

# SwiftComm™ Explosion Proof Wireless Incremental Interface

## A whole new era in wireless industrial control



The SwiftComm Explosion Proof Wireless Encoder Interface allows for wireless transmission of encoder data in hazardous environments. The transmitter is housed in an industry standard instrument case, which is rated for use in Class I, Groups B,C,D and Class II, Groups E,F,G hazardous environments. This rating includes a majority of gas and explosive dust groups including hydrogen, ethylene, propane, metals, coal and grain. Additionally, the SwiftComm Explosion Proof transmitter holds the CENELEC/ATEX Exd IIC flameproof approval.

Encoder installations in difficult applications like cranes, oil field, rotating tables or mobile applications, are now greatly simplified. A robust and secure wireless interface, SwiftComm has the built-in reliability needed for real-time industrial control. Able to interface with any incremental encoder, SwiftComm allows critical position, speed and velocity feedback data to be transmitted to control systems without expensive cabling. The SwiftComm system includes the transmitter-receiver pair, which communicates using a point-to-point frequency-hopping 2.4 GHz RF protocol.



### Transmitter Certifications:

- CENELEC EEX d IIC
- U.S. Standards Class I, Groups B,C,D; Class II Groups E,F,G
- Canadian Standards Class I, Zone 0, Group IIC

### SwiftComm's Unique Advantages

- Robust Signal
- Real-Time Control
- Secure Transmission
- Long Range

### Electrical Specifications

**Supply Voltage** (transmitter or receiver): 5 to 28 VDC (see model number)

**Supply Current** (transmitter or receiver): 220 mA Max

**Output Format:**

Transmitter Input: 2 Channels in quadrature, 1/2 cycle index gated w/ negative B channel Receiver Output: 2 Channels in quadrature, cycle index gated w/ negative B channel

**Temperature: Operating:** -40°C to 70°C

**Storage:** -40°C to 100°C

### Rf Specifications

**RF Power Output:** 17 dBm (50 mW) min

**Frequency Range:** 2.4 GHz ISM Band Adaptive Frequency Hopping Protocol

**Sensitivity:** -80 dBm (0.1% BER @ 1000kbps)

**Antenna Connector:** TNC – Reverse Polarity (50 Ohm)

**Transmission Range:** 300 Meters (5.5 dBi Gain "Rubber Duck" Swivel Antenna, antenna mounted directly to enclosure)

**Encryption:** Proprietary enhanced 40-bit encryption with pseudo-random frequency hopping sequence.

**Security Codes:** 5 Byte range (>500 billion unique codes)

### Output Specifications

**Frequency Response:** > 500 KHz

**Link Update Rate:** 600 uS

**Signal Loss Time without Link Failure:** 120 mS

**Transmission Response Time:** 1ms typical

### Mechanical Specifications

**Dimensions: Transmitter**

114.6W x 122.7 L x 97 H mm

Receiver: 75W x 119L x 53H mm

**Weight:** (Nominal)

Transmitter with antenna: 1.6 Kg (56 oz);

Receiver with antenna: 455 grams (14 oz)

**Environmental Ratings:** Cast aluminum, powder coated, gasketed closure intended for indoor or outdoor use.

Transmitter: Hazardous Area Rating: NEMA 4 X (IP66), Class I, Groups B,C,D and Class II, Groups E,F,G. NEC Class 2 circuits only.

Receiver: NEMA 4 (IP66), install in non-hazardous area only.

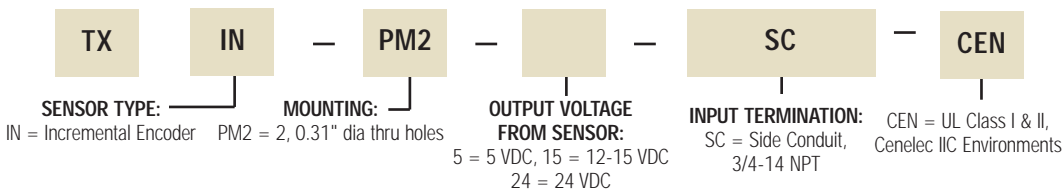
**Mounting Options:** Transmitter: Two 0.31" diameter through hole mounting taps.

Receiver: Two 1/4"-20 tapped holes on back of enclosure for mounting to flat surface. Optional mounting ears or DIN rail kit available.

## SwiftComm Ordering Options for assistance call 800-350-2727

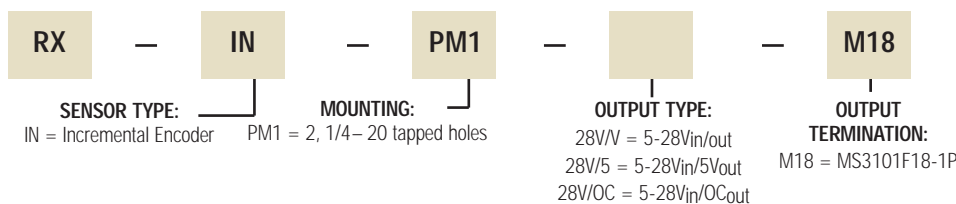
Order Note: The Transmitter and Receiver are sold as pairs. Sensor type must be the same for Transmitter and Receiver modules

### TRANSMITTER MODEL NUMBER



Transmitter includes coupler and antenna.

### RECEIVER MODEL NUMBER

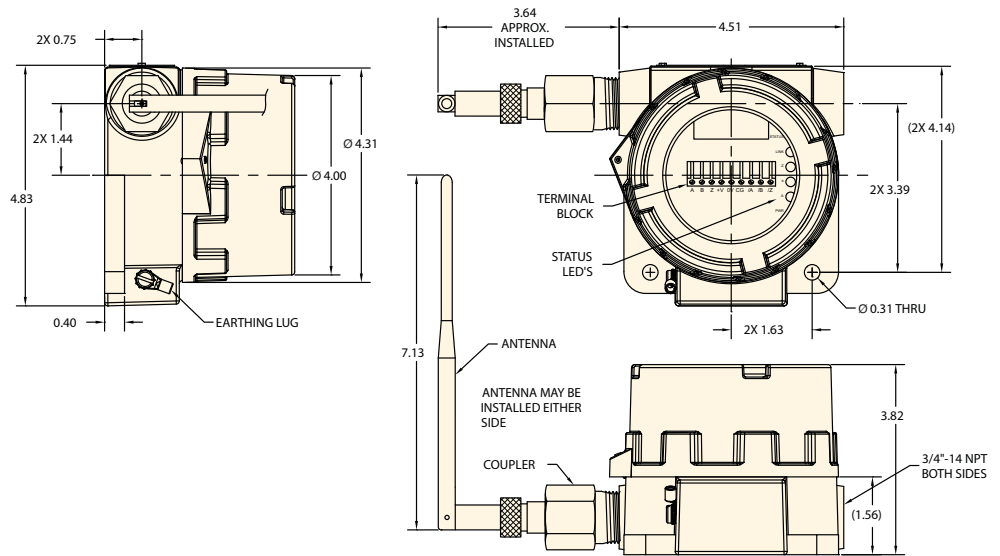


Receiver includes antenna. Mating cable assemblies are available.



## SwiftComm Transmitter Module

Transmitter: 9 Pin Terminal Block	
LABEL	FUNCTION
A	Encoder Channel A
B	Encoder Channel B
Z	Encoder Channel Z
+V	Power Input 6-24VDC
OV	Power Input Circuit Common
CG	Case Ground
$\overline{A}$	Encoder Channel $\overline{A}$
$\overline{B}$	Encoder Channel $\overline{B}$
$\overline{Z}$	Encoder Channel $\overline{Z}$



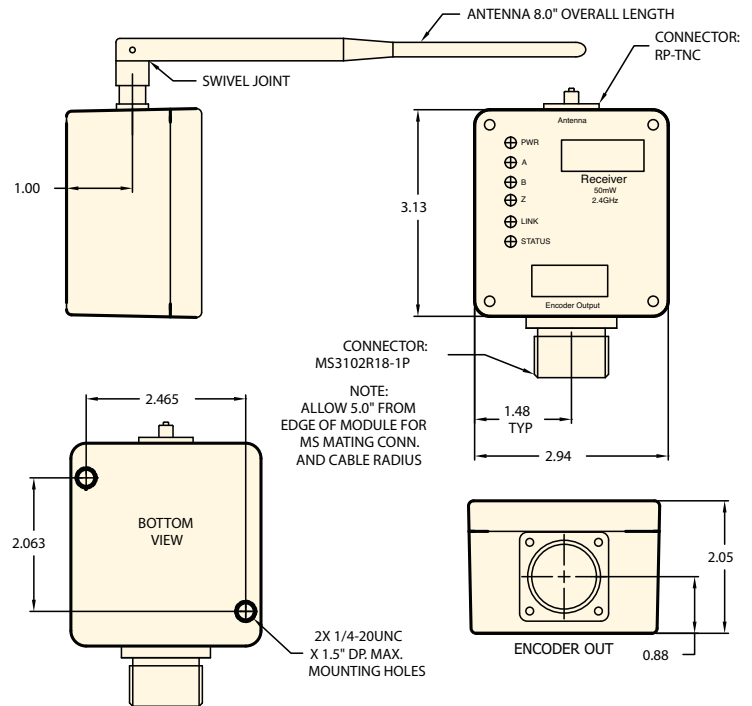
## SwiftComm Receiver Module

Note: Install receiver in non-hazardous area only.

Receiver Pinouts: Encoder Output (MS3102R18-1P)			
PIN	FUNCTION	PIN	FUNCTION
A	A	F	OV (Circuit Common)
B	B	G	N/C
C	Z	H	$\overline{A}$
D	+V (Supply Voltage)	I	$\overline{B}$
E	B.I.T Output*	J	$\overline{Z}$

\*If transmission is interrupted for longer than 0.13 seconds the status of this pin will change from LO to HI. B.I.T. is HI at +V level.

Table A—Front Panel Indicators		
FUNCTION	COLOR	DESCRIPTION
POWER	GREEN	ON Indicates input power is supplied to the Module
A	RED	Indicates quadrature signal A status
B	RED	Indicates quadrature signal B status
Z	RED	Indicates index signal Z status
LINK	GREEN	ON Indicates SwiftComm Modules have established a reliable RF link. OFF Indicates the RF link has been lost and the B.I.T. signal is active
STATUS	RED	Blinks ON each time RF packets are lost. Rate of blinking indicates relative quality of the RF link. Useful when setting up antennas and troubleshooting interference problems.



The SwiftComm Receiver Module has an MS connector that provides the same output signals as a standard BEI encoder. Input power can be from 5 to 28 VDC. Quadrature output signals (specified at time of ordering) can be 5 VDC or V in. The B.I.T. output signal indicates the RF Link Status. Case ground is internally coupled to OV (circuit common) through a 0.022uF capacitor. Depending on system grounding, link performance may be improved by electrically isolating the SwiftComm case from metallic mounts.

United States FCC IC: VSR-SWIFTCOMM07 | Canadian IC: 7445A-SWIFTCOMM07 | Licensed in US and Canada

To satisfy RF exposure requirements, this device and its antenna must operate with a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

This device has been designed to operate with an antenna having a maximum gain of 5.5dBi. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated (EIRP) is not more than the required for successful communication.