Avtron XPH1 SMARTSafe™ Encoder

Severe Duty Encoder for TDS9/10/11 Mounting with Flameproof and Explosion Proof Ratings

Magnetic Durability in a Compact Encoder

- Fits NOV TDS 9, 10 & 11 Top Drives Directly
- No Barrier or Isolator Needed
- No Intrinsic Safety Ground Required
- Class I Div 1 Groups C, D Listed
- AEx Zone 1 Certified
- Fully Protected Against Shorts and Wiring Errors
- Drives up to 1000 feet [305m] of cable without repeaters
- 2 Year No-Hassle Warranty
- -50°C to +85°C Operation
- Zone 1 & 2 Certified

XPH1

Dramatically slash encoder-related downtime on top drive applications!

XPH1 SMARTSafe™ encoders are the world's first explosion-proof encoders with removable electronics and no external barrier! They are cULus, ATEX, IECEx certified and offer incredibly reliable no-bearing construction! SMARTSafe XPH1 encoders can be used in ATEX/IECEx, cUL AEX, and UL gas hazardous environments including NEC500 and NEC 505.

XPH1 comes complete with auto-centering jig, base plate, riser shaft, sensor and rotor to fit NOV TDS9, TDS10, and TDS11. Also available: no-bearing modular sensors (XP5), 8.5" C-face XPH8 as well as intrinsically safe models (XR5, XR12, XR56, XR125, XR485, XR685, XR850) and hollow shaft models M6C.

Use the XPH1 directly in your application with no barrier or isolator required with 1000 feet of cable or more!

Unlike the competition, Avtron SMARTSafe encoder systems are protected against short circuits, power-to-output wiring, and output-to-ground faults. They feature full diagnostics: it's easy to determine that signal quality is good-just look for the green LED. Worried about wiring short circuits and errors? XPH1 will indicate any short circuit conditions with an orange LED and will survive this condition!

No encoder bearing failures, no more sealing problems. Mount XPH1 directly on your motor, build it right into your machine. So many applications benefit from a more reliable no-bearing encoder. Vibration, shock, liquids, dust and dirt won't harm SMARTSafe XPH1 encoders!

Eliminate the biggest cause of hazardous duty encoder failure--eliminate the bearings with XPH1 hazardous duty encoders!

Nidec Industrial Solutions
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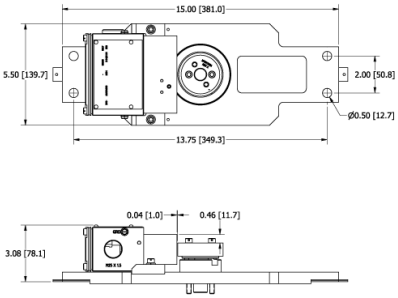
OUTLINE DRAWING



MORE XPH1 ADVANTAGES

- All-digital design, no trim pots or adjustments for longer life
- Advanced sensor technology
- Superior line drivers withstand short circuits and reverse voltage wiring errors
- Fully Potted Electronics
- SMARTSafe sensors find problems before they cause failure
- Allows Gland or Conduit Connections
- Full protection against motor shaft currents

MORE XPH1 SPECIFICATIONS

Operating Power: 5-24VDC in/out
400mA max @ 5V; 200mA max @ 12V; 100mA max @ 24V (plus cable load)
Output Format: A Quad B with marker (A,A–, B,B–, Z,Z–)
Frequency Range: 0 to 250 KHz
PPR: 8-100000
Speed: 6000 RPM Max. (contact factory for higher speeds)
Maximum Cable Length: 1000 ft (305m) (contact factory for longer distances)
Rotor Positioning: Up to +/-0.100" [+/-2.54mm] movement/misalignment
Sensor-Rotor Gap: 0.040", +0.015/-0.030" [1mm+0.38/-0.76]
Temperature: -50°C to 85°C
(rotor -50°C to 100°C continuous, +135°C intermittent)
Environmental: IP65 fully potted sensors
Vibration: 5-2000Hz, 18G; 100G Shock
Weight: 15lbs. [6.8kg]
Certifications:
Class I Div 1, Groups C and D
Class I Zone 1, Ex db ia IIB T4 Gb
Class I Zone 1, AEx db ia IIB T4 Gb
Ex db ia IIB T4 Gb (ATEX/IECEx)
*See installation drawings for Warnings and Limitation
**Consult NOV for installation guidelines and details

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

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SELECTION GUIDE

☐	☐	☐	☐	☐	☐	☐	☐
MODEL	**ROTOR STYLE**	**COVER STYLE**	**OUTPUT**	**LEFT OUTPUT PPR**	**RIGHT OUTPUT PPR**	**CONNECTION OPTIONS**	**MODIFICATIONS**
XPH1	XX - No Rotor A1 - Rotor to fit TDS 9/10/11	X - No Cover	8 - 5-24vDC in/out Hi-Powered, Protected, HX Line Driver	XX - None BC - 50 PPR AF - 60 PPR AK - 80 PPR AG - 100 PPR AH - 120 PPR AA - 128 PPR AM - 200 PPR AL - 240 PPR AN - 256 PPR AP - 300 PPR AE - 360 PPR AC - 400 PPR AB - 480 PPR AQ - 500 PPR AR - 512 PPR AS - 600 PPR AV - 900 PPR AJ - 960 PPR AW - 1000 PPR AY - 1024 PPR AZ - 1200 PPR CX - 1500 PPR A3 - 2000 PPR A4 - 2048 PPR A5 - 2500 PPR AD - 4096 PPR A8 - 4800 PPR A9 - 5000 PPR 00 - Special PPR	XX - None	A - w/screw-type terminal block, M25 Thread on both exits, Blanking Plug installed on right side, A Leads B with CW Rotation B - w/screw-type terminal block, M25 Thread on both exits, Blanking Plug installed on left side, A Leads B with CW Rotation	000 - No Special Options

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