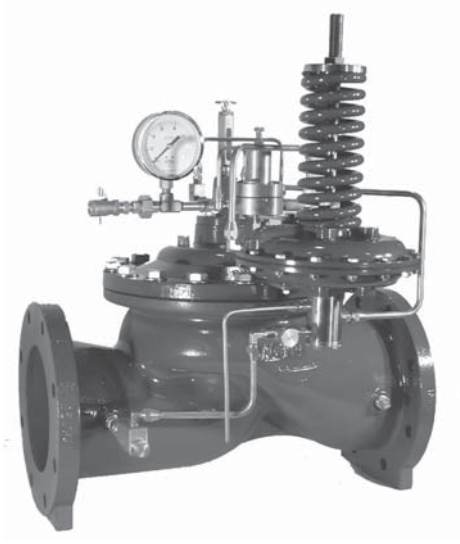


One-Way Flow Altitude Control Valve with Differential Control



The Singer model A-Type 4 altitude control valve employs the basic Singer model 106-PG or 206-PG main valve. The valve functions as a two position control valve - either fully open or fully closed.

The Type 4 allows normal forward flow to fill the reservoir to the maximum level, then closes drip tight at the set point.

It opens to refill the tank once the level drops an adjustable amount below the high water level.

Distribution from the reservoir is through a separate pipeline.

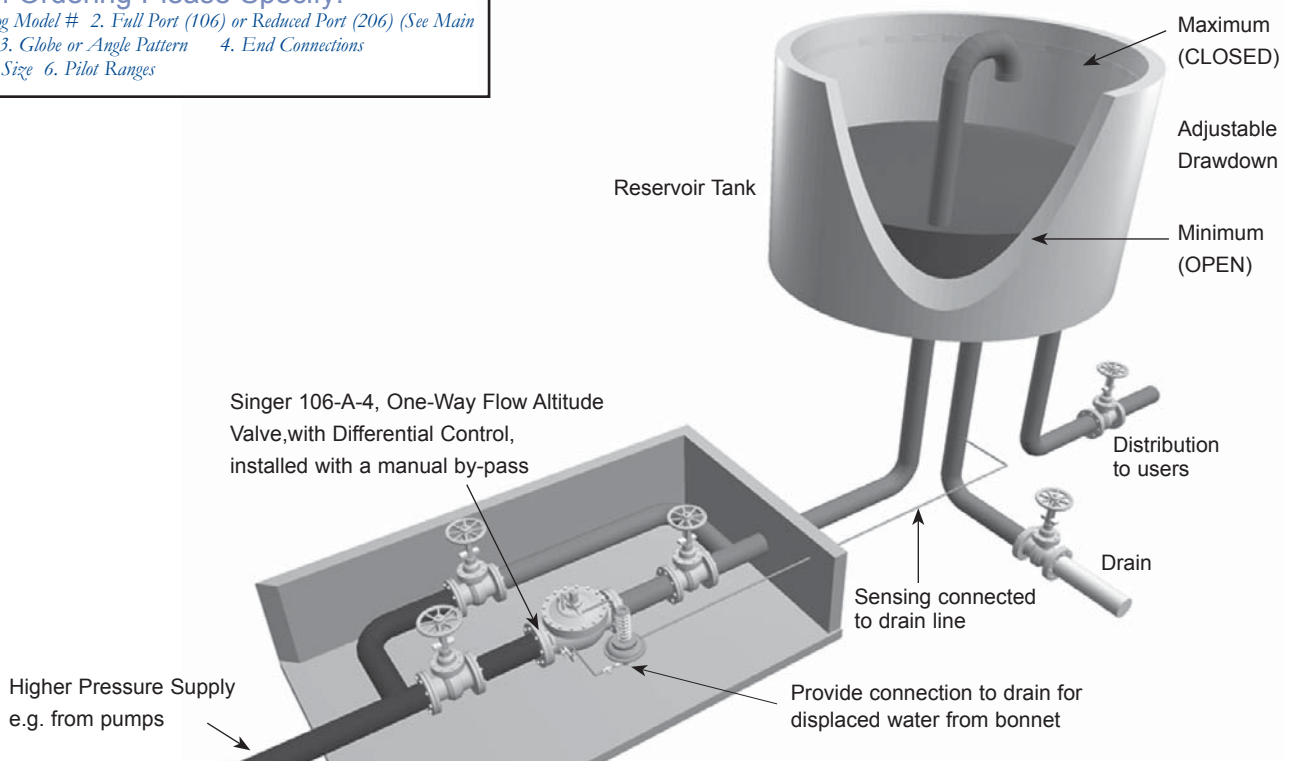
Note: This valve does not prevent reverse flow

- NO OVERFLOW - HIGH LEVEL SHUT-OFF MAINTAINED TO CLOSE TOLERANCES
- OPERATES WITHIN CLOSE LIMITS WITH SUPERIOR REPEATABILITY
- POSITIVE SHUT OFF
- LEVEL DIFFERENTIAL IS ADJUSTABLE

When Ordering Please Specify:

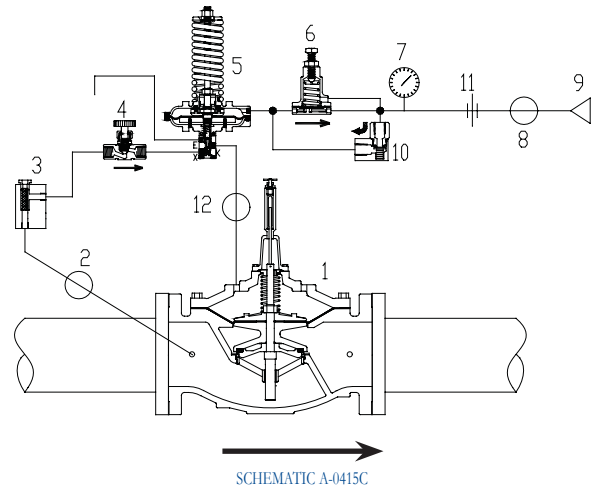
1. Catalog Model #
2. Full Port (106) or Reduced Port (206) (See Main Valves)
3. Globe or Angle Pattern
4. End Connections
5. Valve Size
6. Pilot Ranges

Typical Application:



One Way Flow Altitude Valve With Differential Control:

1. Main Valve - 106-PG or 206-PG - with X107 position indicator
2. Isolation Valve
3. Strainer - 40 mesh stainless steel screen
4. Closing Speed Control
5. Model 301-4 Altitude Pilot
6. Model 106-RD Differential Pilot
7. Altitude Gauge - dual scale - feet and psi
8. Isolation Valve
9. SENSING CONNECTION TO RESERVOIR - complete in field
10. Model 10 Check Valve
11. Union
12. Isolation Valve



Standard materials for pilot system components are:

- Ductile Iron
- Stainless Steel

106-A-Type 4	Flow Coefficient CV (See 106-PG in Main Valve Section for other Valve Data)			
Size (inches)	3"	4"	6"	8"
Size (mm)	80mm	100mm	150mm	200mm
CV*	110	200	460	800
CV**	2.6	4.8	11.0	19.2

206-A-Type 4	Flow Coefficient CV (See 206-PG in Main Valve Section for other Valve Data)			
Size (inches)	3"	4"	6"	8"
Size (mm)	80mm	100mm	150mm	200mm
CV*	60	150	250	505
CV**	1.4	3.6	6.0	12.1

106-A-Type 4	Flow Coefficient CV (See 106-PG in Main Valve Section for other Valve Data)						
Size (inches)	10"	12"	14"	16"	20"	24"	36"
Size (mm)	250mm	300mm	350mm	400mm	500mm	600mm	900mm
CV*	1300	2100	2575	3300	7500	7600	16340
CV**	31.2	50.4	61.8	79.2	180.0	182.4	392.2

206-A-Type 4	Flow Coefficient CV (See 206-PG in Main Valve Section for other Valve Data)									
Size (inches)	10"	12"	16"	18"	20"	24"	28"	30"	32"	36"
Size (mm)	250mm	300mm	400mm	450mm	500mm	600mm	700mm	750mm	800mm	900mm
CV*	985	1550	2200	3300	3400	3500	7800	7800	7900	8000
CV**	23.6	37.2	52.8	79.2	81.6	84.0	187.2	187.2	189.0	192.0

* CV = USGPM at 1 psi pressure drop; ** CV = L/s at 1 kPa pressure drop; $(Q=Cv \sqrt{\Delta P})$
Note: based on fully open valve with pilot system vented to atmosphere

Main Valve Dimensions
106-PG Page 20
206-PG Page 29
Anti-Cav Page 82

Selection Summary

1. Generally select line size to minimize losses during normal forward flow.
2. Use the performance curves to determine the pressure drop across the valve.
3. Limit maximum continuous flow velocity to less than 20 ft/s (6 m/s) for 106 and less than 16 ft/s (5m/s) for 206.
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. Refer to bulletin 106-PG or 206-PG for the displaced volume.
5. Select pilot spring range. Standard (301-4) is 10 to 60 ft (3 to 18m). Specify for 301-4 ranges 4 to 20 ft (1 to 6m), 40 to 125 ft (12 to 38m), 60 to 220 ft (18 to 67m).
6. Select differential pilot spring range. Standard is 10 to 20 ft (3 to 6m). Specify for 12 to 50 ft (4 to 15m). The total differential includes the non-adjustable differential of the altitude pilot.
7. If the fill line discharges below the reservoir surface, an internal dropcheck or separate check valve is suggested. This prevents return flow on loss of supply pressure.

Specification

The valve shall be a Singer Valve model 106 (206) -A-Type 4, size "____", ANSI Class 150 (ANSI 300, ANSI flanges drilled to ISO PN 10 / 16/ 25 or 40) pressure rating/ flange standard, globe (angle), style valve. The Model 301-4 Altitude Pilot spring range (elevation) shall be "___ to ___" feet (meters), with set point preset at factory to "___" feet (meters). The Model 106-RD differential (delayed opening) range shall be "___" to "___" feet (meters), with set point preset at factory to "___" feet (meters). Assembly shall be according to Schematic A-0415C.

- The valve allows normal forward flow to fill the reservoir to the maximum level then closes drip tight at the set point. It opens to refill the tank once the level drops an adjustable distance below the high water level.

Refer to "Main Valve" section, 106-PG (or 206-PG) and "Main Valve Options" section, Model X107 Position Indicator for detailed information pertaining to valve sizes and materials, selection criteria and specifications.

Refer to "Pilot and Accessories" section, Model 301-4 Altitude Pilot for detailed information pertaining to materials and specifications. Model 106-RD Pilot specification information, is available from the factory only at this time.