

# Installation Instructions

## IntelliFlex™ RF Remote Control by Draper

- ① The Radio Frequency receiver must be connected to an Eye Jack on an SC1 or splitter.
- ② Mount receiver with the antenna pointing up.
- ③ Do not mount receiver on or near a metal surface.
- ④ Each RF receiver must be “trained” to “hear” each transmitter before it will work.
- ⑤ Each receiver can “learn” to “hear” up to five different transmitters.

### Installing the Receiver

Connect the receiver to the Eye Jack on an SC1 or splitter (see Fig. 1). If the eye connects to a splitter, then the Main Jack of the Splitter must connect to the Eye Jack of an SC1.

Mount the receiver with the antenna pointing up. For longer range reception, detach the provided antenna and attach the optional Long Range Antenna—Part # C267.001 (see Fig. 2).

**Please Note:** For information on installing SC1 or other “BUS” command controls, please see the instruction sheet for the appropriate item.

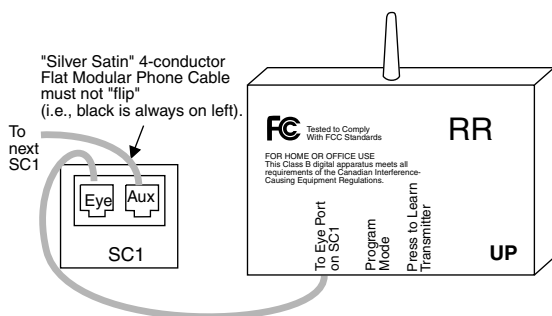


Figure 1

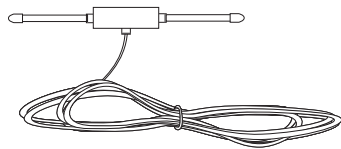


Figure 2

### Training Your RF Receiver

The receiver can “learn” up to 5 different transmitters. It ships from the factory with NO transmitters learned: you must train it in the field to work with your specific transmitters. If the receiver is new with no transmitters learned, the LED will automatically come on when plugged into an “Eye” port.

- ① Press and release the “Learn Transmitter” button on the receiver. The red LED will come on if 5 transmitters have not already been learned. The unit is now ready to learn another radio transmitter.
- ② Press any button on the radio transmitter. The LED on the receiver will go out. This transmitter is added to the list of known transmitters. The receiver returns to normal operation after it has learned a transmitter. If this transmitter is already known to the receiver, the LED will remain lit because the transmitter does not need to be learned again.

#### If no command is received within 10 seconds:

- ① The red LED will flash off, then on, and then go out. No new transmitters were learned.
- ② If no transmitters are known, the LED will turn back on immediately.

#### If the red LED is on and the learn button is pressed and released:

- ① The red LED will turn off with no changes to the learned list.
- ② If no transmitters are known, the LED will turn back on immediately.

#### If no transmitters are known (factory default):

- ① The red LED will turn on as soon as the unit is powered.
- ② The red LED will flash every 10 seconds until a transmitter is learned.
- ③ Pressing the learn button has no meaning while in this mode (the LED will turn off while the button is pushed).

#### To clear all known transmitters:

- ① Press and hold the learn button for 5 seconds. The red LED will blink on and remain on, until a new transmitter is learned.
- ② Release the button, the red LED will come on. The unit is ready to learn the 1st transmitter.

**Please Note:** If you press and release the learn button and the red LED does not come on, the list may be “full” and no more transmitters can be learned. The unit may also not be powered correctly—to fix this, clear receiver and start over.

#### The receiver will not pass commands to the SC1:

- ① While in the learn mode (the red LED is on).
- ② While the button is pressed.

**Please Note:** The stop command will be sent to the SC1 system if the transmitter’s STOP button is still pressed when the receiver exits from learn mode after learning the transmitter.

### Installing the RF Keypad or Wall Switch

If using an RF Wall Mounted Keypad or RF Wall Switch, first test for reception and successful operation of the switch in the desired location. Then, cut hole in appropriate location, attach transmitter module to switch or keypad using modular cable, and attach switch to wall.

Please see Fig. 3 (below), and information provided with the specific switch or keypad for more information. Three AAA batteries required.

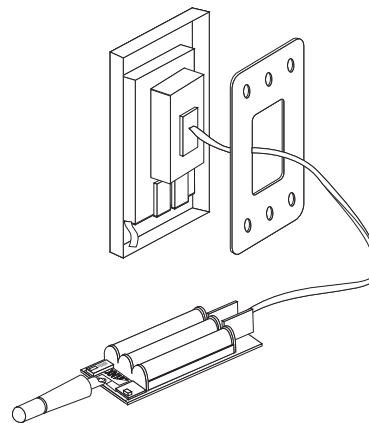
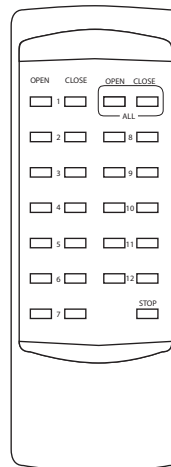


Figure 3

### RF Handheld Transmitters



Please see page 2 for information on radio frequencies and codes.

**Please Note:**  
For button press sequences to manually program your control, see “SC1 Quick Reference Guide” at [www.draperinc.com](http://www.draperinc.com)

# DRAPER

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If you encounter any difficulties installing/wiring your IntelliFlex RF control, call your dealer or Draper, Inc., Spiceland, Ind., (765) 987-7999; or fax (765) 987-7142.

**A Note on Interference**

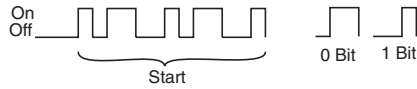
This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate 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:

- ① Reorient or relocate the receiving antenna.
- ② Increase the separation between the equipment and receiver.
- ③ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- ④ Consult the dealer or an experienced radio/TV technician for help.

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 manufacturer could void the user's authority to operate this equipment.

**Radio Codes**

Radio Frequency is 418 MHz ± 75 KHz, on-off keying.



All times in the following description are nominal with a tolerance of ± 5%, however, all times must change proportionally.

**A packet of data consists of:**

A start sequence, 20 address bits, and 16 data bits. The packet is similar to that used by the Holtek brand of data encoder chips.

**The Start sequence consists of:**

471 µs on, 471 µs off, 973 µs on, 973µs off, 471 µs on, 471 µs off, 973 µs on, 973 µs off, 471 µs on.

**Address & data bits consist of:**

A "0 bit" being defined as 471 µs off, 973 µs on,

A "1 bit" being defined as 973 µs off, 471 µs on.

The start sequence plus the address and data bits make a packet 57 msec long. There must then be a pause of 17 msec before the packet is transmitted again.

The address is encoded in 20 bits (A0 = least significant bit, A8 = most significant bit of 512 possible addresses):

A0 0 A1 0 A2 0 A3 0 A4 A5 A6 A7 A8 1 1 1 1 1 1

The button data is encoded in 16 bits (D0 = least significant bit, D7 = most significant bit of 256 possible numbers):

1 D0 1 D1 1 D2 1 D3 1 D4 1 D5 1 D6 1 D7

The button data is converted into a command compatible with the "BUS" connecting receiver controls together.

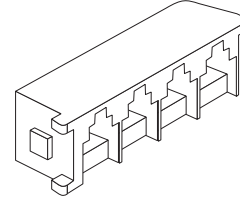
**The complete table of codes (in hex) is:**

OPEN1	42	OPEN10	5a	OPEN19	14
CLOSE1	22	CLOSE10	3a	CLOSE19	0c
OPEN2	62	OPEN11	02	OPEN20	54
CLOSE2	12	CLOSE11	72	CLOSE20	34
OPEN3	32	OPEN12	6a	OPEN21	4c
CLOSE3	0a	CLOSE12	66	CLOSE21	2c
OPEN4	4a	OPEN13	40	OPEN22	58
CLOSE4	2a	CLOSE13	20	CLOSE22	38
OPEN5	1a	OPEN14	60	OPEN23	1c
CLOSE5	06	CLOSE14	10	CLOSE23	70
OPEN6	46	OPEN15	30	OPEN24	68
CLOSE6	26	CLOSE15	08	CLOSE24	64
OPEN7	16	OPEN16	48		
CLOSE7	0e	CLOSE16	28	OPEN ALL	76
OPEN8	56	OPEN17	18	CLOSE ALL	6e
CLOSE8	36	CLOSE17	04	OPEN ALL (13-24)*	74
OPEN9	4e	OPEN18	44	CLOSE ALL (13-24)*	6c
CLOSE9	2e	CLOSE18	24	STOP	52

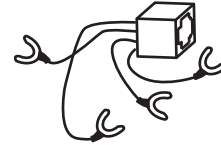
\*These commands correspond to channel 25 on the R2D7 RS232 Serial Translator.

**Optional Cable Accessories**

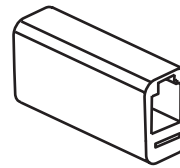
**Splitter**



**Modular Jack Adapter**



**Modular Cable Coupler**



**A Note on Wiring**

The RF Receiver must be plugged in to an open "Eye" jack (see diagram on page 1). All input devices connect using **electrically straight** 4-conductor modular cable.

**Please note:** If you use standard telephone cable, you must first remove one connector, turn it over and re-attach, to ensure that the cable is electrically straight (see diagram below).

