

# Dual Modular Safety Shutoff Valves with Proof of Closure and NEMA Type 4x Enclosure

**DUNGS**<sup>®</sup>  
Combustion Controls

**DMV-D 704/624**  
**DMV-D 704/634**  
**DMV-DLE 704/624**  
**DMV-DLE 704/634**



Two normally closed automatic shutoff valves in one housing. Valve 2 (V2) incorporates proof of closure on both /624 and /634 models. Valve 1 (V1) incorporates proof of closure on model /634 only. Each valve has the following approvals.

#### CSA Certified

- ANSI Z21.21/CSA 6.5
- Marked C/I
- File # 112901

#### Commonwealth of Massachusetts Approved Product

- Approval code G1-1107-35
- Gas Safety Shutoff Valve

#### US, Canadian and EU Models

- DMV-D 704/604
- DMV-DLE 704/604
- 2 in. NPT or 2 in. Rp

#### Codes and Standards

This product is intended for installations covered by but not limited to NFPA 85, NFPA 86, NFPA 37, NFPA 160, ANSI Z83.4/ CSA 3.7, ANSI Z83.18/CSA 4.9, ANSI Z21.13, CSD-1, CAN1-3.1, CGA 3.2, CSA 3.8, CSA B149.1 or CSA B149.3.

**DUNGS is an ISO 9001 manufacturing facility.**



#### Description

The Dual Modular Valve DMV/624 combines two automatic shutoff valves in one compact housing. Valve 2 incorporates proof of closure.

The DMV/634 combines two automatic shutoff valves in one compact housing. Valve 1 and Valve 2 incorporate proof of closure.

Valve 1 (V1) of the DMV-D and DMV-DLE series is fast opening and fast closing. Valve 2 (V2) of the DMV-D is fast opening, while V2 of the DMV-DLE is slow-opening for smoother light-off. Max. flow adjustment on V2 provides variable main flow on both models.

Internal profiles and compact design optimize flow and provide a low pressure drop.

Directly mounting the following accessories creates a compact valve train without additional piping: High and low gas pressure switches, Vent line adapter, DMK butterfly control valve, and VPS valve proving system.

#### Application

The DMV is recommended for industrial and commercial heating applications that require two safety shutoff valves with proof of closure.

The DMV Dual Modular Valve is suitable for natural gas, propane, butane, air and inert gases. The DMV is suitable for dry natural gas, propane, butane, air and inert gases.

A "dry" gas has a dew point lower than +15 °F and its relative humidity is less than 60 %.

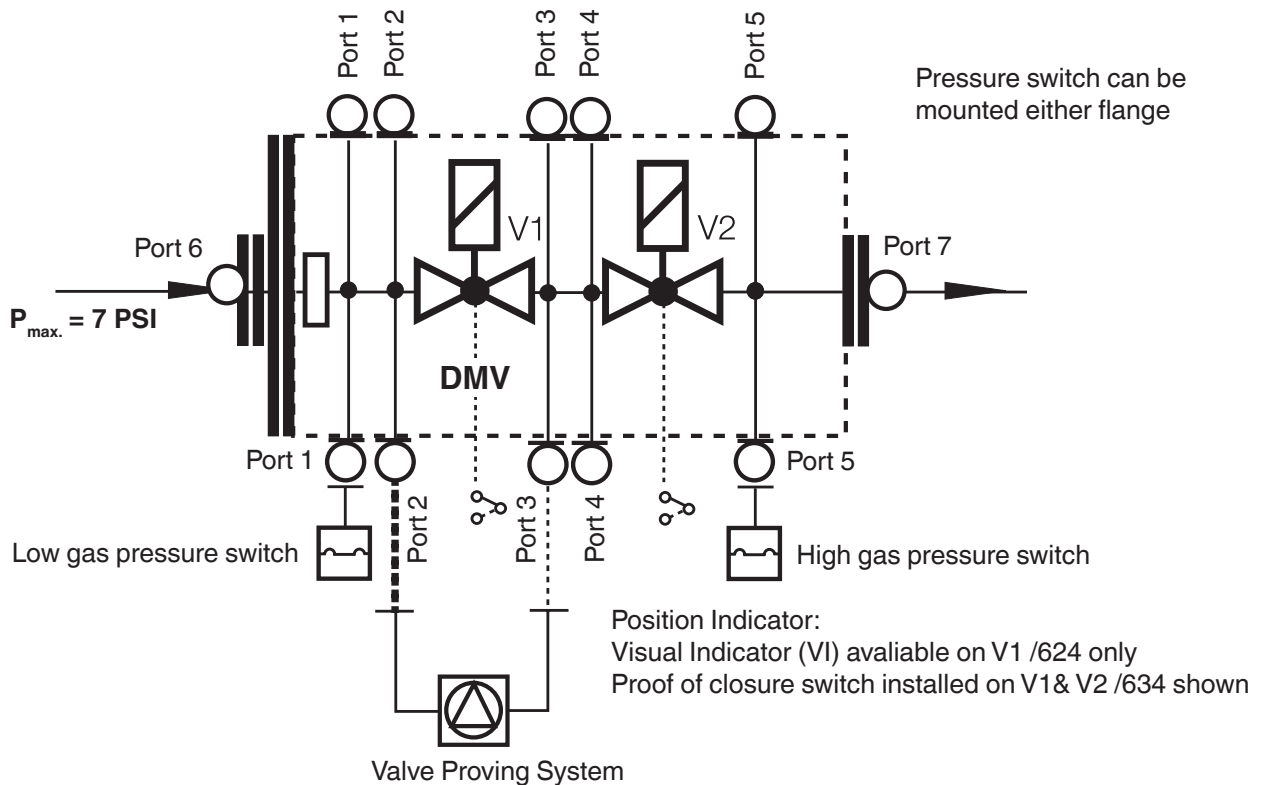
|                    |  |
|--------------------|--|
| <b>DMV-D/624</b>   | Two normally closed automatic shutoff valves in one housing. Valve 2 (V2) incorporates proof of closure. V1 and V2 are fast opening, fast closing. Adjustable max. flow with V2.   |
| <b>DMV-DLE/624</b> | Two normally closed automatic shutoff valves in one housing. Valve 2 (V2) incorporates proof of closure. V1 fast opening, fast closing. V2 is slow opening, fast closing. Adjustable max flow and adjustable initial lift with V2. |
| <b>DMV-D/634</b>   | Two normally closed automatic shutoff valves in one housing. Both valves incorporate proof of closure. V1 and V2 are fast opening, fast closing. Adjustable max flow with V2.  |
| <b>DMV-DLE/634</b> | Two normally closed automatic shutoff valves in one housing. Both valves incorporate proof of closure. V1 fast opening, fast closing. V2 is slow opening, fast closing. Adjustable max. flow and adjustable initial lift with V2.  |


## Specifications

|   |   |  |
|---|---|--|
| Body sizes  | DMV-D(LE) 704/624; DMV-D(LE) 704/634  |  |
| Pipe size / Thread  | 2" NPT or Rp  |  |
| Max. operating pressure                                   | 7 PSI (500 mbar)  |  |
| Max. body pressure  | 15 PSI (1000 mbar)  |  |
| Max. close off pressure                                   | 10 PSI (750 mbar)   |  |
| Electrical ratings (+10 % / -15 %)                        | 110 - 120 VAC @ 50 - 60 Hz  |  |
| Power rating  | 90 VA<br>Ratings shown are total power consumption for both valves inclusive. Inrush and full load current have the same VA rating.                   |  |
| Enclosure rating  | NEMA Type 4x  |  |
| Electrical connection                                     | Screw terminals with 1/2" NPT conduit connection  |  |
| Operating time  | 100 % duty cycle  |  |
| Closing time  | < 1 s   |  |
| Opening time (to max. flow)                               | DMV-D series  | V1 & V2 < 1 s  |
|   | DMV-DLE series  | V1 < 1 s; V2 adjustable 10 to 20 s at 70 °F                        |
| Initial lift adjustment                                   | Adjustable on V2  | DLE only; 0 to 70 % of total flow; 0 to 35% of stroke              |
| Max. flow adjustment                                      | Adjustable on V2  | <10 to 100 % of total flow; <10 to 100% of stroke                  |
| Materials in contact with gas                             | Housing: Aluminum & Steel, free of non-ferrous metals<br>Sealings on valve seats: NBR-based rubber  |  |
| Ambient temperature rating                                | -20 °F to +140 °F (-30 °C to +60 °C)  |  |
| Installation position                                     | Safety shut off valve from vertically upright to horizontal   |  |
| Gas strainer (standard)                                   | Installed in the housing upstream V1 (23 mesh)  |  |
| Proof of closure switch<br>Factory mounted and calibrated | SPDT switch with indication lamps;  | AC max. 10A resistive @ 120 VAC<br>AC max. 8 A inductive @ 120 VAC |
| Position indication (mechanical)                          | Visual indicator (VI), optional for valve #1 of DMV-D(LE) 704/624 ONLY  |  |
| Test ports /<br>Pressure switch mounting ports            | G 1/8 ISO 228 ports available on both sides. Each side has two ports upstream of V1, two between V1 and V2, one downstream V2 and one on each flange. |  |

## DMV dual modular safety shutoff valve system

Optional mounting system shown,  
other configurations possible



 When an accessory is added to the DMV, it may not be possible to mount other devices.

### Additional Accessories

#### GAO/GMH/GML A2 pressure switch

#### Valve proving system

VPS504 S06 (only comes in NEMA Type 12 enclosure).

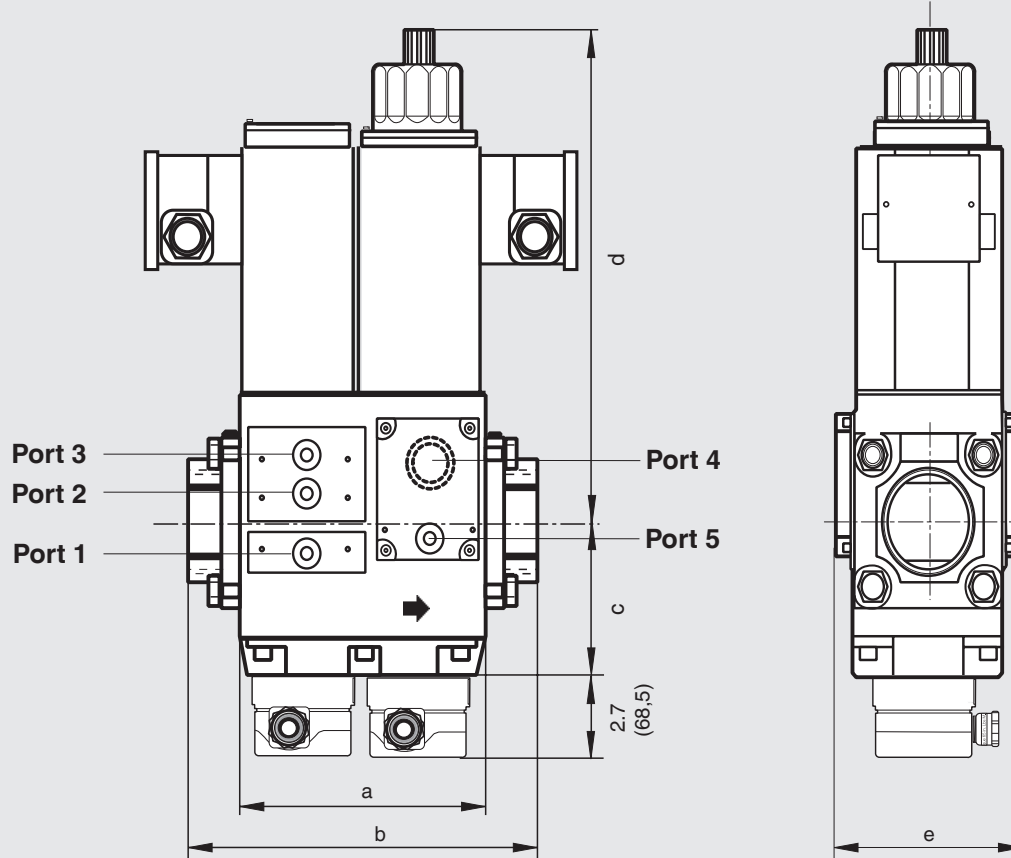
#### DMK butterfly control valve

Mounts directly downstream of DMV to modulate gas flow. Requires actuator. Use DMA actuator with DMK butterfly valve. NEMA Type 4 enclosure available.

#### Adapters

- 1/4" NPT adapter (225047)
- 1/2" NPT Pilot gas adapter; Check flow requirements. (225043)
- G 1/8" Test nipple (219008)
- 1" NPT Vent line adapter (243760)

**Dimensions inch (mm)**  
**DMV-DLE 704/634 shown**



| Type            | Proof of closure | 110 - 120 VAC @ 50 - 60 Hz Order No. | Power* [VA] | Dimensions [inch]<br>Dimensions [mm] |            |           |            |            | Weight [lbs]<br>[kg] |
|-----------------|------------------|--------------------------------------|-------------|--------------------------------------|------------|-----------|------------|------------|----------------------|
|                 |                  |                                      |             | a                                    | b          | c         | d          | e          |                      |
| DMV-D 704/624   | Valve 2          | 267051                               | 90          | 6.4<br>162                           | 9.4<br>239 | 3.5<br>88 | 9.1<br>231 | 5.0<br>127 | 26.6<br>12,1         |
| DMV-DLE 704/624 | Valve 2          | 267053                               | 90          | 6.4<br>162                           | 9.4<br>239 | 3.5<br>88 | 9.7<br>245 | 5.0<br>127 | 27.0<br>12,3         |
| DMV-D 704/634   | Valve 1 & 2      | 267052                               | 90          | 6.4<br>162                           | 9.4<br>239 | 3.5<br>88 | 9.1<br>231 | 5.0<br>127 | 27.5<br>12,5         |
| DMV-DLE 704/634 | Valve 1 & 2      | 267054                               | 90          | 6.4<br>162                           | 9.4<br>239 | 3.5<br>88 | 9.7<br>245 | 5.0<br>127 | 27.9<br>12,7         |

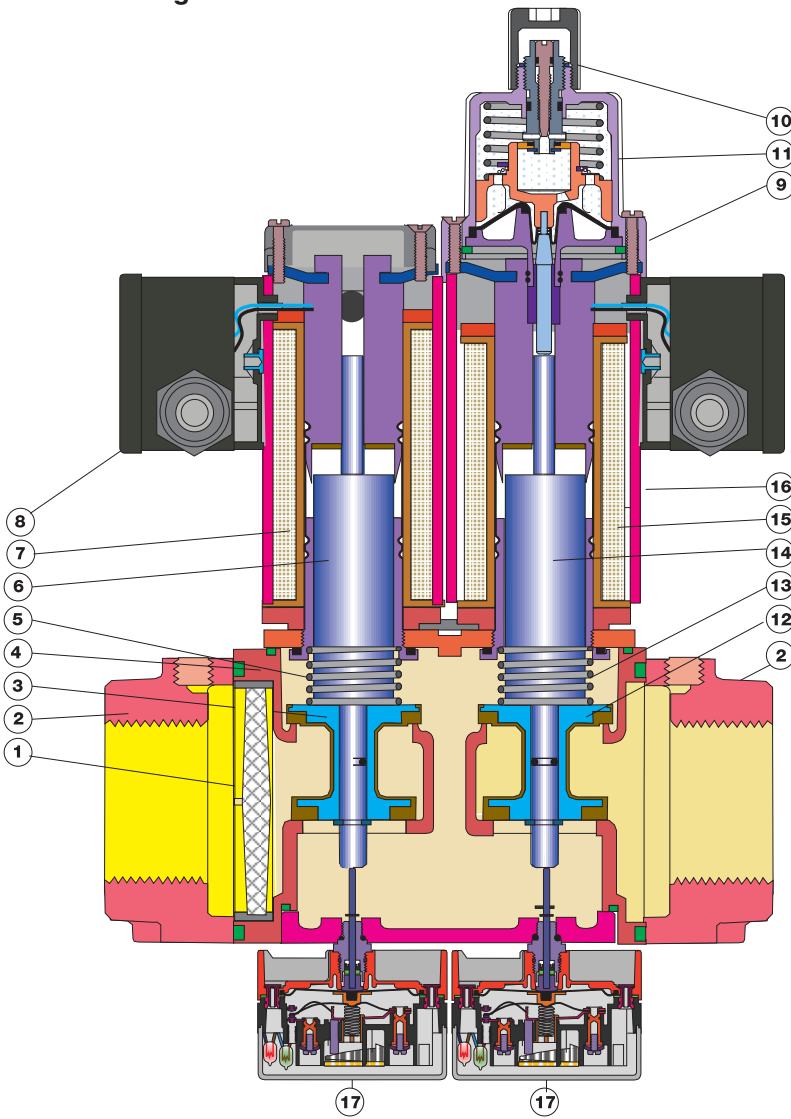
\* Inrush current and full load current have the same VA rating.

| Valve Description | Flange | NPT    | Rp     |
|-------------------|--------|--------|--------|
| DMV-D(LE) 704/624 | 2"     | 232407 | 215384 |
| DMV-D(LE) 704/634 | 2"     | 232407 | 215384 |

| Accessories/Adapters                                      | P/N    |
|---|--------|
| CPI 400 Interlock switch                                  | 266968 |
| Visual indicator<br>(mechanical valve position indicator) | 266949 |
| Vent Line Adapter (field mountable)                       | 243760 |

**⚠ Please order flanges, position indicators and gas filters separately**

**DMV-D(LE) 704/634**  
sectional drawing



- 1 Strainer
- 2 Flange
- 3 Valve V1
- 4 Housing
- 5 Closing spring V1
- 6 Plunger V1
- 7 Solenoid V1
- 8 Electrical connection
- 9 Max flow adjustment
- 10 Initial lift adjustment (DMV-DLE)
- 11 Hydraulic brake (DMV-DLE)
- 12 Valve V2
- 13 Closing spring V2
- 14 Plunger V2
- 15 Solenoid V2
- 16 Solenoid housing
- 17 Proof of closure switch

**Pressure drop for other gases**

To determine the pressure drop when using a gas other than natural gas, use the flow formula below and f value located in the table below to determine

the “corrected” flow rate in CFH through the valve for the other gas used. For example, when using propane, divide the volume (CFH) of propane required for the application by the calculated value

f (f = 0.66 for propane). Use this “corrected” flow rate and the flow curve on the next page to determine pressure drop for propane.

**Determining equivalent flow through valves using another gas**

$$\dot{V}_{\text{gas used}} = \dot{V}_{\text{Natural gas}} \times f$$

$$f = \sqrt{\frac{\text{Density of Natural gas}}{\text{Density of gas used}}}$$

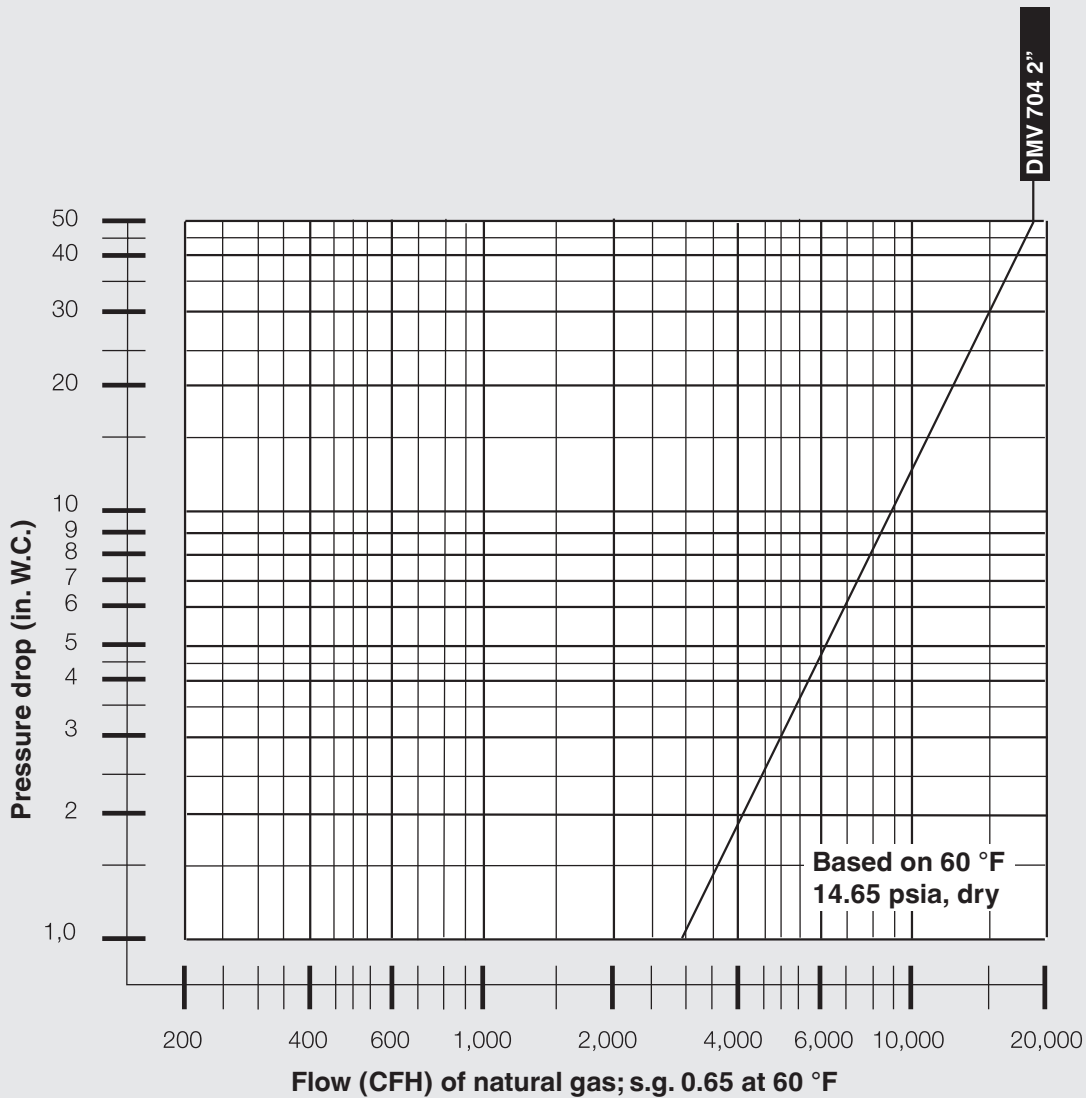
| Type of gas | Density [kg/m <sup>3</sup> ] | s.g. | f    |
|-------------|------------------------------|------|------|
| Natural gas | 0.81                         | 0.65 | 1.00 |
| Butane      | 2.39                         | 1.95 | 0.58 |
| Propane     | 1.86                         | 1.50 | 0.66 |
| Air         | 1.24                         | 1.00 | 0.80 |

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NEMA Type 4x Enclosure**

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**Flow curve**



We reserve the right to make any changes in the interest of technical progress.



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