to normally closed. A signal from the panel opens the solenoid that is attached to the appropriate pneumatic actuator. Pressure is then allowed to pass through the solenoid and open the 3-Way Directional Valve. See Table 4 for valve operating data.

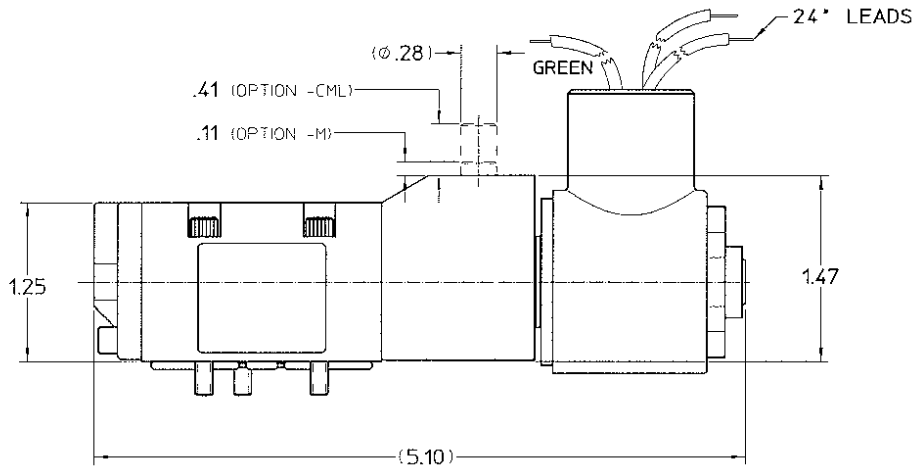


Figure 2. Explosion Proof Pneumatic Solenoid

Table 4: Pneumatic Solenoid Specifications

Description	Measurement
Pressure Range	15 to 115 PSIG
Voltage Rating	24 VDC
Power Consumption (DC)	7W
Power Consumption (AC)	6W
Coil	CG5
Weight	0.80 lb
Ports	1/4" NPT
Override	Locking Manual Override Button
Explosive Proof Rating	Class I Div 2, Group A and B Class I Div 1, Group C and D Class II, Div 1, Groups E,F, and G



For US and Canada explosive proof installations, seal all conduits within 18 inches from the end of the component and follow all installation instructions provided in NFPA 70 for hazardous area installations.

ORDER INFORMATION

Part Number	Description
85-220030-001	3-Way Directional Valve, 1/2" NPT, Carbon Steel, For ADS-FM200 & NOVEC 1230-UL Listed w/ Solenoid and Placement Monitor Switch
85-220030-002	3-Way Directional Valve, 3/4" NPT, Carbon Steel, For ADS-FM200 & NOVEC 1230-UL Listed w/ Solenoid and Placement Monitor Switch
85-220030-003	3-Way Directional Valve, 1" NPT, Carbon Steel, For ADS-FM200 & NOVEC 1230-UL Listed w/ Solenoid and Placement Monitor Switch
85-220031-001	3-Way Directional Valve, 1-1/4" NPT, Carbon Steel, For ADS-FM200 & NOVEC 1230-UL Listed w/ Solenoid and Placement Monitor Switch
85-220031-002	3-Way Directional Valve, 1-1/2" NPT, Carbon Steel, For ADS-FM200 & NOVEC 1230-UL Listed w/ Solenoid and Placement Monitor Switch
85-220031-003	3-Way Directional Valve, 2" NPT, Carbon Steel, For ADS-FM200 & NOVEC 1230-UL Listed w/ Solenoid and Placement Monitor Switch
85-220032-001	3-Way Directional Valve, 3" GVD, Carbon Steel, For ADS-FM200 & NOVEC 1230-UL Listed w/ Solenoid and Placement Monitor Switch
85-220032-002	3-Way Directional Valve, 4" GVD, Carbon Steel, For ADS-FM200 & NOVEC 1230-UL Listed w/ Solenoid and Placement Monitor Switch
85-220030-100	3-Way Directional Valve, 1/2" NPT, Carbon Steel, For ADS-FM200 & NOVEC 1230-UL Listed w/ Solenoid and Placement Monitor Switch, EX Proof
85-220030-200	3-Way Directional Valve, 3/4" NPT, Carbon Steel, For ADS-FM200 & NOVEC 1230-UL Listed w/ Solenoid and Placement Monitor Switch, EX Proof
85-220030-300	3-Way Directional Valve, 1" NPT, Carbon Steel, For ADS-FM200 & NOVEC 1230-UL Listed w/ Solenoid and Placement Monitor Switch, EX Proof
85-220031-100	3-Way Directional Valve, 1-1/4" NPT, Carbon Steel, For ADS-FM200 & NOVEC 1230-UL Listed w/ Solenoid and Placement Monitor Switch, EX Proof
85-220031-200	3-Way Directional Valve, 1-1/2" NPT, Carbon Steel, For ADS-FM200 & NOVEC 1230-UL Listed w/ Solenoid and Placement Monitor Switch, EX Proof
85-220031-300	3-Way Directional Valve, 2" NPT, Carbon Steel, For ADS-FM200 & NOVEC 1230-UL Listed w/ Solenoid and Placement Monitor Switch, EX Proof
85-220032-100	3-Way Directional Valve, 3" GVD, Carbon Steel, For ADS-FM200 & NOVEC 1230-UL Listed w/ Solenoid and Placement Monitor Switch, EX Proof
85-220032-200	3-Way Directional Valve, 4" GVD, Carbon Steel, For ADS-FM200 & NOVEC 1230-UL Listed w/ Solenoid and Placement Monitor Switch, EX Proof
85-220000-001	Retrofit Kit for Solenoid Placement Monitor - 3-Way Directional Valve, Includes Placement Monitor Switch and Accessories
85-220000-100	Retrofit Kit for Solenoid Placement Monitor - 3-Way Directional Valve, Includes Explosion Proof Placement Monitor Switch, Replacement Solenoid, and Accessories

EXPORT INFORMATION (USA)

Jurisdiction: EAR
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