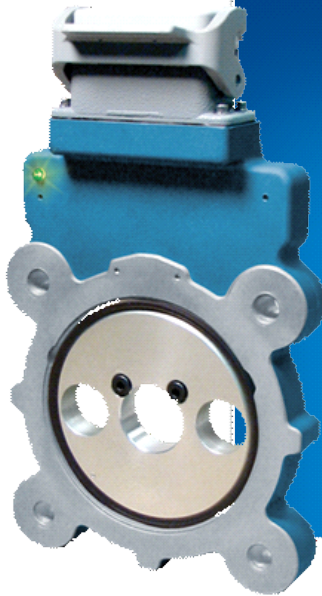


Avtron XR56 SMARTSafe™ Encoders



Hazardous Duty Magnetic Encoder, Heavy Duty 4.5" Modular

Revolutionary No Bearing Design

- | • Fits NEMA 4.5" Flanges for Marathon Blue & Black Max, Reliance & Reuland Motors
- | • ATEX/IECEx Rated for Zone 1, 2, 21 & 22 Applications
 - | • Ideal for Oil and Gas Drilling
 - | • No Bearings to Wear Out
 - | • Fully Potted Electronics
 - | • Up to 5000 PPR
- | • Wide Sensor-Rotor Gap: No Shimming or Scraping
 - | • Protected Against Wiring Errors
- | • Self-Diagnostic LED and Alarm Output
 - | • 3 Year No-Hassle Warranty
 - | • cULus Class I Division 1 Groups A,B,C,D Listed
 - | • cULus Class I Zone 0 Group IIC
 - | • cULus Class I Division 2 Groups A,B,C,D Listed

XR56

XR56 SMARTSafe 4.5" modular incremental quadrature rotary encoders are a breakthrough in hazardous duty encoders. They are ATEX and UL approved and offer incredibly reliable no-bearing construction! SMARTSafe encoders can be used in gas and ATEX dust hazardous environments. Also available: hollow shaft models (XR45, XR47, XR685), shafted models (XR4F, XR485), and no-bearing modular encoders to fit other flange sizes (XR67, XR85, XR115, XR125, XR850).

For Level 2 applications requiring ATEX/IECEx Zone 2 or 22 or UL Class I, Division 2, (gas) Groups A,B,C,D use the XR56 directly in your application with no barrier, isolator or cable gland required.

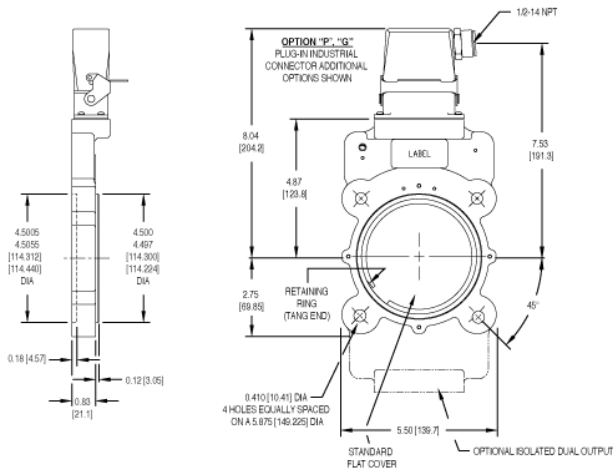
For Level 1 applications requiring ATEX/IECEx Zone 1 or 21 protection use the XRB1 or XRB2 isolator in your control cabinet which permits the use of intrinsically safe wiring instead of explosion-proof conduit or glands. The XR56 can also be used in UL Class I Div 1 & Zone 0 applications using the XRB2 Isolator.

Unlike the competition, Avtron SMARTSafe encoder systems are protected against short circuits, power-to-output wiring, and output-to-ground faults.

Instead of relying on a tiny optical encoder with weak bearings, install the most rugged encoders available for your drilling or industrial applications. Vibration, shock, liquids, dust and dirt won't harm SMARTSafe encoders! Paint booths, draw works, coil tubing rigs...XR56 can keep them all working 24-7-365.

Eliminate the biggest cause of industrial encoder failure--eliminate the bearings with XR56 hazardous duty encoders.

OUTLINE DRAWING



MORE XR56 ADVANTAGES

- Replaces BEI H38 and Dynapar X25 explosion-proof encoders
- Eliminates large & costly flange adapters & flowerpots
- Fits shafts 0.500" - 3.188" [10 - 85 mm]
- Thin profile reduces overall motor depth
- No air gap adjustment required
- Shrugs off dirt, oil, and water contamination
- No glass disks to break or optics to fail
- 4,500,000+ hour MTBF design

XR56 SPECIFICATIONS

Operating Power: (add load and cable drive current as req'd)

Level 1 (XR1): 12-24VDC In, 10.6V Out, 150 mA

Level 1 (XR2): 12-24VDC In/Out, 150 mA

Level 2 Protection: 5-24VDC In/Out, 150mA

Output Format: A Quad B with marker (A,A); B,B), Z,Z)

Frequency Range: 0 to 165 KHz

Maximum Cable Length:

Level 1: Encoder 500' Isolator 1000'

Level 2 (5 to 12 VDC in) 500'

Level 2 (15 to 24 VDC in) 250'

Temperature: -40°C to 80°C (storage -40°C to 100°C)

Environmental: IP54 (see manual for details)

Vibration: 5-2000Hz, 20G, 100G Shock

Weight: 2-3lbs [9-1.4kg]

Certifications:

Level 1: ATEX/IECEx Zone 1 & 21 Group IIC

Level 1: cULus Class I Div 1 and Zone 0 Group A,B,C,D*

Level 2: ATEX/IECEx Zone 2 & 22 Group IIC

Level 2: cULus Class I Div. 2 Groups A,B,C,D

*See installation drawings for Warnings and Limitations.

Check out our website for more detailed specifications, drawings, and installation instructions. www.avtronencoders.com

SELECTION GUIDE

Model	Housing Type	Shaft Size (Thru-Shaft Rotor)	Cover Style	Line Driver	Single/Left Output (PPR)	Right Output (PPR)	Connector	Modifications
XR56A	1- Single Output 2- Double Output	CO- None-std. Shaft Size XX- None Thru-Shaft Rotor (Metric) US Metric CA- 0.500 D2- 10mm CB- 0.625 D3- 12mm CC- 0.875 D4- 14mm CD- 0.938 D5- 15mm CE- 1.000 D6- 16mm CF- 1.125 D7- 18mm CG- 1.250 D8- 19mm CH- 1.375 D9- 24mm CI- 1.500 D10- 28mm CJ- 1.625 D11- 30mm CK- 1.750 D12- 32mm CL- 1.875 D13- 36mm CM- 2.000 D14- 38mm CN- 2.125 D15- 42mm CO- 2.250 D16- 45mm CP- 2.375 D17- 48mm CQ- 2.500 D18- 52mm CR- 2.625 D19- 55mm CS- 2.875 D20- 60mm CT- 3.000 D21- 65mm CU- 3.125 D22- 70mm CV- 3.188 D23- 75mm CW- 3.188 D24- 80mm CX- 3.188 D25- 85mm	E- Extended Shaft Cover F- Flat Cover T- Flat Thru-Hole Cover with Shaft Seal	See chart at right	F- 60 Y- 1024 G- 100 Z- 1200 H- 120 3- 2000 A- 128 4- 2048 L- 240 5- 2500 N- 256 6- 4096 P- 300 8- 4800 E- 360 9- 5000 B- 480 0- Non-Std. Q- 500 R- 512 S- 600 V- 900 J- 960	K- None Y- 1024 Z- 1200 G- 100 3- 2000 H- 120 4- 2048 A- 128 5- 2500 L- 240 6- 4096 N- 256 8- 4800 P- 300 9- 5000 E- 360 0- Non-Std. B- 480 R- 512 S- 600 V- 900 J- 960	See chart at right	000- No Modification 005- Super Magnetic Shielding 018- w/ Isolator XR1 or XR2 for cabinet mount 4xx- Special PPR Code, consult factory 9xx- Special Cable Length, xx=length in feet

* Set Screw Rotor Only

Line Driver Code				Connector Options
Level 1		Level 2		
Class Div 1	Zone 1 & 21 (0)	Class Div 2	Zone 2 & 22	
F	H	n/a	7	C- 10 pin MS (Avtron)
F	H	n/a	7	D- 10 pin MS (Dynapar)
F	H	n/a	7	*- 7 Pin MS
F	H	n/a	7	R- 10 Pin mini twist lock
F	H	n/a	7	W- Flexible cable with Gland
F	H	n/a	7	G- 10 Pin Industrial with Plug
F		G		M- Conduit Box, Terminal Block 1/2" NPT
F		G		N- Conduit Box, Terminal Block 1" NPT
F		G		8- Conduit Box, Terminal Block 25mm PT
XR12	XR22	None	None	Required Isolator: order separately or with option code 018

*= E, F, J, K, S, T, U, V,

Units with connector options H, M, N or 8 are dual labeled for for both cULus Class / Div and ATEX / IECEx Zones



Nidec-Avtron Makes the Most Reliable Encoders in the World

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All dimensions are in inches [millimeters]. Specifications and features are subject to change without notice. EU-SMART™, SMARTSafe™, SMARTach II™, THIN-LINE™, THIN-LINE II™, WIDE-GAP™, and BULLSEYE32™ are trademarks of Nidec Avtron Automation. All other trademarks and registered trademarks are the property of their respective owners.