

General Description

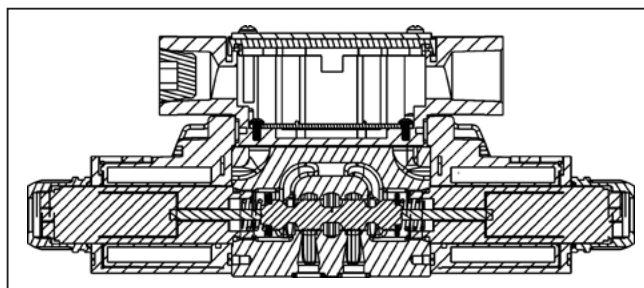
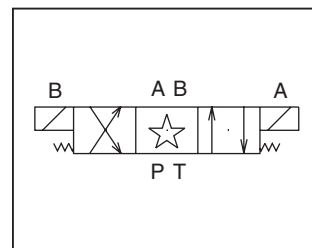
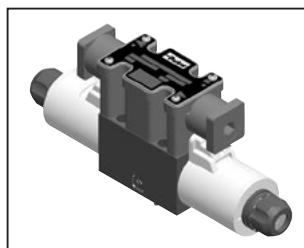
Series D1VW directional control valves are high performance, 4-chamber, direct operated, wet armature solenoid controlled, 3 or 4-way valves. They are available in 2 or 3-position and conform to NFPA's D03, CETOP 3 mounting patterns.

Features

- Soft shift available.
- Thirteen standard spool styles available (for other spools – Consult Factory).
- Two proportional spools.
- DC surge suppression.
- Seven electrical connection options.
- AC & DC lights available (CSA approval for solenoids and lights).
- Internally ground.
- Easy access mounting bolts.
- Waterproof (meets NEMA 4, up to IP69 on some models).
- Explosion proof.
- CSA approvals. CE approvals and Dual Rated approvals available.

Specifications

Mounting Pattern	NFPA D03, CETOP 3, NG 6
Mounting Interface	DIN 24340-A6 ISO 4401-AB-03-4-A CETOP R35H 4.2-4-03, NFPA D03
Maximum Pressure	P, A, B 345 Bar (5000 PSI) Standard 207 Bar (3000 PSI) 10 Watt CSA  276 Bar (4000 PSI) Tank: 103 Bar (1500 PSI) AC only 207 Bar (3000 PSI) DC/AC Rectified Standard 207 Bar (3000 PSI) AC Optional CSA  103 Bar (1500 PSI)



- U.L. recognized coils standard, expect Expl Pf.
- No tools required for coil removal.
- AC rectified coils.

Leakage Rates* 100 SSU @ 49°C (120°F)	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)
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*#008 and #009
Spools may exceed
these rates. Consult
Factory

Response Time

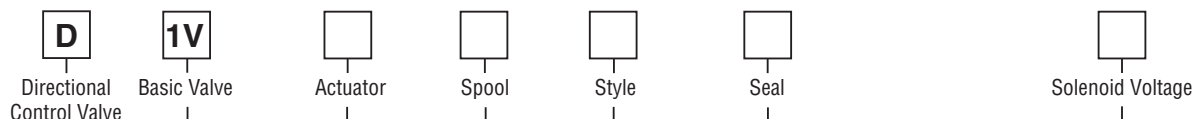
Response time
(milliseconds)
at 345 Bar (5000 PSI)
is 32 LPM (8.5 GPM).

Solenoid Type	Pull-In	Drop-Out
AC	13	20
DC 10 Watt	61	22
DC 30 Watt	51	21

Soft Shift	Orifice Size	Voltage	Spool Center Condition					
			Closed		Open		2-Position	
			Energize	De-Energize	Energize	De-Energize	Energize	De-Energize
S2	0.020	AC	175 ms	700 ms	600 ms	800 ms	150 ms	200 ms
		DC	200 ms	650 ms	700 ms	650 ms	175 ms	225 ms
S3	0.030	AC	150 ms	400 ms	500 ms	600 ms	100 ms	150 ms
		DC	125 ms	325 ms	550 ms	550 ms	100 ms	100 ms
S4	0.040	AC	125 ms	300 ms	450 ms	500 ms	100 ms	100 ms
		DC	100 ms	250 ms	500 ms	450 ms	75 ms	60 ms

WARNING: This product can expose you to chemicals including Lead, Nickel (Metallic), or 1,3-Butadiene which are known to the State of California to cause cancer, and Lead or 1,3-Butadiene which is known to the State of California to cause birth defects and other reproductive harm. For more information go to www.P65Warnings.ca.gov.

A



NFPA D03
 CETOP 3
 DIN NG6

Code	Description
W*	Solenoid, Wet Pin, Screw-in
HW*	Reversed Wiring

Code	Description
N	Nitrile
V	Fluorocarbon

Code	Description
D†#	120 VDC
E*	24/60 - 24/50 VAC
J	24 VDC
K##	12 VDC
Q††#	100/60 VAC
QD††#	100 VAC/60 Hz - 100 VAC/50 Hz
T^^	240/60 - 220/50 VAC
U***	98 VDC
Y	120/60 - 110/50 VAC

* Valve schematic symbols are per NFPA/ANSI standards, providing flow P to A when energizing solenoid A. Note operators reverse sides for #008 and #009 spools. See installation information for details. To configure per DIN standards (A coil over A port, B coil over B port) code valves as D1VHW***.

High watt only.
 * Leadwire only, low watt only.
 ** DIN, low watt available.
 *** Leadwire not available.
 ^^ Plug-in is low watt only.
 † DIN & Leadwire only.
 †† DIN only.

Code	Symbol	Code	Symbol
001		011	
002		015	
003		020*	
004		026*	
006		030**	
007		081†	
008*, 009**		082†	

* 008, 020 & 026 spools have closed crossover.
 ** 009 & 030 spools have open crossover.
 † Only DC or AC rectified.

Valve Weight:

Single Solenoid 1.36 kg (3.0 lbs.)
 Double Solenoid 1.6 kg (3.5 lbs.)

Standard Bolt Kit: BK209

Metric Bolt Kit: BKM209

Seal Kit:

Nitrile SKD1VWN91
 Fluorocarbon SKD1VWV91

Code	Description	Symbol
A*	Double solenoid, 2 position, no springs.	
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.	

* 020 spool only.
 ** 020, 026 and 030 spools only.
 † 020 and 030 spools only. High watt only.
 ‡ High Watt only.

Bold: Designates Tier I products and options.

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

Solenoid Connection		Coil Options		Tube Options		Manual Override Options		Electrical Options		Shift Response and Indication		Approvals		Valve Variations		Design Series			
Code Description C* Leadwire Conduit Box D** Metric Plug (M12X1) DESINA E† Explosion Proof F^x Flying Leadwire G†† Plug-In Conduit Box J++ Deutsch (DT04-2P) P DIN with Plug S‡ Double Spade W† DIN w/o Plug										Code Description Omit Standard Response S2* Soft Shift, 0.020" Orifice S3* Soft Shift, 0.030" Orifice S4* Soft Shift, 0.040" Orifice * Not available with low watt, AC coil, detent or DESINA. AC DIN coil must include rectified lighted plug or be Plug-in style.						Code Description Omit Standard Valve 4†# CSA Canada CSA22.2 No. 139-13 N CE Approved Q†# CE + CSA Approved † Not available with AC high pressure tube. # Valve is derated.		NOTE: Not required when ordering.	
* No conduit box variations – See Plug-in G. ** 24 VDC only, low watt only, lights, diode surge suppressor, not CSA approved. † Not available with lights. †† Required for variations on conduit box style, must have lights. ++ 12 and 24 VDC only. ‡ Only 12 VDC high watt. x 6" leadwire only.								Code Description Omit No Options J**# Diode Surge Suppressor Z† Rectified Coil # Plug-In – 24 VDC only. DIN – DC only with Lighted Plug (5), which has integrated Surge Suppression. "J" not required here. Deutsch – as follows: • 12 VDC Hi watt only • 24 VDC Hi & Lo watt 24 VDC "JER" required. "JET" available. Adds dust rating, not polarity sensitive [IIC, D]. Leadwire – not available † DC tube standard, Plug-In conduit box only. Not polarity sensitive. Only available with Y voltage.											
Code Description Omit* High watt D** Explosion Proof, EExd ATEX E** Explosion Proof, EExme ATEX, IECEx, from Germany F† Low Watt L†† 10 Watt R# Explosion Proof, ATEX/UL/CSA/IECEx, configurable cable connections T# Explosion Proof, ATEX/UL/CSA/IECEx, fixed horizontal cable connection U## Explosion Proof, UL/CSA * AC ambient temperature must not exceed 60°C (140°F). ** J voltage only, no options. † AC only. †† DC and AC rectified only. # J and Y voltages only. Y voltage is rectified. ## J and Y voltages only. Y voltage is not rectified.						Code Description Omit Standard P* Extended Manual Override with Boot T Covered Manual Override, DC only, or AC Rectified * Manual override options not available on Explosion Proof or soft shift. Not available with high pressure AC tube H.													
						Code Description Omit Standard Pressure 103.5 Bar (1500 PSI) AC 207 Bar (3000 PSI) DC H* High Pressure, AC only 207 Bar (3000 PSI) * Not available with CSA or Explosion Proof.													
												Code Description Omit Standard – No Variations 5** Signal Lights - Standard Signal Lights - Hirsch* (DIN w/Plug) (the DC Lighted Plug has Integral Surge Suppression) 56* Manaplug (Mini) with Lights 7B* Manaplug (Micro) with Lights 1C* Manaplug (Mini) Single Sol. 5-pin, with Lights 1D* Manaplug (Micro) Single Sol. 5-pin, with Lights 1J^x Male Weather Pack (one coil) 1L^x Male to Female Weather Pack (two coils) 1M* Manaplug Opposite of Normal 1P Painted Body 2P Complete Painted Valve, 1 mil thick, spec. 4D† Twist & Lock Override (old 5426, 33 Ford Wiring) 7W* 4-pin Micro Manaplug, Special Wiring with Lights 7Y* 4-pin Micro Manaplug, Special Wiring with Lights (old B755) * Plug-in Conduit Box ** Plug-in, DIN, or DESINA only. † DC/AC Rectified only. Not available with soft shift. x Flying leadwire only.							

CAUTION: Manaplug Micro = M12X1 Connection, 4 or 5 pin
Manaplug Mini = 7/8-16 UN-2A Connection

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