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Whatever your industry, no matter which processes you manage, Eaton parts and systems help keep you up and running. Our components make equipment more efficient and easier to use, so you get optimal machine performance and maximum productivity.

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There’s a reason farming and forestry are called “working the land.” These segments involve some of the hardest work and longest hours of any sector in the economy. Your productivity and profitability depend on the way you manage time and tasks.

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Eaton technologies can make your driving operation more successful. Greater comfort and productivity help increase driver retention, while reduced emissions, leaks, and noise improve environmental performance. Increased efficiencies overall mean lower costs and higher net revenue.

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Eaton hydraulic systems provide the precise control and consistent operation required for material handling and utility work. With a broad selection of products and solutions built in, Eaton helps make you a master of your domain.

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When you work on a large scale, even the details are big. You need to trust every part of the equipment that lets you handle construction and mining jobs. For reliable components that deliver consistent performance in extreme conditions, turn to Eaton.

Eaton is a leading diversified power management company

Understanding and helping our customers succeed
• Listening and understanding to requirements and business drivers
• Delivering solutions with value propositions to solve the critical business needs

Knowing what’s important to our customers and integrating that knowledge into the fabric of our business
• ...to deliver innovative, quality products
• ...to respond fast
• ...to provide dedicated customer service and support around the globe

Our strength is global reach with local responsiveness and support
• Customers served in more than 150 countries
• Diverse channels ensure reliable availability and support
• Design and engineering teams provide support for standard products and custom solutions
• Eaton experts offer efficient product and application training

Eaton provides reliable, efficient and safe power management for a growing number of industries.
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DG3V-7 30 Design, Remote Pilot Operated Directional Valve

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Introduction

General Description

DG*V-7 valves are used primarily for controlling the starting, stopping and direction of fluid flow.

Two series of valves, DG5V solenoid controlled, pilot operated and DG3V pilot operated models are available with a wide selection of spools. These include meter-in and meter-out spools and a regeneration type that can obviate extra valves essential in traditional circuit arrangements.

All spools have been designed to provide low shock, fast response characteristics which can be enhanced by optional stroke and/or pilot choke adjustments.

Models include spring offset, spring centered and detented versions.

DG5V valves can be arranged for Internal or External pilot pressure and/or drain connections.

Highlights/Benefits

- 50 design will only have high performance pilot valves.
- High pressure and flow capability for maximum cost-effectiveness.
- Performance upgrade for rated pressure of 350 bar & flow up to 300 lpm.
- Low pressure drop in P-A, P-B, B-T, A-T to minimize power wastage.
- Low shock characteristics to maximize machine life.
- Facility to change solenoid coil without disturbing the hydraulics envelop.
- A lower pressure drop reduces the amount of energy required from the pump to meet the desired pressure and flows needed to move cylinders/equipment.
- This in turn can save the customer money by reducing the amount of electricity drawn from their machine.
- Tank port pressure up to 250 bar.
- External/Internal, Pilot pressure & Drain Plug accessible from the top face & without removing the end cover.
- The many optional features, particularly for DG5V valves, permit matching to virtually every application within the valve’s power capacity.
- Optional mainstage spool position monitoring switch (CE marked) for Spool 35A-EN600.
Functional Symbols

DG3V-7, Remote Pilot operated Models
Comprehensive and simplified symbols.

Spring Offset, End-to-End, DG3V-7-*A

Spring Offset, End-to-End, Opposite Hand, DG3V-7-*AL

Spring Centered, DG3V-7-*C

DG3V-7 Options

The following are shown in a DG3V-7-*C example:

1. Pilot choke module
2. Stroke adjusters at either or at both ends (shown at both ends in example)

One or more options can be built into any DG3V-7 series valve.

Spool types: All ▲

◆ "a" and "b" interchanged for spool type 8.
▲ X' and Y' spools require a stroke adjuster at one or both ends, dependent on the application, to limit stroke towards positions "a" and/or "b".
**Functional Symbols**

**DG5V-7, Solenoid Controlled, Pilot Operated Models**
Comprehensive and simplified symbols shown configured for external pilot supply and internal drain.

**DG5V-7 Options**
The following are shown in a DG5V-7-*C example:
1. Pilot choke module
2. Stroke adjusters, at either or at both ends (shown at both ends in example)
3. External pilot connection
4. Internal drain
One or more options can be built into any DG5 series valve.

Spool types: All
- “a” and “b” interchanged for spool type 8.
- X’ and Y’ spools require a stroke adjuster at one or both ends, dependent on the application, to limit stroke towards positions “a” and/or “b”.

---

**Notes:**
- Spring Offset, End-to-End, DG5V-7-*A
- Spring Offset, End-to-End, Opposite Hand, DG5V-7-*AL
- Spring Centered, DG5V-7-*C
- Spring Offset, End-to-Center, DG5V-7-*B
- Spring Offset, End-to-Center, Opposite Hand, DG5V-7-*BL
- Detented, DG5V-7-*N
Functional Symbols

Spool Types DG3V-7 and DG5V-7
Shown in 3-position form, plus 2 transients.

![Diagram of Spool Types DG3V-7 and DG5V-7]

Notes:
In certain 2-position valves, the "o" position becomes an additional transient, i.e. in DG5V-7-*AL and DG5V-7-*N valves.

- Only 35A available
**Model Codes**

DG3V-7 30 Series, Remote Pilot Operated Directional Valve  
DG5V-7 50 Design, Solenoid Controlled Pilot Operated Directional Valve

**For Remote Pilot operated valves:**  
(F3) - DG3V-7-** - (**) -30

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
</table>
| Fluid Compatibility  
Blank = Standard BUNA-Nitrile Seals  
F3 = Viton Seals  
| Note: For further information see “Hydraulic Fluids” section on page 13.

**Spool Spring Arrangement**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
</tr>
</thead>
</table>
| A = Spring offset, end-to-end (P to B when operated)  
AL = As “A” but left-hand build (P to A when operated)  
B = Spring offset, end-to-center (P to B when operated)  
BL = As “B” but left-hand build (P to A when operated)  
| C = Spring centered  
N = Two-position detented  
DG5V option. Same function from DG3V-7-*C valves by alternating pilot supply to one port (X or Y) and permanently draining the other.

**Spool Control**

1 = Stroke adjustment at both ends  
2 = Pilot choke adjustment both ends  
3 = “1” and “2” combined  
7 = Stroke adjustment, port A end only  
8 = Stroke adjustment, port B end only  
27 = “2” and “7” combined  
28 = “2” and “8” combined

Omit if not required  
▲ Not applicable to DG3V-7-*BL models.  
▼ Not applicable to models shown in the

**Main Stage Spool Monitoring Switch**

Only with “35A” spool  
(Or if not required.)  
PPA - Offset sensing proximity switch “A” port end

* The spool position monitoring switch shown on this technical document is CE marked and certified and complies to European Standard EN 61000-6-4: 2001 (Emissions) for Class A and European Standard EN 61000-6-2: 2001 (Immunity).

**External Pilot Supply. DG5V Valve Option**

Omit for internal pilot supply

**Internal Pilot Drain, DG5V Valve Option**

Omit for external drain, which is also mandatory for 1, 8 and 9 spool-type valves

**Manual Override Option**

Blank = Plain override in solenoid end(s) only  
H = Water-resistant manual override on solenoid end(s)  
Z = No override at either end  
▲ No override in non-solenoid end of single-solenoid valves.

**Solenoid Energization Indentify**

V = Solenoid “A” is at port A end of pilot valve and/or solenoid “B” at port B end independent of main-stage valve port locations or spool type; German practice.  
Omit (except as noted below) for US ANSI B93.9 standard whereby solenoid “A” is that which, when energized, connects P to A in main-stage valve, and/or solenoid “B” connects P to B.  
Note: Energization identities on valves with type 8 spools are identical under US and German practices. In such cases the “V” code is used.

**Solenoid Type/Connection(s)**

U = ISO 4400 (DIN 43650) mounting  
U1 = ISO4400 fitted with PG11 plug  
U6 = ISO4400 with fitted DIN plug with lights  
KU = Top exit flying lead (150mm)  
KUP4 = Junior timer (Amp) connector  
KUP5 = Integral Deutsch Connector  
FW = Flying lead with 1/2” NPT thread wiring housing  
FTW = Flying lead with 1/2” NPT thread junction box and terminal strip

Some female plug connector options available separately from Eaton. Others available from electrical stockists.  
▲ Female connector to be supplied by user.

**Indicate Lights, Option for Codes FTW, in item 10.**

L = Lights fitted  
Omit if lights not required

For U-code solenoids use plug with integral light.

**Coil Rating**

See “Operating Data” on page 11 for further information.

B = 110V AC 50 Hz/ 120V AC 60 Hz  
BL = 110V AC 50 Hz/ 120V AC 60 Hz - Low Power  
D = 220V AC 50 Hz/ 240V AC 60 Hz  
DS = 28V DC 30 Watt  
ED = 250V AC 50 Hz  
G = 12V DC  
GL = 12V DC 18 Watt  
H = 24V DC  
HL = 24V DC 18 Watt  
* For 60 Hz or dual frequency.

**Design Number**

30 series for DG3V valves.  
50 series for DG5V valves.  
Subject to change.

**For Mounting Subplate and Fastener Kit Options**

See “Supporting products” on page 11
Application Notes DG5V-7 50 Design

Pilot Pressure

a. Pilot pressure must always exceed tank line pressure by at least the requisite minimum pilot pressure. This also applies when combining open center spools (0, 1, 8, 9 and 11) with internal pilot pressure, but they should be used only with externally drained valves.

b. Internally drained valves should be used only when surges in the tank line cannot possibly overcome the minimum pilot pressure differential referred to above. When the possibility of pressure surges in the tank line exist, externally drained valves are recommended.

c. When DG5V-7-*N valves are de-energized the pilot and main spools remain in the last selected position, provided that pilot pressure is maintained. If pilot pressure fails, or falls below the minimum, the main spool will spring center.

Caution: Because of this in-built feature the flow conditions of the center position must be selected with care, for the effect on both the direction of flow and the pilot pressure.

Stroke Adjustment Options

These control the maximum opening of the main spool/body passages by adjusting the limits of spool stroke. By this means, the response time and the pressure drop across the valve for any particular flow rate can be controlled. Stroke adjusters can be fitted at either or both ends of the main-stage valve for adjusting the stroke in one or both directions. One use of stroke adjusters is for controlling the metering characteristics of “X*” or “Y*-” type spools. (See model code #4.)

Pilot Choke Adjustment Options

These provide a meter-out flow control system to the fluid in the pilot chambers of main-stage valves. It allows the velocity of the mainstage spool to be controlled, thereby reducing transient shock condition. For optimum results, a constant reduced pilot pressure is recommended.

Control Data, General

a. Dependent on the application and the system filtration, any sliding spool valve, if held shifted under pressure for long periods of time, may stick and not move readily due to fluid residue formation. It may therefore need to be cycled periodically to prevent this from happening.

b. Surges of fluid in a common drain line serving two or more valves can be of sufficient magnitude to cause inadvertent shifting of the spools. It is recommended that circuit protection be used, such as separate drain lines.

c. Control by stroke adjusters, pilot chokes and minimum-pilot-pressure generator options is described on this page.
Operating Data

Performance data typical under standard test conditions which use antiwear hydraulic oil (Class L-HM) at 21 cSt (102 SUS) and 50°C (122°F).

MAXIMUM PRESSURES:

**DG3V-7 valves; ports:**

<table>
<thead>
<tr>
<th>Port</th>
<th>Maximum Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>P, A, B</td>
<td>350 bar (5000 psi)</td>
</tr>
<tr>
<td>T</td>
<td>300 bar (4351 psi)</td>
</tr>
<tr>
<td>X and Y</td>
<td>250 bar (3626 psi)</td>
</tr>
</tbody>
</table>

**DG5V-7-**([-L][-*)(-E)(-*) valves, (externally drained); ports:**

<table>
<thead>
<tr>
<th>Port</th>
<th>Maximum Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>P, A, B</td>
<td>350 bar (5000 psi)</td>
</tr>
<tr>
<td>T</td>
<td>300 bar (4351 psi)</td>
</tr>
<tr>
<td>Y</td>
<td>210 bar (3045 psi) *</td>
</tr>
<tr>
<td>X</td>
<td>250 bar (3626 psi) **</td>
</tr>
</tbody>
</table>

*Restricted by Pilot valve core tube rating  
**A pressure reducer valve must be used for higher pressures.

**DG5V-7-**([-L][-*)(-E)-T(-*) valves, (internally drained); ports:**

<table>
<thead>
<tr>
<th>Port</th>
<th>Maximum Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>P, A, B</td>
<td>350 bar (5000 psi)</td>
</tr>
<tr>
<td>T and Y</td>
<td>210 bar (3045 psi) *</td>
</tr>
<tr>
<td>X</td>
<td>250 bar (3626 psi) **</td>
</tr>
</tbody>
</table>

** MAXIMUM FLOW RATES, L/MIN (USGPM) AT THE MINIMUM PILOT PRESSURES, AND WITH SPOOL TYPE:**

<table>
<thead>
<tr>
<th>Operating Pressure in bar (psi)</th>
<th>50(725)</th>
<th>100(1450)</th>
<th>150(2175)</th>
<th>200(2900)</th>
<th>250(3625)</th>
<th>300(4351)</th>
<th>350(5076)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0*,2,3,6,8*,9**,31,33,52,521,X2,X33,Y2,Y33,35A</td>
<td>300(80)</td>
<td>300(80)</td>
<td>300(80)</td>
<td>300(80)</td>
<td>300(80)</td>
<td>300(80)</td>
<td>300(80)</td>
</tr>
<tr>
<td>1*,11*</td>
<td>300(80)</td>
<td>300(80)</td>
<td>300(80)</td>
<td>300(80)</td>
<td>175(47)</td>
<td>125(34)</td>
<td>70(20)</td>
</tr>
</tbody>
</table>

** SUBJECT TO P-T PRESSURE SATURATION.  
* Open centred spools

Pilot pressures

See “Pilot Pressures” on page 12

Control (swept) volume(s), DG3V and main-stage of DG5V valves:

<table>
<thead>
<tr>
<th>Volume</th>
<th>Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center-to-end</td>
<td>4.9 cm³ (0.29 in³)</td>
</tr>
<tr>
<td>End-to-end</td>
<td>9.8 cm³ (0.60 in³)</td>
</tr>
</tbody>
</table>

ELECTRICAL INFORMATION:

Coil Voltage ratings, DG5V valves

See 12 in “Model Code” on page 8

Coil Voltage limits, DG5V valves:

<table>
<thead>
<tr>
<th>Voltage limit</th>
<th>Maximum voltage</th>
<th>Minimum voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>See “Temperature limits”, on page 11</td>
<td>90% of rated voltage</td>
<td></td>
</tr>
</tbody>
</table>

Power consumption, DG5V valves with AC solenoids:

| Single-frequency coils, 50 Hz types “A” and “C” | 225 | 39 |
| Dual-frequency coils at 50 Hz, types “B” and “D” | 265 | 49 |
| Dual-frequency coils at 60 Hz, types “B” and “D” | 260 | 48 |

Power consumption, DG5V valves with DC solenoids

30W at rated voltage and 20 C (68 F)

Relative duty factor, DG5V valves

Continuous; ED = 100%

Type of protection, DG5V valves:

ISO 4400 coils with plug fitted correctly

IEC 144 class IP65

Junction box

IEC 144 class IP65 (NEMA 4)

Coil winding

Class H

Lead wires (coil types “F****”)

Class H

Coil encapsulation

Class F
Operating Data

**Temperature Limits:**

Fluid temperature limits: -20°C (-4°F) to +70°C (158°F)

Ambient temperature limits: -20°C (-4°F) to +70°C (158°F)

**Maximum Ambients, DG5V Valves with Coils Listed in 12 in “Model Code” Two Pages Back, and Under Conditions Stated Below:**

Dual-Frequency Coils:
- at 50 Hz and 107% of Rated Voltage: 65°C (150°F)
- at 50 Hz and 110% of Rated Voltage: 65°C (150°F)
- at 60 Hz and 107% of Rated Voltage: 65°C (150°F)
- at 60 Hz and 110% of Rated Voltage: 65°C (150°F)

Single-Frequency (50 Hz) Coils:
- at 50 Hz and 110% of Rated Voltage: 75°C (165°F)

DC Coils:
- at 50 Hz and 110% of Rated Voltage: 70°C (158°F)

**Pressure Drop Characteristics**

See page 12, 13

**Response Times, DG5V Valves:**

Typical values for a DG5V-7-2C-E-50 based on a 100% rated voltage from energization/de-energization of the coil to full displacement of mainstage spool. At 150 l/min. and 175 bar.

<table>
<thead>
<tr>
<th>Coil Rating</th>
<th>Pilot Pressure, bar (psi)</th>
<th>Energizing</th>
<th>Time, ms</th>
</tr>
</thead>
<tbody>
<tr>
<td>110V50Hz AC</td>
<td>15 (218)</td>
<td>60</td>
<td>40*</td>
</tr>
<tr>
<td></td>
<td>100 (1450)</td>
<td>25</td>
<td>40*</td>
</tr>
<tr>
<td></td>
<td>250 (3600)</td>
<td>15</td>
<td>40*</td>
</tr>
<tr>
<td>24V DC</td>
<td>15 (218)</td>
<td>95</td>
<td>60*</td>
</tr>
<tr>
<td></td>
<td>100 (1450)</td>
<td>60</td>
<td>60*</td>
</tr>
<tr>
<td></td>
<td>250 (3600)</td>
<td>50</td>
<td>60*</td>
</tr>
</tbody>
</table>

*From applying a signal at the solenoid until the main-stage spool completes its travel.

**Installation Dimensions:**

<table>
<thead>
<tr>
<th>Valves</th>
<th>See page 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting</td>
<td>Surface</td>
</tr>
</tbody>
</table>

**Mass (Weight), Basic Models:**

<table>
<thead>
<tr>
<th>Model</th>
<th>kg (lb) approx.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DG3V-7</td>
<td>7.3 (16.1)</td>
</tr>
<tr>
<td>DG5V-7 - A/B (AC Voltages)</td>
<td>8.4 (18.5)</td>
</tr>
<tr>
<td>DG5V-7 - A/B (DC Voltages)</td>
<td>8.5 (18.7)</td>
</tr>
<tr>
<td>DG5V-7 - C/N (AC Voltages)</td>
<td>8.7 (19.2)</td>
</tr>
<tr>
<td>DG5V-7 - C/N (DC Voltages)</td>
<td>9.1 (20.0)</td>
</tr>
</tbody>
</table>

*Add 1.1 kg (2.4 lb) when pilot chock adjustment is fitted.

**Supporting Products:**

<table>
<thead>
<tr>
<th>Subplate</th>
<th>See catalog 2425</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fastener Kits</td>
<td>See catalog 2314 for available metric bolt kit options, i.e. BKDG7-858918 and BKDG7-858919.</td>
</tr>
</tbody>
</table>

**Installation and Start-Up (Commissioning):**

Mounting Attitudes, DG3V Series: Optional for models shown.

Mounting Attitudes, DG5V Series: Optional for DG5V-7-*B(L)/C/D models, but horizontal mounting is recommended for DG5V-7-*A(L)/N models.

**After-Sales Service:**

Spare-Parts Data for DG3 Valves and Main Stages of DG5 Valves, and Pilot Choke Modules: Consult your local Eaton representative.

Spare-Parts Data for DG4V-3S Pilot Stages of DG5 Models: Ask for spares leaflet I-3886-S (minimal text, in English).
Performance Characteristics

Pilot Pressures

Maximum: 350 bar (5000 psi). Typical minimum differential pilot pressure characteristics, shown below, are based on looped flow through P to A to B to T under standard test conditions.

<table>
<thead>
<tr>
<th>Spool Type</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>6</th>
<th>8</th>
<th>9</th>
<th>11</th>
<th>31</th>
<th>33</th>
<th>52</th>
<th>X*</th>
<th>Y*</th>
<th>35A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum</td>
<td>9</td>
<td>9</td>
<td>12</td>
<td>12</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Differential Pilot Pressure (bar)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Pressure Drop Characteristics

The following typical pressure drops ($\Delta p$) at flow rates ($Q$) are based on standard test conditions, using oil of 0.865 specific gravity. Except where otherwise stated, for any other flow rate ($Q_1$) the pressure drop ($\Delta p_1$) will be approximately $\Delta p_1 = \Delta p (Q_1/Q)^2$.

<table>
<thead>
<tr>
<th>SPOOL TYPE</th>
<th>SPOOL POSITION COVERED</th>
<th>P-A</th>
<th>B-T</th>
<th>P-B</th>
<th>A-T</th>
<th>P-T</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>All</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>1</td>
<td>Energised</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>De-energised</td>
<td>7</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>All</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
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* 65 bar @300l/min.
** 70 bar @150l/min.

- Port B blocked
- Port A blocked
- Port P blocked
- Port T blocked
Performance Characteristics

Hydraulics Fluids
Contamination Control Requirements
Recommendations on Hydraulic Fluids and contamination control methods and the selection of products to control fluid condition are included in Eaton Hydraulics Fluid Recommendation 03-401-2010 rev 1

Fluid Temperatures
For petroleum oil:
Min. . . . . . . . . . . . . . . –20°C (–4°F)
Max.* . . . . . . . . . . +70°C (+158°F)
*To obtain optimum service life from both fluid and hydraulic system, 65°C (150°F) normally is the maximum temperature.
For other fluids where limits are outside those of petroleum oil, consult fluid manufacturer or Eaton representative.
Whatever the actual temperature range, ensure that viscosities stay within those specified under “Hydraulic Fluids”.

DG5V7-50 PRESSURE DROP

Pressure bar.
Flow l/min
Installation Dimensions

Millimeters (inches)

Solenoid Controlled Models with ISO 4400 (DIN 43650)

Electrical Connections and Pilot Choke

DG5V-7-**(L)(-2)(-E)(-T)(-*)(-V)M–U example
For stroke adjusters see page 15

- May vary according to plug source.
- Alternative plug positions by loosening knurled nut counter-clockwise, turning coil and re-tightening nut.

For coil removal
AC models: 45.0 (1.8)
DC models: 61.0 (2.4)

Cable entry can be positioned at 90° either way from position shown, by re-assembling the contact holder into the appropriate position inside the plug connector housing.

Mounting surface
Sealing rings supplied
4 Holes, Ø10.8 (0.45 dia.) through spotfaced Ø17.0 (0.67 dia.)
Torque bolts to 49-59 Nm (36-43 lbf ft.)

Main port T

Main port P

Main port A

Main port B

40.0 (1.57)
219.3 (8.63)
155.0 (6.10)

155.0 (6.10)
55.0 (2.17)
32.0 (1.30)

58.4 (2.30)
92.0 (3.62)
93.0 (3.69)

2 location pins
Ø 3.0 (0.12 dia.)

Pilot choke adjuster fitted when Model code = 2, 3, 27 or 28. To adjust, turn locknut counter-clockwise, then turn screw clockwise to slow down or counter-clockwise to increase the rate. Retighten the locknut to 25-30 Nm (18-22 lbf. ft.)

With pilot choke fitted: 222.0 (8.74)
With pilot choke: 182.0 (7.17)

13.0 (0.5) min. for plug removal

With pilot choke: 40.0 (1.57)

52.0 (2.00)
96.0 (3.78)
32.3 (1.27)

AC models: 45.0 (1.8)
DC models: 61.0 (2.4)

Pilot choke fitted when Model code = 2, 3, 27 or 28.
Optional Features

Solenoid Controlled Models with Stroke Adjusters
DG5V-7-***(L)(-2)E(-T)(-)V-M-U example

To Adjust:
Turn locknut counter-clockwise, then turn screw clockwise to shorten stroke, or counter-clockwise to increase stroke. Re-tighten locknut.

Solenoid Controlled Models with Junction Box having Optional Terminal Strip and Indicator Lights
DG5V-7-***(L)(-*)(E)(-T)(-*)VMF**L example.

Available also with other options shown above and on previous page.

1/2 NPT for F(T)W options, at both ends. Closure plug fitted at one end.
For other options see 9 & 10 in ‘Model Code’

Ref. “Model Code”: 10
Codes “FW”: 2 lead wires for each solenoid, approx. 150 (6.0) long.
M3 (#6) terminals provided for customer connection.
Codes “FTW”: Valve supplied with lead wires connected into terminal strip suitable for M3 (#6) terminals provided for customer connection.

Pilot Operated Models with Optional Pilot Choke and/or Stroke Adjusters
DG3V-7-**(-2)(-**) examples

With pilot choke fitted: 227,0 (8.94)
Without pilot choke: 187,0 (7.36)
Electrical Information

**DG5V-7-35A-PPA(-E)(-T)-******-50 Valve with Spool Position Monitor**

**SPECIFICATIONS**

- **Supply Voltage (Vs)**: 10 to 30 Vdc
- **Supply Current (Isc)**: 8 mA at 24 Vdc (plus load current)
- **Supply Over-voltage Rating**: 35 Vdc continuous
- **Supply Reverse Polarity Rating**: -35 Vdc (with no shorts)
- **Short Circuit Tolerance**: Continuous short between any two pins
- **High Potential Test, Pin to Case**: 300 Vdc
- **Electromagnetic Compatibility**: ISO 7637 Parts O and I worst case and Immunity to Radiated Electromagnetic Fields, 10 KHZ to 1 GHZ per SAE J1113/25 Sep 95
- **Pins to Case Resistance**: 50 Megohms
- **Load Dump Tolerance**: 80 Vdc Peak, 400 ms Decay, with 1.5 Ohm Source Impedance
- **Switching Frequency**: 0 to 3K Hz
- **Output**: Open collector PNP sourcing, normally open
- **Sensing Distance (offset position)**: 1.27 ± 0.25 mm (.050” ± .010”)  
  Hysteresis: 0.25 mm (.010”) Max.
- **Rise/Fall Time**: 6.5/1.5 microsec R1=820 Ohm, C1=20 pF @ 8Vdc
- **Output Leakage Current**: 10μa Max.
- **Output Voltage High**: +Vs – 2.2 Vdc minimum
- **Output Load Current**: 200 mA Max.
- **Operating Pressure**: 350 bar (5000 psi)
- **Operating Temperature**: -40° to 110°C
- **Humidity**: 0 to 100%

Electrical information shown in this window is for offset sensing, Proximity Switch “PPA” Model.

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**Functional Diagram - Spring Offset center condition (ref.)**

- PIN 4 sensor at “A” port side (if applicable)
- PIN 4 sensor at “B” port side (if applicable)
- -full spool stroke
- +full spool stroke
- 0=Full spool stroke
- from full spool stroke

**Output Circuit Wiring Instructions**

- **PIN 1**: Power Supply
- **PIN 4**: Signal Output
- **PIN 3**: Common

**Connector Detail**

- PIN #4: Signal
- PIN #3: Common
- PIN #1: +24VDC±20%
- PIN #2: Not Used

0=Voltage at pin 4 0.5V min.
1=Voltage at pin 4 (Vs = 2.2V/min.)