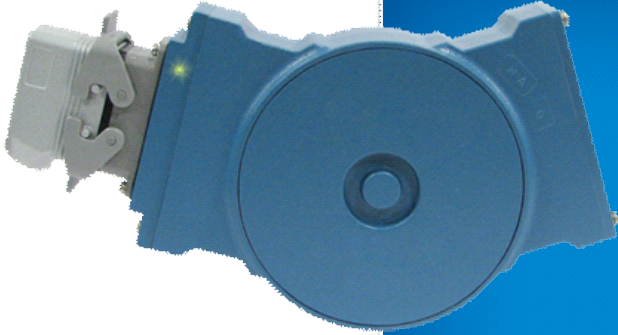# Avtron XR485 SMARTSafe™ Encoders

Severe Duty Magnetic Encoder for Hazardous Applications; Foot or NEMA 56C Face Mount, 5/8" Solid Shaft

Hazardous Duty Shafted Encoder for Severe Environments

- Severe Mill Duty
- ATEX/IECEx Rated for Zone 1, 2, 21 & 22 Applications
- Foot or NEMA 56C Face Mount
- Fully Potted Electronics
- Up to 5000 PPR
- Self-Diagnostic LED and Alarm Output
- 1 Year No-Hassle Warranty
- cULus Class I Div 1 Groups A,B,C,D
- cULus Class I Zone 0 Group IIC
- cULus Class I Div 2 Groups A,B,C,D

XR485

XR485 SMARTSafe solid shaft encoders are a breakthrough in hazardous duty encoders for NEMA C-face and foot mount applications. They are ATEX/IECEx and UL approved and offer incredibly reliable construction! SMARTSafe encoders can be used in ATEC/IECEx gas and dust and UL gas hazardous environments. Also available: hollow shaft models (XR45, XR47, XR685), Euro shafted models (XR4F), no-bearing modular encoders (XR56, XR67, XR85, XR115, XR125, 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 XR485 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. XRB2 Isolator Systems enable use in Class I Div 1 and Zone 0 applications.

Unlike the competition, Avtron SMARTSafe encoder systems are fully protected against short circuits, power-to-output wiring, and output-to-ground faults at every point. Wiring errors won't harm this system!

Instead of depending on a tiny optical encoder with weak bearings use XR485. Vibration, shock, liquids, dust and dirt won't harm SMARTSafe XR485 encoders! Paint booths, draw works, coil tubing rigs...XR485 can keep them all working 24-7-365.

Eliminate encoder failures in your hazardous environment application-select XR485 today!

OUTLINE DRAWING

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

MORE XR485 ADVANTAGES

- Foot mount bolt pattern matches explosion-proof analog models exactly
- Optional K661 signal converter for direct replacement of analog tachs (BC66, etc.)
- Replaces BEI H38, H40 & Dynapar X25 models
- Shrugs off dirt, oil, and water contamination
- Protected against: power-to-phase, short circuits, and reverse voltage wiring problems
- No glass disks to break or optics to fail

XR485 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: 8-5000
Speed: 5500 RPM Max. (contact factory for higher speeds)
Maximum Cable Length:
  Level 1: 400' [120m]
  Level 2: 500' [150m] @ 5-12V; 200' [60m] @ 24V
Temperature: -40°C to 80°C (Storage -40°C to 100°C)
Environmental: Electronics-IP67, IP66 overall (see manual for details)
Vibration: 5-2000Hz, 18G; 100G Shock
Weight: 14 lbs. [6.4 kg]/16lbs [7.3kg] dual output
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

XR485 PART NUMBERS AND AVAILABLE OPTIONS

Model	Temp Rating	Foot Bracket	Style	Left Module		Right Module		Connector Options	Modifi-cations
				Line Driver	PPR	Line Driver	PPR		
XR485	N- -20°C to 80°C C- -40°C to 80°C	X- none 1- A36261 STD 2- BC42/46 style (A25448)	S- single shaft D- dual shaft	X- none See chart at right	X- none J- 960 F- 60 Y- 1024 G- 100 Z- 1200 H- 120 3- 2000 A- 128 4- 2048 L- 240 5- 2500 N- 256 D- 4096 P- 300 8- 4800 E- 360 9- 5000 B- 480 0- special Q- 500 R- 512 S- 600 V- 900	X- none See chart at right	X- none J- 960 F- 60 Y- 1024 G- 100 Z- 1200 H- 120 3- 2000 A- 128 4- 2048 L- 240 5- 2500 N- 256 D- 4096 P- 300 8- 4800 E- 360 9- 5000 B- 480 0- special Q- 500 R- 512 S- 600 V- 900	See chart at right	000- none 003- w/ K661 analog converter 004- super magnetic shielding 018- w/ Isolator XRB1 or XRB2 for cabinet mount 4xx- special PPR (see chart) 9xx- spc'l cable length (xx=ft)

Line Driver Code

Level 1		Level 2		Connector Options
Class I Div 1	Zone 1 & 21 (IIa)	Class I Div 2	Zone 2 & 22	
F	H	n/a	7	A- 10 pin MS W/O Plug
F	H	n/a	7	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

CE

All dimensions are in inches [millimeters].
Specifications and features are subject to change without notice.
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