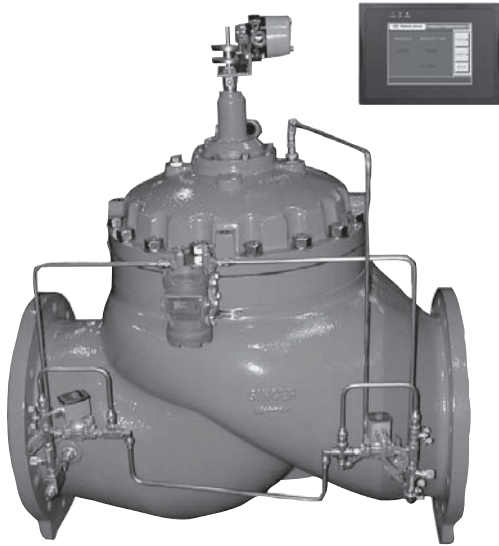


## Electronic Flow Control And Metering System



Singer model -2SC-MV electronic flow control and metering valve employs the basic Singer model 106-PG or 206-PG main valve.

The pressure in the upper operating chamber is controlled by operating the pilot solenoids. The PLC within the MV1-TP control panel determines whether the opening solenoid or the closing solenoid is operated. The change in valve position is dependent upon which solenoid is operated and the duration of the energized period.

The Singer MV1-TP control panel computes the flowrate based on valve differential pressure and position and operates the pilot solenoids to match the flow rate to the customer's pre-determined (adjustable) setpoint. Flow is totalized and displayed via panel readout.

- COMBINES PRECISE FLOW CONTROL WITH ACCURATE FLOW METERING: SAVE SPACE / COST
- PLC-BASED CONTROL PANEL-COMPATIBLE WITH YOUR SCADA SYSTEM
- COMPLETE SERVICE IN-LINE • EASY FIELD ADJUSTMENTS
- MANUAL CONTROLS FOR EMERGENCIES
- MV1-TP ELECTRONIC CONTROL PANEL INCLUDES A PRE-PROGRAMMED LOGIC CONTROLLER, TOUCH SCREEN DISPLAY, LABELED WIRING AND TERMINAL STRIP.
- RE-TRANSMISSION CAPABILITIES • CAN BE FIELD RETROFITTED TO EXISTING VALVES
- + / - 3% ACCURACY, CERTIFIED BY NIST APPROVED TESTING LABORATORY\*\*

\*\* Not Available For All Sizes, Consult Factory.

Electronic Control

### Typical Application:

#### 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. Inlet/Outlet Pressure Range
7. Solenoid Voltage
8. Optional Nema 4x Control Panel Enclosure

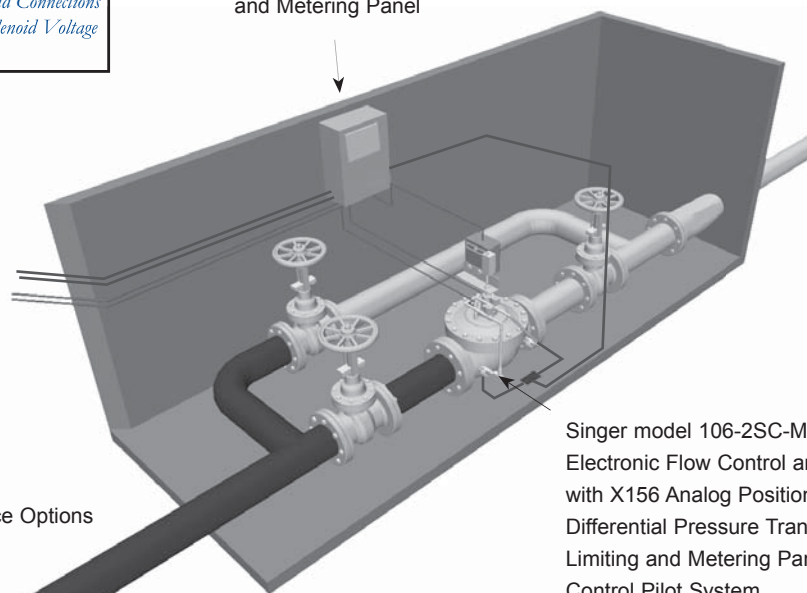
Singer model MV1-TP  
Electronic Flow Control  
and Metering Panel

Power Supply:  
120VAC/60Hz

Setpoint Signal:  
local or remote

To and From  
SCADA\*

\*See available  
SCADA Interface Options



Singer model 106-2SC-MV  
Electronic Flow Control and Metering Valve  
with X156 Analog Position Transmitter, Analog  
Differential Pressure Transmitter, MV1-TP Flow  
Limiting and Metering Panel, Dual Solenoid  
Control Pilot System.

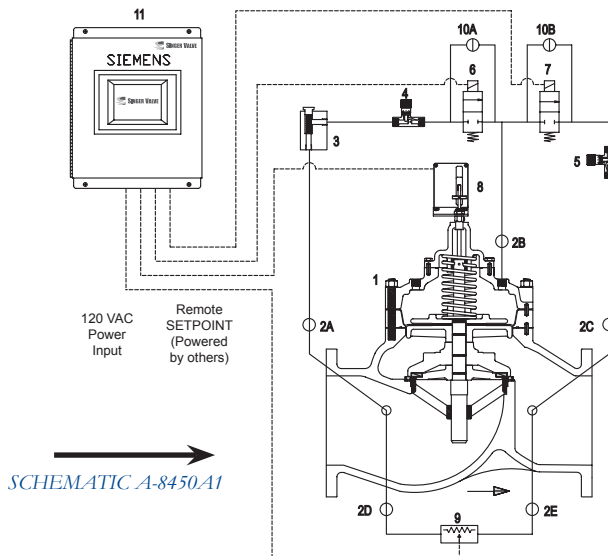
## Electronic Flow Control And Metering Valve:

1. Main Valve - 106-PG or 206-PG
2. Isolating Valves - A,B,C,D,E
3. Strainer - 40 mesh stainless steel screen
4. Closing Speed Control
5. Opening Speed Control
6. Closing Solenoid Pilot Valve - 120VAC/60Hz standard
7. Opening Solenoid Pilot Valve - 120VAC/60Hz standard
- 8\*. Model X156 Analog (4-20mA) Position Transmitter\*
9. Differential Pressure Transmitter
10. Manual By-Pass Valves - A,B - normally closed
11. Model MV1-TP Electronic Flow Control Panel

Note\*: All 106 series 2-1/2" (65m) to 4'(100mm) and all 206 series 4'(100mm) to 6"(150mm) will be fitted with heavy springs.

Standard materials for pilot system components are:

- ASTM B-16 brass fittings, copper tubing
- NEMA 4X solenoid coils
- NEMA panel enclosure



## Selection Summary:

1. Select a valve with sufficient capacity, using the allowable operating pressure drop across the valve. Usually line size.
2. Usually operating in the continuous "c", service range up to 20ft/s (6 m/s) - refer to chart and/or performance curves (see Technical and Sizing Section).
3. If the outlet pressure is less than 35% of the inlet pressure, consult the factory regarding cavitation.
4. Ensure the maximum working pressure rating of the valve exceeds the maximum operating pressure.
5. Ensure the solenoid coils are compatible with the electronic controllers - 120 VAC/60Hz standard.
6. If the operating pressure differential across the valve will exceed 100 psi (6.9 bar), consult the factory. For applications requiring high pressure drops, refer to Singer model PG-()AC (see High Performance Section)

106-2SC-MV	Flow Capacity (See 106-PG in Main Valve Section for other Valve Data)									
Size (inches)	4"	6"	8"	10"	12"	14"	16"	20"	24"	36"
Size (mm)	100mm	150mm	200mm	250mm	300mm	350mm	400mm	500mm	600mm	900mm
Minimum (USGPM)	10	20	40	5	5	5	5	50	50	75
Minimum (L/s)	0.63	1.26	2.52	0.32	0.32	0.32	0.32	3.15	3.15	4.73
Maximum Continuous (USGPM)	800	1800	3100	4900	7000	8500	11000	22500	25000	55470
Maximum Continuous (L/s)	50	114	196	309	442	536	694	1420	1577	3500

NOTE: CF =  
Consult Factory for  
valves 3" and under.

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

206-2SC-MV	Flow Capacity (See 206-PG in Main Valve Section for other Valve Data)												
Size (inches)	4"	6"	8"	10"	12"	16"	18"	20"	24"	28"	30"	32"	36"
Size (mm)	100mm	150mm	200mm	250mm	300mm	400mm	450mm	500mm	600mm	700mm	750mm	800mm	900mm
Minimum (USGPM)	5	10	20	40	5	5	5	5	5	50	50	50	50
Minimum (L/s)	0.32	0.63	1.26	2.52	0.32	0.32	0.32	0.32	0.32	3.15	3.15	3.15	3.15
Maximum Continuous (USGPM)	580	1025	2300	4100	6400	9230	16500	16500	16500	33600	33650	33700	33800
Maximum Continuous (L/s)	37	65	145	259	404	582	1041	1041	1041	2120	2123	2126	2132

## Specifications:

The system shall be a Singer Valve model 106 (206)-2SC-MV, size "\_\_\_\_\_", ANSI Class 150 (ANSI 300, ANSI Flanges drilled to ISO PN10/ 16/ 25 or 40 drillings) pressure rating/ flange standard, globe (angle) style valve. Opening and closing solenoid pilots shall be ASCO 2-Way normally closed: energize to open (normally open: energize to close) with 120VAC/60Hz (220VAC/50Hz or 24VDC) solenoid coil. The main valve shall be equipped with Model X156 4-20mA Position Transmitter and Differential Pressure Transmitter. The Model MV1-TP Flow Control and Metering Panel shall have pre-programmed logic module, adjustments and connection terminals, housed inside NEMA 4X rated raintight enclosure.

- The system shall accurately measure the flow (via the flow control and metering panel) based on valve position and differential pressure and control the flow by positioning the main valve based on the setpoint.
- The flow control and metering panel shall incorporate a pre-programmed logic controller with P.I.D. optimization and real-math calculation for accuracy.
- The flow control and metering panel shall have 24VDC, 1.3 Amp auxiliary power supply.
- Dual solenoid control shall be via solid state relays with zero-voltage switching.
- The flow control and metering panel shall have door-mounted touch screen interface and display.
- The valve shall be equipped with manual by-pass to provide emergency override operation.

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

Refer to "Main Valve Options" section, Model x156 Analog Valve Position Transmitter for information pertaining to material and specifications.

Refer to "Pilot and Accessories" section, Model Needle Valves for detailed information pertaining to materials and specifications of Opening and Closing Speed Controls.

Consult with factory for Solenoid specification information.

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