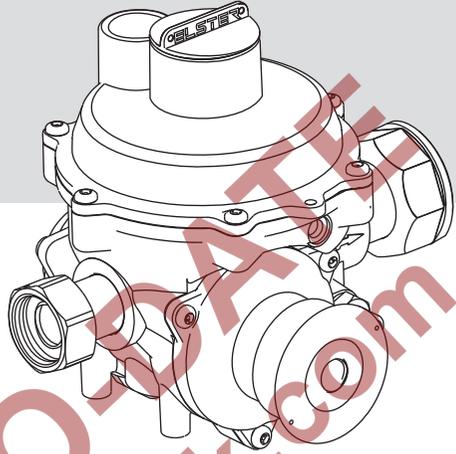


M2R

Two stage meter service regulator



- Maximum upstream pressure
5 bar
- Downstream pressure range
18 to 100 mbar
- Over pressure shut off range
50 to 250 mbar
- Relief valve range
20 to 50 mbar above Pds
- Ambient temperature
-20 °C to +60 °C
- Pressure settings according to
nameplate

Operating instructions

Two stage gas pressure regulators with Integrated Safety Shut off Valve (SSV) and integrated limited capacity Relief Valve (RV)

Gas types

- Natural gas
- Gaseous propane
- Town gas
- Air
- Other gases on request

We recommend installing a filter upstream of each regulator.

Note: Each unit is equipped with a sieve in the inlet.



elster
Instromet

Please read and keep in a safe place

Please read through these instructions carefully before installing or operating. Following the installation, pass the instructions on to the operator. This instruction can also be found at www.docuthek.com.

Explanation of symbols

- = Action
- = Instruction

Liability

We will not be held liable for damages resulting from non-observance of the instructions and noncompliant use.

Safety instructions

Information that is relevant for safety is indicated in the instructions as follows:

⚠ WARNING Indicates possible danger to life and limb.

! CAUTION Indicates possible material damage.

Incorrect handling during installation, adjustment, modification, function tests or maintenance work may cause injuries or material damage.

Installation, adjustment and maintenance only by trained and authorized staff! Incorrect handling during installation, adjustment, modification, functional testing and/or maintenance activities may cause injuries and/or material damage.

Read the operating instructions prior to starting the installation. This unit must be installed and monitored in accordance with the regulations in force.

Fitting regulator into Pipework

- First check for transport damages. Don't install a damaged regulator.
- The direction of the gas flow must be the same as the arrow on the regulator body.
- Ensure that installation pipework is thoroughly clean.
- As a standard, the factory adjustment is done for an upright position as shown on the 1st page. A different position will cause a slight change of the outlet pressure
- The housing must not touch any surrounding walls.
- Remove plastic protection plugs from inlet, outlet and vent.
- Install the regulator into pipework using a jointing compound approved to national standards.
- Use always new gaskets.
- Use only approved gaskets.
- Ensure that gas from the relief valve can vent directly to the atmosphere.

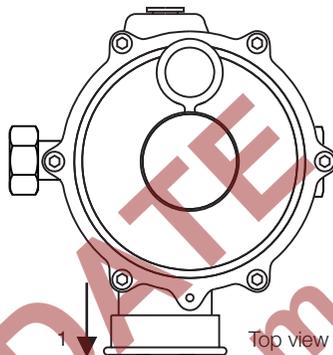
Leak proof test

! CAUTION The Regulator must not be included when carrying out the leak test for the overall system at higher pressures than the levels as stated below.

- Pressurize gas pressure regulator
 - inlet: $1.1 \times P_{u,max}$
 - outlet: $1.1 \times P_{ds,max}$
- The inlet pressure has always to be as high as or higher than the outlet pressure.
- Use liquid leak detector to check for leaks at the pipe connections.

Putting into operation

- Turn off downstream valves.
- Slowly turn on inlet supply.
- Pull the reset knob (1) of the shut off valve to block. Hold for a few seconds than let the reset knob go. If the silvery cap in the reset knob is in front, the SSV is in open position.
- Commission downstream appliance(s)



⚠ WARNING The top cap of the 2nd stage has to be in place during pressure increase and testing.

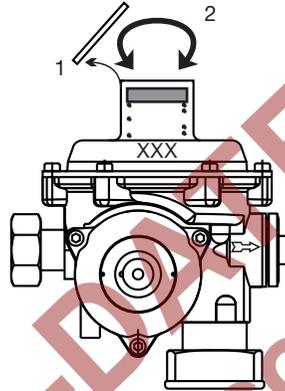
Functional testing

- Connect pressure gauge or manometer to the downstream pipe. Upstream valve has to be open, downstream valve has to be closed.
- Check set pressure: Cause consumption; watch pressure gauge; the downstream pressure should be within the given accuracy range $AC\pm\%$.
- Check lock up pressure: Stop consumption; watch pressure gauge; the downstream pressure should be within the given lock up pressure range $SG+\%$ and should not rise.
- Check relief valve pressure: Increase downstream pressure via feed line until the relief valve will actuate. Watch pressure gauge. The pressure should be within the stated accuracy class $AC\pm\%$.
- Check relief valve lock up: Stop feeding, the outlet pressure should not fall below 0.9 x of the set pressure.
- Check set point of the safety shut off valve: Increase downstream pressure (approx. 1 to 2 mbar/s) by feed line until the safety shut off valve trips off. Watch pressure gauge. The set pressure should be within the given accuracy range $AGo\pm\%$.
Note: a quicker pressure increase will create a deviation on the measured value.
- Check safety shut off lock up: Close upstream valve and decrease outlet pressure below control level (approx. $0.75 \times P_{ds}$), close downstream valve. Watch pressure gauge; the downstream pressure should not rise.

! CAUTION Before resetting the safety shut off valve the downstream pipe has to be pressureless.

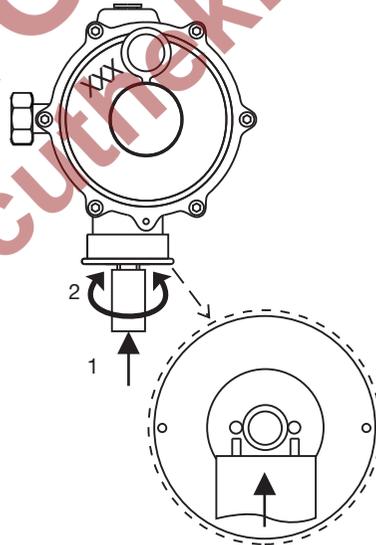
Changing downstream pressure p_{ds}

- Connect pressure gauge or manometer to the downstream pipe.
- Cause consumption; watch pressure gauge.
- Remove the top cap (1).
- Turn adjusting ring (2) with a hexagon socket wrench (19 mm) or a screwdriver.
Clockwise: Outlet pressure increases.
Anti-clockwise: Outlet pressure decreases
- Mark new set pressure on the unit (XXX).
- Replace the top cap (and seal if necessary).



Changing safety shut-off valve trip pressure p_{so}

- Turn off downstream valves.
 - Connect pressure gauge or manometer to the downstream pipe.
 - Insert adjusting tool through the holes in the reset knob (1).
 - Turn adjuster spindle by turning the inserted tool (2).
Clockwise: Set point pressure increases.
Anti-clockwise: Set point pressure decreases.
 - For testing: Increase downstream pressure (approx. 1 to 2 mbar/s) with bypass pipe until the safety shut off valve trips off. Watch pressure gauge. The set pressure should be within the given accuracy range $AG_{0} \pm \%$.
- Note: a quicker pressure increase will create a deviation on the measured value.**
- Mark new set point pressure on the unit (XXX).



! CAUTION The top cap of the 2nd stage has to be in place during pressure increase and testing.

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