Single-stage safety solenoid valves

MVD/5, MVDLE/5

6.20

DUNGS®
Combustion Controls



Technical description

The DUNGS safety solenoid valve 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 500 mbar (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 M 20 cable gland or appliance plug
- 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.

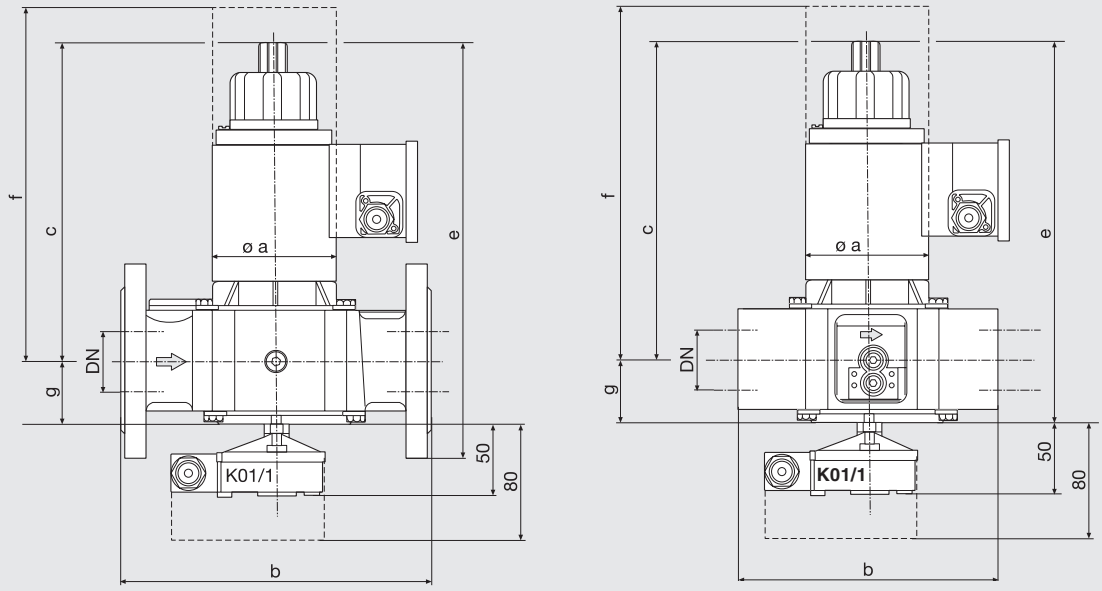
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MVD/5	Single-stage solenoid valve, normally when closed, fast opening, fast closing, manual limitation of flowing gas volume by adjusting main volume.
MVDLE/5	One-stage solenoid valve, normally when closed, slow opening, fast closing. Opening time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

Specifications

Nominal diameters	10	15	20	25	40	50
Pipe thread as per ISO 7/1, Rp	3/8	1/2	3/4	1	1 1/2	2
Flange	Connection flange (PN 16) as per DIN EN 1092-1 (DN 40-50)					
Max. operating pressure	up to 500 mbar (50 kPa)					
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	~ (AC) 110 V und 230 V (+10 % -15 %); 50-60 Hz = (DC) 24 V (±20 %)					
Rating / power consumption	Refer to type overview					
Switch-on duration	100 %					
Degree of protection	IP 54, IP 65 on request					
Electrical connection	M20 cable gland and push-in connection terminals, device plug-in connection according to DIN EN 175301-803					
Switching rate	MVD/5: max. 1000/h MVDLE/5: max. 100/h					
Measuring/ignition gas connection	G 1/4 ISO 118, on both sides in inlet section, additionally G 3/4 with DN 40 to DN 50 (flange)					
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	MVD/5, MVDLE/5: Type K01/1, DIN-tested, mountable on Rp 3/8-2, DN 40-DN 50					
Valve proving system	Type VPS 504, mountable with adapter up to DN 50					
Accessories	K01 closed position signal contact, cable socket for appliance plug 211 202 Equipment plug for line socket, DIN 175301-803 215 699					

Dimensions [mm]
MVD(LE) 503-520/5
MVD(LE) 5040-5050/5



d = largest width

Type	$p_{max.}$	DN / Rp	Solenoid No.	Order No. with M20	Order No. line socket	$P_{max.}$ [VA]	$I_{max.}$ ~ (AC) 230 V	Opening time	Dimensions [mm] ø a	b	c	d	e	f	Order No. [kg]
MVD 503/5	500	Rp 3/8	100	305 347	305 348	17	0,07	< 1 s	50	60	90	60	113	140	0,85
MVD 505/5	500	Rp 1/2	100	305 434	305 435	17	0,07	< 1 s	50	80	90	75	113	150	1
MVD 507/5	500	Rp 3/4	200	305 448	305 449	29	0,12	< 1 s	75	100	135	85	160	200	2,4
MVD 510/5	500	Rp 1	200	305 462	305 463	29	0,12	< 1 s	75	110	135	90	165	200	2,45
MVD 515/5	500	Rp 1 1/2	300	305 474	305 475	64	0,28	< 1 s	95	150	170	116	215	260	5,4
MVD 520/5	500	Rp 2	400	305 486	305 487	98	0,42	< 1 s	115	170	190	130	235	300	8,8
MVDLE 503/5	500	Rp 3/8	100	305 383	305 384	17	0,07	ca. 20 s	50	60	135	75	155	190	0,8
MVDLE 505/5	500	Rp 1/2	120	305 440	305 441	22	0,10	ca. 20 s	50	80	90	75	113	150	1,0
MVDLE 507/5	500	Rp 3/4	200	305 454	305 456	29	0,12	ca. 20 s	75	100	165	85	190	190	2,5
MVDLE 510/5	500	Rp 1	250	305 468	305 469	25	0,11	ca. 20 s	75	110	135	90	165	200	2,45
MVDLE 515/5	500	Rp 1 1/2	300	305 480	305 481	64	0,28	ca. 20 s	95	150	205	116	245	255	5,6
MVDLE 520/5	500	Rp 2	400	305 493	305 494	98	0,42	ca. 20 s	115	170	230	135	270	300	11,1
MVD 5040/5	500	DN 40	300	305 654		64	0,28	< 1 s	95	200	170	150	255	255	7
MVD 5050/5	500	DN 50	400	305 657		98	0,42	< 1 s	115	230	190	165	295	295	12
MVDLE 5040/5	500	DN 40	300	305 656		64	0,28	ca. 20 s	95	230	205	150	255	255	7
MVDLE 5050/5	500	DN 50	400	305 658		98	0,42	ca. 20 s	115	230	230	165	295	295	13,1

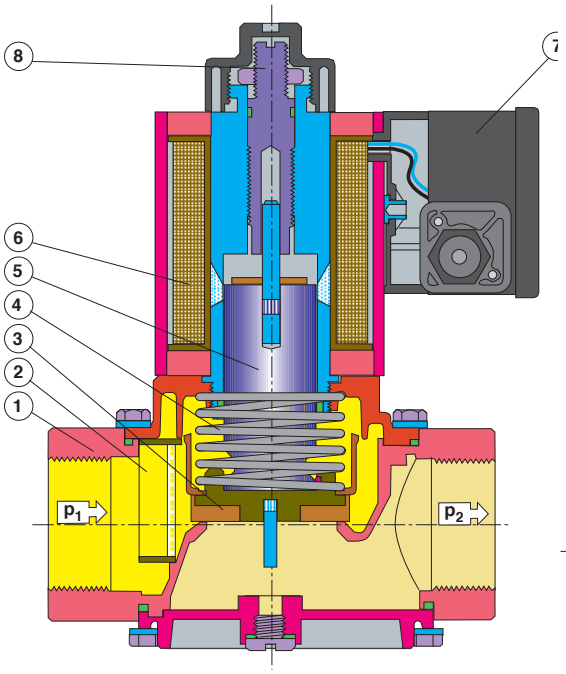
f = Space requirement for solenoid changing
d = largest width

Type code

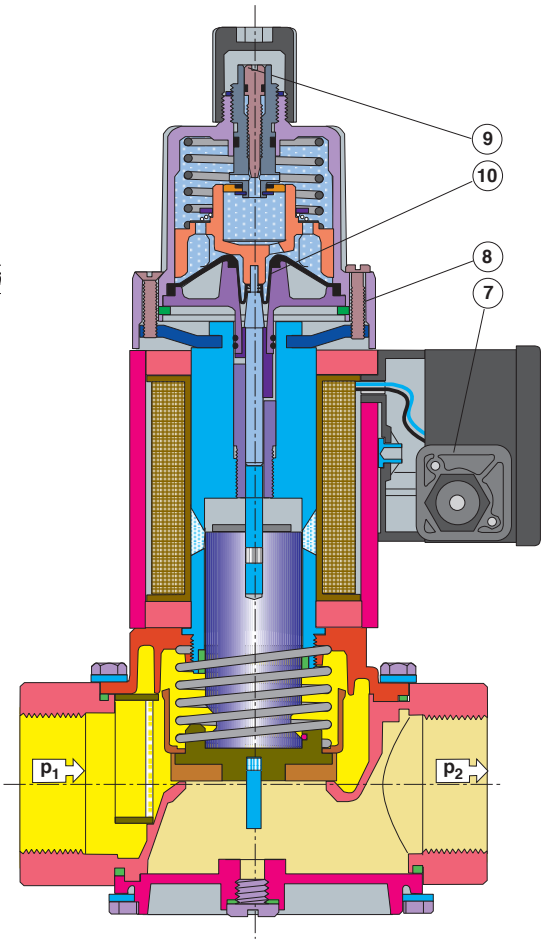
Option	Description
MVD MVDLE	Single-stage safety solenoid valve, normally closed, fast opening, fast closing, main volume adjustment. Single-stage safety solenoid valve, normally when closed, slow opening, fast closing. Opening time adjustment with fast stroke range. Main volume adjustment.
5	500 mbar (50 kPa)/7 psi max. operating pressure
03 05 07 10 15 20	Rp 3/8, nominal diameter 10 Rp 1/2, nominal diameter 15 Rp 3/4, nominal diameter 20 Rp 1, nominal diameter 25 Rp 1 1/2; DN 40, nominal diameter 40 Rp 2; DN 50, nominal diameter 50
/5	European version, K01 closed position signal contact optional mountable
-24 VDC -110 VAC -230 VAC	Mains voltage 24 VDC Mains voltage 110 V AC 50/60 Hz Mains voltage 230 V AC 50/60 Hz
-EC01 -EC05	Electrical connection: Push-in Klemme via M20 Electrical connection: plug accodance to DIN EN 175301-803
-IP54	Degree of protection IP54

 Example: MVD 510/5-230VAC-EC01-IP54

Type MVD/5



Type MVDLE/5



1	Housing	5	Armature		Setting
2	Sieve	6	Solenoid coil	8	- Main volume
3	Valve plate	7	Electrical connection	9	- Fast stroke
4	Closing spring			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.

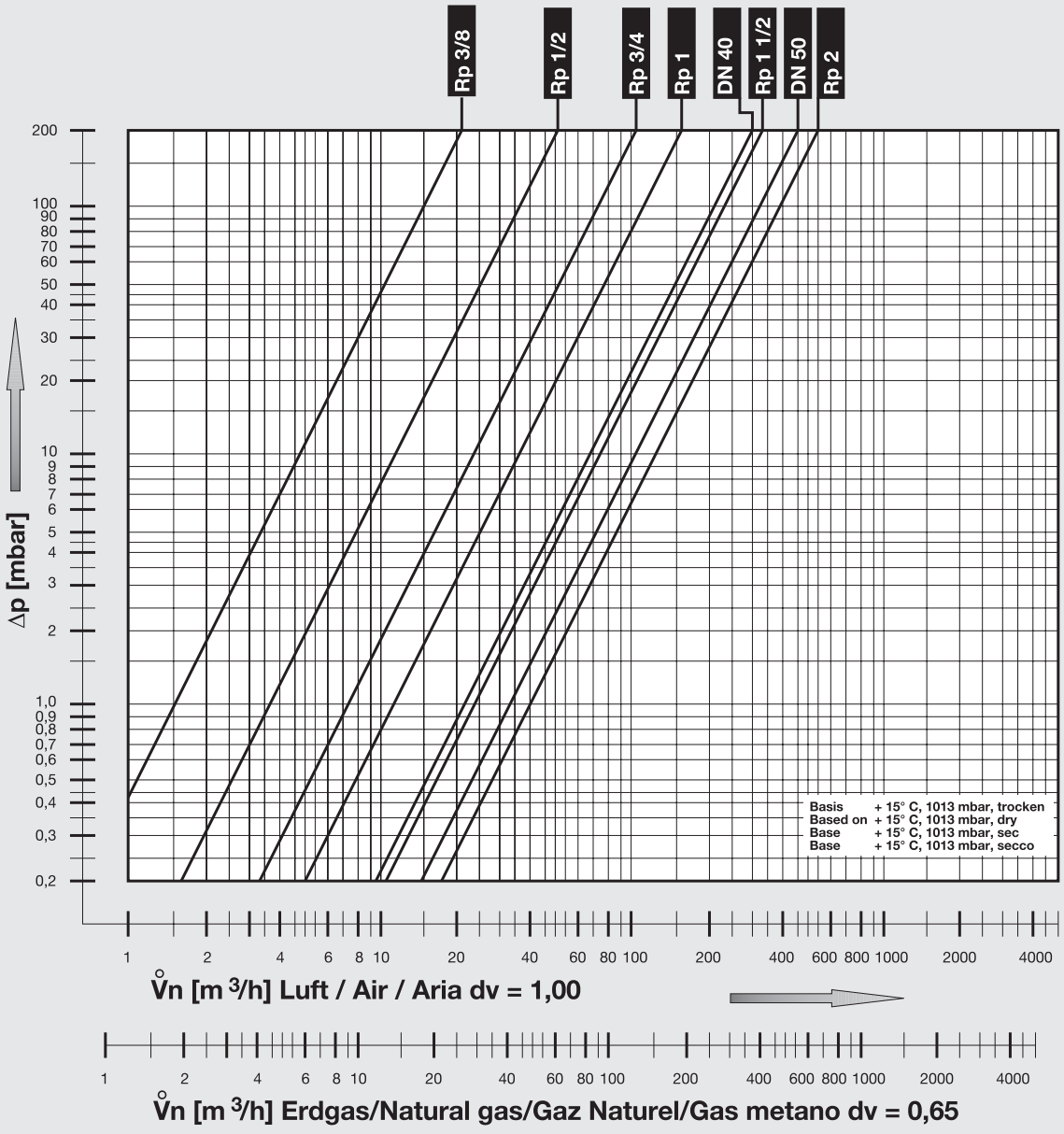
$$\dot{V}_{\text{verwendetes Gas/gas used/ gaz utilisé/gas utilizzato}} = \dot{V}_{\text{Luft/air/air/aria}} \times f$$

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

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

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Flow diagram



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

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