

# RS300S

Pilot Operated Gas Pressure Regulator



Fast and  
accurate



Easy  
installation



Fail to close



Low TCO



Low noise  
level



Corrosion  
proof



# Pilot Operated Gas Pressure Regulator



By its unique design the pilot operated gas pressure regulator RS300S combines quick response times with a high level of accuracy over a wide range of flows and outlet pressures. Especially low capacity circumstances during summer can be combined with high capacity demands during winter without change of the set point. Because of its excellent dynamic characteristics RS300S can be used for both industrial installations and distribution stations. Modular design of RS300S allows Wigersma & Sikkema to anticipate on all customer needs: quick delivery times, preprogrammed customer settings (Plug and Play) and pre-installed options such as a slam shut valve. Quality and reliability have been proven for almost 20 years, low Total Cost of Ownership has been confirmed by all our customers.

## History

Wigersma & Sikkema has a long history with design, production and selling of gas pressure regulators. RS300S originates from Germany, and has been customized for the Dutch market. For many years now all Dutch grid operators make use of RS300S regulators, in addition combined heat power (CHP) manufacturers in Holland prefer applying the RS300S. Nowadays it meets the standards as laid down in EN334. With the outstanding references we have in the Dutch market, it's time for RS300S to conquer the world and anticipate on the challenges we encounter in regulating gas pressures.



## Technical data

In general high quality materials are applied for dynamic & static accuracy and to prevent corrosion; moisture is an issue in each gas supply station, with or without housing. In the end, the use of these materials extend the maintenance intervals and make the overhaul quick and easy. RS300S can be used for 10 years without maintenance easily, inspections by PLEXOR® showed that an interval above 15 years is not an exception.

## Regulator

- Body: ductile iron GGG 40 (EN\_GJS400\_15), with 30 µm Epoxy primer and 30 µm finishing paint
- Membrane housing: zinc nickel coated steel
- Valve shaft, seat and fittings: stainless steel
- Valve material, seals and membranes: nitrile butadiene rubber (NBR)
- Fasteners and sensing lines, Stainless steel
- Flanges: according to EN 1092-2, PN 16
- Low noise levels: by expansion of gas in regulator
- Fluid: natural gas, green gas

## Pilot

- Body: anodised aluminium
- Fasteners and sense lines: stainless steel
- Fittings: zinc nickel coated steel
- Valve material, seals and membranes: nitrile butadiene rubber (NBR)
- Built-in filter element: 10 µm, stainless steel gauge
- Test points: pilot feeding and motorization pressure
- Settings: Plug and Play; delivered at specified set-point



# RS300SE



RS300SE is a distance controlled regulator for dynamic grid capacity. An IP converter 4-20mA / 0-150 mbar controls the pilot of RS300SE resulting in flow limitation and capacity indication. In case of an IP converter malfunction, a preprogrammed configuration determines the set point: "Fail to stay" means the last set point will be kept, "Fail to value" means the pilot returns to a preprogrammed set point.

- Downwards compatible: installation on pre-installed RS300S is possible
- Tracking accuracy: +/- 1,0%
- Control accuracy Q (0-100%): +/- 2,5%
- Field tested and in operation for more than 10 years

## Quality

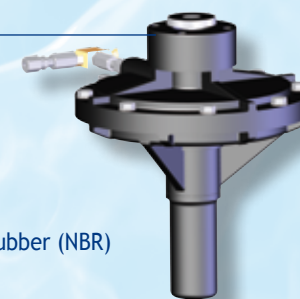
Quality of RS300S is assured by leakage tests and functional testing of both individual components and final assembly of the regulator. Our production facilities have been customized; special tooling and test equipment are designed and manufactured in house. Used methods for testing are submerge, visual inspection with leakage fluid and pressure testing with reference to high-accurate manometers. Finally, RS300S is tested with PLEXOR® while being part of our in house gas supply system feeded by an air compressor and RS300SE. Test results are laid down in a production certificate delivered with each regulator and includes all settings for cross reference.

## Calculation of flow and sizing

The value of the flow coefficient Cg is equal to the amount of gas passing the regulator with the valve fully opened and an absolute inlet pressure of 2.013 bar and an absolute outlet pressure of 1.013 bar at 15°C. The given Cg values for the RS300S series are valid for natural gas only, and are calculated in different ways for critical and sub critical flows. For selecting the regulator that suits you best we prevent you from difficult calculations with our sizing app. Please check out our application on [www.ws-gas.com](http://www.ws-gas.com)

## Slam shut valve

- Body: aluminium with 30 µm Epoxy primer and 30 µm finishing paint
- Valve shaft, seat and fittings and fasteners: stainless steel
- Fittings: zinc nickel coated steel
- Valve material and seals: nitrile butadiene rubber (NBR)
- Over pressure: standard
- Under pressure: optional
- Settings: Plug and Play; delivered at specified set-point (downwards compatible for other )
- Option: electronic SSV detection (downwards compatible)



## General Characteristics

- Inlet pressure range 0.5 to 10 bar
- Outlet pressure range 0.02 to 6 bar
- Pilot feeding pressure 300 mbar above outlet pressure
- Minimum pressure difference inlet and outlet pressure 0.5 bar \*
- Ambient temperature -20 to + 60 °C
- Flow coefficient Cg from 400 up to 3640

## Specifications

Outlet pressure	≥ 50 mbar	50 mbar	unit
Accuracy class AC (DIN 3380, EN 334)	2.5	5	%
Lock-up pressure class SG (DIN 3380, EN 334)	5	10	%
Hysteresis	<0.4	<1	%
Lock-up pressure zone	<1	<1	%
Outlet pressure drift at qmax when varying inlet pressure from 8 to 1.5 bar	+0.5	+1	%
Starting-time:			
- DN50	<0.2	<0.2	s
- DN80, DN100	<0.4	<0.4	s
Time to open from 0-100 % valve travel:			
- DN50	<2	<2	s
- DN80, DN100	<6	<6	s
Time to close from 100-0 % valve travel:			
- DN50	<1	<1	s
- DN80, DN100	<5	<5	s
Overshoot at valve travel from 100-0 % within time to close	<10	<20	%
Undershoot at valve travel from 0-100 % in 10 s within time to open	<10	<20	%
Gas velocity at outlet flange	<150	<150	m/s
AC over-pressure slam shut valve	2.5	5	%
AC under-pressure slam shut valve	10	20	%

Option AF:

If demanded (for example: low overshoot at an emergency-stop) the time to close can be decreased with 100% without loss of dynamic behaviour.

Please ask for option AF

## Capacity range

Flange diameter	Valve diameter (mm)	Cg flow coefficient for natural gas* (m3/h)	Face to face dimension (mm) Tolerance ± 2mm
DN 50	22.5 27.5 37.5	440 640 1000	230**
DN 80	52.5	2270	298***
DN 100	65	3640	351

\* at 15 °C and 1.01325 ba

\*\* By use off fill ring 254

\*\*\* By use of fill ring 310

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