

Features

- Advance technology allows solenoid output to operate throughout DeviceNet voltage
- Onboard diagnostics provides easy calibration
- ODVA conformance tested to Composite 18
- Fully encapsulated electronics module
- Bus powered inputs and outputs
- Two built-in sensors for OPEN/CLOSE detection
- Short/Open Circuit protection
- EMC certified to directive 89/336/EEC//93/68/EEC (Per Stds. EN61000-6-4, EN61000-6-2)

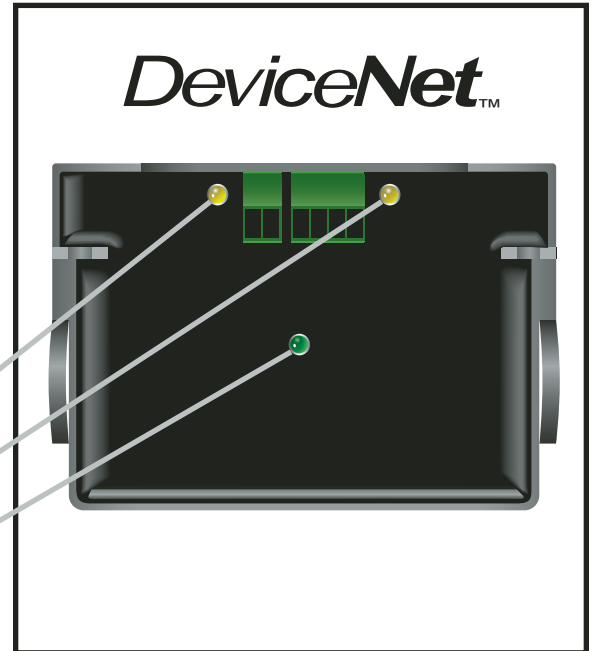
Visual Diagnostics

OPEN POSITION

CLOSED POSITION

LED FOR BUS LINE STATUS

- No LED lit: No power
- Flashing Green: Online but no established DeviceNet connections
- Solid Green: Online with established DeviceNet connections
- Flashing Red: Timed out DeviceNet I/O connection(s)
- Solid Red: Communication fault: Duplicate address or incorrect baud rate



ASCO Valve Monitoring Systems is an integrated network module and limit switch package that connects automated valves and external devices directly to the control system reducing the I/O interfaces and wiring associated with a typical hardwired solution. The DeviceNet Network Card is fully encapsulated for superior environmental protection, and LEDs provide visual status of network connection and valve position. Optional diagnostics provide built-in maintenance tools such as cycle count, travel times, self-calibration, and valve information. Our network cards operate with our NR and VR series rotary or HS series linear indicators. Enclosures types range from Nema 4, 4X to Class 1, Division 1, Groups B, C & D. Accessories such as a Network Junction Box are available.

Note: ASCO recommends using 12 VDC pilot valves with DeviceNet cards.

DeviceNet Technical Specifications

Maximum Distance	500 Meters/1640 Feet @ 125Kbps, 250 Meters/820 Feet @ 250kbps, 100 Meters/328 Feet @ 500Kbps
Physical Media	Four wire system (two for communication and two for power)
Available I/O	2 inputs, 1 output 6 inputs, 2 output (includes 4 general purpose inputs)
Network Topology	Trunk line/dropline with branching
Supported Baud Rate	125 Kbps, 250 Kbps, 500 Kbps
Diagnostics	Yes
Bus Voltage	11-25 VDC

Ordering Number Example: VR7C2YAW0__A

DC = DNet 2x1

DE = DNet 2x1 with diagnostics

DD = DNet 6x2 (m1), 2 outputs, single acting

DH = DNet 6x2 (m2), 1 output, double acting

DF = DNet 6x2 with diagnostics (m1), 2 outputs, single acting

DJ = DNet 6x2 with diagnostics (m2), 1 output, double acting

Standard Diagnostics

Input Status – state of input whether valve is CLOSED or OPEN

Solenoid Voltage – indicates the voltage applied to solenoid

Output Status – indicates whether the solenoid output is in open or short circuit condition

Bus Voltage – indicates the DeviceNet voltage at that node

Valve Tag # – 16 character text for user input of node id

Valve Manufacturer – 16 character text for user input of valve manufacturer of particular node

Actuator Manufacturer – 16 character text for user input of actuator manufacturer of particular node

Valve Serial # – 16 character text for user input of valve serial # of particular node

Actuator Serial # – 16 character text for user input of actuator serial # of particular node

Valve ID # – 16 character text for user input of valve ID (part number or type) of particular node

Actuator ID# – 16 character text for user input of actuator ID (part number or type) of particular node

Extended Diagnostics

Cycle Count Pilot Valve – actual number of cycle, OPEN-to-CLOSE and CLOSE-to-OPEN for the pilot valve

Cycle Count Limit Pilot Valve – operational cycle limit of the pilot valve. Once limit is exceeded a fault will be sent to PLC/DCS indicating limit exceeded

Cycle Count Actuator – actual number of cycle, OPEN-to-CLOSE and CLOSE-to-OPEN for the actuator

Cycle Count Limit Actuator – operational cycle limit of the actuator. Once limit is exceeded a fault will be sent to PLC/DCS indicating limit exceeded

Cycle Count Main Valve (Process Valve) – actual number of cycle, OPEN-to-CLOSE and CLOSE-to-OPEN for the pilot valve

Cycle Count Limit Main Valve (Process Valve) – operational cycle limit of the main valve. Once limit is exceeded a fault will be sent to PLC/DCS indicating limit exceeded

Note: the Travel & Break Time below are accurate to 10ms

Travel Time OPEN-to-CLOSE – the last time between the change-in-state command-CLOSE and the indication the valve is in the CLOSE position. This is the recorded value of the last time the valve was used.

Setpoint Travel Time OPEN-to-CLOSE – calibration value of the time between the change-in-state command-CLOSE and the indication the valve is in the CLOSE position. This value is automatically recorded & saved during Calibration command.

Tolerance Travel Time OPEN-to-CLOSE – maximum allowable difference between Travel Time OPEN-to-CLOSE & Setpoint Travel Time OPEN-to-CLOSE. If Travel Time exceeds Setpoint + Tolerance, then a fault will be sent to PLC/DCS indicating limit exceeded.

Travel Time CLOSE-to-OPEN – the last time between the change-in-state command-OPEN and the indication the valve is in the OPEN position. This is the recorded value of the last time the valve was used.

Setpoint Travel Time CLOSE-to-OPEN – calibration value of the time between the change-in-state command-OPEN and the indication the valve is in the OPEN position. This value is automatically recorded & saved during Calibration command.

Tolerance Travel Time CLOSE-to-OPEN – maximum allowable difference between Travel Time CLOSE-to-OPEN & Setpoint Travel Time CLOSE-to-OPEN. If Travel Time exceeds Setpoint + Tolerance, then a fault will be sent to PLC/DCS indicating limit exceeded.

Break Time OPEN-to-CLOSE – the last time between the change-in-state command-CLOSE and the indication the valve leaves the OPEN state. This is the recorded value of the last time the valve was used.

Setpoint Break Time OPEN-to-CLOSE – calibration value of the time between the change-in-state command-CLOSE and the indication the valve leaves the OPEN state. This value is automatically recorded & saved during Calibration command.

Tolerance Break Time OPEN-to-CLOSE – maximum allowable difference between Break Time OPEN-to-CLOSE & Setpoint Break Time OPEN-to-CLOSE. If the Break Time exceeds Setpoint + Tolerance, then a fault will be sent to PLC/DCS indicating limit exceeded.

Break Time CLOSE-to-OPEN – the last time between the change-in-state command-OPEN and the indication the valve leaves the CLOSE state. This is the recorded value of the last time the valve was used.

Setpoint Break Time CLOSE-to-OPEN – calibration value of the time between the change-in-state command-OPEN and the indication the valve leaves the CLOSE state. This value is automatically recorded & saved during Calibration command.

Tolerance Break Time CLOSE-to-OPEN – maximum allowable difference between Break Time CLOSE-to-OPEN & Setpoint Break Time CLOSE-to-OPEN. If the Break Time exceeds Setpoint + Tolerance, then a fault will be sent to PLC/DCS indicating limit exceeded.

Configurable Behavior – in the event that the PLC/DCS stops communicating the device as the ability to automatically switch to a “Fail Safe” position.

Input Identifier – for versions with 4 extra inputs the device has 4 general purpose identifiers (16 characters max for each) for user input of devices connected to those inputs.