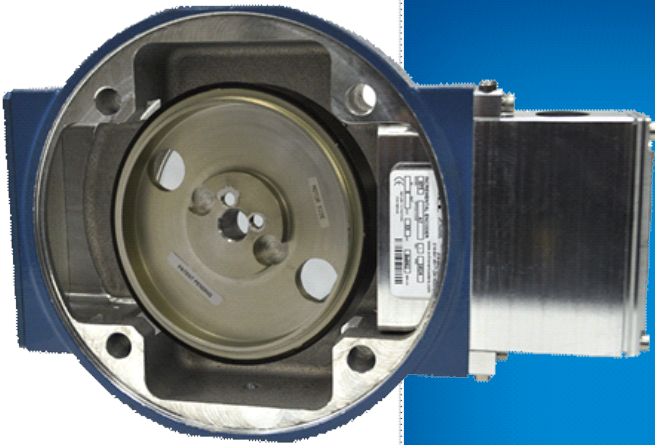




# Avtron XPH8 SMARTSafe™ Encoder



**Severe Duty Encoder for 8.5" C-Face Mount with Flameproof and Explosion Proof Ratings**

## Explosion Proof Bearingless Encoder

- | No Barrier or Isolator Needed
- | No Intrinsic Safety Ground Required
- |  Class I Div 1 Groups C, D Listed
  - | AEx Zone 1 Certified
- |  Zone 1 & 2 Certified
  - | Fits Shafts Up to 4.5" [115mm]
- | Fully Protected Against Shorts and Wiring Errors
- | Adapters available to fit GEB20, 22, 28, GE 752 Motors
- | Wide Sensor-Rotor Gap: No Shimming
  - | Up 100000 PPR
  - | -50°C to +85°C Operation
  - | 2 Year No-Hassle Warranty

## XPH8

XPH8 SMARTSafe™ encoders are the world's first explosion-proof encoders with removable electronics and no external barrier! They are cULus, ATEX, AEx & IECEx certified and offer incredibly reliable no-bearing construction! SMARTSafe XPH8 encoders can be used in ATEX/IECEx, cUL AEX, and UL gas hazardous environments. Also available: no-bearing modular sensors ([XP5](#)), as well as intrinsically safe models ([XR5](#), [XR12](#), [XR56](#), [XR125](#), [XR485](#), [XR685](#), [XR850](#)) and hollow shaft models [M6C](#).

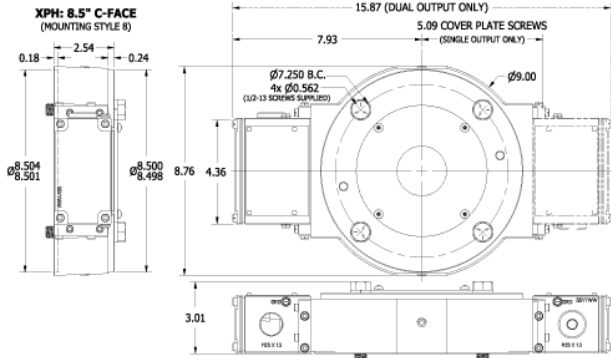
For applications requiring ATEX/IECEx Zone 1 or 2 or cULus Class I, Division 1 or 2, Groups C & D use the XPH8 directly in your application with no barrier or isolator required.

Unlike the competition, Avtron SMARTSafe encoder systems are protected against short circuits, power-to-output wiring, and output-to-ground faults. 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? XPH8 will indicate any short circuit conditions with an orange LED and will survive this condition!

No encoder bearing failures, no more sealing problems. Mount XPH8 directly on your motor. 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 XPH8 encoders!

Eliminate the biggest cause of hazardous duty encoder failure--eliminate the bearings with XPH8 hazardous duty encoders.

# OUTLINE DRAWING



# MORE XPH8 ADVANTAGES

- | All-digital design, no trim pots or adjustments for longer life
- | Superior line drivers withstand short circuits and reverse voltage wiring errors
- | Fully potted electronics
- | SMARTSafe sensors find problems before they cause failure
- | Mix and match any PPRs with any rotor
- | Allows gland or conduit connections
- | Full protection against motor shaft currents

# XPH8 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:** 10-14 lbs. [4.5-6.4kg]  
**Certifications:**

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

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

# SELECTION GUIDE

XPH8 Encoder Part Numbers										
Model	Rotor Style/Bore		Cover	Output	PPR		Connection Options Terminal Box			Modifications
XPH8- 8.5 C-Face mount	US	Metric	X- No Cover F- Flat Cover T- Thru Shaft Cover (No Seals)	8- Hi Power 5-24V in/ 5-24V out (Hx)	Left PPR	Right PPR	Left Exit A- M25 thread	Right Exit Blanking Plug	Phasing A->B CW	000- none 004- Super Magnetic Shielding
	CB- 0.625	DB- 14mm			XX-None	BC-50				
	CA- 0.750	DE- 19mm			BC-50	AF-60				
	CC- 0.875	DF- 30mm			AF-60	AK-80				
	CE- 1.000	DJ- 42mm			AK-80	AG-100				
	CF- 1.125	DP- 60mm			AG-100	AH-120				
	CG- 1.250	DS- 70mm			AH-120	AA-128				
	CH- 1.375	DY- 80mm			AA-128	AM-200				
	CB- 1.500	DZ- 90mm			AM-200	AL-240				
	CJ- 1.625	M4- 95mm			AL-240	AN-256				
	CK- 1.750	M5- 100mm			AN-256	AP-300				
	CL- 1.875				AP-300	AE-360				
	CM- 2.000				AE-360	AC-400				
	CN- 2.125				AC-400	AB-480				
	CQ- 2.250				AB-480	AQ-500				
	CP- 2.375				AQ-500	AR-512				
	CR- 2.500				AR-512	AS-600				
	CT- 2.625				AS-600	AV-900				
	C2- 2.875				AU-720	AJ-960				
	C4- 3.000				AV-900	AW-1000				
	CW- 3.250				AJ-960	AY-1024				
	C3- 3.500				AW-1000	AZ-1200				
	TD- 3.625				AY-1024	CX-1500				
	TG- 3.750				AZ-1200	A3-2000				
	T4- 3.875				CX-1500	A4-2048				
	T5- 4.125				A3-2000	A5-2500				
	T7- 4.250				A4-2048	AT-3072				
	T6- 4.500				A5-2500	A7-3600				
					AD-4096	AD-4096				
					A8-4800	A8-4800				
					A9-5000	A9-5000				
					00-Special	00-Special				
					XX-None					



Nidec-Avtron Makes the Most Reliable Encoders in the World  
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All dimensions are in inches [millimeters].  
 Specifications and features are subject to change without notice.  
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