

Single-stage safety solenoid valves

MVD, MVD/5,
MVDLE/5

DUNGS®
Combustion Controls

6.20



Technical description

The DUNGS safety solenoid valve MVD, MVD/5, MVDLE/5 is a single-stage automatic shut-off valve as per EN 161 for gas burners and gas appliance.

- Max. operating pressure up to 200, 360 or 500 mbar (20, 36 or 50 kPa)
- normally closed
- MVD: fast opening
- MVDLE: Slow opening with adjustable fast stroke for start gas volume
- Main volume adjustable (MVD/MVDLE)
- DC solenoid, rectifier wiring with radio interference suppression in terminal box with PG screw union
- Mountable closed position signal contact to monitor closed position of valve (.../5)
- Pipe thread as per ISO 7/1
- Flange connection as per DIN EN 1092-1
- Reliable function, rugged and maintenance-free
- On request, design without non-ferrous metals

Application

The solenoid valve is used for securing, limiting, shutting off and releasing gas supply to gas burners and gas appliances.

The DUNGS safety solenoid valve MV... is suitable for gases of families 1, 2, 3 and other neutral gaseous media.

Approval

EU type testing certificate as per:

- EU-Gas Appliances Regulation
 - EU-Pressure Equipment Directive
- Approvals in other important gas consuming countries.
- Special designs for the North American market with U_L, FM and CSA registrations.

MV/5	Single-stage solenoid valve, normally when closed, fast opening, fast closing.
MVD/5	Single-stage solenoid valve, normally when closed, fast opening, fast closing, manual limitation of flowing gas volume by adjusting main volume.
MVDLE/5	One-stage solenoid valve, normally when closed, slow opening, fast closing. Opening time adjustment with fast stroke range. Main volume adjustment.

Specifications

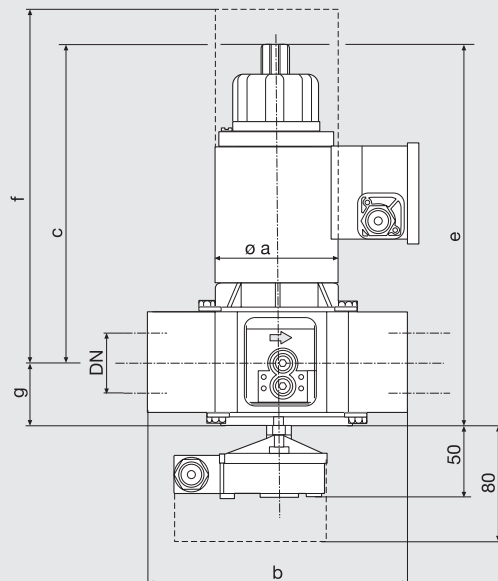
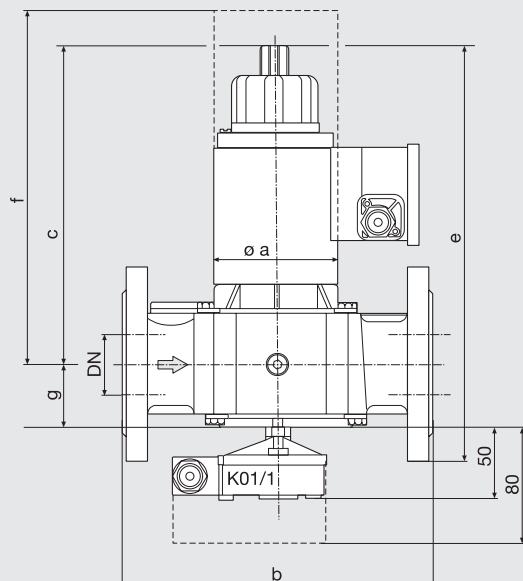
Nominal diameters Pipe thread as per ISO 7/1, Rp Flange	10 15 20 25 40 50 65 80 100 125 150 3/8 1/2 3/4 1 1 1/2 2 2 1/2 Connection flange (PN 16) as per DIN EN 1092-1
Max. operating pressure	up to 200 mbar (20 kPa), 360 mbar (36 kPa) or up to 500 mbar (50 kPa) - refer to type overview
Solenoid valve	Valve as per EN 161, Class A, Group 2, single-stage mode
Closing time	< 1 s
Opening time	< 1 s for MVDLE approx. 20 s at room temperature 20 °C and without fast stroke
Fast stroke	Adjustable
Main volume adjustment	Manually adjustable on MVD and MVDLE
Materials of gas-conveying parts	Housing: aluminium, steel, brass Seals: NBR basis
Voltage/frequency	230 V AC (+10 % -15 %); 50-60 Hz - other voltages on request Solenoids 60E, 61E in 24-28 VDC external activation of solenoid coils required, see operating and mounting instructions
Rating / power consumption	Refer to type overview
Switch-on duration	100 %
Degree of protection	IP 54, IP 65 on request
Electrical connection	At screw terminals via PG* 11 cable gland (* = heavy-gauge conduit thread) Plug connection as per DIN 175 0301-803 can be retrofitted
Switching rate	MVD.../5: max. 1000/h MVDLE.../5: max. 100/h MVD 2125/5, MVD 2150/5, MVD 5100/5, MVD 5125/5, MVD 5150/5: max. 20/h MV 5125/5 S, MV 5150/5 S: max. 20/h
Measuring/ignition gas connection	G 1/4 ISO 118, on both sides in inlet section, additionally G 3/4 on input side, form size DN 40 (flange) upwards
Dirt trap	Sieve installed, mesh width 1 mm
Ambient temperature	-15 °C to +60 °C
Installation position	Solenoid from vertically upright to horizontally lying
Closed position signal contact	MV/5, MVD/5, MVDLE/5: Type K01/1, DIN-tested, mountable on DN 10 - DN 150
Valve proving system	Type VDK 200 A S02, mountable via G 1/4 test connection, Type VPS 504, mountable with adapter up to DN 80
Accessories	K01 closed position signal contact, see Datasheet 12.01 Equipment plug for line socket, DIN 175301-803 211 202 215 733

Type	p _{max.}	DN/Rp	Sole-noid No.	Order No. with PG11	Order No. with line socket	P _{max.} [VA]	I _{max.} ~ (AC) 230 V	Opening time	Dimensions [mm]						Order No. [kg]	
									ø	a	b	c	d	e	f	
MVD 203/5	360	Rp 3/8	100	108 571		15	0,08	< 1 s	50		60	90	60	113	140	0,85
MVD 205/5	360	Rp 1/2	100	013 102	270 486	15	0,08	< 1 s	50		80	90	75	113	150	1
MVD 207/5	360	Rp 3/4	200	121 962	270 487	25	0,15	< 1 s	75		100	135	85	160	200	2,4
MVD 210/5	360	Rp 1	200	013 490	270 488	25	0,15	< 1 s	75		110	135	90	165	200	2,45
MVD 215/5	200	Rp 1 1/2	280	015 446	270 489	60	0,26	< 1 s	80		150	170	116	215	255	4,3
MVD 215/5	360	Rp 1 1/2	300	121 977		60	0,3	< 1 s	95		150	170	116	215	260	5,4
MVD 220/5	200	Rp 2	300	011 767	270 490	60	0,3	< 1 s	95		170	170	116	215	260	5,9
MVD 225/5	200	Rp 2 1/2	400	119 701		100	0,48	< 1 s	115		230	220	165	215	325	10,9
MVD 503/5	500	Rp 3/8	100	158 090		15	0,08	< 1 s	50		60	90	60	113	140	0,85
MVD 505/5	500	Rp 1/2	100	158 110	270 491	15	0,08	< 1 s	50		80	90	75	113	150	1
MVD 507/5	500	Rp 3/4	200	157 530	270 492	25	0,15	< 1 s	75		100	135	85	160	200	2,4
MVD 510/5	500	Rp 1	200	157 540	270 493	25	0,15	< 1 s	75		110	135	90	165	200	2,45
MVD 515/5	500	Rp 1 1/2	300	157 550	270 496	60	0,3	< 1 s	95		150	170	116	215	260	5,4
MVD 520/5	500	Rp 2	400	167 200	270 498	100	0,48	< 1 s	115		170	190	130	235	300	8,8
MVD 525/5	500	Rp 2 1/2	500	170 750		80	0,42	< 1 s	130		230	215	165	300	370	14,5
MVDLE 203/5	360	Rp 3/8	100	108 597		15	0,08	ca. 20 s	50		60	135	75	155	190	0,95
MVDLE 205/5	360	Rp 1/2	100	013 284	271 211	15	0,08	ca. 20 s	50		80	135	75	155	200	1,1
MVDLE 207/5	360	Rp 3/4	200	013 276	271 212	25	0,15	ca. 20 s	75		100	165	85	190	190	2,55
MVDLE 210/5	360	Rp 1	200	013 524	271 213	25	0,15	ca. 20 s	75		110	165	90	200	190	2,75
MVDLE 215/5	200	Rp 1 1/2	280	015 412	270 502	60	0,26	ca. 20 s	80		150	205	116	245	255	4,4
MVDLE 215/5	360	Rp 1 1/2	300	122 002		60	0,3	ca. 20 s	95		150	205	116	245	255	5,5
MVDLE 220/5	200	Rp 2	300	011 775	270 503	60	0,3	ca. 20 s	95		170	205	130	250	255	6,2
MVDLE 225/5	200	Rp 2 1/2	400	118 935		100	0,48	ca. 20 s	115		230	295	165	350	320	11,4
MVDLE 503/5	500	Rp 3/8	100	222 077		15	0,08	ca. 20 s	50		60	135	75	155	190	0,8
MVDLE 507/5	500	Rp 3/4	200	222 079	271 193	25	0,15	ca. 20 s	75		100	165	85	190	190	2,5
MVDLE 515/5	500	Rp 1 1/2	300	222 081	271 195	60	0,3	ca. 20 s	95		150	205	116	245	255	5,6
MVDLE 520/5	500	Rp 2	400	222 082	271 196	100	0,48	ca. 20 s	115		170	230	135	270	300	11,1
MVD 2040/5	200	DN 40	280	111 146		60	0,26	< 1 s	80		200	170	150	235	255	6,8
MVD 2040/5	360	DN 40	300	111 906		60	0,3	< 1 s	95		200	170	150	235	255	7
MVD 2050/5	200	DN 50	300	111 187		60	0,3	< 1 s	95		230	171	165	245	255	7,7
MVD 2065/5	200	DN 65	400	169 390		100	0,48	< 1 s	115		290	221	185	315	330	12,7
MVD 2080/5	200	DN 80	500	169 400		80	0,42	< 1 s	130		310	250	200	340	375	18,5
MVD 2100/5	200	DN 100	550	169 410		100	0,48	< 1 s	150		350	310	240	410	480	31
MVD 5040/5	500	DN 40	300	170 660		60	0,3	< 1 s	95		200	170	150	255	255	7
MVD 5050/5	500	DN 50	400	170 690		100	0,48	< 1 s	115		230	190	165	295	295	12
MVD 5065/5	500	DN 65	500	165 510		80	0,42	< 1 s	130		290	245	190	370	370	17
MVD 5080/5	500	DN 80	550	165 640		100	0,5	< 1 s	150		310	295	200	465	465	27
MVDLE 2040/5	200	DN 40	280	111 914		60	0,26	ca. 20 s	80		200	205	150	270	255	6,9
MVDLE 2040/5	360	DN 40	300	111 153		60	0,3	ca. 20 s	95		200	205	150	270	255	7,1
MVDLE 2050/5	200	DN 50	300	111 195		60	0,3	ca. 20 s	95		230	210	165	280	255	7,5
MVDLE 2065/5	200	DN 65	400	170 930		100	0,48	ca. 20 s	115		290	290	190	385	330	13,3
MVDLE 2080/5	200	DN 80	500	170 940		80	0,42	ca. 20 s	130		310	320	200	405	375	18,5
MVDLE 2100/5	200	DN 100	550	170 950		100	0,48	ca. 20 s	150		350	380	240	480	480	31
MVDLE 5040/5	500	DN 40	300	222 086		60	0,3	ca. 20 s	95		230	205	150	255	255	7
MVDLE 5050/5	500	DN 50	400	222 087		100	0,48	ca. 20 s	115		230	230	165	295	295	13,1

f = Space requirement for solenoid changing

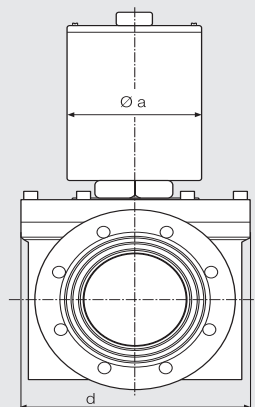
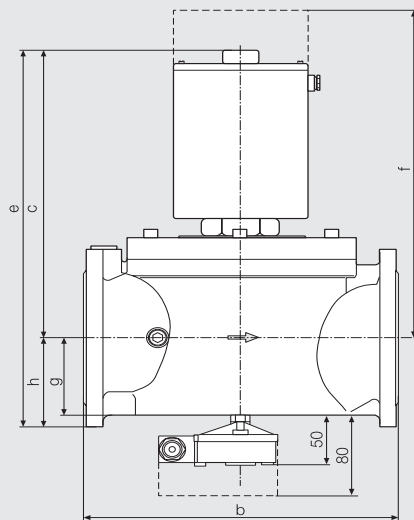
d = largest width

Dimensions [mm]
MVD 203-525/5,
MVDLE 2020/5-2100/5



d = largest width
 Ignition gas valve, Type MV 502, refer to Datasheet 6.01
 * Mounting of a closed position signal contact not possible

Dimensions [mm]
MV 5100/5 - MVD 5150
MV 2125-MV 2150
MV 5125 S
MV 5150 S



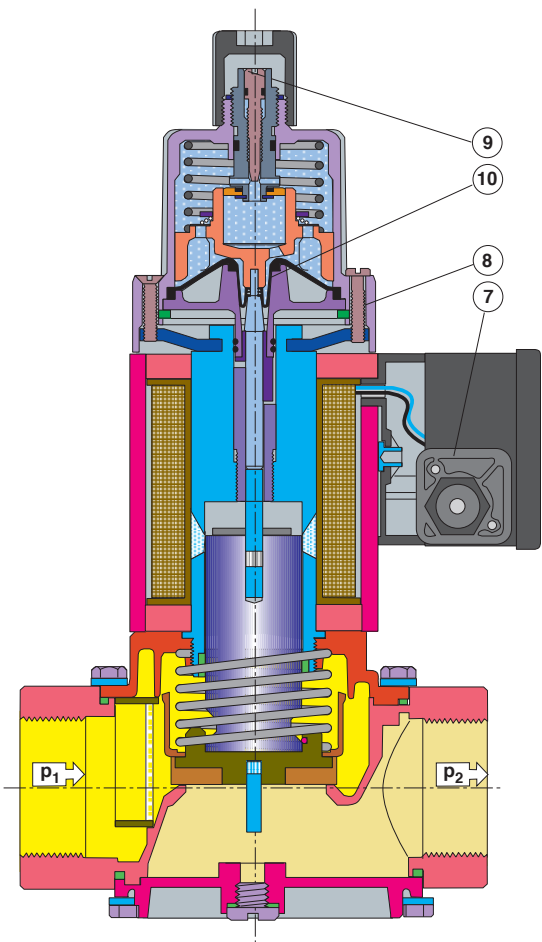
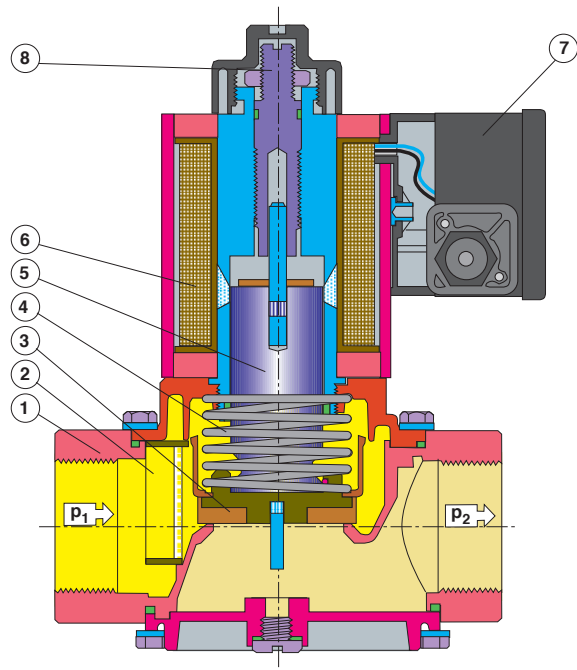
Type	p _{max.}	DN / Rp	Order No.	Sole-noid No.	P _{max.} [VA]*	I _{max.} ~(AC) 230 V [A]**	Opening time	Dimensions [mm]								Weight [kg]
								a	b	c	d	e	f	g	h	
MV 5125/5 S	500	DN 125	224 681	60S	90	7.5	< 1 s	170	400	406	290	531	514	112	125	56.0
MV 5150/5 S	500	DN 150	224 682	61S	90	10	< 1 s	170	480	439	290	582	547	125	143	62.0
MVD 5100/5	500	DN 100	166 150	60E ¹⁾	90	7.5	< 1 s	170	350	365	290	465	498	80	100	39.0
MVD 2125/5	200	DN 125	159 830	60E ¹⁾	90	7.5	< 1 s	170	400	406	290	531	514	112	125	56.0
MVD 5125/5	500	DN 125	159 840	60E ¹⁾	90	7.5	< 1 s	170	400	406	290	531	514	112	125	56.0
MVD 2150/5	200	DN 150	160 050	61E ¹⁾	90	10	< 1 s	170	480	439	290	582	547	125	143	62.0
MVD 5150/5	500	DN 150	160 350	61E ¹⁾	90	10	< 1 s	170	480	439		582	547	125	143	62.0

* Electrical rating in open state

** Switch-on current for approx. 3 s

¹⁾ Solenoids 60E, 61E in 24-28 VDC

external activation of solenoid coils required, see operating and mounting instructions



- 1 Housing
- 2 Sieve
- 3 Valve plate
- 4 Closing spring

- 5 Armature
- 6 Solenoid coil
- 7 Electrical connection

- Setting
- 8 - Main volume
- 9 - Fast stroke
- 10 - Hydraulic brake

Functional description

The DUNGS safety solenoid valve is an automatic shut-off valve operated with auxiliary power. The electromagnetic drive opens against the force of the closing spring 4.

The stroke of armature 5 can be limited by the setting screw 8. The hydraulic brake 10 permits slow opening. Fast stroke 9 can be adjusted.

If the auxiliary power is interrupted (operating voltage), closing spring 4 closes the valve within 1 second. The closed position of the valve can be monitored by a mountable closed position signal contact.

$\dot{V}_{\text{verwendetes Gas/gas used/ gaz utilisé/gas utilizzato}} = \dot{V}_{\text{Luft/air/aria}} \times f$

$f = \sqrt{\frac{\text{Dichte des verwendeten Gases}}{\text{Dichte Luft}}}$
Spec. weight of gas used / Spec. weight air
poids spécifique du gaz utilisé / poids spécifique de l'air
peso specifico del gas utilizzato / peso specifico aria

Gasart Type of gas Type de gaz Tipo di gas	Dichte Spec. Wgt. poids spécifique Peso specifico [kg/m³]	dv	f
Erdgas/Nat. Gas/ Gaz naturel/Gas metano	0.81	0.65	1.24
Stadtgas/City gas/ Gaz de ville/Gas città	0.58	0.47	1.46
Flüssiggas/LPG/ Gaz liquide/Gas liquido	2.08	1.67	0.77
Luft/Air/ Air/Aria	1.24	1.00	1.00

Flow diagram

