

Safety Shutoff Valve MVD Series

DUNGS[®]
Combustion Controls



Normally closed safety shutoff valve with the following approvals.

UL Listed

- UL 429
- File # MH16727

CSA Certified

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

FM Approved

- Class 7411
- File # J.I.0V9A8.AF

US and Canadian Models

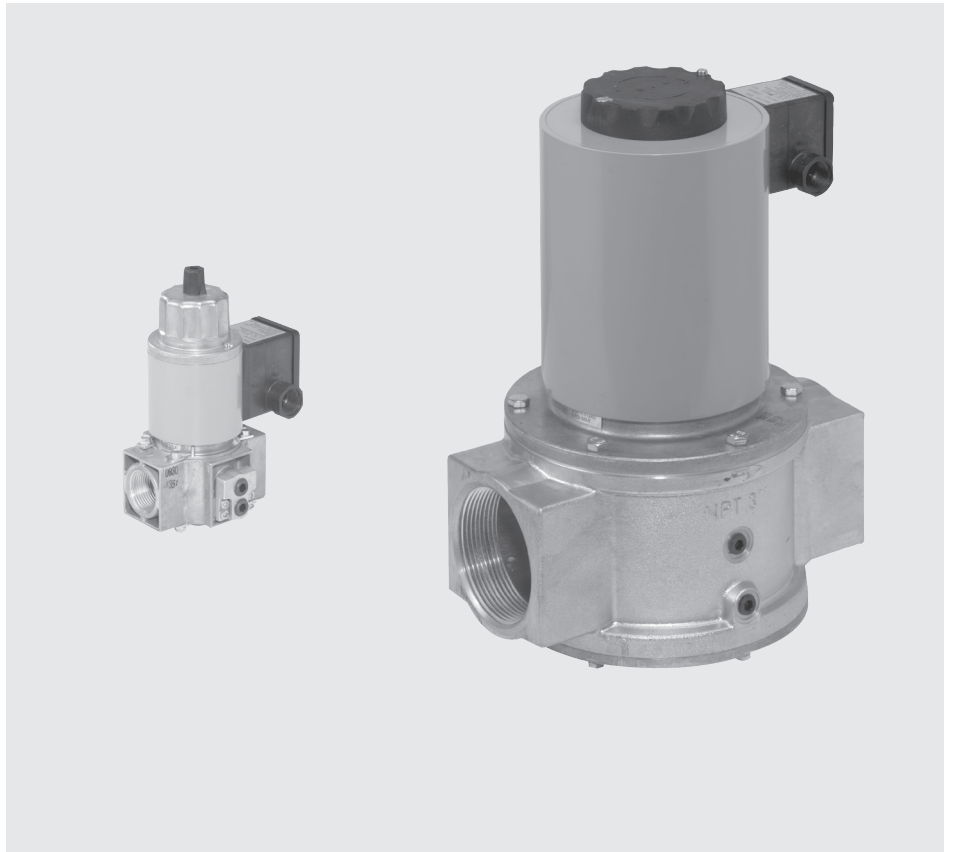
- 1/2" - 3" NPT

Codes and Standards

This product is intended for installations covered by but not limited to NFPA 86, NFPA 37, CSD-1, ANSI Z21.13, UL 795, CSA B149.1 or CSA B149.3.

**Commonwealth of Massachusetts
Approved Product Approval Code
G1-1107-35**

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



Description

The DUNGS MVD series are electrically operated normally closed, automatic safety shutoff valves for gas burners and gas appliances.

- Closing time <1 s
- Max. operating pressure up to 7 PSI (500 mbar) on MVD/6
- Max. close off pressure 15 PSI (1000 mbar) on all models
- MVD/6: fast opening/fast closing
- 120 VAC @ 60 Hz in all models, 24 VAC @ 60 Hz (in some models)
- 1/2" NPT conduit connection
- Optional field installable visual indicator (VI) or CPI 400 with indication lamps and SPDT interlock switch for valve position.
- Reliable, quiet operation; rugged and low maintenance.

Application

The DUNGS MVD series safety shutoff valves are recommended for industrial and commercial heating applications that require one safety shutoff valve or two safety shutoff valves in series. This safety shutoff valve is suitable for use with 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 %.

MV-D Normally closed automatic safety shutoff valve, fast opening, fast closing. Adjustable max. flow.

MV-DLE Normally closed automatic safety shutoff valve, slow opening, fast closing. Adjustable initial lift. Adjustable max. flow.

Specifications

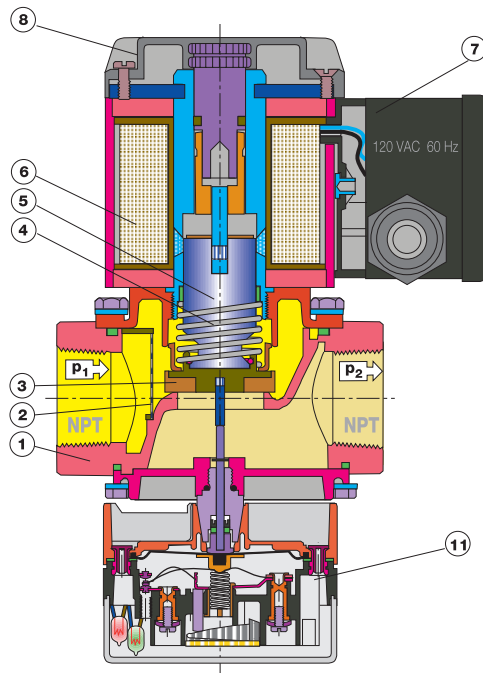
Pipe thread (NPT)	1/2" 3/4" 1" 1 1/4" 1 1/2" 2" 2 1/2" 3"
Max. operating pressure	MVD are 7 PSI (500 mbar) / MVDLE is 3 PSI (200 mbar), see page 3
Max. body pressure	15 PSI (1000 mbar)
Max. close off pressure	15 PSI (1000 mbar)
Electrical ratings (-10 % to +15 %)	120 VAC @ 60 Hz, 24 VAC @ 60 Hz (available in some models), 24 VDC (CSA) see page 3 and 4
Power ratings	Refer to type overview page 4
Enclosure ratings	NEMA 12
Electrical connection	Screw terminals with 1/2" NPT conduit connection
Operating time	100 % duty cycle
Closing time	< 1 s
Opening time (to max. flow)	MVD < 1 s MVDLE Adjustable to approx. 10 to 20 s at 70 °F
Initial lift adjustment	MVDLE only - 0 to 70% of total flow; 0 to 35% of stroke
Max. flow adjustment	Adjustable from <10 to 100 % of total flow; <10 to 100 % of stroke
Materials in contact with gas	Aluminium, steel, brass / Seals: NBR-based rubber
Ambient temperature rating	See also page 3
Installation position	Safety shut off valve from vertically upright to horizontal
Test ports	Two 1/4" NPT upstream and two 1/4" NPT downstream ports
Gas strainer (standard)	Installed in the housing upstream (23 mesh)
Position indication (order separately)	CPI 400 with indication lamps and SPDT interlock switch or Visual indicator (VI)
Valve proving system (requires two safety shutoff valves in system)	Type VDK 200, mounts externally using valve side ports or pipe "T"s.

Approvals	Model	Temperature Rating	MOPD (PSI)**	Max. Close Off (PSI)	Electrical Ratings (Volts / Hz)
 UL 429	MVD	-20 °F to 120 °F	7	7	120/60 (+10% -15%)
	MVDLE	-20 °F to 120 °F	3	7	120/60 (+10% -15%)
	MVD	-20 °F to 120 °F	7	7	24/60 (+10% -15%)*
	MVDLE	-20 °F to 120 °F	3	7	24/60 (+10% -15%)*
 APPROVED FM 7411	MVD	-20 °F to 120 °F	7	15	120/60 (+10% -15%)
	MVDLE	-20 °F to 120 °F	3	15	120/60 (+10% -15%)
	MVD	-20 °F to 120 °F	7	15	24/60 (+10% -15%)*
	MVDLE	-20 °F to 120 °F	3	15	24/60 (+10% -15%)*
 ANSI Z21.21/ CSA 6.5 C/I	MVD	-20 °F to 120 °F	5	5	120/60 (+10% -15%)
	MVDLE	-20 °F to 120 °F	2	5	120/60 (+10% -15%)
	MVD	-20 °F to 120 °F	5	5	24/60 (+10% -15%)*
	MVDLE	-20 °F to 120 °F	2	5	24/60 (+10% -15%)*

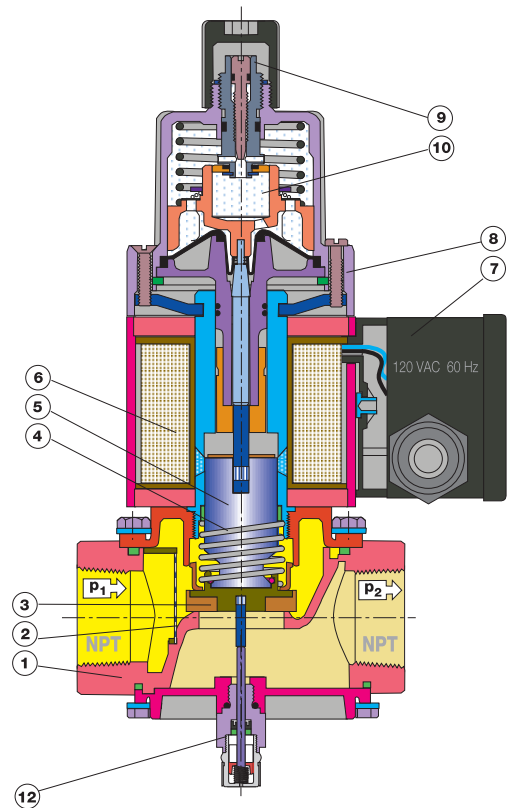
* 24 VAC available in some models (See page 4), 24 VDC is available.

** Maximum Operating Pressure Differential

**Type MVD
sectional drawing**



**Type MVDLE
sectional drawing**



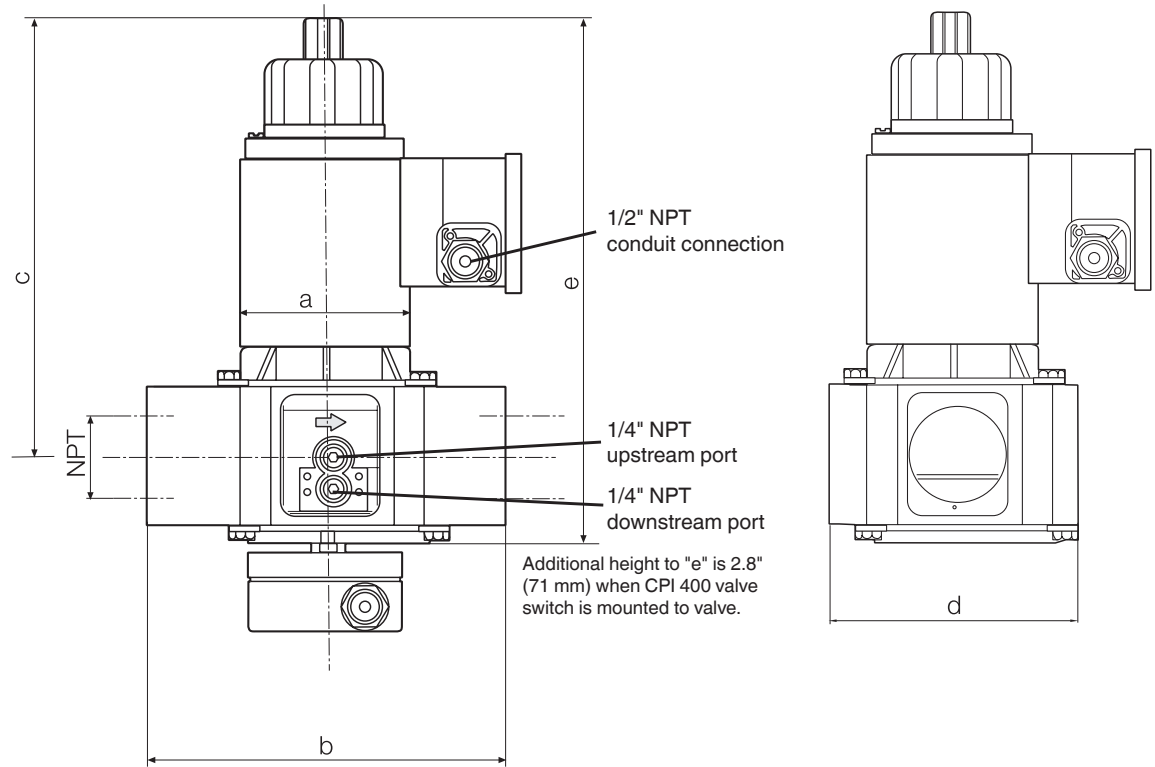
- | | | | | | |
|---|----------------|---|---------------------------------|----|-----------------------------------|
| 1 | Housing | 6 | Solenoid | 10 | Hydraulic brake MVDLE/6 |
| 2 | Strainer | 7 | Electrical connection | 11 | CPI 400 position interlock switch |
| 3 | Valve disc. | 8 | Max flow adjustment | 12 | Visual indicator (VI) |
| 4 | Closing spring | 9 | Initial lift adjustment MVDLE/6 | | |
| 5 | Plunger | | | | |

Type	Ending x = 6 is NEMA Type 12 Order No.	Size	P _{max.} ** [VA] Inrush and Full Load	Dimensions [inch] Dimensions [mm]					Weight [lbs] [kg]
				a	b	c	d	e	
MVDLE 205/6*	216870 217320*	NPT 1/2"	15	1.97 50	2.95 75	5.31 135	2.76 70	6.10 155	2.43 1,10
MVDLE 207/6*	216589 217321*	NPT 3/4"	25	2.95 75	3.94 100	6.50 165	3.15 80	7.48 190	5.62 2,55
MVDLE 210/6*	216590 217322*	NPT 1"	25	2.95 75	4.33 110	6.50 165	3.54 90	7.68 195	6.06 2,75
MVDLE 212/6	217250	NPT 1 1/4"	60	3.74 95	5.91 150	8.07 205	4.57 116	9.65 245	9.70 4,40
MVDLE 215/6	216631	NPT 1 1/2"	60	4.52 115	5.91 150	8.07 205	4.57 116	9.65 245	12.13 5,50
MVDLE 220/6	216632	NPT 2"	60	4.52 115	6.69 170	8.07 205	5.12 130	9.84 250	13.67 6,20
MVDLE 225/6	216633	NPT 2 1/2"	80	4.52 115	9.06 230	11.61 295	6.50 165	13.78 350	25.13 11,40
MVDLE 230/6	217251	NPT 3"	90	5.12 130	10.43 265	14.21 361	7.87 200	16.97 431	38.14 17,31
MVD 505/6*	217641 217640*	NPT 1/2"	15	1.97 50	2.95 75	3.54 90	2.76 70	4.45 113	2.20 1,00
MVD 507/6*	217606 217435*	NPT 3/4"	25	2.95 75	3.94 100	5.31 135	3.15 80	6.30 160	5.29 2,40
MVD 510/6*	217436 217437*	NPT 1"	25	2.95 75	4.33 110	5.31 135	3.54 90	6.50 165	5.73 2,60
MVD 512/6	217438	NPT 1 1/4"	60	3.74 95	5.91 150	6.89 175	4.57 116	8.27 210	11.91 5,40
MVD 515/6	217439	NPT 1 1/2"	60	3.74 95	5.91 150	6.89 175	4.57 116	8.27 210	11.91 5,40
MVD 520/6	217440	NPT 2"	100	4.53 115	6.69 170	6.89 175	5.12 130	9.25 235	19.40 8,80
MVD 525/6	217441	NPT 2 1/2"	80	5.12 130	9.06 230	8.46 215	6.50 165	10.63 270	31.97 14,50
MVD 530/6	217442	NPT 3"	100	5.91 150	10.43 265	11.22 285	7.87 200	13.94 354	55.11 25,00

* Designates model is also available in 24 VAC/60 Hz. Part Number also shown.

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

Dimensions inch (mm)



(MVDLE shown, see page 4 for all values)

Functional description (Reference page 3)

The DUNGS MVD, and MVDLE series valves are automatic safety shutoff valves. The electromagnetic drive opens against the force of the closing spring 4. For the MVD and MVDLE series, the main

flow through valve can be limited by the maximum flow adjustment 8. On the MVDLE series, the hydraulic brake 10 permits slow opening. Initial lift can be adjusted 9. If power is interrupted (operating voltage), closing spring 4 closes the valve within 1 second. The valve position can be visually moni-

tored by using the field installed visual indicator (VI) 12, or it can be visually and electronically monitored by a field installed CPI 400, which includes valve position indication lamps and one SPDT interlock switch 11 (order separately).

Determining equivalent flow through valves using another gas

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

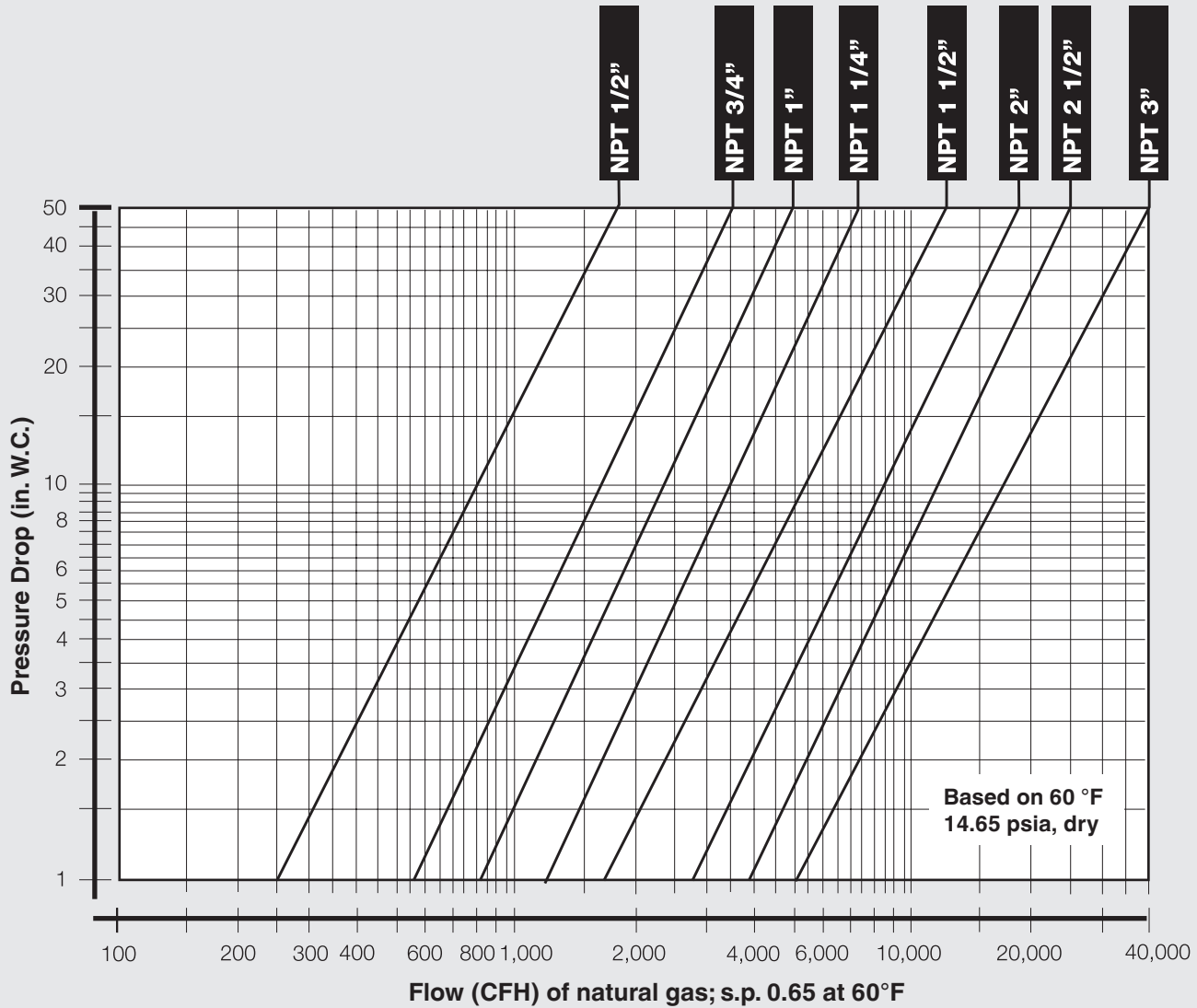
$$f = \sqrt{\frac{\text{Density of Natural gas}}{\text{Density of gas used}}}$$

Type of gas	Density [kg/m ³]	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

Safety Shutoff Valve
MVD Series



Flow diagram



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

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