



Operating manual
For medium pressure reducing valve
Type PR/F... and PR/D...

PR/F



PR/D



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1 General information

This operating manual is for handling pressure regulators. Operating errors can be prevented only with knowledge of this operating manual.

Operating personnel must be informed about the contents of this operating manual.

Improper use may result in hazard to life for the user or other third parties and/or damage to other material assets.

We reserve the right to make technical modifications for improvement purposes to the comparisons and information in this operating manual.

2 Warranty provisions

There shall be no liability, or the warranty shall be void under the following conditions:

- The information and instructions of the operating manual are not followed.
- The devices are improperly used.
- The devices are used for purposes other than their intended one.
- Any type of functional changes conducted without the written permission of ZIMMERLI MESSTECHNIK AG.
- Disregard of the applicable safety regulations when operating the device.
- Guards were not used or functionality was disabled.

Only approved, original spare parts must be used when replacing parts and/or for procuring spare parts.

3 Purpose

These type of pressure regulators are suitable for various tasks (e.g. inerting containers with inactive gases or pressure regulation of pure liquids).

The exact design is customized and must therefore be taken from the device's technical information.

3.1 Intended use

Ambient pressure:	0.8 to 1.1 bar
Inlet pressure / outlet pressure:	According to the data sheet
Ambient temperature:	Within the temperature limits specified in the data sheet With option /Ex: -20 °C to +40 °C
Medium temperature:	According to sealing material, see data sheet Hastelloy mit Option /Ex: -20 bis 180 °C (T6...T4) PTFE with option /Ex: -20 bis 180 °C (T6...T4) Viton with option /Ex: -20 bis 130 °C (T6...T5)
Degree of protection:	Standard version IP40, with weather protection IP54, other versions according to the data sheet

Limitations of the medium: No combustible gases in an explosive concentration. Exception, ATEX-certified devices according to:

- II 2 G Ex h IIB T6 Gb
- II 3 G Ex h IIC T6 Gc
- II 2 D Ex h IIIC T6 Db
- II 3 D Ex h IIIC T6 Dc

Environmental influences (e.g. direct sunlight) that cause the housing temperature to rise to unacceptable levels must be avoided.

Other external radiation (electromagnetic, ionizing radiation, ultrasound): none (if such radiation is present in the area used, the hazard must be taken into account and assessed by the user.) Keep the devices free of dust (dust thickness less than 1 mm).

3.2 Assembly work on the pressure regulator

The user and operator must take measures for mounting, disassembly, and maintenance work of and on the pressure regulator in areas with explosive atmospheres to prevent these operations from creating sources of ignition.

4 Safety provisions

Any work on or with the device may be performed only by qualified personnel who are familiar with the applicable regulations on operating pressure regulators and/or pressure containers.

If disassembling safety equipment is required for installation, it must be assembled and inspected immediately once the work has concluded.

Do not exceed the operating pressure. It is specified on the nameplate of each device.

When using the device, the provisions regarding the filling material must be followed.

Natural regulations regarding usage and test intervals must be followed.

5 Material resistance

Since the operator chose the material, the supplier cannot provide any guarantees regarding material resistance. It is the operator's responsibility to ensure that the material of the devices, including seals and add-on components (e.g., pressure gauges, pilot regulator, etc.) are adequately resistant against the medium.

6 Startup

6.1 Before installation

Before installation, perform a visual inspection on the device to determine any transport damage. The device's performance data must be reviewed (max. inlet pressure, secondary pressure, etc.).

The values noted on the nameplate are the values measured in our functional test.

The resistance of the materials has to be checked (see the corresponding chapter of this operating manual).

Newly installed pipelines must be fully rinsed clean to eliminate mechanical residues. It must be ensured that the pressure regulator is connected at the local equipotential bonding, either through an adequate and permanent connection to metallic pipes or via a direct connection to local equipotential bonding.

6.2 Installation

Always install the medium pressure regulator as close as possible to the process tank or consumer within non-turbulent flow.

Be mindful of the flow direction! (Marked on the housing with an arrow). Otherwise, there is the risk of damaging the pressure regulator.

6.3 Assembly position and installation

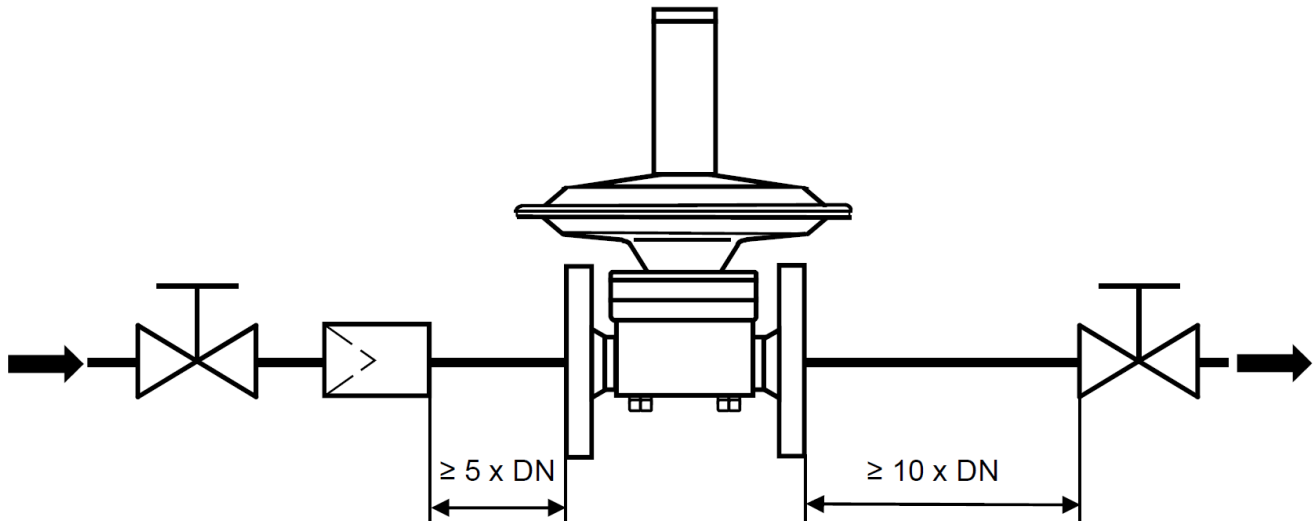
The Installation position is freely selectable. Sealed devices are set to the desired pressure according to the ordered position. If the devices are configured by the user, then this also must take place in the subsequent installation position.

The configuration can be sealed using the lateral hole in the setting screw. Factory-sealed devices are set to the specified pressure.

Assembly must be performed on both sides (p_1 , primary side and p_2 , secondary side) within non-turbulent flow. To that end:

- Straight inlet piping of 5 x DN on the primary side and
- Straight outlet piping of 10 x DN on the secondary side is recommended

Furthermore, it is recommended that you install one shut-off valve each before and after the pressure regulator to simplify any maintenance work. Furthermore, a suitable filter must be installed before the pressure regulator in case of dirty gases or if there is a hazard of solid particles.



Avoid pressure shocks after assembly and always open shut-off valves slowly!

6.4 Configuring the setpoint

Always open the valves in lines before or after the pressure regulator slowly and avoid pressure shocks!

Spring-loaded model PR/F:

Slowly open the valve or ball valve before or after the pressure regulator. Set the desired pressure by turning the setting screw (8 mm hexagon socket).

Warning! Observe the maximum values on the nameplate.

Clockwise rotation = Decreasing secondary pressure p_2

Counterclockwise rotation = Increasing secondary pressure p_2

Dome-loaded model with pilot regulator PR/Ds / De:

The dome pressure is set to the desired value using a pilot regulator via a handwheel or a setting screw (depending on the design). Maximum permissible dome pressure according to nameplate/pressure level of the process connections

Dome-loaded model without pilot regulator PR/D:

Apply pressure to the dome via the G1/8". Open the needle valve in the lateral surface 1 ... 2 rotations (right-hand thread). Upon reaching the desired dome pressure, carefully close the needle valve; the sealing surfaces are metallically sealing. The gas connection to the dome can subsequently be removed again.

7 Maintenance and repairs

The previously mentioned pressure regulators work without auxiliary energy and are maintenance-free. Additional queries may be processed only by specifying the serial number.

The serial number must be specified for spare part orders.

Device returns for repair or modification can be accepted only if they have been cleaned and have a completed RMA according to the applicable regulations. In the case of hazardous media, we recommend returning the device disassembled and cleaned.

7.1 Inspection intervals

An annual review of the function or maintenance is recommended depending on the characteristics of the medium and the respective operating states. Depending on these results, the testing/maintenance interval can be shortened or extended by the operator/user.

9 Code: PR 25

PR/D	D: G $\frac{1}{4}$ " (¼" BSP)	Funktion	Domgesteuert	Dome loaded	Dôme	0.5 - 40 bar
PR/Ds	Ds: G $\frac{1}{4}$ " (¼" BSP)	Function	Dom-Fremdsteuer.	Dome / Remote	Pilotage/indirecte	0.5 - 40 bar
PR/De	De: G $\frac{1}{4}$ " (¼" BSP)	Fonction	Dom-Eigensteuer.	Dome / Pilot	Pilotage/directe	0.5 - 40 bar
PR/F			Federgesteuert	Spring loaded	Dôme à ressort	1.0 - 10 bar
25	DN25, PN40	Grösse Size Dimension	Einbaulänge	Lay length	Encombrement	200 mm
25	1", 150 lbs		Einbaulänge	Lay length	Encombrement	231 mm
25	1", 300 lbs		Einbaulänge	Lay length	Encombrement	244 mm
25	G1 (1" BSP)		Einbaulänge	Lay length	Encombrement	206 mm
25	1" NPT		Einbaulänge	Lay length	Encombrement	206 mm
25	TriClamp Ø 50.5		Einbaulänge	Lay length	Encombrement	177 mm
S		Material Material Matériaux	Edelstahl	SST	INOX	1.4404
H			Hastelloy C	Hastelloy C	Hastelloy C	2.4819, C276
X			Sonder auf Anfrage	Special on request	Spécial nous consulter	
-FD	DN25, PN40	Anschluss Connection Raccord	Flansch	Flange	Brides	DIN EN 1092-1, B1
-FA1	1", 150 lbs		Flansch	Flange	Brides	ANSI
-FA3	1", 300 lbs		Flansch	Flange	Brides	ANSI
-GD3	G1, (1" BSP)		Gewinde	Thread	Fileté	DIN / EN
-GN3	1" NPT		Gewinde	Thread	Fileté	ANSI
-TCB	TriClamp		TriClamp	Ø 50.5 mm	DIN 32676, B	DIN / EN
-XX		Sonder auf Anfrage	Special on request	Spécial nous consulter		
-H		Membrane Diaphragm Membrane	Hastelloy	-20/180 °C		
-P			PTFE	-20/180 °C		
-V			Viton®	-20/130 °C		
30		Federbereich¹⁾ Spring range Plage de réglage	0.5 / 1 - 3.0 bar	[p₂ = f (p₁)]¹⁾ [p ₂ =+150 mbar/bar@p ₁ <16 bar & p ₂ =-150 mbar/bar@p ₁ >16 bar] [p ₂ =+150 mbar/bar@p ₁ <16 bar & p ₂ =-150 mbar/bar@p ₁ >16 bar] (D/De/Ds) Dom Dome Dôme		
100			0.5 / 1 - 10.0 bar			
-			0.3 - 40.0 bar			
17		Sitz Seat Siège	Kv = 4.5 / 17 mm			
Optionen, /Options, /Options						
/S1 ²⁾	Manometerstutzen	G $\frac{1}{4}$ " (¼" BSP, p ₁)				
	Pressure gauge nozzle	G $\frac{1}{4}$ " (¼" BSP, p ₁)				
	Raccord de manomètre	G $\frac{1}{4}$ " (¼" BSP, p ₁)				
/S2 ²⁾	Manometerstutzen	G $\frac{1}{4}$ " (¼" BSP, p ₂)				
	Pressure gauge nozzle	G $\frac{1}{4}$ " (¼" BSP, p ₂)				
	Raccord de manomètre	G $\frac{1}{4}$ " (¼" BSP, p ₂)				
/Sd ²⁾	Manometerstutzen	G $\frac{1}{4}$ " (¼" BSP) auf Dom				
	Pressure gauge nozzle	G $\frac{1}{4}$ " (¼" BSP) on dome				
	Raccord de manomètre	G $\frac{1}{4}$ " (¼" BSP) sur dôme				
/Sp	Eingestellt/plombiert	Adjusted and sealed / Ajusté et plombé				
/C2.2	Werksabnahmezeugnis	EN 10204-2.2				
	Works acceptance certificate	EN 10204-2.2				
	Certificat de réception en usine	EN 10204-2.2				
/C3.1	Werkstoffprüfzeugnis	EN 10204-3.1				
	Material certificate	EN 10204-3.1				
	Certificat materiel	EN 10204-3.1				
/Cp	Einstellprotokoll	Test protocol	Protocole de réglage			
/Ex	ATEX Zulassung	ATEX approval	Certificat ATEX			
/FDA	FDA-Bescheinigung	FDA approval	Certificat FDA			
/Ff	Öl-Fettfrei	Certificate degreasing	Sans Huile ni Graisse			

Beispiel, Example, Exemple

PR/F 25 S -FD -P 100 17 /S1/Sp/C3.1/Ex

Hinweise / Hints / Remarque

¹⁾ Vordruckabhängigkeit
Primary pressure effect
Dépendance de la pression primaire

²⁾ Manometer passend zum Druckbereich optional verfügbar
Pressure gauge, suitable for the pressure range, optionally available
En option, possibilité d'un manomètre avec la plage de pression correspondante