# MV、MVD 、MVDLE

# Gas solenoid valve

# Technical instruction

## Description:

This type of gas solenoid valve is mainly used for gas burners and gas equipment:

- Maximum working pressure are 200, 360, or 500 mbar(20, 36, or 50KPa)
- Shut off when the power off(normally closed)
- MV、MVD: fast opening
- MVDLE: Slow opening with adjustable fast stroke for start gas volume
- Main volume adjustable (MVD/MVDLE)
- Pipe thread as per ISO 7/1、Flange connection as per ISO 7005

## Features:

- Reliable function, rugged and maintenance-free.

## Application:

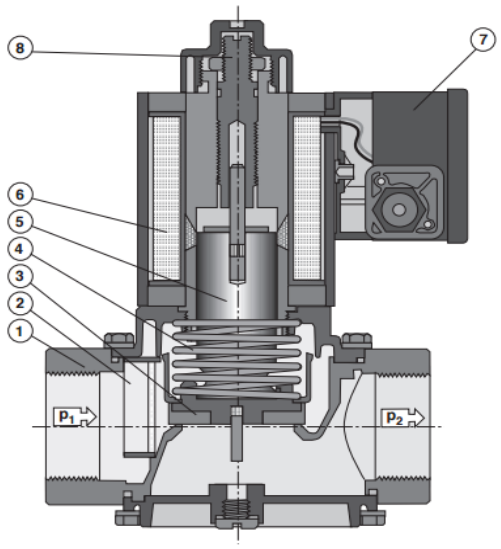
The solenoid valve is used for securing, limit- ing, shutting off and releasing gas supply to gas burners and gas appliances.

MV... is suitable for gases of families 1, 2, 3 and other neutral gaseous media.

版本号:2018.05

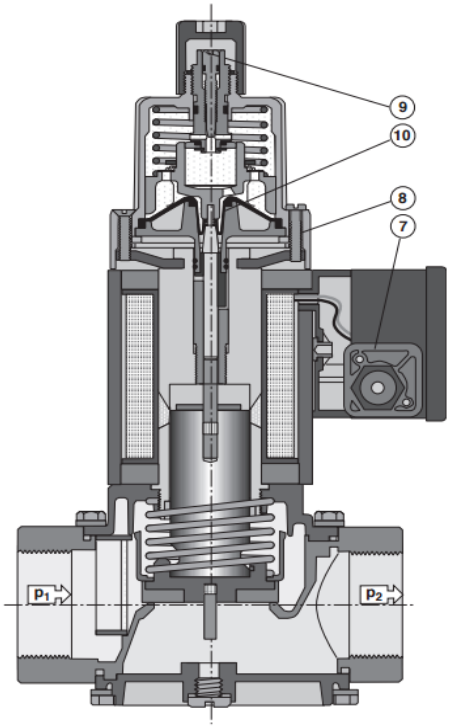
一、Valve workflow description

MVD.../5 型




1 外壳
2 筛网过滤器
3 阀盘
4 关闭弹簧

MVDLE/5 型




5 衔铁
6 电磁线圈
7 电气连接

调节装置
8 - 主流量
9 - 快速开启行程
10 - 液压制动器

Functional description:

After the power supply is energized, the coil electromagnetic force drives the armature 5 to move, and the spring 4 is compressed back to the position (close) so as to drive the rubber valve disc 3 to move and open the valve. The opening stroke of armature 5 can be limited by adjusting screw 8. The hydraulic brake 10 can realize the function of slowly opening solenoid valve and the opening speed and initial opening stroke can be adjusted by 9.

Power off, close spring 4 return movement in 1 second to close the solenoid valve.

## 2、technical parameters

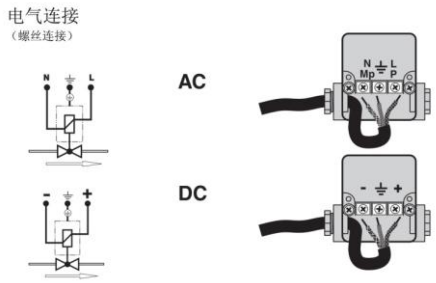
MV Single-stage solenoid valve, normally when closed, fast opening, fast closing.

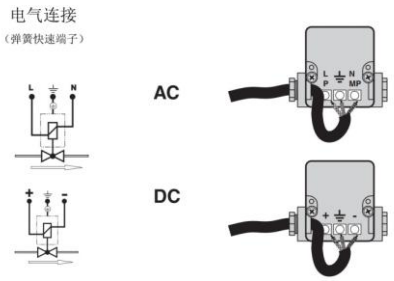
MVD Single-stage solenoid valve, normally when closed, fast opening, fast closing, manual limitation of flowing gas volume by adjusting main volume.

MVDLE One-stage solenoid valve, normally when closed, slow opening, fast closing. Opening time adjust- ment with fast stroke range. Main volume adjustment.

| | |
|---|---|
| Medium | 1, 2, 3 and other neutral gaseous media |
| Ambient temperature | -15 ° C to +60 ° C |
| Nominal diameters | 10 15 20 25 40 50 65 80 100 125 150<br>RP 3/8 1/2 3/4 1 1-1/2 2 2-1/2 |
| 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 | Class A, Group 2, single-stage mode |
| Closing time | <1S |
| Opening time | <1S, for MVDLE approx. 20s at room temperature 20° C and without fast stroke |
| Materials of gas-conveying parts | Housing: aluminium, steel, brass |
| Voltage/frequency | 230 V AC (+10 % -15 %); 50-60 Hz - other voltages on request |
| Rating / power consumption | Refer to type overview |
| Degree of protection | IP54 |
| Electrical connection | Spring quick wire terminal, screw terminal, solenoid valve special wiring plug can be offered additionally<br>Working status display: LED indicator shows blue as working status |
| Measuring/ignition gas connection | On both sides in inlet section, additionally G 3/4 on input side, from size DN 40 (flange) upwards |
| Switching rate | MV/MVD series: max1000/h<br>MVDLE series: max 100/h |
| Dirt trap | Sieve installed, mesh width 1 mm |
| Installation position | Solenoid from vertically upright to horizontally lying |

## Electrical connection diagram：




## 3、Models

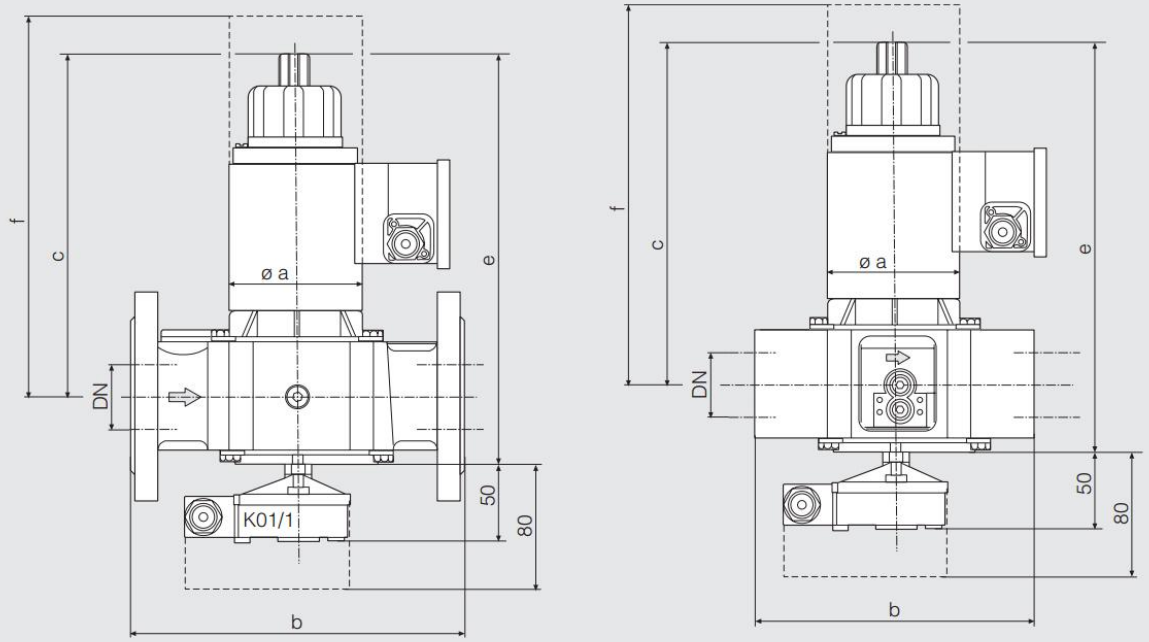
| Model | Pmax. [mbar] | DN/RP | Coil No. | Power [AV] | Current A(～230V) | Opening time | Dimension a | b | c | d | e | f | Weight [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MVD203/5 | 360 | Rp3/8 | 100 | 17 | 0.08 | <1S | 50 | 60 | 90 | 60 | 113 | 140 | 0.85 |
| MVD205/5 | 360 | Rp1/2 | 100 | 17 | 0.08 | <1S | 50 | 80 | 90 | 75 | 113 | 150 | 1.00 |
| MVD207/5 | 360 | Rp3/4 | 200 | 30 | 0.15 | <1S | 75 | 100 | 135 | 85 | 160 | 200 | 2.40 |
| MVD210/5 | 360 | Rp1 | 200 | 30 | 0.15 | <1S | 75 | 110 | 135 | 85 | 165 | 200 | 2.45 |
| MVD215/5 | 200 | Rp1 1/2 | 280 | 60 | 0.26 | <1S | 80 | 150 | 170 | 116 | 215 | 255 | 4.30 |
| MVD220/5 | 200 | Rp2 | 300 | 65 | 0.30 | <1S | 95 | 150 | 170 | 116 | 215 | 260 | 5.90 |
| MVD225/5 | 200 | Rp2 1/2 | 400 | 100 | 0.48 | <1S | 115 | 230 | 220 | 165 | 215 | 325 | 10.90 |
| MVDLE203/5 | 360 | Rp3/8 | 100 | 17 | 0.08 | ca.20s | 50 | 60 | 135 | 75 | 155 | 190 | 0.95 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MVDLE205/5 | 360 | Rp1/2 | 100 | 17 | 0.08 | ca.20s | 50 | 80 | 130 | 75 | 155 | 200 | 1.10 |
| MVDLE207/5 | 360 | Rp3/4 | 200 | 30 | 0.15 | ca.20s | 75 | 100 | 165 | 85 | 190 | 190 | 2.55 |
| MVDLE210/5 | 360 | Rp1 | 200 | 30 | 0.15 | ca.20s | 75 | 110 | 165 | 90 | 200 | 190 | 2.75 |
| MVDLE215/5 | 200 | Rp1 1/2 | 280 | 60 | 0.26 | ca.20s | 80 | 150 | 205 | 116 | 245 | 255 | 4.40 |
| MVDLE220/5 | 200 | Rp2 | 300 | 65 | 0.30 | ca.20s | 95 | 170 | 205 | 130 | 250 | 255 | 6.20 |
| MVDLE225/5 | 200 | Rp2 1/2 | 400 | 100 | 0.48 | ca.20s | 115 | 230 | 295 | 165 | 350 | 320 | 11.40 |
| MVD503/5 | 500 | Rp3/8 | 100 | 17 | 0.08 | <1S | 50 | 60 | 90 | 60 | 113 | 140 | 0.85 |
| MVD505/5 | 500 | Rp1/2 | 100 | 17 | 0.08 | <1S | 50 | 80 | 90 | 75 | 113 | 150 | 1.00 |
| MVD507/5 | 500 | Rp3/4 | 200 | 30 | 0.15 | <1S | 75 | 100 | 135 | 85 | 160 | 200 | 2.40 |
| MVD510/5 | 500 | Rp1 | 200 | 30 | 0.15 | <1S | 75 | 110 | 135 | 90 | 165 | 200 | 2.45 |
| MVD515/5 | 500 | Rp1 1/2 | 380 | 65 | 0.30 | <1S | 95 | 150 | 170 | 116 | 215 | 260 | 5.40 |
| MVD520/5 | 500 | Rp2 | 400 | 100 | 0.48 | <1S | 115 | 170 | 190 | 130 | 235 | 300 | 8.80 |
| MVD525/5 | 500 | Rp2 1/2 | 500 | 90 | 0.42 | <1S | 130 | 230 | 215 | 165 | 300 | 370 | 14.50 |
| MVDLE503/5 | 500 | Rp3/8 | 100 | 17 | 0.08 | ca.20s | 50 | 60 | 135 | 75 | 155 | 190 | 0.80 |
| MVDLE505/5 | 500 | Rp1/2 | 120 | 25 | 0.08 | ca.20s | 50 | 80 | 130 | 75 | 170 | 220 | 1.00 |
| MVDLE507/5 | 500 | Rp3/4 | 200 | 30 | 0.15 | ca.20s | 75 | 100 | 165 | 85 | 190 | 190 | 2.50 |
| MVDLE510/5 | 500 | Rp1 | 250 | 26 | 0.15 | ca.20s | 75 | 110 | 195 | 90 | 220 | 213 | 2.60 |
| MVDLE515/5 | 500 | Rp1 1/2 | 380 | 65 | 0.26 | ca.20s | 95 | 150 | 205 | 116 | 245 | 255 | 5.60 |
| MVDLE520/5 | 500 | Rp2 | 400 | 100 | 0.30 | ca.20s | 115 | 170 | 230 | 135 | 270 | 300 | 11.10 |
| MVD2040/5 | 200 | DN40 | 280 | 60 | 0.26 | <1S | 80 | 200 | 170 | 150 | 235 | 255 | 6.80 |
| MVD2040/5 | 360 | DN40 | 300 | 65 | 0.30 | <1S | 95 | 200 | 170 | 150 | 235 | 255 | 7.00 |
| MVD2050/5 | 200 | DN50 | 300 | 65 | 0.30 | <1S | 95 | 230 | 171 | 165 | 245 | 255 | 7.70 |
| MVD2065/5 | 200 | DN65 | 400 | 100 | 0.48 | <1S | 115 | 290 | 221 | 185 | 315 | 330 | 12.70 |
| MVD2080/5 | 200 | DN80 | 500 | 90 | 0.42 | <1S | 130 | 310 | 250 | 200 | 340 | 375 | 18.50 |
| MVD2100/5 | 200 | DN100 | 550 | 100 | 0.48 | <1S | 150 | 350 | 310 | 240 | 410 | 480 | 31.00 |
| MVDLE2040/5 | 200 | DN40 | 280 | 60 | 0.26 | ca.20s | 80 | 200 | 205 | 150 | 270 | 255 | 6.90 |
| MVDLE2040/5 | 360 | DN40 | 300 | 65 | 0.30 | ca.20s | 95 | 200 | 205 | 150 | 270 | 255 | 7.10 |
| MVDLE2050/5 | 200 | DN50 | 300 | 65 | 0.30 | ca.20s | 95 | 230 | 210 | 165 | 280 | 255 | 7.50 |
| MVDLE2065/5 | 200 | DN65 | 400 | 100 | 0.48 | ca.20s | 115 | 290 | 221 | 185 | 315 | 330 | 13.30 |
| MVDLE2080/5 | 200 | DN80 | 500 | 90 | 0.42 | ca.20s | 130 | 310 | 320 | 200 | 405 | 375 | 18.50 |
| MVDLE2100/5 | 200 | DN100 | 550 | 100 | 0.48 | ca.20s | 150 | 350 | 380 | 240 | 480 | 480 | 31.00 |
| MVD5040/5 | 500 | DN40 | 300 | 65 | 0.30 | <1S | 95 | 200 | 170 | 150 | 235 | 255 | 7.00 |
| MVD5050/5 | 500 | DN50 | 400 | 100 | 0.48 | <1S | 115 | 230 | 190 | 165 | 265 | 295 | 12.00 |
| MVD5065/5 | 500 | DN65 | 500 | 90 | 0.42 | <1S | 130 | 290 | 245 | 190 | 340 | 370 | 17.00 |
| MVD5080/5 | 500 | DN80 | 550 | 100 | 0.50 | <1S | 150 | 310 | 295 | 200 | 385 | 465 | 27.00 |
| MVD5100/5 | 500 | DN100 | 600 | 80 | 0.40 | <1S | 170 | 350 | 345 | 240 | 445 | 570 | 42.00 |
| MVD5040/5 | 500 | DN40 | 300 | 65 | 0.30 | ca.20s | 95 | 200 | 205 | 150 | 270 | 255 | 7.00 |
| MVD5050/5 | 500 | DN50 | 400 | 100 | 0.48 | ca.20s | 115 | 230 | 230 | 165 | 300 | 295 | 13.10 |

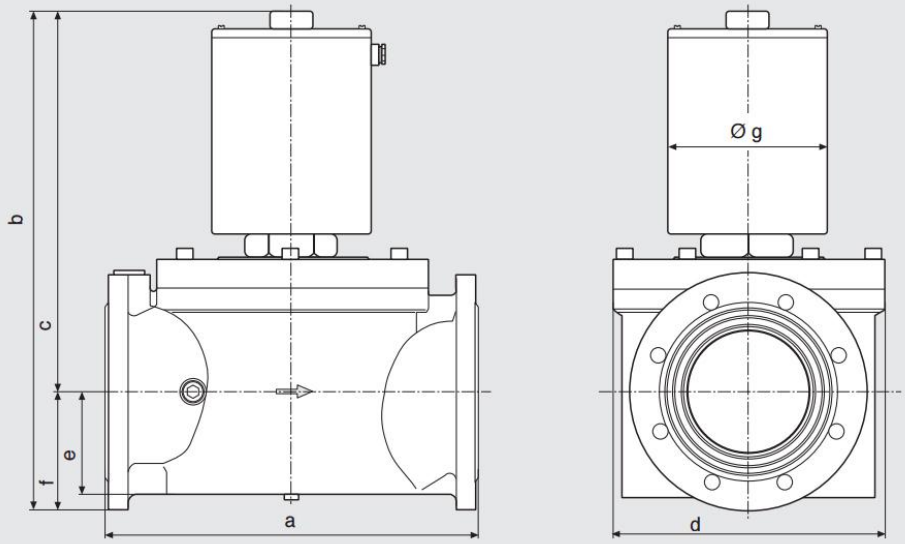
b= The mounting distance of the air inlet at both ends of the solenoid valve
f= Solenoid valve installation location requirements
d= Maximum width

4：Installation dimension diagram (Unit MM)

安装尺寸[mm]




安装尺寸 (mm)



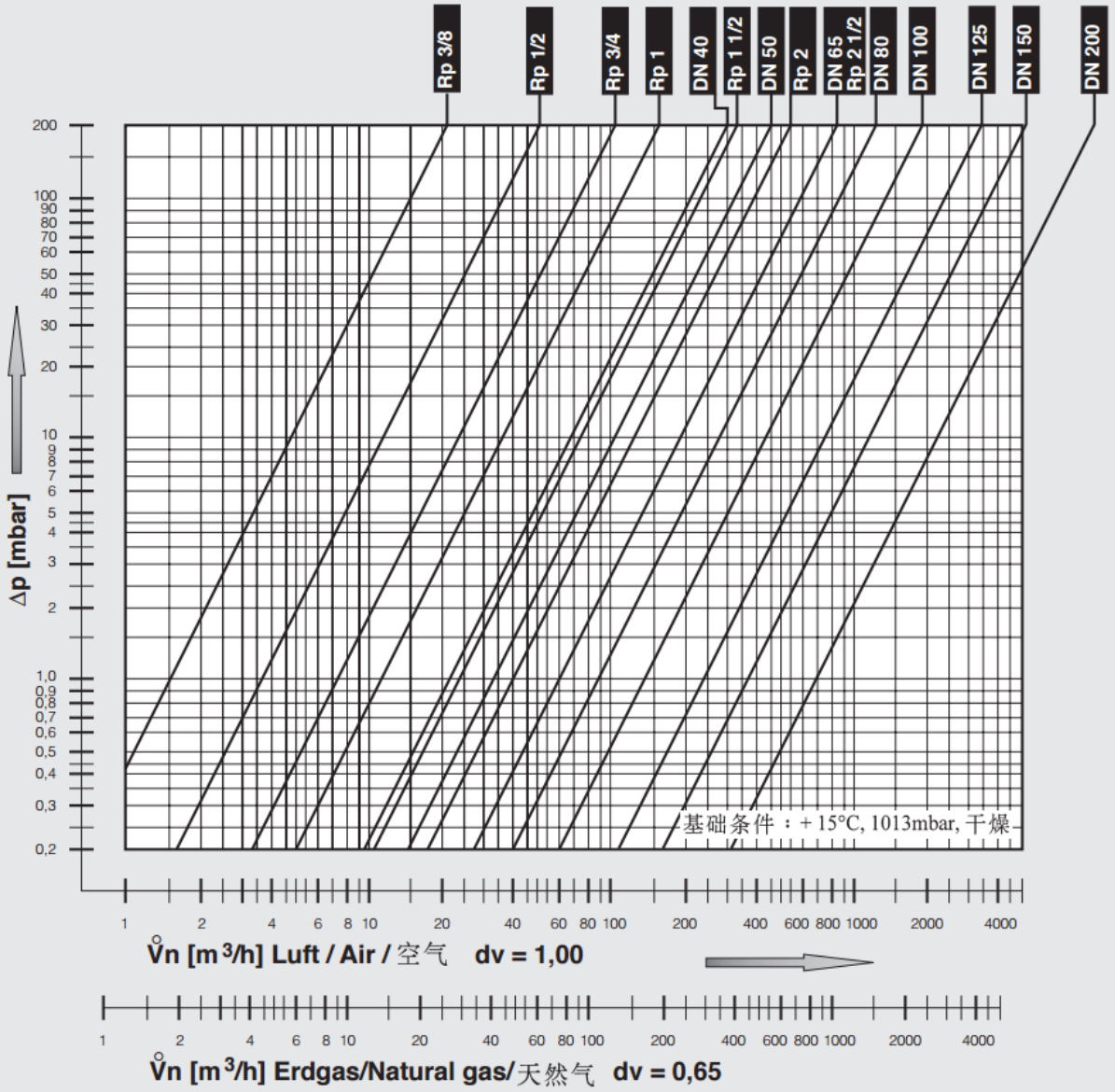

5、Flow, interface, pressure relationship curve

$V_{all\ gas} = V_{air} \times f$

$$f = \sqrt{\frac{\text{air specific gravity}}{\text{all gas specific gravity}}}$$

| Gas species | Proportion [kg/m³] | dv | f |
|---|---|---|---|
| Natural gas | 0.81 | 0.65 | 1.24 |
| City gas | 0.58 | 0.47 | 1.46 |
| LPG | 2.08 | 1.67 | 0.77 |
| Air | 1.24 | 1.00 | 1.00 |

# 流量图


Rp 3/8
Rp 1/2
Rp 3/4
Rp 1
DN 40
Rp 1 1/2
DN 50
Rp 2
DN 65
Rp 2 1/2
DN 80
DN 100
DN 125
DN 150
DN 200
Δp [mbar]
200
100
90
80
70
60
50
40
30
20
10
9
8
7
6
5
4
3
2
1,0
0,9
0,8
0,7
0,6
0,5
0,4
0,3
0,2
基础条件：+15°C, 1013mbar, 干燥
1
2
4
6
8
10
20
40
60
80
100
200
400
600
800
1000
2000
4000
V̊n [m³/h] Luft / Air / 空气 dv = 1,00
V̊n [m³/h] Erdgas/Natural gas/天然气 dv = 0,65