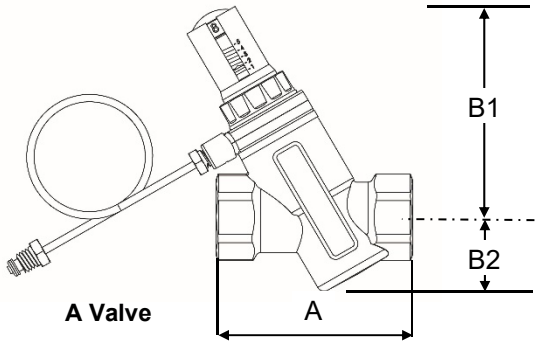
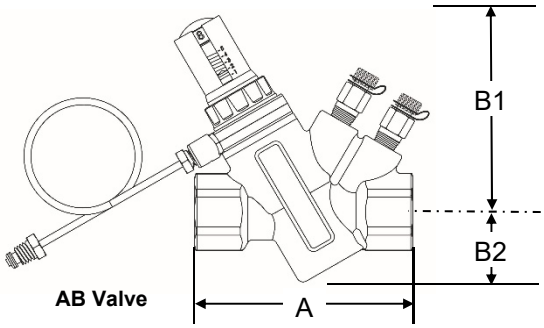




SPECIFICATIONS:

PSI / Temperature Rating:	360 PSI / 248º F[1]
Cartridge:	Glass-reinforced PPS/POM with EPDM Diaphragm
Body Material:	Forged brass
End Connections:	Female NPT
O-Rings:	EPDM
Body Tappings:	P/T Test Valves on AB Valve Housing
Maximum Operational ΔP:	58 PSI
Controlled ΔP:	PM1: 0.7 to 7.3 PSID, PM2: 0.7 to 8.7 PSID, PM3: 0.7 to 14.5 PSID
Capillary Tube:	Diameter: 3mm, length: 1m

DIMENSIONS & WEIGHTS (NOMINAL)

SIZE	MODEL NO.	HOUSING	A	B1	B2	Cv^2	Cv^3	WEIGHT (LBS.)
1/2"	PM1_04B_N	A Valve	3.2	3.4	1.2	3.6	2.8	1.9
3/4"	PM1_05B_N		3.2					
1/2"	PM1_01B_N	AB Valve	3.2					2.0
3/4"	PM1_02B_N		3.7					
1”	PM2_14B_N	AB Valve	5.0	4.5	1.9	14.5	12.9	4.1
1-1/4”	PM2_15B_N		5.0					3.8
1-1/2”	PM3_40_N	AB Valve	6.7	5.9	2.1	37.1	59.2	8.6
2”	PM3_50_N							7.7

NOTES

[1] Temperature rating is defined due to no external spindle condensation.

[2] Cvs are based on valve housing without cartridge. To calculate pressure drop use the formula $\Delta P=(GPM/CV)^2$ and add the pressure drop to the cartridge PSID range.

[3] Cvs for PIM-A Mini cartridge and valve housing. To calculate pressure drop use the formula $\Delta P=(GPM/CV)^2$ and add the pressure drop to the cartridge PSID range.

This specification © 2019 Griswold Controls

2803 Barranca Parkway, Irvine, CA 92606
(949) 559-6000 Fax (949) 559-6088
www.GriswoldControls.com

GRISWOLD CONTROLS®

FLOW RANGE (GPM)

MODEL NO.	SETTING	1	2	3	4	5
PM1	Minimum Flow	0.06	0.06	0.06	0.06	0.06
	Maximum Flow	1.8	3.3	6.2	6.6	6.6
PM2	Minimum Flow	0.07	0.07	0.07	0.07	0.07
	Maximum Flow	7.57	13.07	25.62	25.93	26.32
PM3	Minimum Flow	0.88	1.32	0.88	1.19	2.82
	Maximum Flow	16.2	24.4	59.9	61.2	61.6

MODEL NUMBER SELECTION[4]

P M ___ ___ B ___ N ___

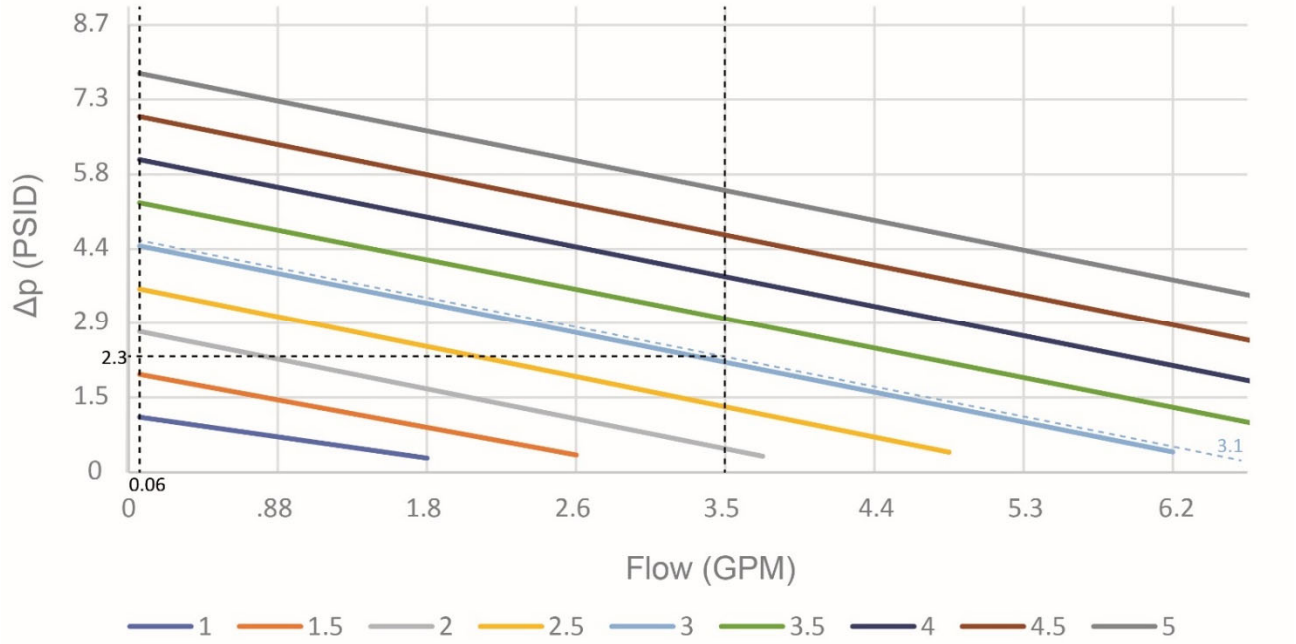
Select Cartridge Size (1=0.066 to 6.60GPM, 2=0.066 to 26.4GPM, 3=0.88 to 61.6 GPM)

Select Body Type and Size (**AB**: 01=1/2", 02=3/4", 14=1", 15=1-1/4", 40=1-1/2", 50=2" **A**: 04=1/2", 05=3/4")

Select capillary tube connection (1=Tube for connection to Isolator S OR QuickSet valve, 2=Tube with union M8 to ¼" adapter)

T=Optional 3"x3" Aluminum Hanging

FLOW RATE (GPM) CURVES (PM1)



NOTES

[4] Model no. and flow rate are indicated on label affixed to body.

This specification © 2019 Griswold Controls

2803 Barranca Parkway, Irvine, CA 92606
(949) 559-6000 Fax (949) 559-6088
www.GriswoldControls.com

GRISWOLD CONTROLS®

DESCRIPTION

The PIM-A Mini is an externally adjustable differential pressure control valves. The purpose of the valve is to keep a constant differential pressure across a coil or valve.

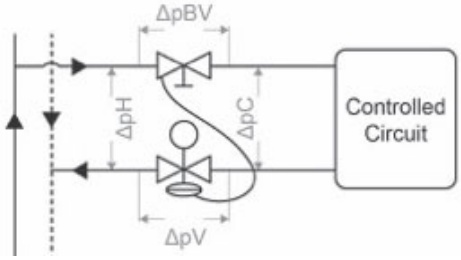
The PIM-A Mini insert holds a patented dual spring construction ensuring a large differential pressure adjustment range. Adjustment to the specific ΔP required over the controlled subsystem is externally adjustable and can easily be adjusted even when the valve is installed and in operation.

SIZING – HOW TO SELECT

The PIM-A Mini valve is selected based on the required flow rate and the differential pressure required across the controlled circuit (ΔpC) at design flow (see flow rate curves above for reference).

The PIM-A Mini will ensure that the differential pressure across the controlled circuit (ΔpC) never exceeds the maximum defined PSID in the chosen setting, even at partial load conditions, down to the minimum flow values listed.

Example;
Design flow rate = 3.5 GPM
Pipe size = ¾"
ΔpC = 2.3 PSID (design condition)



Select the valve model required:
The ΔpC and ΔpV required by the valve at 3.5 GPM is shown in the flow rate curves above. In order to optimize the system energy efficiency, the setting with closest value is selected; in this case, setting 3.1 is selected. Note that the maximum flow values are to be limited either on the partner valve or on the radiator thermostats.

Calculate pressure loss across PIM-A Mini (ΔpV):
$\Delta pV = (Q \text{ design } / Cv)^2 = (3.5 \text{ GPM} / 2.8)^2 = 1.6 \text{ PSID}$

Calculate the pressure loss across the partner valve (ΔpBV): In this example a ¾" QuickSet valve (4.2 Cv) is used as a partner valve and the permanent pressure drop is 0.69 PSID @ 3.5 GPM- see QuickSet literature or sizing calculator.

The minimum pump head is now defined: ΔpH = ΔpBV + ΔpC + ΔpV => 0.69 + 2.3 + 1.6 = 4.59 PSID.
The pump can now be selected considering a pressure drop of 4.59 PSID. The PIM-A Mini in setting 3.1 will hereafter ensure that the ΔpC never supersedes 4.59 PSID within the specified flow range.

This specification © 2019 Griswold Controls

2803 Barranca Parkway, Irvine, CA 92606
(949) 559-6000 Fax (949) 559-6088
www.GriswoldControls.com
GRISWOLD CONTROLS®

	PM1 Flow (GPM) at Cartridge Setting														
PSI	1	1,2	1,4	1,6	1,8	2	2,2	2,4	2,6	2,8	3	3,5	4	4,5	5
0.44	1.452	1.892	2.288	2.728	3.124	3.564	4.048	4.532	5.06	5.588	6.116				
0.58	1.144	1.628	2.068	2.464	2.904	3.344	3.828	4.312	4.84	5.368	5.896				
0.73	0.836	1.364	1.804	2.244	2.684	3.124	3.608	4.092	4.62	5.148	5.676				
0.87	0.528	1.056	1.54	2.024	2.464	2.904	3.388	3.872	4.4	4.928	5.456	6.776			
1.02	0.22	0.792	1.32	1.76	2.244	2.684	3.168	3.652	4.18	4.708	5.236	6.556			
1.16	0.066	0.528	1.056	1.54	2.024	2.464	2.948	3.432	3.96	4.488	5.016	6.336			
1.31		0.264	0.836	1.32	1.804	2.244	2.728	3.256	3.74	4.268	4.796	6.116			
1.45		0.066	0.572	1.056	1.54	2.024	2.508	3.036	3.52	4.048	4.576	5.896			
1.6			0.308	0.836	1.32	1.804	2.288	2.816	3.3	3.828	4.356	5.676			
1.74			0.066	0.616	1.1	1.584	2.068	2.596	3.08	3.608	4.136	5.456	6.688		
1.89				0.396	0.88	1.364	1.848	2.376	2.86	3.388	3.916	5.236	6.468		
2.03				0.132	0.66	1.144	1.628	2.156	2.64	3.168	3.696	5.016	6.248		
2.18				0.066	0.44	0.924	1.408	1.936	2.42	2.948	3.476	4.796	6.028		
2.32					0.22	0.704	1.232	1.716	2.2	2.728	3.256	4.576	5.808		
2.47					0.066	0.484	1.012	1.496	1.98	2.508	3.036	4.356	5.588	6.776	
2.61						0.264	0.792	1.276	1.804	2.288	2.816	4.136	5.368	6.556	
2.76						0.066	0.572	1.056	1.584	2.068	2.596	3.916	5.148	6.336	
2.90							0.352	0.836	1.364	1.848	2.376	3.696	4.928	6.116	
3.05							0.132	0.616	1.144	1.628	2.156	3.432	4.708	5.896	
3.19							0.066	0.396	0.924	1.408	1.936	3.212	4.488	5.676	
3.34								0.176	0.704	1.188	1.716	2.992	4.268	5.456	6.82
3.48								0.066	0.484	0.968	1.496	2.772	4.048	5.236	6.6
3.63									0.264	0.748	1.276	2.552	3.828	5.016	6.38
3.77									0.066	0.528	1.056	2.332	3.608	4.84	6.16
3.92										0.308	0.836	2.112	3.388	4.62	5.94
4.06										0.088	0.616	1.892	3.168	4.4	5.72
4.21										0.066	0.396	1.672	2.948	4.18	5.5
4.35											0.176	1.452	2.728	3.96	5.28
4.50											0.066	1.232	2.508	3.74	5.06
4.64												1.012	2.288	3.52	4.84
4.79												0.792	2.068	3.3	4.62
4.93												0.572	1.848	3.08	4.4
5.08												0.352	1.628	2.86	4.18
5.22												0.132	1.408	2.64	3.96
5.37												0.066	1.188	2.42	3.74
5.51													0.968	2.2	3.52
5.66													0.748	1.98	3.3
5.80													0.528	1.76	3.08
5.95													0.308	1.54	2.86
6.09													0.066	1.32	2.64
6.24														1.1	2.42
6.38														0.88	2.2
6.53														0.66	1.98
6.67														0.484	1.76
6.82														0.264	1.54
6.96														0.06	1.32
7.11															1.1
7.25															0.88
7.4															0.66
7.54															0.44
7.69															0.22
7.83															0.06

This specification © 2019 Griswold Controls
2803 Barranca Parkway, Irvine, CA 92606
(949) 559-6000 Fax (949) 559-6088
www.GriswoldControls.com
GRISWOLD CONTROLS®

	PM2 Flow (GPM) at Cartridge Setting														
PSI	1	1,2	1,4	1,6	1,8	2	2,2	2,4	2,6	2,8	3	3,5	4	4,5	5
0.73	7.57	7.57	7.57	8.85	10.92	13.07	15.36	17.74	20.21	22.85	25.62				
0.87	6.16	6.16	6.29	8.23	10.30	12.46	14.70	17.04	19.54	22.14	24.87				
1.02	4.80	4.80	5.68	7.62	9.64	11.80	14.04	16.38	18.84	21.44	24.17				
1.16	3.43	3.43	5.06	7.00	9.02	11.14	13.34	15.67	18.14	20.69	23.42				
1.31	2.07	2.64	4.49	6.38	8.41	10.48	12.68	15.01	17.43	19.99	22.67				
1.45	0.66	2.02	3.87	5.77	7.75	9.86	12.02	14.31	16.73	19.28	21.97				
1.60	0.07	1.45	3.26	5.15	7.13	9.20	11.36	13.65	16.02	18.58	21.22				
1.74		0.84	2.64	4.53	6.51	8.54	10.70	12.99	15.36	17.83	20.47				
1.89		0.26	2.07	3.92	5.85	7.92	10.04	12.28	14.66	17.12	19.76				
2.03		0.07	1.45	3.30	5.24	7.26	9.38	11.62	13.95	16.42	19.02	26.15			
2.18			0.84	2.69	4.58	6.60	8.72	10.92	13.25	15.72	18.27	25.36			
2.32			0.22	2.07	3.96	5.94	8.06	10.26	12.55	14.97	17.56	24.56			
2.47			0.07	1.45	3.35	5.33	7.40	9.55	11.84	14.26	16.82	23.77			
2.61				0.84	2.69	4.67	6.74	8.89	11.18	13.56	16.07	23.02			
2.76				0.22	2.07	4.01	6.07	8.23	10.48	12.85	15.36	22.23			
2.90				0.07	1.45	3.39	5.41	7.53	9.77	12.11	14.61	21.44			
3.05					0.79	2.73	4.75	6.87	9.07	11.40	13.87	20.65			
3.19					0.18	2.07	4.09	6.16	8.36	10.70	13.16	19.85			
3.34					0.07	1.45	3.43	5.50	7.70	9.99	12.41	19.06			
3.48						0.79	2.77	4.80	7.00	9.29	11.67	18.27	25.93		
3.63						0.13	2.07	4.14	6.29	8.54	10.96	17.52	25.05		
3.77						0.07	1.41	3.48	5.59	7.84	10.21	16.73	24.21		
3.92							0.75	2.77	4.89	7.13	9.46	15.94	23.37		
4.06							0.07	2.11	4.18	6.43	8.76	15.14	22.54		
4.21								1.41	3.52	5.68	8.01	14.35	21.70		
4.35								0.75	2.82	4.97	7.26	13.56	20.82		
4.50								0.07	2.11	4.27	6.56	12.77	19.99		
4.64									1.41	3.57	5.81	11.97	19.15		
4.79									0.70	2.82	5.06	11.23	18.31		
4.93									0.07	2.11	4.31	10.43	17.43	25.66	
5.08										1.41	3.61	9.64	16.60	24.74	
5.22										0.70	2.86	8.85	15.76	23.81	
5.37										0.07	2.11	8.06	14.92	22.89	
5.51											1.41	7.26	14.04	21.97	
5.66											0.66	6.47	13.21	21.04	
5.80											0.07	5.72	12.37	20.16	
5.95												4.93	11.53	19.24	
6.09												4.14	10.65	18.31	
6.24												3.35	9.82	17.39	26.32
6.38												2.55	8.98	16.46	25.31
6.53												1.76	8.14	15.54	24.34
6.67												0.97	7.31	14.66	23.33
6.82												0.22	6.43	13.73	22.32
6.96												0.07	5.59	12.81	21.31
7.11													4.75	11.89	20.34
7.25													3.92	10.96	19.32
7.40													3.04	10.04	18.31
7.54													2.20	9.16	17.30
7.69													1.36	8.23	16.33
7.83													0.53	7.31	15.32

This specification © 2019 Griswold Controls

2803 Barranca Parkway, Irvine, CA 92606
(949) 559-6000 Fax (949) 559-6088
www.GriswoldControls.com

	PM3 Flow (GPM) at Cartridge Setting														
PSI	1	1,2	1,4	1,6	1,8	2	2,2	2,4	2,6	2,8	3	3,5	4	4,5	5
0.73	16.16	16.16	16.16	16.16	17.17	24.44	31.39	39.27	48.43						
1.45	7.35	7.35	7.35	7.57	12.46	18.93	25.54	32.98	41.39	51.52					
1.74	3.83	3.96	4.05	5.94	10.57	16.73	23.20	30.51	38.75	48.43	59.88				
2.03	0.88	1.63	2.29	4.31	8.67	14.53	20.83	28.00	36.10	45.79	56.80				
2.32			0.88	2.69	6.82	12.33	18.49	25.49	33.51	42.71	53.72				
2.61				1.01	4.93	10.13	16.16	22.98	30.82	40.07	50.63				
2.90					3.04	7.93	13.83	20.47	28.14	36.99	47.55				
3.19					1.14	5.72	11.49	18.01	25.45	34.08	44.03				
3.48						3.52	9.11	15.50	22.76	31.22	40.95				
3.77						1.32	6.78	12.99	20.08	28.31	37.87				
4.06							4.45	10.48	17.39	25.41	34.78	59.00			
4.35							2.11	7.97	14.71	22.50	31.66	55.48			
4.64								5.46	12.02	19.64	28.49	52.40			
4.93								2.99	9.33	16.73	25.36	48.87			
5.22								0.88	6.65	13.83	22.24	45.35			
5.51									3.96	10.92	19.06	42.27			
5.80									1.28	8.01	15.94	38.75			
6.09										5.15	12.77	35.66	61.20		
6.38										2.25	9.64	32.23	57.68		
6.67											6.47	28.93	54.16		
6.96											3.35	25.58	50.63		
7.25											0.88	22.28	47.11		
7.54												18.93	43.46		
7.83												15.63	39.94		
8.12												12.28	36.41	59.88	
8.41												8.98	32.89	56.36	
8.70												5.64	29.37	53.28	
8.99												2.33	25.85	50.19	
9.28													22.32	47.11	
9.57													18.80	43.59	
9.86													15.28	40.51	61.64
10.15													11.76	37.43	58.56
10.44													8.23	34.08	55.48
10.73													4.71	30.91	52.84
11.02													1.19	27.69	49.75
11.31														24.48	46.67
11.60														21.27	44.03
11.89														18.10	40.95
12.18														14.88	37.87
12.47														11.67	35.09
12.76														8.50	32.14
13.05														5.28	29.24
13.34														2.07	26.29
13.63															23.34
13.92															20.43
14.21															17.48
14.50															14.53
14.79															11.62
15.08															8.67
15.37															5.72
15.66															2.82

This specification © 2019 Griswold Controls

2803 Barranca Parkway, Irvine, CA 92606
(949) 559-6000 Fax (949) 559-6088
www.GriswoldControls.com

GRISWOLD CONTROLS®