



PRODUCT HIGHLIGHT

HAZARDOUS LOCATION ENCODERS

PERFORMANCE, RELIABILITY, AND ADAPTABILITY

Applications in hazardous locations - such as the oil and gas industry, paint application and chemical processing - present a tougher challenge for sensors. High temperature and pressure, potentially explosive environments, extreme vibration, shock, dirt and moisture are all part of the daily working environment. Position sensors are crucial components in oil and gas equipment and must operate reliably day in and day out. Sensata - BEI Sensors is well aware of the unique requirements of these demanding industries and has designed products of uncompromising quality and performance, making them the most reliable position sensing solutions found anywhere.



PROTECTION METHODS EXPLAINED

Protection Method	Sensata Series	Certification
<p><b>EXPLOSION PROOF (FLAME PROOF)</b></p> <p>This protection method relies on a <b>rugged enclosure</b>, which <b>safely contains an internal ignition</b>. Hot gasses are vented in a controlled way. Metal to metal joints or flame paths are designed to restrict the flow of hot gasses so that when they reach the outside of the enclosure, they're not hot enough to ignite the surrounding hazardous materials. <b>Agency approved wiring and/or fittings</b> must be used with these products.</p> <p>MSHA product variations are <b>certified for use below ground level</b> in mining thanks to the explosion proof design specific for this application.</p>	<p>H38, H40, LP35-HC (H38-CEN is triple certified) GAUX, GEUX, GAMX, GEMX CAUX, CEUX, CAMX, CEMX, PAUX, MAAX, MAUX</p> <p>H38-MSHA</p>	<p>cULus LISTED Class I, Div. 1, Class II, Div. 1</p> <p>Ex IEC IECEx Zone 1</p> <p>MSHA 30 CFR, Part 18</p>
<p><b>INTRINSICALLY SAFE</b></p> <p>This protection method relies on <b>limiting the amount of electrical power</b> that can get to the device in the hazardous location. The electronics don't store energy, don't cause sparks and the mechanical parts of the product don't heat up past certain limits under specified operating conditions. These products <b>must be installed and used as part of an intrinsically safe circuit</b> utilizing one or more agency approved "<b>Associated Apparatus</b>" or <b>IS Barriers</b>.</p>	<p>H20, HS20, H25, HS25, HS35, LP35-HX, HS45 (all are triple certified)</p> <p>IHM5, IBM5, IH05, IB05, IHM9</p>	<p>cULus LISTED Class I, Div. 1, Class II, Div. 1</p> <p>Ex IEC IECEx Zone 0 Zone 1</p>
<p><b>NON-INCENDIVE (NON-SPARKING)</b></p> <p>This type of protection certifies a product as <b>safe when installed correctly and is operated within the limits</b> set forth by the certifying agency. These products are standard configuration, both electrically and mechanically. The certification is of specific constructions that cannot be changed without agency approval. No special barriers, wiring or heavy enclosures are required.</p>	<p>H20, HS20, H25, HS25, HS35, LP35-HN, HS45 (all are triple certified)</p> <p>PHU9</p>	<p>cULus LISTED Class I, Div. 2 *Class II, Div. 2</p> <p>Ex IEC IECEx Zone 2</p> <p>(*) not applicable to all models</p>

## FEATURED PRODUCTS

### H20, H25, HS20, HS25, HS35, HS45 TRIPLE CERTIFIED



A full line of UL-certified non-incendive and intrinsically safe encoders, also compliant to CENELEC/ATEX and IECEx hazardous area standards. This triple certification is provided on six popular heavy duty encoder models sized 2 to 4.5 inches in both hollow shaft and shafted versions.

### LP35 LOW PROFILE, TRIPLE CERTIFIED



This compact, vibration and shock resistant series, with intrinsically safe, non-incendive and explosion proof designs is a perfect fit for tight installations, like top drives and mud pumps. The removable terminal box model simplifies field installation and an IP66 ingress protection rating and hard anodized enclosure shields the internal components from exposure to the elements.

### H38, H40, GAMX, MAAx EXPLOSION PROOF



These explosion-proof and flameproof series' use heavy enclosures for the standard encoder electronics. No special barriers are required for installation. The H40 is an ultra heavy duty explosion-proof encoder which has a special internal structure which also isolates the electronics and optics from severe shock and shaft loading conditions.

### HS35 DRAWWORKS ENCODER



This heavy-duty HS35 rotary encoder features a threaded hollow shaft style for use as a winch-turns counter in the drawworks systems of oil rigs.

### 700 and 6300, DOWNHOLE LINEAR POSITION SENSORS



Designed to operate reliably in extreme environments, these rugged linear potentiometers will withstand temperatures between -40° and +200°C, and pressures of up to 35,000 psi.

### 60004 INTRINSIC SAFETY BARRIER



This unique electronic module provides power and signal isolation for an incremental encoder with differential quadrature outputs and index all in one space saving package. The perfect fit with any Intrinsically safe certified encoder.

## APPLICATIONS

- Paint application
- Chemical processing
- Mining
- Hazardous areas where flammable liquids, vapors, gases or combustible dust may exist



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