

J48Z & P

Zero Regulator and
Proportionator
Nominal Diameter $\frac{3}{4}$ " – 2"



Applications

- Industrial

This product is discontinued!

Brief information

Operation: The J48 is supplied in two special versions, J48Z Zero Regulator and the J48P Proportionator. Both of these versions include the release spring adjustment mechanism which provides easy access for spring adjustment and routine maintenance.

J48Z Application: The J48Z Zero Regulator is utilised where burner train design creates a negative pressure on the downstream side of the regulator. In this situation, very low outlet pressures -0.75 to $+0.25$ mb (-0.3 to $+0.1$ "wg) are required. To obtain these very low pressures with a high degree of sensitivity and accuracy, a large diaphragm is incorporated, together with a low rate spring. The recommended inlet pressure for sizes up to 2" is 5 - 10mb (2" - 4" wg) and the J48Z should be preceded by a Jeavons J48 regulator set at the recommended inlet pressure.

J48P Application: The J48P Proportionator is utilised to control gas pressure in a burner train, relative to the air supply. This ensures that the air / gas ratio stays in proportion for various flow conditions. The new J48 quick release spring adjustment mechanism incorporates an "O" ring as standard. This enables the J48P to be top loaded from an external source such as the air supply. Both versions, which are designed for natural, liquefied petroleum and manufactured gases, must be installed in horizontal pipelines.

Control: The outlet pressure can be easily and accurately adjusted by turning the spring adjustment unit located under the top cap. The design of this mechanism provides virtually frictionless adjustment and eliminates "spring wind up". The complete spring adjustment mechanism can be removed easily for maintenance and spring changes.

Technical Data: Recommended inlet pressure J48Z: 5 – 10 mbar (2"-4" wg)
Maximum outlet pressure J48P: 350 mbar (5 PSIG)

Servicing: The J48Z and P have been designed for ease of access, inspection and servicing of all internal components. A standard soft spares kit is available for all sizes.

$\frac{3}{4}$ " - 1"	reference number SK4806-01
$1\frac{1}{4}$ " - $1\frac{1}{2}$ "	reference number SK4808-01
2"	reference number SK4809-01.

Main features

- Sizes $\frac{3}{4}$ ", 1", $1\frac{1}{4}$ ", $1\frac{1}{2}$ " & 2"
- Temperature range -20°C to $+70^{\circ}\text{C}$
- Threaded connections to BS EN 10226 (ISO 7) or NPT (other threads may be available upon request)
- Spring loaded
- Quick release spring adjustment
- Excellent outlet pressure control



J48Z: Zero Regulator

Maximum Capacities

All capacities in SCMH 0.64 s.g.

MAXIMUM CAPACITY VERSUS PRESSURE DROP

With zero gauge outlet pressure the pressure drop is measured when the regulator valve is virtually fully open for each set flow rate.

PRESSURE DROP (mbar)

Size FLOWRATE (SCMH) "K" Factor	3/4"	1"	1 1/4"	1 1/2"	2"
5	0.50	0.28	0.08	0.07	0.02
10	2.00	1.10	0.32	0.27	0.08
20	7.99	4.40	1.27	1.07	0.33
30	-	9.88	2.86	2.40	0.75
40	-	-	5.08	4.27	1.33
60	-	-	-	9.58	2.99
80	-	-	-	-	5.30
100	-	-	-	-	8.28
120	-	-	-	-	-

INLET PRESSURE VERSUS MAXIMUM CAPACITY

With zero gauge outlet pressure the maximum capacity is measured when the regulator valve is virtually full-open for each set inlet pressure.

CAPACITY (SCMH)

Size FLOWRATE (SCMH) "K" Factor	3/4"	1"	1 1/4"	1 1/2"	2"
1.0	7.1	9.5	17.7	19.3	34.7
2.0	10.0	13.5	25.1	27.4	49.1
3.0	12.2	16.5	30.7	33.5	60.1
4.0	14.1	19.1	35.5	38.7	69.4
5.0	15.8	21.3	39.7	43.3	77.7
8.0	20.0	27.0	50.3	54.8	98.3
10.0	22.4	30.2	56.2	61.3	110.0

The capacities on the previous pages are given in SCMH of natural gas (0.64 SG).
For other gases multiply the capacity by:

$$\sqrt{\frac{0.64}{\text{gas sg}}}$$

GAS	SG
Air	1.00
Towns Gas	0.50
Propane	1.53
Propane / Air	1.20

If the tables above do not provide sufficient information a formula is provided to calculate the fully open capacity for all sizes of zero regulator at any pressure drop.

The full open formula is: $Q = K \sqrt{(P_i^2 - P_o^2)}$

Where:

- Q = Flow rate corrected to standard pressure and temperature conditions (SCMH).
- P_i = Inlet Pressure (mbar absolute units)
- P_o = Outlet Pressure (mbar absolute units)
- K = Flow constant for each size of regulator (see table).

J48P: Proportionator

Full Open Capacities

All capacities in SCM/H 0.64 s.g.

SIZE: ¾"

"K" Factor = 0.157

	OUTLET PRESSURE (mbar)				
	5	7.5	10	15	20
Pin mbar					
15	22	-	-	-	-
20	28	25	-	-	-
25	32	30	28	-	-
35	39	37	36	32	-
53	50	48	47	44	41
70	58	57	56	53	51
105	73	72	71	69	67
140	85	84	83	82	80
210	106	106	105	104	103
350	142	142	141	140	140

SIZE: 1"

"K" Factor = 0.212

	OUTLET PRESSURE (mbar)				
	5	7.5	10	15	20
Pin mbar					
15	30	-	-	-	-
20	37	34	-	-	-
25	43	40	37	-	-
35	53	50	48	43	-
53	67	65	63	60	56
70	78	77	75	72	69
105	98	97	95	93	90
140	115	114	113	110	108
210	143	143	142	140	139
350	192	191	191	189	188

SIZE: 1¼"

"K" Factor = 0.394

	OUTLET PRESSURE (mbar)				
	5	7.5	10	15	20
Pin mbar					
15	56	-	-	-	-
20	69	63	-	-	-
25	80	75	69	-	-
35	98	94	90	80	-
53	125	121	118	111	104
70	146	143	140	134	128
105	182	180	178	173	168
140	213	211	210	206	202
210	267	266	264	261	258
350	357	356	355	353	350

SIZE: 1½"

"K" Factor = 0.430

	OUTLET PRESSURE (mbar)				
	5	7.5	10	15	20
Pin mbar					
15	61	-	-	-	-
20	75	69	-	-	-
25	87	82	76	-	-
35	107	102	98	88	-
53	136	132	129	121	113
70	159	156	153	146	140
105	199	196	194	189	184
140	233	231	229	224	220
210	291	290	288	285	281
350	389	388	387	385	382

SIZE: 2"

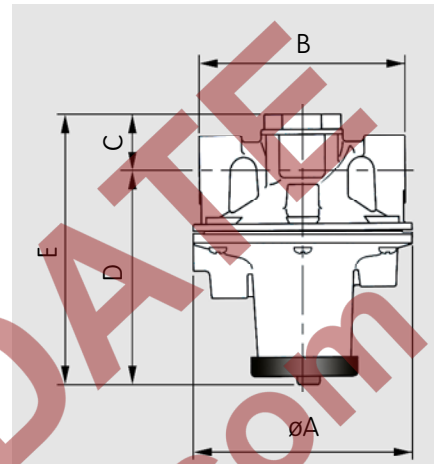
"K" Factor = 0.770

	OUTLET PRESSURE (mbar)				
	5	7.5	10	15	20
Pin mbar					
15	110	-	-	-	-
20	135	123	-	-	-
25	156	146	136	-	-
35	192	184	175	157	-
53	244	237	231	217	203
70	285	279	274	263	251
105	356	352	348	339	330
140	417	414	410	402	395
210	522	519	517	511	505
350	698	696	694	690	685

J48Z & P: Zero and Proportionator

Dimensions and Weights

SIZE	A	B	C	D	E	Weight (Kg)
3/4" & 1"	134	125	34	132	166	1.0
1 1/4" & 1 1/2"	185	155	45	149	194	1.9
2"	234	200	52	167	219	3.1



Material Specifications

A summary of the material specification for the J48Z & P is given for reference. All material has been selected to provide maximum durability and reliability in service.

Components	Specification
Body, cover, spring adjusting bush, spring adjusting screw and bottom plug.	Aluminium Alloy
Top cap, locking lever, spring holder, diaphragm spacer, valve spacer and valve disc holder.	Acetal Resin (Top cap and locking lever UV stabilised)
Diaphragm plate.	Mild steel
Main diaphragm, secondary diaphragm, valve disc and "O" rings.	Nitrile (Buna)
Springs	Carbon Steel
Impulse tube	Brass

Quality:

Elster Jeavons is committed to a programme of continuous quality enhancement. All equipment designed and manufactured by the Elster-Instromet group benefits from the group's quality assurance standards which are approved to EN ISO9001:2008.

Loading Springs

All springs are colour coded for ease of identification.

3/4" & 1"	1 1/4" & 1 1/2"	2"
J4806-125 -	J4806-020 Green	J4806-020 Green

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