

# Valve Flow Measurement

## 133VF Retrofittable Metering Kit Option



131VF Flow Module

X117 Series Position Transmitter



X117D



DP Differential Pressure Transmitter

- System accurately measures flow rate
- No external meter is required
- For new installations and retrofitting existing valves
- Completely self-contained, requiring 12 to 24 VDC power
- Simple integration

The Cla-Val 133VF Flow Metering System is an effective means of obtaining real-time flow data from a Cla-Val control valve regardless of valve function and without an external flow device. Now all Cla-Val control valves in a water distribution system can be economically integrated into SCADA control or pressure and flow management strategies.

The 133VF System is completely self-contained and when factory installed on new Cla-Val automatic control valves or field installed on existing valves, accurately measures flow rate and transmits it as a 4 - 20 mA analog signal. It can be used on virtually all valve sizes from two through twenty-four inch and is typically used at pressure reducing, back pressure, flow limiting, and level control valve stations.

The 131VF flow module accepts 4-20 mA analog signals of valve differential pressure and valve position to determine the flow rate.

The partially-open valve Cv is derived from valve position then used to calculate flow rate with formula shown below:

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

Where:

Q = flow (gpm)

DP = differential pressure (psi)

SG = specific gravity of fluid (water = 1.0)

The system features the “heart” of the 133-01 Flow Metering Control Valve technology and adapts it for single-valve flow monitoring-only applications. The 133VF System major components are an X117D valve position transmitter, a differential or inlet and outlet pressure transmitters and a 131VF flow calculating module. All components are 24 VDC powered and weather protected to IP-68 submersible rating. The 131VF module, with standard DIN rail mounting, contains powerful mini-computer technology for calculating valve flow based on inputs from the sensors and using the appropriate flow curve for a particular Cla-Val valve. For increased accuracy the 131VF module uses third-party certified flow curves tested for this particular metering application. Valve differential pressure measurement can be located either at the valve inlet and outlet bosses or on pipe adjacent to the valve providing installation versatility in all applications and operating conditions.



Automatic Control Valve with Metering Kit Installed

For applications requiring flow measurement and remote set point control, see 133-01 Metering Valve catalog data sheet.