ValveMeter Lite System

▲ ValveMeter Lite System shown w/ a Model 115-3 Valve

The ValveMeter Lite (VML) is an electronic flow measurement system that can be added to any OCV control valve, ranging from 4" to 24". By adding this system, the electronic unit will give the ability to measure flow through the adapted valve. As a result, the user may access this information any of the following ways:

1.) Digital display on the front of the ValveMeter Lite electronics unit
2.) The unit will translate the flow to a 4-20mA analog output that is scaled to the maximum flow of the valve selected (20 feet/sec rate)
3.) Digital output (RS232) for the flow rate, totalizer count, measurement scale, and other information

Typical examples include:
●Water transmission lines ●Water treatment plants ●Pump stations

Note: For clarification of electronic terminology refer to the OCV Electronic Glossary
***Valves 1-1/4" through 24" are certified to NSF/ANSI 372. Valves 4" through 24" are also certified to NSF/ANSI 61-G.*

THEORY OF OPERATION

ValveMeter Lite with an OCV Control Valve
The ValveMeter Lite System will measure the valve degree of opening (Cv), and the differential pressure (DP) across the valve, and then calculate the water flow (Q) thru the valve using the formula listed below. By mounting and calibrating the Model 190 Position Transducer and the Model 210 Differential Pressure Transducer-the electronics-can then measure the valve position. From this information, the electronics unit calculates the Cv of the valve from an internal table of the selected valve. After the Cv has been computed, the Differential Pressure (DP) is measured and the formula below is used to calculate the flow through the valve.

$$Q = C_v \sqrt{\frac{DP}{SG}}$$

Whereas: Q = Flow in GPM
Cv = Coefficient of Valve (in Gallons)
DP= Differential Pressure (PSI)
SG= Specific Gravity of Fluid (Water = 1.0)

After the flow has been calculated, the electronics unit then converts the flow to the selected scaling and then displays the flow.
At one second intervals the 4-20mA analog output is updated to the current flow rate.

SYSTEM COMPONENTS

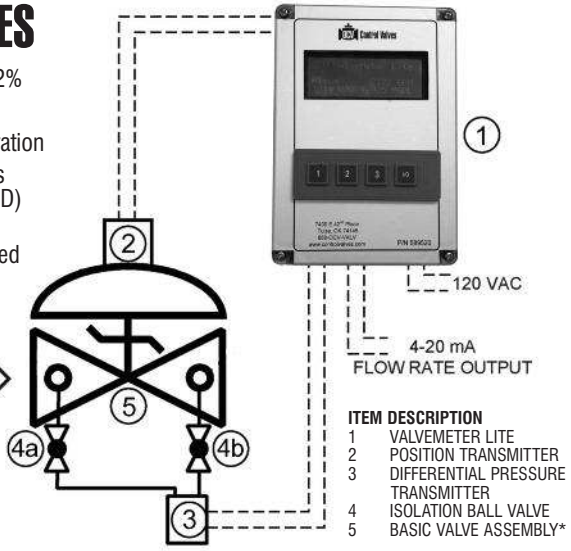
The ValveMeter Lite System consists of three components:
1.) ValveMeter Electronics Unit: This device is the heart of the flow measurement system and provides power to the other units needed.
2.) Model 190 Position Transducer: This unit is attached to the valve bonnet visual stem port and is used to measure the amount of valve opening.
3.) Model 210 Differential Pressure Transducer: This unit is attached to the valve on the back side, and is used to measure the difference between the input and output of the valve.

*Note-This system does not include a control valve. It is designed as an accessory to add to an OCV control valve when the application requires flow measurement information. The ValveMeter Lite may be added to an existing OCV control valve (any OCV valve that is 4" or larger).

How to order your VML System
When Ordering please provide:
Fluid to be controlled - Model Number - Size - Globe or Angle - Controller Voltages - Controller Options - Special Requirements / Installation Requirements

MODEL FEATURES

- Overall accuracy of +/- 2%
- Sizes 4"-24"
- User-friendly screen operation
- User-selectable flow units (USGPM, m3/hr, L/S, MGD) by internal DIP switch
- 4-20 mA output of metered flow rate
- Includes totalizer (sums) the total number of gallons that have flowed through the valve since the totalizer reset. Measured in USGPM, m3/hr, L/S or MGD)
- RS232 communications
- 100-260Vac 50-60Hz with 24/12 VDC, or solar powered units available
- Optional
  - Configuration for low pressure operation
  - Consult factory for others



ITEM	DESCRIPTION
1	VALVEMETER LITE
2	POSITION TRANSMITTER
3	DIFFERENTIAL PRESSURE TRANSMITTER
4	ISOLATION BALL VALVE
5	BASIC VALVE ASSEMBLY*

*Note: valve may be any OCV control valve from 4" to 24". Valve is sold seperately from VML System.

CONTROLLER SPECIFICATIONS

Power Requirements:
100-260 VAC 50-60Hz standard; Optional 24VDC or 12VDC
Inputs From Transducers:
4-20 mA standard
Panel Dimensions:
6-3/4" (172mm) High x 4-3/4"(121mm) Wide x 2-3/8" (60.3mm) Deep
Enclosure:
Nema 4X (weather tight, corrosion resistant)
Application Engineering Assistance:
Consult Factory

VML SPECIFICATIONS

(Typical Water Application)

The electronic flow measurement system shall operate to measure the flow rate without the use of external flow transducer.

DESIGN
The electronic flow measurement system shall consist of the valve position transmitter and valve differential transmitter and shall be adapted to the valve assembly. The measurement unit (electronics) shall be furnished separately for remote installation at a convenient location. The electronic flow system shall be operationally tested prior to shipment.

MATERIALS OF CONSTRUCTION
The measurement system shall be of weather-proof enclosures and be suitable for operation on <voltage>.

OPERATING CONDITIONS
The electronic flow measurement system shall be suitable for pressures of <X to X> psi, measuring flow rates up to <X> gpm.

ACCEPTABLE PRODUCTS
The electronic measurement system shall be mounted on a <size> OCV Control Valve, as manufactured by OCV Control Valves, Tulsa, Oklahoma, USA.

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ValveMeter Lite Flow Measurement System