



## VMM

---

### MULTIPLE SAFETY SOLENOID VALVE FOR REGULATING TRAINS





## VMM MULTIPLE SAFETY SOLENOID VALVE

CLASS A - GROUP 2

The VMM type valve is a combination of two valves in an only compact and versatile valve housing. The first valve (A) is a fast opening solenoid valve that is safety. The second valve (B) may be a fast opening or a slow opening solenoid valve to adjust the gas flow, with a first adjustable fast stroke and a second adjustable slow stroke. It is possible connect a third by-pass valve (C), which performs by driver stage or to obtain a second fast (slow) stroke or both.

### APPLICATION

This type of device is suitable for gas and air blocking and adjusting controls in atmospheric burners or fan-assisted burners (with one or two stages operation), in industrial ovens and in all gas equipments which use regulating trains.

### INSTALLATION AND ADJUSTMENT

Check correspondence of flow direction with arrow printed on valve body, check correct alignment of connecting pipes and allow enough space from the walls to allow free air circulation. Valve may be mounted with coil in horizontal or vertical position. Coil may be oriented 360 degrees in any direction (do not use unit as lever).

Install in an area that is protected from rain and water splashes or drops. In the slow valve capacity may be adjusted from 0 cubic meters/h to the maximum marked on the plate by turning internal adjustment screw under the upper cap (9), and by turning the outer screw, the length of the rapid flow section may be adjusted (8). Make sure that capacity adjustments are made while burner is in operation. Adjustments below 40% capacity are unadvisable since they may cause turbulence. It is also possible to regulate open time by turning the screw located on the side of the shock absorber (7). One fourth of a turn clockwise increases open time by 2÷3 s, up to a maximum of about 25 s (slow run). Manufacture calibration is about 14 s. By-pass capacity may be adjusted too (6): remove the coil fastener cap and turn adjustment screw under locking dowel. When adjustment is completed screw back locking dowel and all the caps.

**Use proper tools only.**

### ELECTRICAL CONNECTION

Remove protection cover and connect power cables to rectifier circuit terminal board (5). Should cables pass through originally closed opening, use the rubber capsule placed underneath the cap to close any other opening. When connection is completed replace gasket and screw back cover.

### CLEANING AND MAINTENANCE

Dust and any foreign bodies may be easily removed from the filter (3, to the inside of the inlet connection flange) or the gas passage zone. After shutting off upstream gas and electric current, the coil is removed by unscrewing the shock absorber located on its top. Great care should be taken not to force the rod sideways, and to check cleanliness and centering of the 2 sealing O-Rings. Unscrew the 8 screws fixing the counter flanges to valve body. During this operation care should be taken not to cause damage to the seat housing and the Teflon sliding clamps.

**Avoid disassembling or tampering with the shock absorber.**

### TECHNICAL CHARACTERISTICS

f/f Connections	: gas threaded from 1"1/4, 1"1/2 and 2"
By-pass size	: 1/2" and 1"
Voltage rating	: 230V 50/60Hz (by request 110V 50/60Hz)
Power absorption	: 160W (without by-pass) by-pass 1/2" 25W, by-pass 1" 45W
Voltage tolerance	: -15% ÷ + 10%
Working temperature	: -15°C ÷ + 60°C
Compatible gas range	: all gases according to EN437
Max working pressure	: 200 - 360 mbar
Opening/Closing time	: < 1 second
Protection class	: IP 54
Cable gland	: PG11
Pressure inlets	: nr. 8 (10) from G1/4" on two sides and on connection flanges
Standard filter	: brass wire 600µ

**Executed according to EN161 rule in force.**

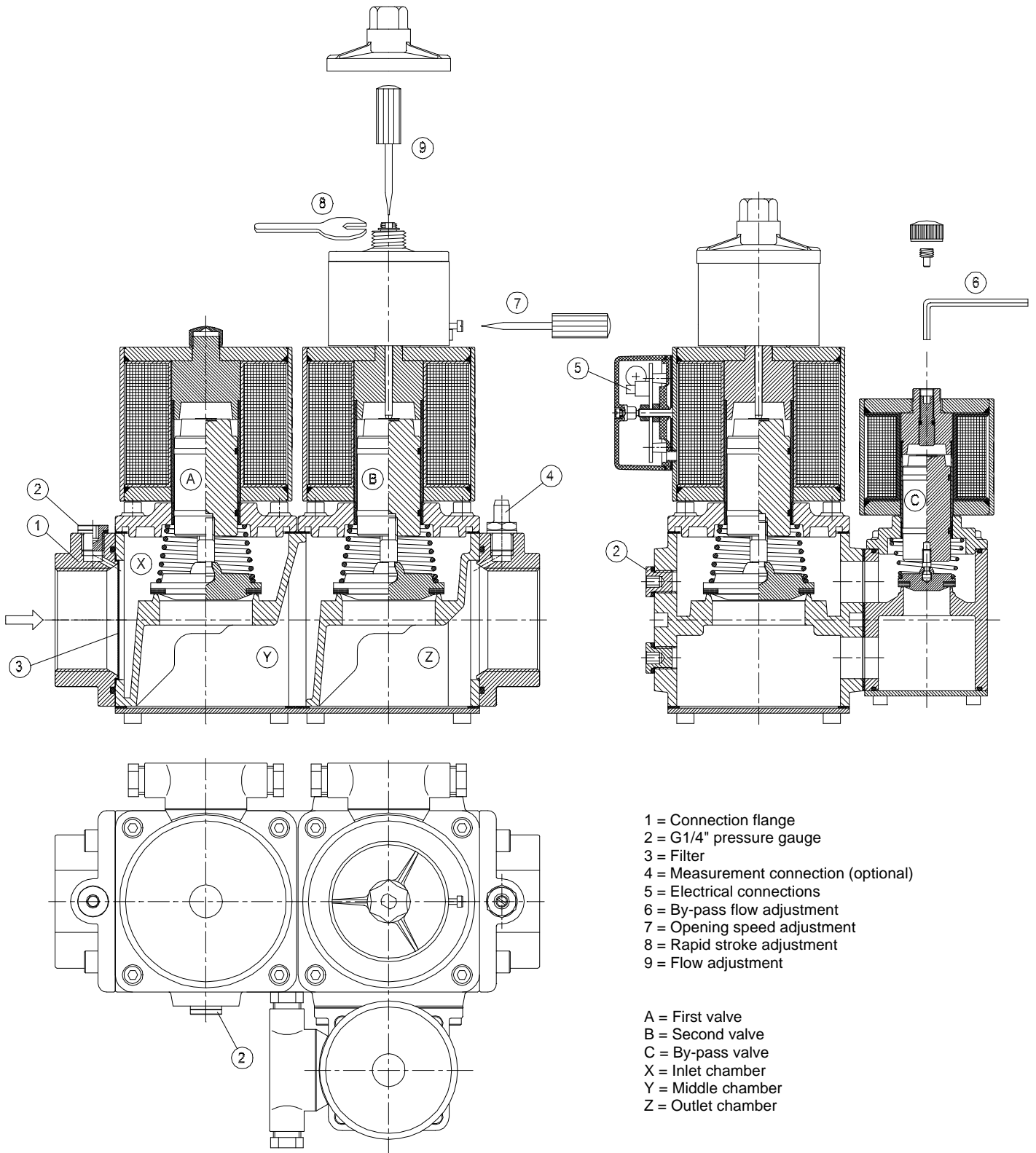
**GASTEC PIN ratification: 0063AQ1350, October 1999**

This control must be installed in compliance with the laws in force.

Elektrogas reserves the right to update or make technical changes without prior advice.



## ADJUSTMENT



- 1 = Connection flange
- 2 = G1/4" pressure gauge
- 3 = Filter
- 4 = Measurement connection (optional)
- 5 = Electrical connections
- 6 = By-pass flow adjustment
- 7 = Opening speed adjustment
- 8 = Rapid stroke adjustment
- 9 = Flow adjustment

- A = First valve
- B = Second valve
- C = By-pass valve
- X = Inlet chamber
- Y = Middle chamber
- Z = Outlet chamber



**VALVE IDENTIFICATION**

**VMM**

**50**

**2**

**A**

**S**

**1**

**0**

**Valve type**

**Connections size**

32 = 1"¼ (DN32)

40 = 1"½ (DN40)

50 = 2" (DN50)

**Max pressure working**

2 = 200 mbar

3 = 360 mbar

**Supply voltage**

A = 230V 50/60Hz

B = 110V 50/60Hz

**Second valve type**

F = fast

S = slow

**By-pass valve on the Right side**

(seen from the inlet)

0 = none

1 = 1/2" (DN15) Fast

2 = 1/2" (DN15) Slow

3 = 1" (DN25) Fast

4 = 1" (DN25) Slow

**By-pass valve on the Left side**

(seen from the inlet)

0 = none

1 = 1/2" (DN15) Fast

2 = 1/2" (DN15) Slow

3 = 1" (DN25) Fast

4 = 1" (DN25) Slow

**Accessories fitted on request**

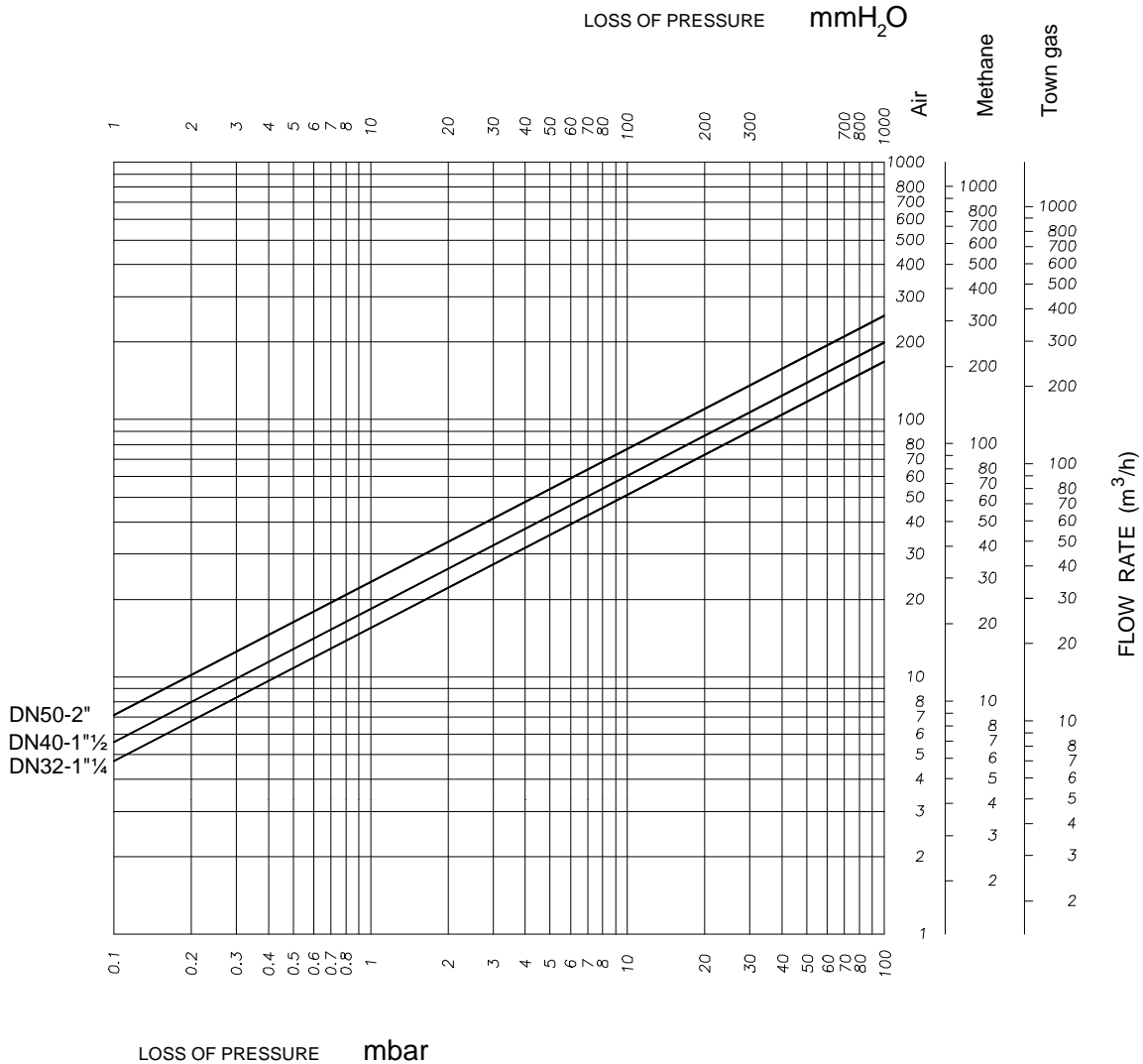
Pressure gauge

Pressure switch

Limit switch



## DIAGRAM LOSS OF PRESSURE



## FORMULA OF CONVERSION FROM AIR TO OTHER GASES

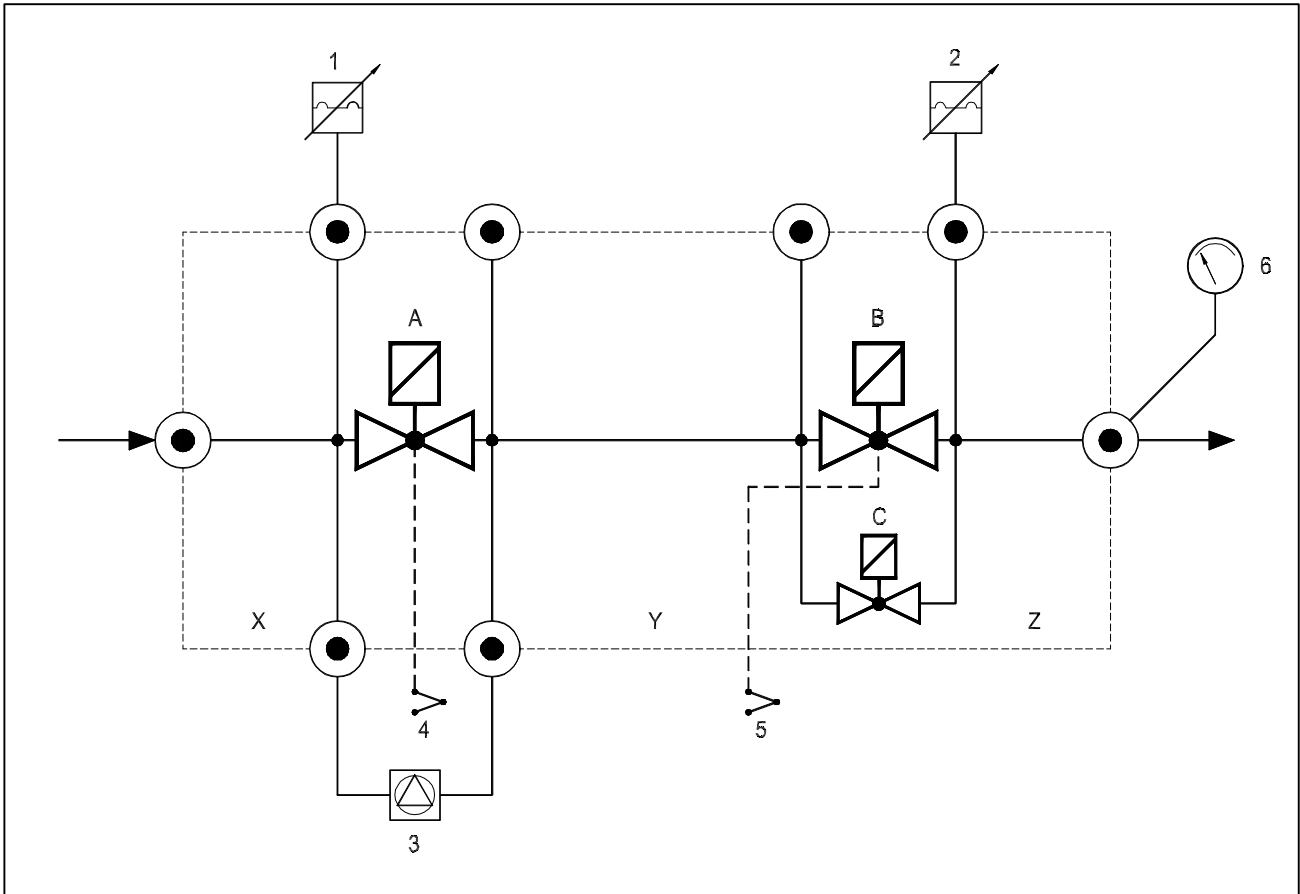
GAS TYPE	SPECIFIC GRAVITY (Kg/m³)	K
Natural Gas	0.80	1.25
Town Gas	0.57	1.48
Liquid Gas	2.08	0.77
Air	1.25	1.00

$$V_{AIR} = \frac{V_{GAS\ TO\ BE\ USED}}{K}$$

$$K = \sqrt{\frac{AIR\ SPECIFIC\ GRAVITY}{GAS\ SPECIFIC\ GRAVITY}}$$



## SYNOPTIC TABLE



- 1 = Adjustable pressure switch (Min)
- 2 = Adjustable pressure switch (Max)
- 3 = Valve leakage tester
- 4 = Limit switch
- 5 = Limit switch
- 6 = Burner pressure gauge

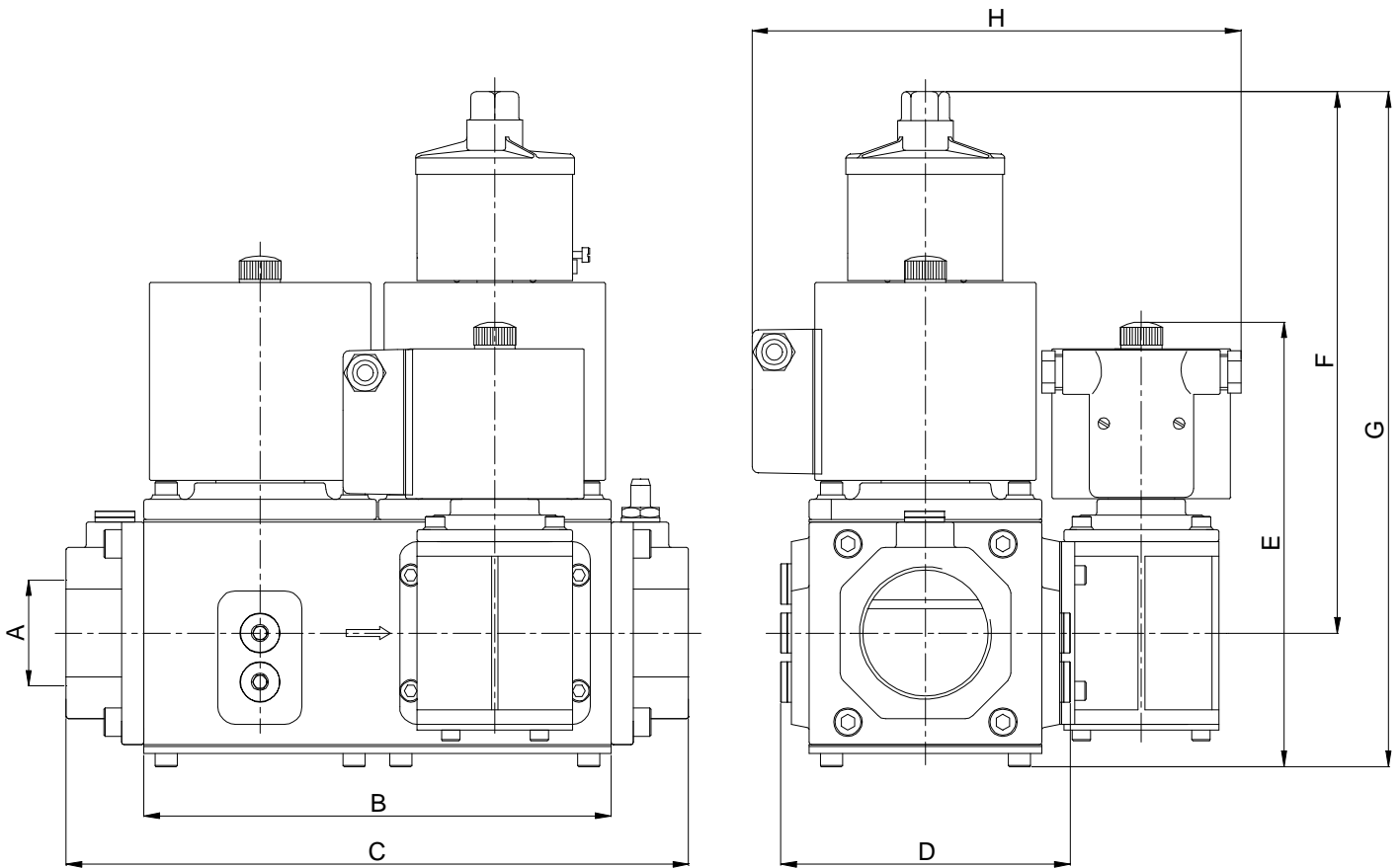
- A = First valve
- B = Second valve
- C = By-pass valve
- X = Inlet chamber
- Y = Middle chamber
- Z = Outlet chamber

In the VMM type valve are available eight (ten without by-pass) G1/4" pressure gauge on two sides and on connection flanges to connect several control devices.

The assemblage of any accessories could exclude the fitting of other devices.



## OVERALL DIMENSIONS



	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	<b>Kg</b>
<b>VMM....F00</b>	Gas threaded	211	280	138	-	170	230	148	13,0
<b>VMM....S00</b>	Gas threaded	211	280	138	-	245	305	148	13,7
<b>VMM....S10</b>	Gas threaded	211	280	138	190	245	305	200	15,3
<b>VMM....S20</b>	Gas threaded	211	280	138	252	245	305	200	15,5
<b>VMM....S30</b>	Gas threaded	211	280	138	198	245	305	220	16,3
<b>VMM....S40</b>	Gas threaded	211	280	138	260	245	305	220	16,5