



# 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™, a business within Emerson™ Process Management, is a global leader in on/off valve control and position monitoring for the process industries. Our solutions enable plants, platforms, and pipelines to manage and control operations more intelligently and efficiently under the most demanding and extreme conditions.

#### 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 (175°C), cold temperature (-60°C), and sub-sea (6,800 meters) applications, TopWorx™ products are suitable for use in Flame-proof/Explosion Proof, Non-Incendive, and Intrinsically Safe hazardous areas with IECEx, ATEX, EAC, InMetro, UL, CSA, KOSHA, and NEPSI certifications.



#### GLOBAL SERVICE & SUPPORT

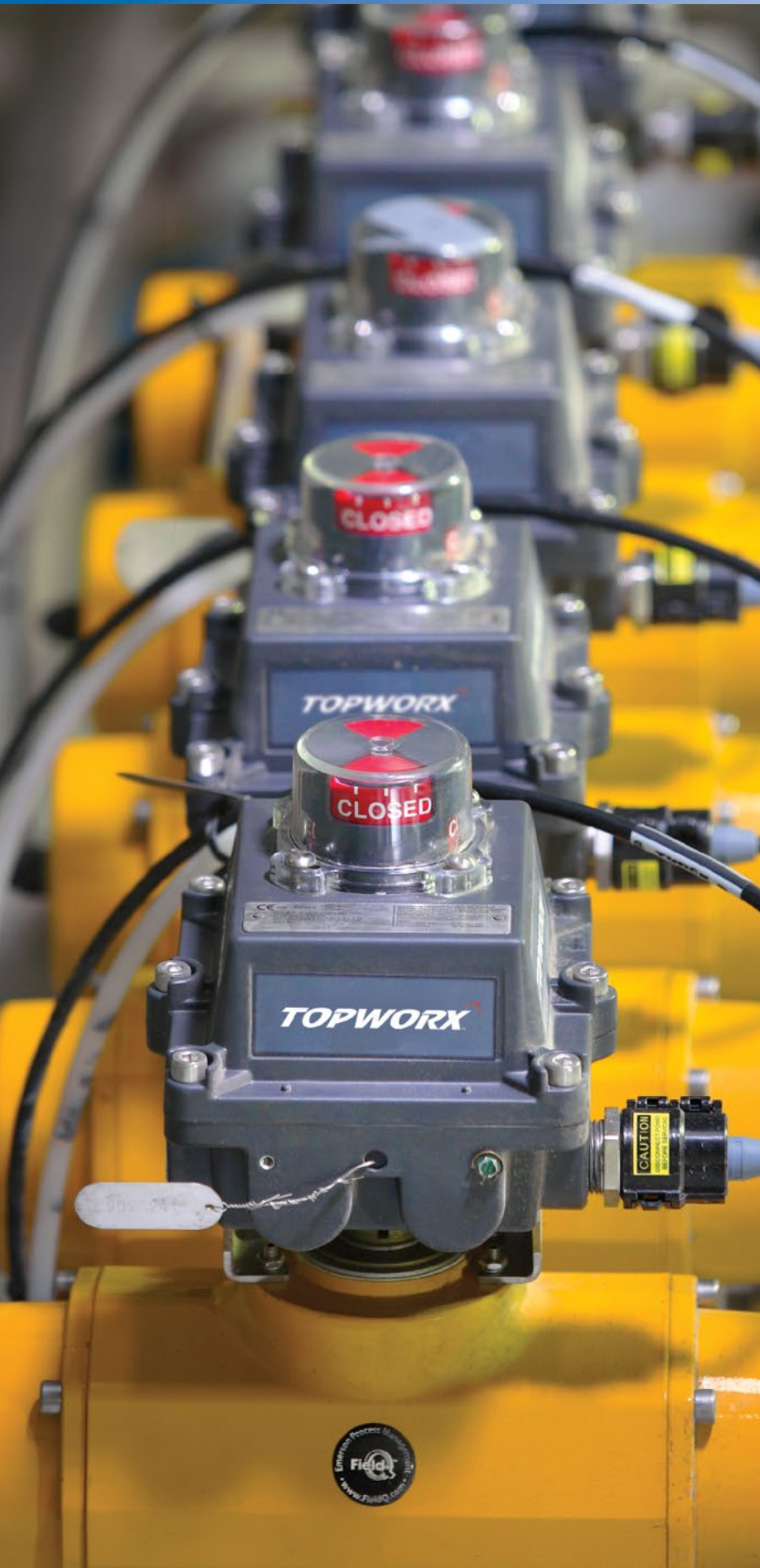
With company locations in the United States, United Kingdom, South Africa, Bahrain, and Singapore, TopWorx™ is strategically positioned to provide outstanding support. In addition, over 200 Certified Product Partners throughout the world are available to provide competent local support when needed.



[WWW.TOPWORX.COM](http://WWW.TOPWORX.COM)

Visit [www.topworx.com](http://www.topworx.com) for comprehensive information on our company, capabilities, and products – including model numbers, data sheets, specifications, dimensions, and certifications.

## DISCRETE VALVE CONTROLLERS FOR ON/OFF VALVES



TopWorx™ discrete valve controllers enable automated on/off valves to communicate via FOUNDATION Fieldbus, DeviceNet, AS-Interface, Profibus, HART and Wireless 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™ valve control solutions deliver on today's new customer requirements. With the TopWorx™ 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 Wireless HART.
- The most reliable and durable valve position sensor on the planet.
- On/Off valve control and indication through wireless technology.
- Quality products with global agency approvals including IECEx, ATEX, CE, UL, CSA, as well as NEPSI, KOSHA, InMetro, and EAC.
- The unmatched process experience and bus networking expertise of TopWorx™, the leading provider of valve control and position sensing solutions for the process industries.

# TOPWORX™ D-SERIES

World-Class Discrete Valve Controllers with the Highest Technology Available

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

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 D-Series is Built Tough!

Designed to provide reliable service for a lifetime, the 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 96 hours at a depth of 30 meters.



### Hot

Tested for long-term functionality in temperatures up to 176°F/80°C



### Cold

Tested for endurance in temperatures down to -76°F/-60°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 and Sira 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 contact factory for compatibility information.



"I like the fact that the D-Series has world wide approvals since we have projects throughout the world."

- Project Engineer, Global Engineering Firm



### Visual Display

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

### Bus Networking / Sensor options

- FOUNDATION, Profibus, DeviceNet, AS-Interface, HART
- GO™ Switch, Proximity, P+F™, Mechanical, 4-20mA Transmitter

### Stainless Steel Shaft & Fasteners

- 1/4" DD or NAMUR Shaft
- Captive cover bolts
- Captive dome screws



### Rugged Enclosures for every environment

- Aluminum, Composite, Stainless
- Up to four conduit entries (English or Metric)
- O-ring seals everywhere
- Buna, Silicone o-ring options

### Pilot Valves

- Aluminum, 316 Stainless Steel available
- Low Power Solenoid or Ultra-Low Power Piezo
- Single or Dual Coil
- .86 Cv and 3.7 Cv
- Integrally mounted for extra protection
- Built-in 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

### Environmental extremes

- Rated for environments from -76°F/-60°C to 347°F/175°C
- NEMA Type 4, 4X, IP66/67

## MULTIPLE D-SERIES PLATFORMS FOR EVERY ENVIRONMENT



DXP

Tropicalized Aluminum  
 Flameproof/Explosion Proof/Intrinsically Safe  
 Class I Division 1 Groups A-D  
 Class I Division 2 Groups A-D  
 Class II Division 2 Groups F and G  
 Ex ia IIC T4 Tamb  
 -50°C to +50°C  
 Ex d IIB+H2 T6...T3 Tamb  
 -60°C to +175°C  
 Ex d IIC T6...T3 Tamb  
 -60°C to +175°C  
 Ex tb IIIC T135°C Tamb  
 -50°C to + 110°C  
 II2GD, IP66/67, Type 4X



DXS

316 Stainless Steel  
 Flameproof/Explosion Proof  
 /Intrinsically Safe  
 Class I Division 1 Groups A-D  
 Class I Division 2 Groups A-D  
 Ex ia IIC T6 Tamb  
 -50°C to 50°C  
 Ex d IIB+H2 T6...T3 Tamb  
 -60°C to +175°C  
 Ex tb IIIC T135°C Tamb  
 -50°C to + 110°C  
 II2GD, IP66/67, Type 4X

**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  
 /Non-Incendive  
 Class I Division 1 Groups C & D  
 Class I Division 2 Groups A-D  
 Ex d IIB+H2 T6 Tamb -50°C  
 to +60°C  
 Ex tb IIIC T135°C Tamb  
 -50°C to + 110°C  
 II2GD, IP66/67, Type 4X



DXR

Composite Resin  
 Non-Incendive/Intrinsically Safe  
 Class I Division 2 Groups A-D  
 Class II Division 2 Groups F & G  
 Ex ia IIC T6 Tamb  
 -20°C to 50°C  
 Ex e mb IIC  
 -20°C to 44°C T4  
 Ex tb IIIC T66C II2D  
 II2GD, IP67, Type 4X

# TOPWORX™ T-SERIES

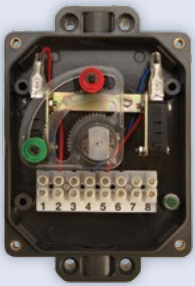
## High-Value Switchboxes with a Variety of Options

TopWorx™ 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, and bus networks, the T-Series is suitable for use in all hazardous areas and carry IECEx, ATEX, and UL certifications.

### The TopWorx™ T-Series Delivers Outstanding Value!

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



#### Optimum Use of Space

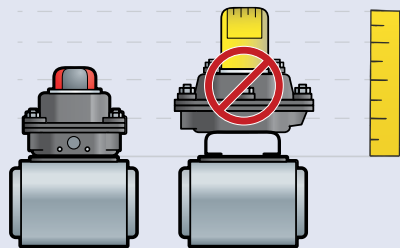
The unique layout supplies ample working space inside the enclosure for wiring and setting of the switches while taking up very little space above the actuator.



#### TwistSet™ Cams

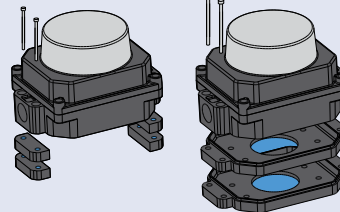
Unique TwistSet cam design allows easy access and accurate stepless setting of sensor position with minimum hysteresis.

Color-coded strikers enable quick identification of open/closed switches. Includes locking feature to ensure no target migration.



#### 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 four conduit entries (English or Metric)
- O-ring seals everywhere

### Environmental Extremes

- Operating temperatures from -76°F/-60°C to +175°F/80°C
- NEMA 4, 4X, IP66/67

### Pilot Valves

- Low Power Solenoid
- Single 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
- GO Switch, Proximity, P+F, Mechanical

### Stainless Steel Shaft and Fasteners

- NAMUR Shaft
- Captive cover bolts and indicator screws

## MULTIPLE T-SERIES PLATFORMS FOR EVERY ENVIRONMENT



TXS

Direct-Mount Stainless Steel  
Flameproof/Intrinsically Safe/  
Explosion Proof /Non-Incendive  
Class I Division 1 Groups C & D  
Class I Division 2 Groups A-D  
Class II Division 1 Groups E-G  
Class II Division 2 Groups F and G  
Ex ia IIC T4 Tamb -50°C to 85°C  
Ex d IIB T4 Tamb -60°C to 80°C  
Ex d IIC T4 Tamb -60°C to 80°C  
Ex tb IIIC T135C Tamb -50°C to 80°C  
II2GD, IP66/67, Type 4X



TXP

Direct-Mount Aluminum  
Flameproof/Intrinsically Safe/  
Explosion Proof /Non-Incendive  
Class I Division 1 Groups C & D  
Class I Division 2 Groups A-D  
Class II Division 1 Groups E-G  
Class II Division 2 Groups F and G  
Ex ia IIC T4 Tamb -50°C to 85°C  
Ex d IIB T4 Tamb -60°C to 80°C  
Ex d IIC T4 Tamb -60°C to 80°C  
Ex tb IIIC T135C Tamb -50°C to 80°C  
II2GD, IP66/67, Type 4X

# TOPWORX™ TV-SERIES

High-Value Switchboxes with a Variety of Options

Compact, rugged, and dependable solution for discrete valve control and valve position monitoring where weight and real estate are at a premium. Light weight and robust enclosures specially designed for non-incendive, intrinsically safe and general purpose application. Each enclosure is suited for heavy wash down and corrosive environments and IP66/68 tested.





#### Light, Rugged and Compact Enclosure

- Aluminum, Stainless or Aluminum base with clear polycarbonate options
- (2) M20, M25, 1/2NPT, or 3/4NPT conduit options
- Direct ISO/NAMUR mount
- Silicone seals everywhere

#### Up to (4) Four Sensors Inside

- Mechanical –SPDT or DPDT
- Inductive
- Proximity
- NAMURI

#### Stainless Steel Shaft and Fasteners

- NAMUR Shaft
- Captive cover bolts and indicator screws



#### Environmental Extremes

- Operating temperatures from -58°F/-50°C to +185°F/95°C
- NEMA Type 4, 4X

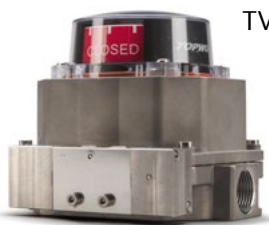
#### Visual Display

- Impact resistant polycarbonate
- Pre-adjusted to 90° for easy installation
- Intuitive colors
- Customizable

#### Pilot Valves

- Low or high power solenoid options
- Single of dual coil—single acting or double acting actuators
- Aluminum or Stainless Steel spool valve options

### MULTIPLE TV-SERIES PLATFORMS FOR EVERY ENVIRONMENT



**TVH** | Stainless Steel  
Intrinsically Safe/Non-Incendive  
Class I & II Division 1 & 2  
Ex ia IIC T4  
Ex tb IIIC T135°C  
Tamb -50°C to +85°C  
Ex nA nC IIC T4  
Tamb -40°C to +95°C



**TVL** | Tropicalized Aluminum  
Intrinsically Safe/Non-Incendive  
Class I & II Division 1 & 2  
Ex ia IIC T4  
Ex tb IIIC T135°C  
Tamb -50°C to +85°C  
Ex nA nC IIC T4  
Tamb -40°C to +95°C



**TVF** | Tropicalized Aluminum Base with Polycarbonate Lid  
Intrinsically Safe/Non-Incendive  
Class I & II Division 1 & 2  
Ex ia IIC T4  
Tamb -20°C to +40°C



**TVA** | Direct-Mount Composite Resin  
Intrinsically Safe  
General Purpose  
Ex ia IIC T4 II2G  
Tamb -40°C to 60°C

# TOPWORX™ BUS NETWORKS

## Connectivity to Every Fieldbus Network

### SENSOR-COMMUNICATION MODULES

TopWorx™ Sensor-Communication Modules are microprocessor based 'brains' that mount inside TopWorx™ 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 TopWorx™ enclosures.

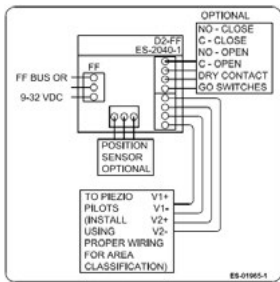
#### SCM Features:

- Short-circuit protection
- Resistant to impact, moisture, shock, vibration, contamination
- LEDs indicate valve position and facilitate sensor set-up

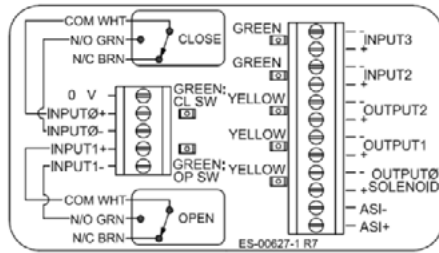


### BUS NETWORKS

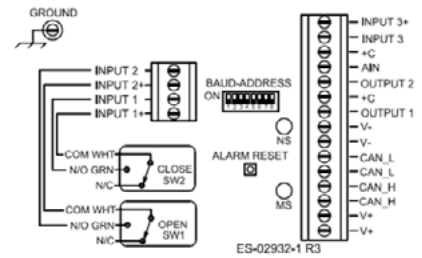
TopWorx™ Sensor-Communication Modules make it easy to connect automated on/off valves to modern bus networking protocols such as FOUNDATION Fieldbus, DeviceNet, AS-interface, Profibus, and HART.



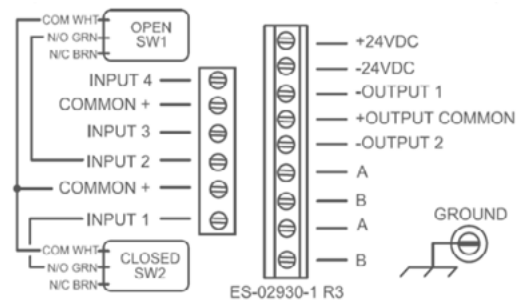
FOUNDATION Fieldbus



ASI



DeviceNet



Profibus



## FOUNDATION FIELDBUS

- Factory programmed with: (2) DI, (1) DO, (1) AI, (1) PID, with the ability to add any additional 10 function blocks.
- Emerson DeltaV, Honeywell, Yokogawa, ABB, Invensys approved
- Pre-defined templates, on-board diagnostics, and EDDL-enhanced on-board diagnostics.
- Consumes only 17mA to operate, reduces VCRs and DSTs required
- Local calibration button for factory setting of GO switches.
- Position feedback via DO read back reduces number of function blocks.

## BEST-IN-CLASS CAPABILITIES

- Reduced macrocycle times with 15 to 20ms block execution times
- Reduced VCR Links (Publisher/Subscriber)
- ITK 6.0 registered guaranteeing the latest advancements in field diagnostics per NAMUR NE 107, with 17 diagnostics and alerts.
- Live updates without process interruptions - Device Descriptions (DD's) can be updated without taking the device offline.
- Link Active Scheduler (LAS) capable, allowing for communication backup.

## MONITORING FEATURES

- The two built in cycle counters, a life cycle counter and adjustable counter, with high limit alarm that gives the user needed information to implement a preventative maintenance strategy.
- With built in timers that record valve time in open position, open travel time, and close travel time allowed for failure prediction by trending opening and closing times.

## CALIBRATION SWITCH

The D2-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.

## ASCO® 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



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



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



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



# TOPWORX™ POSITION SENSORS

The Industry's Leading Selection of Position Sensors

TopWorx™ 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.

## All in one proximity sensor and limit switch

GO Switches are hermetically sealed to 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: 105°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
- Resistant 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



## SENSORS & SWITCHES

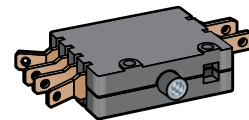
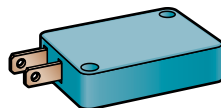
- GO™ Switch leverless limit switches
- 4-20mA position transmitters with HART protocol
- Proximity
- Reed
- Mechanical

## 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

# TOPWORX™ PILOT VALVES

## Solenoid Valves to Pilot Any Actuator

TopWorx™ provides a portfolio of self-contained ASCO pilots and spool valves to control pneumatic actuators. ASCO spool valves are specially designed to stay open for long periods of time and close when needed. The ASCO unique design combines hard T-seal and flexible o-rings, provides bubble-tight shutoff, resistance to dirt, and mutimillion cycle life controlling air or inert gas, making them a perfect fit for any application.

### SOLENOID VALVES

- 24vdc, 120vac, 220vac
- Aluminum, 316 Stainless, 304 Stainless
- Single Coil, Dual Coil, Blocked Center
- High Flow up to 3.7Cv
- Low Power Consumption (solenoid 0.5 watts; piezo 12mw)



### 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
- 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

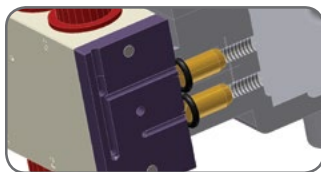
### Flow Rates

- 1.0 Cv



### MANUAL OVERRIDES

- Momentary/Latchingw



### 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 situ without affecting the integrity of the explosion proof enclosure.

Integrated metal manifold with color coded tubing for supply and work to allow for easy of trouble shooting. In case of a solenoid failure easily diagnose the failed component: pilot or spool.

### Special ASCO seal design with T-Seals are designed to:

- Reduce leakage by applying more pressure to a smaller area around the spool sealing surface
- Self-cleaning design and less sensitive to particulate contamination in the medium
- Provide a dynamic wiping action making them better suited to spool valves than plain “o-rings”
- Eliminate “stiction” with smaller contact area and higher contact pressure provided by the cushioning rings located behind the T-seal

# TOPWORX™ D-ESD

## SIL-3 Partial Stroke Test Solutions

TopWorx™ SIL-3 ESD Valve Controllers provide a complete Partial Stroke Test Solution with unique features and functionality that enable partial stroke testing of emergency shutdown valves without disrupting or shutting down the process.

The **TopWorx™ Partial Stroke Test Solution** comes complete with:

- Sensor Control Module to partially close the valve without disrupting the process
- Pass/Fail indication via high/low response on the return signal
- Open and Closed position sensors for feedback to the DCS or PLC
- Onboard Diagnostics to enable predictive maintenance and early-warning alerts
- Aluminum, Composite, and 316 Stainless Steel platforms certified for use in Flameproof/Explosion Proof, or Non-Incendive hazardous areas
- An optional local, lockable partial stroke Test Button integral to the unit

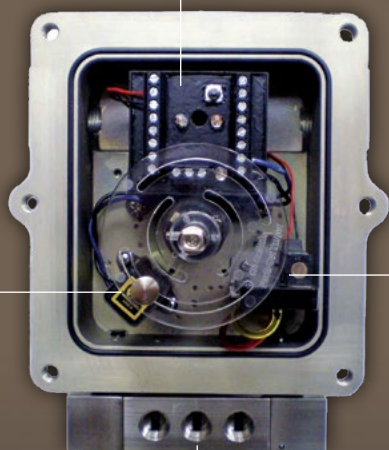
The **TopWorx™ Partial Stroke Test Solution** provides Onboard Diagnostics to alert the user to the following Dangerous Failures:

- Valve packing/shaft damage
- Actuator spring fatigue/breakage
- Solenoid pilot exhaust blockage
- Solenoid spring failure



Convenient Partial Stroke Testing

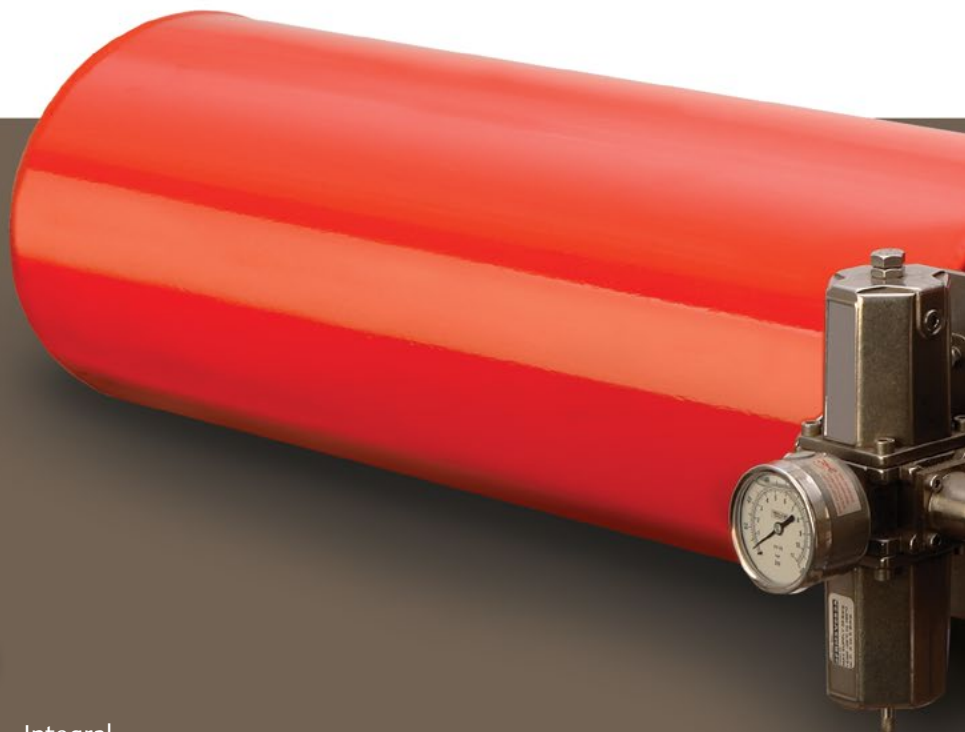
Partial Stroke Test Module



GO™ Switch  
Partial Stroke Confirmation Switch

Integral Solenoid

Spool Valve





**DXP** Tropicalized Aluminum  
Flameproof/Explosion Proof



**DXS** 316 Stainless Steel  
Flameproof/Explosion Proof

**SIL-3**  
IEC 61508



### Capabilities

- Suitable for use in SIL-3 applications
- Certified for use in hazardous areas
- Integrated solution with all controls in a single housing
- Onboard diagnostics for performance validation

# TOPWORX™ APPLICATIONS

## Valve Control Solutions for Every Application

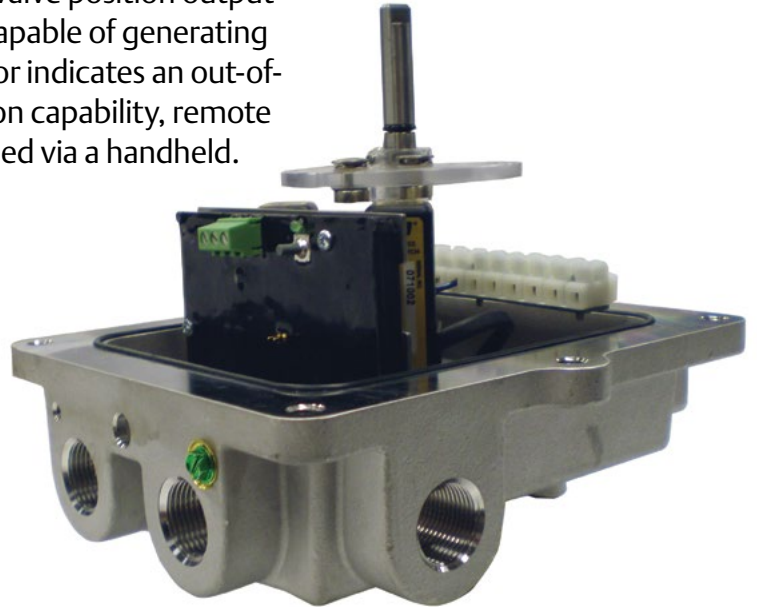
### 4-20mA TRANSMITTERS WITH HART PROTOCOL



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.

#### 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



### THE STAINLESS STEEL, 35-SERIES GO™ SWITCH

#### Hermetically-Sealed, Stainless Steel, DPDT Proximity Switch

For over fifty years, GO™ Switch, all in one proximity sensor and limit switches, have set the standard for reliability and durability in the process industries. Their unique operating principle and best-in-class capabilities have made them the most specified switch in the world for demanding process applications.

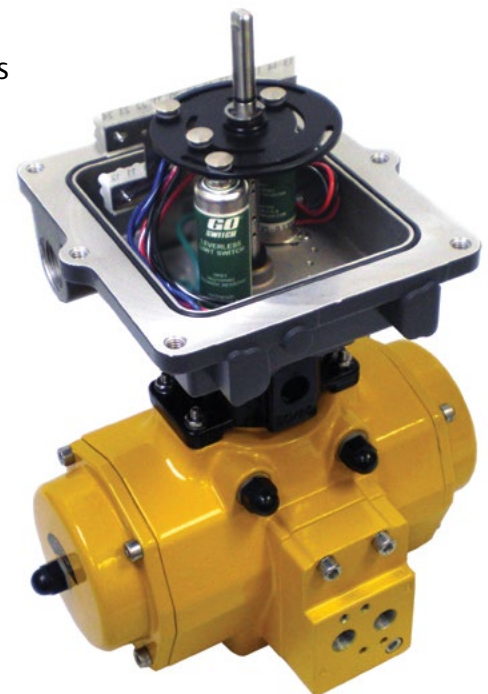
#### TopWorx™ has once again improved on greatness.

The 35-Series GO™ Switch is available in two versions: The original Single Pole Double Throw GO™ Switch or the stainless steel, Double Pole Double Throw, version.

#### Features:

- One-piece, stainless steel housing
- Hermetically-sealed, Double Pole Double Throw contacts
- Suitable for both Ex d and Intrinsically Safe applications
- Up to four (4) switches in a single enclosure
- Extremely low hysteresis
- PLC and higher current ratings with AC/DC - NO/NC wiring flexibility
- 4amp/120vac and 3amp/24vdc
- Available with SOV and HART options

**GO Gets It.**





## LINEAR VALVE MONITORS & SENSORS

TopWorx™ discrete valve controllers 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.



TopWorx™ D-Series  
on linear control  
valves

## DXP AND DXS WITH IEC/ATEX IIC CERTIFICATION The Only IIC Valve Controller with an Integral Solenoid.

Most ATEX Ex d IIC valve controllers have small containers with screw-top lids and very few options. Often the threads on the screw-top lids bind up, causing safety issues on multiple levels. TopWorx™ is changing all of that with the IIC-certified DXP valve controller.

### There is no competition.

The unique modular design of the TopWorx™ DXP discrete valve controller combines bus networking, pilot valve and position sensors into a globally certified, explosion proof enclosure that attaches to any automated valve package.

#### Features:

- Serrated Flange (No binding of threads)
- Improved ingress protection
- IECEx, ATEX, & Ex d Group IIC
- The only IIC Box with integral solenoid
- Available with all Bus & Sensor options!



Serrated Flange

# TOPWORX™ APPLICATIONS

## Valve Control Solutions for Every Application

### TOPWORX™ 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 -60°C/-76°F

The TopWorx™ D-Series will give accurate position indication down to -60°C with the use of the GO Switch.



“ We replaced all of a competitor’s switchbox with the TopWorx™ DXP 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. ”

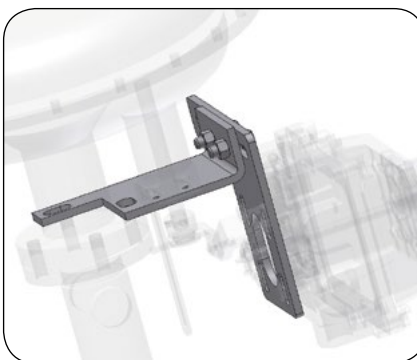
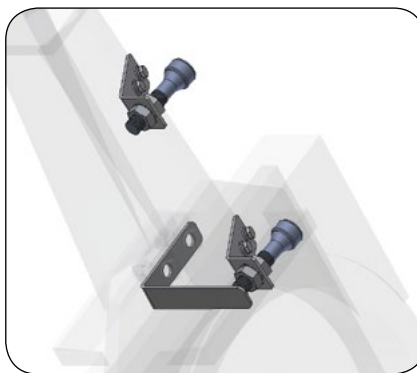
- **Process Engineer**, German Chemical Company

# TOPWORX™ MOUNTING KITS

VIP™ Brackets to Fit Any Rotary Valve or Actuator

## VIP MOUNTING KIT

TopWorx™ valve controllers can be mounted on any rack-n-pinion, scotch-yoke, or vane actuator, quarter-turn manual valves, linear knifegate and control valves, and positioners. Visit [www.topworx.com](http://www.topworx.com) for a complete list of available kits or to request a custom design.



TopWorx™ offers thousands of mounting kits to fit a wide variety of valves and actuators. Each kit comes complete with a parts list and installation instructions.

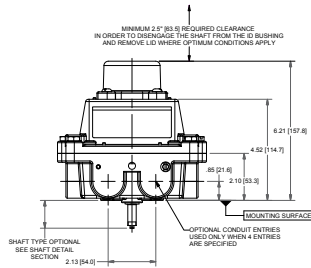
3Z Valve	Larox
Actreg	Ledeen
Airtorque	MAGNETROL
ANCHOR DARLING	Marwin
Apollo	Masoneilan
Automax	Mogas
AXELSON	Neles-Jamesbury
Baumann	Neway
Bettis	Newcon Valve
Biffi	Orbinox
Bray	Orbit
BROOKS BRODIE	PBM
Cameron	PBV
CCI	Poyam
ChemValve	Protech
Clarkson	PVC
Compaq	QTRCO
Conbraco	Radius
Contromatics	RCS
COPES VULCAN	Remote Control
Crane	RF Technologies
DeZurik	Rhino
Durco	Rotork
El-O-Matic	SAMSON
Fabri Valve	Severn Glocon
Fisher	SPEAKMAN
Flowbus	TBV
Flowserve	Triac
General Valve	Trutorq
Grinnell	Unitorq
HAWS	Valtek
HONEYWELL	Valvtechnologies
Hytork	Vanessa
ITT	Velan
KENNETH ELLIOT	VTI
Keystone-Morin	Watts
Kinetrol	WKM
Kitz	Worcester
KTM	Xomox-Matryx
KTM	

# TOPWORX™ TECHNICAL INFORMATION

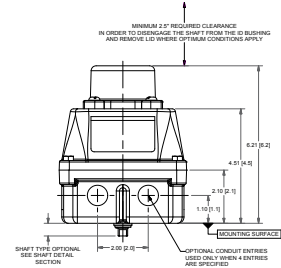
## Dimensional Drawings, Electrical Ratings

### D-SERIES DIAGRAMS

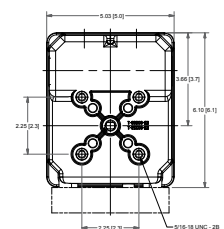
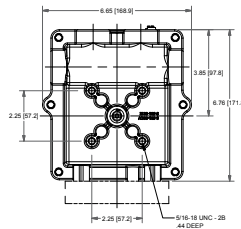
DXP



DXR

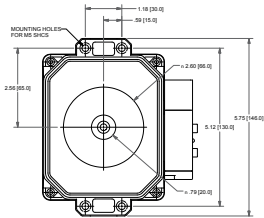
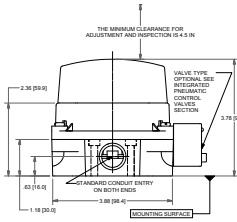


DXS

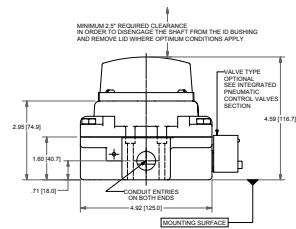


### T-SERIES DIAGRAMS

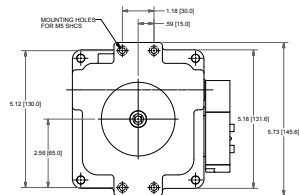
TVA



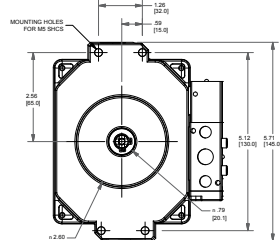
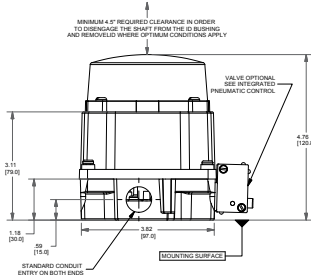
TXS



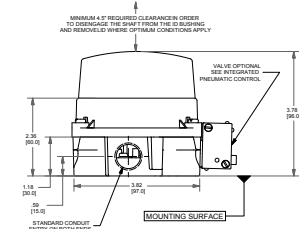
TXP



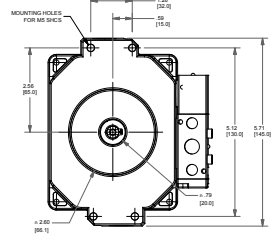
TVH



TVF

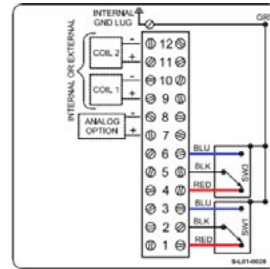


TVL



## GO Switches

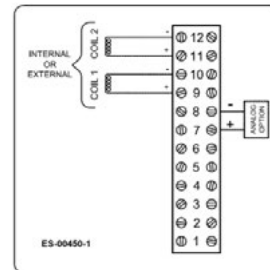
Option	Contact Type	Contact Form	Electrical Rating
L	Gold-Flashed, Dry-Contact	SPDT	4A@120VAC, 3A@24VDC
Z	Palladium Silver, Dry-Contact	DPDT	4A@120VAC, 3A@24VDC



L2

## Transmitters

Option	Type	Signal	Electrical Rating
_X	Potentiometer	4-20mA	8.5-34VDC
_H	Potentiometer	HART	15-39VDC



\_X

## Solenoid Valves

### D-Series

Voltage	Power Consumption	Pressure Rating
24VDC	.5W	45-150 PSI
110VAC	3VA	45-150 PSI
220VAC	3VA	45-150 PSI
Piezo	12mW	45-150 PSI








### T-Series

Voltage	Power Consumption	Pressure Rating
24VDC	.5W (I.S.), 1W (non-I.S.)	30-100 PSI
110VAC	3VA	30-100 PSI
220VAC	3VA	30-100 PSI



# TOPWORX™ D-SERIES, DXP, DXR, DXS ORDERING GUIDE

Choose one option from each category to build a complete model number.  
Consult factory for options not shown below.

Enclosure	Bus/Sensor	Area Classification	Visual Display	Shaft	Conduit Entries
<p><b>DXP</b> Tropicalized Aluminum</p> <p><b>DXR</b> Composite Resin ("S" Silicone O-Rings only; Stainless steel conduit entries) (Area Classification "0" only available with ATEX/IECEx approvals) 232</p> <p><b>DXS</b> 316 Stainless steel (Only available with "R" or "M" shaft options)</p>	<p><b>Bus Network</b>  <b>AS</b> AS-Interface (Area class cannot be 0)  <b>*FF</b> FOUNDATION Fieldbus w/ 0-10K Pot  <b>*FL</b> Foundation Fieldbus w/(2) SPDT GO Switches  <b>*FP</b> Foundation Fieldbus w/(2) SPDT GO Switches and 0-10K Pot  <b>DN</b> DeviceNet (Area class cannot be 0)  <b>Partial Stroke Test</b>  <b>ES</b> ESD/PST Module w/GO Switch (Area class cannot be 0)  <b>GO Switches</b>  <b>L2</b> (2)GO Switches SPDT hermetic seal  <b>L4</b> (4)GO Switches SPDT hermetic seal(not available with pilot)  <b>Z2</b> (2)GO Switches DPDT hermetic seal  <b>Z4</b> (4)GO Switches DPDT hermetic seal, (not available with pilot)  <b>Mechanical Switches</b>                      (Area class cannot be 2, DXR with G approval not available with pilot)  <b>M2</b> (2)Mech SPDT No Adder  <b>M4</b> (4)Mech SPDT  <b>M6</b> (6)Mech SPDT  <b>T2</b> (2)Mech DPDT  <b>K2</b> (2)Mech SPDT gold contacts  <b>K4</b> (4)Mech SPDT gold contacts  <b>Proximity Switches</b>  <b>R2</b> (2) SPDT Prox switches  <b>R4</b> (4) SPDT Prox switches (R2 &amp; R4 only available with DXR and Ex me certification)  <b>Inductive Sensors</b>  <b>E2</b> (2) p+f NJ2-V3-N  <b>inductive NAMUR</b>  <b>E4</b> (4) p+f NJ2-V3-N                      inductive NAMUR  <b>Analog Output</b>                      (Available with 2-switch options only for L,Z,M,K,E,T)  <b>_X</b> 4-20mA transmitter  <b>_H</b> 4-20mA transmitter with HART (Not available with switch option T; LH not available w/pilot valve) (LH, ZH Not available with DXR)                      Example:  <b>LH</b> =(2) GO Switches with HART™ transmitter                      * FF, *FL and *FP with Area Classification "0" has an ib protection</p>	<p><b>0</b> Intrinsically safe (Bus/sensor cannot be AS, DN, ES, or _X; Requires appropriate I.S. barrier)                      - North America Class I Div 1&amp;2 Groups A, B, C, D Type 4, 4X                      - ATEX/IECEx Zone 0 II2GD, T6/T4 Ex ia IIC Ex tb IIIC, IP66/67 (Foundation Fieldbus) Zone 1, Ex ib IIC T4, IP67</p> <p><b>1</b> Explosion proof / Flame proof (DXP/S only)                      - North America Class I Div 1 Groups C, D; Class I Div 2, Groups A, B, C, D. (Groups A &amp; B must be hermetically sealed) Type 4, 4X, - ATEX/IECEx Zone 1 II2G, II2GD, T6/T4/T3 Ex d IIB+H2 Ex tb IIIC IP66/67 (O-Rings must be S for DUST certification)</p> <p><b>2</b> Non-incendive (Bus/sensor must be L, Z, P, E, AS, FF,_X, _H, _E or DN)                      - North America Class I Div 2 Groups A, B, C, D; Class II Div 2 Groups F,G - ATEX (DXP/S only) II3G Ex nA nC tb, IP66/67 (O-Rings must be S for DUST certification)</p> <p><b>G</b> General Purpose Type 4, 4X (not available with DXR with mechanical switches)</p> <p><b>C</b> Flameproof (DXS not available with valve; Conduit entries must be E or M) ATEX/IECEx II2G, II2GD, T6/T4/T3 Ex d IIC Ex tb IIIC IP66/67</p> <p><b>M</b> Flameproof (only available with R2 and R4 sensor options) (DXR only) ATEX/IECEx Zone 1, II2GD Ex e mb IIC T4, Ex tb IIIC T66 IP67</p> <p><b>W</b> No approvals; Type 4, 4X IP66/68</p>	<p><b>G</b> Standard 90° Green OPEN, Red CLOSED</p> <p><b>R</b> Standard 90° Green CLOSED, Red OPEN</p> <p><b>B</b> 90° Black OPEN, Yellow CLOSED No Adder</p> <p><b>Y</b> 90° Yellow OPEN, Black CLOSED</p> <p><b>1</b> 3 way, 90° L Port  </p> <p><b>3</b> 3 way, 90° T Port  </p> <p><b>5</b> 3 way, 90° T Port  </p> <p><b>7</b> 3 way, 180° T Port 3 position  </p> <p><b>9</b> 3 way, 180° T Port 3 position  </p>	<p><b>S</b> 1/4" DD 304 stainless steel</p> <p><b>N</b> NAMUR 304 stainless steel</p> <p><b>R</b> 1/4" DD 316 stainless steel (Shaft &amp; external hardware)</p> <p><b>M</b> NAMUR 316 stainless steel (Shaft &amp; external hardware)</p>	<p><b>DXP/DXS (Metal Conduit Entries)</b>  <b>E</b> (2) 3/4" NPT</p> <p><b>4</b> (2) 3/4" NPT (2) 1/2" NPT</p> <p><b>M</b> (2) M20</p> <p><b>3</b> (4) M20</p> <p><b>6</b> (4) 3/4" NPT</p> <p><b>DXR (Stainless Conduit Entries Required for North American approval)</b>  <b>P</b> (2) 1/2" NPT</p> <p><b>E</b> (2) 3/4" NPT</p> <p><b>M</b> (2) M20</p> <p><b>DXR (Resin Conduit Entries)</b>  <b>A</b> (2) 1/2" NPT</p> <p><b>B</b> (2) 3/4" NPT</p> <p><b>C</b> (2) M20</p>

**Ordering Guide**  
Fill in the boxes to create your 'ordering number.'

For complete information on certification options, go to [www.topworx.com](http://www.topworx.com) and download the applicable product certificate.

Enclosure  
\_\_\_\_

Bus/Sensor  
\_\_\_\_

Area Classification  
\_\_\_\_

Visual Display  
\_\_\_\_

Shaft  
\_\_\_\_

Conduit Entries  
\_\_\_\_

**Ordering Examples:**  
DXP-FF0GNEBPA2  
DXP-L21GNEB1A2

O-Rings	Pilot	Spool Valve	Valve Cv	Manual Override	Regional Certs
<p><b>B</b> Buna-N <b>No Adder</b></p> <p><b>S</b> Silicone <b>No Adder</b></p> <p><b>NOTE:</b> For Temperatures below -40°C, Silicone o-rings are recommended</p>	<p><b>Blank</b> No pilot device(s)</p> <p><b>1</b> (1) 24 Vdc pilot, fail open/closed 0.5 W (non-I.S.)  0.5W (I.S)</p> <p><b>2</b> (2) 24 Vdc pilots, fail last position 0.5W (non-I.S.)  0.5W (I.S)</p> <p><b>4</b> (1) 220 Vac pilot, 2W, fail open/closed</p> <p><b>5</b> (2) 220 Vac pilots, 2W, fail last position</p> <p><b>7</b> (1) 110 Vac pilot, 1.1W, fail open/closed</p> <p><b>8</b> (2) 110 Vac pilots, 1.1W, fail last position</p> <p><b>P</b> (1) piezo pilot, fail open/closed (FF only)</p> <p><b>R</b> (2) piezo pilots, fail last position (FF only)</p>	<p><b>Blank</b> No Spool Valve</p> <p><b>A</b> Aluminum Hard coat anodized</p> <p><b>6</b> 316 Stainless steel</p>	<p><b>Blank</b> No Spool Valve</p> <p><b>2</b> .86 Cv (1/4" NPT Ports)</p> <p><b>3</b> 3.7 Cv (1/2" NPT Ports) (For manual override consult factory) (Spool Valve A) (Spool Valve 6)</p>	<p><b>Blank</b> No override</p> <p><b>1</b> Single Pushbutton Momentary/Latching</p> <p><b>2</b> Dual Pushbutton Momentary/Latching</p> <p><b>T</b> Partial stroke test button with lockable cover (Sensor ES only) (Not avail w/ Area Class C) (DXP/S - Conduit Entries 4 or 3 only. DXR - consult factory)</p>	<p><b>Blank</b> No Regional Cert</p> <p><b>B</b> InMetro (Area Class 0,1 and C only)</p> <p><b>N</b> NEPSI</p> <p><b>F</b> FISCO (Bus/Sensor must be FF; Area Class must be 0)</p> <p><b>K</b> KOSHA (DXP/S only) (Area class 1 or C)</p> <p><b>R</b> EAC (DXP/S only)(O-Rings must be B or S,B=Gas Approved;S= Gas/Dust Approved)</p> <p><b>A</b> ANZEx Ex d IIC, Ex d IIB+H2 (DXP/S only)</p> <p><b>P</b> PESO (India) (Gas approval only)</p>
O-Rings	Pilot	Spool	Valve Cv	Override	Regional Certs

**TOPWORX™ ACCESSORIES**

Description	Part Number
<b>Pneumatic Accessories</b>	
Flow Control, 1/4" NPT (1 per kit) (DXP/TXP/TVA) .....	AL-M21
Flow Control, 1/2" NPT (1 per kit) (DXP w/3.0Cv spool valve) .....	AL-M22
Breathers, 1/4" NPT (2 per kit) (DXP) .....	AL-M31

# TOPWORX™ T-SERIES, TXP, TXS, TVA ORDERING GUIDE

Choose one option from each category to build a complete model number.  
Consult factory for options not shown below.

## Enclosure

**TXP** Tropicalized Aluminum

**TXS** 316 Stainless Steel

## Bus/Sensor

### Bus Network

**AS** AS-Interface

(Area class cannot be 0)

**PB** Profibus DP

(Area class must be 1, C or W)

### Mechanical Switches

(Area class cannot be 2)

**M2** (2) Mech SPDT

**M4** (4) Mech SPDT

**K2** (2) Mech SPDT w/gold contacts

**T2** (2) Mech DPDT

### Proximity Switches

**R2** (2) SPDT 200mA max

**R4** (4) SPDT 200mA max

**P2** (2) SPDT 3A max

**P4** (4) SPDT 3A max

### GO Switches

**L2** (2) GO™ Switches  
SPDT hermetically sealed  
(TXP/TXS w/o pilot valve only)

### Inductive Sensors

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

### Analog Output

**0X** 4-20 mA Transmitter  
with no switches

Examples:

**AS** = AS-i with "R" type reed switches

## Area Classification

**0** Intrinsically safe  
ATEX/IECEX  
Zone 1  
I2GD Ex ia IIC  
Ex tb IIIC, IP66/67

**C** Flame Proof  
ATEX/IECEX  
I2GD Ex d IIC  
Ex tb IIIC, IP66/67  
(w/o pilot valve)

**1** Explosion proof  
CI I Div 1 Grps C,D  
CI II Div 1 Grps E-G (NEC approvals w/o pilot valve)  
ATEX/IECEX  
Zone 1  
I2GD Ex d IIB  
Ex tb IIIC, IP66/67

**2** Non-incendive  
CI I Div 2 Grps A-D  
CI II Div 2 Grps F&G (NEC approvals w/o pilot valve)  
ATEX I3GD (Not available with all sensing options)  
Ex nA nC IIC, IP66/67  
Ex tb IIIC

**G** General Purpose  
Type 4X

**W** No approvals  
Type 4, 4x  
IP66/68

## Visual Display

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

**R** Standard 90°  
Green CLOSED,  
Red OPEN

**B** 90° Black OPEN,  
Yellow CLOSED

**F** Flat-top with skirt  
indicator  
(TXP & TXS only)  
(Indicator not provided with "L" Shaft option)

**Y** 90° Yellow OPEN,  
Black CLOSED

**J** 3 Way T Port,  
Green/Red

**K** 3 Way L Port,  
Green/Red

## Shaft

**N** NAMUR  
304 stainless steel

**L** 1" Extended  
Linear Shaft

## Conduit Entries

### TXP/TXS

**P** (2) 1/2" NPT

**M** (2) M20

**E** (2) 3/4" NPT  
(Not available with pilot valve)

**3** (4) M20  
(Not available with pilot valve)

**4** (2) 3/4" NPT  
(2) 1/2" NPT  
(Not available with pilot valve)

! TVA and TXP mounting accessories now sold separately.  
See listing below for kit #s and description.

For complete information on certification options, go to [www.topworx.com](http://www.topworx.com) and download the applicable product certificate.

## Ordering Guide

Fill in the boxes to create your 'ordering number.'

Enclosure

Bus/Sensor

Area Classification

Visual Display

Shaft

Conduit Entries



**Ordering Examples:**  
 TXS-ASCGNPM1A1  
 TXP-M21GNPB1A1

O-Rings	Pilot	Spool Valve	Valve Cv	Manual Override	Regional Certs
M Silicone	<b>Blank</b> No pilot device(s)  <b>1</b> (1) 24Vdc pilot, fail open/closed 1W (non I.S)  0.5W (I.S)  <b>7</b> (1) 110Vac pilot, 3VA, fail open/closed  <b>4</b> (1) 220Vac pilot, 3VA fail open/closed	<b>Blank</b> No spool valve  <b>A</b> Aluminum Hard coat anodized  <b>6</b> 316 Stainless steel  <div style="border: 1px solid black; border-radius: 10px; padding: 5px; text-align: center; margin: 10px 0;"> <b>Don't Forget!</b> </div> Filtered air is required for proper valve operation. Reference <a href="http://www.topworx.com">www.topworx.com</a> for additional Air Filter information.	<b>Blank</b> No spool valve  <b>1</b> 1.0 Cv (1/4" NPT Ports)  <b>8</b> 1.0 Cv (1/4" BSP Ports)	<b>Blank</b> No override  <b>1</b> Single Pushbutton Momentary/Latching	<b>Blank</b> No Regional Cert  <b>N</b> NEPSI  <b>R</b> EAC  <b>B</b> InMetro (Area Class 0, 1 and C only)  <b>P</b> PESO (Gas approval only)
O-Rings	Pilot	Spool	Valve Cv	Override	Regional Certs

## T-SERIES MOUNTING KITS

Description	Part Number	Description	Part Number
<b><u>Resin Mounting Kits for TVA</u></b>		<b><u>Stainless Steel Mounting Kits for TXS</u></b>	
Mounting Kit for 20 x 80 .....	AL-TR01	Non-NAMUR Interface Kit .....	Z001205
Mounting Kit for 30 x 80 .....	AL-TR04	Mounting Kit for 20 x 80 .....	AV-TS09
Mounting Kit for 30 x 130 .....	AL-TR07	Mounting Kit for 20 x 80 (flattop only) .....	AV-TS10
Mounting Kit for 50 x 130 .....	AL-TR09	Mounting Kit for 30 x 80 .....	AV-TS11
<b><u>Mounting Kits for TXP</u></b>		Mounting Kit for 30 x 80 (flattop only) .....	AV-TS12
Mounting Kit for 20 x 80 .....	AV-TA09	Mounting Kit for 30 x 130 .....	AV-TS13
Mounting Kit for 20 x 80 (flattop only) .....	AV-TA10	Mounting Kit for 30 x 130 (flattop only) .....	AV-TS14
Mounting Kit for 30 x 80 .....	AV-TA11	Mounting Kit for 50 x 130 .....	AV-TS15
Mounting Kit for 30 x 80 (flattop only) .....	AV-TA12	Mounting Kit for 50 x 130 (TXS flattop only) .....	AV-TS16
Mounting Kit for 30 x 130 .....	AV-TA13		
Mounting Kit for 30 x 130 (flattop only) .....	AV-TA14		
Mounting Kit for 50 x 130 .....	AV-TA15		
Mounting Kit for 50 x 130 (flattop only) .....	AV-TA16		

# TOPWORX™ T-SERIES, TVF, TVL, TVH ORDERING GUIDE

Choose one option from each category to build a complete model number.  
Consult factory for options not shown below.

## Enclosure

**TVF** Tropicalized Aluminum base with clear resin lid

**TVL** Tropicalized Aluminum base and Lid

**TVH** 316 Stainless Steel base and lid

**TVA** Engineered Resin (Area Class must be W or 0), (Only available with Bus/Sensors AS, AM (with or w/o pilot valve) M, K, T, R, P or E (w/o pilot valve))

## Bus/Sensor

**Bus Network**  
(area class cannot be 0)

**AS** AS-Interface  
**DN** DeviceNet  
**PB** Profibus DP

### Mechanical Switches

(Area class cannot be 2)

**M2** (2) Mech SPDT  
**M4** (4) Mech SPDT  
**K2** (2) Mech SPDT w/ gold contacts  
**T2** (2) Mech DPDT

### Proximity Switches

**R2** (2) SPDT 200mA max  
**R4** (4) SPDT 200mA max  
**P2** (2) SPDT 3A max

### Analog Output

(Available with M, K, T, E)(Not available w/ pilot/spool valve)  
**\_X** 4-20 mA Transmitter

### Inductive Sensors

**E2** (2) p+f N/2-V3-N inductive NAMUR  
**12** (2) Ind prox PNP N/O (Area class can only be "W")

### Examples:

**0X** 4-20 mA Transmitter with no switches

**MX** 4-20 mA Transmitter with mechanical switches

**AS** AS-i with "R" type reed switches

## Area Classification

**0** Intrinsically safe  
ATEX/IECEX Zone 1  
II2GD Ex ia IIC  
Ex tb IIIC, IP66/68 (Dust groups TVL/TVH only)  
CI I Div 1 Grps- A-D; CI II Div 1 Grps E-G (TVA ATEX/IECEX Only)

**2** Non-incendive  
ATEX/IECEX Zone 2  
II3GD Ex nA nC IIC  
Ex tc IIIC, IP66/68  
CI I Div 2 Grps A-D; CI I Div 2 Grps F & G

**W** No approvals, Type 4, 4X  
IP66/68

**G** General Purpose  
Type 4X (Not available on TVA)

TVF, TVL & TVH  
10pt. terminal strip w/ pilots  
12pt. terminal strip w/o pilots

TVA  
8pt. terminal strip w/o pilots

## Visual Display

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

**R** Standard 90°  
Green CLOSED,  
Red OPEN

**B** 90° Black OPEN,  
Yellow CLOSED

**F** Flat-top with skirt indicator  
(TVL & TVH only)  
(Indicator not provided with "L" Shaft option)

**Y** 90° Yellow OPEN,  
Black CLOSED

**T** Green THRU, Red DIVERT

**K** 3 Way L Port,  
Green/Red

## Shaft

**N** NAMUR  
304 stainless steel

**L** 1" Extended  
Linear Shaft  
(TVL/TVH only)

## Conduit Entries

**(TVF/TVL/TVH)**  
**P** (2) 1/2" NPT

**M** (2) M20

**E** (2) 3/4" NPT

**1** (2) M25

### TVA

**A** (2) 1/2" NPT Resin

**C** (2) M20 Resin

For complete information on certification options, go to [www.topworx.com](http://www.topworx.com) and download the applicable product certificate.

## Ordering Guide

Fill in the boxes to create your 'ordering number.'

Enclosure

Bus/Sensor

Area Classification

Visual Display

Shaft

Conduit Entries

**Ordering Examples:**  
TVF-M20GNPM1A1  
TVL-R4WGNPM

O-Rings	Pilot	Spool Valve	Valve Cv	Manual Override	Regionals
<p><b>M</b> Silicone</p>	<p><b>Blank</b> No pilot device(s)</p> <p><b>1</b> (1) 24Vdc pilot, fail open/closed 1W (non-I.S.) 0.5 W (I.S.)</p> <p><b>2</b> (2) 24Vdc pilots fail last position 1W (non-I.S.) 0.5 W (I.S.)</p> <p><b>4</b> (1) 220Vac pilot, 3VA fail open/closed</p> <p><b>5</b> (2) 220Vac pilots, 3VA fail last position</p> <p><b>7</b> (1) 110Vac pilot, 3VA, fail open/closed</p> <p><b>8</b> (2) 110Vac pilots, 3VA fail last position</p>	<p><b>Blank</b> No spool valve</p> <p><b>A</b> Aluminum Hard coat anodized</p> <p><b>6</b> 316 Stainless steel</p>	<p><b>Blank</b> No spool valve</p> <p><b>1</b> 1.0 Cv (1/4" NPT Ports)</p> <p><b>8</b> 1.0 Cv (1/4" BSP Ports)</p>	<p><b>Blank</b> No override</p> <p><b>1</b> Single Pushbutton Momentary/Latching</p> <p><b>2</b> Dual Pushbutton Momentary Latching</p>	<p><b>N</b> NEPSI</p> <p><b>R</b> EAC (Not available in TVA)</p> <p><b>B</b> InMetro (Area Class "0" only)</p> <p><b>P</b> Peso (Gas approval only)</p>
O-Rings	Pilot	Spool	Valve Cv	Override	Regionals

**T-Series Mounting Kits** (All hardware included)

Description	Part Number	List Price	Description	Part Number	List Price
<b>Mounting Kits for TVF/TVL</b>			<b>Stainless Steel Mounting Kits for TVH</b>		
Mounting Kit for 20 x 80	AV-TA01		Mounting Kit for 20 x 80	AV-TS01	
Mounting Kit for 20 x 80 (flattop only)	AV-TA02		Mounting Kit for 20 x 80 (flattop only)	AV-TS02	
Mounting Kit for 30 x 80	AV-TA03		Mounting Kit for 30 x 80	AV-TS03	
Mounting Kit for 30 x 80 (flattop only)	AV-TA04		Mounting Kit for 30 x 80 (flattop only)	AV-TS04	
Mounting Kit for 30 x 130	AV-TA05		Mounting Kit for 30 x 130	AV-TS05	
Mounting Kit for 30 x 130 (flattop only)	AV-TA06		Mounting Kit for 30 x 130 (flattop only)	AV-TS06	
Mounting Kit for 50 x 130	AV-TA07		Mounting Kit for 50 x 130	AV-TS07	
Mounting Kit for 50 x 130 (flattop only)	AV-TA08		Mounting Kit for 50 x 130 (flattop only)	AV-TS08	
Mounting Kit for existing standard shaft brackets	AV-PL001-1				
<b>Resin Mounting Kits for TVA</b>					
Mounting Kit for 20 x 80	AL-TR01				
Mounting Kit for 30 x 80	AL-TR04				
Mounting Kit for 30 x 130	AL-TR07				
Mounting Kit for 50 x 130	AL-TR09				

## GLOBAL SUPPORT OFFICES

### Americas

3300 Fern Valley Road  
Louisville, Kentucky 40213 USA  
+1 502 969 8000  
info.TopWorx@Emerson.com

### Asia-Pacific

Asia Pacific Pte Ltd - TopWorx  
c/o ASCO ASIA  
BLK4008, Ang Mo Kio Avenue 10  
#04-17/22, Techplace 1  
Singapore 569625  
+65 6891 7550  
info.TopWorx@Emerson.com

### Europe

Horsfield Way  
Bredbury Industrial Estate  
Stockport SK6 2SU  
United Kingdom  
+44 0 161 406 5155  
info.TopWorx@Emerson.com

### Middle East

P.O. Box 17033  
Jebel Ali Free Zone  
Dubai 17033  
United Arab Emirates  
+971 4 811 8283  
info.TopWorx@Emerson.com

### Africa

24 Angus Crescent  
Longmeadow Business Estate East  
Modderfontein  
Gauteng  
South Africa  
+27 11 451 3700  
info.TopWorx@Emerson.com

Visit [www.topworx.com](http://www.topworx.com) comprehensive information on our company, capabilities, and products – including model numbers, data sheets, specifications, dimensions, and certifications.

[www.topworx.com](http://www.topworx.com)

© 2016 TopWorx. All rights reserved. TopWorx™, GO Switch, VIP and Leverless Limit Switch are all trademarks of TopWorx™. The Emerson logo is a trademark and a service mark of Emerson Electric. Co.

© 2016 Emerson Electric Company. All other marks are the property of their respective owners. Information herein – including product specifications – is subject to change without notice.

### About Emerson Process Management

Emerson Process Management is a powerful, global, single source of process improvement technology and expertise. We help major companies in selected industries optimize their plants and processes to achieve higher quality, greater reliability and faster time to market, while steadily advancing productivity and profitability. We can build it – providing experienced project management, engineering and a single point of accountability for the entire instrumentation and automation system. We can connect it – seamlessly integrating people and technology at every level of the process. We can improve it – creating more efficient utilization of energy and raw materials. And we can sustain it – producing greater reliability, month after month, year after year. From the field, to the plant, to the bottom line – where performance is the question, Emerson is the answer.

