Safety Shutoff Valves
MV-D/6, MV-DLE/6
MV-D/604, MV-DLE/604

DUNGS®

Normally closed safety shutoff valve with the following approvals.

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

CSA Certified
- **ANSI Z21.21 CGA 6.5 C/I**
- **File # LR 112901**

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

US and Canadian Models
- **MV-D/6 505/6 - MV-D/6 530/6**
- **MV-DLE/6 205/6 - MV-DLE/6 230/6**
- **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 MV-D/6 and the MV-DLE/6 are 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 MV-D/6
  3 PSI (200 mbar) on MV-DLE/6
- Max. close off pressure
  15 PSI (1000 mbar) on all models
- MV-D/6: fast opening/fast closing
- MV-DLE/6: 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 MV-D/6 and MV-DLE/6 are recommended for industrial and commercial heating applications that require one safety shutoff valve or two safety shutoff valves in series. The MV-D/6 and MV-DLE/6 safety shutoff valves are suitable for natural gas, propane, butane, air and inert gases.

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MV-D/6	Normally closed automatic safety shutoff valve, fast opening, fast closing. Adjustable max. flow.
MV-DLE/6	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	MV-D/6; 7 PSI (500 mbar) / MV-DLE/6; 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 ratings	NEMA Type 1 or 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)	MV-D/6 < 1 s MV-DLE/6 Adjustable to approx. 10 to 20 s at 70 °F
Initial lift adjustment	MV-DLE/6 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" 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	15	15	120/60 (-10% +15%)
	DLE	-30 °F to 140 °F	15	15	120/60 (-10% +15%)
	D	-30 °F to 140 °F	15	15	24/60 (-10% +15%)*
	DLE	-30 °F to 140 °F	15	15	24/60 (-10% +15%)*
Z21.21/6.5 C/I	D	-20 °F to 120 °F	5	5	120/60 (-10% +15%)
	DLE	-20 °F to 120 °F	2	2	120/60 (-10% +15%)
	D	-20 °F to 120 °F	5	5	24/60 (-10% +15%)*
	DLE	-20 °F to 120 °F	2	2	24/60 (-10% +15%)*

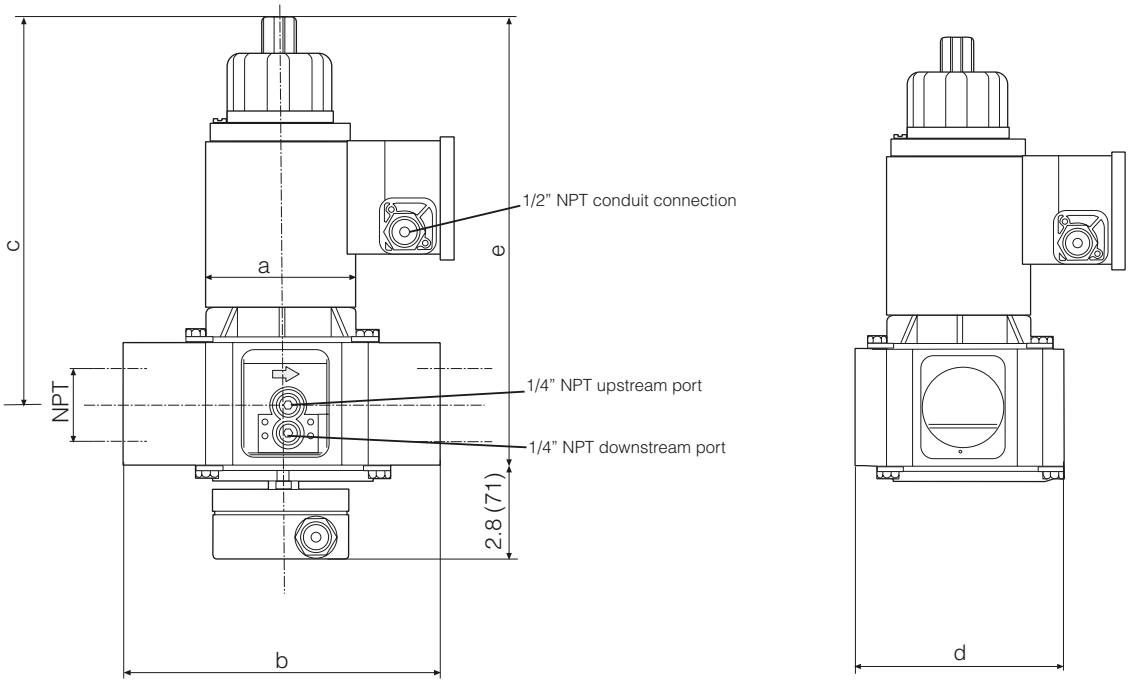
* 24VAC available in some models (See page 4)
** Maximum Operating Pressure Differential

NEMA Type 1	NEMA Type 1 Order No.	NEMA Type 4x	NEMA Type 4x Order No.	Size (NPT)	$P_{max.}$** [VA] Inrush and Full Load	Dimensions [inch] Dimensions [mm] a	b	c	d	e	Weight [lbs] [kg]
MV-DLE 205/6*	46030-2 46031-2*	**MV-DLE 205/604**	D240992	1/2"	15	**1.97** 50	**2.95** 75	**5.31** 135	**2.76** 70	**6.10** 155	**2.43** 1,10
MV-DLE 207/6*	46030-3 46031-3*	**MV-DLE 207/604**	D240993	3/4"	25	**2.76** 70	**3.94** 100	**6.50** 165	**3.15** 80	**7.48** 190	**5.62** 2,55
MV-DLE 210/6*	46030-4 46031-4*	**MV-DLE 210/604**	D240994	1"	25	**2.95** 75	**4.33** 110	**6.50** 165	**3.54** 90	**7.68** 195	**6.06** 2,75
MV-DLE 212/6	46030-5	**MV-DLE 212/604**	D240995	1 1/4"	60	**3.74** 95	**5.91** 150	**8.07** 205	**4.57** 116	**9.65** 245	**9.70** 4,40
MV-DLE 215/6	46030-6	**MV-DLE 215/604**	D240996	1 1/2"	60	**3.74** 95	**5.91** 150	**8.07** 205	**4.57** 116	**9.65** 245	**12.13** 5,50
MV-DLE 220/6	46030-8	**MV-DLE 220/604**	D240997	2"	60	**4.53** 115	**6.69** 170	**8.07** 205	**5.12** 130	**9.84** 250	**13.67** 6,20
MV-DLE 225/6	46030-10	**MV-DLE 225/604**	D240998	2 1/2"	80	**5.12** 130	**9.06** 230	**11.61** 295	**6.50** 165	**13.78** 350	**25.13** 11,40
MV-DLE 230/6	46030-12	**MV-DLE 230/604**	D240999	3"	90	**5.91** 150	**10.43** 265	**14.21** 361	**7.87** 200	**16.97** 431	**38.14** 17,31
MV-D 505/6*	46040-2 46041-2*	**MV-D 505/604**	D241000	1/2"	15	**1.97** 50	**2.95** 75	**3.54** 90	**2.76** 70	**4.45** 113	**2.20** 1,00
MV-D 507/6*	46040-3 46041-3*	**MV-D 507/604**	D241001	3/4"	25	**2.36** 60	**3.94** 100	**5.31** 135	**3.15** 80	**6.30** 160	**5.29** 2,40
MV-D 510/6*	46040-4 46041-4*	**MV-D 510/604**	D241002	1"	25	**2.95** 75	**4.33** 110	**5.31** 135	**3.54** 90	**6.50** 165	**5.73** 2,60
MV-D 512/6	46040-5	**MV-D 512/604**	D241003	1 1/4"	60	**3.74** 95	**5.91** 150	**6.89** 175	**4.57** 116	**8.27** 210	**11.91** 5,40
MV-D 515/6	46040-6	**MV-D 515/604**	D241004	1 1/2"	60	**3.74** 95	**5.91** 150	**6.89** 175	**4.57** 116	**8.27** 210	**11.91** 5,40
MV-D 520/6	46040-8	**MV-D 520/604**	D241016	2"	100	**4.53** 115	**6.69** 170	**6.89** 175	**5.12** 130	**9.25** 235	**19.40** 8,80
MV-D 525/6	46040-10	**MV-D 525/604**	D241005	2 1/2"	80	**5.12** 130	**9.06** 230	**8.46** 215	**6.50** 165	**10.63** 270	**31.97** 14,50
MV-D 530/6	46040-12	**MV-D 530/604**	D241006	3"	100	**5.91** 150	**10.43** 265	**11.22** 285	**7.87** 200	**13.94** 354	**55.11** 25,00

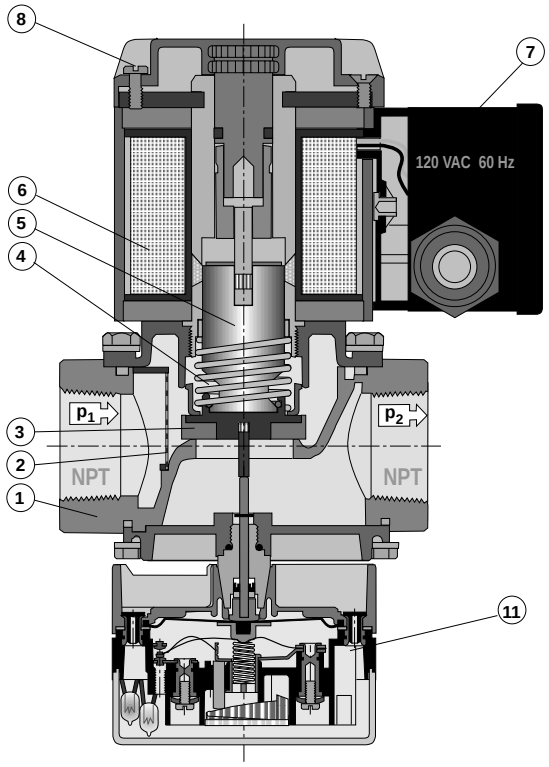
* Designates model is also available in 24VAC/60 Hz. Part Number also shown.

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

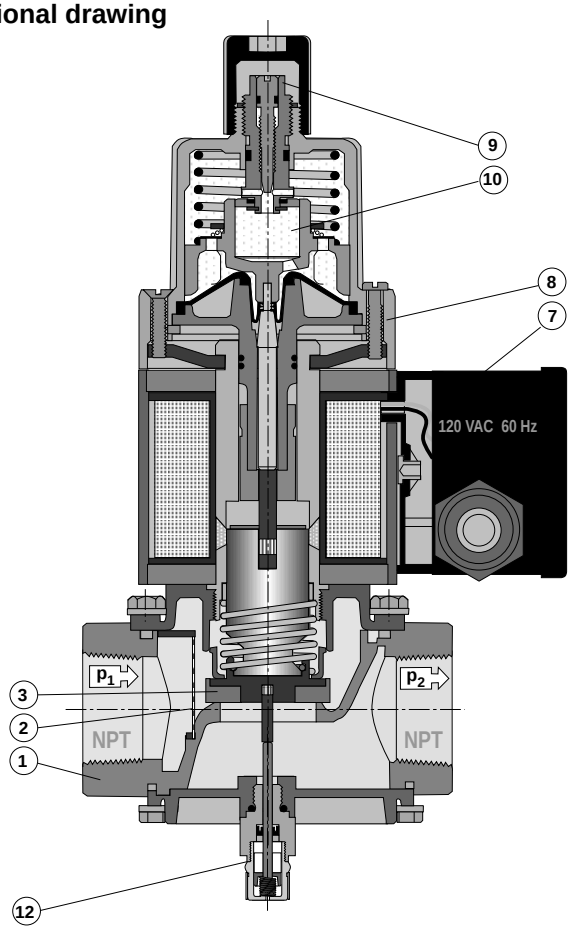
Dimensions inch (mm)



Type MV-D/6
sectional drawing



Type MV-DLE/6
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 MV-DLE/6		
5	Plunger	10	Hydraulic brake MV-DLE/6		

Functional description

The DUNGS MV-D/6 and MV-DLE/6 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.

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

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

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

On the MV-DLE/6, 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)

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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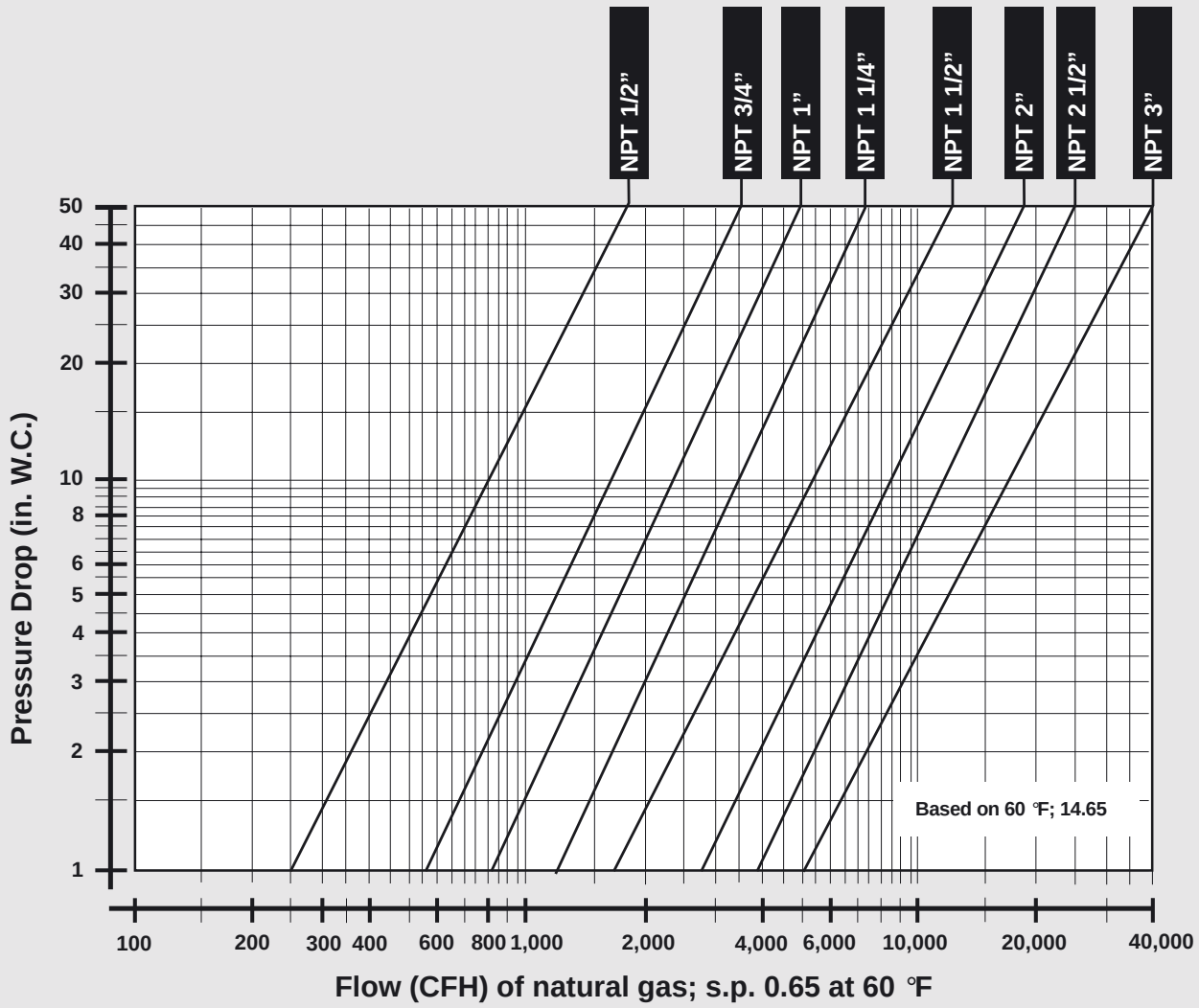
Flow diagram



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

Karl Dungs Inc.
524 Apollo Drive Suite 10
Lino Lakes, MN 55014, U.S.A.
Phone 651 792-8912
Fax 651 792-8919
e-mail info@karldungsusa.com
Internet http://www.dungs.com/usa/

Karl Dungs GmbH & Co.
P.O. Box 12 29
D-73602 Schorndorf, Germany
Phone +49 (0)7181-804-0
Fax +49 (0)7181-804-166
e-mail info@dungs.com
Internet http://www.dungs.com