# Dwyer. SERIES MARK | PROXIMITY BY DWYER **POSITION INDICATORS/SWITCHES/TRANSMITTERS**



Mark 1 **Polyester Coated Aluminum** (Environmentally sealed for corrosive areas)



Mark 1 Stainless Steel (Environmentally sealed for corrosive areas)



Mark 1 Magnetic Coupling Cutaway Model 12VDOJ2



Mark 3 Multi Turn



Mark 4 Thru-Shaft Cutaway Model 42RDOJ2



Scan here to watch product video

The Proximity™ MARK SERIES is a line of position indicators with a selection of various output options. Three model styles make up the Mark series to cover almost any application. Standard models in the Mark Series have visual position indicators and are weatherproof, explosion-proof, and submersible. A large variety of outputs are available to fit specific applications. There is a choice of 1 to 6 switch outputs of 16 varieties including inductive sensors, high temperature switches, gold contact switches, hermetically sealed switches, and high current switches. Besides the switch outputs the Series offers potentionester outputs, transmitters, HART® and WirelessHART® Communications. The units are purchased for either direct drive applications, such as rotary valves, or lever drive applications, such as linear valves. Adjustable visual indicator is standard on direct drive units that displays OPEN / CLOSED status and degrees A magnetic drive that completely seals the switch compartment from the atmosphere

for maximum leak protection is utilized in the Mark 1. The Mark 3 uses the same magnetic drive of the Mark 1, but it can be used for multi-turn applications with 1 to 25 revolutions, such as gate valves. A through shaft drive is incorporated in the Mark 4 making the unit a more cost effective alternative to the Mark 1 for applications that

Position Indicators/ Switches/Transmitter

### MARK WITH WIRELESSHART® FEATURES/BENEFITS

Available on Mark 1 and 4 model indicators
 WirelessHART® allows for adjustment of settings without needing to remove the device from a hazardous environment

· Wireless ability saves on installation costs associated with running conduit and wires

### MARK 1 FEATURES/BENEFITS

- Features a magnetic coupling that isolates the switch compartment, completely sealing the unit from the surrounding atmosphere for maximum hazard and leak protection
- EZ set cams on switch models provide simple set point adjustment Flexible design allows multiple switches and transmitter options Ideal for corrosive environments

### MARK 3 FEATURES/BENEFITS

- Features a magnetic coupling that isolates the switch compartment, completely sealing the unit from the surrounding atmosphere for maximum hazard and leak orotection
- Multi-Turn models that can provide switch signals between 1 and 25 revolutions, and transmitter models for up to 10 revolutions without gear reduction
- Flexible design allows multiple switches and transmitter options
- Ideal for corrosive environments

### MARK 4 FEATURES/BENEFITS

- Thru-Shaft design that features a 1" bushing for long life and O-rings to seal the switch compartment for hazard, corrosion, and leak protection

- EZ set cams on switch models provide simple set point adjustment
  Flexible design allows multiple switches and transmitter options
  A more cost effective alternative to the Mark 1 Series for less demanding applications



are not as demanding.

MODEL CHART Model Function Model Design Design Function 2 SPDT 2 SPDT (lever drive) 2 SPDT 12AD0 Magnetic coupling 42AD0 Thru-shaft drive 12AL0 Magnetic coupling Magnetic coupling 44AD0 4 SPDT Thru-shaft drive 14AD0 4 SPDT 45VD0 2 SPDT & 4-20 mA Thru-shaft drive 15VD0 2 SPDT & 4-20 mA Magnetic coupling position transmitter 2 SPDT 42VD0-J1 position transmitter Thru-shaft drive 12AD1 2 SPDT Magnetic coupling 44VD0-J1 4 SPDT Thru-shaft drive 4 SPDT 2 SPDT 4 SPDT 14AD1 12VD0-J1 Magnetic coupling Magnetic coupling 14VD0-J1 Magnetic coupling

Mark Series mounted to an actuator

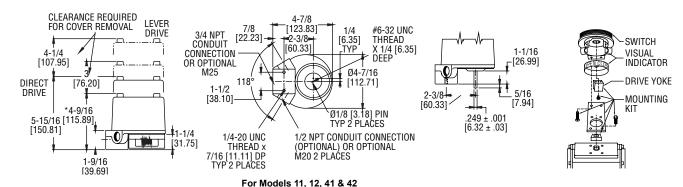
Mounting kits with drive yoke (see drawing), or slotted lever arm, bracket, fasteners and other zinc plated or stainless steel hardware fit over 2000 popular valves and actuators. A high strength spring tempered stainless steel drive yoke/coupling is tailored to fit securely to a specific valve or actuator stem. There is no slippage or binding. No special alignment fixtures are required due to switch offset design and yoke to stem engagement that makes installation a "snap". Each kit is specially designed for a particular valve or actuator, making field mounting simple with standard tools. Please specify make and model of valve or actuator on order.

Mounting kits can be used interchangeably with all models since external mounting features are identical. Rotary valves utilize direct drive couplings and a slotted lever drive is used with linear valves. Lever drives convert linear motion to rotary. Stainless steel visual indicators are standard for direct drive, automated quarter-turn valve applications.

## **Durger** Series Mark | PROXIMITY BY DWYER POSITION INDICATORS/SWITCHES/TRANSMITTERS

3       Arr X, Multi-Turn       Mark 3, Thru-Shaft       signifies available         tput Type       1       2       Signifies available       Mark 4, Thru-Shaft         tput Type       1       2       Signifies available       Mark 4, Thru-Shaft         tput Type       1       2       Signifies available       Mark 4, Thru-Shaft         3       1       A Detentioneter 1/2%, Available with switches, see note below.*       A       A         31       1 KQ Potentiometer 1/2%, Available with switches, see note below.*       A       A         32       2 KQ Potentiometer. Available with switches, see note below.*       A       A         310       10 KQ Potentiometer. Available with switches, see note below.*       A       A         320       20 KQ Potentiometer 1/2%. Available with switches, see note below.*       A       A         4       4       Switches       A       A       A         51       Transmitter 1 KQ Potentiometer 1/2%. Available with switches, see note below.*       A       A       A         52       Transmitter 1 KQ Potentiometer 1/2%. Available with switches, see note below.*       A       A       A         6       6       Switches Available with Switch Types B, I, R, W.       A       A       A         7 <th>MODEL CHAI Construction</th> <th></th> <th></th> <th>Т</th> <th></th> <th></th> <th>Mark 1, Magnetic Coupling</th> <th>Avail</th> <th>able On</th> <th>tions "A"</th> <th>,</th>	MODEL CHAI Construction			Т			Mark 1, Magnetic Coupling	Avail	able On	tions "A"	,
Upset Type         1         Sender.         Documentary the sender of the sen		3					Mark 3, Multi-Turn	signit	fies ava	ilable	
Type         I         Sector           3         1         Sector         A           3         1         Constructure         A           33         1         Constructure         A           33         1         Constructure         A           33         5         Constructure         A           34         Constructure         A         A           35         Constructure         A         A           36         Constructure         A         A           37         Constructure         A         A           4         Sector         A         A           37         Constructure         A         A           38         Constructure         A         A           4         Sector         A         A           37         Constructure         A         A           4         Sector         A         A           4         Sector         A         A           4         A         A         A           4         Sector         A         A           4         Sector         A         A		4					Irk 4, I nru-Snatt				
tiout Type								Mark		-	
1     2     2     2     2     2     2     2     2     3 <td></td> <td><math>\left  \right </math></td> <td>1</td> <td>+</td> <td></td> <td></td> <td>1 Switch</td> <td>Δ Δ</td> <td>3</td> <td></td> <td>-</td>		$\left  \right $	1	+			1 Switch	Δ Δ	3		-
31 31 310 310 310 310 310 310 310 310 31	utput type		2				2 Switches	A		A	
320 320 320 320 320 320 320 320 320 320											
310 310 310 310 310 310 310 310 310 310			32				$2 k\Omega$ Potentiometer. Available with switches, see note below.*	A	A	A	
320     CDLQ. Dependiometer. Available with switches, see note below."     A     A     A       51     Timemitter 14D Potentioneter 1/4%. Available with switches, see note below."     A     A       52     Timemitter 14D Potentioneter 1/4%. Available with switches, see note below."     A     A       7     A     A     A     A       8     Astinution and 1 Switch. Available with switches, see note below."     A     A       91     A     Astinution and 1 Switch. Available with switch Types B. I. R. W.     A     A       91     A     Astinution and 1 Switch. Available with switch Types B. I. R. W.     A     A       91     A     Astinution and 1 Switch. Available with switch Types B. I. R. W.     A     A       91     A     Astinution and 1 Switch. Available with switch Types B. I. R. W.     A     A       91     A     Astinution and 1 Switch. Available with switches, see note below."     A     A       1tch Type     A     Astinution and 1 Switch. Available with switches, see note below."     A     A       1tch Type     A     Astinution and 1 Switch. Available with switches, see note below."     A     A       1tch Type     Astinution and 1 Switch. Available with switches, see note below."     A     A       1tch Type     Astinution and 1 Switch. Available with switches, see note below."									A		
S         Internetiter 1 (2) Potentioneter 1/22, 4 to 20nA, Available with switches, see note below:         A        <			320				20 k $\Omega$ Potentiometer. Available with switches, see note below.*	A	A	A	
51     Transmitter 1.4D Potentiometer 1.45. Available with switchs, see note below."     A     A       7     A     A     A       8     AS-Interface and 1 Switch. Available with Switch Types B, I, R, W.     A     A       91     AS-Interface and 1 Switch. Available with Switch Types B, I, R, W.     A     A       91     AS-Interface and 1 Switch. Available with Switch Types B, I, R, W.     A     A       91     AS-Interface and 1 Switch. Available with Switch Types B, I, R, W.     A     A       91     A     AS-Interface and 1 Switch. Available with Switch Types B, I, R, W.     A     A       91     A     AS-Interface and 1 Switch. Available with Switch Types B, I, R, W.     A     A       91     A     AS-Interface and 1 Switch. Switch Types B, I, R, W.     A     A       100     ASDI Sing, Factor Tot D, Daving T, Tot D, LA     A     A       111     Transmitter VM Wiesdel AG Types T, Tot D, Daving T, Daving								A	A	A	
6       C       B       B       B       B       A       A       A       A         9       Transmitter with HART communication. Available with switch here. Scentact Lettory.       A       A       A         9       Transmitter with HART communication. Available with switches. Scentact Lettory.       A       A       A         1       Transmitter with HART communication. Available with switches. Scentact Lettory.       A       A       A         1       Transmitter with HART communication. Available with switches. Scentact Lettory.       A       A       A         1       Transmitter with HART communication. Available with switches. Scentact Lettory.       A       A       A         1       Transmitter with HART communication. Available with switches. Scentact Lettory.       A       A       A         1       Transmitter with HART communication. Available with switches. Scentact Lettory.       A       A       A         1       Transmitter with HART communication. Available with switches. Scentact Lettory.       A       A       A         1       Transmitter with HART communication. Available with switches. Scentact Lettory.       A       A       A         1       Specific Transmitter with Switches.       Specific Transmitter with Switches.       A       A       A       A <td></td> <td></td> <td>51</td> <td></td> <td></td> <td></td> <td>Transmitter 1 k<math>\Omega</math> Potentiometer 1/4%. Available with switches, see note below.*</td> <td>A</td> <td>A</td> <td></td> <td></td>			51				Transmitter 1 k $\Omega$ Potentiometer 1/4%. Available with switches, see note below.*	A	A		
8         Ad-interface and 2 Switches, Available with Switch Types 8, 1, R, W.         Ad-interface and 2 Switches, Available with Switch Types 8, 1, R, W.         Additional Constraints and the switch Switch Science 1 and the switch Switch Science 1 and the switch Switch Science 1 and the switc			52   6					A		A	
9         Image: Im			7				AS-interface and 1 Switch. Available with Switch Types B, I, R, W.	A		A	
International structure         International			8								
B         Inductive Senser. 10: 30 VDC (==): Load: 0; LA         A         A         A           0         0         SPDT Senser. 10: 30 VDC (==): Load: 0; LA         A         A         A           0         SPDT Gold Contect Senser. Relet: 11: A git 25 VAC (=): Dia A git 2			91				Transmitter with WirelessHART <sup>®</sup> communication. Not available with switches. (Contact factory)	A		A	
B         Inductive Senser. 10: 30 VDC (==): Load: 0; LA         A         A         A           0         0         SPDT Senser. 10: 30 VDC (==): Load: 0; LA         A         A         A           0         SPDT Gold Contect Senser. Relet: 11: A git 25 VAC (=): Dia A git 2	Rating		I A	•			SPDT Snap, Rated: 15 A @ 125/250/480 VAC (~); 1/8 hp @ 125 VAC (~), 1/4 hp @ 250 VAC (~), 1/2	A	A	A	
D         D         DPT 5np. Relet 10 A @ 125/200 VAC (-), 0.3 A @ 125 VDC (-::), 1.15 Å @ 250 VDC (-::), 1.1							Inductive Sensor. 10 to 30 VDC (). Load: 0.1 A.				
G       SPDT Gold Contact Snap, Rated: 1.4 (g) 125 VAC (-).       A       A       A         M       SPDT Hemetically Sealed Snap, Rated: 1.4 (g) 125 VAC (-).       A       A       A         N       SPDT Hemetically Sealed Snap, Rated: 1.4 (g) 125 VAC (-).       A       A       A         N       SPDT Hemetically Sealed Snap, Rated: 1.4 (g) 125 VAC (-).       A       A       A         N       SPDT Temetically Sealed Snap, Rated: 1.4 (g) 125 VAC (-).       A       A       A         SPDT Temp, Reld: 1.4 (g) 125 VAC (-).       C(-).       A       A       A         V       SPDT Tong, Reld: 1.4 (g) 125 VAC (-).       A       A       A         V       SPDT Tong, Reld: 1.4 (g) 125 VAC (-).       A       A       A         V       SPDT Tong, Reld: 1.4 (g) 125 VAC (-).       A       A       A         V       SPDT Tong, Reld: 1.4 (g) 125 VAC (-).       A       A       A         Ving       Direct Onvolt Crima, Ving Nated Nate, Nate, Nated Nate, Nate, Nated Nate, Nate, Nated Nate, Nat				5			SPD1 High Temperature Snap, 350°F (1/6°C) for 600 hours, Rated:15.1 A @ 125/250/277 VAC (~).				
Image: Start Multice Market 10:00 (25 VDC (-m), 14 hp @ 125 VAC (-)VDC (2m), 14 hp @ 125 VAC (-)VDC (2m), 15 PDT (2m), 14 hp @ 125 VAC (-)VDC (-m), 14 hp @ 125 VAC (-m), 14 hp @ 12							SPDT Gold Contact Snap, Rated: 1 A @ 125 VAC (~).		А		
No. Switchies         No. Switchies         A         A         A           SPDT High Temperature Seaded Reed Reed Reed Reed Reed Reed Reed							NAMUR Inductive Sensor. 15 mA max @ 5-25 VDC ().	A		Â	
Image: Second Reed, Reed, 24 @ 125 VAC (-), 24 @ 24 VAC (-), 12 A @ 125 VAC (-), 12 A W A A A A A A A A A A A A A A A A A							SPDT Magnetic Blow-Out, Rated: 10 A @ 125 VAC (~)/VDC (), 1/4 hp @ 125 VAC (~)/VDC ().	A	A	A	
V       SPDT 5 nig., Reled: 10.4 @ (12520 VAC (~), 13 p. @ 125250 VAC (~), 12 A @ 125 VDC (~), 14 A       A       A         Ving       A       A       A       A       A       A         Ving       A       District (ungeten), 2000 (~), 14 A       A       A       A         Ving       C       District (ungeten), 2000 (~), 14 A       A       A       A         Ving       Direct or Yoke Drew with Visual Indicator, 3000 (Window, 4       A       A       A         Lever (Shaft Projection) with Visual Indicator, 1000 (Color (~), 1000 Visual Indicator, 4       A       A       A         closure       0       Auminum, Painted Rad, 2000 with SS trim       A       A       A         2       Auminum, Painted Rad, 2000 with SS trim       A       A       A         4       F       Thru 20       A       A       A         4       A       A       A       A       A         4       Direct or Yoke Drew with Wistrait Indicator, 4       A       A       A       A         10       Auminum, Painted Rad, 2000 with SS trim       A       A       A       A       A         4       Auminum, Painted Rad, 2000 with SS trim       A       A       A       A       A			F	<b>२</b>			SPDT Hermetically Sealed Reed, Rated: 2 A @ 125 VAC (~), 2 A @ 24 VDC ().			A	
V       SPDT 5 nig., Reled: 10.4 @ (12520 VAC (~), 13 p. @ 125250 VAC (~), 12 A @ 125 VDC (~), 14 A       A       A         Ving       A       A       A       A       A       A         Ving       A       District (ungeten), 2000 (~), 14 A       A       A       A         Ving       C       District (ungeten), 2000 (~), 14 A       A       A       A         Ving       Direct or Yoke Drew with Visual Indicator, 3000 (Window, 4       A       A       A         Lever (Shaft Projection) with Visual Indicator, 1000 (Color (~), 1000 Visual Indicator, 4       A       A       A         closure       0       Auminum, Painted Rad, 2000 with SS trim       A       A       A         2       Auminum, Painted Rad, 2000 with SS trim       A       A       A         4       F       Thru 20       A       A       A         4       A       A       A       A       A         4       Direct or Yoke Drew with Wistrait Indicator, 4       A       A       A       A         10       Auminum, Painted Rad, 2000 with SS trim       A       A       A       A       A         4       Auminum, Painted Rad, 2000 with SS trim       A       A       A       A       A							SPDT Snap, Rated: 4 A @ 125/250 VAC (~).		 A		
Wing         A         A         A         A           wing         A         A         A         A         A           wing         A         A         A         A         A         A           wing         A         A         A         A         A         A         A           wing         A         A         A         A         A         A         A           wing         A         A         A         A         A         A         A           wing         Lever Drive (Shaft Projection) with Vsual Indicator.         A         A         A         A           closure         0         Aluminum, Painted White Droxy with SS trim         A         A         A         A           6         Aluminum, Painted White Spacy with SS trim         A         A         A         A           10 cast 316 Stainless Stell         A							SPDT Snap, Rated: 10 A @ 125/250 VAC (~), 1/3 hp @ 125/250 VAC (~), 1/2 A @ 125 VDC (), 1/4		Ă		
ving       A				~			A @ 250 VDC (), 4 A @ 125 VAC (~) (tungsten).	<b>_</b>			
thod       D       Direct Drive (or Yoke) with Visual Indicator.       A	riving	$\vdash$		_	<u> </u>			A	A	A	
L         Lever Drive (Shaft Projection) with valual indicator.         A	Method				)		Direct Drive (or Yoke) with Visual Indicator.		A		
closure       0       Aluminum, Painted Black       A       A       A       A       A         1       Aluminum, Painted Red       A       A       A       A       A       A         2       Aluminum, Painted Red       A       A       A       A       A       A         6       5       Aluminum, Painted Red       A       A       A       A       A         6       7       thruu 20       Aluminum, Painted Color not yet specified)       A       A       A         7       thruu 20       Aluminum, Painted Color not yet specified)       A       A       A         6       C1       Long Dwell Cam (not on Mark 3)       A       A       A         7       thrue 20       Aluminum, Painted Color not yet specified)       A       A       A         1       Aluminum, Painted Ville Color not yet specified)       A       A       A       A         6       C1       Long Dwell Cam (not on Mark 3)       A       A       A       A         7       Aluminum Painted Step       Matche Solenoid Valve (Must be ordered with 1,2 option).       A       A       A         8       Any Output Type 91: Directive 2014/3/4/L (L KEMA 03ATEX2391 X, C { €018 & 112 G Ex					.		Lever Drive (Shaft Projection) without Visual Indicator.				
Image: Structure       Image: Structure <td< td=""><td></td><td> </td><td></td><td>N</td><td>_</td><td></td><td></td><td>A</td><td></td><td></td><td></td></td<>				N	_			A			
Image: Structure       Image: Structure <td< td=""><td>Inclosure</td><td></td><td></td><td></td><td>1</td><td></td><td>Aluminum, Painted White Epoxy with SS trim</td><td></td><td>A</td><td>A</td><td></td></td<>	Inclosure				1		Aluminum, Painted White Epoxy with SS trim		A	A	
Image: Structure       Image: Structure <td< td=""><td></td><td></td><td></td><td></td><td>2</td><td></td><td></td><td></td><td>A</td><td></td><td>S/</td></td<>					2				A		S/
Image: Structure       Image: Structure <td< td=""><td></td><td></td><td></td><td></td><td>6</td><td></td><td>Cast 316 Stainless Steel</td><td>A</td><td>A</td><td>A</td><td>a</td></td<>					6		Cast 316 Stainless Steel	A	A	A	a
Image: Structure       Image: Structure <td< td=""><td>Intiono</td><td><math>\left  \right </math></td><td></td><td>+</td><td>7 thru</td><td></td><td></td><td></td><td>A</td><td></td><td></td></td<>	Intiono	$\left  \right $		+	7 thru				A		
Image: Structure       Image: Structure <td< td=""><td>puons</td><td></td><td></td><td></td><td></td><td>C2</td><td>Double Cam (not on Mark 3)</td><td>A</td><td></td><td>A</td><td></td></td<>	puons					C2	Double Cam (not on Mark 3)	A		A	
Junction Packağe with Two 1/2" NPT Female Conduit Connection and Terminal Strip.       A <t< td=""><td rowspan="2"></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>0</td></t<>											0
SV2       2 Attached Solenoid Valves (Must be ordered with J2 option).       A       A       A         MT       Metric Threaded Conduit Connection, M25 X 1.5 for optional J1 and J2 connections).       A       A       A         B       Any Output Type except 91: Directive 2014/34/EU, KEMA 03ATEX2391 X, C€ 0518 (S) II 2G Ex db IIC       A       A         B       Output Type 91: Directive 2014/34/EU, KEMA 03ATEX1392 X, C€ 0518 (S) II 3G Ex db IIC       A       A         A       A       A       A       A         IS       Output Type 91: Directive 2014/34/EU, KEMA 03ATEX1392 X, C€ 0518 (S) II 1G Ex ia IIC T4 Gb       A       -         IS       Output Type except 91: Directive 2014/34/EU, KEMA 03ATEX1392 X, C€ 0518 (S) II 1G Ex ia IIC T4 Ga       A       A         IE       Any Output Type except 91: IECEX DEX 11.0056X Ex db IIC T6 Gb (-25/-40/-50°C C and A       A       A         IE       Any Output Type except 91: IECEX DEX 11.0056X, Ex db IIC T4 Ga.       A       A         IE       Any Output Type except 91: IECEX DEX 11.0056X, Ex db IIC T4 Ga.       A       A         III       Output Type except 91: IECEX DEX 11.0067X Ex ia IIC T4 Ga.       A       A         III       Output Type 91: IECEX DEX 11.0067X Ex ia IIC T4 Ga.       A       A       A         III       Output Type 91: IECEX DEX 11.0067X Ex ia IIC T4 Ga. <td></td> <td></td> <td></td> <td></td> <td>J2</td> <td>Junction Package with Two 1/2" NPT Female Conduit Connection and Terminal Strip.</td> <td>A</td> <td></td> <td>A</td> <td></td>						J2	Junction Package with Two 1/2" NPT Female Conduit Connection and Terminal Strip.	A		A	
MT       Metric Threaded Conduit Connection, M25 X 15 (M20 X 1.5 for optional J1 and J2 connections).       A       A       A         B       Any Output Type except 91: Directive 2014/34/EU, KEMA 03ATEX2391 X, <b>C</b> (©518 ()) I2G Ex db IIC       A       A       A         B       Output Type 91: Directive 2014/34/EU, KEMA 03ATEX2391 X, <b>C</b> (©518 ()) I2G Ex db IIC T4 Gb       A       A       A         C40°C \$1amb \$0°C).       IS       Output Type 91: Directive 2014/34/EU, KEMA 03ATEX1392 X, <b>C</b> (0518 ()) I1G Ex ia IIC A       A       A         Any Output Type except 91: Directive 2014/34/EU, KEMA 03ATEX1392 X, <b>C</b> (0518 ()) I1G Ex ia IIC A G       A       A       A         Cutput Type 91: Directive 2014/34/EU, KEMA 03ATEX1392 X, <b>C</b> (0518 ()) I1G Ex ia IIC A G       A       A       A         II       Output Type 91: Directive 2014/34/EU, KEMA 03ATEX1392 X, <b>C</b> (0518 ()) I1G Ex ia IIC A G       A       A         III       Cargo Except 91: IECEX DEK 11.0056X Ex db IIC T6 Gb (-25/-40/-50°C S Tamb \$70°C and T5 for -25/-40/-50°C S Tamb \$80°C). optional wording depending on output and switch type selected.       A       A       A         Output Type except 91: IECEX DEK 11.0056X Ex db IIC T6 Gb (-25/-40/-50°C S Tamb \$70°C and T5 for -25/-40/-50°C S Tamb \$80°C). Optional wording depending on output and switch type selected.       A       A       A         Output Type 91: witC5 DEK 11.0056X Ex db IIC T6 Gb (-25/-40/-50°C S Tamb \$80°C). Detext IIC T4 Gb.       A								A		A	
The Gb (-25/-40/-50°C ≤ Tamb ≤ 70°C and T5 for -25°C/-40°C/-50°C ≤ Tamb ≤ 80°C). Depending on output switch type selected.       A         0. Output Type 91: Directive 2014/34/EU, KEMA 03ATEX1392 X, <b>(€</b> 0518 ()) II G Ex tal IIC A A A       A         1. S Output Type 91: Directive 2014/34/EU, KEMA 03ATEX1392 X, <b>(€</b> 0518 ()) II G Ex tal IIC A A A       A         1. G Utput Type 91: Directive 2014/34/EU, KEMA 03ATEX1392 X, <b>(€</b> 0518 ()) II G Ex tal IIC A A A       A         1. G Utput Type 91: Directive 2014/34/EU, KEMA 03ATEX1392 X, <b>(€</b> 0518 ()) II G Ex tal IIC A A A       A         1. G Utput Type 91: Directive 2014/34/EU, KEMA 03ATEX1392 X, <b>(€</b> 0518 ()) II G Ex tal IIC A A A       A         1. G Utput Type 91: Directive 2014/34/EU, KEMA 03ATEX1392 X, <b>(€</b> 0518 ()) II G Ex tal IIC A A A       A         1. G Utput Type 91: Directive 2014/34/EU, KEMA 03ATEX1392 X, <b>(€</b> 0518 ()) II G Ex tal IIC A A A       A         1. G Utput Type 91: Directive 2014/34/EU, KEMA 03ATEX1392 X, <b>(€</b> 0518 ()) II G Ex tal IIC A       A         1. II Output Type 91: IECEX DEK 11.0061X Ex tal IIC T4 Ga.       A       A         1. II Output Type 91: With Suffix B Directive 2014/34/EU, KEMA 03ATEX2391 X, <b>(€</b> 0518 ()) II 2G Ex db IIC A       A       A         1. II Output Type 91: With Suffix B Directive 2014/34/EU, KEMA 03ATEX1392 X, <b>(€</b> 0518 ()) II 2G Ex db IIC A       A       A         1. II Output Type 91 with Suffix B Directive 2014/34/EU, KEMA 03ATEX1392 X, <b>(€</b> 0518 ()) II 2G Ex db IIC A       A       A         1. II G G tor						MT	Metric Threaded Conduit Connection, M25 X 1.5 (M20 X 1.5 for optional J1 and J2 connections).	A	A	A	
Image: State of the selected.       Image: State of the selected.       Image: State of the selected.         Image: State of the selected.       Image: State of the selected.       Image: State of the selected.       Image: State of the selected.         Image: State of the selected.       Image: State of the selected.       Image: State of the selected.       Image: State of the selected.       Image: State of the selected.         Image: State of the selected.       Image: State of the selected.       Image: State of the selected.       Image: State of the selected.       Image: State of the selected.         Image: State of the selected.       Image: State of the selected.       Image: State of the selected.       Image: State of the selected.       Image: State of the selected.       Image: State of the selected.         Image: State of the selected.<						В	Any Output Type except 91: Directive 2014/34/EU, KEMA 03ATEX2391 X, $\zeta \in$ 0518 (£x) II 2G Ex db IIC T6 Gb (-25/-40/-50°C $\leq$ Tamb $\leq$ 70°C and T5 for -25°C/-40°C/-50°C $\leq$ Tamb $\leq$ 80°C). Depending on	A	A	A	
Image: Image							output switch type selected				
Image: Second state in the second s						в	$(-40^{\circ}C < Tamb < 80^{\circ}C)$	A		A	
Image: Section of the sectin the sectin the sectin the sectin the section of the						IS	Any Output Type except 91: Directive 2014/34/EU, KEMA 03ATEX1392 X, C C 0518 ( ) II G Ex ia IIC	A	А	A	
-40°C ≤ Tamb ≤ 80°C.       -40°C ≤ Tamb ≤ 80°C.       A       A         Tis for -25/-40/-50°C ≤ Tamb ≤ 80°C) optional wording depending on output and switch type selected. Output Type 91: IECEx DEK 11.0056X, Ex db IIC T4 Gb.       A       A         IE       Any Output Type 91: IECEx DEK 11.0056X, Ex db IIC T4 Gb.       A       A       A         II       Output Type 91: IECEx DEK 11.0061X Ex ia IIC T4 Ga.       A       A       A         III       Output Type 91: IECEX DEK 11.0061X Ex ia IIC T4 Ga.       A       A       A         III       Certificate NCC 13.02339X; Marking: Ex d IIC T6 Gb or Ex d IIC T5 Gb       A       A       A         EM       Certificate: NCC 13.02338X; Marking: Ex ia IIC T4 Ga       A       A       A       A         III       Output Type 91 with Suffix B Directive 2014/34/EU, KEMA 03ATEX2391 X, <b>C €</b> 0518 (II 2G Ex ia IIC A       A       A       A         III       Output Type 91 with Suffix IS Directive 2014/34/EU, KEMA 03ATEX1392 X, <b>C €</b> 0518 (II 2G Ex ia IIC A       A       A       A         III       Dutput Type 91 with Suffix IE IECEX DEK 11.0061X Ex ia IIC T4 Gb. Battery not included.       A       A       A         III       Dutput Type 91 with Suffix IE IECEX DEK 11.0061X Ex ia IIC T4 Gb. Battery not included.       A       -       A         IIIIIII       BO Uutput Type 91 with Suffix II IE						IS	Output Type 91: Directive 2014/34/EU, KEMA 03ATEX1392 X, C € 0518 🖾 II 1G Ex ia IIC T4 Ga for	А		A	
Image: Static Static Steel Tag       To for -25/-40/-50°C < Tamb & 80°C) optional wording depending on output and switch type selected. Output Type 91: IECEx DEK 11.0061X, Ex do IIC T4 Ga.       A        A         Image: Static S							-40°C ≤ Tamb ≤ 80°C.				
Image:							To for $-25/-40/-50^{\circ}C \le Tamb \le 80^{\circ}C$ ) optional wording depending on output and switch type selected.	A	A	A	
II       Output Type 91 (I): IECEX DEK 11.0061X Ex ia IIC T4 Ga.       A <td></td> <td></td> <td></td> <td></td> <td>I.E.</td> <td>Output Type 91: IECEx DEK 11.0056X, Ex db IIC T4 Gb.</td> <td></td> <td></td> <td></td> <td></td>						I.E.	Output Type 91: IECEx DEK 11.0056X, Ex db IIC T4 Gb.				
Image: EM       Certificate: NCC 13.02338X; Marking: Ex ia IIC T4 Ga       A						11	Output Type 91 IECEX DEK 11 0061X Ex ia IIC T4 Ga		A	Â	
Image: Mark 1 and 4 potentiometer and transmitter outputs will have no switches when ordered with switch type 5, D, G, M or T. WirelessHART® not available with switches.       Image: Mark 1 and 4 potentiometer and transmitter outputs will have no switches abore.       Image: Mark 1 and 4 potentiometer and transmitter outputs will have no switches.       A       A       A       A         A       In 4 Gb (-40°C ≤ Tamb ≤ 80°C). Battery not included.       A        A							Certificate NCC 13.02339X; Marking: Ex d IIC T6 Gb or Ex d IIC T5 Gb	A	A		
LB       T4 Ga for -40°C ≤ Tamb ≤ 80°C. Battery not included.       A        A         LB       Output Type 91 with Suffix IE IECEx DEK 11.0056X, Ex db IIC T4 Gb. Battery not included.       A        A         LB       Output Type 91 with Suffix IE IECEx DEK 11.0061X Ex ia IIC T4 Gb. Battery not included.       A        A         LB       Output Type 91 with Suffix IE IECEx DEK 11.0061X Ex ia IIC T4 Gb. Battery not included.       A        A         PP       Plug J1, J2 Ports       A       A       A       A       A         PT       Paper Tag       A       A       A       A       A         STR       Stainless Steel Tag Riveted       STW Stainless Steel Tag Wired       A       A       A         ote: Mark 1 and 4 potentiometer and transmitter outputs will have no switches when ordered with switch type S, C, I, R, V, or W;       A       A       A         A switches if ordered with switch type S. Mark 3 potentiometer and transmitter outputs will have no switches when ordered with switch type O, and 2 switches if ordered with switch type S, Mark 3 potentiometer and transmitter outputs will have no switches when ordered with switch type O, and 2 switches if ordered with switch type S, D, G, M or T. WirelessHART® not available with switches.         ample: 12VD0_J1       rk 1, 2 Switches both Type V – SPDT, Direct Drive, Painted Aluminum Enclosure with Junction Package.						IM	Output Type 91 with Suffix B Directive 2014/34/EU, KEMA 03ATEX2391 X, C € 0518 🐼 II 2G Ex db IIC	Â	Â	A	
LB       Output Type 91 with Suffix IT IECEX DEK 11.0061X EX Ia IIC 14 Ga. Battery not included.       A       A       A       A         PP       Plug J1, J2 Ports       A       A       A       A       A       A         PT       Paper Tag       A       A       A       A       A       A       A         STR       Stainless Steel Tag Riveted       A       A       A       A       A         STW       Stainless Steel Tag Wired       A       A       A       A       A         ote:       Mark 1 and 4 potentiometer and transmitter outputs will have no switches when ordered with switch type B, C, I, R, V, or W;       A       A       A         4 switches if ordered with switch type S. Mark 3 potentiometer and transmitter outputs will have no switches when ordered with switch type O, and 2 switches if ordered hit switch type S, D, G, M or T. WirelessHART® not available with switches.         ample:       12VD0-J1       rk 1, 2 Switches both Type V – SPDT, Direct Drive, Painted Aluminum Enclosure with Junction Package.         ample:       15VD0       Store       Store       Store       Store						LB	14 Gb (-40°C ≤ Tamb ≤ 80°C). Battery not included. Output Type 91 with Suffix IS Directive 2014/34/EU KEMA 03ATEX1392 X $CC$ 0518 $\bigcirc$    2C EV is IIC	A		A	
LB       Output Type 91 with Suffix IT IECEX DEK 11.0061X EX Ia IIC 14 Ga. Battery not included.       A       A       A       A         PP       Plug J1, J2 Ports       A       A       A       A       A       A         PT       Paper Tag       A       A       A       A       A       A       A         STR       Stainless Steel Tag Riveted       A       A       A       A       A         STW       Stainless Steel Tag Wired       A       A       A       A       A         ote:       Mark 1 and 4 potentiometer and transmitter outputs will have no switches when ordered with switch type B, C, I, R, V, or W;       A       A       A         4 switches if ordered with switch type S. Mark 3 potentiometer and transmitter outputs will have no switches when ordered with switch type O, and 2 switches if ordered hit switch type S, D, G, M or T. WirelessHART® not available with switches.         ample:       12VD0-J1       rk 1, 2 Switches both Type V – SPDT, Direct Drive, Painted Aluminum Enclosure with Junction Package.         ample:       15VD0       Store       Store       Store       Store						LB	T4 Ga for -40°C $\leq$ Tamb $\leq$ 80°C. Battery not included.	A		A	
Image: PP product of the product of							Output Type 91 with Suffix IE IECEX DEK 11.0056X, Ex db IIC T4 Gb. Battery not included.	A		A	
Image: STR       Stainless Steel Tag Riveted       A       A       A       A         STW       Stainless Steel Tag Wired       A       A       A       A         ote: Mark 1 and 4 potentiometer and transmitter outputs will have no switches when ordered with switch type 0; 2 switches if ordered with switch types B, C, I, R, V, or W;       1 4 switches if ordered with switch type S. Mark 3 potentiometer and transmitter outputs will have no switches when ordered with switch type 0, and 2 switches if ordered hswitch types A, D, G, M or T. WirelessHART® not available with switches.         ample:       12VD0-J1         rk 1, 2 Switches both Type V – SPDT, Direct Drive, Painted Aluminum Enclosure with Junction Package.         ample:       15VD0						PP	Plug J1, J2 Ports	A	A	A	
ote: Mark 1 and 4 potentiometer and transmitter outputs will have no switches when ordered with switch type O; 2 switches if ordered with switch types B, C, I, R, V, or W; d 4 switch types if ordered with switch type S. Mark 3 potentiometer and transmitter outputs will have no switches when ordered with switch type O, and 2 switches if ordered h switch types A, D, G, M or T. WirelessHART® not available with switches. ample: 12VD0-J1 rk 1, 2 Switches both Type V – SPDT, Direct Drive, Painted Aluminum Enclosure with Junction Package.							Paper lag Stainless Steel Tag Riveted				
d 4 switches if ordered with switch type S. Mark 3 potentiometer and transmitter outputs will have no switches when ordered with switch type O, and 2 switches if ordered n switch types A, D, G, M or T. WirelessHART® not available with switches. ample: 12VD0-J1 rk 1, 2 Switches both Type V – SPDT, Direct Drive, Painted Aluminum Enclosure with Junction Package. ample: 15VD0						STW	Stainless Steel Tag Wired	A	A	A	
ample: 12VD0-J1 rk 1, 2 Switches both Type V – SPDT, Direct Drive, Painted Aluminum Enclosure with Junction Package. ample: 15VD0	Note: Mark 1	and	d 4 pot	enti	ometer a	and trans	mitter outputs will have no switches when ordered with switch type O; 2 switches if ordered with switch type O and transmitter outputs will have no switches when ordered with switch type O and	/pes B	, C, I, R	, V, or W;	
ample: 12VD0-J1 rk 1, 2 Switches both Type V – SPDT, Direct Drive, Painted Aluminum Enclosure with Junction Package. ample: 15VD0	vith switch typ	es /	A, D, C	G, N	or T. Wi	relessHA	RT <sup>®</sup> not available with switches.	u 2 5W	iteries II	ordered	
ample: 15VD0	xample: 12V	'D0-	-J1								
	cample: 15V	′D0									

# **POSITION INDICATORS/SWITCHES/TRANSMITTERS**



### SPECIFICATIONS

### Mark 1, 3, and 4 with Potentiometer

Mark 1, 3, and 4 with Potentiometer Accuracy: ± 0.5% of full span. Optional ± 0.25% of full span. Temperature Limits: -40 to 176°F (-40 to 80°C).(ATEX flameproof, -B suffix and IECEX flameproof, -IE suffix, rated -40 to 176°F (-40 to 80°C) for switch types A, G, M, O, R, S, T, V, or W, -13 to 176°F (-25 to 80°C) for switch types B, D, or I.; ATEX intrinsically safe, -IS suffix and IECEX intrinsically safe, -II suffix, rated -13 to 104°F (-25 to 40°C) for switch type I, -40 to 104°F (-40 to 40°C) for switch types O, R, S, V, or W. Devore Believe 4 C. With the set of the

Power Rating: 1.5 Watt maximum. Output Signal: 1000 Ω standard. Optional 2000, 5000, 10000, or 20000 Ω. Zero and Span Adjustments: Span trim pot with 2000Ω adjustment. No zero adjustment

Rotational Travel: Mark 1 and 4: Minimum: 0°, Maximum: 340°. Mark 3: 0 to 10 revolutions.

Mark 1, 3, and 4 with Transmitter Accuracy:  $\pm 0.5\%$  of full span. Optional  $\pm 0.25\%$  of full span. Temperature Limits: -40 to 176°F (-40 to 80°C). (ATEX flameproof, -B suffix and IECEx flameproof, -IE suffix, rated -40 to 176°F (-40 to 80°C) for switch types A, G, M, O, R, S, T, V, or W, -13 to 176°F (-25 to 80°C) for switch types B, D, or I.; ATEX intrinsically safe, -IS suffix and IECEx intrinsically safe, -II suffix, rated -13 to 104°F (-25 to 40°C) for switch type I, -40 to 104°F (-40 to 40°C) for switch types O, R, S, V, or W).

Power Requirements: 5 to 30 VDC.

Position Indicators/ Switches/Transmitter

Current Consumption: 50 m A. Output Signal: 4 to 20 mA. Zero and Span Adjustments: Trim pots for adjusting both. Mark 1 and 4: Span is adjustable from 50 to 300°, Mark 3: Span is adjustable from 1.5 to 8.5 revolutions. Conduit Connection: 3/4" female NPT standard. Optional one or two 1/2" female NPT. M25 X 1.5 and M20 X 1.5 optional.

Rotational Travel: Mark 1 and 4: Minimum: 50°, Maximum: 300°. Mark 3: Minimum: 1.5 revolutions, Maximum: 8.5 revolutions.

### Mark 1 and 4 Transmitter with HART® communication

Accuracy: ± 0.5% of full span. Optional ± 0.25% of full span. Temperature Limits: -40 to 176°F (-40 to 80°C). (ATEX flameproof, -B suffix and IECEX flameproof, -IE suffix, rated -40 to 176°F (-40 to 80°C) for switch types A, G, M, O, R, S, V or W, -13 to 176°F (-25 to 80°C) for switch types B, D or 1; ATEX intrinsically safe, -IS suffix and IECEX intrinsically safe, -II suffix, rated -40 to 104°F (-40 to 40°C) for switch types O, R, S, V or W; -13 to 104°F (-25 to 40°C) for switch type I.). Power Requirements: 8 to 30 VDC.

Current Consumption: 21 mA.

Output Signal: 4 to 20 mA.

HART® Receive Impedance:  $Rx = 500 \text{ k}\Omega$ ; Cx = 2500 pF. Zero and Span Adjustments: Pushbuttons or HART® communication master for setting both. Mark 1 and 4: Span is adjustable from 0 to 330°. Mark 3: Span is adjustable from 1.5 to 8.5 revolutions. Conduit Connection: 3/4″ female NPT standard. Optional one or two 1/2″ female

NPT. M25 X 1.5 and M20 X 1.5 optional. Rotational Travel: Mark 1 and 4: Maximum: 330°.

### Mark 1 and 4 Transmitter with WirelessHART® communication

Accuracy: +0.5% of full span. Optional ±0.25% of full span. Temperature Limits: -40 to 176°F (-40 to 80°C). ATEX flameproof, -B suffix and IECEx flameproof, -IE suffix: rated -40 to 176°F (-40 to 80°C). ATEX intrinsically safe, -IS suffix and IECEx intrinsically safe, -II suffix: rated -40 to 176°F (-40 to 80°C).

Power Requirements: 8 to 30 VDC Current Consumption: 50 mA max. Power Output: +10 dBm (10 mW). Operating Frequency: 2400 to 2483.5 MHz. Operating Channels: 15. Sensitivity: -85dB. Zero and Span Adjustments: Pushbuttons or WirelessHART® communication master for setting both. Span is adjustable from -160 to 160°. Conduit Connection: Two 1/2" female NPT, M20 X 1.5 optional. Rotational Travel: Mark 1 and 4: Maximum: 320°

### SPECIFICATIONS Product Ratings:

Weatherproof and flameproof. NEMA 1, 2, 3, 3R, 3S, 4, 4X, 6, 7, 9, 12, 13.

UL rated: Class I, Div. 1 & 2, Groups B, C, D (Some units available for Group A, consult factory); Class II, Div. 1 & 2, Groups E, F, and G.

CSA rated: Class I, Div. 1 & 2, Groups A, B, C, D; Class II, Div. 1 & 2, Groups E, F, and G. Submersible to 15 meters (IP68); It is up to the end user to source the proper fittings to ensure a watertight seal.

### ATEX Compliant

A Low Compute Type except 91: Directive 2014/34/EU, KEMA 03ATEX2391 X, **(€** 0518 ↔ II 2G Ex db IIC T6 Gb for -25°C/-40°C/-50°C ≤ Tamb ≤ 70°C and T5 for -25°C/-40°C/-50°C ≤ Tamb ≤

GD TOT -25°C/-40°C/-50°C ≤ Tamb ≤ 70°C and T5 for -25°C/-40°C/-50°C ≤ Tamb ≤ 80°C, optional wording depending on output and switch type selected. Compliant per EN 60079-0:2012+A11:2013 and EN 60079-1:2014. -B suffix, Output Type 91, with or without -LB suffix: Directive 2014/34/EU, KEMA 03ATEX2391 X, C 0518 E II 2G Ex db IIC T4 Gb for -40°C ≤ Tamb ≤ 80°C. Compliant per EN 60079-0:2012 + A11:2013, EN 60079-1:2014 and EN 60079-11:2012.

-IS suffix, any Output Type except 91: Directive 2014/34/EU, KEMA 03ATEX1392 X,  $C \in 0518 \bigoplus II 1G Ex ia IIC T4$ Ga. Compliant per EN 60079-0:2012 + A11: 2013 and EN 60079-11:2012. -IS suffix, Output Type 91, with or without -LB suffix: Directive 2014/34/EU, KEMA 03ATEX1392 X,  $C \in 0518 \bigoplus II 2G Ex ia IIC T4 Ga. Compliant per EN 60079-0:2012+A11:2013 and EN 60079-11:2012.$ 

### IECEx Compliant:

LE suffix, any Output Type except 91:IECEx DEK 11.0056X Ex db IIC T6 Gb for -25°C/-40°C/-50°C ≤ Tamb ≤  $70^{\circ}$ C and T5 for -25°C/-40°C/-50°C ≤ Tamb ≤  $80^{\circ}$ C optional wording depending on output and switch type selected. Compliant per IEC 60079-0:2011 and IEC 60079-1:2014.

-IE suffix, Output Type 91, with or without -LB suffix: IECEx DEK 11.0056X, Ex db IIC T4 Gb for -40°  $\leq$  Tamb  $\leq$  80°C. Compliant per IEC 60079-0:2011, IEC 60079-1:2014 and IEC 60079-11: 2011.

-II suffix, any Output Type except 91: IECEx DEK 11.0061X Ex ia IIC T4 Ga. Compliant per IEC 60079-0:2011, IEC 60079-11:2011, and IEC 60079-26:2014

-II suffix, Output Type 91, with or without -LB suffix: DEK 11.0061X Ex ia IIC T4 Ga. Compliant per IEC 60079-0:2014, and IEC 60079-11:2011.

### INMETRO Compliant:

IM suffix, Certificate: NCC 13.02338 X; Marking: Ex ia IIC T4 Ga EM suffix, Certificate: NCC 13.02339 X; Marking: Ex d IIC T6 Gb or Ex d IIC T5 Gb

Electrical Connections: Screw terminal. Optional factory sealed leads that are 36"

(914.4 mm) of 16 AWG. Conduit Connection: Standard: one 3/4" female NPT; optional one to two 1/2" female NPT; WirelessHART® models: two 1/2" female NPT; Optional: M25 X 1.5 or M20 X 1.5 connections may be supplied in lieu of 3/4" and 1/2" female NPT for all

Mounting Orientation: Not position sensitive. Weight: 4 to 6 lb (1.5 to 3.0 kg). Operational Life: Over 10,000,000 cycles. Maximum Altitude: 2000 meters.

Mark 1, 3 and 4 with Switch Outputs Temperature Limits: -58 to 176°F (-50 to 80°C). Switch Type C rated to 350°F (176°C) for 600 hours, Switch Type T rated to 250°F (121°C) continuous. (ATEX flameproof, -B suffix and IECEx flameproof, -IE suffix, rated -58 to 176°F (-50 to 80°C) for switch type A, G, H, T, or M, -40 to 176°F (40 to 80°C) for switch type O, R, S, V, or W, -13 to 176°F (-25 to 80°C) for switch type B, D, I, or AS Interface; ATEX intrinsically safe, -IS suffix and IECEx intrinsically safe, -II suffix, rated -13 to 104°F (-25 to 40°C) for switch type D or I, -40 to 104°F (-40 to 40°C) for switch type R, V, or W, or -58 to 104°F (-50 to 40°C) for switch type A, G, or H.). Switch Type: See page reference b below. Electrical Rating: See page reference b below. Set Point Adjustment: Mark 1 and 4: 5 to 360°.

