

TwoView® - Dual Pump Controller

Features, Level Sensors & Complete Systems

- Lead/Lag Pump Control
- Unique Bar Display
- Select Alternating Pumps
- Accepts 4-20 mA Sensors
- High and Low Alarms
- Sump or Make-Up Versions

Technical Information

Sensor Input: Isolated input accepts any type of 4-20 mA process signal. Loop power available up to 24VDC for 2 wire device

Input Power: 120VAC/500mA; 24VDC unregulated/450 mA; 220VAC/300 mA

Security Levels: 3 levels of access protect data changes with DIP switch on back

Control Circuits: Four Form C relays, 10.0 amp 125VAC (noninductive). The lead and lag relays can be selected to alternate, or you can specify the primary pump circuit with a DIP switch on back. For more detail, see Controller Operation inside, or TwoView® Controller Notes on back page.

Programmed Memory: EEPROM - Loss of power will not affect existing programmed data.

Mounting Format: Flush mounted anodized steel enclosure with eight (8) 10/32 studs and sealing gasket; NEMA 4 graphic front panel; steel back pan housing.

Overall Dimensions: Tall: 16.75" (425 mm), Wide: 10.25" (250mm), Deep 2.25" (57mm), Weight: 10 lbs.

Level Sensor Input

Input is an isolated 4-20 mA. It is also loop powered up to 24VDC for two wire sensors. It accepts any type of 4-20 mA process signal from a wide variety of sensors. Provides tremendous design flexibility on your application. Some of the more common types of input sensors are pressure transducers, ultrasonic, submersible transducers, capacitance probes and bubbler systems measuring back pressure. Existing bubblers systems can be upgraded to TwoView® by connecting the back pressure line from the bubbler stand pipe to a pressure transducer, available from DistaView®, converting pressure to a 4-20 mA signal.

Isolated Sensor Input Terminal

4. 4-20 mA (-)
3. 4-20 mA (+)
2. Ground
1. + 24VDC Output

Complete TwoView® Control Systems

A variety of complete turnkey systems are available to control your application. The system includes: a TwoView® controller; a NEMA 4 or 12 enclosure, with or without a protective window door; and either a transducer or bubbler to send the level to TwoView®.

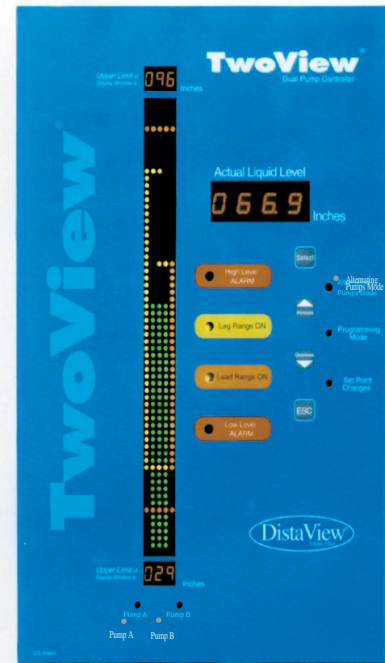
Transducer System: Flush-mounted TwoView® in the door of a NEMA 4 or 12 enclosure with or without a protective window door; din rail mounted terminal strip, and back plate inside the enclosure. Your choice of pressure transducer with NPT fittings or submersible on a cable. See specification key to order. Other types are available to meet your specs. Ask your rep.

Bubbler System: This system uses the bubbler principle to sense level without using plant air. The air supply is a low pressure, low flow dual diaphragm pump located in the enclosure. The back pressure from the bubbler stand pipe is converted to a 4-20 mA signal with a pressure transducer in the NEMA enclosure.

No Foolin' Around Bubbler: This system uses plant air but doesn't require any adjustments to the air supply or flow. An excellent upgrade to existing photohelic gauge bubblers.



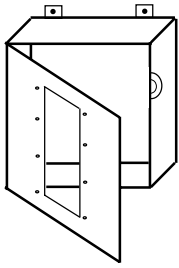
DistaView Corp.
(800) 795-9970





TwoView® System Enclosures: Electrical metal enclosures are NEMA 4 or 12, with back plate and a pre-cut door or hinged swing-out panel to flush mount TwoView®. Painted grey primer standard finish.

NEMA
**04
4X**



Narrow Fiberglass Door Mount LiquaVision®: Fiberglass NEMA 4X 20" h X 16" w X 8" d box with back plate and pre-cut door to flush mount LiquaVision®

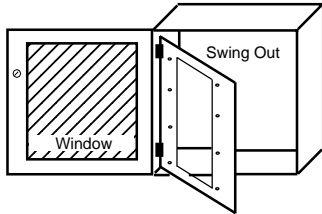
F16

Narrow Metal Door Mount LiquaVision®: Fiberglass NEMA 4 20" h X 16" w X 8" d box with back plate and pre-cut door to flush mount LiquaVision®

M16

Window Door with Swing Out LiquaVision®: Flush mount in the pre-cut swing-out panel behind the window door. NEMA 4 enclosure, 20" h X 20" w X 8" d, with back plate. Metal Hoffman Concept Enclosure

W20



Narrow Window Enclosure: Same as above (W20) but with a 16" wide enclosure, window door and swing-out panel - 20" h X 16" w X 8" d Metal Hoffman Concept Enclosure

W16

No Enclosure: Full size paper cutting template only to assist your mounting

XXX



Level Sensors: There are many types of sensors and installations. TwoView® accepts any type of sensor producing a 4-20 mA signal. The following are basic types, but not the only sensors that will work. TwoView® provides up to 24VDC to power loop sensors.

Pressure Transducer Endress & Hauser: Installs externally to tank with 1/2" NPT male fitting.

PT

Bubbler with Internal Air by DistaView®: Uses the traditional bubbler principle to sense level. Internal Air Pump up to 100 inches eliminates the need for plant air. See bottom of first page for complete description.

PB

No Foolin' Around Bubbler by DistaView®: This system uses plant air but doesn't require any adjustments to the air supply or flow. An excellent upgrade to existing photohelic gauge bubblers.

NF

Other Sensor Types: A variety of special application sensors are available. Specific information about ultrasonic, capacitance probes, microwave and laser sensing devices is available from your rep. TwoView® accepts any 4-20 mA process signal.

OT

No Sensor: Supplied by others.

XX



Select Sensor Range: There are a variety of sensor ranges available. The maximum height of the liquid covering the sensor or bubbler stand pipe must be determined to insure the correct range transducer. Specific gravity of the material may also affect the correct range. See back page questions.

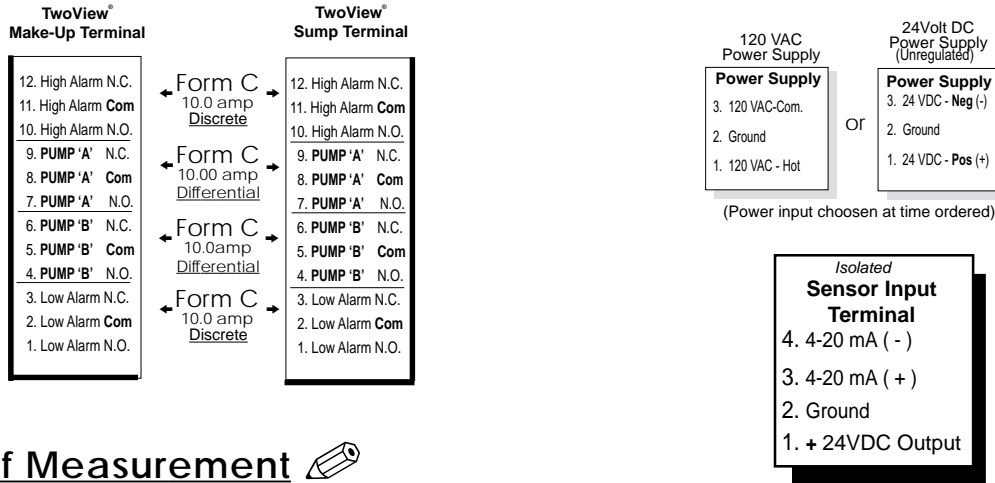
Endress & Hauser Pressure Sensor PMC 131		Order Code	Bubbler System Sensor for Internal Air and No Foolin' Around		Order Code	RANGE ORDER CODE		
	0-50 INWC	050W		0-10 INWC	B10W		Range	
	0-100 INWC	100W		0-15 INWC	B15W	Sensor		
0-5 PSIG	005P	0-20 INWC		B20W	Enclosure			
0-15 PSIG	015P	0-30 INWC		B30W				NEMA
0-30 PSIG	030P	0-50 INWC		B50W				
0-50 PSIG	050P	0-80 INWC		B80W				
0-150 PSIG	150P	0-100 INWC		BB1W				
		0-1 PSI		B01P				
		0-2 PSI		B02P				
		0-3 PSI		B03P				
		0-5 PSI		B05P				
		0-10 PSI		B10P				
		0-15 PSI	B15P					
		0-20 PSI	B20P					
		0-30 PSI	B30P					

TwoView® Controller Operation

MU Make-Up A typical application would be water tower control. Two differential Form C circuits maintain the lead and lag levels within their upper and lower limits. The lead range circuit is activated when the level reaches the lowest point of the range and is deactivated at the high point in the lead range. If the level falls to the lowest point of the lag range the second pump circuit is activated. Both pumps will remain on until the high points selected for each range is met. When either of the alarm levels are exceeded those circuits are activated.

SU Sump A typical application would be municipal lift stations. Two differential Form C circuits maintain the lead and lag levels within their upper and lower limits. The lead range circuit is activated when the level reaches the highest point of the range and is deactivated at the lowest point. If the level continues rising to the highest point of the lag range, the second pump or lag circuit is activated. Both pumps remain on until the low levels selected for each range are met. When either of the alarm levels are exceeded, those circuits are activated.

SP Special Order Custom operations can be programmed. Describe your specific control needs on back.



Units of Measurement

- 01** Inches Graphic face shows level in inches (Maximum 999 Inches)
- 02** Centimeters Graphic face shows level in centimeters (Maximum 999 Centimeters)
- 05** Feet Graphic face shows level in feet (Maximum 999 feet, programed in 1.0 ft. increments)
- 04** Feet in Tenths Graphic face shows level in feet (Maximum 99.9 feet, programed in 0.10 ft. increments)
- 06** Special Order Graphic face shows level in measurements you require

Language

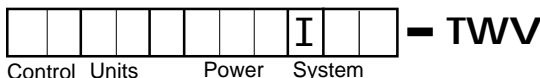
- E** English Manual, back label, side tags & graphic face printed in English
- S** Spanish Manual, back label & side tags in Spanish; graphic face in English

Power Supply Voltage


- 024** 24 Volt DC 750 mA unregulated or regulated
- 120** 120 Volt AC 900 mA
- 220** 220 Volt AC 600 mA

Complete System Assembled

- AT** Transducer System: All of the selected components are assembled in the specified enclosure. The system comes with all the input and output terminals wired to a DIN mounted terminal strip. TwoView® is already mounted in the door or swing-out panel. You bring power and sensor wiring through the knock-out style of your choice. *Starters and protection not included.*
- AB** Bubbler System: This system comes assembled with a 1/4" NPT female fitting for the bubbler stand pipe connection. Same assembly as the AT Transducer System above.
- XX** No Assembly Required: All components and enclosure with cutting template.




Application Notes for Quotes & Orders - TwoView® - Dual Pump Controller

 **Contact Name:** _____ **Company:** _____

Phone: () _____ -- _____ ext. _____ • Fax: () _____ -- _____

Department _____ Rep Name _____ Date ____/____/____

 **Material Being Measured:** What is it? _____ Lift Station Water Tower Other
(Sensor diaphragm is 316 stainless steel. Other diaphragm types are special order.)

- Normal Operating Temperature: _____ °F °C
- Max. Temperature: _____ °F °C For how long? _____
- Specific Gravity of Material: _____ It's water.
- High Viscosity or Particulates that may clog 3/8" orifice? YES (see note if YES)


NOTE: The Endress & Hauser PMC 131 and PMC 41 pressure transducers have 3/8" diameter orifices to sense pressure. If you are in contact with high viscosity liquids, slurry and/or sludge, you may want to consider a flush diaphragm with a straight thread connection. Call for details.

Site Installation Notes:

- TwoView® enclosure is located - Outdoor / Indoor
- Pressure Sensor will be located - Outdoor / Indoor
- Distance pressure sensor is from TwoView® controller - approx. feet _____ .
- Depth of liquid above the sensor, bubbler tube or length of submersible cable is approx. ____ inches.
- Tank is pressurized? YES - up to ____ psi. NO
- Tank is under vacuum? YES - up to ____ inches Hg. NO
- Does the controller location have a great deal of dust or caustic vapors in the air?
 Dusty - What is it? _____ Vapor - What is it? _____
- Standard E&H transducer thread size is 1/2" NPT male. Is this acceptable? YES NO
If not, what thread size is required? _____

TwoView® Controller Notes:

- Are the devices on each circuit under 10.0 amps each? NO YES Amps _____
NOTE: On all inductive loads you should install surge suppressors. If the devices require greater than 10.0 amps use an additional "coil" relay in the circuit.
- Describe the level control you require for this installation - ✓check one.
 - Make-Up [MU]** Two differential Form C circuits maintain the lead and lag levels. The lead range circuit is activated when the level reaches the lowest point of the range and is deactivated at the high point in the lead range. If the level falls to the lowest point of the lag range, the second pump circuit is activated. Both pumps will remain on until the high points selected for each range are met. When either of the alarm levels is exceeded, those circuits are activated.
 - Sump [SU]** Two differential Form C circuits maintain the lead and lag levels. The lead range circuit is activated when the level reaches the lowest point of the range and is deactivated at the high point in the lead range. If the level falls to the lowest point of the lag range, the second pump circuit is activated. Both pumps will remain on until the high points selected for each range are met. When either of the alarm levels is exceeded, those circuits are activated.
 - Special Order [SP]** Custom operations can be programmed. Describe your specific control needs:

 **Comments & Notes:** _____

