

Two-Way Flow Altitude Control Valve

The Type 1 altitude control valves are based on the 106-PG or 206-PG main valve and are ideal for maintaining a preset maximum water level.



TECHNICAL GUIDE: **AVH1.14**

Applications

Potable water
Pressure systems
Municipal
Mining Applications
Irrigation Applications

Product Attributes

No overflows
Superior repeatability
Positive shut-off
Easily serviceable at ground level

Quality

AS 5081:2008
Flanging to AS/NZS 4087
Coating to AS/NZS 4158



The Type 1 altitude control valves are based on the 106-PG or 206-PG main valve and are ideal for maintaining a preset maximum water level.

The valve functions as a two position control valve, either fully open or fully closed. The Type 1 allows normal forward flow to fill the reservoir to the maximum level and then closes drip-tight at the set-point. It opens to allow reverse flow through the valve when the supply pressure drops a fixed amount below the reservoir head. When a higher supply pressure is restored, the Type 1 valve will then allow normal forward flow to refill the tank to the maximum level.

5. Select pilot spring range: 4 to 20 ft / 1 to 6 m; 10 to 60 ft / 3 to 18 m; 40 to 125 ft / 12 to 38 m; 60 to 220 ft / 18 to 67 m.
6. There is a non-adjustable differential required between the reservoir head and the supply pressure in order for the valve to open. It ranges from 1 ft / 0.3 m to 3 ft / 0.90 m for the pilot spring ranges listed.

SELECTION

1. Generally select line size to minimize losses during normal forward flow.
2. Use the performance curves and sizing bulletin to determine the pressure drop across the valve.
3. Limit maximum continuous flow velocity to 20 ft/s / 6 m/s for 106 and 16 ft/s / 5 m/s for 206. Consult Singer Valve if higher flows are expected.
4. The pilot system exhausts to atmosphere, ensuring the valve opens fully; requires that the displaced volume of water be taken to drain with each opening.

STANDARD MATERIALS

Standard materials for pilot system components are:

- Ductile Iron
- Stainless Steel
- Brass
- Copper

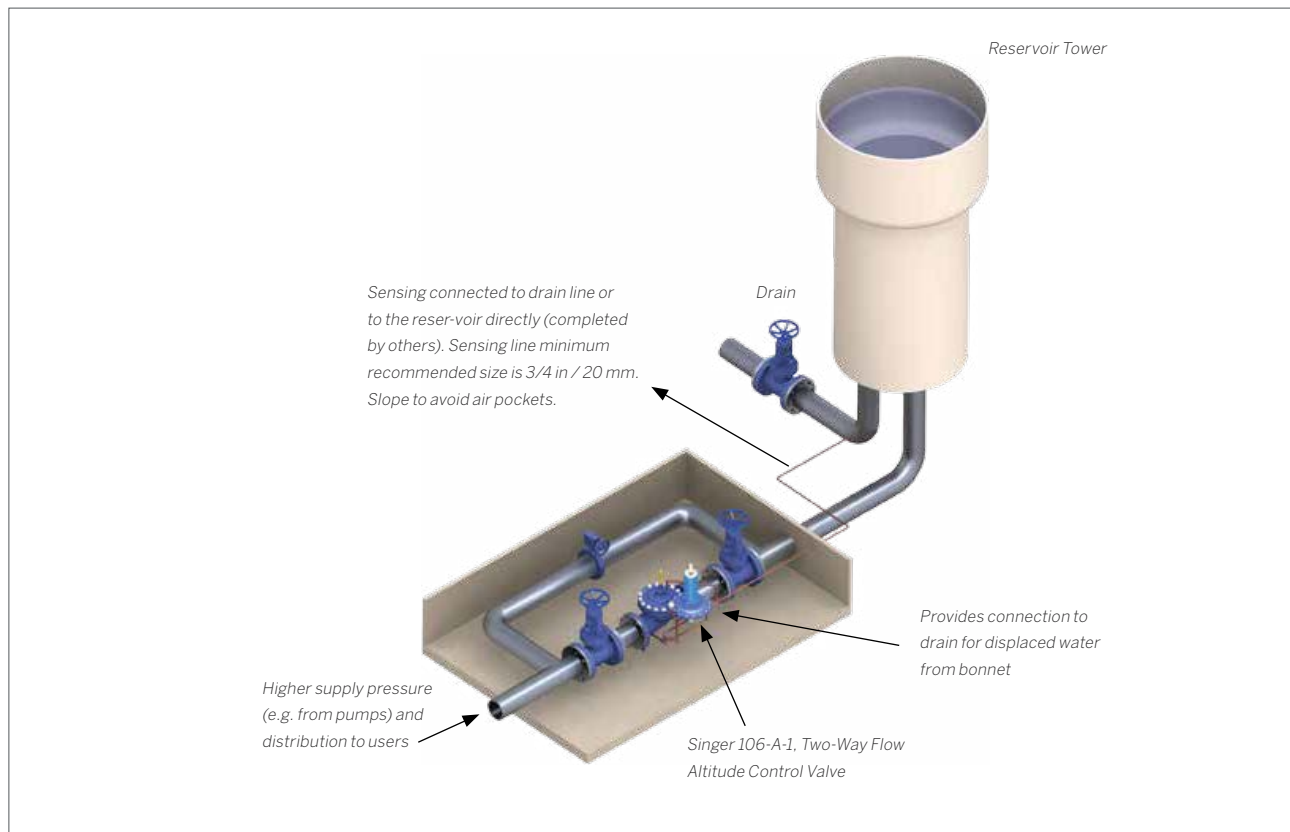


FIG. 1 Typical application

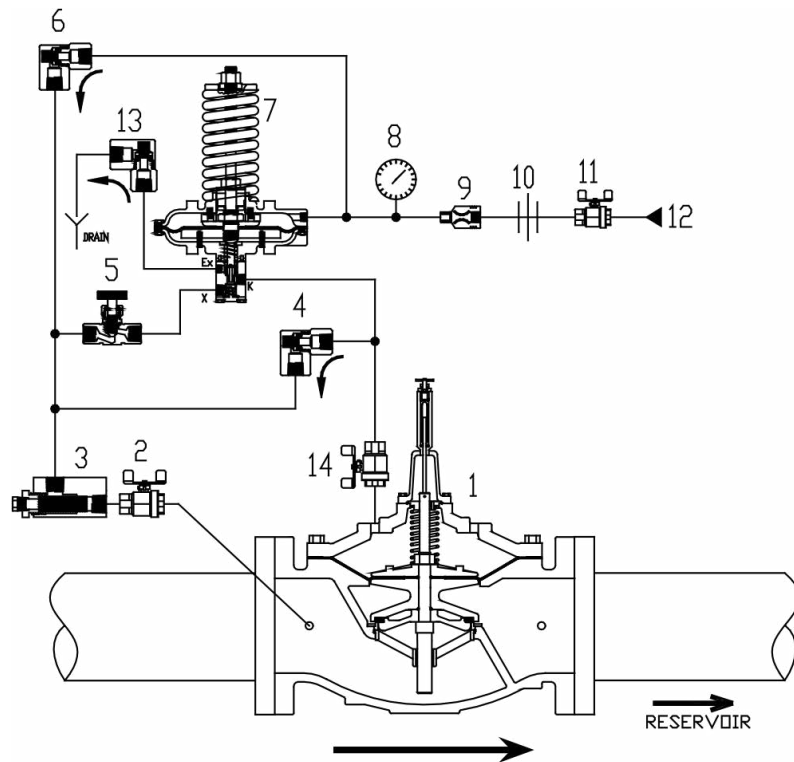


FIG. 2 Schematic A-0412D

SCHEMATIC DRAWING

1. Main Valve - 106-PG or 206-PG - with X107 position indicator
2. Isolation Valve
3. Strainer - 40 mesh stainless steel screen
4. Model 10 Check Valve
5. Closing Speed Control
6. Model 12 Check Valve
7. Model 301-4 Altitude Pilot
8. Altitude Gauge
9. Fixed Restriction - 1/8 in / 3.2 mm, 1/16 in / 1.58 mm
10. Union
11. Isolation Valve
12. Connection to Reservoir - complete in field
13. Model 12 Check Valve
14. Isolation Valve

106-A-Type 1 Flow Coefficient C_v (See 106-PG in Main Valve Section for other valve data)

Size (inches)	3 in	4 in	6 in	8 in
Size (mm)	80 mm	100 mm	150 mm	200 mm
C _v ¹	110	200	460	800
K _v ²	26	47	110	190

106-A-Type 1 Flow Coefficient C_v (See 106-PG in Main Valve section for other valve data)

Size (inches)	10 in	12 in	14 in	16 in	20 in	24 in	36 in
Size (mm)	250 mm	300 mm	350 mm	400 mm	500 mm	600 mm	900 mm
C _v ¹	1300	2100	2575	3300	5100	7600	16340
K _v ²	310	500	610	780	1210	1800	3875

206-A-Type 1 Flow Coefficient C_v (See 206-PG in Main Valve section for other valve data)

Size (inches)	10 in	12 in	16 in	18 in	20 in	24 x 16 in	24 x 20 in	28 in	30 in	32 in	36 in	40 in
Size (mm)	250 mm	300 mm	400 mm	450 mm	500 mm	600 x 400 mm	600 x 500 mm	700 mm	750 mm	800 mm	900 mm	1000 mm
C _v ¹	985	1550	2200	3300	3400	3500	5300	7800	7800	7900	8000	18000
K _v ²	230	370	520	780	810	830	1210	1850	1850	1870	1900	4265

*C_v = USGPM at 1 psi pressure drop

**K_v = L / s at 1 bar pressure drop

($Q=C_v \sqrt{\Delta P}$)

Note: based on fully open valve



Scan for more information

Disclaimer: While every effort has been made to ensure that the information in this document is correct and accurate, users of Hygrade Water Infrastructure product or information within this document must make their own assessment of suitability for their particular application. Product dimensions are nominal only, and should be verified if critical to a particular installation. No warranty is either expressed, implied, or statutory made by Hygrade Water Infrastructure unless expressly stated in any sale and purchase agreement entered into between Hygrade Water Infrastructure and the user. **April 2024**