valvetop

CLOSED

valvetop

TOPWORX

TOPWORX

DISCRETE VALVE CONTROLLERS
POSITION MONITORING AND CONTROL OF AUTOMATED ON/OFF VALVES

- Suitable for use on rotary and linear applications

- Certified for use in all hazardous areas

- Integrated solutions (bus + sensors + pilot)

- Technology leadership in fieldbus networks

TOPWORX
Control Without Compromise

TopWorx is the global leader in valve control and position sensing solutions for the process industries. Our solutions help plants, platforms, and pipelines improve productivity and increase safety in the harshest environments and toughest applications.

GLOBAL TECHNOLOGY LEADERSHIP

TopWorx technology advancements are at the forefront of innovation in the process automation industry. TopWorx uses wireless technologies and fieldbus protocols such as FOUNDATION Fieldbus, DeviceNet, AS-Interface, Profibus, and HART to reduce installation costs and enable predictive maintenance.

GLOBAL HAZARDOUS AREA CERTIFICATIONS

In addition to high temperature (204°C), cold temperature (-50°C), and sub-sea (6,800 meters) applications, TopWorx products are suitable for use in Flameproof/Explosion Proof, Non-Incendive, Intrinsically Safe hazardous areas with IECEx, ATEX, GOST, InMetro, UL, CSA, JIS, KOSHA, and NEPSI certifications.

GLOBAL SERVICE & SUPPORT

With company locations in the United States, United Kingdom, South Africa, Bahrain, and Singapore, TopWorx is strategically positioned to provide outstanding support. In addition, over 150 Certified Product Partners throughout the world are available to provide competent local support when needed.

WWW.TOPWORX.COM

Visit **www.topworx.com** for comprehensive information on our company, capabilities, and products – including model numbers, data sheets, specifications, dimensions, and certifications.

valvetop DISCRETE VALVE CONTROLLERS FOR ON/OFF VALVES

Valvetop® discrete valve controllers enable automated on/off valves to communicate via FOUNDATION Fieldbus, DeviceNet, AS-Interface, Profibus, and HART protocols. They attach to all rotary and linear valves and actuators, operate in the most demanding environmental conditions, and carry a variety of hazardous area certifications.

Discrete Valve Controllers for:
• Any bus network
• Any hazardous area
• Any valve or actuator
• Anywhere in the world

TopWorx Valvetop valve control solutions deliver on today's new customer requirements. With the Valvetop program, customers enjoy:

• A complete line of valve controllers and monitors for every protocol, application, environment, and hazardous area.

• The world's leading selection of valve networking products, including FOUNDATION Fieldbus, DeviceNet, AS-Interface, Profibus, and HART.

• 'GO Switch Inside', the most reliable and durable valve position sensor on the planet.

• Quality products with global agency approvals including IECEX, ATEX, CE, UL, CSA, FM as well as NEPSI, JIS, KOSHA, InMetro, and GOST.

• The unmatched process experience and bus networking expertise of TopWorx, the leading provider of valve control and position sensing solutions for the process industries.

VALVETOP® D-SERIES
World-Class Discrete Valve Controllers with the Highest Technology Available

Valvetop® D-Series discrete valve controllers are certified for use in every world area. They carry IECEx, ATEX, UL, and CSA certifications in a single model, making it easier for global customers to standardize across plants in multiple world areas. Other certifications available include NEPSI, JIS, KOSHA, InMetro, and GOST.

Valvetop® D-Series discrete valve controllers can survive in virtually any plant condition. Their heavy-duty construction and corrosion resistance enable superior performance in the most demanding applications.

The Valvetop® D-Series is Built Tough!

Designed to provide reliable service for a lifetime, the Valvetop® D-Series has been built to last in the most demanding applications, and endurance tested for over 3.5 million cycles to prove it.

Wet
Tested against intense water pressure blasts and complete submersion underwater for ½ hour

Hot
Tested for endurance in temperatures up to 176°F/80°C

Cold
Tested for endurance in temperatures down to -58°F/-50°C

Dirty
Tested in dust chamber and proven dust tight

Abusive
Tested against the "300 pound man step test" and proven impact and step resistant

Corrosive
Tested against hundreds of corrosive and caustic elements and proven to resist deterioration or chipping

Explosive
Tested by UL for use in explosive environments with no seal-off fittings required (DXP, DXS)

Chemical Compatibility
Tested against hundreds of chemicals with varying exposure times, temperatures, and concentrations. Please visit www.topworx.com for specific chemical compatibility information.

" I like the fact that the DXP has world wide approvals since we have projects throughout the world. "
- Project Engineer, Global Engineering Firm

![valvetop](valvetop logo)

Visual Display
• Impact resistant polycarbonate
• Intuitive colors (Green/Red)
• Adjustable/customizable
• Pre-adjusted to 90° for easy installation
• Less than 1 3/4" tall

Rugged Enclosures for every environment
• Aluminum, Composite, Stainless
• Up to four conduit entries (English or Metric)
• O-ring seals everywhere
• Buna, Viton, EPDM, Silicone o-ring options

Pilot Valves
• Aluminum, 304, 316 Stainless Steel available
• Low Power Solenoid or Ultra-Low Power Piezo
• Single or Dual Coil
• 1.2 Cv or 3.0 Cv
• Integrally mounted for extra protection
• Built-in, 5-micron filter protects the pilots against debris
• Fast, easy troubleshooting:
  - Pneumatic tubing is color-coded for trouble shooting while system is pressurized
  - Troubleshoot valve without removing the cover

Bus Networking / Sensor options
• FOUNDATION, DeviceNet, AS-Interface, HART
• GO® Switch, Proximity, P+F, Mechanical, 4-20mA Transmitter

Stainless Steel Shaft & Fasteners
• ¼" DD or NAMUR Shaft
• Captive cover bolts
• Captive dome screws

Environmental extremes
• Operating temperatures from −58°F/–50°C to 176°F/80°C
• NEMA Type 4, 4X, 7 plus IP67

MULTIPLE D-SERIES PLATFORMS FOR EVERY ENVIRONMENT

DXP | Tropicalized Aluminum Flameproof/Explosion Proof/ Intrinsically Safe
Class I Division 1 Groups C & D
Class I Division 2 Groups A-D
Ex ia IIC T6 Tamb -50°C to 60°C II1GD
Ex d IIB+H2 T6 Tamb -50°C to +60°C II2G

DXS | 316L Stainless Steel Flameproof/Explosion Proof/ Intrinsically Safe
Class I Division 1 Groups C & D
Class I Division 2 Groups A-D
Ex ia IIC T6 Tamb -50°C to 60°C II1GD
Ex d IIB+H2 T6 Tamb -50°C to +60°C II2G

SIL-3
IEC 61508

D-ESD | Partial Stroke Testing for Emergency Shutdown Valves
Suitable for use in SIL-3 applications
Stainless, Aluminum, or Resin
Flameproof/Explosion Proof/Intrinsically safe
Class I Division 1 Groups C & D
Class I Division 2 Groups A-D
Ex ia IIC T6 Tamb -40°C to 60°C II1GD
Ex d IIB+H2 T6 Tamb -50°C to +60°C II2G

DXR | Composite Resin Non-Incendive/Intrinscally Safe
Class I Division 2 Groups A-D
Ex ia IIC T6 II1GD
Ex me [ia]IIC T6 II2G

Valvetop® T-Series switchboxes deliver outstanding value by providing full functionality in compact, direct-mount enclosures.

Available with a variety of position sensors, integral solenoid valves, bus networks, the T-Series is suitable for use in all hazardous areas and carry IECEx, ATEX, UL, and CSA certifications.

The Valvetop® T-Series Delivers Outstanding Value!

Designed to provide maximum functionality in a compact form factor, the Valvetop® T-Series has a number of unique features that save space, time, and money.

Optimum Use of Space
The unique layout supplies ample working space inside the enclosure for wiring and setting of the switches while taking up very little space above the actuator.

TwistSet Cams
Unique TwistSet cam design allows easy access and accurate stepless setting of sensor position with minimum hysteresis.

Color-coded strikers enable quick identification of open/closed switches.
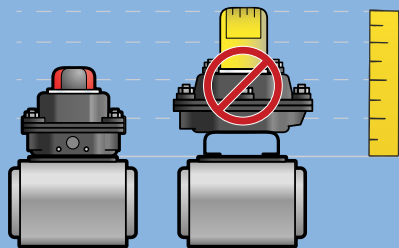
Low Profile Design
The unique direct-mounting feature eliminates expensive mounting brackets while reducing the height of the switchbox and the overall footprint above the actuator.
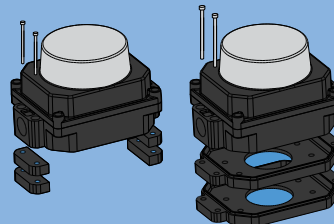
Direct Mounting
Unique mounting design enables simple attachment to any ISO/NAMUR actuator without the need for expensive mounting brackets

" I like the features of the T-Series products. The direct mount feature saves money on the cost of brackets. "
- President, Valve Distributor

Solid Enclosures for Every Environment
- Aluminum, Composite, Stainless
- Up to three conduit entries (English or Metric)
- O-ring seals everywhere
- Buna, EPDM, O-ring options

Environmental Extremes
- Operating temperatures from -40°F/-40°C to 176°F/80°C
- NEMA 4, 4X

Pilot Valves
- Low Power Solenoid
- Single or Dual Coil
- 1.0 Cv
- Integrally mounted for extra protection

Visual Display
- Impact resistant polycarbonate
- Intuitive colors (Green/Red)
- Pre-adjusted to 90° for easy installation
- Low profile/High visibility
- Customizable

Bus Networking / Sensor Options
- AS-Interface, Profibus, DeviceNet
- GO Switch, Proximity, P+F, Mechanical, 4-20mA Transmitter

Stainless Steel Shaft and Fasteners
- NAMUR Shaft
- Captive cover bolts and indicator screws

MULTIPLE T-SERIES PLATFORMS FOR EVERY ENVIRONMENT

TVG | Direct-Mount Composite Resin
General Purpose/Intrinsically Safe
Ordinary Locations
Ex ia IIC T4 II2G

TXP | Direct-Mount Aluminum
Flameproof/Explosion Proof/Intrinsically Safe
Class I Division 2 Groups A-D
Ex ia IIC T4 Tamb -50°C II2G
Ex d IIB T6 Tamb -50°C II2G
Ex d IIB+H2 T6 Tamb -50°C II2GD (Flat top)
Ex d IIC T4 Tamb -50°C to 80°C (Flat top)

TVC | Direct-Mount Composite Resin
Non-Incendive/Intrinsically Safe
Class 1 Division 2 Groups A-D
Ex ia IIC T4 II2G

TXS | Direct-Mount Stainless Steel
Flameproof/Explosion Proof/Intrinsically Safe
Class I Division 2 Groups A-D
Ex ia IIC T4 Tamb -50°C II2G
Ex d IIB T6 Tamb -50°C II2G
Ex d IIB+H2 T6 Tamb -50°C II2GD (Flat top)
Ex d IIC T4 Tamb -50°C to 80°C (Flat top)

SENSOR-COMMUNICATION MODULES

TopWorx Sensor-Communication Modules are microprocessor based 'brains' that mount inside Valvetop enclosures to deliver position sensing and bus networking functionality to on/off valves. They combine position sensors, bus communications, solenoid outputs, and wiring terminals into a compact, sealed module that drops into various Valvetop enclosures.

SCM Features:

• Short-circuit protection

• Resistant to impact, moisture, shock, vibration, contamination

• LEDs indicate valve position and facilitate sensor set-up
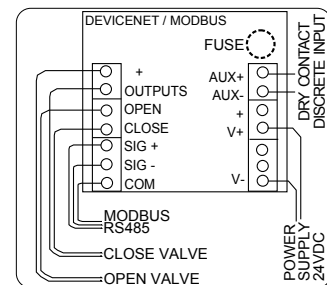
BUS NETWORKS

TopWorx Sensor-Communication Modules make it easy to connect automated on/off valves to modern bus networking protocols such as FOUNDATION Fieldbus, DeviceNet, AS-interface, Profibus, and HART.
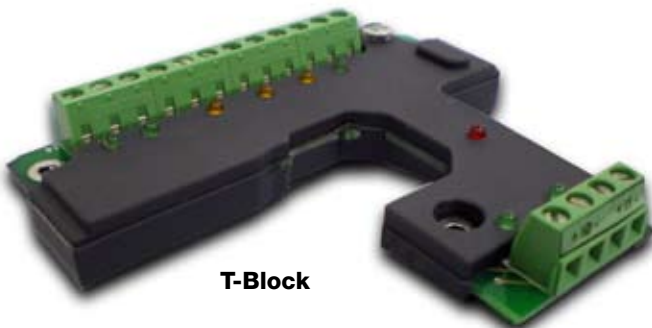
FOUNDATION   DeviceNet.   ASi

PROFI BUS   HART COMMUNICATION FOUNDATION
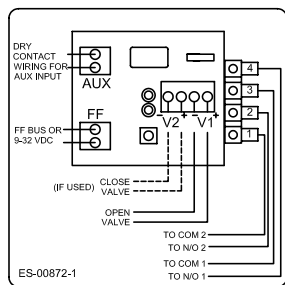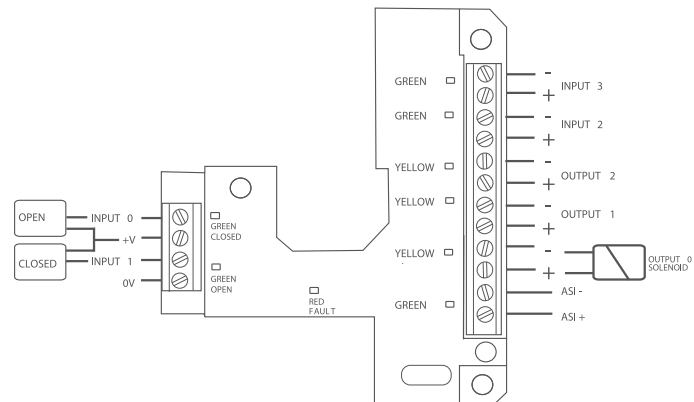

FOUNDATION Fieldbus
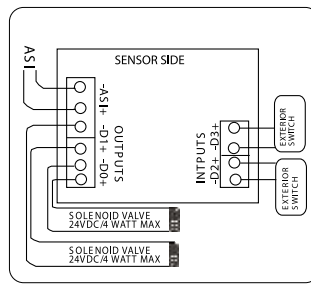
ASi

DeviceNet, Modbus

T-Block

FOUNDATION FIELDBUS

- 5 Discrete Inputs, 3 Discrete Outputs
- Emerson DeltaV, Honeywell, Yokogawa, Rockwell, Invensys approved

- Pre-defined templates, on-board diagnostics, and early warning LEDs
- Consumes only 17mA to operate, reduces VCRs and DSTs required

- Local calibration button for factory setting of end of stroke switches
- Position feedback via DO read back reduces number of function blocks.

BEST-IN-CLASS CAPABILITIES

- Reduced number of blocks scheduled on the segment
- Reduced macrocycle times
- Reduced VCR Links (Publisher/Subscriber)

- Reduced DST count
- Higher density of valves per segment
- Less segments required per project (less hardware)

- Pre-Built and Industry Tested Library Modules (reduced engineering)
- Lower Total Cost of Ownership for Intrinsically Safe Applications

SINGLE DO BLOCK
Using the Readback function in the DO block for position feedback reduces the number of DSTs required and allows the user to switch the solenoid and get position feedback via this single DO block.

CALIBRATION SWITCH
The SCM-FF is equipped with a local calibration button for pre-installation function testing of the valve actuator package. This ensures that all valve automators can function test packages before installation without having to purchase expensive test equipment. LEDs indicate correct position setting of the switches.

PIEZO TECHNOLOGY
TopWorx discrete valve controllers incorporate the best piezo technology available on the market today. With a response time of under 50mS and a high flow rate, we ensure the spool valve reacts immediately to a change in signal.

DeviceNet

- 3 Discrete Inputs, 2 Discrete Outputs, 1 Analog Input
- Rockwell, Emerson DeltaV approved
- On-board diagnostics and early warning LEDs
- TopWorx is a Rockwell Automation "Encompass" partner

ASi

- ASi 2.1 with up to 4 Discrete Inputs and 3 Discrete Outputs
- Early warning LEDs

PROFIBUS PROCESS FIELD BUS

- Profibus DP V0
- 4 Discrete Inputs 2 Discrete Outputs
- Early warning LEDs

HART COMMUNICATION FOUNDATION

- Digital confirmation of analog signal
- Auto-calibration via handheld

VALVETOP® POSITION SENSORS
The Industry's Leading Selection of Position Sensors

Valvetop provides the industry's leading selection of valve position sensors, including GO® Switch leverless limit switches, proximity sensors, mechanical limit switches, potentiometers, and 4-20mA position transmitters.

SENSORS & SWITCHES
- GO® Switch leverless limit switches
- 4-20mA position transmitters with HART protocol
- Proximity
- Reed
- Mechanical

GO® SWITCH INSIDE

GO® Switch leverless limit switches are hermetically sealed and outperform all other position sensors in hot, cold, wet, dirty, abusive, corrosive, and explosive conditions. GO Switches deliver best-in-class capabilities:

- Highest amp rating (4amp/120vac, 3amp/24vdc)
- Highest temperature rating - 80°C
- Up to four GO Switches inside
- Hermetically Sealed contacts
- SPDT, DPDT, and Stainless Steel options
- Proximity operation – nothing to jam, bend, break, or wear out
- Immune to electrical noise, radio frequency interference, dust, dirt, and most chemicals
- No leakage current, not voltage or polarity sensitive
- Simple device – inherently intrinsically safe with barrier
- Unlike Reed Switches, Gold flashed contacts allow for use in both low and high current applications within a single switch

PUSHSET CAM

Unique pushset cam design allows quick and accurate setting of the GO Switch positions reducing deadband and hysteresis to a minimum. Switches can easily be set in the mid-position for control applications such as 3-way ball valves or diverter valves.
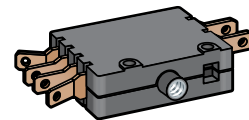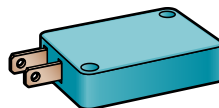
4-20mA POSITION TRANSMITTER

- Fully potted electronic module with LEDs and Auto Calibration feature
- Precise setting of the zero and span can be done in seconds for both CW and CCW rotation with a simple push button
- Position feedback sensor is mounted directly to the switchbox shaft eliminating backlash caused by traditional gear train
- Up to 300° rotation for choke valve applications
- The need for re-calibration is eliminated
- Available with GO Switches and HART Protocol

PROXIMITY SENSORS

Choose from a variety of proximity sensors including reed switches and inductive proximity sensors such as Pepperl+Fuchs and others.
- Up to 6 proximity sensors
- AC, DC, Namur versions available
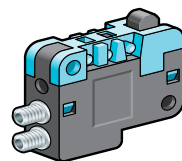
MECHANICAL LIMIT SWITCHES

- Up to 6 mechanical switches
- 15A/120vac
- SPDT and DPDT contacts available
- Up to 6 mechanical switches

PNEUMATIC SWITCHES

- Common in marine/shipbuilding industry
- Ideal for explosive or intrinsically safe environments

VALVETOP® PILOT VALVES
Solenoid Valves to Pilot Any Actuator

Valvetop provides a portfolio of self-contained pilot valves to control pneumatic actuators. These compact, high flow spool valves are all low power and can deliver significant operating cost savings. Integral pilot valve options include solenoid and piezo pilots, aluminum and 316 or 304 stainless steel valve bodies, and pushbutton or palm actuated manual overrides.

SOLENOID VALVES
- 24Vdc, 120vac, 220vac
- Aluminum, 316 Stainless, 304 Stainless
- Single Coil, Dual Coil, Blocked Center
- High Flow up to 3.0Cv
- Low Power Consumption (solenoid 0.5 watts; piezo 12mw)
- Low temperature rating -50°C (-58°F) (on request)

PILOTS

- Internally mounted for protection from the environment
- Low Power Solenoid or Ultra-Low Power Piezo pilots
- Single or Dual Pilots
- Fail open, Fail closed, Fail in last position, Blocked center
- 50 million cycle minimum life
- Class F coil insulation (Class H available on request)
- Response time 10mS

VALVE BODIES

- Anodized Aluminum
- 316 Stainless Steel
- 304 Stainless Steel

Flow Rates
- 1.2 Cv
- 3.0 Cv

MANUAL OVERRIDES

- Momentary
- Latching
- Manual Reset
  ° Prevents accidental opening of a tripped ESD valve
  ° Local operator intervention is required before valve can be re-opened

DUAL VALVE

- Two integral solenoid valves configured in series or parallel
- For applications where a redundant solenoid is required
- For ESD valves or control of 3-position actuators

MANUAL RESET SOLENOID VALVE

- Designed for Critical Service or Emergency Shutdown Valve applications which often require operators to manually verify a system prior to restarting a process
- Features a 1.2 Cv flow rate and rugged 316 stainless steel housing, ideal for offshore applications

How It Works
a) The pushbutton on the Manual Reset solenoid valve is manually pushed and latched. The inward movement of the pushbutton causes the valve to shift.

b) The pilot is then energized, which unlatches the manual pushbutton, but does not change the valve state.

c) When the coil is de-energized, the valve is returned to its original fail-safe mode.
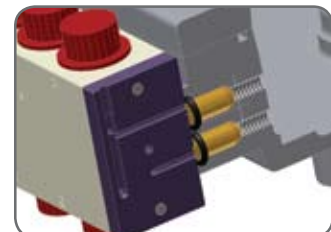
FLAME ARRESTORS

These double as in line filters, protecting the pilot against damage caused by dirty air. This design also allows the users to replace or work on the external valve in situe without affecting the integrity of the explosion proof enclosure.

Valvetop offers the broadest range on the market today. With a variety of enclosures to tackle any harsh environment, global certifications to satisfy any hazardous area classification, and your choice of bus networks, sensors, and solenoids, Valvetop has a product to meet your specific application needs.
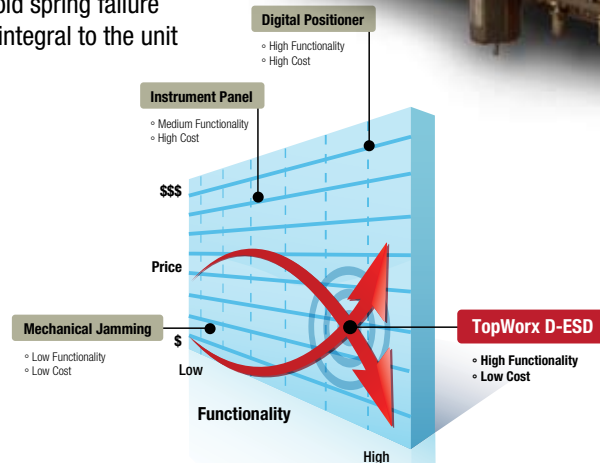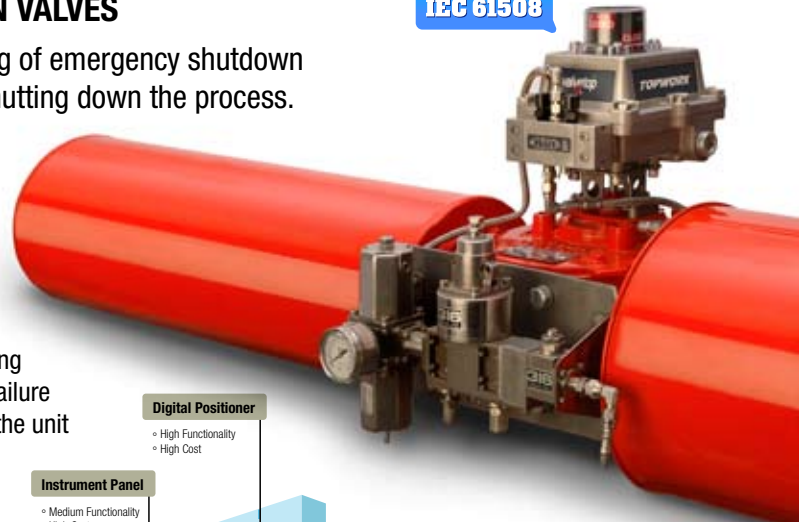
PARTIAL STROKE TESTING OF EMERGENCY SHUTDOWN VALVES

SIL-3
IEC 61508

Valvetop® D-ESD Valve Controllers provide partial stroke testing of emergency shutdown valves in safety instrumented systems without disrupting or shutting down the process.

Key Features:
• Suitable for use in SIL-3 applications
• Certified for use in all hazardous areas
• Spurious trip prevention
• Integrated Solution with all sensors, diagnostics, and pneumatic controls in a single housing
• Onboard Diagnostic Alerts for valve packing/shaft damage, actuator spring fatigue/breakage, solenoid pilot exhaust blockage, and solenoid spring failure
• An optional local, lockable, manual partial stroke Test Button integral to the unit

Digital Positioner
  ○ High Functionality
  ○ High Cost

Instrument Panel
  ○ Medium Functionality
  ○ High Cost

$$$

Price

Mechanical Jamming
  ○ Low Functionality
  ○ Low Cost

$

Low

Functionality

High

TopWorx D-ESD
  ○ High Functionality
  ○ Low Cost

4-20mA TRANSMITTERS WITH HART PROTOCOL

HART®
COMMUNICATION FOUNDATION

The 2-wire position transmitter with HART will generate a nominal 4-20mA signal proportional to valve position output for full-range actuation of the valve. The transmitter is capable of generating signals below 4mA and above 20mA if the position sensor indicates an out-of-range value. With the added HART digital communication capability, remote calibration and parameter configuration can be performed via a handheld.

Key Features:
• Remote set point calibration using a handheld device for calibration and monitoring
• Selectable over and under travel settings
• 4 to 20mA variable reading
• Monitoring and setting of alarms with advanced diagnostics. Includes deadband detection, out of range indication and detection of internal memory errors

LINEAR VALVE MONITORS & SENSORS

Valvetop discrete valve controllers and GO Switch leverless limit switches are the products of choice for linear valves of all types. Their precision sensing and proven reliability deliver the best position feedback available. Options such as 4-20mA transmitters with end-of-stroke sensors and HART protocol provide continuous monitoring and confirmation of valve position. Custom mounting kits are available to ensure reliable operation for the life of the valve package.

Valvetop D-Series on linear globe valves

GO 70 Series on linear
knifegate valves

Valvetop D-Series on
linear control valves

GO 70 Series on linear
control valves

WIRELESS APPLICATIONS

TopWorx is a member of the HART Foundation and ISA SP-100 Working Groups whose task is to release open wireless protocols ensuring interoperability of devices from a multitude of vendors. Wireless devices from TopWorx will meet the requirements of the process industries such as MESH capability, long battery life, and security encryption technology.

DUAL PILOT VALVE FOR DRIBBLE FEED CONTROL

By using TopWorx's unique dual valve option the solenoids can be configured to allow two stage closing of the valve for applications such as tank filling where the valve needs to be throttled to prevent overflowing.
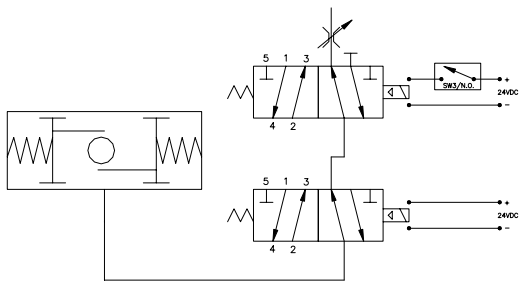
MULTI-TURN MANUAL VALVE

Unique adaptor for fitting position monitors to rising stem and non-rising stem gate and globe valves

VALVETOP VISUAL INDICATORS

A variety of indicators to fit every application, including multiple color combinations such as Green/Red and Yellow/Black, plus three-way, 90° and 180° flow paths. Other languages are also available upon request.

COLD TEMP TO -50°C/-58°F

The Valvetop D-Series operates at temperatures down to -50°C by using a special cold-temp solenoid configuration

" We replaced all of a competitor's switchbox with the TopWorx Valvetop using GO Switches. We can set the DXPs and walk away from them knowing that they work great. "
- **I&C Leader,** Japanese Chemical Company

" The TopWorx product was attractive to us because the enclosure was resilient and able to survive in a hazardous and corrosive environment. "
- **Process Engineer,** German Chemical Company

VIP® MOUNTING KIT

With over 1,500 mounting kit designs, Valvetop valve controllers can be mounted on any rack-n-pinion, scotch-yoke, or vane actuators, quarter-turn manual valves, linear knifegate and control valves, and positioners. Visit www.topworx.com for a complete list of available kits or to request a custom design.

TopWorx has thousands of mounting kits available to fit Valvetop and GO Switch products to a wide variety of valves and actuators. Each kit completes complete with parts list and installation instructions.

|	
3Z Valve	Larox
Actreg	Ledeen
Airtorque	Marwin
Apollo	Masoneilan
Automax	Matryx
Baumann	Mogas
Bettis	Morin
Biffi	Neles
Bray	Neway
Cameron	Newcon Valve
CCI	OMB
ChemValve	Orbinox
Clarkson	Orbit
Compaq	PBM
Conbraco	PBV
Contromatics	Poyam
CPV	Protech
Crane	PVC
DeZurik	QTRCO
Durco	Radius
El-O-Matic	RCS
Fabri Valve	Remote Controls
FieldQ	RF Technologies
Fisher	Rhino
Flowbus	Rotork
Flowserve	Severn Glocon
Flowtech	TBV
Fluor-Seal	Triac
FMC	Trutorq
General Valve	Unitorq
Grinnell	Valtek
Hytork	Valvtechnologies
ITT	Vanessa
Jamesbury	Velan
Keystone	VTI
Kinetrol	Watts
Kitz	WKM
KPC	Worcester
KTM	Xomox
KVC	

D-SERIES DIAGRAMS

DXP

DXS

DXR

T-SERIES DIAGRAMS

TVG

TVC

TXP
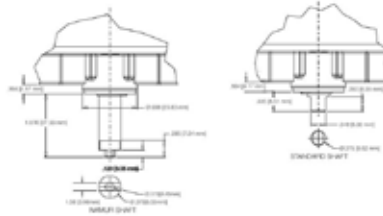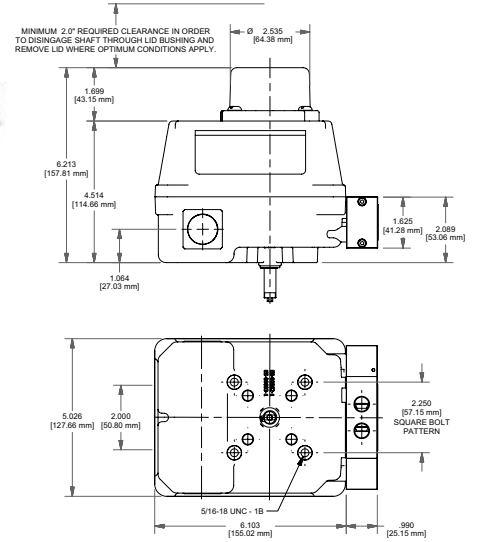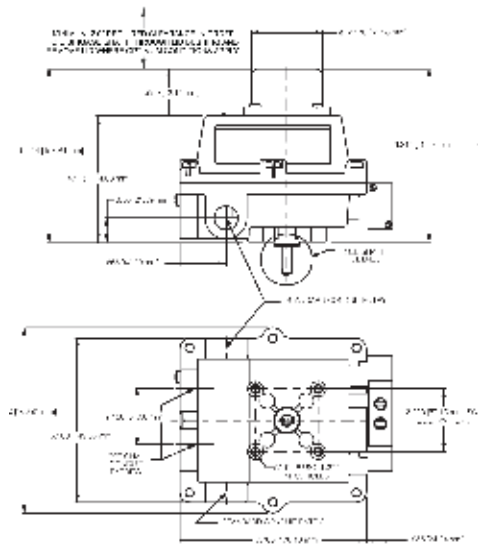
TXS
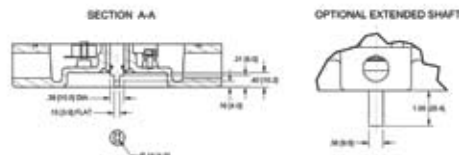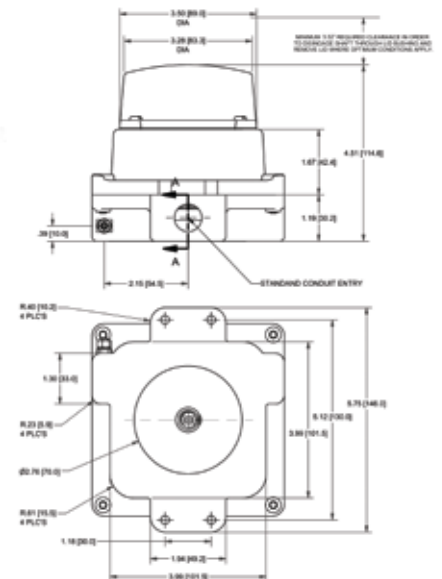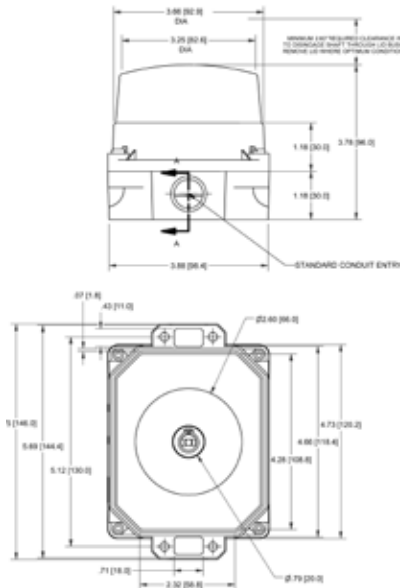
DRY-CONTACT POSITION SENSORS

Electrical ratings:
- L (GO Switch): 4amp/120vac, 3amp/24vdc
- P (Hi-Amp Prox): 3amp/120vac, 2amp/24vdc
- R (Low-Amp Prox): .2amp/30vdc
- M (Mechanical Switch) 15A/120vac
- _X (4-20mA Transmitter) 8.5-34vdc
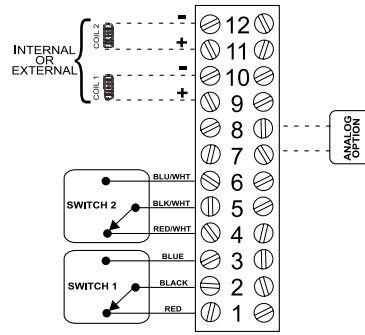
M2, P2, R2
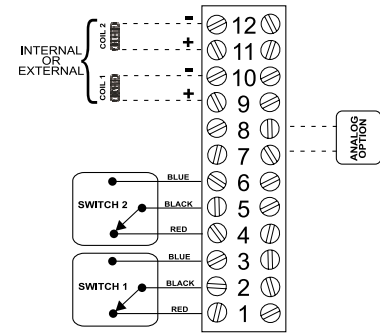
L2

INDUCTIVE PROXIMITY SENSORS

- Available with all types of inductive proximity sensors, including Pepperl & Fuchs, IFM, and Turck
- 3-Wire PNP/NPN:
  - : Voltage: 10-30vdc
  - : Power Consumption: 15mA
  - : Operating Current: 0- 200mA
- 2-Wire N/O & N/C
  - : Voltage: 5-250vac/vdc
  - : Power Consumption <0.5mA
  - : Operating Current: 0- 200mA
- Namur Output:
  - : 8vdc
  - : Current consumption:
  - : Switched: <1mA
  - : Unswitched: >3mA
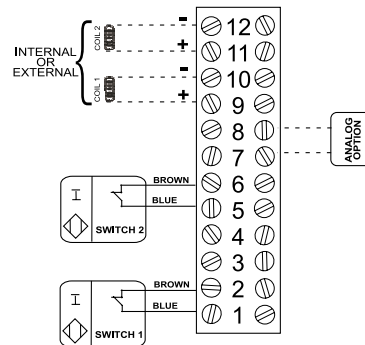
Namur/2-Wire
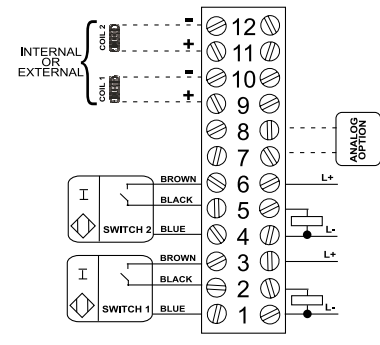
3-Wire PNP

SOLENOID VALVES

Pressure rating: 15-100psi (1- 8bar)
Temperature rating:
- Standard -20°C - +60°C
- Low Temp: -50°C to +60°C
- Cold Temp. Piezo: -30°C to +60°C
- Standard Piezo: -10°C

Power consumption:
- Standard: 0.5Watts
- Piezo: 12mWatts

Voltages:
- 12/24vdc
- 110vac
- 220vac
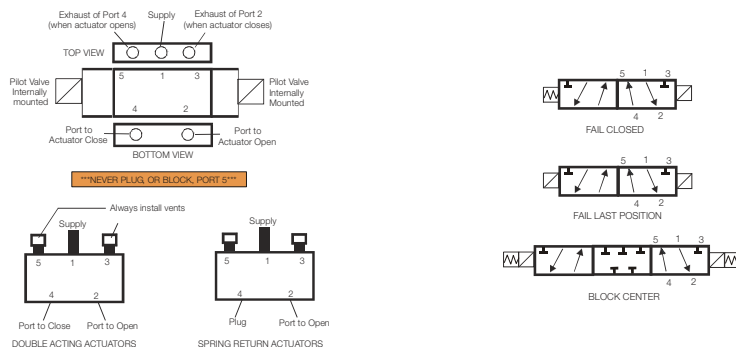
VALVETOP® SUGGESTED SPECIFICATIONS

Below please find Suggested Specifications that will help ensure you receive the TopWorx product you want.

D-Series with GO® Switch Inside
Discrete Valve Controller shall provide open and closed position feedback using GO Switch proximity-type sensors with hermetically sealed contacts rated 4amp/120vac and 3amp/24Vdc.

D-Series with FOUNDATION Fieldbus
Discrete Valve Controller shall communicate via FOUNDATION Fieldbus and shall provide open and closed position feedback using hermetically sealed proximity sensors and a single DO Block via the Readback function. Valve controller shall consume 17mA or less to operate and shall include a calibration switch for offline setup and adjustment.

D-Series with Integral Pilot Valve
Discrete Valve Controller shall have integral pilot valve with minimum 1.2Cv flow rate, built-in 5-micron filter, and low-power solenoid coil inside the switchbox enclosure.

D-Series with Ex d IIC Certification
Discrete Valve Controller shall have EX d IIC certification without using a screw-cover housing.

D-Series with Partial Stroke Test function
Emergency Shutdown Valve shall have Partial Stroke Test (PST) capability to periodically test the valve's functionality without shutting down or disrupting the process. PST solution shall stroke the valve automatically rather than manually, shall provide end of stroke position feedback using a GO Switch, and shall provide a means to test the functionality of the solenoid valve. ESD valve must be available to perform at all times during a test.

Visit www.topworx.com for comprehensive information on our company, capabilities, and products - including model numbers, data sheets, specifications, dimensions, and certifications.

VALVETOP® ORDERING GUIDE

Choose one option from each category to build a complete model number.

✓ Denotes *FastTrack Delivery* option most likely to be available for immediate shipment.

Enclosure

D SERIES

✓ **DXP** Tropicalized Aluminum

✓ **DXR** Composite Resin

DXS 316L Stainless Steel

T SERIES

✓ **TVC** Composite Resin Direct Mount

✓ **TXP** Aluminum Direct Mount

TXS Stainless Steel Direct Mount

Bus/Sensor

AS AS-Interface

✓ **FF** FOUNDATION Fieldbus (D Series only)

DN DeviceNet

MB Modbus (D Series only)

ES ESD Module Partial Stroke Test (D Series only)

GO Switches

✓ **L2** (2) GO Switches SPDT 4A/120vac, 3A/24vdc Hermetically Sealed

L4 (4) GO Switches SPDT 4A/120vac, 3A/24vdc Hermetically Sealed (D Series only)

Mechanical Switches

✓ **M2** (2) Mech SPDT

M4 (4) Mech SPDT

M6 (6) Mech DPDT (D series only)

T2 (2) Mech DPDT

K2 (2) Mech SPDT gold contacts

K4 (4) Mech SPDT gold contacts

Proximity Switches

PN (2) SPDT Proximity Hermetic Seal 1A/120vac, .5A/24vdc

PS (2) SPDT Proximity Hermetic Seal w/ LEDs 250mA/120vac, 250mA/24vdc

Inductive Sensors

E2 (2) p+f NJ2-V3-N inductive NAMUR

E4 (4) p+f NJ2-V3-N inductive NAMUR

Analog Output
(Available with 2 switch options only for L,M,K,E & T) (R switches also availble for T Series)

_X 4-20mA transmitter

OX 4-20mA transmitter (no switches)

_H 4-20mA transmitter w/ HART (D Series Only)

Area Classification

D SERIES

0 Intrinsically Safe* Class I, Div 1 & 2 Groups A,B,C,D Zone 0 (ATEX) Ex ia IIC II1G IP67; Type 4

✓ **1** Flameproof/Explosion Proof Class I, Div 1 & 2 Groups C & D Class I, Div. 2 Groups A,B,C,D (Hermetic seal only) Zone 1 (ATEX/IECEx) Ex d IIB+H2 II2G IP67; Type 4, 7

✓ **2** Non-Incendive Class I, Div 2 Groups A-D Class II, Div 2 Groups E-G Zone 2 (ATEX/IECEx) Ex nA IIC II3G Ex tD II3D IP67; Type 4

G General Purpose Ordinary Locations Type 4, 4X (DXR only)

C (ATEX/IECEx) Ex d IIC II2G IP67 (DXP only)

W IP67/No approvals

T SERIES

0 Intrinsically Safe (ATEX) Zone 1 Ex ia IIC II2G IP67

1 Flameproof (ATEX / IECEx) Zone 1 Ex d IIB II2G IP67

H Flameproof (ATEX IECEx) Zone 1 Ex d IIB+H2 II2GD IP67 (TXP & TXS Flat-top only) (No pilot valve)

C Flameproof (IECEx) Ex d IIC IP67 (TXP & TXS Flat-top only) (No pilot valve)

2 Non-Incendive Class I & II Div 2 Groups A-G Zone 2 (ATEX/IECEx) Ex nA IIC II3G Ex tD II3D IP67; Type 4

G General Purpose Ordinary Locations Type 4

W IP67/No approvals

* With appropriate I.S. barrier

Visual Display

✓ **G** Standard 90° Green OPEN, Red CLOSED

B 90° Black OPEN, Yellow CLOSED

✓ **1** 45° Green OPEN, Red CLOSED

Y 90° Yellow OPEN, Black CLOSED

✓ **X** 45° Black OPEN, Yellow CLOSED

1 3 way, 90°

3 3 way, 90°

5 3 way, 90°

7 3 way, 180°

9 3 way, 180°

F Flat-top w/ skirt indicator (T Series only)

Shaft

✓ **S** 1/4" DD 304 SS

✓ **N** NAMUR 304 SS

Conduit

DXP/DXS

✓ **E** (2) 3/4" NPT

4 (2) 3/4" NPT (2) 1/2" NPT

M (2) M20

3 (4) M20

6 (4) 3/4" NPT

DXR (Stainless Conduit Entries)

P (2) 1/2" NPT

✓ **E** (2) 3/4" NPT

M (2) M20

DXR (Resin Conduit Entries)

A (2) 1/2" NPT

B (2) 3/4" NPT

C (2) M20

Note: Resin conduit entries are recommended for end of line device only.

T SERIES

✓ **P** (2) 1/2" NPT

M (2) M20

O-Rings

✓ **B** Buna-N

E EPDM

S Silicone

V Viton

M Buna/ EPDM (T Series Only)

Pilot

✓ **Blank** No pilot devices

✓ **1** (1) 24Vdc pilot, .5W, fail open/ closed

2 (2) 24Vdc pilot, .5W, fail last position

3 (2) 24Vdc pilot, .5W, block center (D Series Only)

4 (1) 220vac pilot, 1.9W fail open/ closed

5 (1) 220vac pilot, 1.9W fail last position

6 (2) 220vac pilot, 1.9W block center (D Series Only)

7 (1) 110vac pilot, 1.1W fail open/ closed

8 (2) 110vac pilot, 1.1W fail last position

9 (2) 110vac pilots, 1.1W, block center (D Series only)

✓ **P** (1) piezo pilot, fail open/ closed, (FF only) (D Series only)

R (2) piezo pilots, fail last position, (FF only) (D Series only)

U (2) piezo pilots, block center, (FF only) (D Series only)

Spool

✓ **Blank** No spool valve

✓ **A** Aluminum hard coat anodized

S 304 SS

✓ **6** 316 SS

Valve Cv

Blank No spool valve

1 1.0 Cv (1/4" NPT Ports) (T Series Only)

✓ **2** 1.2 Cv (1/4" NPT ports) (D Series Only)

3 3.0 Cv (D Series Only) (1/2" NPT ports)

C Cold Temp valve to -50° C 1.0 Cv (1/4" NPT Ports) (O-ring must be E or S) (D Series Only) (Spool valve S or 6 only)

Override

Blank No override (All manual override options for D Series only)

1 Single Pushbutton Momentary / Latching

2 Dual Pushbutton Momentary / Latching

3 Single Pushbutton Momentary

4 Dual Pushbutton Momentary

5 Manual Reset No voltage release latching with pushbutton (Spool Valve 6 only) (Valve Cv 2 only)

A Single palm actuator Momentary / Latching

B Dual palm actuator Momentary / Latching

C Single palm actuator Momentary

D Dual palm actuator Momentary

E Manual Reset No-voltage release latching with palm actuator (Spool valve 6 only) (Valve Cv 2 only)

T Partial stroke test button with lockable cover (Sensor ES or HL only)

Enclosure	Bus/Sensor	Area Classification	Visual Display	Shaft	Conduit	O-Rings	Pilot	Spool	Cv	Override

Ordering Guide Fill in each box to create a complete model number.

TOPWORX

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including model numbers, data sheets, specifications, dimensions, and certifications.

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valvetop GO SWITCH