Avtron XR125 SMARTSafe™ Encoders

Hazardous Duty Magnetic Encoder, Heavy Duty 12.5" Modular

Our Largest Hazardous Duty Encoder

- Fits NEMA 12.5" Flanges
- Fits Shafts up to 7 7/8" [200mm]
- 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 8192 PPR
- 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

XR125

XR125 SMARTSafe 12.5" modular incremental quadrature rotary encoders are a breakthrough in hazardous duty encoders to fit large shaft applications. They are ATEX/IECEx and cULus approved and offer incredibly reliable no-bearing construction! SMARTSafe encoders can be used in ATEX/IECEx gas and dust and UL gas environments. Also available: hollow shaft models (XR45, XR47, XR685), shafted models (XR4F, XR485), no-bearing modular encoders to fit other flange sizes (XR56, XR67, XR85, XR115, XR850), and modular sensors (XR5, XR12).

For Level 2 applications requiring ATEX/IECEx Zone 2 or 22 or UL Class I, Division 2, Groups A,B,C,D use the XR125 directly in your application, with no barrier, isolator or cable gland required.

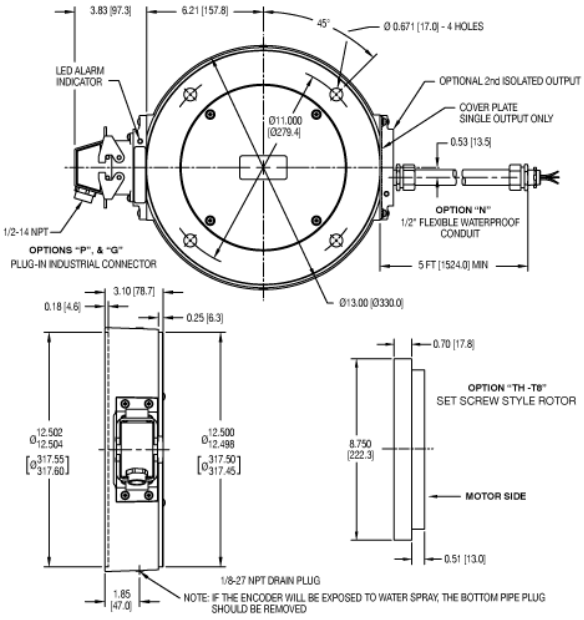
For Level 1 applications requiring ATEX/IECEx Zone 1 or 21 use the XRB1 or XRB2 isolator in your control cabinet which permits the use of intrinsically safe wiring instead of explosion proof conduit or glands. The XR125 can also be used in UL Class I Division 1 and Zone 0 applications using the XRB2 Isolator.

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

Instead of mounting a tiny optical encoder with weak bearings on a wobbling stub shaft, mount XR125 directly on your main application shaft. Vibration, shock, liquids, dust and dirt won't harm SMARTSafe XR125 encoders! Paint booths, draw works, coil tubing rigs...XR125 can keep them all working 24-7-365.

Eliminate the biggest cause of industrial encoder failure--eliminate the bearings with XR125 hazardous duty encoders.

OUTLINE DRAWING



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

MORE XR125 ADVANTAGES

- Easy-swap electronic modules
- Sensors can be directly machine-mounted for OEM flexibility
- 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
- Wide Sensor-Rotor Gap: No Shimming or Scraping

XR125 SPECIFICATIONS

Operating Power: (add cable drive current as req'd)
Level 1 Protection: 12-24VDC In, 10.6V Out, 150mA
Level 2 Protection: 5-24VDC In/Out, 100mA
Output Format: A Quad B with marker (A,A–, B,B–, Z,Z–)
Frequency Range: 0 to 165 KHz
PPR: 8-8192
Speed: 5000 RPM Max. (contact factory for higher speeds)
Maximum Cable Length:
Level 1 (Local/Remote): 1000' [300m] / 400' [120m]
Level 2: 500' [150m] @ 5-12V; 200' [60m] @ 24V
Rotor Positioning: Up to +/- 0.100" [+/- 2.54mm] movement/misalignment
Sensor-Rotor Gap: 0.045", +0.015/-0.040" [1.14mm+0.38/-1.0]
Temperature: -40°C to 80°C (Storage -40°C to 100°C)
Environmental: Electronics-IP67 (see manual for details)
Vibration: 5-2000Hz, 20G; 100G Shock
Weight: 15-18 lbs. [7-8kg]
Certifications:
Level 1: ATEX/IECEx Zone 1 & Zone 21 Group IIC
Level 1: cULus Class I, Division 1 and Zone 0 Group A,B,C,D*
Level 2: ATEX/IECEx Zone 2 & 22 Group IIC
Level 2: cULus Class I, Division 2 Group A,B,C,D
***See installation drawings for Warnings and Limitations**

SELECTION GUIDE

XR125 PART NUMBERS AND AVAILABLE OPTIONS

Model	Thru Shaft Rotor Bore, US Sizes	Thru Shaft Rotor Bore, Metric	Inboard & Outboard Cover Plates	Left Module: Line Driver	Left Module: PPR	Right Module: Line Driver	Right Module: PPR	Connector Options	Modifications
XR125	XX- no rotor TH- 1.375" TJ- 1.625" TL- 1.875" TM- 2.000" TN- 2.125" TQ- 2.250" TP- 2.375" TR- 2.500" TT- 2.625" T2- 2.875" TV- 3.125" TW- 3.250" TY- 3.375" T4- 3.875" TB- 4.125" T5- 4.250"	TC- 4.375" T6- 4.500" TD- 4.625" TE- 4.690" TA- 4.875" TG- 5.000" T7- 5.375" T8- 6.750" T9- 7.875" MG- 25mm MC- 110mm ME- 120mm MK- 120mm (m6 tol shaft) MF- 160mm M8- 170mm	X- none F- no inboard, flat outboard T- no inboard, thru outboard	X- none See chart at right	X- none F- 60 G- 100 H- 120 A- 128 L- 240 N- 256 P- 300 E- 360 B- 480 Q- 500 R- 512 S- 600 V- 900 J- 960 Y- 1024 Z- 1200 3- 2000 4- 2048 5- 2500 D- 4096 8- 4800 9- 5000 0- special	X- none See chart at right	X- none F- 60 G- 100 H- 120 A- 128 L- 240 N- 256 P- 300 E- 360 B- 480 Q- 500 R- 512 S- 600 V- 900 J- 960 Y- 1024 Z- 1200 3- 2000 4- 2048 5- 2500 D- 4096 8- 4800 9- 5000 0- special	See chart at right	000- none 004- Super magnetic shielding 005- Expand top speed to 6000 RPM 006- Super magnetic shielding & sealed housing for marine 018- w/ Isolator XRB1 or XRB2 for cabinet mount 4xx- Special PPR Code, consult factory 9xx- Special Cable Length, xx=length (ft/0.3m)

Line Driver Code				
Level 1		Level 2		
Class I Div 1	Zone 1 & 21 (ia)	Class I Div 2	Zone 2 & 22	Connector Options
F	H	n/a	7	A- 10 pin MS W/O Plug B- 10 pin MS with Plug
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		4- Conduit Box, Terminal Block 1/2" NPT
F		G		5- Conduit Box, Terminal Block 3/4" NPT
F		G		6- Conduit Box, Terminal Block 1" NPT
F		G		7- Conduit Box, Terminal Block 25mm PT
XRB2	XRB2	None	None	Required Isolator: order seperately or with option code 018

*= E, F, J, K, S, T, U, V,
Units with connector options 4, 5, 6, or 7 are dual labeled for for both cULus Class / Div and ATEX / IECEx Zones

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