

### General Description

Series D3DW directional control valves are high performance, 5-chamber, direct operated, wet armature, solenoid controlled, 3 or 4-way valves. They are available in 2 or 3-position and conform to NFPA's D05, CETOP 5 mounting patterns.

### Features

- 22 spools available including proportional.
- DC surge suppression available to protect electrical equipment.
- Easy access mounting bolts.
- CSA approved.
- No tools required for coil removal.
- High pressure tank line capability.
- Monitor switch available.

### Response Time (ms)

Signal to 95% spool stroke measured at 175 Bar (2500 PSI) and 75 LPM (20 GPM)

Solenoid Type	Pull-In	Drop-Out
DC	110	85

### Solenoid Ratings\*\*

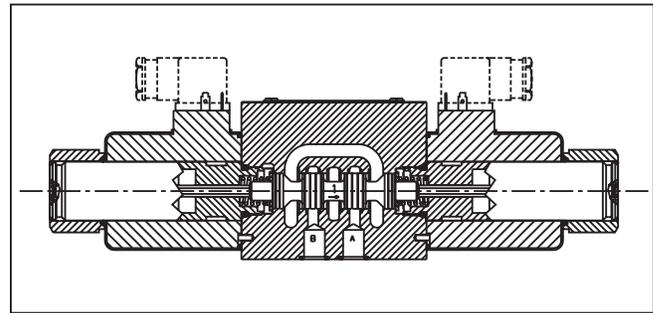
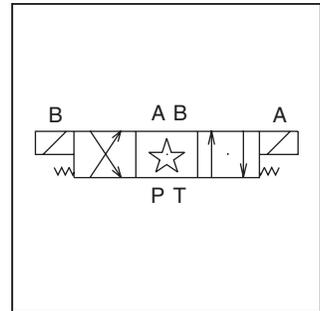
<b>Insulation</b>	Class H
<b>Allowable Deviation from rated voltage</b>	DC only -10% to +15%
<b>Armature</b>	Wet pin type

\*\* DC Solenoids available with optional molded metal oxide varistor (MOV) for surge suppression.

### D3DW Solenoid Electrical Characteristics

Solenoid Code	Nominal Volts	In Rush Amps	Holding Amps	Nominal Watts (Ref)
K	12 VDC	—	3.00	36
J	24 VDC	—	1.50	36
D	120 VDC	—	0.30	36
Y*	120/60 110/50	—	0.37	36
T*	240/60 220/50	—	0.18	36

\* AC input rectified to DC

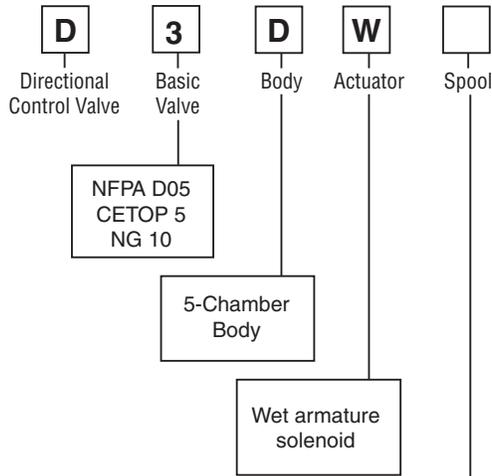


### Specifications

<b>Interface</b>	NFPA D05, CETOP 5, NG 10
<b>Max. Operating Pressure</b>	P, A, B: 345 Bar (5000 PSI) Standard CSA  207 Bar (3000 PSI) Tank: 207 Bar (3000 PSI) Standard CSA  103 Bar (1500 PSI)
<b>Maximum Flow</b>	See Spool Reference Chart
<b>Leakage Rates 100 SSU @ 49°C (120°F)</b>	Maximum Allowable: 19.7 cc (1.2 Cu. in.) per Minute/ Land @ 69 Bar (1000 PSI)* 73.8 cc (4.5 Cu. in.) per Minute/ Land @ 207 Bar (3000 PSI)* Typical: 4.9 cc (0.3 Cu. in.) per Minute/ Land @ 69 Bar (1000 PSI)* 26.2 cc (1.6 Cu. in.) per Minute/ Land @ 345 Bar (5000 PSI)

\* #008 and #009 Spools may exceed these rates, consult factory.

**A**



Code	Description
K	12 VDC
J	24 VDC
D	120 VDC
Y*	120/60 AC 110/50
T*	240/60 AC 220/50

\* Must be rectified.

Code	Description
N	Nitrile
V	Fluorocarbon

Code	Symbol	Code	Symbol
1		14	
2		15	
3		16	
4		20*	
5		21	
6		22	
7		26*	
8*		30**	
9**		81	
10		82	
11			
12			

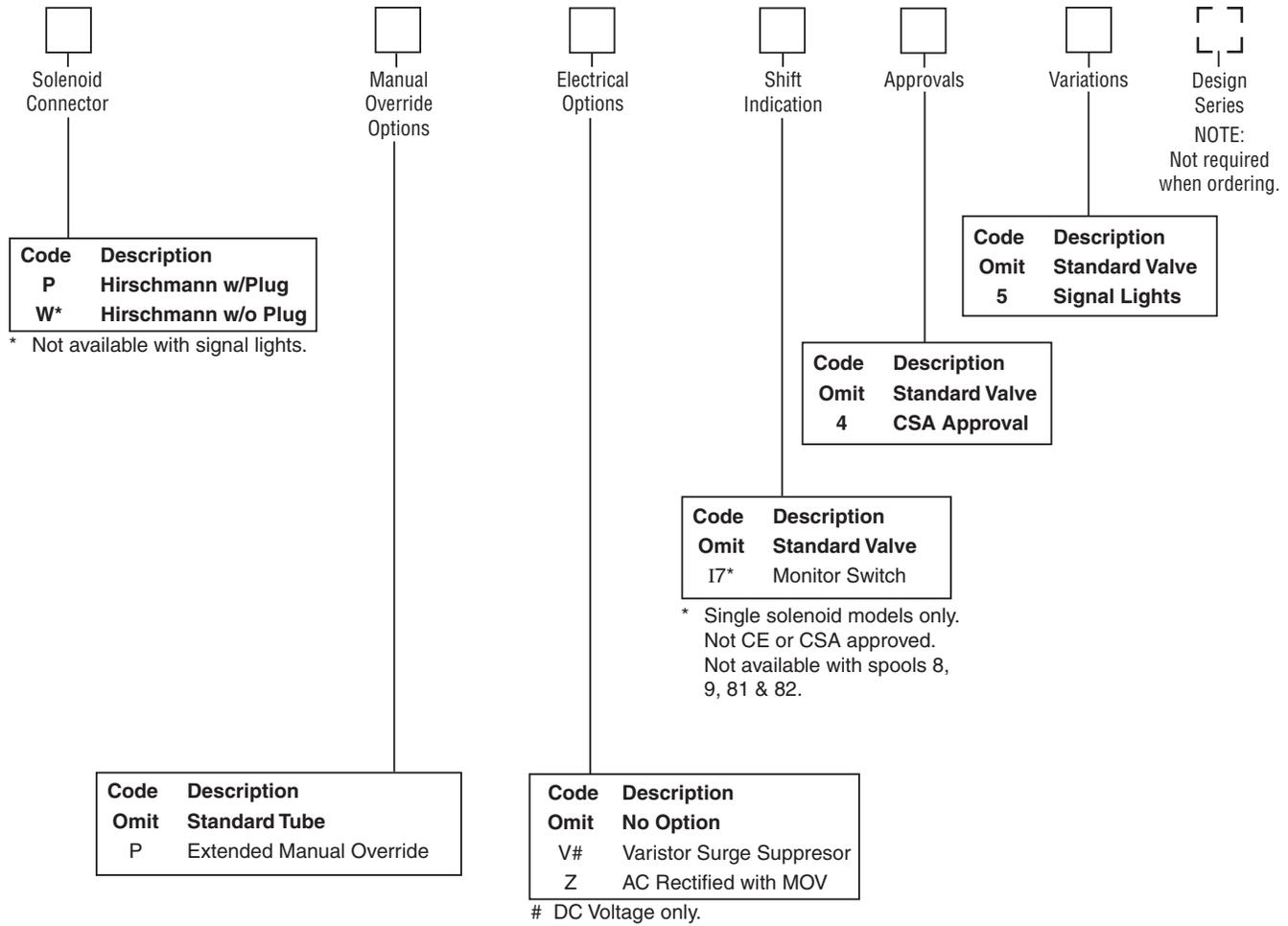
Code	Description	Symbol
B*	Single solenoid, 2 position, spring offset. P to A and B to T in offset position.	
C	Double solenoid, 3 position, spring centered.	
D†	Double solenoid, 2 position, detent.	
E	Single solenoid, 2 position, spring centered. P to B and A to T when energized.	
F	Single solenoid, 2 position. Spring offset, energized to center. Position spool spacer on A side. P to A and B to T in spring offset position.	
H*	Single solenoid, 2 position, spring offset. P to B and A to T in offset position.	
K	Single solenoid, 2 position. Spring centered. P to A and B to T when energized.	
M	Single solenoid, 2 position, spring offset, energized to center position. Spool spacer on B side. P to B and A to T in spring offset position.	

\* 8, 20 & 26 spools have closed crossover.  
 \*\* 9 & 30 spools have open crossover.

Valve schematic symbols are per NFPA/ANSI standards, providing flow P to A when energizing solenoid A. Note operators reverse sides for #8 and #9 spools. See installation information for details.

**Bold: Designates Tier I products and options.**

**Non-Bold: Designates Tier II products and options. These products will have longer lead times.**



**Mounting Bolt Kits**

UNC Bolt Kits for use with D3DW Directional Control Valves & Sandwich Valves					
		Number of Sandwich Valves @ 2.00" (50mm) thickness			
		0	1	2	3
D3DW	Standard:	BK98 1.62"	BK141 3.50"	BK142 5.50"	BK143 7.50"
	Metric:	BKM98 40mm	BKM141 90mm	BKM142 140mm	BKM143 190mm

**NOTE:** All bolts are SAE grade 8, 1/4-20 UNC-2A thread, torque to 16 Nm (12 ft-lbs).

**Valve Weight:**

Single Solenoid	5.3 kg (11.6 lbs.)
Double Solenoid	7.3 kg (16.0 lbs.)

**Seal Kit:**

Nitrile	SKD3DW
Fluorocarbon	SKD3DWV

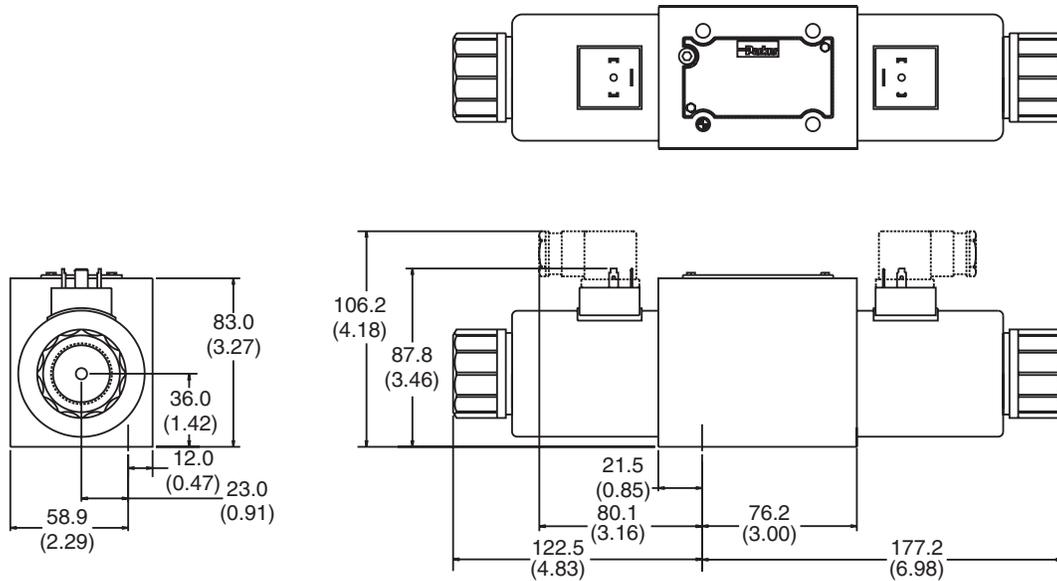
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Inch equivalents for millimeter dimensions are shown in (\*\*)

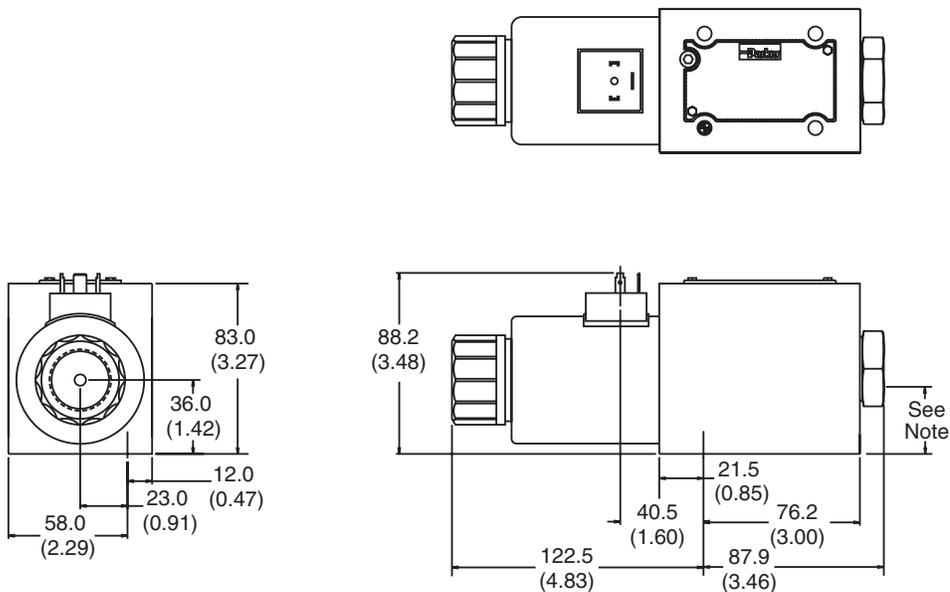
**A**

**Hirschmann, Double DC Solenoid**



**Note:** 30.0mm (1.18") from bottom of bolt hole counterbore to bottom of valve.

**Hirschmann, Single DC Solenoid**



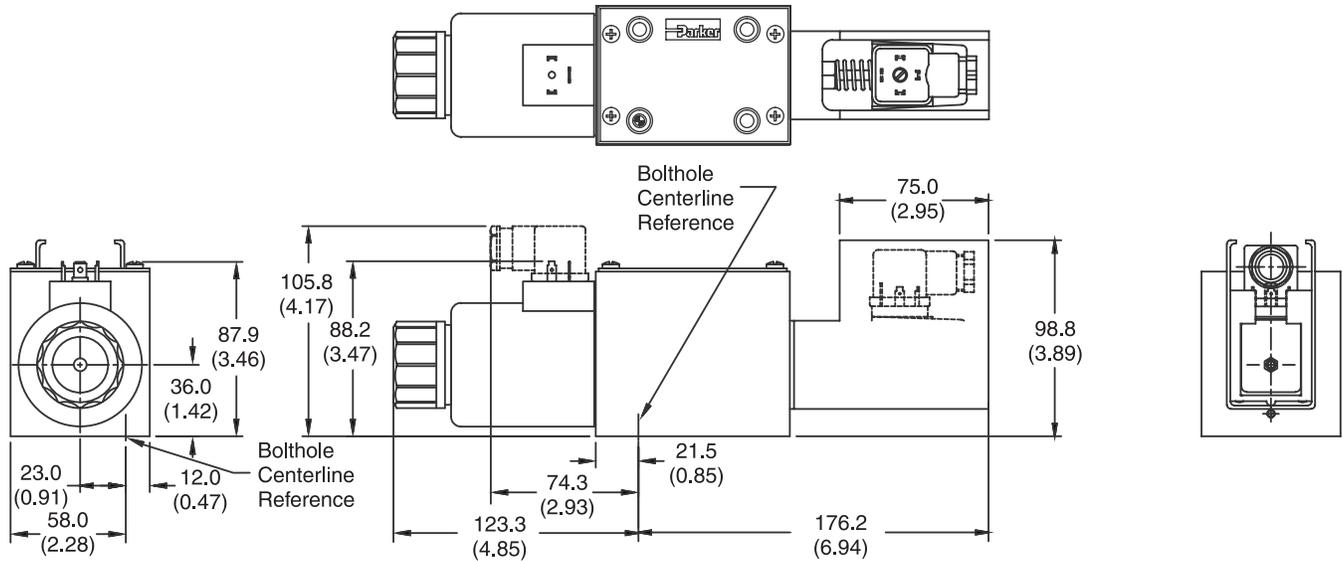
**Note:** 30.0mm (1.18") from bottom of bolt hole counterbore to bottom of valve.



Inch equivalents for millimeter dimensions are shown in (\*\*)

**Hirschmann, Single DC Solenoid  
with Variation I7 (Monitor Switch)**

**A**



**Note:** 30.0mm (1.18") from bottom of bolt hole counterbore to bottom of valve.

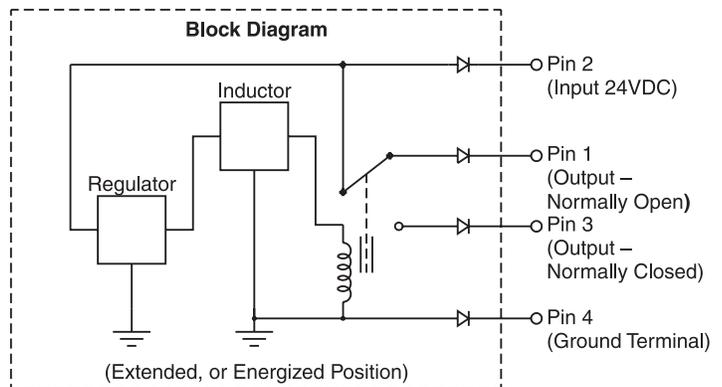


**Monitor Switch  
(Variation I7) End of Stroke**

This feature provides for electrical confirmation of the spool shift. This can be used in safety circuits, to assure proper sequencing, etc.

**Switch Data**

Inductive switch requiring +18-42 volt input. Outputs "A" and "B" are opposite; one at "0" voltage, the other at input voltage. During switching, "A" and "B" outputs reverse. Provides 0.4A switching current.



For repetitive switch power-up conditions, please consult factory.