

A whole new era in wireless industrial control



Now the machine designer is free to install sensor equipment without the expense and constraints of a hard-wired system. Encoder installations in difficult applications like cranes, rotating tables or mobile applications, are greatly simplified. The SwiftComm system includes the transmitter-receiver pair, which communicates using a point-to-point frequency-hopping 2.4 GHz RF protocol. Because of its flexible input/output electronics, it can interface with many different industrial sensors and control systems. Simply connect the SwiftComm transmitter to the sensor and the SwiftComm receiver to your control system and apply power. That's it! No complicated cabling required.

SwiftComm's proprietary radio protocols include a broad security code range, data encryption, handshaking, interference recovery, and error checking that together provides a secure and robust wireless interface system. Ruggedness and flexibility are further enhanced with SwiftComm's NEMA 4 weatherproof enclosures, panel mounting options, antenna choices and wide-range DC power inputs.



## SwiftComm's Unique Advantages

- Robust Signal
- Secure Transmission
- Real-Time Control
- 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° to 70°, Storage: -40° to 100°

## Rf Specifications

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

**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:** (mm, including Antenna Connector)

Transmitter (excluding cable set): 75W x 98L x 53H

Receiver: 75W x 119L x 53H

### Weight:

Transmitter with 10-foot cable (no antenna): 911 grams

Receiver (no antenna): 455 grams

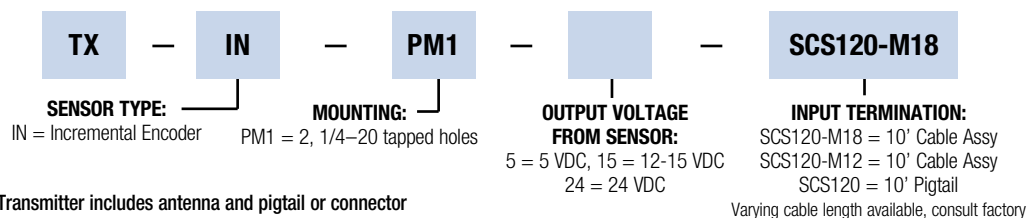
**Enclosure:** NEMA 4 cast aluminum, powder coated, gasketed closure intended for indoor or outdoor use. Protected against windblown dust and rain, splashing water, hose directed water and by the formation of ice on the enclosure.

**Mounting Options:** 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

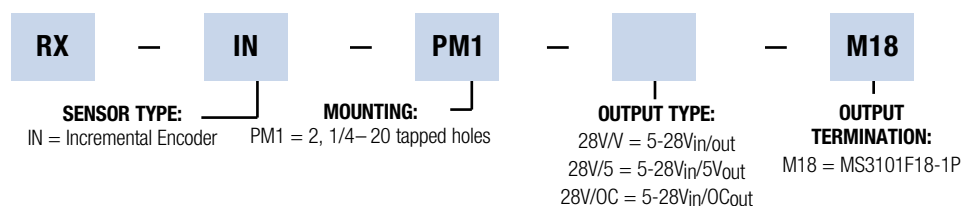
Order Note: The Transmitter and Receiver are sold as pairs. Sensor type must be the same for Transmitter and Receiver modules

### TRANSMITTER MODEL NUMBER



Transmitter includes antenna and pigtail or connector assembly. Power cable ordered separately.

### RECEIVER MODEL NUMBER



Receiver includes antenna. Mating cable assemblies are available.

# BEI SENSORS

Tel: 805-968-0782 / 800-350-2727  
Fax: 805-968-3154 / 800-960-2726  
7230 Hollister Ave., Goleta, CA 93117-2807  
[www.beisensors.com](http://www.beisensors.com)

Specification No. 02107-001 Rev.11-11

## SwiftComm Transmitter Module

The SwiftComm Transmitter Module has two connector plugs: a 5-pin connector for power input, B.I.T output and chassis ground; and a 3-meter (10 foot) cable with a 10-pin MS connector attached to the end.

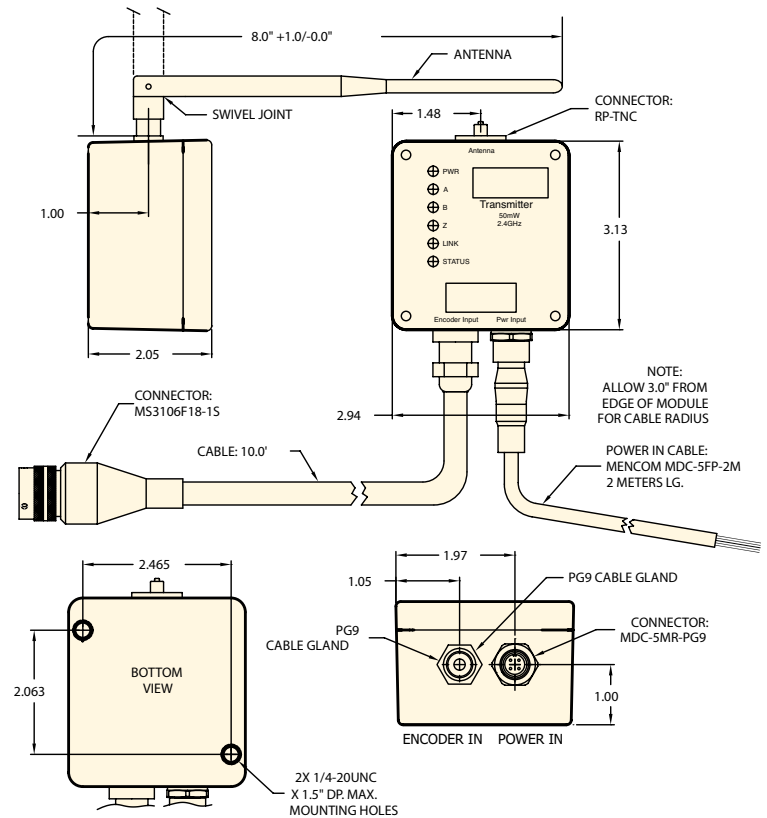
### Transmitter: Pwr Input & BIT Output (5 Pin Connector)

Pin	Function	Color	Pin	Function	Color
1	+V (Supply Voltage)	BRN	4	—	BLK
2	B.I.T Output*	WHT	5	Case Ground	GRY
3	0V (Circuit Common)	BLU			

\*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.

### Transmitter: Encoder Input (MS3106F18-1S, MS3116F12-10S or 10 ft pigtail)

M12 Pin	M18 Pin	Color (Pigtail)	Incremental Function
A	A	Yellow	A
B	B	Blue	B
C	C	Orange	Z
D	D	Red	+V (Supply to Encoder)
E	E	—	—
F	F	Black	0V (Supply to Encoder)
G	G	—	Case Gnd
H	H	Wh/Yellow	A/
J	I	Wh/Blue	B/
K	J	Wh/Orange	Z/



## SwiftComm Receiver Module

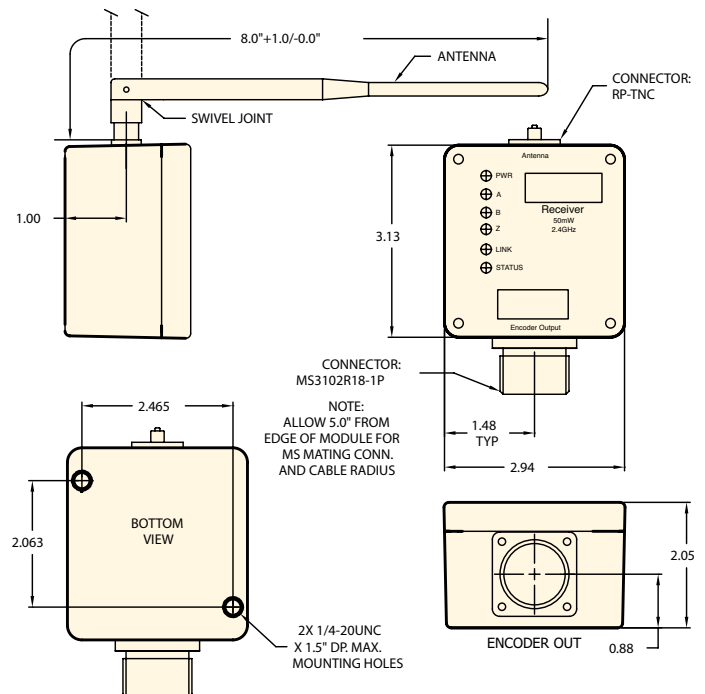
### Receiver Pinouts: Encoder Output (MS3102R18-1P)

PIN	FUNCTION	PIN	FUNCTION
A	A	F	0V (Circuit Common)
B	B	G	Case Gnd
C	Z	H	A
D	+V (Supply Voltage)	I	B
E	B.I.T Output*	J	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 connected to 0V (circuit common). Depending on system grounding, link performance may be improved by electrically isolating SwiftComm case from metallic mounts.

## SwiftComm Accessories

Part Number	Description
31320-K53M	Power Cable, 3 meter
31391-18xx	Receiver Cable/Connector Assembly
37100-010	Antenna Extension Cable & Mounting Bracket
38554-001	Transmitter/ Receiver Mounting Bracket
38561-001	Transmitter/ Receiver DIN Rail Adapter

United States FCC IC: VSR-SWIFTCOMM11 | Canadian IC: 7445A-SWIFTCOMM11  
Licensed in US, Canada, and European Union.

### FCC NOTICE

This equipment has been tested and found to comply with the limits for a class B digital device pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without the approval of the manufacturer could void the user's authority to operate the equipment.

### FCC RF EXPOSURE STATEMENT

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.

### INFORMATION FOR CANADIAN USERS (IC NOTICE)

Under Industry Canada regulations, this radio transmitter may only operate using an antenna having a maximum gain of 5.5 dBi approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that necessary for successful communication.

The radio transmitter IC 7445A-SWIFTCOMM11 has been approved by Industry Canada to operate with the antenna and optional coaxial extension cable listed below with a maximum gain of 5.5 dBi. The required antenna impedance is 50 ohms. Antenna types not included in this list or having a gain greater than 5.5 dBi are strictly prohibited for use with this device.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal de 5.5dBi approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique pour d'autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

Le présent émetteur radio (IC 7445A-SWIFTCOMM11) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal de 5.5dBi. L'impédance requise pour chaque type d'antenne est de 50ohms. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage.

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Sensata:

[60014-003](#) [60015-003](#)