

Dual Modular Safety Shutoff Valves with NEMA 4x Enclosure

DMV-D 704/604
DMV-DLE 704/604

DUNGS®
Combustion Controls



Two normally closed safety shutoff valves in one housing; each with the following approval.

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 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) combines two safety shutoff valves in one compact housing, which can be wired independently or in parallel.

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
- VPS Valve Proving System
- DMK Butterfly control valve

Application

The DMV is recommended for industrial and commercial heating applications that require two safety shutoff valves. The DMV is suitable for natural gas, propane, butane, air and inert gases.

DMV-D 704/604

Two normally closed safety shutoff valves in one housing. V1 and V2 are fast opening, fast closing. Adjustable max. flow with V2.

DMV-DLE 704/604

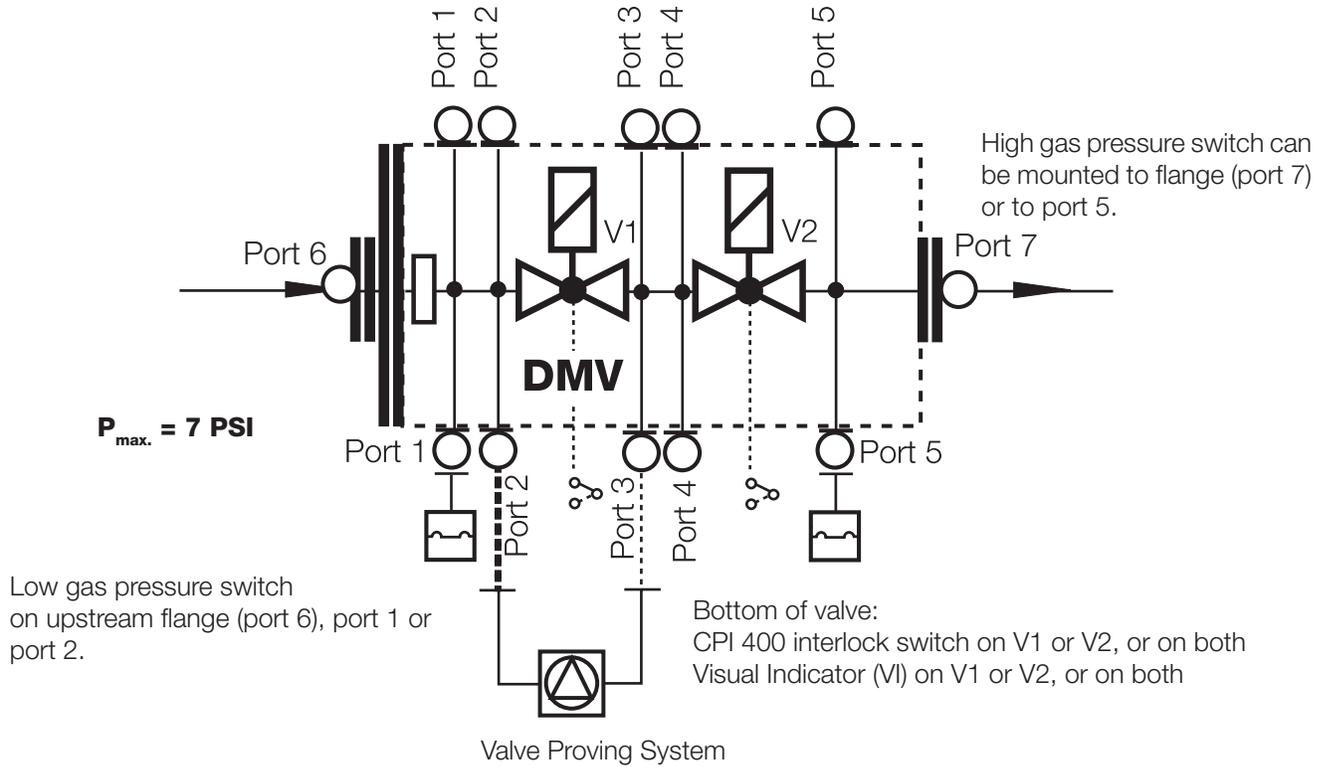
Two normally closed safety shutoff valves in one housing. V1 fast opening, fast closing. V2 is slow opening, fast closing. Adjustable max. flow and adjustable initial lift with V2.

Specifications

Body sizes pipe size / thread	DMV-D(LE) 704/604 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	DMV-D(LE) 704/604: 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	DIN-connector with 1/2" NPT conduit adapter	
Operating time	100 % duty cycle	
Closing time	< 1 s	
Opening time (to max. flow)	DMV-D 704/604 DMV-DLE 704/604	V1 & V2 < 1 s V1 < 1 s; V2 Adjustable to approx. 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. Sealings on valve seats: 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)	
Position indication (order separately)	CPI 400 (with indication lamps and SPDT interlock switch) or Visual Indicator (VI)	

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

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

GAO/GMH/GML A2 pressure switch

Position indication

CPI 400 with indication lamps and SPDT interlock switch, or Visual indicator (VI)

DMK butterfly control valve

Mounts directly downstream of DMV to modulate gas flow. Requires actuator. Use DMA actuator with DMK butterfly valve.

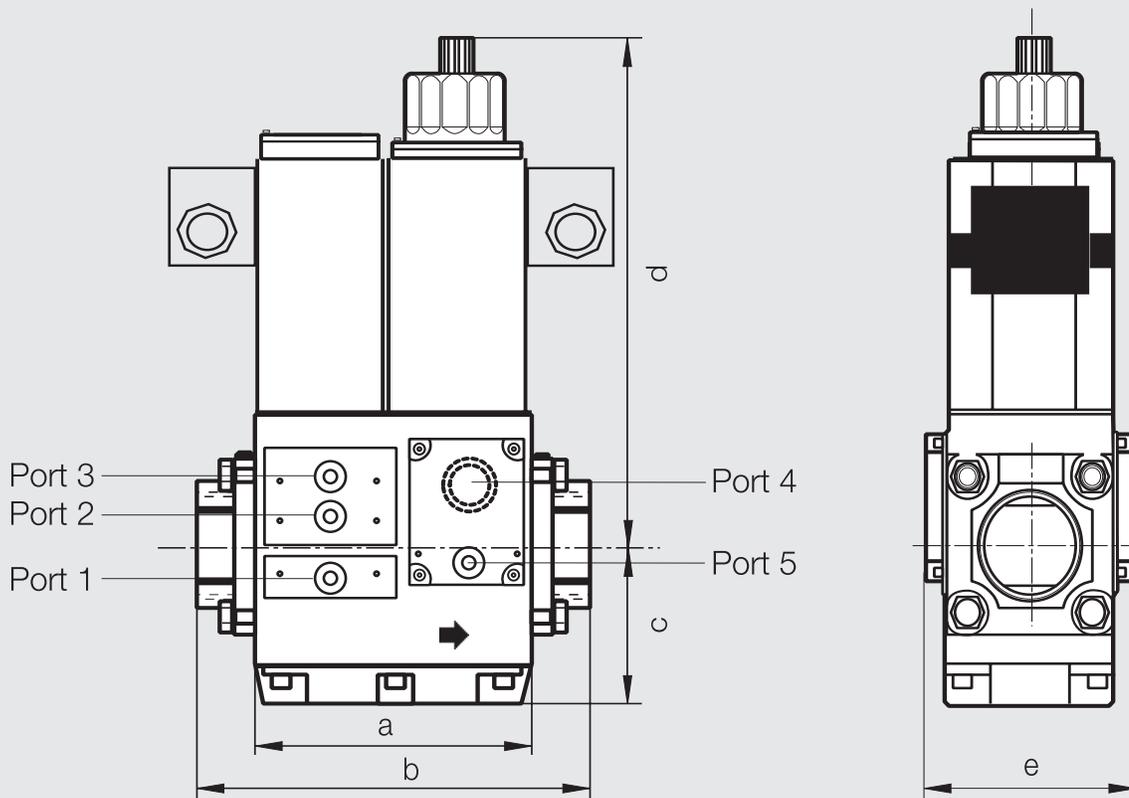
Adapters

- 1/4" NPT adapter (225-047)
- 1/2" NPT Pilot gas adapter; Check flow requirements. (225-043)
- G 1/8" Test nipple (219-008)

VPS 504 S06 Valve Proving System

Mounts directly to either side of the valve, and can be used in lieu of a normally open vent valve and/or proof of closure in many jurisdictions.

Dimensions inch (mm)



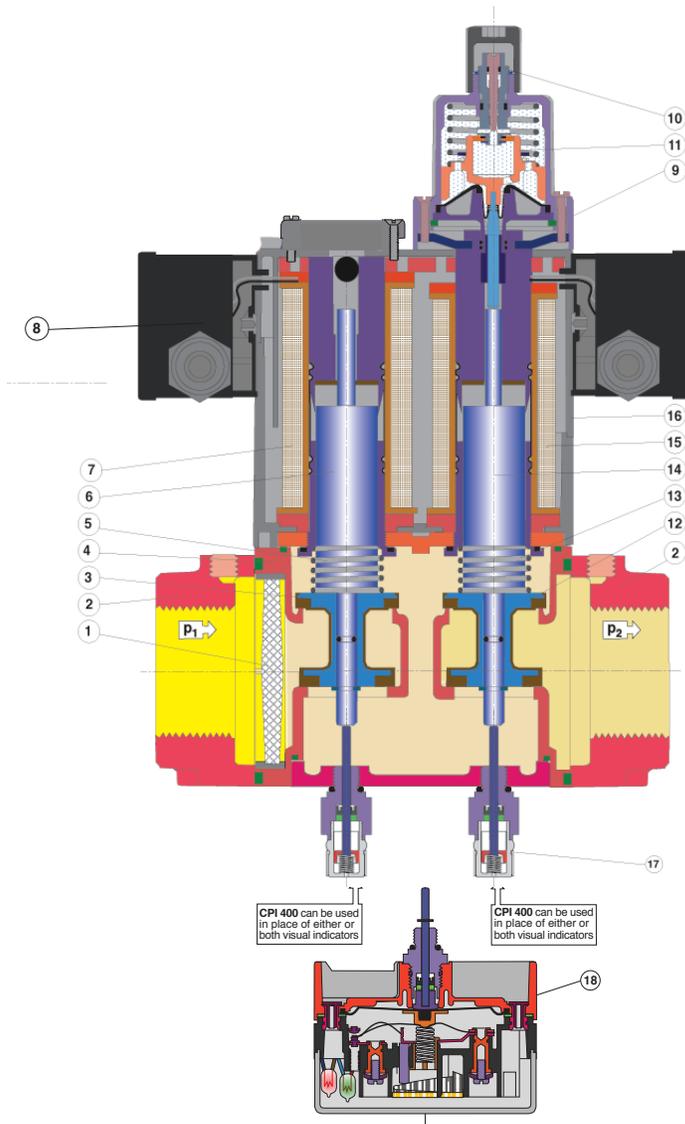
Type	Order No. 110-120 Vac 50-60 Hz	Power* [VA]	Dimensions [inch] Dimensions [mm]					Weight [lbs] [kg]
			a	b	c	d	e	
DMV-D 704/604	241-625	90	6.4 162	9.4 239	3.5 88	9.7 245	4.8 123	26.6 12.1
DMV-DLE 704/604	241-617	90	6.4 162	9.4 239	3.5 88	9.7 245	4.8 123	27.0 12.3
2" NPT Flange	232-407							
2" Rp flange	215-384							

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

Accessories	Order No.
CPI 400 interlock switch	224-253A
Visual indicator (mechanical valve position indicator)	217-665
Vent Line Adapter (field mountable)	243-760

Order flanges and position indicators separately

DMV-D(LE) 704/604
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 Visual indicator (VI)
- 18 CPI 400 interlock 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 above 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.

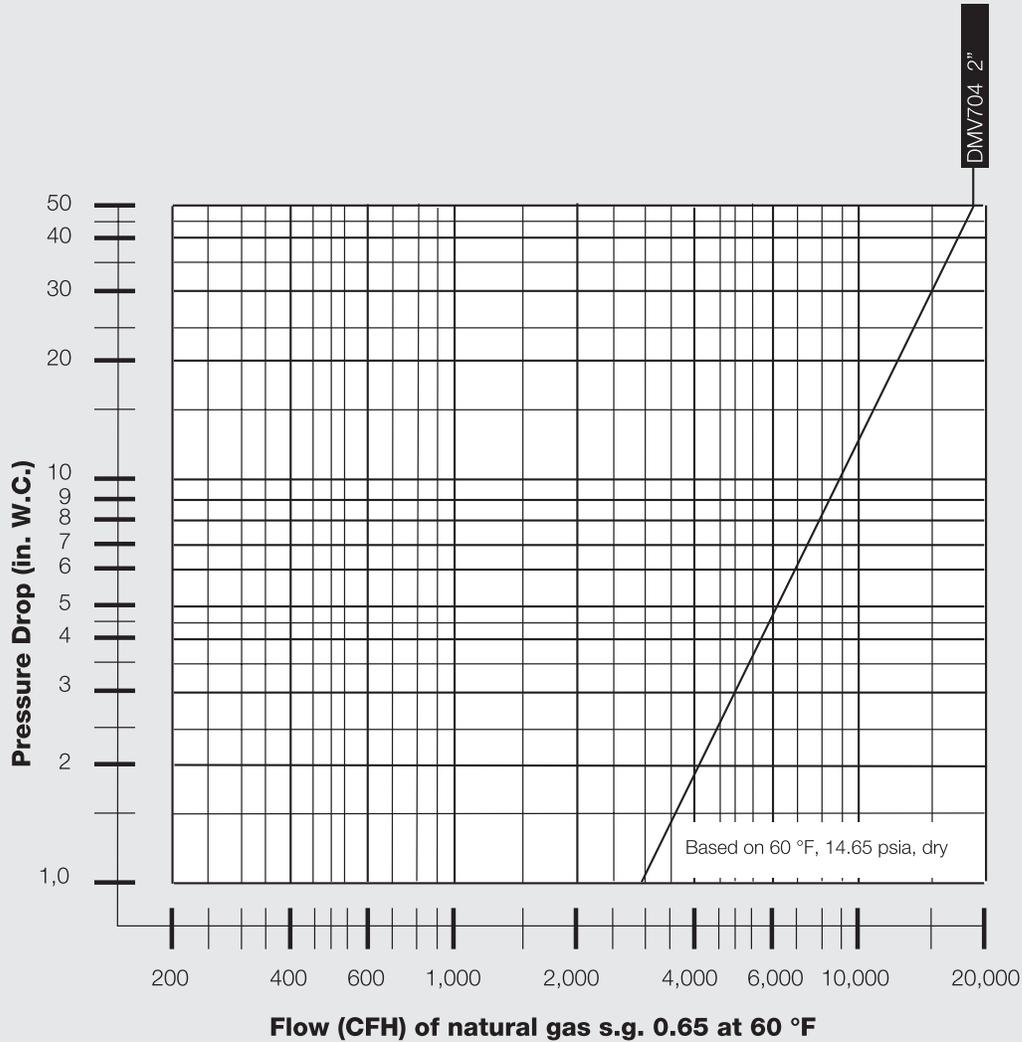
$$f = \sqrt{\frac{\text{Spec. gravity of Natural Gas}}{\text{Spec. gravity of gas used}}}$$

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

**Dual Modular Safety
Shutoff Valves
DMV-D 704/604
DMV-DLE 704/604**



Flow curve



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

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