

# Avtron XP5 SMARTSafe™ Sensor



**Severe Duty Magneto-resistive Sensor  
with Flameproof and Explosion Proof  
Ratings**

## Explosion-Proof Magnetic Sensor

No Barrier or Isolator Needed

Class I Div 1 Groups C, D Listed

Fits Shafts Up to 2" [52mm]

Fully Protected Against Shorts and  
Wiring Errors

Up 100000 PPR

2 Year No-Hassle Warranty

Fully Potted Electronics

Zone 1 & 2 Certified

Wide Sensor-Rotor Gap: No  
Shimming

ATEX Zone 1 Certified

No Intrinsic Safety Ground  
Required

## XP5

XP5 SMARTSafe™ sensors power the world's first explosion-proof encoder with removable electronics and no external barrier! They are cULus, ATEX, AEx & IECEx certified and offer incredibly reliable no-bearing construction! SMARTSafe XP5 sensors can be used in ATEX/IECEx, cUL, AEX, and UL gas hazardous environments.

Also available: no-bearing modular encoders (XPH8), as well as intrinsically safe models (XR5, XR12, XR56A, XR125, XR485, XR685, XR850), and hollow shaft models (M6C).

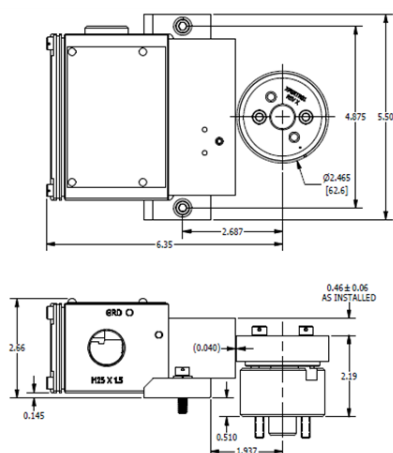
For Level 1 applications requiring ATEX/IECEx Zone 1 or cULus Class I, Division 1, Groups C & D use the XP5 directly in your application with no barrier or isolator required.

Unlike the competition, Avtron SMARTSafe encoder systems are protected against short circuits, power-to-output wiring, and output-to-ground faults. XP5 features full diagnostics: it's easy to determine that signal quality is good, and that there are no wiring short-circuits.

Instead of mounting a tiny optical encoder with weak bearings on a wobbling stub shaft mount XP5 directly on your machine and install the rotor on your main application shaft. Top drives, draw works, coil tubing, paint lines...so many applications benefit from a more reliable no-bearing encoder. Vibration, shock, liquids, dust and dirt won't harm SMARTSafe XP5 encoders!

Eliminate the biggest cause of hazardous duty encoder failure--eliminate the bearings with XP5 hazardous duty encoder sensors.

## OUTLINE DRAWING



## MORE XP5 ADVANTAGES

- Sensor PPR can be factory reprogrammed
- Shrugs off dirt, oil and water
- No glass disks to break or optics to fail
- Detects, indicates, and survives wiring errors: Short circuits, phase-to-ground, phase-to-V
- Direct machine-mount
- Self-Diagnostic LED: Red/Orange/Green
- Full protection from motor shaft currents

## MORE XP5 SPECIFICATIONS

**Operating Power:** Volts: 5-24VDC in/out; Current: 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  $\pm 0.100$ " [ $\pm 2.54$ mm] movement/misalignment

**Sensor-Rotor Gap:** 0.040",  $\pm 0.015$  / -0.030" [1.14mm  $\pm 0.38$  / -0.76]

**Temperature:** -50°C to 85°C

(rotor -50°C to 100°C continuous, +135°C intermittent)

**Environmental:** IP65

**Vibration:** 5-2000Hz, 18G; 100G Shock

**Weight:** 4.6 lbs. [2.1kg] (no rotor)

**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 Limitations

Check out our website for more detailed specifications, drawings, and installation instructions. [www.avtronencoders.com](http://www.avtronencoders.com)

## SELECTION GUIDE

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MODEL	STYLE	LINE DRIVER	PPR	TERMINAL BOX CONNECTION OPTIONS	MODIFICATIONS
XP5-	1 - with Bottom Mount Bracket for XPH1 64mm rotor 2 - with Side Mount Brackets, compatible with 222mm rotor 8 - with Side Mount Brackets, compatible with 143mm rotor, XPH8	8 - 5-24V in 5-24V out high power Hx	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 AU - 720 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 AT - 3072 PPR A7 - 3600 PPR AD - 4096 PPR A8 - 4800 PPR A9 - 5000 PPR 00 - Special	A - Left Exit M25 Thread, Right Exit Blank Plug, Phasing A > B CCW B - Left Exit Blank Plug, Right Exit M25 Thread, Phasing A > B CCW	000 - None D01 - Penlink Only Special Option