

# Dual Modular Safety Shutoff Valves with Proof of Closure

**DMV-D/622 Series**  
**DMV-DLE/622 Series**

**DUNGS®**  
Combustion Controls



**Two normally closed automatic shutoff valves in one housing. Valve 2 (V2) incorporates “proof of closure”. Each valve has the following approvals.**

#### **UL Recognized**

- UL 429
- File #MH16727

#### **CSA Certified**

- ANSI Z21.21 • CSA 6.5
- Marked C/I
- File # 157406

#### **FM Approved**

- Class 7411
- File # J.I. 3004006

#### **Commonwealth of Massachusetts Approved Product**

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

#### **US and Canadian Models**

- DMV-D 702/622 and 703/622
- DMV-DLE 702/622 and 703/622
- 1/2 in. NPT - 2 in. NPT

#### **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, UL 795, UL 2200, CAN1-3.1, CGA 3.2, CSA 3.8, or CSA B149.3.

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



#### **Description**

The Dual Modular Valve DMV/622 combines two automatic shutoff valves in one compact housing. Valve 2 (V2) incorporates “proof of closure” valve seal overtravel and interlock. Both valves 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. Two body styles reduce inventory. Directly mounting the following accesso-

ries creates a compact valve train without additional piping:

- Pressure regulator
- High and low gas pressure switches
- Valve proving system
- Butterfly control valve

#### **Application**

The DMV/622 is recommended for industrial and commercial heating applications that require two safety shutoff valves and “proof of closure” valve seal overtravel and interlock. The DMV Dual Modular Valve is suitable for natural gas, propane, butane, air and inert gases. Suitable for up to 0.1% by volume, dry H<sub>2</sub>S.

**DMV-D/622**

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/622**

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.

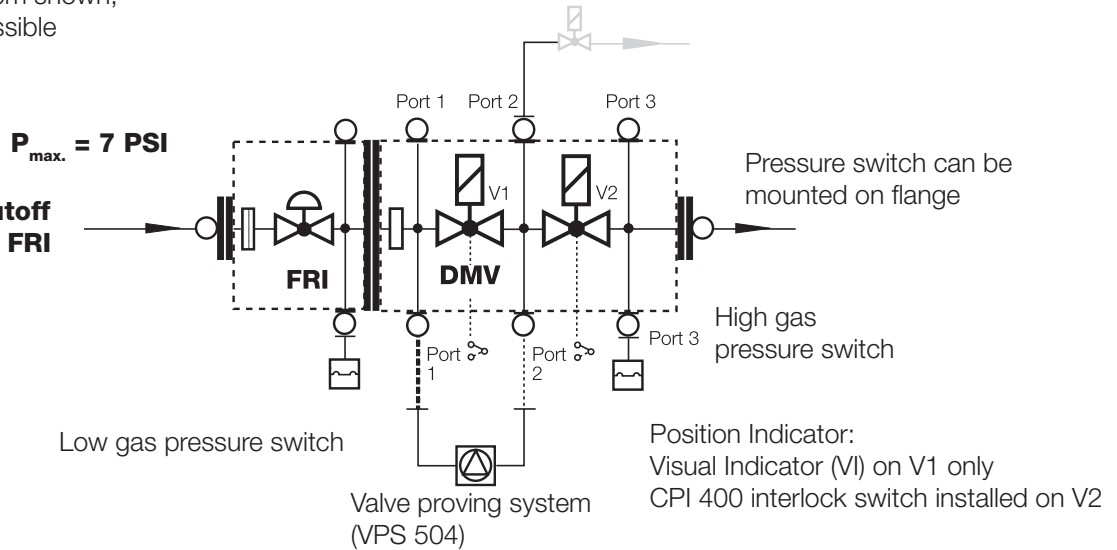
**Specifications**

Body sizes pipe size / thread	DMV 701 1/2" - 1" NPT	DMV 702 1" - 2" NPT	DMV 703 1" - 2" NPT
Max. operating pressure	7 PSI (500 mbar) FM, UL	5 PSI (360 mbar) CSA	
Max. body pressure	15 PSI (1000 mbar)		
Max. close-off pressure	7 PSI (500 mbar) FM, UL	5 PSI (360 mbar) CSA	
Electrical ratings (+10% / -15%)	110 - 120 VAC/50 - 60 Hz 24 VAC / 50 - 60 Hz; 24 VDC		
Power ratings	DMV 701: 45 VA	DMV 702: 65 VA	DMV 703: 90 VA
	Ratings shown are total power consumption for both valves inclusive. Inrush and full load current have the same VA rating.		
Enclosure rating	NEMA Type 12		
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.../622 DMV-DLE.../622	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; approx. 0 to 70 % of total flow	
Max. flow adjustment	Adjustable on V2	approx. 5 to 100 % of total flow	
Materials in contact with gas	Housing: Sealings on valve seats:	Aluminium, Steel. NBR-based rubber	
Ambient temperature rating	-40 °F to +150 °F (-40 °C to +65 °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 one port upstream V1, one between V1 and V2, one downstream V2, and one on each flange.		
Gas filter (optional)	Replaceable integral gas filter (50 micron) in inlet of DMV or Pre-Mount Filter Block for DMV 702 and 703. (Cannot be used with FRI directly mounted to the DMV.)		
Gas strainer (standard)	Installed in the housing upstream V1 (23 mesh)		
Proof of closure switch Factory mounted and calibrated	SPDT switch with indication lamps;	AC max. 10A resistive @ 120 Vac AC max. 8A inductive @ 120 Vac	
Position indication	Visual indicator (VI)		
Valve proving system	Requires VPS 504; mounts directly to either side of DMV.		

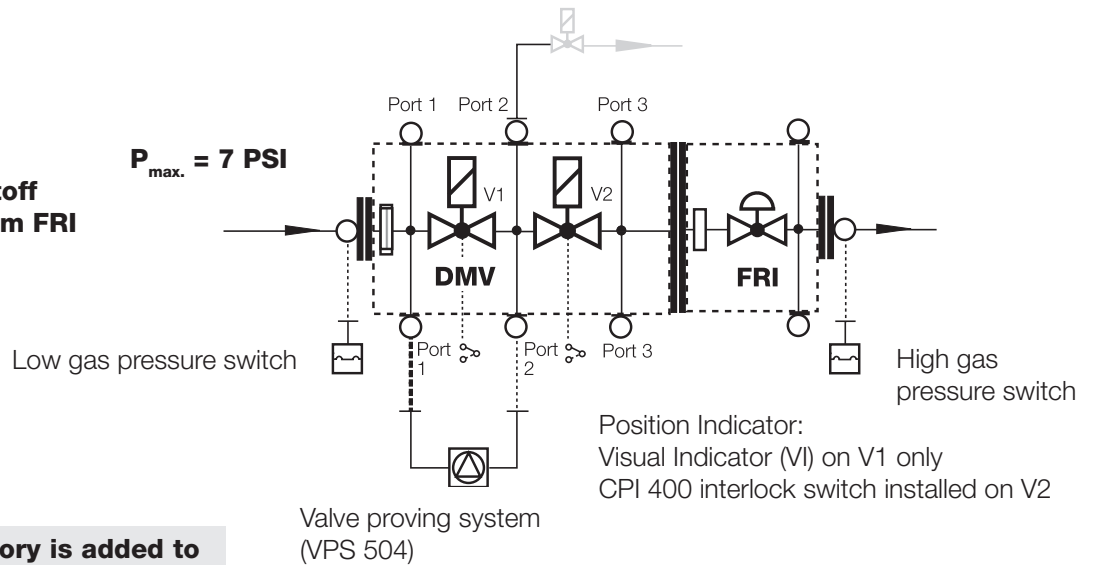
## DMV dual safety shutoff valve modular system

Optional mounting system shown,  
other configurations possible

### DMV dual safety shutoff valve with upstream FRI pressure regulator



### DMV dual safety shutoff valve with downstream FRI pressure regulator



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

#### FRI Gas pressure regulator

Mounting the FRI series gas pressure regulator directly to the DMV dual safety shutoff valve is possible with a mounting kit.

The FRI pressure regulator can be installed upstream or downstream of the DMV dual safety shutoff valve depending on application requirements.

#### FRI mounting kit for DMV

FRI 705 - 707/6 to DMV 701/622

**Order No. 219 967**

FRI 710-712/6 to DMV 702/622 + DMV 703/622

**Order No. 219 968**

#### Additional Accessories

##### VPS 504

Valve proving system (approved by some authorities having jurisdiction in lieu of vent valve and "proof of closure" e.g. FM, IRI).

##### Integral gas filter (optional)

50 micron gas filter

##### Pre-Mount Filter (optional)

50 micron gas filter

##### GAO/GMH/GML A2

gas pressure switch

##### Position indication

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.

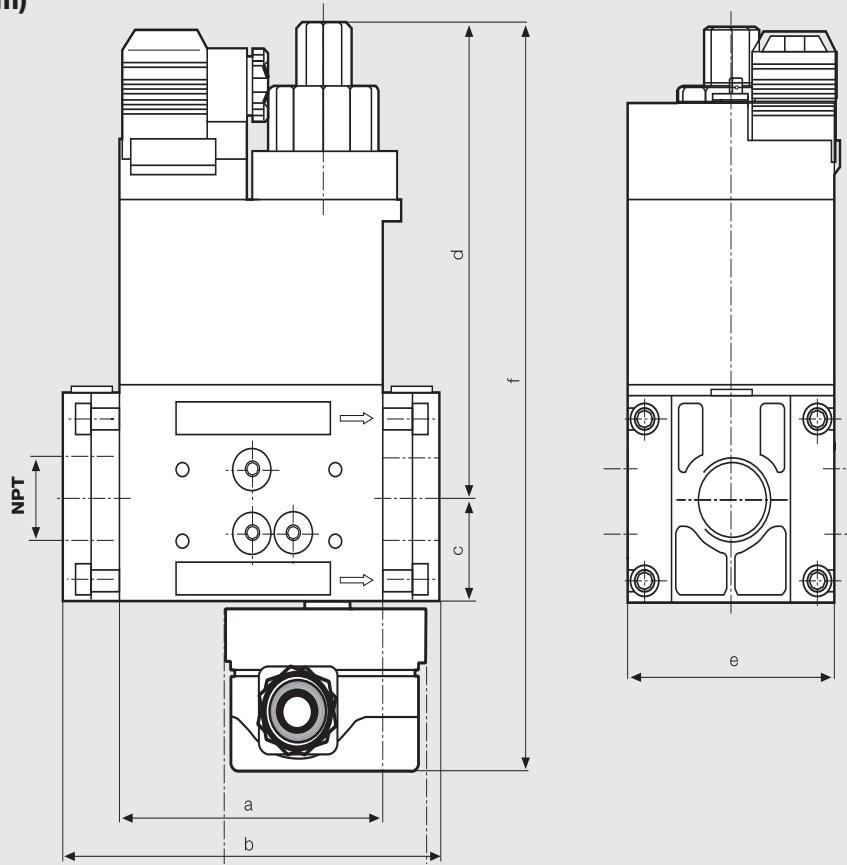
#### DMV D(LE) 7xx/622 VLA (with vent line adapter)

Factory installed vent line adapter which integrates a vent line connection with the DMV series.

#### 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)
- Port 3 Pressure switch mounting adapter (214-975)

**Dimensions inch (mm)**



Type	110-120 VAC 50-60 Hz Order No.	24 VDC Order No.	24 VAC 50-60 Hz Order No.	Power** [VA]	Dimensions [inch]						Weight [lbs] [kg]
					Dimensions [mm]						
					a	b	c**	d	e	f	
DMV-D 701/622	243-761P	upon request	upon request	45	<b>3.7</b> 93	<b>5.6</b> 141	<b>1.4</b> 35	<b>1.4</b> 35	<b>1.4</b> 35	<b>4.6</b> 2.1	<b>4.6</b> 2.1
DMV-D 702/622	230-791P	upon request	upon request	65	<b>4.9</b> 124	<b>6.9</b> 174	<b>1.8</b> 45	<b>5.9</b> 150	<b>3.9</b> 101	<b>10.4</b> 263	<b>10.1</b> 4.6
DMV-D 703/622	230-793P	upon request	upon request	90	<b>4.9</b> 124	<b>7.9</b> 201	<b>1.8</b> 45	<b>7.5</b> 190	<b>3.9</b> 101	<b>12.0</b> 303	<b>12.1</b> 5.6
DMV-DLE 701/622	244-000P	upon request	upon request	45	<b>3.7</b> 93	<b>5.6</b> 141	<b>1.4</b> 35	<b>1.4</b> 35	<b>1.4</b> 35	<b>4.6</b> 2.1	<b>4.8</b> 2.1
DMV-DLE 702/622	230-792P	upon request	upon request	65	<b>4.9</b> 124	<b>6.9</b> 174	<b>1.8</b> 45	<b>6.7</b> 197	<b>3.9</b> 101	<b>11.2</b> 310	<b>10.3</b> 4.7
DMV-DLE 703/622	230-794P	upon request	upon request	90	<b>4.9</b> 124	<b>7.9</b> 201	<b>1.8</b> 45	<b>8.6</b> 218	<b>3.9</b> 101	<b>13.1</b> 331	<b>12.3</b> 5.7

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

\*\* When using with the vent line adapter assembly, add 1.65" to dimension c. (see vent line adapter information sheet)

Valve	Flange	NPT	Rp	DIN-Connector	Visual indicator
DMV-701/602	<b>1/2"</b>	222-371	222-341		210-319
DMV-701/602	<b>3/4"</b>	222-368	222-342		217-665
DMV-701/602	<b>1"</b>	221-999	222-001		
DMV-702/6 & 703/602	<b>1"</b>	222-369	222-343	<b>Integral gas filter (50 micron)</b>	
DMV-702/6 & 703/602	<b>1 1/4"</b>	222-370	222-344	DMV-701/602	214-276
DMV-702/6 & 703/602	<b>1 1/2"</b>	222-003	221-884	DMV-702/622	214-525
DMV-702/6 & 703/602	<b>2"</b>	221-997	221-926	DMV-703/622	214-525

**Pre-Mount Filter**

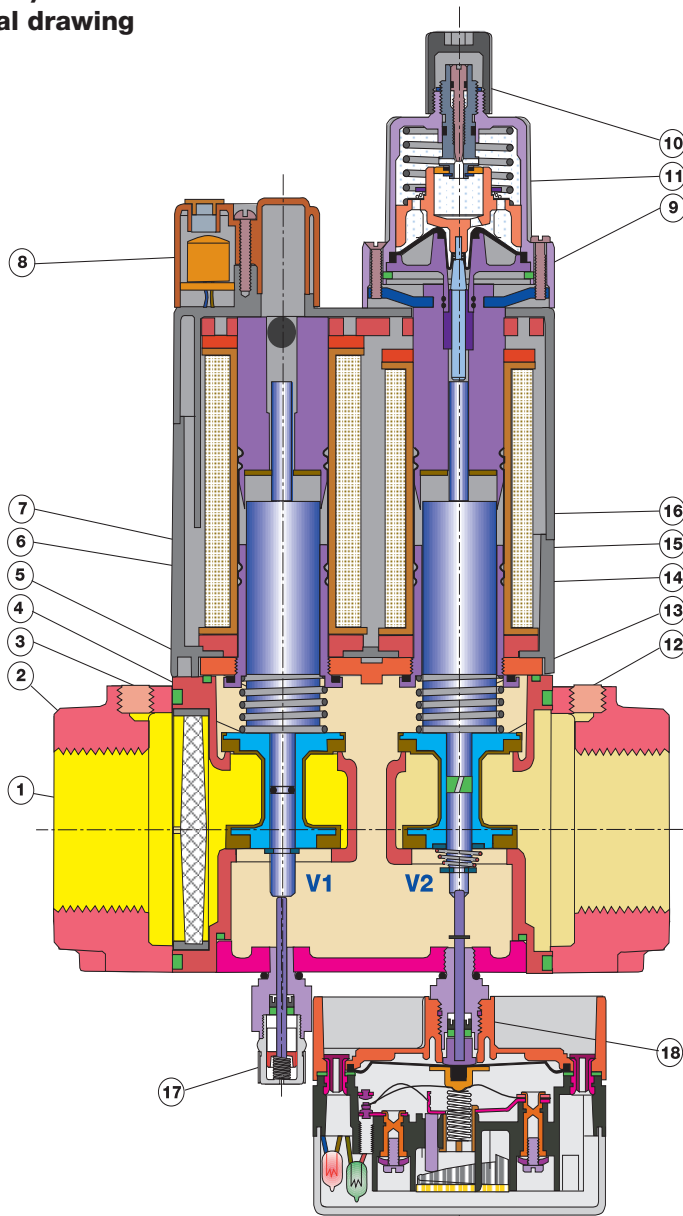
DMV-701/602	232-440
DMV-702/602	226-342
DMV-703/602	226-342

**Pre-Mount replacement filter**

DMV-701/602	238-653
DMV-702/602	226-997
DMV-703/602	226-997

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

**DMV-D(LE).../622**  
**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 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 above to determine pressure drop for propane.

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

f = correction factor to determine flow through valves with other gases.

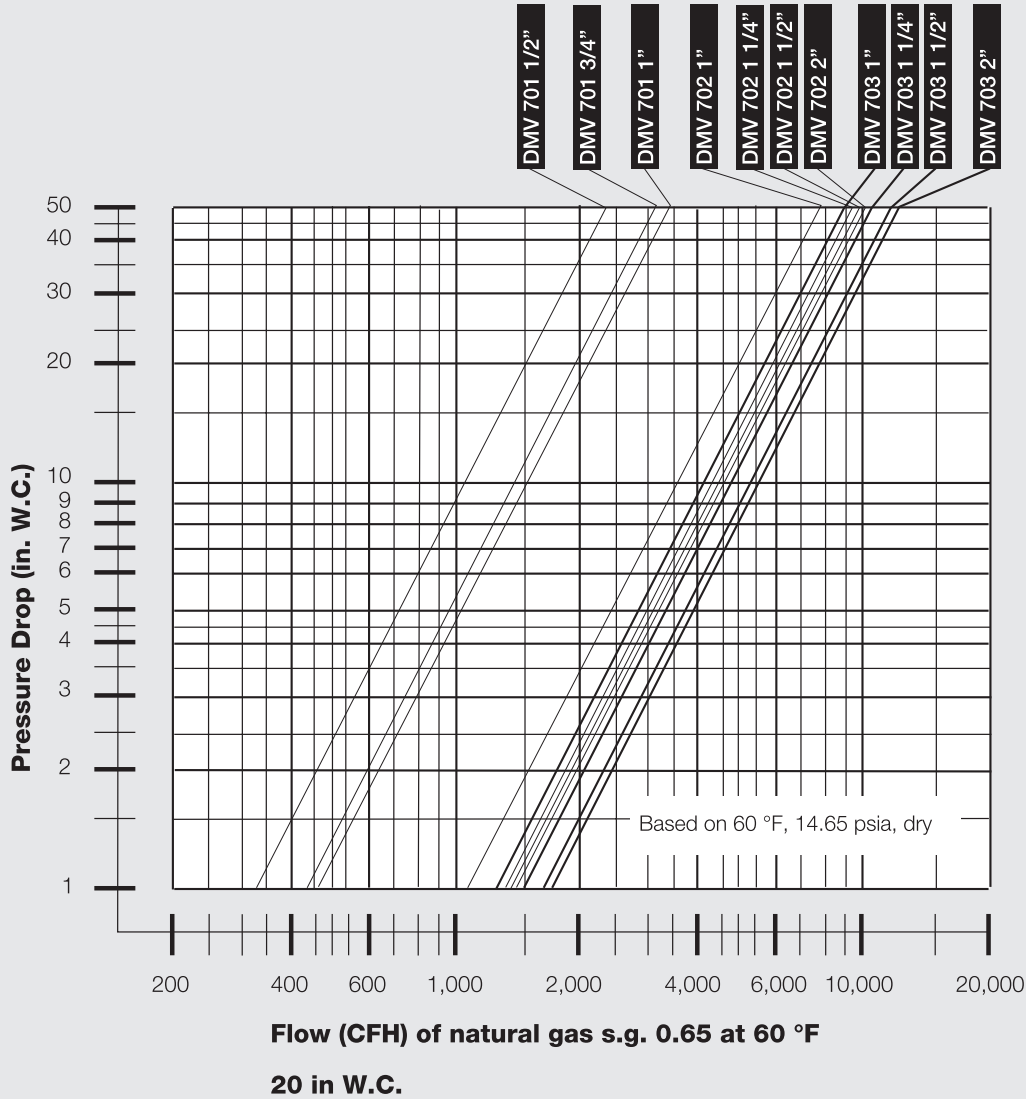
$$f = \sqrt{\frac{\text{Spec. gravity of Natural Gas}}{\text{Spec. gravity of gas used}}}$$

Type of gas	Density [kg/m <sup>3</sup> ]	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 Safety Shutoff Valves  
with Proof of Closure  
DMV-D/622, DMV-DLE/622**



**Flow curve**



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

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