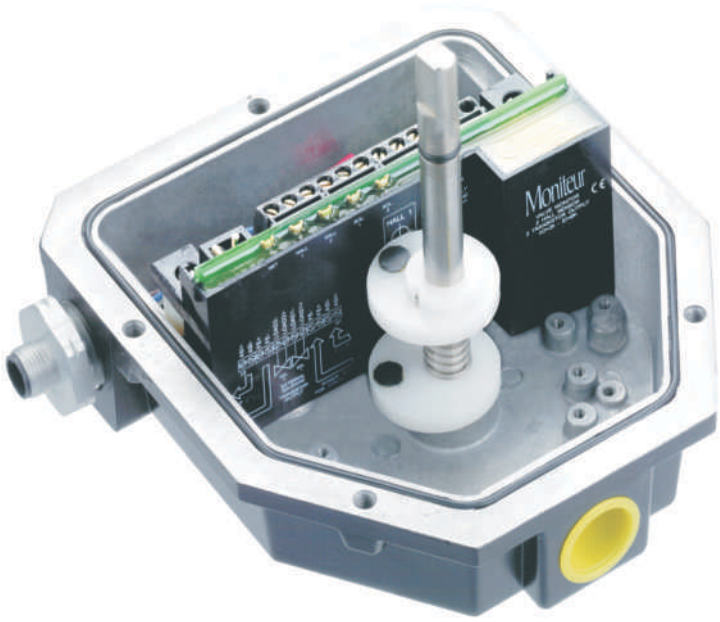
Moniteur

PROFIBUS DP
Valve Position Controllers

Profibus Valve Position Controllers

Moniteur VPCs with encapsulated Profibus interface cards adapt your on/off automated valves to an advanced Profibus DP valve network. The Profibus protocol was developed in 1989 by a group of factory automation suppliers.

Profibus-DP is a device level bus network that supports both analog and discrete signals. Profibus-DP has widespread usage for such items as remote I/O systems, motor control centers, and variable speed drives. Profibus-DP communicates at speeds from 9.6 Kbps to 12 Mbps over distances from 100 to 1,000 meters.



Advanced Profibus DP Platform Improves Reliability

The Network Card. A full function encapsulated network card for the network protocol includes the following benefits:

- Encapsulated electronics and position sensors ensures reliability in corrosive, humid and dirty environments.
- Hall effect position sensors designed into the card provide optimum stability in areas of high vibration.
- Two transistor outputs with a combined output of up to 4.8w @ 24VDC are available for your solenoid valves
- High visibility LEDs are located on-board for local indication of on-board sensors, auxiliary inputs, outputs and network status.
- Two additional inputs are available for local pressure or temperature switches.

The Physical Platform. Moniteur's platform is available in many configurations:

- Housings in Aluminum, Hard Anodized Aluminum or SuperTough Zytel® for General Purpose or Hazardous Areas
- Moniteur's proven Engineered Loc-Ring Cam and Shaft Retention System assures stable output signals in difficult environments over a multi-million cycle life.
- Optional Mini and Micro plug connectors can be fitted to the conduit entries of the enclosures to speed installation.

The Visual Indicator. Moniteur's High Visibility Valve Position Indication preferred by users worldwide are available in a wide variety of colors and flow patterns.

The Solenoid Valve. Low power solenoid valves optimized for the network card output are available with direct NAMUR actuator mounting or pre-wired to the VPC.

Profibus® DP Technical Information

- Each Network Supports up to 32 Devices per Segment or 128 With Repeaters
- Automatic Baud Rate up to 1.5 mp/s.
- Up to 1000 m Maximum Trunk Length Without Repeaters, dependent upon the chosen Baud Rate.
- Supports Both Discrete and Analog Signals
- I/O Modules Allow Connection of Conventional Analog and Discrete Devices
- Interfaces Available for Many Variable Speed Drives, Motor Control Centers, and Field Devices
- Simple Integration of New Devices into an Existing Network
- Supports Mono-Master and Multi-Master Systems

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Form VN9-1605

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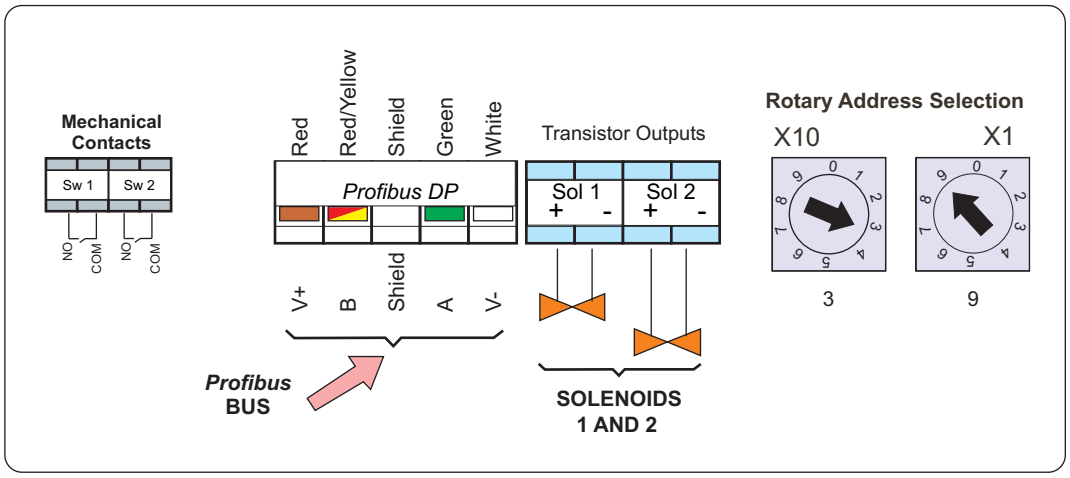
Wiring Diagram



Standard Profibus® Network Card Specifications

Power

Voltage	24Vdc ±10%
Current	<40mA

Communication

Type	Slave
Communication	Polled
Word	1 Byte TX, 1 Byte RX
Addressing	0 to 99, by Rotary Switch
Transmission Rate	up to 1.5 mp/s Baud

Local Indication

Green (Light)	Active and Allocated

On-Board Sensor Inputs

Type	(2) Hall Effect Solid-State Sensors, (1) for Each Valve Position
Local Indication	Red LEDs

Solenoid Output

Type	(2) Transistor Programmable to NO or NC
Transistor Rating	24VDC / 2 X 200 mA
Indicator	(2) Red LEDs

Mechanical Inputs

Type	(2) Mechanical Contacts
Activation	Open / Closed Circuit

Intelligent Part Number System

F	M	Y	B	-	5	S	2	0	-	DP7
Series	Cover	Indicator	Bearing		Shaft	Sensor	Quantity	Conduit		Network Card

Description	Code
Series:	
Watchman (Nema 4)	F
Survivor (Plastic Nema 4)	P
Sentinel (Ex-Proof)	A
Moniteur	
With Indicator	M
Flat Cover	F
Indicator Type (open/closed)	
No Indicator (Flat Cover)	N
Black / Yellow (Standard)	Y

Description	Code
Bearing	
Bronze	B
303 Stainless	S
Shaft	
Standard 303 SS	1
Standard 316 SS	3
Low Profile NAMUR 303 SS	5
Low Profile NAMUR 316 SS	7
NAMUR 303 SS	E
NAMUR 316 S	G

Description	Code
Switch/Sensor Type	
On Board Sensors	S
Sensor Quantity	2
Conduit Connection	
2 - 1/2" F NPT (F & P Series)	0
3 - 1/2" F NPT (F & P Series)	6
2 - 3/4" F NPT (A Series)	0
3 - 3/4" F NPT (A Series)	5
Profibus DP	-DP7

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Data Map for Profibus DP

Diagnosis Bits

The Profibus DP valve monitor has diagnosis of short-circuit or solenoid open and the power supply voltage, indicating the fault locally through the PWR LED.

Input							Output	
Bit 0	Bit 1	Bit 2	Bit 3	Bit 4	Bit 5	Bit 6	Bit 0	Bit 1
sensor 1	sensor 2	MC1	MC2	Power Supply	output 1	output 2	sol 1	sol 2
hall sensor		mechanical contact		under or overvoltage < 19V or > 29V	short-circuit or open		solenoid	

The module also allows the bits to be viewed in configuration software, see the table below the meaning of each bit.

Input Bits				
Bit	**Operation Description**	**Signaling LED**		**Bit Sent to PLC**
Bit 0	indicates the activation of the sensor 1	S1	-	0 - sensor 1 deactivated
			yellow	1 - sensor 1 activated
Bit 1	indicates the activation of the sensor 2	S2	-	0 - sensor 2 deactivated
			yellow	1 - sensor 2 activated
Bit 2	indicates the closing of mechanic contact 1	MC1	-	0 - contact 1 open
			yellow	1 - contact 1 closed
Bit 3	indicates the closing of mechanic contact 2	MC2	-	0 - contact 2 open
			yellow	1 - contact 2 closed
Bit 4	indicates the power supply state undervoltage < 19V - overvoltage > 29V	PW	PW - red	0 - under or overvoltage
			PW - green	1 - power supply in normal condition
Bit 5	indicates the output 1 state PW LED also indicates output in short-circuit or open	PW	PW - red	0 - output 1 short-circuited or open
			PW - green	1 - output 1 in normal condition
Bit 6	indicates the output 2 state PW LED also indicates output in short-circuit or open	PW	PW - red	0 - output 2 short-circuited or open
			PW - green	1 - output 2 in normal condition
Output Bits				
Bit	**Operation Description**	**Signaling LED**		**Bit Sent to PLC**
Bit 0	indicates the activation of the output 1	SOL1	-	0 - output 1 deactivated
			yellow	1 - output 1 activated
Bit 1	indicates the activation of the output 2	SOL2	-	0 - output 2 deactivated
			yellow	1 - output 2 activated
Note: the indication of open or short-circuit of outputs indicated by PW LED only work when its output is activated.				