# 319.5 Crystal MaxLife Door/Window Sensor Installation Instructions

Introduction

These are the **319.5 Crystal Maxlife Door/Window Sensor Installation Instructions** for models 60-362N-10-319.5 and 60-362N-11-319.5. Install the sensor (Figure 1) on doors, windows, and other objects that open and close. The sensor transmits signals to the control panel when a magnet mounted near the sensor is moved away from or closer to the sensor. The sensor is equipped with a cover tamper microswitch for additional security.

Figure 1. Sensor
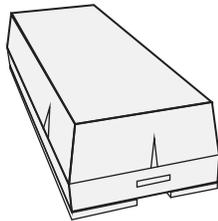
Use the following installation guidelines:

- Mount the sensor on the door frame and the magnet on the door. For double doors, mount the sensor on the least-used door and the magnet on the most-used door.

- Where possible, install sensors within 100 ft. (30 m) of the panel. While a transmitter may have an open-air range of 500 ft. (150 m) or more, the environment at the installation site may have a significant affect on operational range. Changing a sensor location may improve wireless communication.

- Line up the alignment mark on the magnet to one of the alignment marks on the sensor.

- Mount sensors at least 4.7 in. (12 cm) above the floor to avoid potential damage.

- Avoid mounting sensors in areas where they will be exposed to moisture or where the operating temperature range will exceed the specified range.

- If possible, mount directly to a stud. If a stud is not available, use plastic anchors.

- Avoid mounting the sensor in areas with a large quantity of metal or electrical wiring.

- Only one input can be used at any given time.

- You must mount the magnet within 3/8 in. (0.95 cm) of the sensor.

- Mount sensors with screws, not double-sided tape.

- Only install the EOL resistor when an external contact is used.

You will need the following tools and materials:

- Two #6 x 1.00 in. PPH (Phillips panhead) screws and two plastic anchors for mounting the sensor (included).

- Two #6 x 0.625 in. PPH screws for mounting the magnet (included).

- External contact 4.7 Kohm end-of-line (EOL) resistor (included).

- Phillips screwdriver

Caution: You must be free of all static electricity when handling electronic components. Touch a grounded, bare metal surface before touching a circuit board or wear a grounded wrist strap.
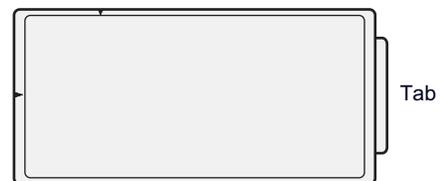
Programming

This section describes general guidelines for programming (learning) the sensor into panel memory. Refer to the specific panel or receiver documentation for complete programming details.
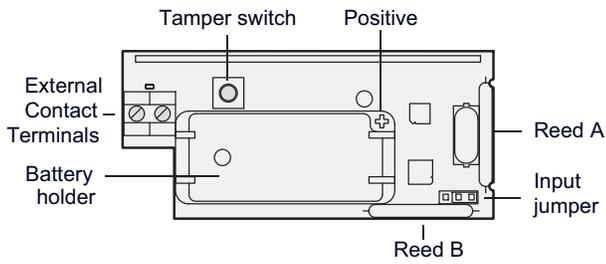
To program the sensor:

1. Remove the sensor cover by squeezing the cover ends firmly releasing the tab (Figure 2) from sensor base slot.

Figure 2. Sensor tab

Tab

2. If required, insert the battery into the battery holder, observing correct polarity (Figure 3).

Figure 3. Board components

3. Set the panel to program mode.

4. Proceed to the **Learn sensors** menu.

5. Set the external contact in the alarm condition (see External contact wiring).

6. Press and release the tamper switch (Figure 3) on the sensor until the panel responds.

7. Select the appropriate sensor group and number.

8. Exit program mode.

Input selection

Only one door/window input can be used at any given time. For example, if the external contact is used, internal reed switches (Reed A and Reed B in Figure 3) cannot be used.

Note: Power down the device before positioning the input selection.

See Figure 4 and position the input selection jumper to select:

Reed B. Left two pins covered (default).

Reed A. Right two pins covered.

External contact. Jumper removed.

**Figure 4 Input selection jumper**
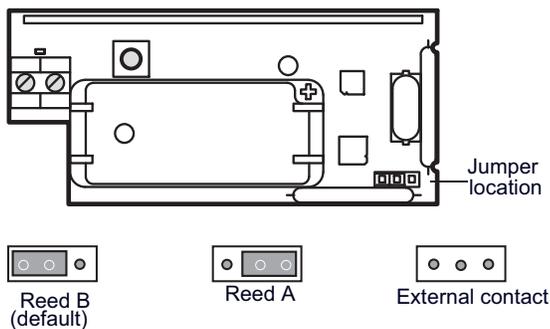
Verifying RF communication

Before mounting the sensor, verify the sensor mounting location provides good RF panel communication.

To verify:

1. Put the panel/receiver into sensor test mode.

2. Take the sensor to the mounting location.

3. Hold the magnet next to the alignment mark on the sensor (Figure 5) and then pull the magnet away from the sensor.

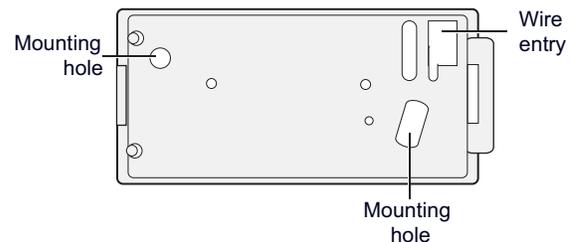**Figure 5. Alignment marks**
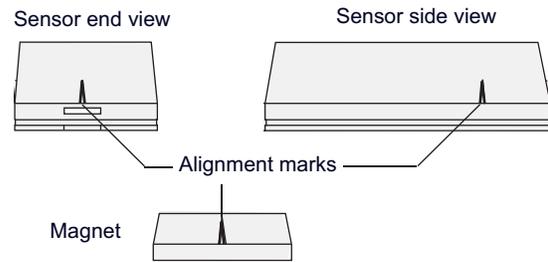
4. Listen for siren beeps to determine appropriate response (refer to the specific panel/receiver documentation).

5. Exit sensor test mode.

## Mounting

To mount the sensor:

1. Remove the sensor battery.

2. Remove the circuit board from the sensor base by pulling back on the plastic tab.

3. Mount the sensor base using the screws provided (Figure 6).

Figure 6. Mounting holes

4. Replace the circuit board.

5. Remove the magnet from its base.

6. Line up the magnet alignment mark with the sensor alignment mark, depending on the internal reed switch being used (Figure 5).

7. Mount the magnet base with the #6 x 0.625 in. PPH screws no more than 3/8 in. (0.95 cm) away from the sensor base (Figure 7). Replace the magnet cover.

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Figure 7. Mounted sensor
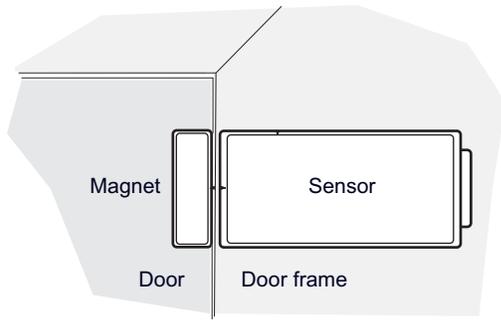
8. Insert the sensor battery observing correct polarity (Figure 3).

9. Attach the sensor cover to the base.

External contact wiring

Use the following specifications for the external contact:

• Maximum wire length: 26 ft. (8 m).

• Wire: Stranded, 22-gauge (0.7112 mm).

• Switches: Hermetically sealed external switches (sealed reed switches) that supply a minimum 250 ms open or close on alarm.

Note: Do not connect more than five external contacts to a door/window sensor.

You can wire the sensor terminal blocks with leads from an external contact (Figure 8). The door/window sensor provides alarm and tamper indication. Wire the external contact with one end-of-line (EOL) resistor in series with the external contact.

Caution: You must install the EOL resistor at the external detection device for proper supervision. For UL listed installations, the EOL resistor must be UL listed, manufactured by Edwards part number EOL-4k7L, and rated 4.7Kohm.

This gives the following readings for each configuration:

Normally closed	Normally open
Zero ohm/short = Tamper	Zero ohm/short = Tamper
4.7 Kohm = Normal	4.7 Kohm = Alarm
Open = Alarm	Open = Normal

Figure 8 shows external contact wiring (normally closed and normally open). For UL listed installations, use only UL listed accessories/contacts.

Figure 8. External contact wiring
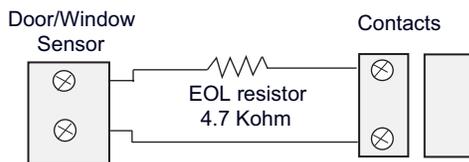
Sensor test

The sensor test verifies proper communication between the sensor and the panel/receiver. To test the sensor, refer to the specific panel/receiver documentation and do the following:

1. Put the panel/receiver into sensor test mode.

2. Open the door/window the sensor is protecting. The sensor transmits a signal.

3. Listen for siren beeps to determine the appropriate response.

4. Exit sensor test mode.

Battery replacement

Note: Battery replacement should be done by trained personnel only.

When the system indicates low sensor battery, replace it immediately. Use the recommended replacement batteries (see Specifications).

To replace the batteries:

1. Remove the sensor cover.

2. Remove the battery. Follow local laws for battery disposal.

3. Insert the replacement battery, observing correct polarity (Figure 3).

4. Perform a sensor test with the panel. See Sensor test.

Caution: The battery used in this device may present a fire or chemical burn hazard if improperly handled. Do not recharge, disassemble, heat above 100°C (212°F), or dispose of in fire. Use only batteries listed in the Specifications section. Use of another battery may present a risk of fire or explosion.

Troubleshooting

This information is provided to help you diagnose and solve various problems that may arise while configuring or using the door/window sensor.

Power up / battery

If the unit does not power up properly:

• Make sure the battery is fully seated within the battery bucket and the polarity is correct.

• Check the battery voltage (3.0 VDC nominal).

**RF communication**

If the control panel does not respond:

• Use the 60-401 RF Sniffer to make sure the transmitter is sending messages for activation.

• Move or rotate the sensor position.

Tamper (cover/external contact)

If a tamper condition does not restore:

- Make sure the cover tamper spring is properly installed. The tamper spring must be properly seated into the switch post groove.

Figure 9. Tamper spring

Switch post groove for proper tamper spring installation
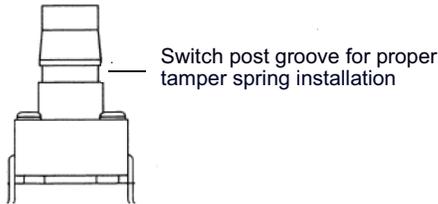
- Make sure the proper value end-of-line (EOL) resistor is installed (4700 ohms series resistor).

Figure 10. External contact wiring
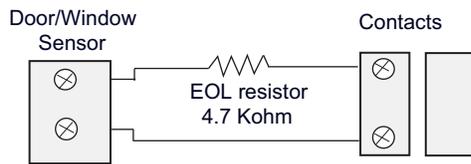
- Make sure the EOL resistor is properly seated in the terminal block.
- Make sure the terminal block contacts are securely fastened.
- Make sure the external contact wiring meets required specification.

Open (reed switch/external contact)

If an open condition does not restore:

- Make sure the input selection jumper is in the correct position.
- Make sure the arrow on the magnet and the guide line on the transmitter are aligned and within 3/8 in. (0.95 cm) of each other.
- Verify that the external contact is operating properly in all conditions of operation.

Specifications

Model number	Brown: 60-362N-11-319.5 (NX-651N) White: 60-362N-10-319.5 (NX-650N)
Frequency	319.5 MHz
Compatibility	Interlogix 319.5 MHz control panels/receivers
Battery type	3.0 V, 1300 mAh lithium
Required batteries	Duracell DL 123A, Energizer EL123, Sanyo CR123A
Estimated battery life	5 to 10 years at 20°C (68°F) depending on the number of activations per day
Magnet gap	3/8 in. (max.)
Supervisory interval	64 minutes
End-of-line resistor	4.7 Kohm
Typical RF output power	0.25mW EIRP
Operating temperature	32 to 120°F (0 to 49°C)
Storage temperature	-30 to 140°F (-34 to 60°C)
Relative humidity	0 to 85% noncondensing
Dimensions (LxWxD)	3.02 x 1.5 x 1.02in. (81 x 38 x 26 mm)
Weight	44 g
Listings	UL 1023, UL 634
Replacement plastics 600-1063-60-362N-10	D/W sensor 60-362N-10 - 319..5 replacement enclosure, 5 pack, white
600-1063-60-362N-11	D/W sensor 60-362N-11 - 319..5 replacement enclosure, 5 pack, brown

Regulatory information

Manufacturer	UTC Fire & Security Americas Corporation, Inc. 1275 Red Fox Rd., Arden Hills, MN 55112-6943, USA
FCC compliance	This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
	FCC ID: B4Z-914D-DWS IC: 1175C-914EDWS

Contact information

www.utcfireandsecurity.com or www.interlogix.com

For customer support, see www.interlogix.com/customer-support

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