

ART 202

Pressure Independent Control Valve (PICV)



Features

- Flange Connections ISO 7005-2 / EN 1092-2.
- Measurement of flow and minimum differential pressure due to valve design with 3 P/T plugs.
- Full stroke modulation at all times, regardless of the preset flow.
- The constant differential pressure across the modulating control component guarantees 100% authority.
- Can be flushed and commissioned before the actuator is installed.
- Once the flow is set, the actuator can be mounted and the valve ready to operate.

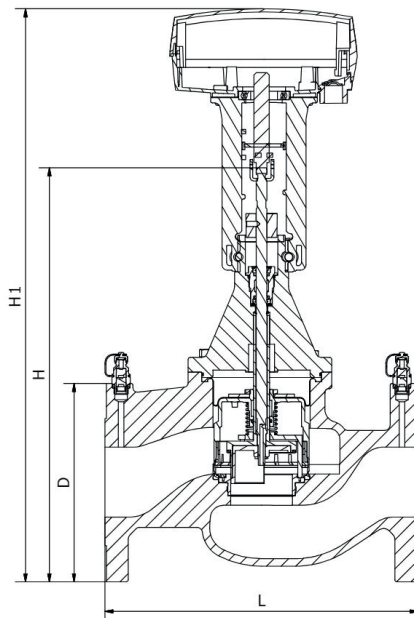
Technical data

Max pressure: 16 Bar
 Max Differential pressure: 800 kPa (8 Bar)
 Working temp: 0°C to +120°C
 With stem heater mounted: From -10°C

Needles for DP measurement

Max Diameter. Ø3.2mm
 Length. 25 - 40mm

Part Name	Material
Valve Housing DN50-150	GJL-250/GJS-400
Valve Housing DN200-300	GJS-400
Valve Cover	GJS-400
DP Controller DN50-80	Stainless Steel/PPS
DP Controller DN100-300	Stainless Steel
Spring	Stainless Steel
Diaphragm DN50-80	Reinforced EPDM/HNBR
Diaphragm DN50-80	Reinforced EPDM
O-Rings	EPDM

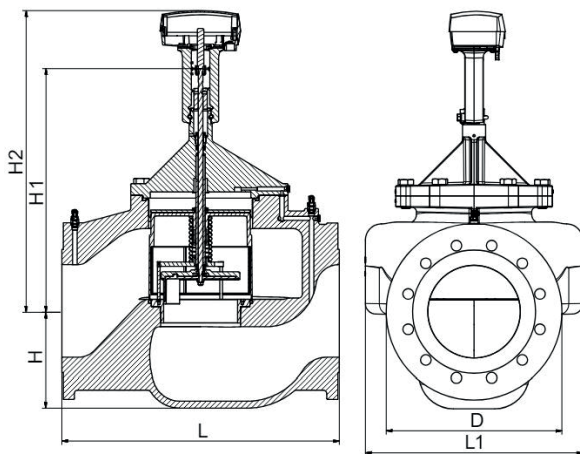


DN50 - DN150

DN	DN50	DN65	DN80	DN100	DN125	DN150
Series	Standard	Standard	Standard	Standard	Standard	Standard
L	230	290	310	350	400	480
H	367	384	413	566	608	676
H1	508	525	554	700	747	768
D	165	185	200	235	270	285
Stroke	20	20	20	40	40	43
Kgs	14.5	19.2	27.5	50.1	77.2	111

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DN200 - DN300

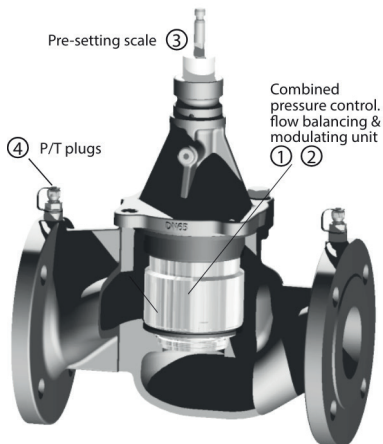
DN	DN200	DN250	DN300
Series	Standard	Standard	Standard
L	600	730	850
L1	470	549	719
H	209	229	279
H1	524	685	685
H2	650	872	872
D	380	444	520
Stroke	43	48	48
Kgs	175	307	470

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1. Differential pressure control
2. Modulating control component
3. Presetting scale
4. P/T Plugs
5. Actuator



Manual Operation

The AL202 actuator can be operated by the manual handle.

Operating Pressure

The ART 202 (DN50 - DN300) can operate to a maximum differential pressure of 800kPa (8 bar).

Close Off Pressure

The ART 202 is capable of closing against the following differential pressures to EN 1349 Class IV:

- DN50 to DN125: 800kPa (8 Bar) - based on 800N actuator force
- DN150 to DN200: 800kPa (8 Bar) - based on 1100N actuator force
- DN250 to DN300: 800kPa (8 Bar) - based on 2000N actuator force

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Flow Rates

DN	Series	Type	Flow (m ³ /h)
DN50	Standard	Low Flow	2.5 - 15.0
		High Flow	3.9 - 24.0
DN65	Standard	Low Flow	4.4 - 25.0
		High Flow	5.9 - 35.0
DN80	Standard	Low Flow	5.3 - 34.0
		High Flow	7.0 - 43.0
DN100	Standard	Low Flow	12.1 - 68.0
		High Flow	14.8 - 90.0
DN125	Standard	Low Flow	18.5 - 110
		High Flow	23.0 - 135
DN150	Standard	Low Flow	25.6 - 148
		High Flow	32.0 - 195
DN200	Standard	Low Flow	95.0 - 210
		High Flow	130 - 280
DN250	Standard	Low Flow	190 - 475
		High Flow	245 - 600
DN300	Standard	Low Flow	190 - 475
		High Flow	245 - 600

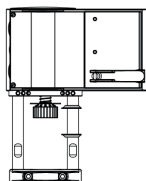
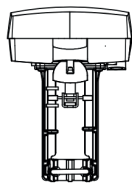
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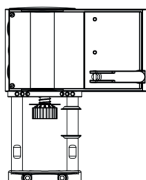
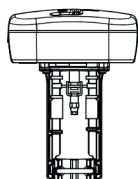
Actuator Options Available

Standard Actuator



Valve Dimension	Control Signal
DN50 - DN200	0-10 V / 3-pos
DN250 - DN300	0-10 V/4-20 mA 3-pos / 2-pos

Spring Return Actuator



Valve Dimension	Control Signal
DN50 - DN125	0-10 V / 3-pos (stem up)
	0-10 V / 3-pos (stem down)
DN150 - DN300	0-10 V/4-20 mA 3-pos / 2-pos (stem up)
	0-10 V/4-20 mA 3-pos / 2-pos (stem down)

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Setting and Flow

Series		Standard									
DN		DN50 LF					DN50 HF				
Pre-Set	Flow m³/h	Flow l/s	Flow gpm	Min.Δ kPa	Kv Signal	Flow m³/h	Flow l/s	Flow gpm	Min.Δ kPa	Kv Signal	
0.6	2.50	0.689	10.9	7	9.19	3.90	1.09	17.3	19	9.68	
0.8	3.20	0.887	14.1	7	11.7	5.10	1.41	22.3	19	11.9	
1.0	3.90	1.07	17.0	7	13.9	6.20	1.71	27.2	19	14.1	
1.2	4.50	1.25	19.8	7	15.9	7.20	2.00	31.8	19	16.2	
1.4	5.10	1.42	22.5	7	17.7	8.20	2.29	36.2	19	18.2	
1.6	5.70	1.59	25.1	7	19.5	9.20	2.56	40.6	20	20.1	
1.8	6.30	1.75	27.7	8	21.1	10.2	2.83	44.9	20	22.0	
2.0	6.90	1.92	30.4	8	22.8	11.2	3.11	49.2	21	23.9	
2.2	7.50	2.08	33.0	9	24.5	12.2	3.39	53.7	22	25.7	
2.4	8.10	2.26	35.8	9	26.2	13.2	3.67	58.2	24	27.6	
2.6	8.80	2.44	38.7	10	27.9	14.3	3.97	62.9	25	29.3	
2.8	9.50	2.64	41.8	11	29.6	15.4	4.28	67.9	27	31.0	
3.0	10.2	2.84	45.0	12	31.4	16.6	4.61	73.1	30	32.7	
3.2	11.0	3.07	48.6	13	33.2	17.9	4.97	78.7	33	34.3	
3.4	11.9	3.31	52.4	15	34.9	19.2	5.35	84.7	36	35.7	
3.6	12.8	3.57	56.6	16	36.6	20.7	5.75	91.2	40	37.0	
3.8	13.9	3.86	61.1	18	38.2	22.3	6.19	98.1	45	38.2	
4.0	15.0	4.17	66.0	20	39.6	24.0	6.67	106	50	39.1	

Series		Standard									
DN		DN65 LF					DN65 HF				
Pre-Set	Flow m³/h	Flow l/s	Flow gpm	Min.Δ kPa	Kv Signal	Flow m³/h	Flow l/s	Flow gpm	Min.Δ kPa	Kv Signal	
0.6	4.40	1.22	19.3	15	11.6	6.00	1.65	26.2	30	10.9	
0.8	5.60	1.54	24.5	15	14.8	7.60	2.11	33.4	30	13.6	
1.0	6.60	1.85	29.3	15	17.5	9.10	2.53	40.1	30	16.0	
1.2	7.70	2.13	33.7	16	19.9	10.5	2.93	46.4	31	18.2	
1.4	8.60	2.40	38.0	17	22.1	11.9	3.31	52.5	32	20.4	
1.6	9.60	2.66	42.2	17	24.3	13.3	3.69	58.5	32	22.6	
1.8	10.5	2.93	46.4	18	26.4	14.7	4.07	64.5	32	24.9	
2.0	11.5	3.20	50.6	18	28.6	16.0	4.46	70.7	32	27.3	
2.2	12.5	3.47	55.0	18	30.9	17.5	4.86	77.0	32	29.9	
2.4	13.5	3.76	59.6	19	33.3	19.0	5.28	83.6	32	32.6	
2.6	14.7	4.07	64.5	19	35.9	20.6	5.72	90.6	33	35.5	
2.8	15.8	4.40	69.7	19	38.6	22.3	6.19	98.1	34	38.5	
3.0	17.1	4.75	75.3	20	41.4	24.1	6.69	106	35	41.5	
3.2	18.5	5.13	81.3	21	44.2	26.0	7.22	114	37	44.5	
3.4	19.9	5.54	87.8	21	47.0	28.0	7.79	123	40	47.4	
3.6	21.5	5.98	94.7	22	49.6	30.2	8.40	133	44	50.1	
3.8	23.2	6.45	102	24	52.0	32.5	9.04	143	49	52.5	
4.0	25.0	6.95	110	25	54.0	35.0	9.72	154	55	54.3	

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Setting and Flow

Series		Standard									
DN		DN80 LF					DN80 HF				
Pre-Set	Flow m³/h	Flow l/s	Flow gpm	Min.Δ kPa	Kv Signal	Flow m³/h	Flow l/s	Flow gpm	Min.Δ kPa	Kv Signal	
0.6	5.30	1.48	23.5	16	14.9	7.00	1.95	30.9	23	15.0	
0.8	6.90	1.91	30.2	16	18.8	9.00	2.51	39.8	23	19.9	
1.0	8.30	2.30	36.5	16	22.4	11.0	3.04	48.2	23	24.0	
1.2	9.60	2.68	42.4	17	25.8	12.8	3.55	56.2	24	27.5	
1.4	10.9	3.04	48.2	17	29.1	14.5	4.03	63.9	24	30.6	
1.6	12.2	3.40	53.8	17	32.5	16.2	4.51	71.5	24	33.7	
1.8	13.5	3.75	59.5	18	35.8	18.0	4.98	79.0	25	36.7	
2.0	14.8	4.11	65.2	18	39.2	19.6	5.46	86.5	25	39.9	
2.2	16.2	4.49	71.1	18	42.7	21.4	5.94	94.2	25	43.3	
2.4	17.6	4.88	77.3	19	46.3	23.2	6.45	102	26	46.9	
2.6	19.1	5.30	83.9	19	50.0	25.1	6.97	111	27	50.8	
2.8	20.7	5.74	91.0	19	53.9	27.1	7.53	119	28	54.9	
3.0	22.4	6.23	98.7	20	57.7	29.3	8.13	129	30	59.1	
3.2	24.3	6.76	107	21	61.5	31.6	8.78	139	33	63.2	
3.4	26.4	7.34	116	21	65.3	34.1	9.47	150	36	67.2	
3.6	28.7	7.98	126	22	68.9	36.8	10.2	162	40	70.7	
3.8	31.2	8.68	138	24	72.2	39.8	11.1	175	44	73.5	
4.0	34.0	9.45	150	25	75.2	43.0	12.0	189	50	75.4	

Series		Standard									
DN		DN100 LF					DN100 HF				
Pre-Set	Flow m³/h	Flow l/s	Flow gpm	Min.Δ kPa	Kv Signal	Flow m³/h	Flow l/s	Flow gpm	Min.Δ kPa	Kv Signal	
0.6	12.1	3.37	53.4	19	35.2	14.8	4.10	65.0	29	35.0	
0.8	15.3	4.25	67.3	20	43.4	18.9	5.25	83.2	29	43.0	
1.0	18.1	5.04	79.9	20	50.2	22.6	6.28	99.5	30	49.6	
1.2	20.8	5.76	91.4	20	56.1	26.0	7.22	114	31	55.3	
1.4	23.2	6.44	102	21	61.4	29.1	8.09	128	32	60.8	
1.6	25.5	7.08	112	21	66.5	32.1	8.92	141	33	66.3	
1.8	27.8	7.71	122	22	71.7	35.1	9.74	154	34	72.2	
2.0	30.0	8.35	132	22	77.1	38.1	10.6	168	35	78.8	
2.2	32.4	9.00	143	22	83.0	41.2	11.4	181	36	86.3	
2.4	34.9	9.70	154	23	89.6	44.5	12.4	196	38	94.6	
2.6	37.6	10.5	166	23	96.9	48.2	13.4	212	40	104	
2.8	40.6	11.3	179	24	105	52.2	14.5	230	42	114	
3.0	44.0	12.2	194	25	114	56.7	15.8	250	45	125	
3.2	47.7	13.3	210	26	124	61.9	17.2	272	49	136	
3.4	51.9	14.4	229	27	134	67.7	18.8	298	53	148	
3.6	56.7	15.7	249	29	145	74.2	20.6	327	59	159	
3.8	62.0	17.2	273	32	156	81.7	22.7	360	66	169	
4.0	68.0	18.9	299	35	168	90.0	25.0	396	75	178	

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Setting and Flow

Series	Standard									
DN	DN125 LF					DN125 HF				
Pre-Set	Flow m³/h	Flow l/s	Flow gpm	Min.Δ kPa	Kv Signal	Flow m³/h	Flow l/s	Flow gpm	Min.Δ kPa	Kv Signal
0.6	18.5	5.14	81.5	16	43.6	23.0	6.39	101	27	45.4
0.8	23.6	6.54	104	16	54.3	29.9	8.31	132	27	56.7
1.0	28.5	7.92	125	16	64.4	36.5	10.1	161	27	67.4
1.2	33.3	9.26	147	17	74.2	42.8	11.9	188	28	77.7
1.4	38.0	10.6	167	17	83.8	48.7	13.5	215	28	87.7
1.6	42.6	11.8	188	17	93.4	54.5	15.1	240	28	97.7
1.8	47.1	13.1	207	18	103	60.0	16.7	264	29	108
2.0	51.5	14.3	227	18	113	65.5	18.2	288	29	118
2.2	55.9	15.5	246	18	123	70.9	19.7	312	29	128
2.4	60.4	16.8	266	19	133	76.4	21.2	336	30	139
2.6	65.0	18.1	286	19	144	82.0	22.8	361	31	150
2.8	69.8	19.4	308	20	155	87.8	24.4	387	32	161
3.0	75.0	20.8	330	21	166	94.0	26.1	414	33	172
3.2	80.6	22.4	355	22	177	101	28.0	443	35	183
3.4	86.7	24.1	382	24	188	108	30.0	475	37	194
3.6	93.6	26.0	412	26	200	116	32.2	511	41	204
3.8	101	28.1	446	30	211	125	34.7	550	46	214
4.0	110	30.6	484	35	221	135	37.5	594	53	223

Series	Standard									
DN	DN150 LF					DN150 HF				
Pre-Set	Flow m³/h	Flow l/s	Flow gpm	Min.Δ kPa	Kv Signal	Flow m³/h	Flow l/s	Flow gpm	Min.Δ kPa	Kv Signal
0.6	25.6	7.11	113	21	60.8	32.0	8.89	141	33	59.8
0.8	32.6	9.05	143	21	77.0	41.3	11.5	182	33	76.1
1.0	39.2	10.9	173	21	92.3	50.0	13.9	220	33	91.6
1.2	45.6	12.7	201	21	107	58.2	16.2	256	33	106
1.4	51.8	14.4	228	21	121	66.0	18.3	291	33	121
1.6	58.0	16.1	255	21	134	73.7	20.5	324	33	134
1.8	64.1	17.8	282	21	147	81.3	22.6	358	33	148
2.0	70.4	19.6	310	22	160	89.0	24.7	392	34	161
2.2	76.8	21.3	338	23	173	96.9	26.9	427	36	174
2.4	83.4	23.2	367	25	185	105	29.2	463	38	186
2.6	90.3	25.1	398	27	197	114	31.6	501	40	199
2.8	97.5	27.1	429	28	209	123	34.2	542	43	211
3.0	105	29.2	462	30	221	133	36.9	586	46	223
3.2	113	31.3	497	32	232	144	39.9	632	49	235
3.4	121	33.6	533	33	243	155	43.1	683	53	246
3.6	130	36.0	571	34	253	167	46.5	737	57	257
3.8	139	38.5	610	35	263	181	50.2	796	61	267
4.0	148	41.1	652	35	271	195	54.2	859	65	277

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Setting and Flow

Series	Standard									
DN	DN200 LF					DN200 HF				
Pre-Set	Flow m³/h	Flow l/s	Flow gpm	Min.Δ kPa	Kv Signal	Flow m³/h	Flow l/s	Flow gpm	Min.Δ kPa	Kv Signal
1.0	95	26.4	418	11	243	130	36.1	572	31	245
1.2	100	27.8	440	12	261	137	38.1	604	32	265
1.4	105	29.3	464	12	276	145	40.2	638	33	280
1.6	112	31.0	491	13	287	153	42.4	673	35	291
1.8	118	32.8	520	15	295	161	44.8	710	38	299
2.0	125	34.7	550	16	301	170	47.2	748	41	305
2.2	132	36.8	583	17	306	179	49.8	789	45	310
2.4	140	38.9	617	19	310	189	52.4	831	49	313
2.6	148	41.1	652	21	314	199	55.2	875	53	317
2.8	156	43.5	689	22	320	209	58.1	921	57	322
3.0	165	45.8	726	24	326	220	61.1	969	61	328
3.2	174	48.3	765	26	335	231	64.2	1018	65	337
3.4	183	50.7	804	27	346	243	67.4	1069	69	348
3.6	192	53.3	844	29	361	255	70.8	1122	72	364
3.8	201	55.8	884	31	380	267	74.2	1176	75	384
4.0	210	58.3	925	32	404	280	77.8	1233	78	409

Series	Standard									
DN	DN250 LF					DN250 HF				
Pre-Set	Flow m³/h	Flow l/s	Flow gpm	Min.Δ kPa	Kv Signal	Flow m³/h	Flow l/s	Flow gpm	Min.Δ kPa	Kv Signal
1.0	190	52.8	837	10	408	245	68.1	1079	15	428
1.2	205	57.0	904	10	418	256	71.2	1129	16	442
1.4	220	61.0	967	11	432	270	75.1	1190	17	456
1.6	233	64.8	1027	12	448	286	79.6	1261	20	470
1.8	247	68.5	1086	13	468	305	84.7	1342	22	484
2.0	260	72.2	1145	15	490	325	90.3	1431	25	498
2.2	274	76.0	1205	17	513	347	96.4	1528	28	533
2.4	288	80.1	1269	19	538	371	103	1632	32	567
2.6	304	84.4	1338	21	563	396	110	1743	36	597
2.8	321	89.2	1413	23	587	422	117	1860	40	626
3.0	340	94.4	1497	25	611	450	125	1981	45	652
3.2	361	100	1590	27	634	479	133	2107	50	676
3.4	385	107	1695	29	654	508	141	2237	55	697
3.6	412	114	1812	31	672	538	150	2370	60	717
3.8	441	123	1944	33	687	569	158	2505	65	733
4.0	475	132	2091	35	699	600	167	2642	70	748

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Setting and Flow

Series	Standard									
DN	DN300 LF					DN300 HF				
Pre-Set	Flow m³/h	Flow l/s	Flow gpm	Min.Δ kPa	Kv Signal	Flow m³/h	Flow l/s	Flow gpm	Min.Δ kPa	Kv Signal
1.0	190	52.8	837	10	387	245	68.1	1079	15	397
1.2	205	57.0	904	10	419	256	71.2	1129	16	429
1.4	220	61.0	967	11	447	270	75.1	1190	17	457
1.6	233	64.8	1027	12	469	286	79.6	1261	20	481
1.8	247	68.5	1086	13	489	305	84.7	1342	22	502
2.0	260	72.2	1145	15	505	325	90.3	1431	25	521
2.2	274	76.0	1205	17	519	347	96.4	1528	28	538
2.4	288	80.1	1269	19	533	371	103	1632	32	554
2.6	304	84.4	1338	21	546	396	110	1743	36	571
2.8	321	89.2	1413	23	559	422	117	1860	40	588
3.0	340	94.4	1497	25	574	450	125	1981	45	606
3.2	361	100	1590	27	591	479	133	2107	50	627
3.4	385	107	1695	29	611	508	141	2237	55	650
3.6	412	114	1812	31	635	538	150	2370	60	677
3.8	441	123	1944	33	663	569	158	2505	65	709
4.0	475	132	2091	35	697	600	167	2642	70	746

Flow measurement accuracy using KV-signal

When using the KV-signal for flow measurement, the accuracy is $\pm 5\%$. See the curve to the left.

The curve is applicable regardless of the mounting position.

The KV-values accuracy follows the BS 7350 standard for flow measurement devices for heating and chilled water systems.

