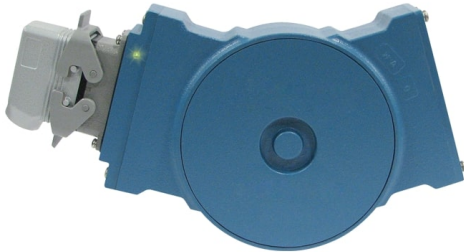**AVTRON™ ENCODERS** *A Nidec BRAND*

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

Severe Mill Duty

Foot or NEMA 56C Face Mount

ATEX/IECEx Rated for Zone 1, 2, 21 & 22 Applications

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, XR685), Euro shafted models (XR4F), no-bearing modular encoders (XR56, XR85, XR115, XR125, XR850), and modular sensors (XR5, XR12).

For 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.
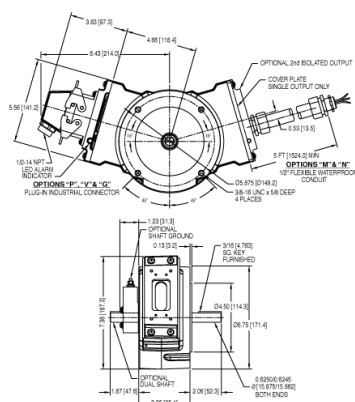
For applications requiring UL Division 1, ATEX/IECEx Zone 1 or 21 use the XRB3 isolator in your control cabinet which permits the use of intrinsically safe wiring instead of explosion proof conduit or glands. XRB3 Isolator Systems enable use in Class I Div 1 and Zone 0 applications.

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

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.)
- 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
- Replaces BEI H38, H40 & Dynapar X25 models

MORE XR485 SPECIFICATIONS

Operating Power: (add cable drive current as req'd)
Division 1, Zone 1 (XRB3): 12-24VDC In, 10.6V Out, 150mA
Division 2, Zone 2: 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:
Division 1, Zone 1: 400' [120m]
Division 2, Zone 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:
ATEX/IECEx Zone 1 & Zone 21 Group IIC
cULus Class I, Division 1 and Zone 0 Group A,B,C,D*
ATEX/IECEx Zone 2 & 22 Group IIC
cULus Class I, Division 2 Group 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	TEMPERATURE RATING	FOOT MOUNTING	SHAFT MOUNTING	LEFT OUTPUT LINE DRIVER	LEFT OUTPUT PPR	RIGHT OUTPUT LINE DRIVER	RIGHT OUTPUT PPR	CONNECTOR OPTIONS	MODIFICATIONS
☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
XR485	N - -20°C to +80°C (Standard) C - -40°C to +80°C	X - Standard NEMA 56C Face Mount (No Foot Mount Included) 1 - Standard Bolt Pattern Foot Mount Bracket (Avtron & RIM6200/H56) 2 - BC42/46 Bolt Pattern Foot Mount Bracket (GE Analog Tachogenerator)	S - Standard Single Ended 5/8 in. x 2 in. Stainless Steel Shaft, with 3/16 in. Key way & Key D - Dual 5/8 inch x 2 inch Stainless Steel Shafts, each with 3/16 in. Key way & Key	X - No Left Output F - Level 1 Protection, (UL Class I, Div 1, UL/cUL Class I, Zone 0 Listed) 5-7v, 5V out (NOTE Requires XRB3 Isolator) H - Level 1 Protection (ATEX/IECEx Zone 1 & 21), 5-7v in, 5v out (NOTE Requires XRB3 Isolator) 7 - Level 2 Protection, (ATEX/IECEx Zone 2 & 22) 5-24v, 5-24V out G - Level 2 Protection, (UL Class I, Div 2 Listed) 5-24v, 5-24V out R - US CLASS I, DIV 2, ZONE 2, RECOGNIZED, 5-24v in, 5-24v out	X - No Left Output F - 60 PPR G - 100 PPR H - 120 PPR A - 128 PPR L - 240 PPR N - 256 PPR P - 300 PPR E - 360 PPR B - 480 PPR Q - 500 PPR R - 512 PPR S - 600 PPR V - 900 PPR J - 960 PPR W - 1000 PPR Y - 1024 PPR Z - 1200 PPR 6 - 1800 PPR 3 - 2000 PPR 4 - 2048 PPR 5 - 2500 PPR D - 4096 PPR 8 - 4800 PPR 9 - 5000 PPR 0 - Special PPR	X - No Right Output H - Level 1 Protection (ATEX/IECEx Zone 1 & 21), 5-7v in, 5v out (NOTE Requires XRB3 Isolator) 7 - Level 2 Protection, (ATEX/IECEx Zone 2 & 22) 5-24v, 5-24V out F - Level 1 Protection, (UL Class I, Div 1, UL/cUL Class I, Zone 0 Listed) 5-7v, 5V out (NOTE Requires XRB3 Isolator) G - Level 2 Protection, (UL Class I, Div 2 Listed) 5-24v, 5-24V out R - US CLASS I, DIV 2, ZONE 2, RECOGNIZED, 5-24v in, 5-24v out	X - No Right Output F - 60 PPR G - 100 PPR H - 120 PPR A - 128 PPR L - 240 PPR N - 256 PPR P - 300 PPR E - 360 PPR B - 480 PPR Q - 500 PPR R - 512 PPR S - 600 PPR V - 900 PPR J - 960 PPR W - 1000 PPR Y - 1024 PPR Z - 1200 PPR 6 - 1800 PPR 3 - 2000 PPR 4 - 2048 PPR 5 - 2500 PPR D - 4096 PPR 8 - 4800 PPR 9 - 5000 PPR 0 - Special PPR	A - 10 pin MS style w/o Mating Plug B - 10 pin MS style w/Plug J - 7 pin MS style w/Plug (A, B, Z) (Standard Phasing) K - 7 pin MS style w/Plug (A, A/, B, B/) (Standard Phasing) G - Industrial EPIC Style w/LED alarm P - Industrial EPIC Style w/LED and remote alarm contact (level 2 protection only) R - Baldor Mini MS style w/Plug W - 3' Sealed Cable w/Color Coded Leads 4 - Std conduit box, 1/2" NPT threads (ATEX/IECEx/UL/cUL rating) 5 - Std conduit box, 3/4" NPT threads (ATEX/IECEx/UL/cUL rating) 6 - Std conduit box, 1" NPT threads (ATEX/IECEx/UL/cUL rating) 7 - Std conduit box, 25mm threads (ATEX/IECEx/UL/cUL rating) X - No connector, no sensor (housing only)	000 - No Special Options 004 - Super Magnetic Shielded Sensor(s) 005 - Krytox Bearing Grease for Hydrocarbon Atmospheres 018 - Include XRB3 Remote Level 1 Isolator for Cabinet Mount 030 - Special Dual Shaft Modification 6" on DE end, 4" on ODE 401 - 1270 PPR (Special) Left Output (Set Left PPR Code to 0) 402 - 150 PPR (Special) Left Output (Set Left PPR Code to 0) 403 - 50 PPR (Special) Left Output (Set Left PPR Code to 0) 404 - 16 PPR (Special) Right Output (Set Right PPR Code to 0) 405 - 16 PPR (Special) Left Output (Set Left PPR Code to 0) 406 - 6000 PPR (Special) Left Output (Set Left PPR Code to 0) 407 - 2800 PPR (Special) Left Output (Set Left PPR Code to 0) 408 - 1400 (Special) Left Output PPR (Set Left PPR Code to 0) 409 - 30 PPR (Special) Left Output (Set Left PPR Code to 0) 410 - 6000 PPR (Special) Right Output (Set Right PPR Code to 0) 901 - Special 1'/0.3m cable length built into sensor 902 - Special 2'/0.6m cable length built into sensor 903 - Special 3'/0.9m cable length built into sensor 905 - Special 5'/1.5m cable length built into sensor 910 - Special 10'/3m cable length built into sensor 915 - Special 15'/4.5m cable length built into sensor 920 - Special 20'/6m cable length built into sensor 925 - Special 25'/7.5m cable length built into sensor 930 - Special 30'/9m cable length built into sensor 933 - Special 33'/10m cable length built into sensor

AVTRON ENCODERS™
A Nidec BRAND

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