Gas Pressure Regulator Series BD 240

Honeywell

For Light Commercial and Industrial Applications.

Designed to provide accurate pressure reduction, BD 240 is primarily utilized for commercial, industrial and multi-installation applications. The gas pressure regulator is equipped with a spring-loaded measuring unit and is available in various options for specific applications, especially a fixed factor billing model for PFM applications that ensures outlet pressure accuracy to +/- 1% absolute pressure. The BD 240 is supported by Honeywell's global expertise and unmatched local support capabilities.

Proven Technology. Superior Performance.

Key Features

Introduction

Specifically designed for safe, accurate pressure reduction for gas service to domestic, light commercial and light industrial applications. The Type 240 are high pressure direct acting, diaphragm operated regulators. Pressure reduction on relatively low flow rates up to 2,600 scfh or 75 m^3/hr. Certified to Canadian Standard CAN/CGA 6.18. Use with confidence on any non-corrosive natural and manufactured gases.

Features

- Available on a wide range of body connections from ¾" to 1½"
- Available with full internal relief, limited internal relief or without internal relief valve
- Body and vent available in any orientation
- Large inlet pressure range
- Wide outlet pressure range up to 3 psig
- Wide capacity range
- Available with Over (OPCO) or Over & Under (UPCO/OPCO) Pressure Safety Devices
- Ease of maintenance
- Also available in a pilot loaded version.

Technical Specifications
Applications, Features, Technical Data

Materials of Construction	
Component	**Material**
Body	Straight Body—Dutile Iron
Diaphragm Casings	Die Cast Aluminum
Diaphragm	Molded Nitrile Rubber with Nylon Re-Inforcing
Valve Seat	Buna N Rubber
Diaphragm Plates	Steel
Orifice	Aluminum, Brass or Stainless Steel
Fasteners	Steel
Vent Screen	Stainless Steel
Top Cap	Cast Aluminum

Body Sizes	
Straight	**Straight**
Inlet ½," ¾," 1"	Inlet 1¼," 1½"
Outlet ½," ¾," 1"	Outlet 1¼," 1½"
Connections Available with BSP or NPT Threads	Connections to ASA or PN Standards

Weights	
With Straight Body	4.63 lbs/2.1 kg
With OPCU	Add 1.1 lbs/0.5 kg
With OPCU/OPCO	Add 1.76 lbs/0.8 kg

Ambient Temperature Range
-40°F to 140°F/-40°C to 60°C

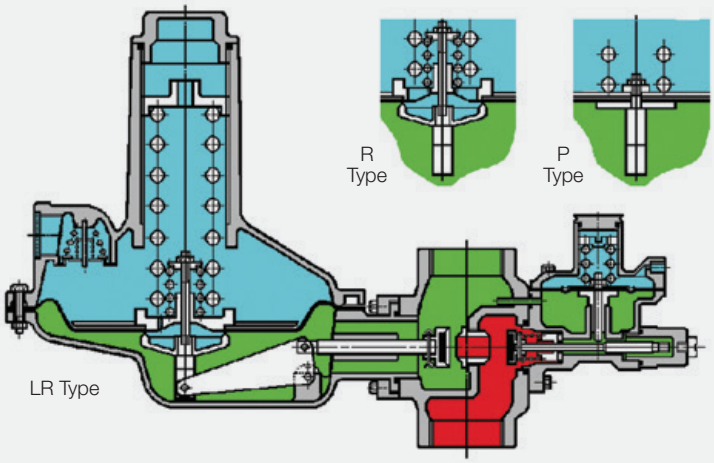
Spring Selection & Relief Capacity		
Spring	**Set Point**	**Relief Pressure Range (mbar)**
126	4"-8" wg	15-20
131	6"-14" wg	18-35
127	10"-17" wg	25-42
392	16"-30" wg	39-75
393	1-2 psig	69-138
394	2-3 psig	138-207

Internal Relief Valve

There are 3 options regarding the use of an automatic Internal Relief Valve (IRV) as a means of over-pressure protection.

- P type—No Internal Relief Valve
- R type—Full Capacity Internal Relief Valve
- LR type—Limited Capacity Internal Relief Valve.

The IRV setting on the two versions, R or LR, can be adjusted independently of any outlet pressure adjustment.



Over and Under Pressure Cut-Off Valves

An intergral Over, or combined Over and Under Pressure, Cut-Off valve can be fitted to the back of the regulator body. This “OPCO,” or “UPCO/OPCO” valve will automatically close and completely shut off the gas supply should the outlet pressure rise above, or fall below, pre-determined levels. The cut-off valve will remain closed, even if the pressure is restored, until the reason for the abnormal condition is corrected and the cut-off valve is manually re-opened.

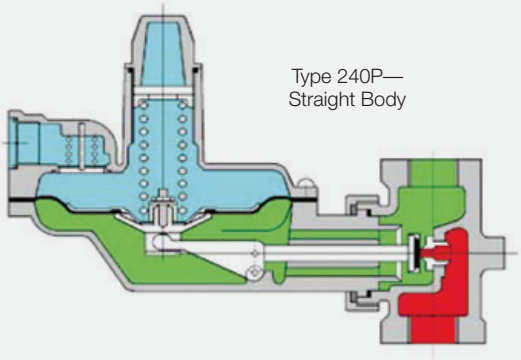
BDRMG Type 290 Over Pressure Cut-Off		BDRMG Type 290H Over Pressure Cut-Off	
Spring #	**Spring Range**	**Spring #**	**Spring Range**
861	14"-28" wg	868	2-7.5 psig
868	27"-67" wg		

BDRMG Type 309 Over & Under Pressure Cut-Off			
Over Pressure		**Under Pressure**	
Spring #	**Spring Range**	**Spring #**	**Spring Range**
1175	20"-45" wg	1138	4"-10" wg
1174	45"-90" wg		

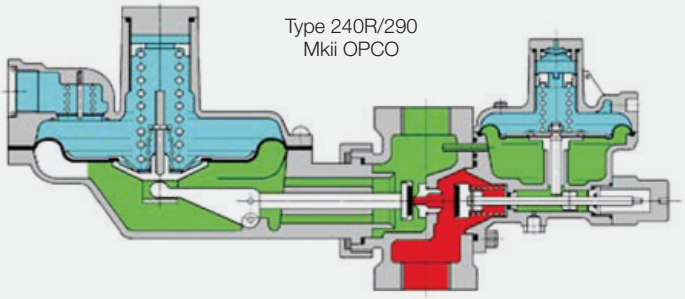
Fire Rated Version

Available with thermal version with cast steel casting rather than aluminum. The internal components are stainless steel rather than brass. If the unit was to be engulfed in a fire (up to a temperature of 650°C), the cut-off valve will limit forward gas leakage to a minimum.

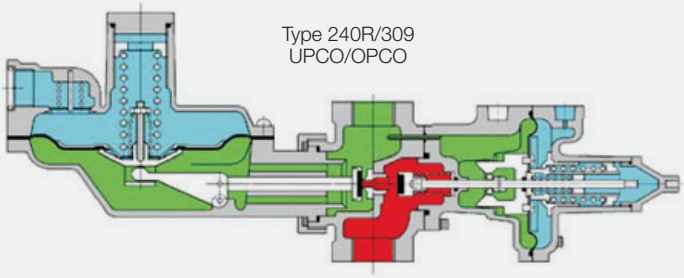
Sectional Diagrams



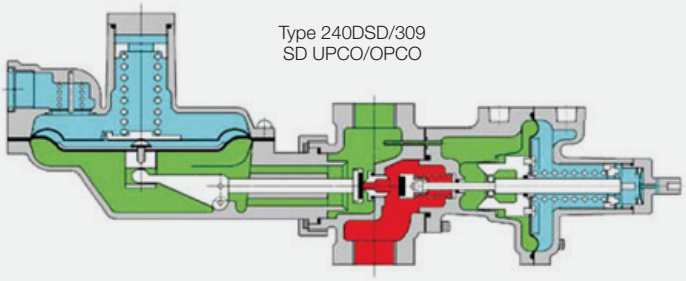
Type 240P—
Straight Body



Type 240R/290
Mkii OPCO



Type 240R/309
UPCO/OPCO

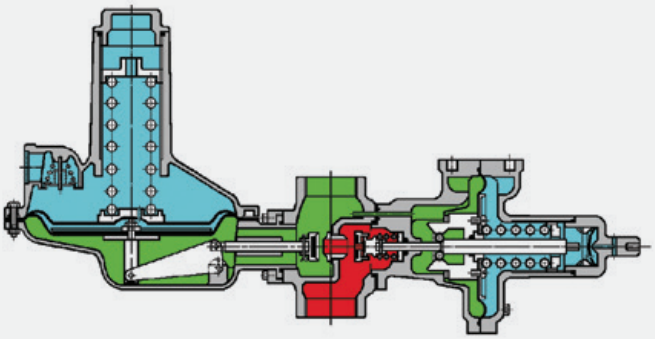


Type 240DSD/309
SD UPCO/OPCO

Application

Specifically designed for safe, accurate pressure reduction inside a building where an external vent line is not practical—commonly known as a “vent-free” regulator. Extensively used for service to commercial and industrial applications.

For natural gas and all non-corrosive gaseous media.



Characteristics

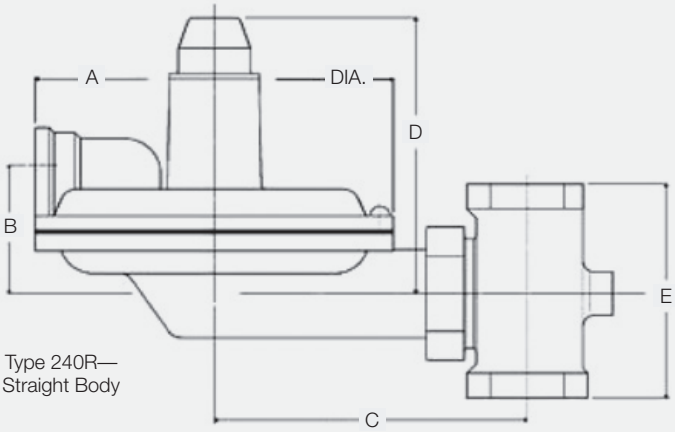
The Safety Diaphragm versions are always fitted with an intergral Over Pressure Cut-Off (OPCO) Valve, or combined OPCO and Under Pressure Cut-Off (UPCO) Valve to monitor and maintain a safe outlet pressure.

Both the regulator and the safety device (Cut-Off valve) are fitted with Safety Diaphragms (SD). These are specifically designed to restrict any leakage to atmosphere and contain the gaseous media at a safe and allowable level in the event of the main diaphragm leaking or rupturing.

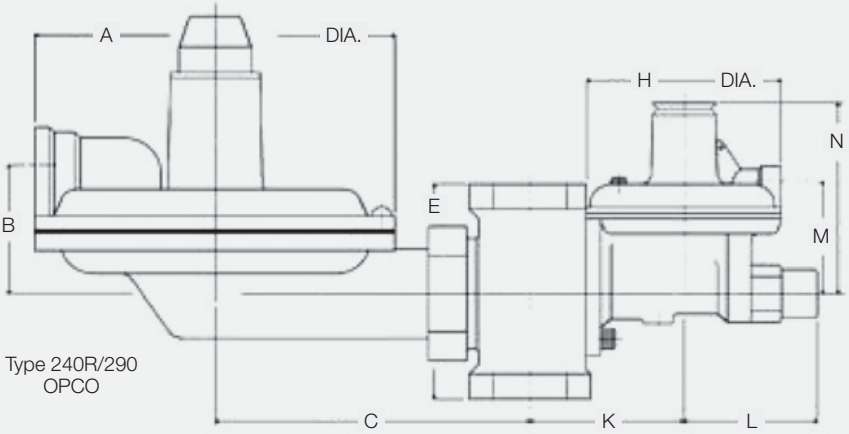
The SD version is not available with an internal relief valve because of the installation of the safety diaphragm.

The safety device are also fitted with a thermal sensor that will automatically close the Cut-Off Valve, thus shutting off the gas supply, should the unit be exposed to a temperature in excess of 206°F (97°C).

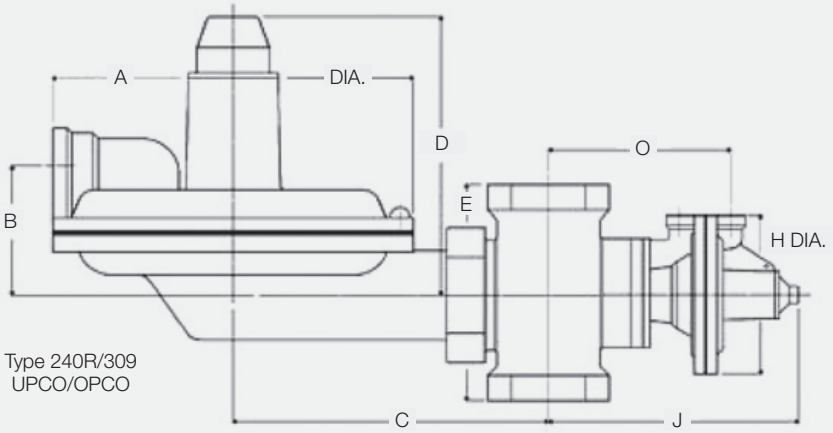
Dimensional Drawings



Type 240R—
Straight Body



Type 240R/290
OPCO



Type 240R/309
UPCO/OPCO

Vent Connection Tapped ¾"														
Body Size	A	B	C	D	E	F	G	H	J	K	L	M	N	O
½," ¾" & 1"	6¾"	2¼"	6"	5¼"	4"	2"	2"	3¾"	5¾"	4¼"	2½"	2¼"	3¾"	3¾"
1¼" & 1½"	6¾"	2¼"	6"	5¼"	5"	5"	2"	3¾"	5¾"	4¼"	2½"	2¼"	3¾"	3¾"

Typical Capacities

sm³/hour (natural gas, 0.6 sg) scfh (natural gas, 0.6 sg)

Spring No. and Outlet Pressure	Inlet Pressure		Orifice Diameter (Millimetres/Inches)																			
	mbar	psig	1/8" (3.2mm)		3.5mm		3/16" (5mm)		1/4"		7mm		5/16"		9mm		3/8"		7/16" (11mm)		1/2"	
	20	8" wc							**2.4**	85	**2.5**	90	**2.7**	95	**2.8**	100	**3.1**	108	**3.8**	135	**4.1**	144
	25	10					**1.9**	68	**2.5**	90	**2.7**	95	**3.2**	112	**3.4**	120	**3.7**	130	**4.4**	157	**4.8**	171
	45	18					**2.5**	90	**3.4**	121	**4.0**	140	**4.2**	148	**4.6**	164	**4.8**	171	**5.9**	207	**6.4**	225
	70	1 psig	**2.3**	80	**2.4**	84	**3.7**	130	**5.1**	180	**5.5**	194	**6.1**	216	**6.5**	230	**7.1**	252	**8.2**	288	**8.7**	306
Spring 126	**210**	3	**3.8**	135	**4.4**	155	**6.0**	212	**6.7**	238	**8.9**	315	**9.3**	328	**11.3**	400	**12.1**	427	**20.4**	720	**21.7**	765
Range	**345**	5	**5.5**	193	**5.8**	206	**8.8**	310	**12.2**	432	**14.4**	510	**14.8**	522	**17.5**	620	**18.5**	652	**25.5**	900	**31.9**	1125
10-20 mbar	**690**	10	**8.7**	306	**9.8**	348	**15.8**	558	**22.9**	810	**24.2**	855	**31.9**	1125	**35.4**	1250	**40.8**	1440	**44.6**	1575	**51.0**	1800
(4"-8" wc)	**1 bar**	15	**12.1**	427	**13.8**	490	**19.1**	675	**25.5**	900	**30.4**	1075	**38.2**	1350	**41.0**	1450	**44.6**	1575	**51.0**	1800		
Set Point	**1.5**	22	**14.8**	522	**19.5**	690	**38.2**	1350	**51.0**	1800	**51.0**	1800	**51.0**	1800	**51.0**	1800						
15 mbar	**2.0**	30	**16.6**	585	**26.4**	935	**44.6**	1575	**51.0**	1800	**51.0**	1800	**51.0**	1800	**51.0**	1800						
(6" wc)	**2.5**	37	**18.5**	652	**31.0**	1096	**46.7**	1650	**51.0**	1800	**51.0**	1800										
Droop	**3.0**	45	**22.9**	810	**34.7**	1226	**51.0**	1800	**51.0**	1800	**51.0**	1800										
2.5 mbar	**4.0**	60	**25.5**	900	**37.4**	1322	**51.0**	1800														
(1" wc)	**6.0**	90	**31.9**	1125	**38.3**	1354	**51.0**	1800														
	7.0	100	**38.2**	1350	**40.2**	1420																
	8.0	117	**44.6**	1575	**46.0**	1625																
	8.6	125	**51.0**	1800																		
Spring 131	**45**	18" wc					**2.2**	76	**2.8**	99	**3.0**	105	**3.6**	126	**4.0**	140	**4.1**	144	**5.1**	180	**5.4**	189
Range	**70**	1 psig	**1.8**	63	**2.4**	85	**3.1**	108	**4.1**	144	**5.0**	177	**5.1**	180	**5.7**	202	**5.9**	207	**8.0**	283	**8.3**	292
15-35 mbar	**210**	3	**3.7**	130	**4.2**	148	**6.1**	216	**6.4**	225	**9.0**	322	**8.7**	306	**109.0**	385	**11.2**	396	**16.6**	585	**17.8**	630
(6"-14" wc)	**345**	5	**5.0**	175	**6.4**	226	**8.3**	292	**11.5**	405	**14.3**	506	**13.8**	486	**16.9**	598	**17.2**	607	**25.5**	900	**26.8**	945
Set Point	**690**	10	**8.3**	292	**8.6**	303	**15.3**	540	**21.7**	765	**22.1**	780	**30.6**	1080	**31.3**	1107	**38.2**	1350	**42.1**	1485	**48.4**	1710
25 mbar	**1 bar**	15	**11.5**	405	**12.4**	439	**18.9**	666	**25.5**	900	**30.1**	1064	**38.2**	1350	**40.2**	1420	**44.6**	1575	**51.0**	1800		
(10" wc)	**1.5**	22	**14.5**	513	**19.0**	670	**36.8**	1300	**51.0**	1800	**51.0**	1800	**51.0**	1800	**51.0**	1800						
Droop	**2 to 8.6 bar**		Capacities are identical to those for Spring No. 126 given above																			
3.7 mbar	30 to 125 psig																					
(1½" wc)																						
Spring 127	**45**	18" wc							**2.2**	76	**2.4**	86	**2.8**	99	**3.0**	106	**3.2**	112	**3.9**	139	**4.2**	148
Range	**70**	1 psig					**2.8**	99	**3.8**	135	**4.4**	158	**4.7**	166	**5.2**	185	**5.5**	193	**7.5**	265	**7.6**	270
25-43 mbar	**210**	3	**3.7**	130	**5.5**	194	**6.1**	216	**6.4**	225	**8.4**	298	**8.7**	306	**10.9**	385	**11.2**	396	**16.6**	585	**17.8**	630
(10"-17" wc)	**345**	5	**5.0**	175	**6.9**	245	**8.3**	292	**11.5**	405	**13.4**	475	**13.8**	486	**16.7**	590	**17.2**	607	**25.5**	900	**26.8**	945
Set Point	**690**	10	**8.3**	292	**10.4**	368	**15.3**	540	**21.7**	765	**26.5**	935	**30.6**	1080	**36.5**	1290	**38.2**	1350	**42.1**	1485	**48.4**	1710
37.5 mbar	**1 bar**	15	**11.5**	405	**14.6**	516	**18.9**	666	**25.5**	900	**37.1**	1310	**38.2**	1350	**43.8**	1548	**44.6**	1575	**51.0**	1800		
(15" wc)	**1.5**	22	**14.5**	513	**20.1**	710	**36.8**	1300	**51.0**	1800	**51.0**	1800	**51.0**	1800	**51.0**	1800						
Droop	**2 to 8.6 bar**		Capacities are identical to those for Spring No. 126 given above																			
5.6 mbar	30 to 125 psig																					
(2¼" wc)																						
	70	1 psig	**1.5**	52	**1.7**	60	**2.0**	72	**3.8**	134	**4.0**	142	**4.7**	166	**5.2**	185	**5.6**	198	**6.7**	237	**6.9**	244
	210	3	**2.7**	96	**3.2**	113	**3.7**	130	**6.2**	218	**6.6**	232	**7.5**	265	**9.7**	345	**10.8**	380	**13.7**	485	**15.1**	535
Spring 392	**345**	5	**3.9**	139	**4.8**	168	**5.6**	198	**10.1**	356	**12.7**	450	**13.5**	478	**14.0**	495	**14.6**	514	**20.1**	711	**22.4**	791
Range	**690**	10	**7.4**	260	**8.5**	300	**9.6**	340	**15.2**	538	**17.7**	625	**21.4**	756	**24.1**	850	**26.3**	930	**38.2**	1350	**41.9**	1480
40-75 mbar	**1 bar**	15	**11.4**	401	**11.7**	414	**15.9**	562	**19.3**	682	**26.7**	942	**29.6**	1044	**36.4**	1287	**37.4**	1322	**40.9**	1445	**54.7**	1930
(16"-30" wc)	**1.5**	22	**13.4**	472	**15.0**	530	**29.7**	1050	**37.1**	1310	**42.1**	1485	**44.3**	1565	**47.6**	1680	**55.8**	1970	**73.6**	2600	**31.9**	1125
Set Point	**2.0**	30	**18.7**	660	**19.5**	688	**35.7**	1260	**44.3**	1565	**50.4**	1780	**51.8**	1830	**73.6**	2600	**40.8**	1440	**44.6**	1575	**51.0**	1800
60 mbar	**2.5**	37	**22.7**	802	**23.5**	830	**43.2**	1525	**51.5**	1820	**65.1**	2300	**73.6**	2600	**73.6**	2600	**44.6**	1575	**51.0**	1800		
(24" wc)	**3.0**	45	**25.1**	885	**25.6**	905	**44.7**	1580	**58.6**	2072	**73.6**	2600	**51.0**	1800	**51.0**	1800						
Droop	**4.0**	60	**29.6**	1045	**32.6**	1150	**46.8**	1652	**65.1**	2300	**73.6**	2600	**51.0**	1800	**51.0**	1800						
9.5 mbar	**6.0**	90	**47.0**	1660	**59.5**	2100	**65.1**	2300	**51.0**	1800	**51.0**	1800										
(3.8" wc)	**7.0**	100	**49.3**	1742	**65.1**	2300	**51.0**	1800	**51.0**	1800	**51.0**	1800										
	8.0	117	**51.5**	1820	**65.1**	2300	**51.0**	1800														
	8.6	125	**54.7**	1930	**38.3**	1354	**51.0**	1800														

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Typical Capacities *(cont.)*

sm³/hour (natural gas, 0.6 sg) scfh (natural gas, 0.6 sg)

Spring No. and Outlet Pressure	Inlet Pressure		Orifice Diameter (Millimetres/Inches)																			
	mbar	psig	1/8" (3.2mm)		3.5mm		3/16" (5mm)		1/4"		7mm		5/16"		9mm		3/8"		7/16" (11mm)		1/2"	
Spring 393 Range **70-140 mbar** (1-2 psig) Set Point **105 mbar** (42" wc) Droop **16 mbar** (6.3" wc)	**210**	3	**3.0**	107	**3.3**	115	**4.1**	145	**7.4**	262	**7.8**	277	**8.7**	307	**10.0**	354	**10.5**	**370**	**12.8**	**452**	**15.0**	530
	345	5	**5.9**	208	**6.2**	218	**7.0**	247	**12.0**	424	**12.3**	436	**14.0**	494	**14.6**	515	**15.0**	530	**21.0**	740	**23.9**	845
	690	10	**8.9**	316	**9.8**	346	**12.9**	454	**16.3**	575	**17.7**	625	**21.9**	774	**29.2**	1032	**31.3**	1105	**33.3**	1178	**40.3**	1425
	1 bar	15	**12.2**	430	**13.3**	471	**17.3**	610	**20.3**	718	**23.2**	820	**28.5**	1005	**36.2**	1277	**37.1**	1310	**38.6**	1364	**53.8**	1900
	1.5	22	**15.0**	528	**18.3**	645	**24.9**	878	**29.4**	1040	**35.0**	1235	**37.2**	1315	**48.5**	1712	**54.4**	1920	**73.6**	2600		
	2.0	30	**18.0**	635	**22.5**	796	**34.7**	1225	**40.1**	1416	**40.7**	1437	**48.9**	1726	**60.5**	2135						
	2.5	37	**22.0**	779	**27.4**	968	**42.9**	1516	**47.4**	1675	**48.8**	1722	**57.6**	2034	**73.6**	2300						
	3.0	45	**26.2**	925	**30.6**	1080	**44.7**	1578	**55.2**	1952	**57.2**	2020										
	4.0	60	**30.4**	1075	**37.4**	1322	**44.9**	1585	**57.6**	2035												
	6.0	90	**43.0**	1518	**48.0**	1700	**50.4**	1780														
	7.0	100	**49.3**	1740	**52.4**	1850	**55.2**	1950														
	8.0	117	**50.4**	1780	**65.1**	2300																
	8.6	125	**51.0**	1800	**65.1**	2300																
Spring 394 Range **140-210 mbar** (2-3 psig) Set Point **175 mbar** (70" wc) Droop **26 mbar** (10.5" wc)	210	3	2.7	94	2.8	97	2.9	102	4.6	161	5.0	178	6.3	222	6.6	235	7.0	248	9.3	328	11.0	387
	345	5	4.6	162	4.8	169	5.0	177	8.0	282	8.7	309	11.0	390	11.4	404	12.0	425	15.9	560	19.0	670
	690	10	7.5	264	8.9	315	11.9	420	14.1	498	17.4	613	22.4	792	23.4	826	26.5	935	27.4	967	33.6	1185
	1 bar	15	10.2	359	10.6	375	14.2	502	16.2	573	20.0	707	24.4	861	29.7	1048	33.5	1184	37.4	1320	45.7	1614
	1.5	22	11.8	418	13.6	482	24.1	852	30.0	1061	36.2	1280	39.2	1385	43.0	1518	43.2	1525	57.5	2030		
	2.0	30	14.0	495	15.0	530	30.2	1065	35.4	1252	40.4	1426	44.6	1575	46.7	1650	49.7	1755				
	2.5	37	19.2	678	20.4	722	33.8	1195	42.3	1493	46.2	1630	51.4	1815	61.2	2160						
	3.0	45	20.9	737	23.5	830	35.1	1238	45.4	1604	50.8	1795	54.4	1920								
	4.0	60	26.3	928	31.0	1095	38.5	1360	48.2	1703	51.8	1830										
	6.0	90	36.7	1296	40.0	1412	42.1	1485														
	7.0	100	41.4	1462	45.7	1615	45.0	1590														
	8.0	117	48.4	1708	51.7	1825																
	8.6	125	49.2	1737	52.4	1850																

Please Note: The capacities given above are for the ½," ¾" or 1" body. A larger body (1¼" & 1½") is also available, however these larger bodies do not significantly increase the capacity of the regulator. These larger bodies are offered for customer convenience when larger pipework is used. The capacity of regulators of this type is determined by the internal orifice size rather than the body size. The capacity of the 1¼" & 1½" regulators is approximately 7½% greater than the figures listed above.

Additional Information

- Regulator & Relief Valve Performance Graphs/Charts
- Installation, Operation, Maintenance & Spares Kits Manuals
- Website & Complete Product Portfolio Brochures
- On-site Sales/Engineering Assistance
- Regulator Training & Seminars
- Specialty Assemblies & Design (i.e heating, propane industries, etc.)
- Station Design & Assembly
- Certification Documents (CE, CSA, ASA, etc.)
- Customer Specific Labeling (hard stamp or adhesive).

Additional Products

Manufactured Canada (BDRMG Canada)

- Domestic, Commercial and Light Industrial Type Regulators
- Corresponding Safety Devices (Over Pressure and Under Pressure Cut Off)
- Appliance Regulators
- "Farm-Tap" Regulators
- Regulator Assemblies (specific to customer applications)
- Station Design and Assembly
- Meter Connections (i.e. swivels, cap nuts, etc.)
- Filters & Sediment Expansion Loop Assemblies
- Custom Machining (any application).

Additional Products

Manufactured by various Group members

- Regulators for any application (low, medium, high or ultra high pressures)
- Safety Devices
- Underground Gas Control Modules
- Station Design and Assembly (any pressure or application)
- Meters and Complete Metering Stations (rotary, ultrasonic, etc.)
- Electronic Flow Correctors
- Odorizers
- Data Logging & Recording, Control Systems.

For More Information

To learn more about Honeywell's Low Pressure Gas Regulators, visit www.honeywellprocess.com or contact your Honeywell account manager.

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