Spring-Loaded, Pressure-Reducing Regulators—TBRS16 Series

Features

- Spring-loaded pressure control
- Diaphragm sensing mechanism
- Ultrasensitive with millibar control
- Balanced poppet
- 316L stainless steel materials of construction
- External feedback
- Adjustable from 0.07 psig (2.0 in. H_2O, 5 mbar) pressure
- Supply pressure effect ratio: 1:3000

Options

- Factory set and locked
- Special cleaning to ASTM G93 Level C

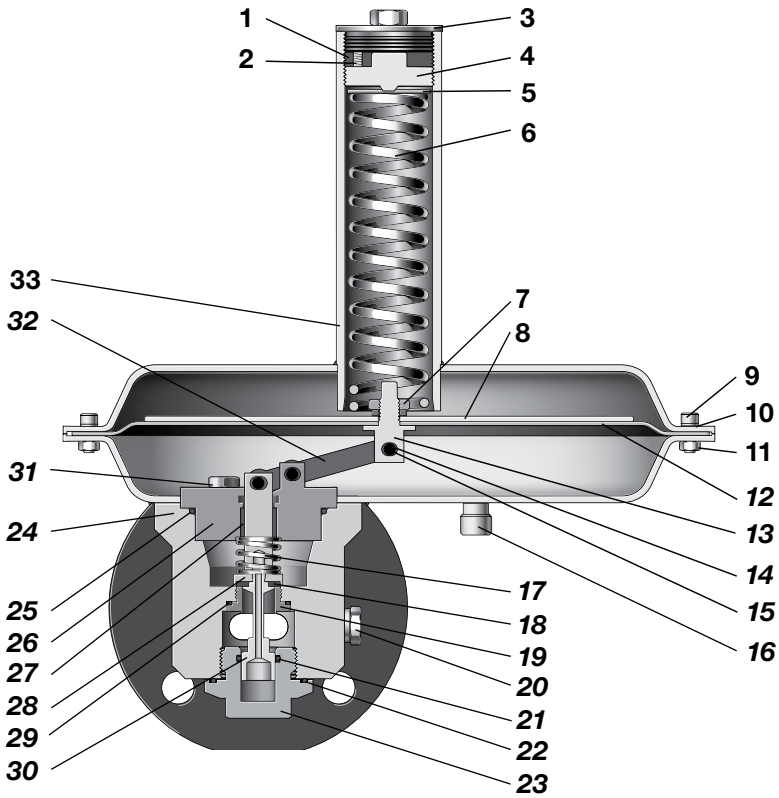
Technical Data

Maximum Inlet Pressure psig (bar)	Maximum Outlet Control Pressure psig (in. H_2O, mbar)	Temperature Range °F (°C)	Flow Coefficient (C_v)
232 (16.0)	2.9 (80, 200)	–4 to 212 (–20 to 100)	6.9

Seat Diameter in. (mm)	Inlet and Outlet Connections	Gauge / EF Connections	Weight lb (kg)
0.75 (19.0)	2 in. ASME or DIN flanges	Gauge: 1/4 in. NPT External feedback: 1/2 in. NPT	25 (14.3)

Materials of Construction

TBRS16 Series Regulator

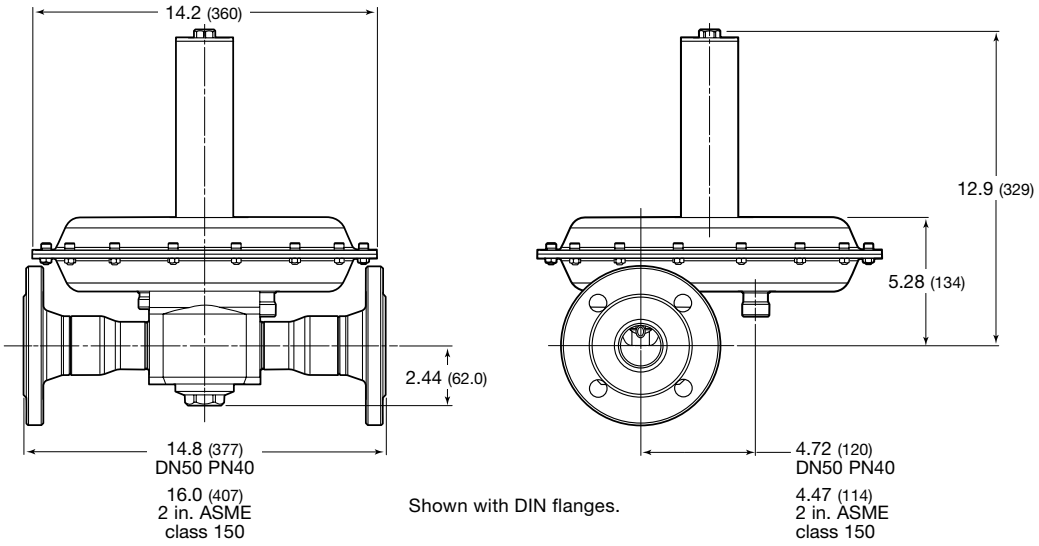


Component	Material / Specification
1 Lock screw	A2-70
2 Set screw	A2
3 Cover	316L SS / A479 or EN10088
4 Adjusting screw	
5 Spring guide	
6 Set spring	302 SS / A240
7 Lock nut	A4
8 Diaphragm plate	316L SS / A479 or EN10088
9 Socket-head cap screw	A4-80
10 Lock washer	A2
11 Nut	
***12** Diaphragm / liner*	*PTFE / butyl*
***13** Diaphragm screw*	*316L SS / A479 or EN10088*
***14** Bushing*	
***15** Hex head screw*	
***16** Gauge and EF fittings*	
***17** Poppet spring*	*302 SS / A240*
***18** Poppet insert*	*431 SS / A276*
***19** Seat*	*316L SS / A479 or EN10088*
***20** Plug*	
***21** Poppet O-ring*	*EPDM, FFKM, FKM, nitrile*
***22** Plug O-ring*	
***23** Body plug*	*316L SS / A479 or EN10088*
***24** Body assembly (body, reducers, flanges, lower dish)*	
***25** Holder O-ring*	*EPDM, FFKM, FKM, nitrile*
***26** Valve holder*	*316L SS / A479 or EN10088*
***27** Guide bushing*	
***28** Poppet housing*	
***29** Seat seal*	*EPDM, FFKM, FKM, nitrile*
***30** Poppet*	*316L SS / A479 or EN10088*
***31** Hex head screw*	
***32** Lever*	
33 Spring housing assembly	316L SS / A479 or EN10088
Wetted lubricants: Silicone-based and synthetic hydrocarbon-based	

Wetted components listed in *italics*.

Dimensions

Dimensions, in inches (millimeters), are for reference only and are subject to change.



Flow Table

Outlet Pressure Range psig (in. H_2O, mbar)	Inlet Pressure, psig (bar)											
	14 (1.0)	29 (2.0)	43 (3.0)	58 (4.0)	72 (5.0)	87 (6.0)	101 (7.0)	116 (8.0)	130 (9.0)	145 (10.0)	159 (11.0)	174 (12.0)
	Air Flow, std ft^3/min (Nm^3/h)											
0.07 to 0.14 (2.0 to 4.0, 5 to 10)	52.9 (90)	106 (180)	159 (270)	212 (360)	265 (450)	318 (540)	371 (630)	424 (720)	530 (900)	636 (1080)	742 (1260)	848 (1440)
0.14 to 0.72 (4.0 to 20, 10 to 50)												
0.29 to 2.9 (8.0 to 80, 20 to 200)												

Inlet pressure determines the maximum flow because the outlet pressure is less than 50 % of inlet pressure, and in this situation, the gas flows through the seat at sonic velocity. This is known as critical or choked flow. Flow will not increase even if outlet pressure decreases to 0.014 psig (0.40 in. H_2O, 1.0 mbar).

Ordering Information

Build a TBRS16 series regulator ordering number by combining the designators in the sequence shown below.

1	2	3	4	5	6	7	8	9	10	11
TBRS	**FA**	16	**A**	1	**- 02**	**- 3**	**- V**	T	**V**	**- FS**

1 Series
TBRS = 232 psig (16.0 bar) maximum inlet pressure

2 Inlet /Outlet
FA = ASME B16.5 flange
FD = DIN flange

3 Size
16 = 2 in. / DN50

4 Pressure Class
A = ASME class 150
M = DN class PN16

5 Flange Facing
1 = Raised face smooth

6 Body Material
02 = 316L SS

7 Pressure Control Range
1 = 0.07 to 0.14 psig (2.0 to 4.0 in. H_2O, 5 to 10 mbar)
2 = 0.14 to 0.72 psig (4.0 to 20 in. H_2O, 10 to 50 mbar)
3 = 0.29 to 2.9 psig (8.0 to 80 in. H_2O, 20 to 200 mbar)

8 Seal Material
V = Fluorocarbon FKM
E = EPDM
F = FFKM

9 Diaphragm Material
T = PTFE

10 Seat Seal Material
V = Fluorocarbon FKM
E = EPDM
F = FFKM

11 Option
FS = Factory set and locked
G93 = ASTM G93 Level C-cleaned