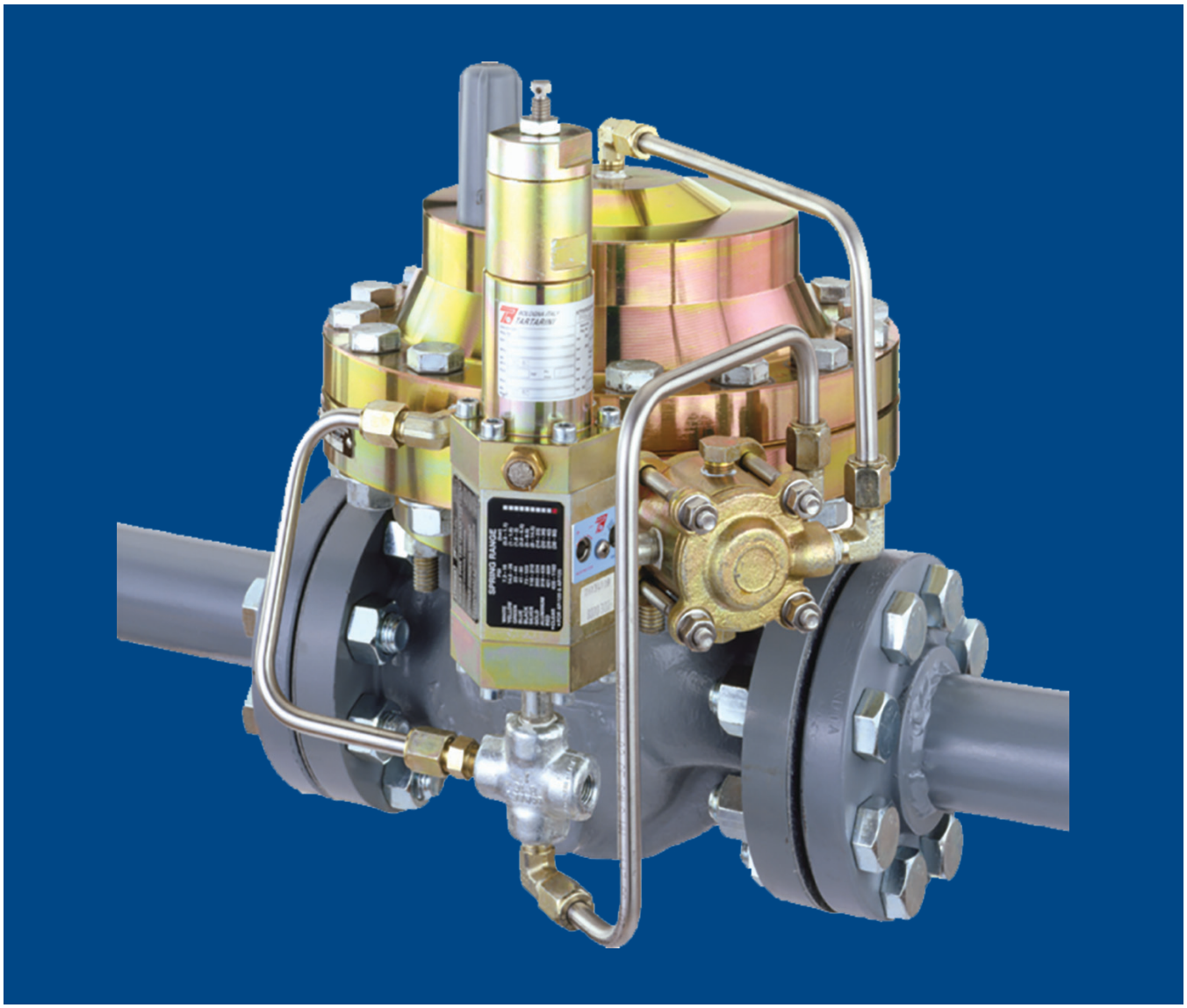
PRESSURE REGULATORS

Types EZH and EZHSO



Europe, Middle East and Africa Only

FISHER™

EMERSON™

Types EZH and EZHSO Regulators

Pressure Regulators

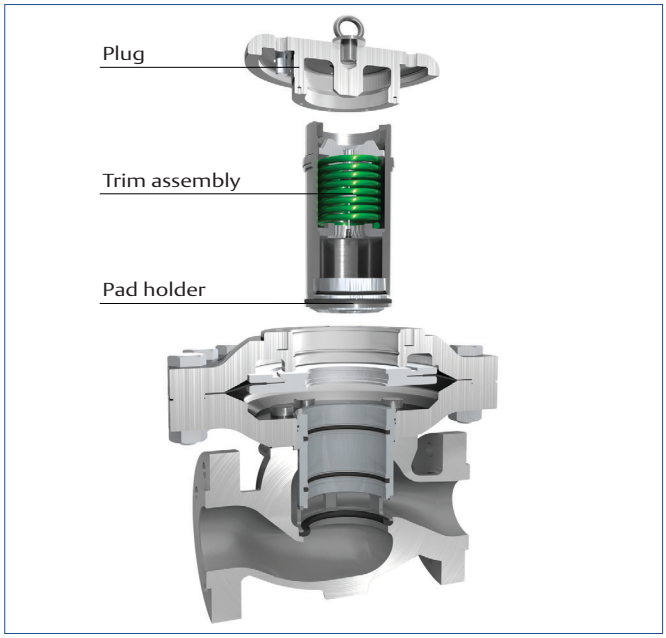
Types EZH and EZHSO (Spring-to-Open) regulators are accurate pilot-operated, pressure-balanced and soft-seated regulators.

They are designed for use in **high pressure** natural gas transmission / city gate stations, **large capacity** distribution systems and power plant feeds. They provide smooth, reliable operation, tight shutoff and long life.

The main benefits are as follows:

- **Long life in severe service applications:** The Types EZH and EZHSO utilize a metal plug design to deflect particles and debris away from the soft-seat, which gives enhanced resistance to particle erosion to provide a longer service life. In addition, the Types EZH and EZHSO can be constructed with Fluorocarbon (FKM) soft parts to extend service life in applications where liquid aromatics are entrained in the gas.
- **High turn down capability:** The oversized diaphragm and unique piloting system of the Types EZH and EZHSO allow for a high turn down ratio, which will provide superior pressure control in systems with large variations in downstream flow demand.
- **Noise attenuation module:** The Types EZH and EZHSO offer an optional Whisper Trim™ Cage which is integral to the regulator therefore maintaining the advantages of its compact design. It allows for a noise attenuation up to 8 dB.
- **Absolutely no bleed to atmosphere:** The Types EZH and EZHSO eliminate nuisance and wasteful bleed gas to atmosphere by utilizing a pilot-operated control system, which bleeds 100% of the gas to the downstream system while the regulator is operating.
- **Bubble tight shutoff:** The Types EZH and EZHSO have a knife-edged, metal plug and a soft seat which provides bubble tight shutoff for use in applications where positive shutoff is required. For example: dead-end systems.
- **Accurate pressure control:** The Types EZH and EZHSO use the Types PRX and SA/2 pilot system to provide stable and accurate downstream pressure control regardless of load changes or inlet pressure variations.
- **Easy maintenance system:** A top entry design reduces maintenance time. Trim parts can be inspected, cleaned and replaced without removing the body from the pipeline. An innovative system has been designed for the Types EZH DN 100, 150 and 200 which allows maintenance to be carried out by a single operator for DN 100 and by two operators for DN 150 and 200. Maintenance is carried out by simply removing the top plug, extracting the trim assembly, removing the pad holder and then changing the pad. Easy and fast maintenance, no special tools requirement, makes the Type EZH ownership low in cost.
- **Spring-to-close and spring-to-open versions:** Optional positions to choose from in case of main valve diaphragm failure or lack of supply pressure to the pilot. See table on page 6 for "Failure Mode Analysis".

Whisper Trim Cage



Type EZH DN 100, 150 and 200 Easy Maintenance System

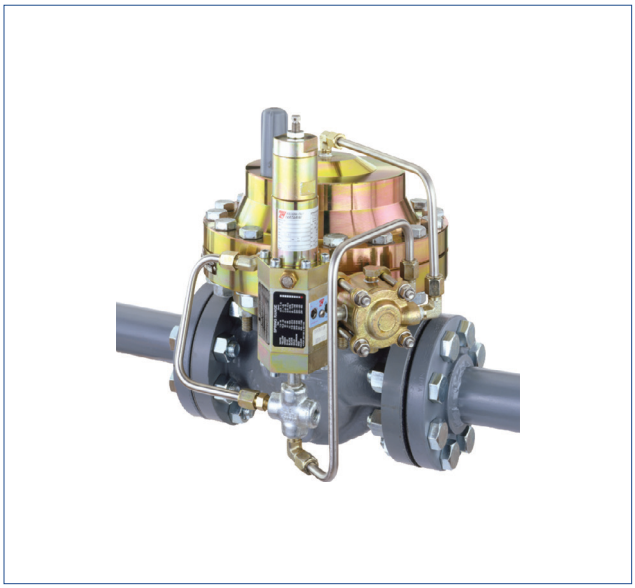
Configurations

Type EZH: Pilot-operated pressure reducing regulator for low to high outlet pressure.

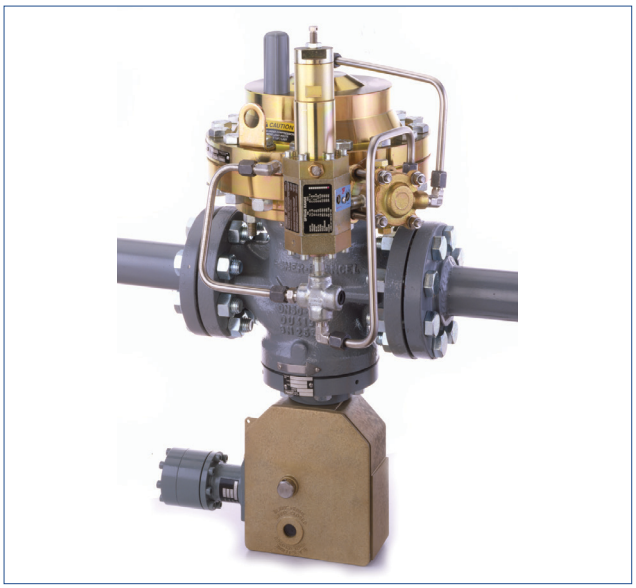
Type EZH-OS2: Type EZH pressure reducing regulator with a Type OS2 slam-shut device for overpressure or overpressure and underpressure protection.

Type EZHSO: Spring-to-Open pilot-operated pressure reducing regulator for low to high outlet pressure.

Type EZHSO-OS2: Type EZHSO pressure reducing regulator with a Type OS2 slam-shut device for overpressure or overpressure and underpressure protection.



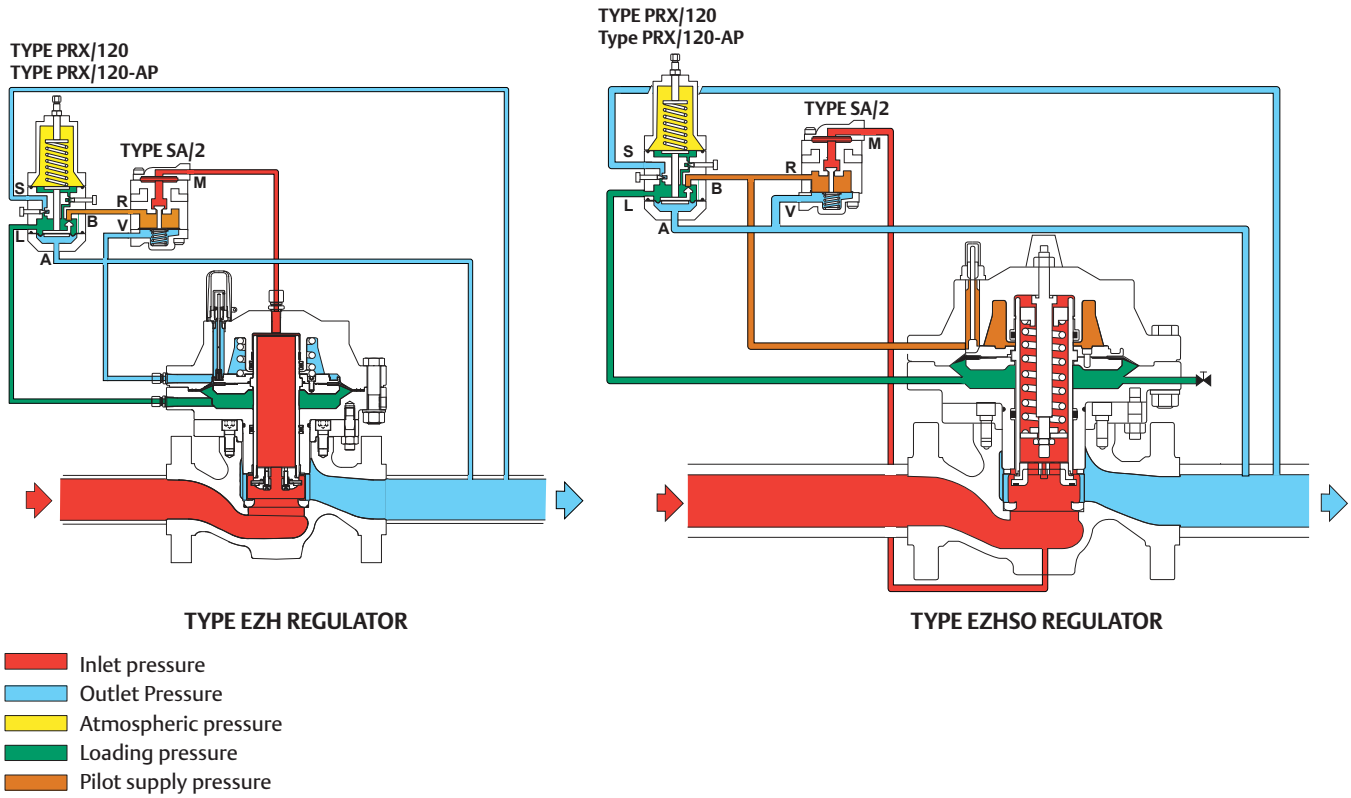
Type EZH



Type EZH-OS2

Types EZH and EZHSO Regulators

Operation



TYPE EZH REGULATOR

TYPE EZHSO REGULATOR

Inlet pressure
Outlet Pressure
Atmospheric pressure
Loading pressure
Pilot supply pressure

The pilot-operated Type EZH uses inlet pressure as the operating medium, which is reduced through pilot operation to load the actuator diaphragm. Outlet pressure (Pd) opposes the motorization pressure (Pm) in the actuator and also opposes the pilot control spring. Type EZHSO Spring-to-Open version uses inlet pressure as the operating medium, which is reduced through pilot operation to load the actuator diaphragm (lower chamber). The upper case of Type EZHSO actuator is filled with pressure coming from stabilizer filter Type SA/2. This pressure on the upper chamber of the regulator actuator diaphragm opposes the main spring force that tends to open the regulator. The outlet pressure opposes the pilot control spring.

Opening

When the outlet pressure (Pd) drops below the setting of the pilot control spring, pilot control spring force on the pilot diaphragm thus opens the pilot valve plug, providing additional motorization pressure (Pm) to the actuator diaphragm. This diaphragm motorization pressure opens the main valve plug, supplying the required flow to the downstream system. Any excess motorization pressure on the actuator diaphragm escapes downstream through the bleed restriction in the pilot.

Closing

TYPE EZH - When the gas demand in the downstream system has been satisfied, the outlet pressure (Pd) increases. The increased pressure is transmitted through the downstream control line and acts on the pilot diaphragm. This pressure exceeds the pilot spring setting and moves the diaphragm, closing the orifice. The motorization pressure (Pm) acting on the main diaphragm bleeds to the downstream system through a bleed restriction in the pilot.

TYPE EZHSO - When the outlet pressure (Pd) increase over the setting of the pilot spring, the pilot valve disk will be closed, reducing motorization pressure (Pm) to the lower chamber of the regulator actuator diaphragm; the pressure in the upper chamber will force the regulator to close.

Adjustment

The adjustment of the regulator is performed by means of the pilot adjusting screw, which causes variation of the compression of the control spring. Adjustment is performed while the regulator is in operation with the aid of a pressure gauge to monitor downstream pressure. The shut-off valve downstream of the regulator must not be completely closed, it is necessary that a small quantity of gas flows downstream to allow the outlet side to vent when it is necessary to lower the pressure.

Operation

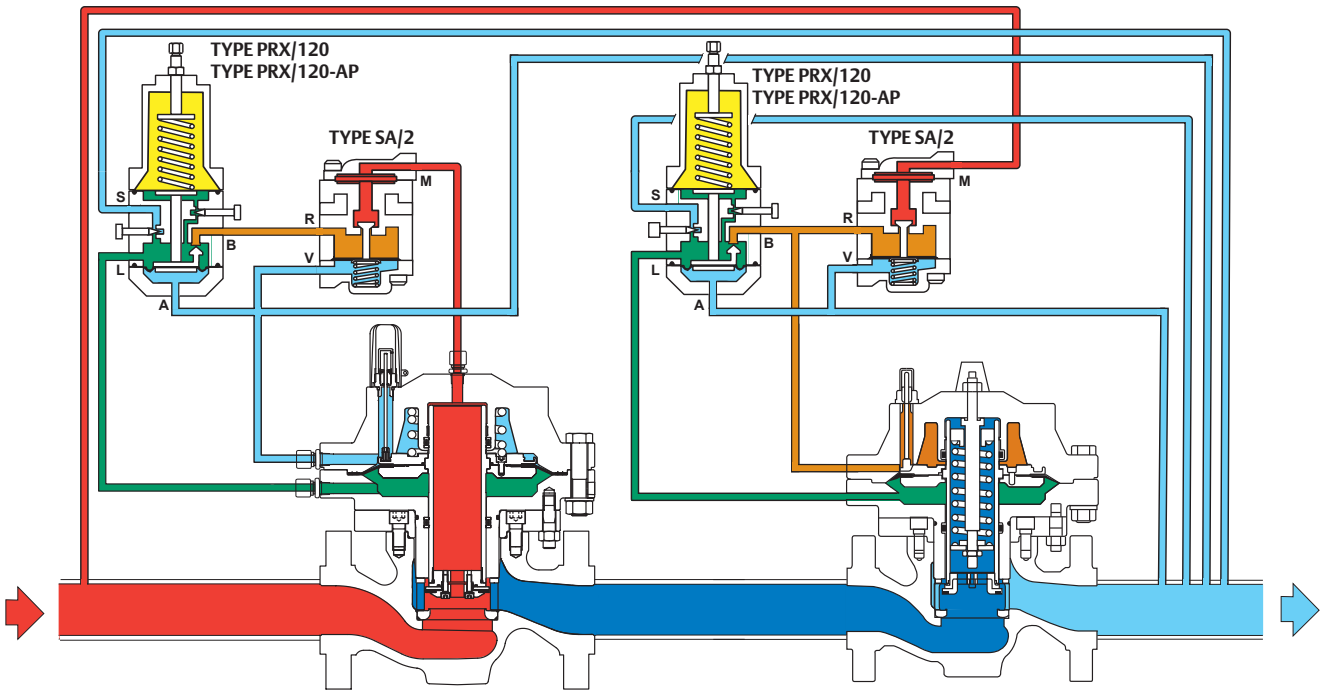
Monitoring System

Monitoring regulation is overpressure protection by containment, therefore, there is no relief valve to vent to the atmosphere.

When the working regulator fails to control the pressure, a monitor regulator installed in series, which has been sensing the downstream and control pressure, goes into operation to maintain the downstream pressure at a slightly higher level than normal pressure.

During an overpressure situation, the monitoring system keeps the customer on line.

Wide-Open Monitoring Systems



- Inlet pressure
- Outlet Pressure
- Atmospheric pressure
- Loading pressure
- Intermediate Pressure
- Pilot supply pressure

This figure shows an upstream wide open monitor Type EZH and a downstream active regulator Type EZHSO (Spring-to-Open).

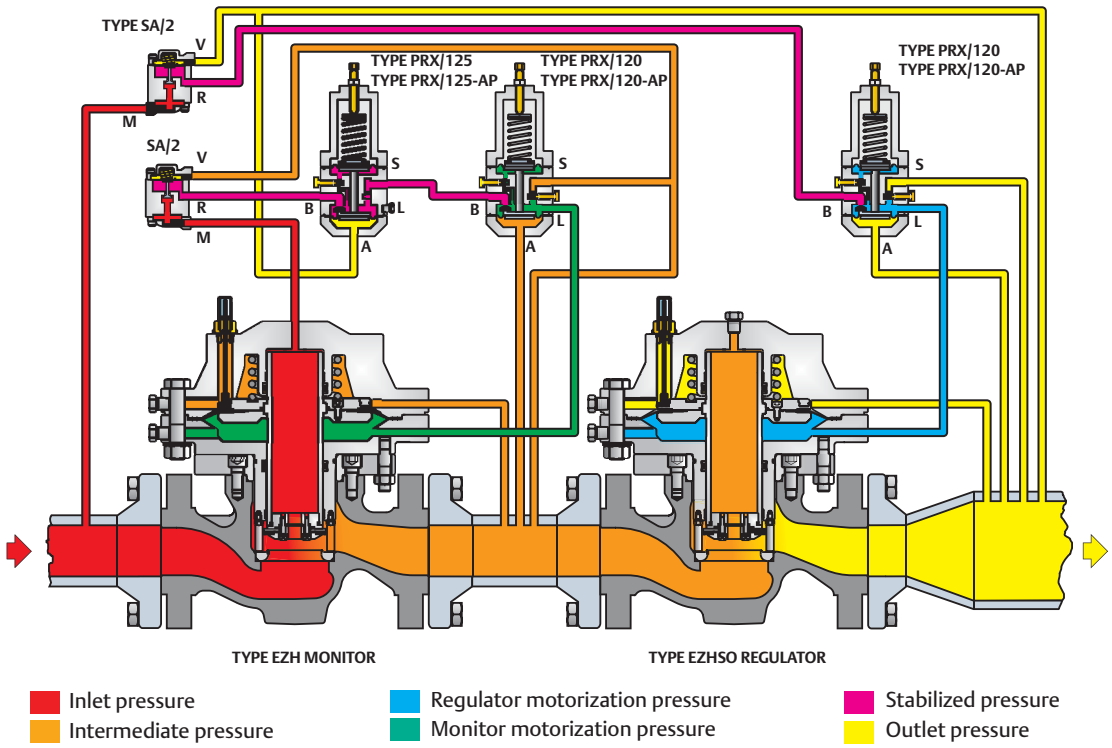
In this installation, if the Type EZHSO no longer controls the outlet pressure, it will remain open, letting the Type EZH regulator to reach the required outlet pressure.

In case of failure of the Type EZH, it will close and protect the downstream system from overpressure condition.

Types EZH and EZHSO Regulators

Operation

Working Monitoring System



In a working monitoring system, the upstream regulator requires two pilots and it is always the monitoring regulator. In this way, both units are always operating and can be easily checked for proper operation. In normal operation, the working regulator controls the outlet pressure of the system. The monitoring regulator's working pilot Type PRX/120 or PRX/120-AP controls the intermediate pressure and the monitor pilot Type PRX/125 or PRX/125-AP senses the system's outlet pressure. If the working regulator fails, the monitoring pilot Type PRX/125 or PRX/125-AP will sense the increase in outlet pressure and take control. The working regulator must be rated for the maximum allowable operating pressure of the system because this will be its inlet pressure if the monitoring regulator fails. Also, the outlet pressure rating of the monitoring pilot Type PRX/125 or PRX/125-AP and any other components that are exposed to the intermediate pressure must be rated for full inlet pressure. Working monitor installations require a Type EZH or EZHSO main valve with a Type PRX/120 or PRX/120-AP working pilot and a Type PRX/125 or PRX/125-AP monitoring pilot for the upstream regulator, and a Type EZH or EZHSO with the appropriate Type PRX/120 or PRX/120-AP pilot for the downstream regulator.

Failure Mode Analysis

Part Name	Failure (Worst Case)	Cause of Failure	Effect	Type	Regulator Reaction Mode	
Filter	Filter blocked / clogged	Dirty gas	Decrease of feeding pressure gives decrease of motorization pressure	EZHSO	Open	
				EZH		Close
Pilot Disk	Pilot cannot be closed	Dirty gas (microparticles), sour gas	Increase motorization pressure	EZHSO	Open	
				EZH	Open	
Pilot Lower Diaphragm	Pilot cannot control	Fabric quality, sour gas	Decrease motorization pressure	EZHSO	Open	
				EZH		Close
Pilot Upper Diaphragm	Pilot cannot feed the regulator	Fabric quality, sour gas	Decrease motorization pressure	EZHSO	Open	
				EZH		Close
Regulator Diaphragm	Not proper performance of the motorization pressure chamber	Fabric quality, sour gas	Balancing of pressures and charge or discharge of the motorization pressure chamber	EZHSO	Open	
				EZH		Close

Features

Applications

EZH and EZHSO Series regulators are used in reduction, distribution and conveying stations of suitably filtered natural gas. They can also be used for air, propane, butane, LPG, city gas, nitrogen, carbon dioxide and hydrogen.

Technical Features

Allowable pressure	PS	:	up to 100 bar
Inlet pressure	P_u	:	1 to 100 bar
Set range	P_d	:	1 to 80 bar
Minimum operating differential pressure			
Type EZH	Δp_{min}	:	1 bar
Type EZHSO	Δp_{min}	:	3.8 bar (DN 25, 50 and 80) 1.8 bar (DN 100) 1 bar (DN 150 and 200)
Maximum operating differential pressure			
Type EZH	Δp_{min}	:	99 bar
Type EZHSO	Δp_{min}	:	96.2 bar

Functional Features

Accuracy class			
Type EZH	AC	:	up to ± 1%
Type EZHSO	AC	:	up to ± 2.5%
Lock-up pressure class	SG	:	up to + 5%
Class of lock-up pressure zone	SZ	:	up to 5%
Operating temperature	TS	:	-20 / 60°C -30 / 71°C (optional)
Shut-off device			
Maximum operating differential pressure	Δp_{max}	:	99 bar
Response time	ta	:	< 1 s
Accuracy class			
Diaphragm and bellows version	AG	:	up to ± 2.5%
Piston version	AG	:	up to ± 5%
Set pressure range	W_{du} - W_{do}	:	0.010 / 100 bar

Flanged connections

Same Inlet and outlet: DN 25 - 50 - 80 - 100 - 150 - 200

Flange rating: PN 16B - PN 25B - PN 40B
ANSI 150 RF - ANSI 300 RF - ANSI 600 RF

Materials

Body	Steel	Regulator valve plug	Stainless steel
Connecting parts and bottom	Steel	Slam-shut valve plug	Stainless steel
Actuator	Steel	Regulator plug disc	Nitrile (NBR) or Fluorocarbon (FKM)
Regulator / Slam-shut orifice	Stainless steel	Slam-shut O-rings	Nitrile (NBR) or Fluorocarbon (FKM)

Types EZH and EZHSO Regulators

Calculation Procedures

Symbols

Q = Natural gas flow rate in Stm^3/h
P1 = Absolute inlet pressure in bar
P2 = Absolute outlet pressure in bar
C_g = Flow rate coefficient
C_1 = Body shape factor
d = Relative density of the gas

Flow Coefficients

REDUCTION		TYPES EZH AND EZHSO											
		Slam-Shut (X Body)						Without Slam-Shut (E Body)					
		DN 25	DN 50	DN 80	DN 100	DN 150	DN 200	DN 25	DN 50	DN 80	DN 100	DN 150	DN 200
Q_f	0	284	1078	2247	3567	6845	12,376	280	1088	2266	3696	7010	13,026
	1	210	908	1684	2969	5464	----	218	829	1698	2902	5804	----
	2	126	671	1058	1763	3685	6531	128	607	1066	1784	3670	7010
	3	79	385	685	1062	2088	4051	81	370	690	1072	2098	4051
C_g	0	550	2092	4359	6920	13,280	24,010	544	2110	4396	7170	13,600	25,270
	1	408	1762	3266	5760	10,600	----	423	1609	3294	5630	11,260	----
	2	245	1301	2052	3420	7150	12,670	249	1177	2069	3460	7120	13,600
	3	154	746	1328	2060	4050	7860	157	718	1339	2080	4070	7860
C_1	0	31.3	38.3	30.8	32.5	32.8	33.3	35.5	33.5	30.8	31.4	31.4	35.0
	1	34.3	35.3	33.9	35.3	35.0	----	38.7	31.9	33.9	34.2	35.9	----
	2	33.6	38.8	37.8	37.3	38.8	33.9	39.7	35.6	37.8	36.3	39.6	36.4
	3	32.1	40.8	33.6	37.1	39.7	38.3	39.1	38.2	33.6	37.3	30.8	38.3
F_L	----	0.89											
F_D	0	0.61	0.56	0.56	0.61	0.69	0.69	0.59	0.61	0.60	0.63	0.69	0.69

REDUCTION		TYPES EZH AND EZHSO WITH WHISPER III											
		Slam-Shut Integrated (X Body)						Without Slam-Shut (E Body)					
		DN 25	DN 50	DN 80	DN 100	DN 150	DN 200	DN 25	DN 50	DN 80	DN 100	DN 150	DN 200
Q_f	0	223	781	1693	2742	6103	9,990	255	793	1708	2789	6397	10,088
	1	215	764	1418	2479	4974	----	209	716	1172	2438	5304	----
	2	140	603	975	1644	3495	6423	127	566	984	1711	3449	6624
	3	87	370	685	1041	2036	3892	81	358	690	1057	2072	3892
C_g	0	433	1516	3285	5320	11,840	19,380	495	1539	3313	5410	12,410	19,570
	1	417	1482	2751	4810	9650	----	406	1389	2774	4730	10,290	----
	2	273	1169	1892	3190	6780	12,460	247	1099	1908	3320	7080	12,850
	3	168	718	1328	2020	3950	7550	158	695	1339	2050	4020	7550
C_1	0	35.5	37	30.8	31.7	34.0	32.4	33.8	33.5	30.8	30.4	33.3	32.8
	1	35.4	37.5	33.6	34.1	35.0	----	39.4	34.1	33.6	32.4	35.1	----
	2	32.3	39.5	37.1	36.4	37.6	38.1	39.9	35.7	37.1	35.7	37.1	39.3
	3	32.9	39.4	38.3	37.6	39.6	39.6	39.9	37.7	38.3	37.3	39.6	39.6
F_I	----	0.89											
F_D	0	0.03	0.03	0.02	0.02	0.01	0.01	0.03	0.03	0.02	0.02	0.01	0.01

Flow Rate Q

Sub-critical state with: $P2 > \frac{P1}{2}$

$$Q = 0.525 \cdot C_g \cdot P1 \cdot \text{sine}\left(\frac{3417}{C1} \cdot \sqrt{\frac{P1-P2}{P1}} \right)^{\circ}$$

N.B. the sine argument is expressed in sexagesimal degree.

Critical state with: $P2 \leq \frac{P1}{2}$

$$Q = 0.525 \cdot C_g \cdot P1$$

For other gases with different densities, the flow rate calculated with the above formulas must be multiplied by the correction factor:

$$F = \sqrt{\frac{0.6}{d}}$$

GAS	RELATIVE DENSITY, d	FACTOR, F
Air	1	0.78
City gas	0.44	1.17
Butane	2.01	0.55
Propane	1.53	0.63
Nitrogen	0.97	0.79
Carbon dioxide	1.52	0.63
Hydrogen	0.07	2.93

DN Sizes

Calculate the required C_g with the following formula:

Sub-critical with: $P2 > \frac{P1}{2}$

$$C_g = \frac{Q}{0.525 \cdot P1 \cdot \text{sine}\left(\frac{3417}{C1} \cdot \sqrt{\frac{P1 - P2}{P1}} \right)^{\circ}}$$

N.B. The sine argument is expressed in sexagesimal degree.

Critical state with: $P2 \leq \frac{P1}{2}$

$$C_g = \frac{Q}{0.525 \cdot P1}$$

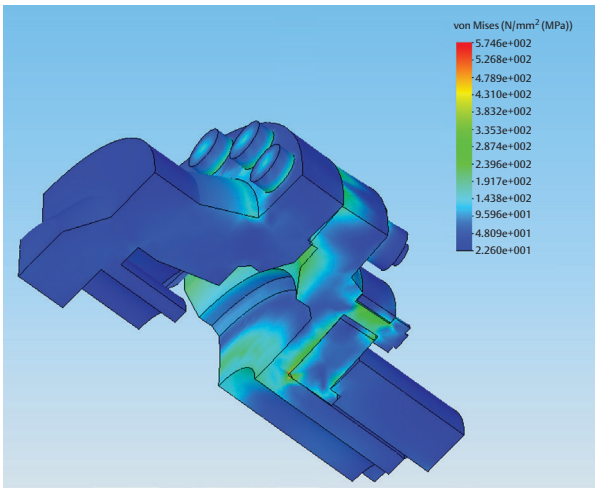
N.B. The above formulas apply to natural gas flow rate only. If the flow rate value (Q) refers to other gasses, divide it by the correction factor F.

Select the diameter of the regulator with C_g higher than calculated value.

After finding the DN of the regulator, check that gas speed on the seat does not exceed 120 m/sec, using the following formula:

$$V = 345.92 \cdot \frac{Q}{DN^2} \cdot \frac{1 - 0.002 \cdot P_u}{1 + P_u}$$

V = Velocity (m/s)
345.92 = Numerical constant
Q = Flow rate under standard conditions (Stm^3/h)
DN = Regulator nominal diameter (mm)
P_u = Inlet pressure in relative value (bar)



Advanced Design Tools

Types EZH and EZHSO Regulators

Slam-Shut Device

The optional slam-shut device can provide either overpressure or overpressure and underpressure protection by completely shutting off the flow of gas to the downstream system. The slam-shut has a mechanism box and a manometric device. The manometric device is a spring and diaphragm actuator. Its movement activates the detection stage of the mechanism box.

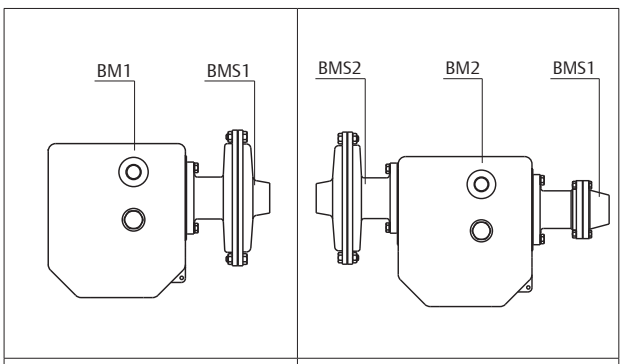
The shutoff is a two-stage process, the detection stage and the power stage. This separation between detection stage and power stage provides maximum precision, alleviating many false trips caused by environmental vibrations.

The slam-shut device includes a bypass valve that will allow pressure to be equalized when resetting the device. Once the slam-shut device has been tripped, it must be manually reset.

For more information about the Types EZH and EZHSO with a slam-shut device, contact the local Sales Representative or Sales Office.

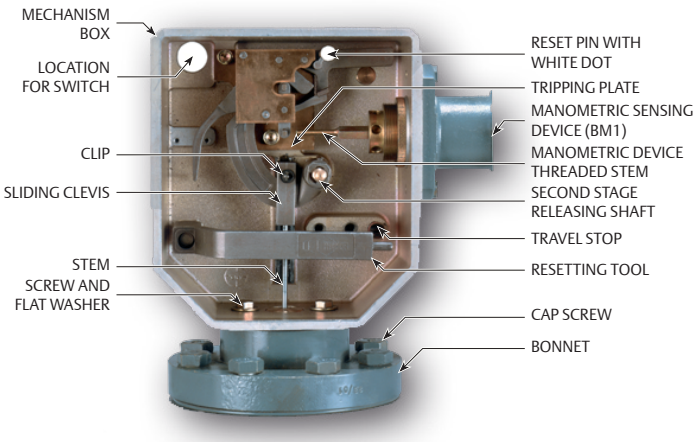
Spring Adjustment Ranges (BMS)

BMS			MAX. ONLY			MIN. ONLY			MAX. AND MIN.		INTERVALS Δ1 AND Δ2	
Type	Size	PMS box, bar	W_{dso} Setting, bar			W_{dsu} Setting, bar			W_{dsu} Setting, bar			
			Max. low pt. possible	Recommended Range		Min. low pt. possible	Recommended Range		Min. low pt. possible	Max. high pt.	Δ1 (bar)	Δ2 (bar)
				Max. low pt.	Max. high pt.		Min. low pt.	Min. high pt.				
Diaphragm	162	10	0.010	0.015	0.035	0.010	0.015	0.035	0.010	0.035	0.004	0.010
			0.025	0.040	0.080	0.025	0.040	0.080	0.025	0.080	0.005	0.025
			0.045	0.080	0.140	0.045	0.080	0.150	0.045	0.140	0.010	0.050
			0.070	0.070	0.240	0.070	0.070	0.240	0.070	0.240	0.014	0.060
			0.115	0.140	0.380	0.115	0.150	0.400	0.115	0.380	0.018	0.150
			0.140	0.300	0.750	0.140	0.300	0.650	0.140	0.750	0.050	0.350
			0.250	0.600	1.3	0.250	0.600	1.15	0.230	1.3	0.080	0.600
			0.450	1.2	2.3	0.450	1.1	2.0	0.450	2.3	0.170	1.1
	071	20	1.0	2.0	5.1	1.0	2.0	4.7	1.0	5.1	0.350	2.5
			2.1	4.0	11.0	2.1	4.0	9.5	2.1	11.0	0.700	5.5
			4.0	8.0	16.0	4.0	8.0	14.4	4.0	16.0	1.6	10.0
Piston	027	100	16.0	16.0	22.0	16.0	16.0	19.0	*Not possible with only 1 BMS*		3.0	----
			22.0	22.0	40.0	19.0	19.0	38.0			6.5	
	017	100	40.0	40.0	55.0	38.0	38.0	50.0			7.0	
			55.0	55.0	100.0	50.0	50.0	90.0			12.0	
Bellows	236	35	5.5	11.0	22.0	5.5	11.0	16.0	5.5	22.0	1.6	10.0
			8.3	16.0	35.0	8.3	16.0	28.0	8.3	35.0	2.5	20.0
	315	72	17.5	35.0	72.0	17.5	28.0	65.0	17.5	72.0	5.0	33.0



Mechanism Box (BM1) with One Manometric Sensing Device (BMS1)

Mechanism Box (BM2) with Two Manometric Sensing Devices (BMS1 and BMS2)



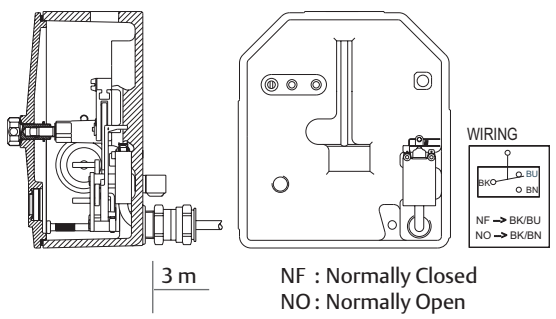
Type OS2 Internal Parts

Applications and Construction Guide

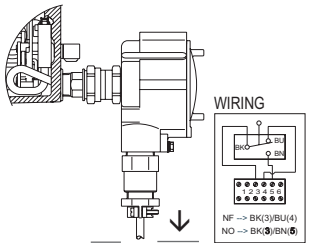
APPLICATION	MECHANISM BOX		MANOMETRIC SENSING DEVICE	
	BM1	BM2	BMS1	BMS2
Overpressure Shut-off (OPSO)	Yes	No	Yes	No
Underpressure Shut-off (UPSO)	Yes	No	Yes	No
Overpressure Shut-off (OPSO) and Underpressure Shut-off (UPSO)	Yes	No	Yes(1)	No
Overpressure Shut-off (OPSO) and Underpressure Shut-off (UPSO)	No	Yes	Yes(2)	Yes
Overpressure Shut-off (OPSO), Overpressure Shut-off (OPSO) and Underpressure Shut-off (UPSO)	No	Yes	Yes	Yes

1. When using one manometric sensing device (BMS1) for both overpressure and underpressure shutoff, make sure that the difference between set pressures falls within the maximum range shown in above table "Spring Adjustment Ranges".
2. When using two manometric sensing devices (BMS1 and a BMS2), the BMS1 can only be used for high trip.

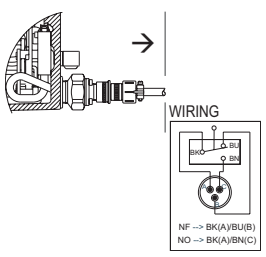
VERSIONS OF EXPLOSION PROOF LIMIT SWITCHES								
Versions	Installment	Tightness	Connection	Mechanical connections	Electrical connections			
					Common	NF	NO	Connection
C0		IP 68	Without	Cap 1/2 NPT				
C1	Explosion proof	IP 68	Explosion proof	3 m wire	Black	Blue	Brown	Wires
C2	Explosion proof	IP 65	Explosion proof	Connector box explosion proof PE explosion proof	3	4	5	Screwed wiring
C3	Intrinsically safe	IP 68	Explosion proof	Intrinsically safe tight-shut connector	A	B	C	Welded wiring



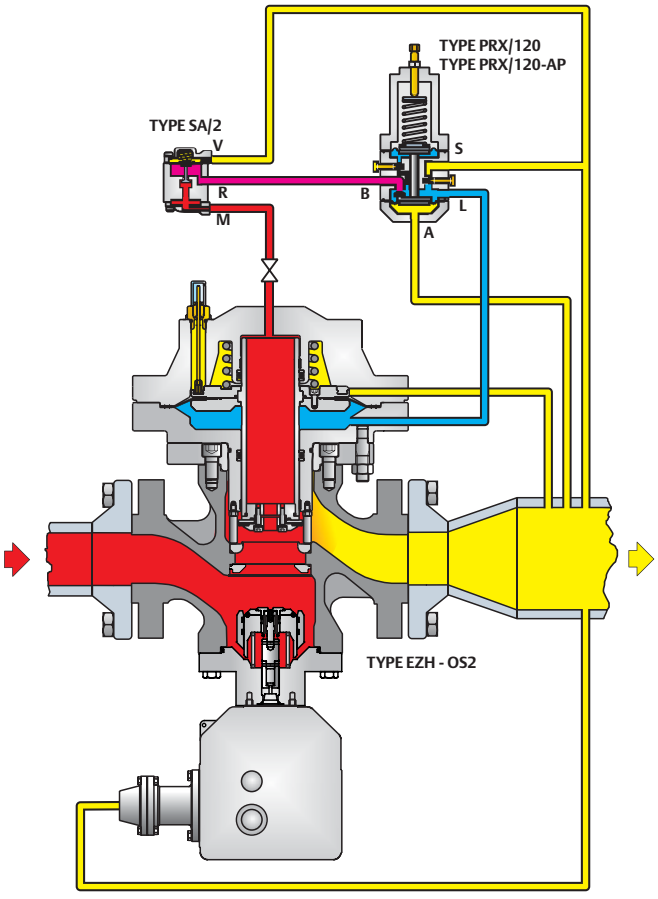
C1 Contact Version
Explosion proof connection with cable and tight-shut packing gland



C2 Contact Version
Explosion proof connection with explosion proof connector box



C3 Contact Version
Explosion proof connection with tight-shut connector for intrinsically safe



Types EZH and EZHSO Regulators

Pilots

The Types EZH and EZHSO pressure reducing regulator includes a PRX Series pilot mounted on the Types EZH and EZHSO main valve for pressure reducing or wide-open monitoring applications.

PRX Series pressure reducing pilots have the ability to handle a wide range of set points from 1 to 80 bar:

Type PRX/120

Outlet pressure range of 0.5 to 42 bar. The Type PRX/120 can be used as the pilot on single stage pressure reducing regulators or as the monitor pilot or as the working pilot in wide-open monitor systems.

Type PRX/120-AP

Outlet pressure range of 30 to 80 bar. The Type PRX/120-AP can be used as the pilot on single stage pressure reducing regulators or as the monitor pilot or as the working pilot in wide-open monitor systems.

Type PRX/125

Identical to the Type PRX/120 except the restriction screw is removed. The Type PRX/125 can only be used as the monitor override pilot on working monitor applications.

Type PRX/125-AP

Identical to the Type PRX/120-AP except the restriction screw is removed. The Type PRX/125-AP can only be used as the monitor override pilot on working monitor applications.

The Type SA/2

Pilot supply filter regulator, provides a constant supply pressure to the PRX Series pilot that is 3 bar over set pressure. The Type SA/2is equipped with a 5µ filtering degree filter and is suitable for heating.

PRX/ Series

APPLICATION			ALLOWABLE PRESSURE PS, bar	SET RANGE W_d, bar	BODY AND COVERS MATERIAL
Regulator or Monitor Type	Operating Monitor Type				
	Regulator	Monitor			
PRX/120	PRX/120	PRX/125	100	0.5 - 42	Steel
PRX-AP/120	PRX-AP/120	PRX-AP/125		30 - 80	

1/4 NPT female threaded connections

The Type SA/2 pressure pre-reducer must be used with PRX/ Series pilots.

Type SA/2

TYPE	ALLOWABLE PRESSURE PS, bar	SUPPLIED PRESSURE	BODY AND COVERS MATERIAL
SA/2	100	3 bar + Downstream pressure	Steel

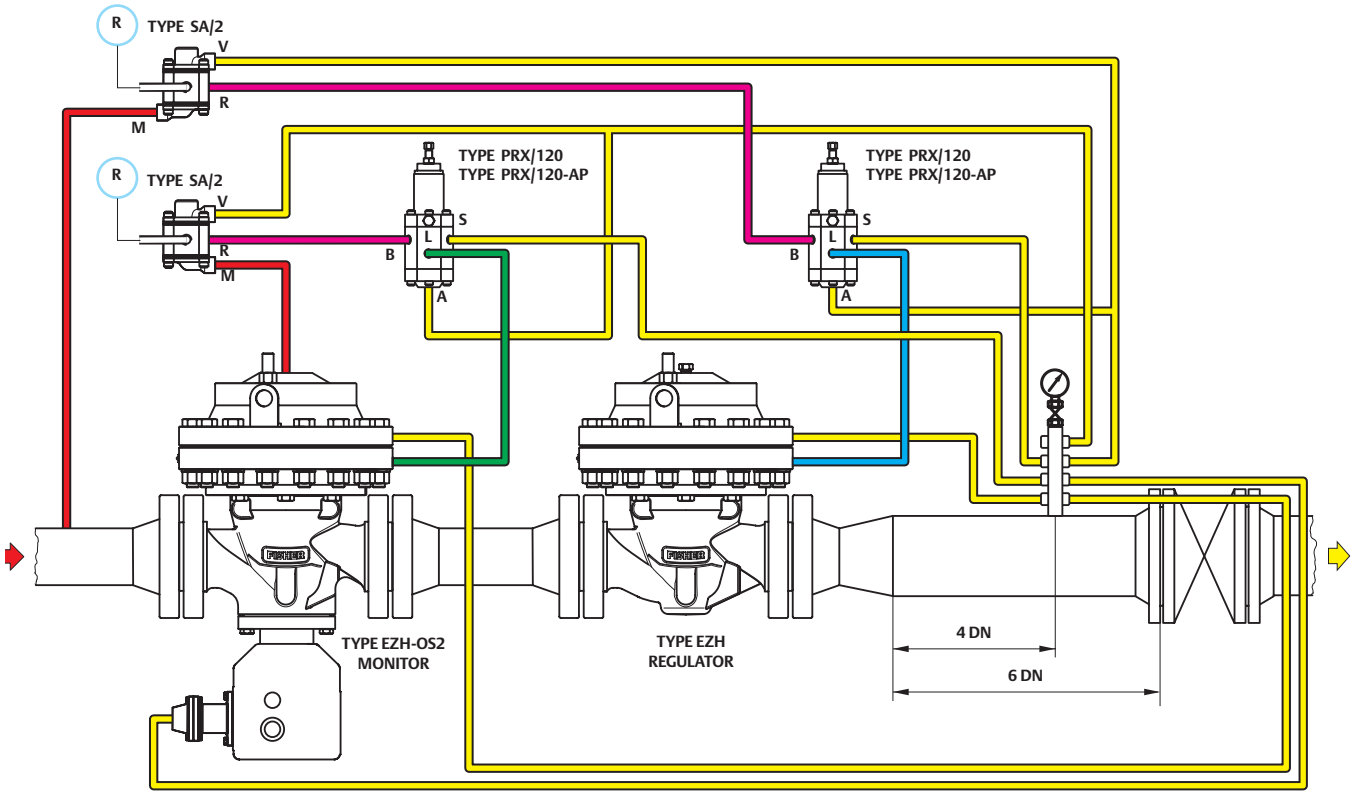
1/4 NPT female threaded connections

Booster Valves

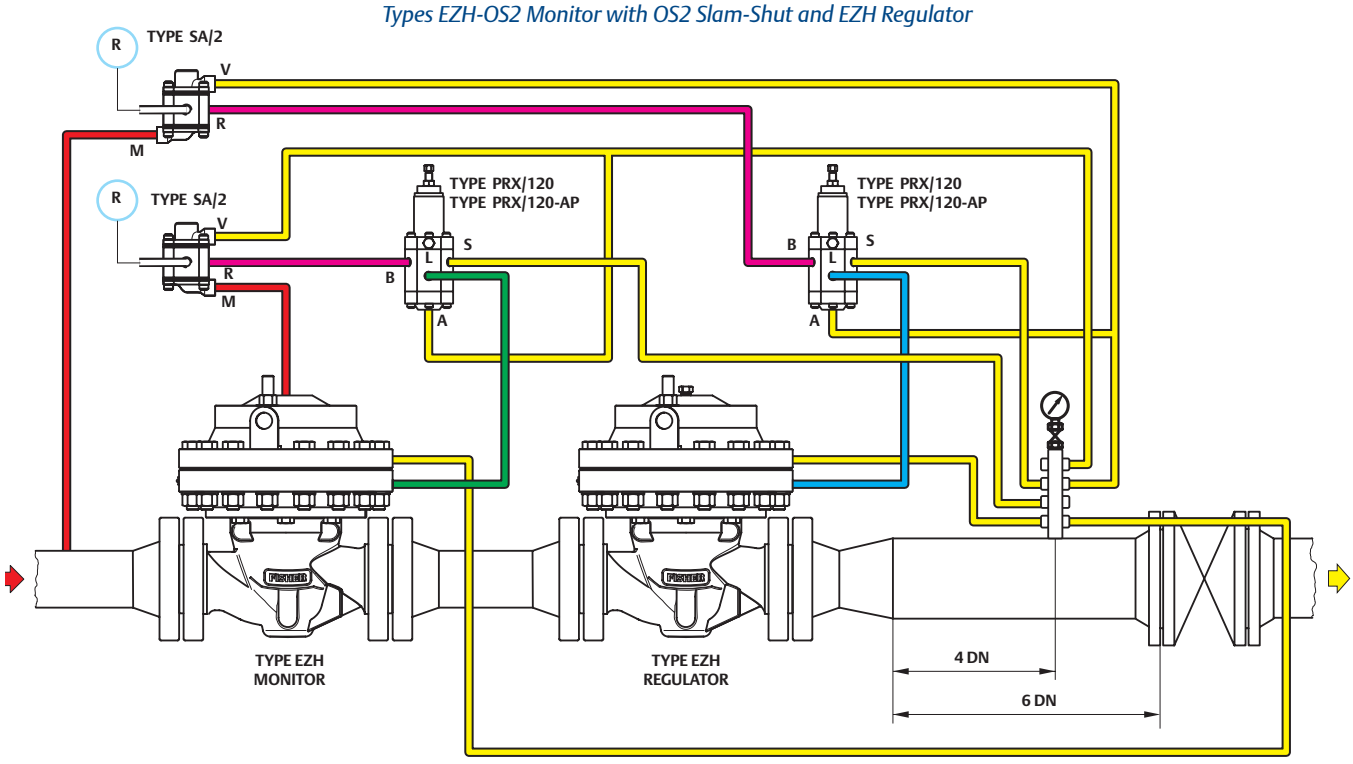
MODEL	ALLOWABLE PRESSURE PS, bar	SET RANGE W_d, bar	BODY AND COVERS MATERIAL
PRX/131	100	0.5 - 40	Steel
PRX-AP/131		30 - 80	

1/4 NPT female threaded connections

Examples of Connections



Types EZH-OS2 Monitor with OS2 Slam-Shut and EZH Regulator



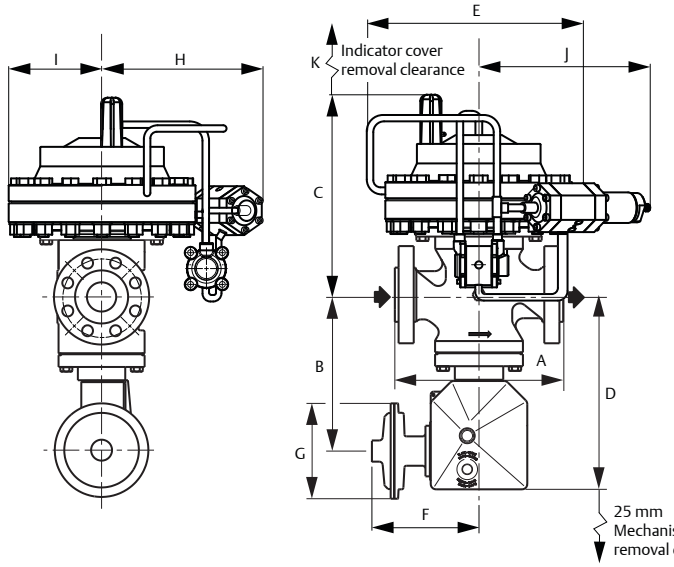
Types EZH Monitor and EZH Regulator

Inlet pressure
Regulator motorization pressure
Monitor motorization pressure
Stabilized pressure
Outlet pressure
(R) To the heating system

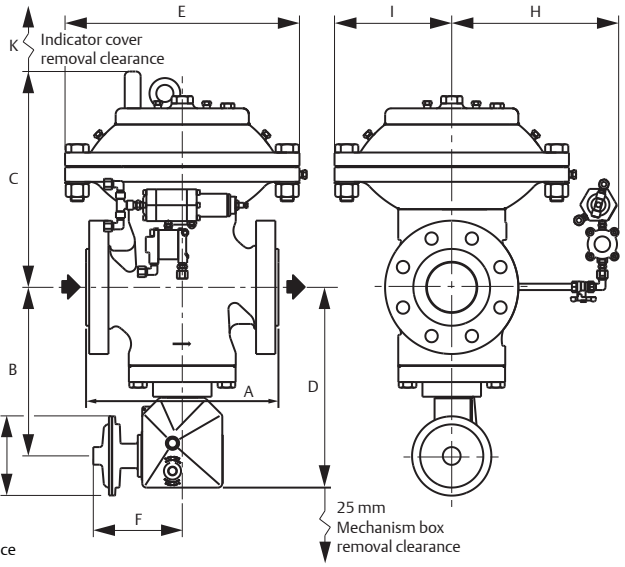
Types EZH and EZHSO Regulators

Overall Dimensions and Weights

DN 25, 50 and 80

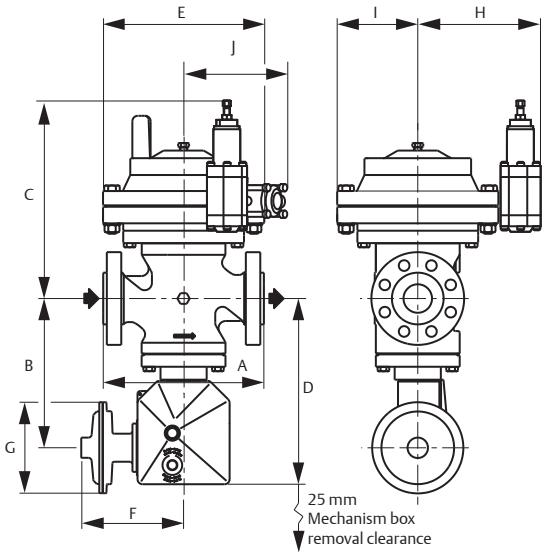


DN 100, 150 and 200



Types EZH OS2 and EZHSO OS2 (Horizontal Position)

DN 25, 50, 80, 100, 150 and 200



Types EZH OS2 and EZHSO OS2 (Vertical Position)

DN	WEIGHT, kg		
	CL150 / PN 16B	CL300 / PN 25B / PN 40B	CL600
25	49	50	51
50	81	83	85
80	168	175	177
100	237	250	265
150	680	690	696
200	878	888	894

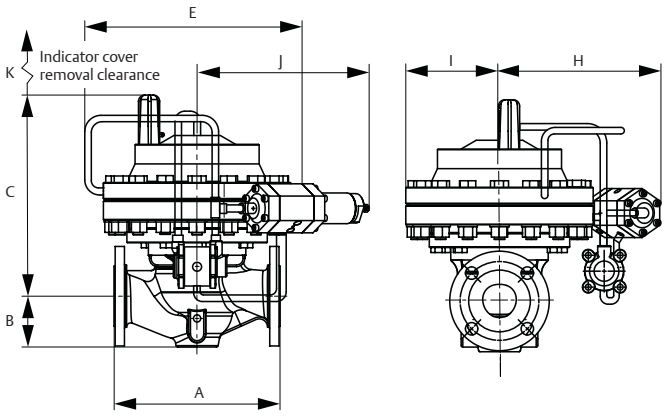
For Type EZHSO OS2 version add 1 kg.

DN	OVERALL DIMENSION, mm					
	F			G		
	Diaphragm	Piston	Bellows	Diaphragm	Piston	Bellows
25	181	204	223	162	71	74
50						
80						
100						
150						
200						

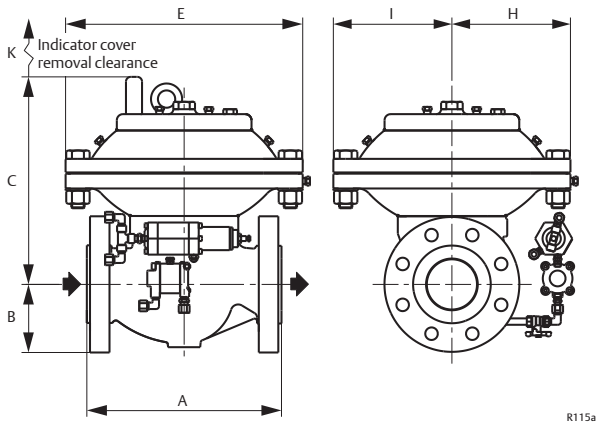
DN	MAXIMUM OVERALL DIMENSION, mm															
	A						B	C		D	E	H		I	J		K
	CL150	CL300	CL600	PN 16B	PN 25B	PN 40B		Type PRX Horizontal	Type PRX Vertical			Type PRX Horizontal	Type PRX Vertical		Type PRX Horizontal	Type PRX Vertical	
25	184	197	210	193.5			250	290	310	315	320	260	250	113	280	190	38
50	254	267	286	254	267		265	320	320	330	380	310	310	144	270	190	
80	298	317	337	310	317		301	400	400	366	500	390	390	200	270	270	51
100	352	368	394	350	368		345	442	427	410	580	394	394	240	----	140	
150	451	473	508	451	473		330	635	635	395	700	432	432	330	----	457	70
200	543	568	610	543	568		475	724	724	579	700	432	432	300	----	457	70

Overall Dimensions and Weights

DN 25, 50 and 80



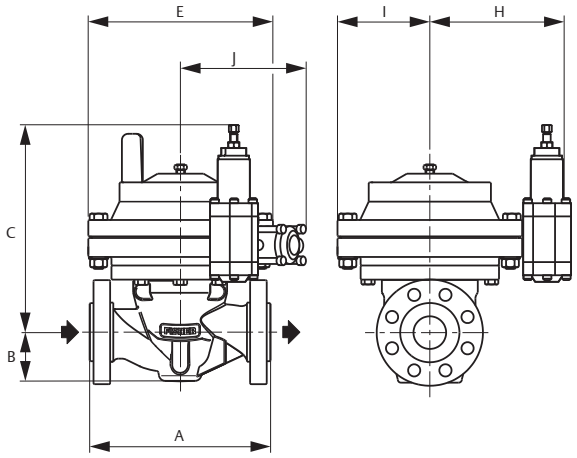
DN 100, 150 and 200



R115a

Types EZH and EZHSO (Horizontal Position)

DN 25, 50, 80, 100, 150 and 200



Types EZH and EZHSO (Vertical Position)

DN	WEIGHT, kg		
	CL150 / PN 16B	CL300 / PN 25B / PN 40B	CL600
25	38	39	40
50	71	74	75
80	145	151	153
100	211	224	239
150	646	656	662
200	832	842	850

For Type EZHSO version add 1 kg.

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DN	MAXIMUM OVERALL DIMENSION, mm															
	A						B	C		E	H		I	J		K
	CL150	CL300	CL600	PN 16B	PN 25B	PN 40B		Type PRX Horizontal	Type PRX Vertical		Type PRX Horizontal	Type PRX Vertical		Type PRX Horizontal	Type PRX Vertical	
25	184	197	210	193.5			62	290	310	320	260	250	113	280	190	38
50	254	267	286	254	267		83	320	320	380	310	310	144	270	190	
80	298	317	337	310	317		105	400	400	500	390	390	200	270	270	51
100	352	368	394	350	368		137	442	427	580	394	394	240	----	140	
150	451	473	508	451	473		135	635	635	700	432	432	330	----	457	70
200	543	568	610	543	568		210	724	724	700	432	432	330	----	457	70

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