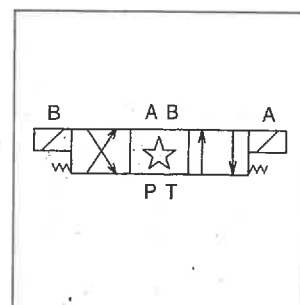
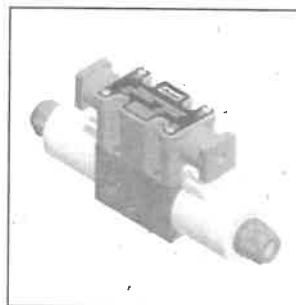


## General Description

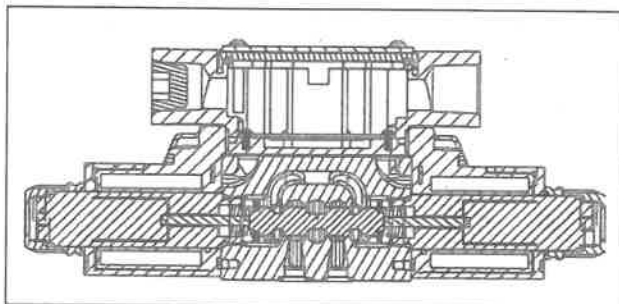
Series D1VW directional control valves are high performance, 4-chamber, direct operated, wet armature solenoid controlled, 3 or 4-way valves. They are available in 2 or 3-position and conform to NFPA's D03, CETOP 3 mounting patterns.

## Features

- Soft shift available.
- 19 standard spool styles available (for other spools – Consult Factory).
- Proportional spools.
- DC surge suppression.
- Eight 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 IP67 on some models).
- Explosion proof.
- CSA approvals.



**A**



- U.L. recognized available - Contact the division.
- No tools required for coil removal.
- AC rectified coils.

## Specifications

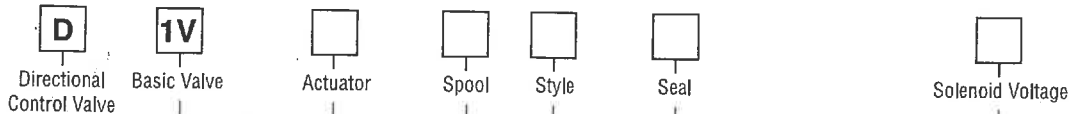
|                           |                                                                                                                                                                                                                                                       |                                                                        |                                                                                                                                                                                                             |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Mounting Pattern</b>   | NFPA D03, CETOP 3, NG 6                                                                                                                                                                                                                               | <b>Leakage Rates*</b>                                                  | Maximum Allowable:                                                                                                                                                                                          |
| <b>Mounting Interface</b> | DIN 24340-A6<br>ISO 4401-AB-03-4-A<br>CETOP R35H 4.2-4-03,<br>NFPA D03                                                                                                                                                                                | <b>100 SSU @<br/>49°C (120°F)</b>                                      | 19.7 cc (1.2 Cu. in.) per Minute/Land @<br>69 Bar (1000 PSI)*                                                                                                                                               |
| <b>Maximum Pressure</b>   | P, A, B<br>345 Bar (5000 PSI) Standard<br>207 Bar (3000 PSI) 10 Watt<br>CSA  276 Bar (3750 PSI)<br>Tank:<br>103 Bar (1500 PSI) AC only<br>207 Bar (3000 PSI) DC/AC<br>Rectified Standard<br>207 Bar (3000 PSI) AC Optional<br>CSA  103 Bar (1500 PSI) | *#008 and #009<br>Spools may<br>exceed these rates.<br>Consult Factory | 73.8 cc (4.5 Cu. in.) per Minute/Land @<br>207 Bar (3000 PSI)*<br>Typical:<br>4.9 cc (0.3 Cu. in.) per Minute/Land @<br>69 Bar (1000 PSI)*<br>26.2 cc (1.6 Cu. in.) per Minute/Land @<br>345 Bar (5000 PSI) |

### 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       |

|            | Orifice<br>Size | Spool Center Condition |             |          |             |            |             |
|------------|-----------------|------------------------|-------------|----------|-------------|------------|-------------|
|            |                 | Closed                 |             | Open     |             | 2-Position |             |
|            |                 | Energize               | De-Energize | Energize | De-Energize | Energize   | De-Energize |
| Soft Shift |                 |                        |             |          |             |            |             |
| S2         | 0.020           | 125 ms                 | 920 ms      | 200 ms   | 275 ms      | 51 ms      | 100 ms      |
| S5         | 0.050           | 51 ms                  | 675 ms      | 50 ms    | 27 ms       | 51 ms      | 21 ms       |



NFPA D03  
 CETOP 3  
 DIN NG6

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

| Code | Description  |
|------|--------------|
| N    | Nitrile      |
| V    | Fluorocarbon |
| E*   | EPR          |

\* Contact HVD for availability.

| Code | Description | Code | Description         |
|------|-------------|------|---------------------|
| A**  | 24/50 VAC   | Q**  | 100/60 VAC          |
| D    | 120 VDC     | QD†  | 100/60 - 100/50 VAC |
| G    | 198 VDC     | R    | 24/60 VAC           |
| J    | 24 VDC      | T    | 240/60 - 220/50 VAC |
| K    | 12 VDC      | U    | 98 VDC              |
| L    | 6 VDC       | Y    | 120/60 - 110/50 VAC |
| N*** | 220/50 VAC  | Z    | 250 VDC             |
| P*** | 110/50 VAC  |      |                     |

\*\* High Watt only

\*\*\* Explosion Proof only.

† Available in DIN only.

\* 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\*\*\*.

| Code        | Symbol | Code  | Symbol |
|-------------|--------|-------|--------|
| 001         |        | 011   |        |
| 002         |        | 014   |        |
| 003         |        | 015   |        |
| 004         |        | 016   |        |
| 005         |        | 020*  |        |
| 006         |        | 026*  |        |
| 007         |        | 030** |        |
| 008*, 009** |        | 081   |        |
| 010         |        | 082   |        |

\* 008, 020 & 026 spools have closed crossover.

\*\* 009 & 030 spools have open crossover.

| 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. |        |

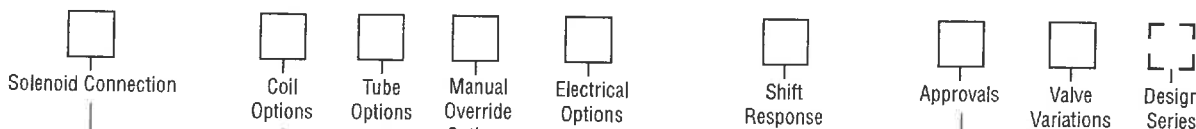
\* 020, 026 and 030 spools only.

† 020 and 030 spools 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.**



NOTE:  
 Not required  
 when ordering.

| Code       | Description                 |
|------------|-----------------------------|
| <b>C*</b>  | <b>Leadwire Conduit Box</b> |
| D**        | Metric Plug (M12X1), DESINA |
| E†         | Explosion Proof             |
| <b>G††</b> | <b>Plug-In Conduit Box</b>  |
| <b>J#</b>  | <b>Deutsch (DT06-2S)</b>    |
| M#         | Metri-Pack (150)            |
| <b>P</b>   | <b>DIN with Plug</b>        |
| S#         | Dual Spade                  |
| <b>W†</b>  | <b>DIN w/o Plug</b>         |

\* No variations – See Plug-in.  
 \*\* DC only, lights, diode surge suppressor, not CSA approved.  
 † Not available with lights.  
 †† Required for variations on conduit box style. Must have lights.  
 # DC only, no lights, not CSA approved.

| Code        | Description                            |
|-------------|----------------------------------------|
| <b>Omit</b> | <b>Standard Response</b>               |
| S2*         | Soft Shift, 0.020" Orifice             |
| S3*         | Soft Shift, 0.030" Orifice             |
| S4*         | Soft Shift, 0.040" Orifice             |
| S5*         | Soft Shift, 0.050" Orifice             |
| I7**        | Monitor Switch Direct Op. End Stroke   |
| I8**        | Monitor Switch Direct Op. Start Stroke |

\* Not available with 10 watt. AC DIN coil must include plug.  
 \*\* Single solenoid models only. Not CE or CSA approved.

| Code         | Description                        |
|--------------|------------------------------------|
| <b>Omit*</b> | <b>High Watt</b>                   |
| D**          | Explosion Proof, EEXD ATEX         |
| E**          | Explosion Proof, EEXME ATEX        |
| F†           | Low Watt                           |
| L††          | 10 Watt                            |
| O**          | Explosion Proof, MSHA              |
| T#           | Explosion Proof, Ex d IIC ATEX/CSA |
| U**          | Explosion Proof, UL/CSA            |

\* AC ambient temperature must not exceed 60°C (140°F).  
 \*\* 60 Hz only on AC, no options.  
 † AC only.  
 †† DC and AC rectified only.  
 # J, K and Y voltages only. Dual frequency on AC, no options.

| Code        | Description            |
|-------------|------------------------|
| <b>Omit</b> | <b>No Options</b>      |
| J**         | Diode Surge Suppressor |
| Z†          | Rectified Coil         |

† DC tube standard.  
 \*\* DC only. DIN coil must have plug with lights.

| Code        | Description           |
|-------------|-----------------------|
| <b>Omit</b> | <b>Standard Valve</b> |
| 3*†         | CSA US                |
| 4*#         | CSA Canada            |

\* Not available with AC high pressure tube.  
 † B, C, H styles only. J, K, Y, U voltages only. C, G, W sol. connections only. Conforms to UL429.  
 # Valve is derated.

| Code        | Description                     |
|-------------|---------------------------------|
| <b>Omit</b> | <b>Standard</b>                 |
| T*†         | No Override                     |
| P*          | Extended Manual Override w/Boot |

\* Manual override options not available on explosion proof or soft shift.  
 † DC/AC rectified only.

| Code        | Description                    |
|-------------|--------------------------------|
| <b>Omit</b> | <b>Standard Pressure</b>       |
|             | <b>103.5 Bar (1500 PSI) AC</b> |
|             | <b>207 Bar (3000 PSI) DC</b>   |
| <b>H*</b>   | <b>High Pressure, AC only</b>  |
|             | <b>207 Bar (3000 PSI)</b>      |

\* Not available with CSA.

| Code        | Description                                                 |
|-------------|-------------------------------------------------------------|
| <b>Omit</b> | <b>No Variations</b>                                        |
| <b>5**</b>  | <b>Signal Lights</b>                                        |
| <b>56*</b>  | <b>Manaplug (Mini) with Lights</b>                          |
| 7B*         | Manaplug (Micro) with Lights                                |
| <b>1C*</b>  | <b>Manaplug (Mini) Single Sol. 5-pin, with Lights</b>       |
| 1D*         | Manplug (Micro) Single Sol. 5-pin, with Lights              |
| 1M*         | Manaplug Opposite of Normal                                 |
| 4D†         | Twist & Lock Override (Old 5426, 33 Ford wiring)            |
| 4E†         | Push Manual Override (Old x5450)                            |
| 4F          | Heavy Duty Detent                                           |
| 1P          | Painted Body                                                |
| 7Y*         | 4-pin M12x1 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.

**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

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

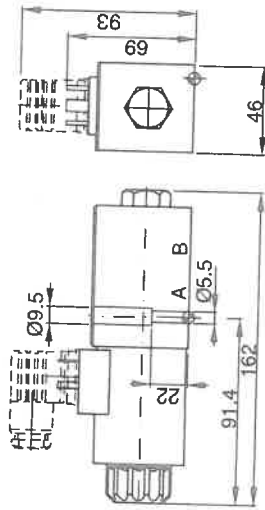
D1.indd, dd



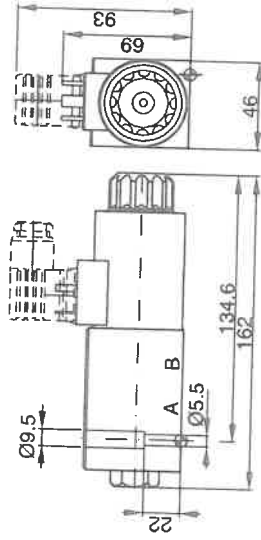
Catalogue MSG11-3500/UK  
**Dimensions**

**Directional Control Valve  
Series D1VW**

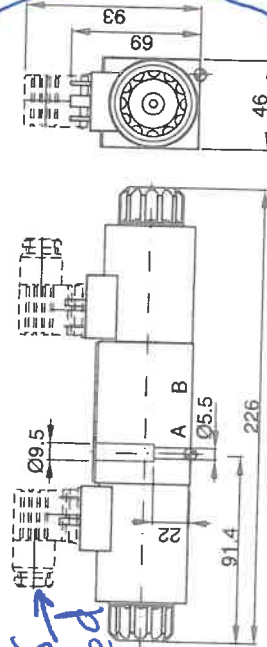
**Interface EN 175301-803, DC solenoid  
B, E, F -style**



**H, K, M -style**

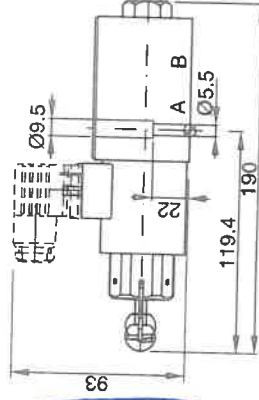


**C, D -style**



*Plugs  
Included*

**Option 4N, with lockable manual override  
(available for all styles, DC only)**



**Interface EN 175301-803 AC solenoid**