Safety Shutoff Valves
MVD/6, MVDLE/6

DUNGS®

Normally closed safety shutoff valve with the following approvals.

UL Listed
- **UL 429**
- **File # MH16727**

AGA / CGA Certified
- **ANSI Z21.21**
- **CGA 6.5**
- **CGA 3.9**
- **File # LM112901-04**

FM Approved
- **Class 7411**
- **File # J.I.0V9A8.AF**

US and Canadian Models
- **MVD 505/6 - MVD 530/6**
- **MVDLE 205/6 - MVDLE 230/6**
- **1/2 in. NPT - 3 in. NPT**

European models tested to EN161 per Gas Appliance Directive 90/396/ EEC.

DUNGS is an ISO 9001 manufacturing facility.

Description

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

- Closing time <1s.
- Max. operating pressure up to
  7 PSI (500 mbar) on MVD
  3 PSI (200 mbar) on MVDLE
- Max. close off pressure
  15 PSI (1000 mbar) on all models
- MVD: fast opening/fast closing
- MVDLE: slow opening with adjustable initial lift, fast closing
- Max flow is adjustable
- 120 VAC/ 60 Hz, 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 and MVDLE are recommended for industrial and commercial heating applications that require one safety shutoff valve or two safety shutoff valves in series. The MVD and MVDLE safety shutoff valves are suitable for natural gas, propane, butane, air and other inert gases.

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MVD	Normally closed automatic safety shutoff valve, fast opening, fast closing. Adjustable max. flow.
MVDLE	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 7 PSI (500 mbar), MVDLE 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, 24 VAC (available in some models) / 60 Hz; see page 3 and 4
Power ratings	Refer to type overview page 4
Enclosure rating	NEMA 1
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 25% 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	-20 °F to +140 °F (-30 °C to +60 °C), depending on approval. 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" NPTdownstream 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	D	-20 °F to 120 °F	7	7	120/60 (-10% +15%)
	DLE	-20 °F to 120 °F	3	7	120/60 (-10% +15%)
	D	-20 °F to 120 °F	7	7	24/60 (-10% +15%)*
	DLE	-20 °F to 120 °F	3	7	24/60 (-10% +15%)*
FM 7411	D	-30 °F to 140 °F	7	15	120/60, 24/60 (-10% +15%)*
	DLE	-30 °F to 140 °F	3	15	120/60, 24/60 (-10% +15%)*
Z21.21 6.5	D	-20 °F to 120 °F	5	5	120/60 (-10% +15%)
	DLE	-20 °F to 120 °F	2	5	120/60 (-10% +15%)
3.9	D	-20 °F to 120 °F	7	7	120/60 (-10% +15%)
	DLE	-20 °F to 120 °F	3	7	120/60 (-10% +15%)

* 24VAC available in some models (See page 4)

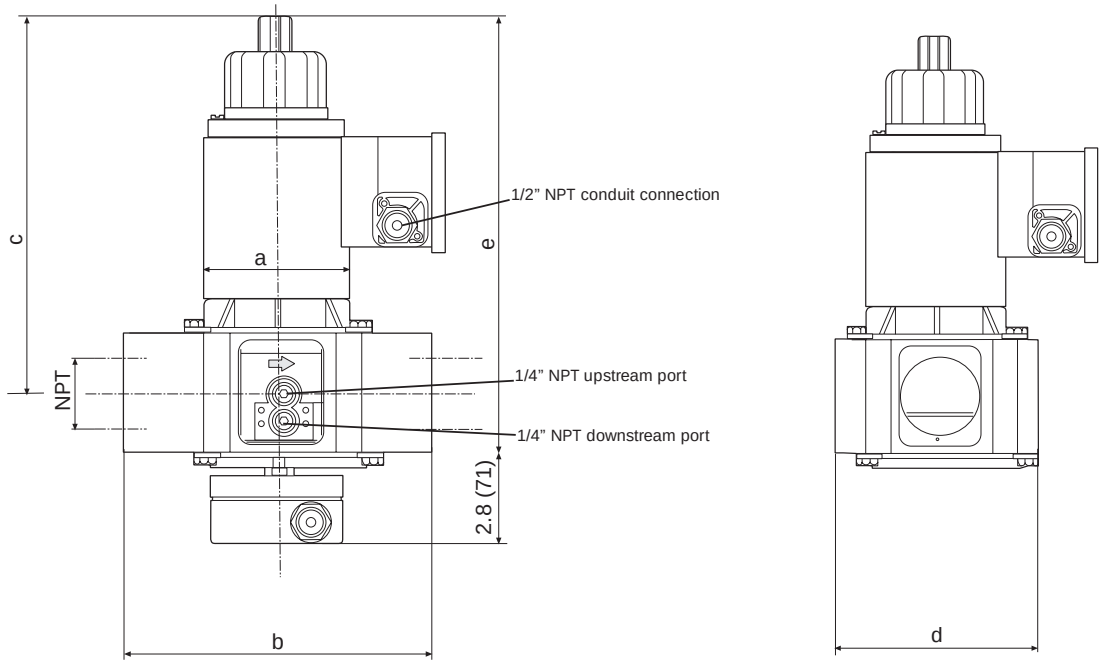
** Maximum Operating Pressure Differential

Type	PSI	NPT	Sole-noid No.	Order No.	$P_{max.}$** [VA] Inrush and Full Load	Opening time to max flow	Dimensions [inch] Dimensions [mm] a	b	c	d	e	Weight [lbs] [kg]
MVDLE 205/6*	3	1/2"	100	46030-2	15	approx. 10 s	**1.97**	**2.95**	**5.31**	**2.76**	**6.10**	**2.43**
			100	46031-2*			50	75	135	70	155	1,10
MVDLE 207/6*	3	3/4"	200	46030-3	25	approx. 10 s	**2.76**	**3.94**	**6.50**	**3.15**	**7.48**	**5.62**
			200	46031-3*			70	100	165	80	190	2,55
MVDLE 210/6*	3	1"	200	46030-4	25	approx. 10 s	**2.95**	**4.33**	**6.50**	**3.54**	**7.68**	**6.06**
			200	46031-4*			75	110	165	90	195	2,75
MVDLE 212/6	3	1 1/4"	300	46030-5	60	approx. 10 s	**3.74**	**5.91**	**8.07**	**4.57**	**9.65**	**9.70**
							95	150	205	116	245	4,40
MVDLE 215/6	3	1 1/2"	300	46030-6	60	approx. 10 s	**3.74**	**5.91**	**8.07**	**4.57**	**9.65**	**12.13**
							95	150	205	116	245	5,50
MVDLE 220/6	3	2"	300	46030-8	60	approx. 10 s	**4.53**	**6.69**	**8.07**	**5.12**	**9.84**	**13.67**
							115	170	205	130	250	6,20
MVDLE 225/6	3	2 1/2"	400	46030-10	80	approx. 10 s	**5.12**	**9.06**	**11.61**	**6.50**	**13.78**	**25.13**
							130	230	295	165	350	11,40
MVDLE 230/6	3	3"	500	46030-12	90	approx. 10 s	**5.91**	**10.43**	**14.21**	**7.87**	**16.97**	**38.14**
							150	265	361	200	431	17,31
MVD 505/6*	7	1/2"	100	46040-2	15	< 1 s	**1.97**	**2.95**	**3.54**	**2.76**	**4.45**	**2.20**
			100	46041-2*			50	75	90	70	113	1,00
MVD 507/6*	7	3/4"	200	46040-3	25	< 1 s	**2.36**	**3.94**	**5.31**	**3.15**	**6.30**	**5.29**
			200	46041-3*			60	100	135	80	160	2,40
MVD 510/6*	7	1"	200	46040-4	25	< 1 s	**2.95**	**4.33**	**5.31**	**3.54**	**6.50**	**5.73**
			200	46041-4*			75	110	135	90	165	2,60
MVD 512/6	7	1 1/4"	300	46040-5	60	< 1 s	**3.74**	**5.91**	**6.89**	**4.57**	**8.27**	**11.91**
							95	150	175	116	210	5,40
MVD 515/6	7	1 1/2"	300	46040-6	60	< 1 s	**3.74**	**5.91**	**6.89**	**4.57**	**8.27**	**11.91**
							95	150	175	116	210	5,40
MVD 520/6	7	2"	400	46040-8	100	< 1 s	**4.53**	**6.69**	**6.89**	**5.12**	**9.25**	**19.40**
							115	170	175	130	235	8,80
MVD 525/6	7	2 1/2"	500	46040-10	80	< 1 s	**5.12**	**9.06**	**8.46**	**6.50**	**10.63**	**31.97**
							130	230	215	165	270	14,50
MVD 530/6	7	3"	550	46040-12	100	< 1 s	**5.91**	**10.43**	**11.22**	**7.87**	**13.94**	**55.11**
							150	265	285	200	354	25,00

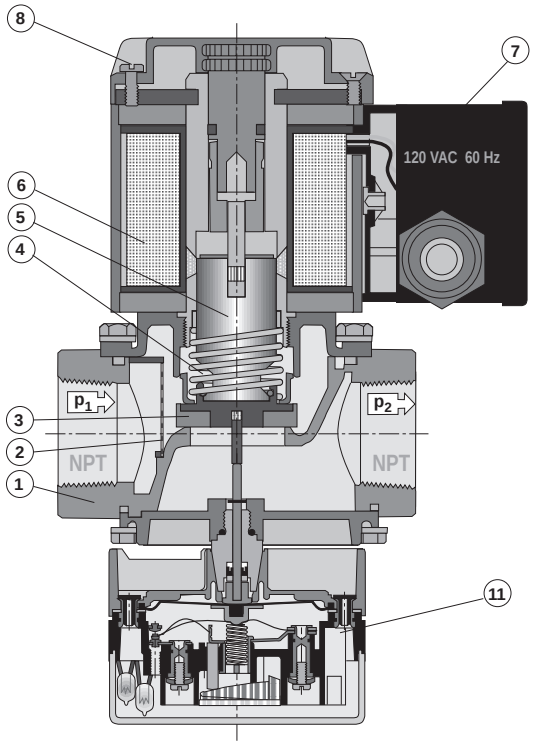
* Designates model is also available in 24VAC/60 Hz. Part Number also shown.

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

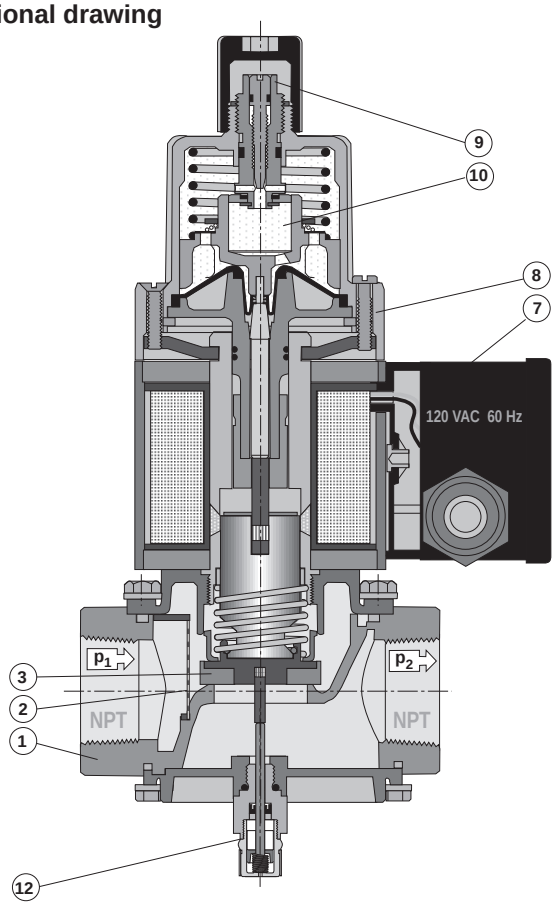
Dimensions inch (*mm*)



Type MVD
sectional drawing



Type MVDLE
sectional drawing



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

Functional description
The DUNGS MVD and MVDLE valves are automatic safety shutoff valves. The electromagnetic drive opens against the force of the closing spring 4.
The main flow through valve can be limited by the maximum flow adjustment 8.

On the MVDLE, 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 monitored by using the field installed visual indicator (VI) 12, or it can be visually and electronically monitored by a field installed CPI 400 with indication lamps and SPDT interlock switch 11.
(Order separately)

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

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/m³]	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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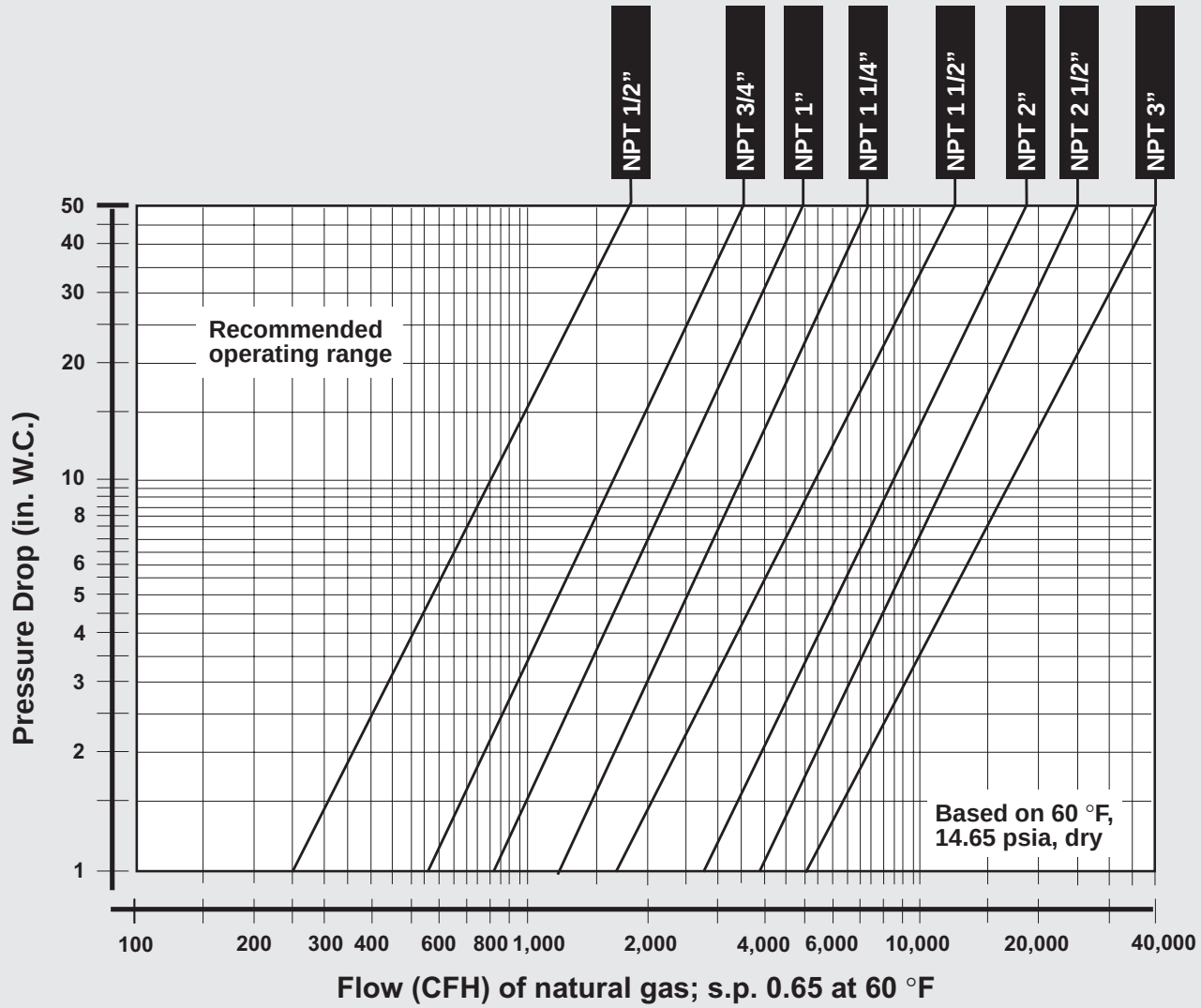
Flow diagram



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

CERTIFIED DIN ISO 9001 QUALITY SYSTEM
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