

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

DUNGS[®]
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 natural gas, propane, butane, air and inert gases.

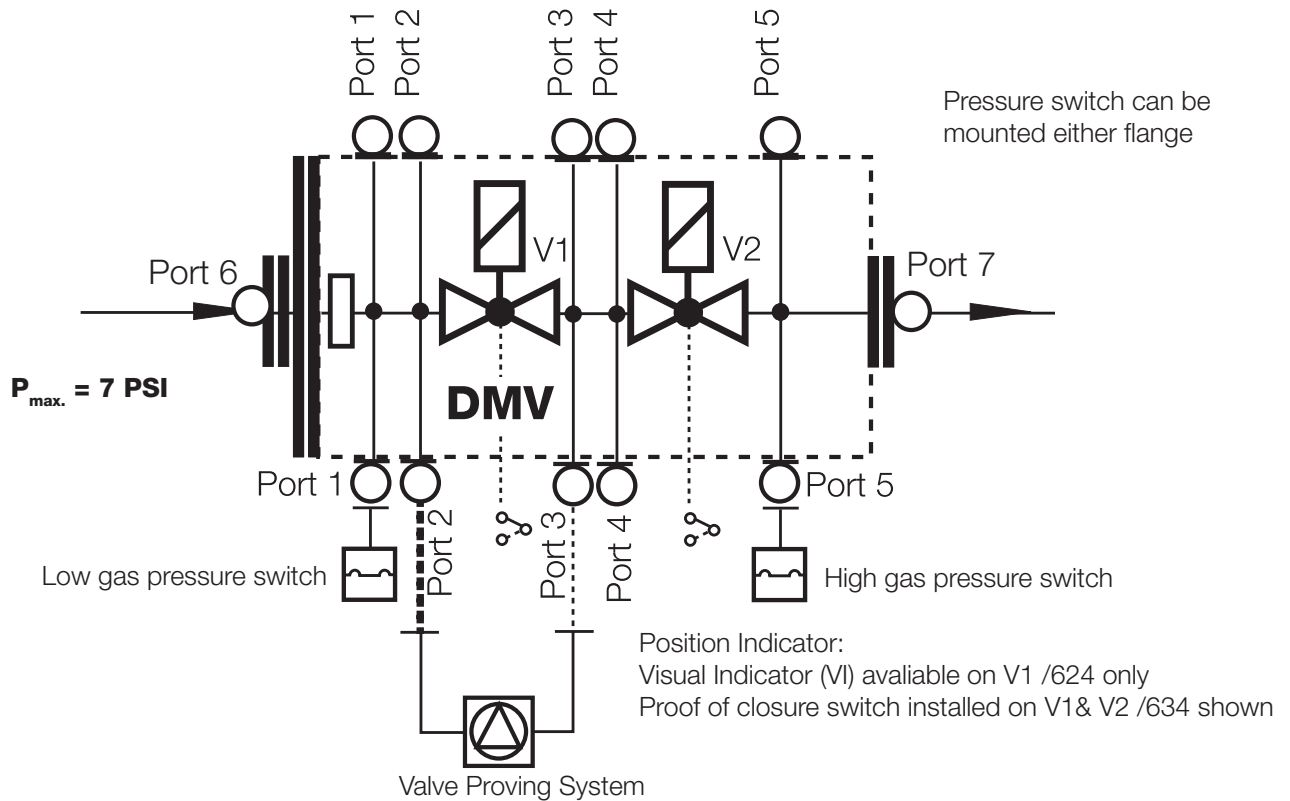
DMV-D/624	Two normally closed automatic shutoff valves in one housing. Valve 2 (V2) incorporates proof of closure. V1 and V2 are fast opening, fast closing. Adjustable max. flow with V2.
DMV-DLE/624	Two normally closed automatic shutoff valves in one housing. Valve 2 (V2) incorporates proof of closure. V1 fast opening, fast closing. V2 is slow opening, fast closing. Adjustable max. flow and Adjustable initial lift with V2.
DMV-D/634	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.
DMV-DLE/634	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 pipe size / thread	DMV-D(LE) 704/624; DMV-D(LE) 704/634 2" NPT or Rp	
Max. operating pressure	7 PSI (500 mbar) Factory Rating	5 PSI (360 mbar) CSA
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 ratings	90 VA <small>Ratings shown are total power consumption for both valves inclusive. Inrush and full load current have the same VA rating.</small>	
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 DMV-DLE series	V1 & V2 < 1 s 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: Sealings on valve seats:	Aluminum & Steel, free of non-ferrous metals NBR-based rubber
Ambient temperature rating	-20 °F to +140 °F (-30 °C to +60 °C)	
Installation position	Safety valve upright vertical to horizontal	
Test ports 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.	
Gas strainer (standard)	Installed in the housing upstream V1 (23 mesh)	
Proof of closure switch Factory mounted and calibrated	SPDT switch with position indication lamps AC max. 10A resistive @ 120 Vac and AC max. 8A inductive @ 120 Vac	
Position indication (mechanical)	Visual indicator (VI), optional for valve #1 of DMV-D(LE) 704/624 ONLY	

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

Vent line adapter (field mountable)

Allows venting between the automatic safety shutoff valves (P/N 243-760).

GAO/GMH/GML A2 pressure switch

Valve proving system

VPS 504 S06 (only comes in NEMA Type 12 enclosure).

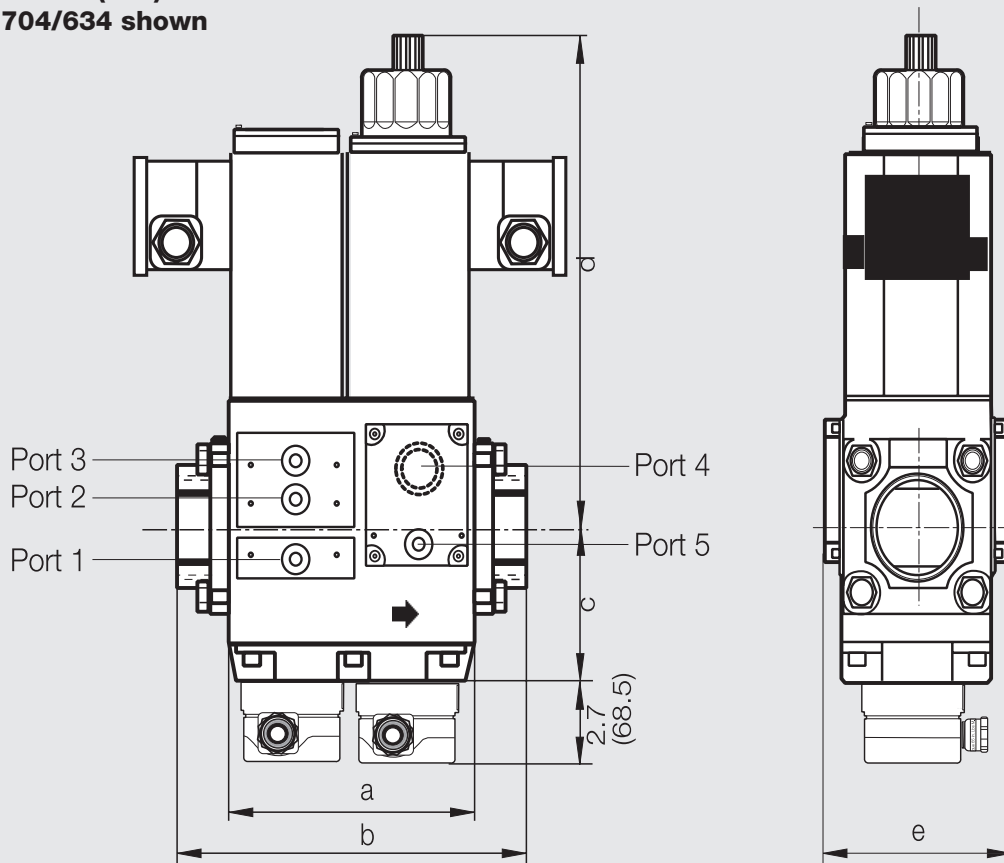
DMK butterfly control valve

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 (225-047)
- 1/2" NPT Pilot gas adapter; Check flow requirements. (225-043)
- G 1/8" Test nipple (219-008)

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



Type	Proof of closure	Order No.	Power* [VA]	Dimensions [inch]					Weight [lbs]
				Dimensions [mm]					
		110-120 Vac 50-60 Hz		a	b	c	d	e	[kg]
DMV-D 704/624	Valve 2	242-489P	90	6.4	9.4	3.5	9.1	5.0	26.6
				162	239	88	231	127	12.1
DMV-DLE 704/624	Valve 2	242-490P	90	6.4	9.4	3.5	9.7	5.0	27.0
				162	239	88	245	127	12.3
DMV-D 704/634	Valve 1 & 2	242-489PP	90	6.4	9.4	3.5	9.1	5.0	27.5
				162	239	88	231	127	12.5
DMV-DLE 704/634	Valve 1 & 2	242-490PP	90	6.4	9.4	3.5	9.7	5.0	27.9
				162	239	88	245	127	12.7

Order No.

Valve Flange	2" NPT	232-407
Valve Flange	2" Rp	215-384

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

Accessories

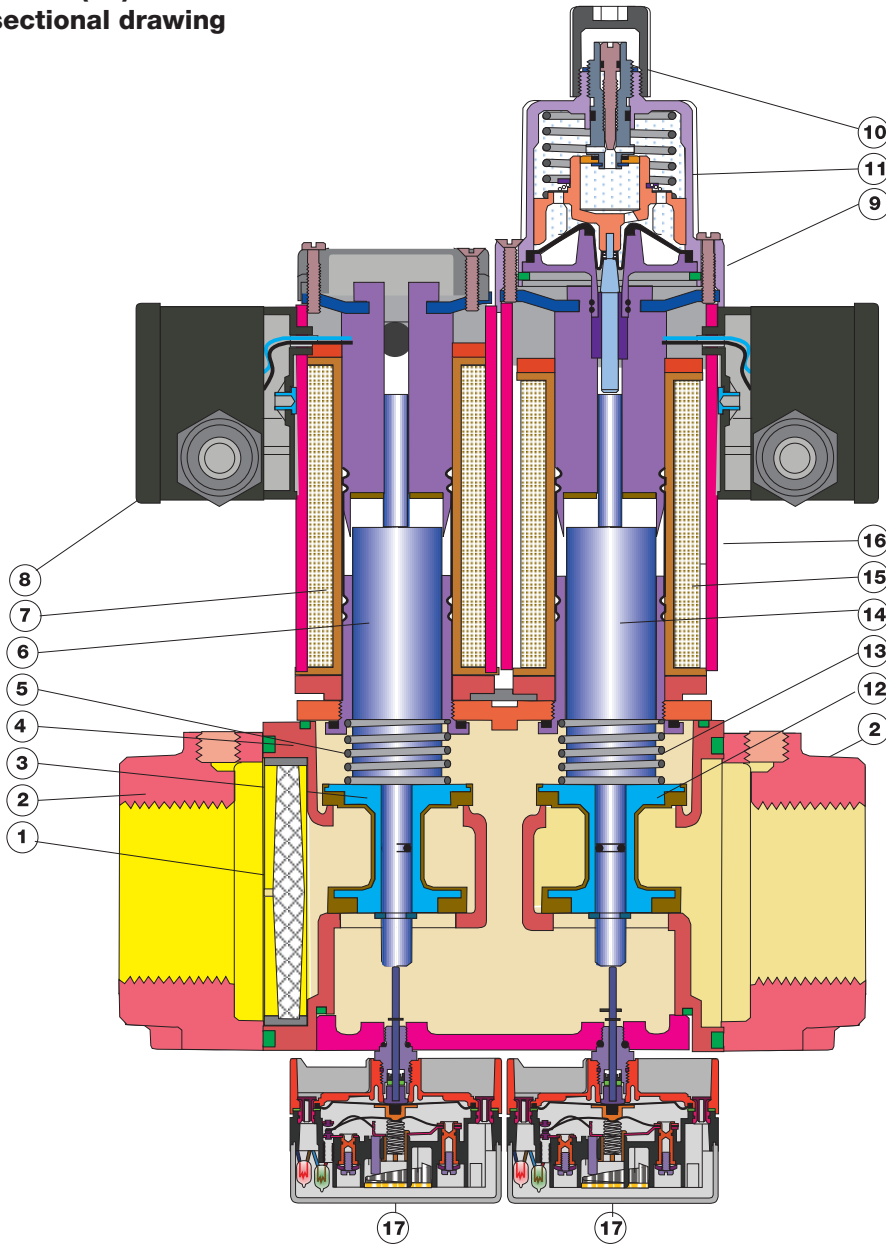
Order No.

• Valve switch CPI 400	224-253A
• Visual indicator (mechanical valve position indicator)	217-665
• Vent Line Adapter (field mountable)	243-760



Please order flanges 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

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

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

Use this formula to calculator the f factor for other gases not listed on the table.

$$f = \sqrt{\frac{\text{Spec. gravity of Natural Gas}}{\text{Spec. gravity of gas used}}}$$

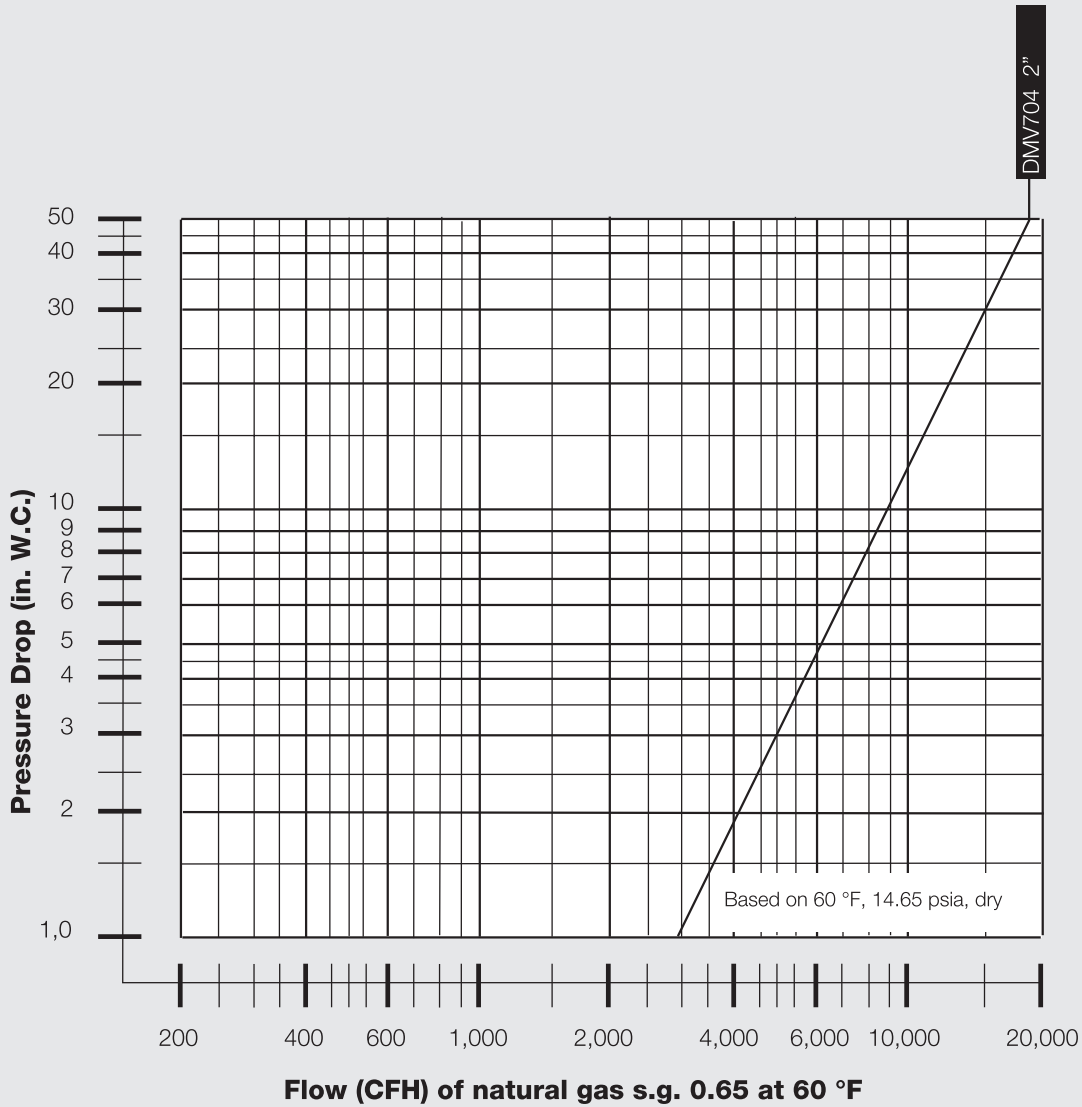
Type of gas used	Density [kg/m ³]	sg	f
Natural gas	0.81	0.65	1.00
Butane	2.39	1.95	0.58
Propane	1.86	1.50	0.66
Air	1.24	1.00	0.80

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with Proof of Closure and
NEMA 4x Enclosure**

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



Flow curve



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

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