

# WMR / WMRG / WMG

## Residential Regulator / Shut-off valve

### Features

- For residential applications
- Kiwa-Gastec QA label
- EN 88 or PRS/3 2004
- Compact design
- High capacity
- Ready for connection on gas meter
- Long lifetime (> 30 years)
- Maintenance free
- Traceable by means of unique serial number and production date on label
- 100% automatically preset and tested in production line

### Applications

The WMR regulators are designed for residential applications in low-pressure service lines.

They can be mounted directly on the gas meter inlet. The compact angled design is ideal for installation in space-saving meter cabinets.

The WM types can be used for indoor and outdoor applications.

### Description

The WMR is a spring-loaded self-operated gas pressure regulating device optionally equipped with an under pressure protection device which closes in case of low inlet pressure. It reverts automatically to the open position when conditions return to normal. The regulator is equipped with an inlet strainer.

The device is fully preset from the factory and ready to be fitted on a gas meter. All adjustments screws are sealed and protected against unauthorized use. Also stand-alone shut-off valves (UPCO) are available (WMG).



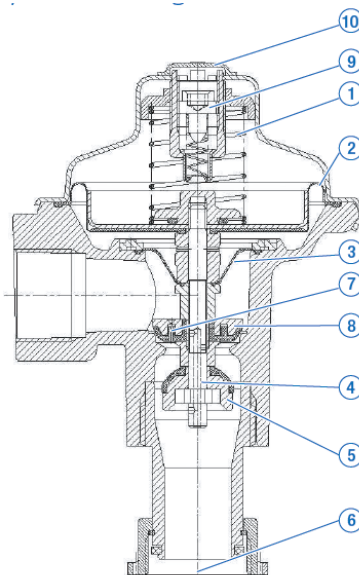
### Operating Principle

The pressure reduction takes place between the seat and the **valve disc** (5). The valve disc position is controlled by the **diaphragm** (2) which senses, through the **tube** (4), the outlet pressure on one side and is loaded by the **spring** (1) on the other side. Spring load is adjustable by the **nut** (9). The **seal-cap** (10) prevents unauthorized intervention. The force on the valve disc (5) arising from the pressure differential is balanced by equivalent force from the pressure differential on the balancing **diaphragm** (3).

### Safety

The **safety valve** (8) closes when the inlet pressure drops below a pre-set value (typically 15 mbar), to provide gas loss protection.

However the valve plug design allows a limited gas flow to creep to the outlet pipe through the **plug hole** (7). In case of restored inlet pressure and no gas demand, the outlet pressure builds and re-opens the safety plug without manual reset. A 400 µm strainer on the inlet side protects the regulator against dirt.



WMRG W3/4 Cross-section

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### Technical Features

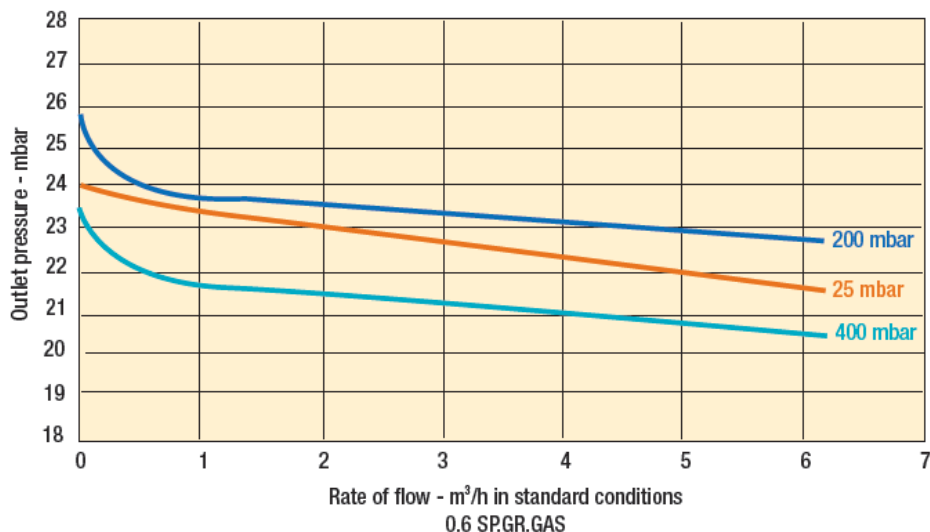
Maximum inlet pressure *	WMR / WMRG: 400 mbar
Outlet pressure *	15-35 mbar
Maximum flow capacity (inlet pressure 200/400mbar)	10 m <sup>3</sup> /h (air)
Safety features (optional)	Gas loss protection
Accuracy and lockup pressure	Up to AC 10 / up to SG 20
Operating temperature	-20 °C to +60 °C
Acceptable gases	Natural gas, propane, butane, air, nitrogen, manufactured gas
Activation pressure shut-off valve *	15 mbar ± 2,5

\* other settings on request

### Typical Performance Curve (24mbar Set Point)

Standard conditions:

- Absolute pressure of 1013 mbar
- Temperature of 15°C



### Correction factor for non-natural gas applications

The flow rates are indicated for a 0,6 specific gravity gas. To determine the volumetric flow rate for gases other than natural gas, multiply or calculate the values in the capacity tables using the sizing equations with a correction factor.

The table below lists correction factors for some common gases:

Gas type	Specific gravity	Correction factor
Air	1,00	0,77
Butane	2,01	0,55
Carbon dioxide (dry)	1,52	0,63
Carbon monoxide (dry)	0,97	0,79
Natural gas	0,60	1,00
Nitrogen	0,97	0,79
Propane	1,53	0,63
Propane-Air mix	1,20	0,71

Specific gravity or relative density (air =1, non dimensional value)

Use the following formula to calculate the correction factor for gasses not listed above. In the formula, "d" is the specific gravity of the gas.

$$\text{Correction factor} = \sqrt{\frac{0,6}{d}}$$

### Materials

Body	:	Die cast aluminum
Spring	:	Stainless Steel
Seals	:	Nitrile rubber
Diaphragms	:	Nitrile rubber
Internal assembly parts	:	Aluminum and Brass
Adjustment parts	:	POM

### Regulator & Shut-off valve types

Standard types, identifiable by the standard seal-cap color

		<u>Seal-cap color*</u>	
WMR	:	Gas regulator	Black
WMRG	:	Gas regulator with safety shut-off	Yellow
WMG	:	Safety shut-off valve	Blue
WMRG-outdoor version	:	Gas regulator with safety shut-off (outdoor applications)	Black
WMG-outdoor version	:	Safety shut-off valve (outdoor applications)	Blue

\* other color combinations can be delivered on request

Examples:

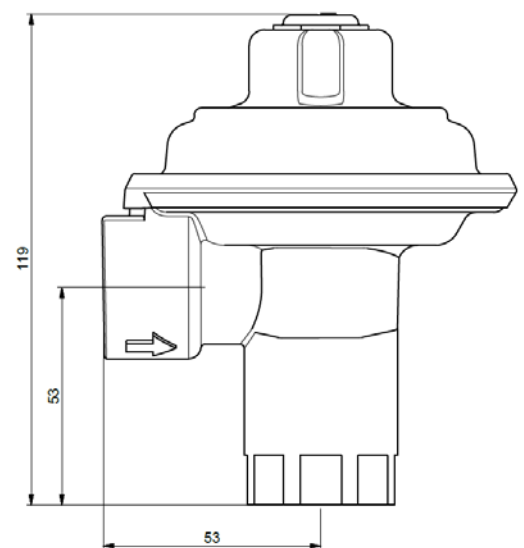


### Overall Dimensions & Threads

Various options are available for the inlet- and outlet, such as:

	Thread on Inlet	Thread on Outlet
<b>Kiwa-Gastec QA</b>	Internal Rp ¼" EN 10226-1 ISO 7-1	Internal Rp ¼" EN 10226-1 ISO 7-1
<b>PRS/3:2004</b>	Internal Rc ¼" EN 10226-2 ISO 7-1	Internal Rc ¼" EN 10226-2 ISO 7-1

Other specifications are available upon request



### Installation

Gas must flow through the valve body in the same direction as the arrow cast on the body. The WMR / WMRG is usually installed directly on the inlet of the gas meter and the WMG on the outlet of the gas meter.

The WMR / WMRG has been tested and set whilst the diaphragm was in horizontal position (outlet down), which is the preferred position. The WMR / WMRG can also be installed indoor with the diaphragm positioned vertically.

### Ordering

When ordering regulator or shut-off valve types please supply the following information:

- Type of device
- Minimum and maximum inlet pressures
- Outlet pressure range
- Outlet pressure setting
- Connection type
- Applicable Standard(s)
- Indoor / Outdoor version
- Desired seal-cap color (other than standard)

A technical data sheet for ordering is available on request.