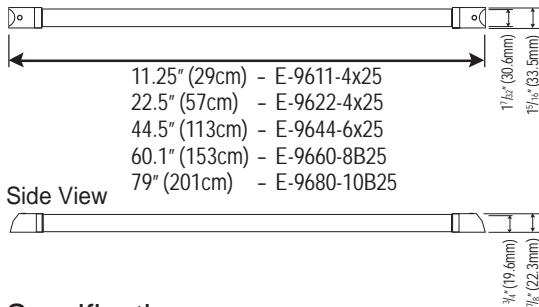


Dimensions:



Specifications:

	E-9611-2x25	E-9622-4x25	E-9644-6x25	E-9660-8B25	E-9680-10B25
Standby - 12-24VDC	80mA	89mA	94mA	102mA	110mA
Active - 12-24VDC	60mA	73mA	79mA	92mA	100mA
Dimensions	11 1/4" x 1 5/16" x 7/8"	22 1/2" x 1 5/16" x 7/8"	44 1/2" x 1 5/16" x 7/8"	60 1/8" x 1 5/16" x 7/8"	79" x 1 5/16" x 7/8"
Response time	0.5-20mS	0.5-32.5mS	0.5-48.5mS	0.5-60mS	0.5-70mS
Maximum range	Indoor: 50' (16m), outdoor: 25' (8m)				
Detection method	Simultaneous break of 2 adjacent beams or any single beam (programmable)				
Output	NO./NC. relay output, 1A @ 12 ~ 24VDC				
Operating temperature	-49 ~131 F (-45 ~55 C)				
Attenuation LED	(On): powered, aligned properly* (Flashing): beam is broken or unaligned* (Off): no power* *Depending upon how programmed				
Enclosure / Case	IP65 / Al alloy				
Mounting bracket	Included				

WARRANTY: This SECO-LARM product is warranted against defects in material and workmanship while used in normal service for a period of one (1) year from the date of sale to the original consumer customer. SECO-LARM's obligation is limited to the repair or replacement of any defective part if the unit is returned, transportation prepaid, to SECO-LARM. This Warranty is void if damage is caused by or attributed to acts of God, physical or electrical misuse or abuse, neglect, repair, or alteration, improper or abnormal usage, or faulty installation, or if for any other reason SECO-LARM determines that such equipment is not operating properly as a result of causes other than defects in material and workmanship. The sole obligation of SECO-LARM, and the purchaser's exclusive remedy, shall be limited to replacement or repair only, at SECO-LARM's option. In no event shall SECO-LARM be liable for any special, collateral, incidental, or consequential personal or property damages of any kind to the purchaser or anyone else.

NOTICE

The information and specifications printed in this manual are current at the time of publication. However, the SECO-LARM policy is one of continual development and improvement. For this reason, SECO-LARM reserves the right to change specifications without notice. SECO-LARM is also not responsible for misprints or typographical errors.

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CurtainSensor032309b.pmd

INSTALLATION MANUAL

ENFORCER®

Curtain/Barrier Sensors

- E-9680-10B25** -- 10-Beams, 80-Inches Long, Black
- E-9660-8B25** -- 8-Beams, 60-Inches Long, Black
- E-9644-6B25** -- 6-Beams, 44-Inches Long, Black*
- E-9622-4B25** -- 4-Beams, 22-Inches Long, Black*
- E-9611-2B25** -- 2-Beams, 11-Inches Long, Black*

*Available in White

Range: 50 ft. indoor, 25 ft. outdoor



(E-9622-4B25 shown)



SECO-LARM® U.S.A., INC.

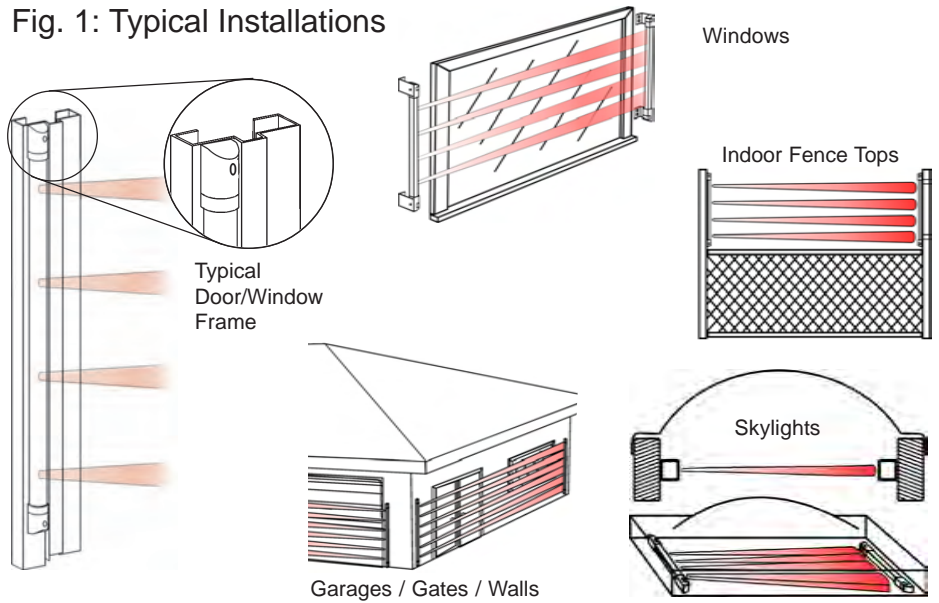
Table of Contents:

What's Included -----	2	Wiring the Transmitter - Fig. 8 -----	5
Typical Installations - Fig. 1 -----	2	Removing the Lens Caps -----	5
Features -----	3	Removing the Lens Caps - Fig. 9 -----	5
Choosing a Location -----	3	Programming - Table 2 -----	5
Beware Natural Interference - Fig. 2 -----	3	Connecting One or More Sensors - Fig. 10 -	6
Orientation to Sun - Fig. 3 -----	3	Selectable 3-Channel Beam Freq. - Fig. 11 -	6
Orientation - Fig. 4 -----	3	Connecting Multiple Curtain Sensors -----	7
Forming Barriers - Fig. 5 -----	4	Mount Transmitter & Receiver, & Test Sensor	7
Mounting the Curtain Sensor -----	4	Tamper Protection -----	7
Running the Wires -----	4	Troubleshooting - Table 3 -----	7
Connecting the Wires -----	4	Dimensions -----	8
Maximum Wire Length - Table 1 -----	4	Specifications -----	8
End Cap Cover - Fig. 6 -----	4	Warranty -----	8
Wiring the Receiver - Fig. 7 -----	4		

What's Included:



Fig. 1: Typical Installations



Connecting Multiple Curtain Sensors

Several units can be connected together in parallel to the same power supply output and alarm input of an alarm control panel, as shown in fig. 10.

Mount the Transmitter and Receiver, and Test the Sensor

1. Temporarily mount the transmitter and receiver to where they are expected to be mounted, so the mounting position can be changed if necessary.
2. Connect the transmitter and the receiver.
3. Once it is powered up, test the curtain sensor by breaking two adjacent beams or any single beam (depending on how programmed).

4. The curtain sensor also has red LEDs which can be used for testing purposes (see Table 2).
5. After the curtain sensor is tested and aligned, permanently mount it.
6. After it is mounted, test the curtain sensor again.

Tamper Protection

The receiver and the transmitter both have a tamper switch on one end to protect against someone attempting to open the unit. However, there is no separate tamper output to the alarm control panel. Instead, the alarm output is triggered if the cover of the end cap with the tamper button is removed, if the transmitter or receiver is moved out of alignment, or if power is disconnected.

Table 3: Troubleshooting

Problem	Possible cause	Possible solution
Transmitter LED never turns ON	Power not connected, or power wires cut	Test the power and ground wire with a voltage meter to ensure power is connected and is of the correct voltage.
	Transmitter jumper "JMP1" is programmed in the open position	Change the programming, or if no LED is desired, leave the jumper in the open position.
Receiver LED never turns ON	Power not connected, or power wires cut	Test the power and ground wire with a voltage meter to ensure power is connected and is of the correct voltage.
Receiver LED does not turn ON unless the sensor is triggered	Receiver jumper "JMP1" is programmed in the open position	Change the programming, unless having the LED not remain turned ON is better for that installation.
Receiver LED flashes all the time	Transmitter and receiver are out of alignment	Re-align the transmitter and receiver.
Does not trigger when beam is broken	Mounted too close to a shiny surface which causes the beam to reflect in multiple angles	Remount the curtain sensor, or repaint the surface to cut down on the reflection.
Receiver continuously triggers the alarm	Transmitter and receiver are out of alignment	Re-align the transmitter and receiver.
	The cover on the end cap of the receiver with the tamper button is not snapped in place, or the tamper button is not in the right position.	Check that the tamper button and the cover for the tamper button are mounted correctly.
False alarm	Interference from other sensors	Re-install so that one sensor does not interfere with another sensor.
	Wind blowing leaves into beam	Cut back leafy vegetation.
	Rain water running into the beam	Do not mount under the edge of the roof.
	Other interference outdoors	Mount under a roof or shelter.

Fig. 10: Connecting One or More Sensors

Please reference fig. 7 & 8 for terminal blocks.

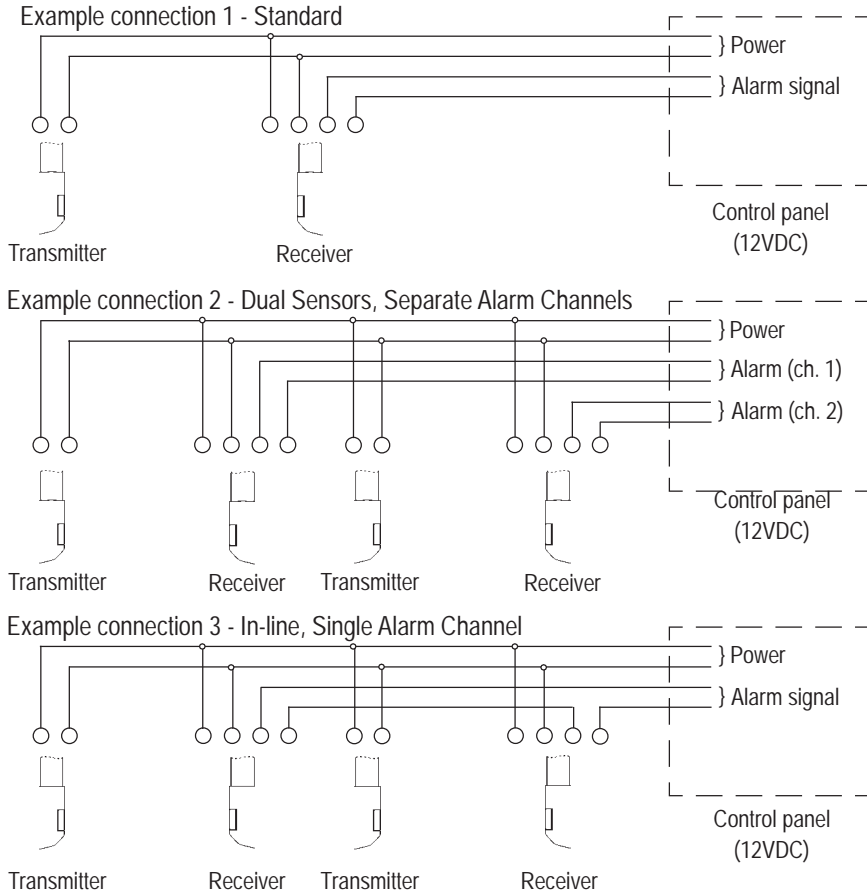
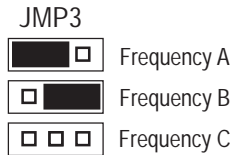


Fig. 11: Selectable 3-Channel Beam Frequency:

The sensor beam frequency can be set at different frequencies on-site to avoid interference from other photobeam sensors nearby. To select between three different beam frequencies, set the jumper of the transmitter side and receiver side. See fig. 11 for jumper position.



Note: If a different frequency is selected, power must be cycled on the transmitter and receiver after the new frequency is selected.

Note: Both the transmitter and the receiver of each pair must be set to matching frequencies to work together correctly.

Features:

- Multi-frequency to reduce interference between multiple units.
- Install on windows, doorways, skylights, fence tops, and any place where space is limited.
- Perfect for indoor and outdoor* perimeter security.
- Slim-line design (7/8" x 1 5/16").
- 2, 4, 6, 8, or 10 separate photoelectric beam sensors. Programmable trigger upon simultaneous breaking of any single or 2 adjacent beams.
- (11" sensor requires both beams to be broken.)
- Rugged aluminum construction.
- Anti-tamper circuit for use when power is cut or end cap is removed.
- No synchronizing wires required.
- N.O./N.C. relay output.
- LED alignment indicator.
- L-brackets and mounting hardware included.

*See "Choose a Location" below for details on mounting the sensor outdoors.

Important

Do not connect to power until the sensor is completely installed and the installation has been double-checked.

Choose a Location

When used outdoors, place the curtain sensor under a roof or shelter. This will reduce the chance of false alarms caused by rain or snow.

To prevent erratic operation and/or false alarms:

- Wind will not directly cause false alarms, but could cause leaves or similar objects to fly or wave into the beams. Do not mount near trees, bushes, or other leafy vegetation (see fig. 2).
- Do not mount where water which runs off the roof might break the beam (see fig. 2). In such a case, the sensor must be sheltered.
- Do not mount near reflective surfaces, as this could prevent the sensor from working properly.
- Do not mount where the transmitter or receiver could be splashed by water or mud.
- Do not mount where the unit could be suddenly

exposed to a bright light, such as a floodlight or a passing automobile's headlight.

- Do not let sunlight or any direct beam of light shine directly on curtain beam sensor. If unavoidable, mount so the transmitter, not the receiver, faces the sun (see fig. 3).
- Do not mount where animals or other objects could accidentally break the beams.

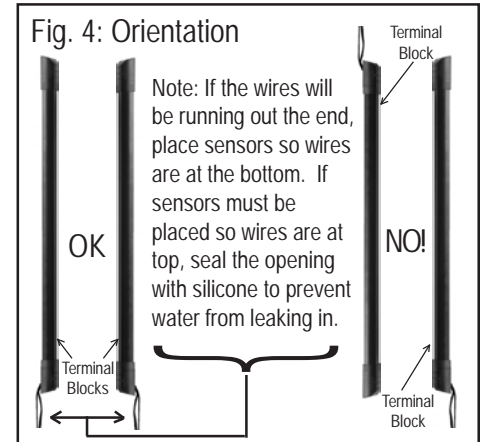
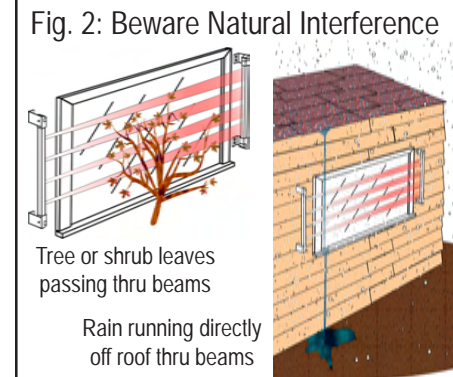
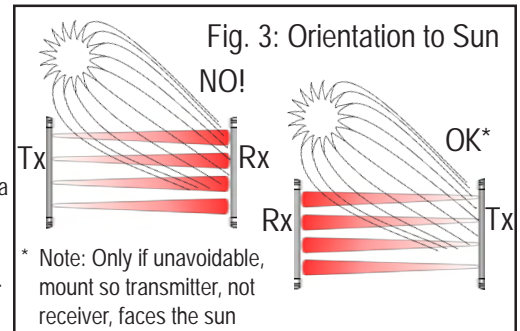
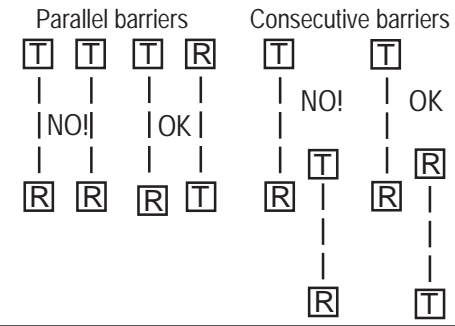


Fig. 5: Forming Barriers



wires of the transmitter to the receiver's power wires. In this case, run six wires to the receiver: two wires to the power source, two for the alarm signal and two to the transmitter.

NOTE: If burying the wires is required, make sure to run them through electrical conduit. Shielded cable is strongly suggested.

NOTE: If the wires are run along the wall, the use of an armored cable is strongly suggested. (See "Mounting the Curtain Sensor," point 2.)

Connecting the Wires

1. Receiver:
 - a. Pull the end cap with the red wire leads off the receiver, and slide the printed circuit board out far enough to expose the wiring block.
 - b. Run the four wires (or six wires, if connecting the transmitter's power wires to the receiver) through one or more of the three round

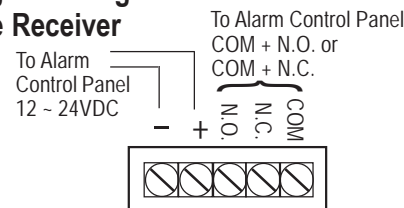
Table 1: Maximum Wire Length

Voltage	Gauge	Max. length
12VDC	AWG 22	1800 feet (550 meters)
12VDC	AWG 20	2600 feet (800 meters)
24VDC	AWG 22	2600 feet (800 meters)
24VDC	AWG 20	3900 feet (1200 meters)

Fig. 6: End Cap Cover



Fig. 7: Wiring the Receiver



Mounting the Curtain Sensor

1. Find a suitable location (see fig. 1):
 - a. The transmitter and receiver can be mounted at any angle as long as they are parallel to each other and directly facing each other, and as long as the wires come out of the same ends of both units (see fig. 4).
 - b. If using multiple curtain sensors, be sure to set each for a different frequency (see Selectable 3-Channel Beam Frequency, Pg. 6).
 - c. The transmitter and receiver must not be separated by more than 50 ft. indoors, 25 ft. outdoors.
2. Mount the transmitter and the receiver in such a way that surface-mounted wires do not come out from above the units. This is to prevent water from entering via the wire holes. If this is unavoidable, use silicone to completely cover the area where the wires come out the holes to prevent water from entering.
3. Once a suitable mounting location has been found, remove the covers of the end caps (see fig. 6), and pull the tamper buttons out of the end caps (one per transmitter or receiver) and locate the mounting holes. Using these holes as a template, mark their location on the wall with a pencil.
4. Connect the wires (see figs. 7 and 8) before permanently mounting the units to the wall.

Running the Wires

Run four wires (2 x power and 2 x alarm signal) from the alarm control panel to the receiver of the curtain sensor. Shielded cable is strongly suggested. See Table 1 for maximum wire length. Two power wires must also be run to the transmitter.

It may be more convenient to connect the two power

knockout holes in the end cap near where the tamper button wires run, and connect them to the wiring block (see figs. 7 and 8).

- c. Program the receiver (see Table 2).
 - d. Carefully push the printed circuit board back into the case and reinsert the end cap.
 - e. Reinsert the cap over the tamper button and small tamper cap.
2. Transmitter:
 - a. Pull the end cap with the red wire leads off the transmitter, and slide the printed circuit board out far enough to expose the wiring block.
 - b. Run the two power wires through one or more of the three round knockout holes in the end cap near where the tamper button wires run, and connect them to the wiring block (see fig. 8).
 - c. Program the transmitter (see Table 2).
 - d. Carefully push the printed circuit board back into the case and reinsert the end cap.
 - e. Reinsert the cap over the tamper button and small tamper cap.

- Note:** Screw the wires tightly to avoid slipping off the terminals, but not so tight that they break.
- Note:** Unused terminal screws should be tightened.
- Note:** Grounding may be necessary, depending on the location.

Removing the Lens Caps (for outdoor use only)

For best results when the curtain sensor is mounted outdoors, remove the transmitter lens caps. (Important: DO NOT remove the receiver lens caps!)

To remove the lens caps (see fig. 9):

1. Slide out the circuit board of the transmitter (see the "Connecting the Wires" section for the procedure).
2. Carefully pull the lens caps off of all the lenses (4 for the E-9611-2x25, 8 for the E-9622-4x25, 12 for the E-9644-6x25, 16 for the E-9660-8B25, 20 for the E-9680-10B25).
3. Slide back in the printed circuit board (see the "Connecting the Wires" section for the procedure).

Fig. 8: Wiring the Transmitter

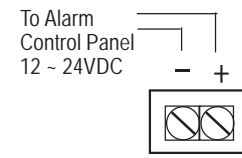


Fig. 9: Removing the Lens Caps

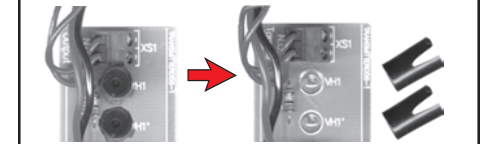


Table 2: Transmitter and Receiver Programming

	Receiver		Transmitter	
LED operation Jumper labeled: "JMP1"	1 C 2 <ul style="list-style-type: none"> • LED ON if power is present and beams are aligned. • LED flashes when beams are broken. 	1 C 2 <ul style="list-style-type: none"> • LED ON if sensor is triggered. • LED flashes when beams are broken. 	LED ON LED ON if power is present.	LED OFF LED OFF at all times.
Number of beams to interrupt to trigger receiver. Jumper labeled: "JMP2."	1 Beam Receiver triggers if any angle beam is interrupted.	2 Beams Receiver triggers only if 2 adjacent beams interrupted at same time.		