

Installation Instructions

IntelliFlex™ Wall Mountable Keypad by Draper

- ① Keypad must be connected to an "Eye" Jack on an SC1 or splitter.
- ② If using an RF Keypad, RF receiver must be "trained" to "hear" Keypad before it will work.
- ③ Keypad can be used to program shade controls. Programming codes available at www.draperinc.com.

Installing the Hardwired Keypad

If using a hardwired Wall Mounted Keypad, cut hole in appropriate location, plug modular cable into keypad, and attach switch to wall. Plug other end of modular cable into SC1 or other control device.

Please Note: Keypad must plug into the Eye Jack on an SC1 or splitter (see Fig. 1). If the eye connects to a splitter, then the Main jack next to it must connect to the Eye Jack on an SC1.

Please Note: For information on installing SC1 or other "Bus" command controls, please see the instruction sheet for the appropriate item.

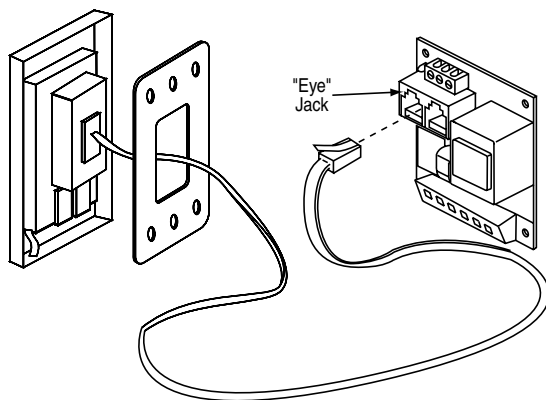


Figure 1

Installing the RF Keypad

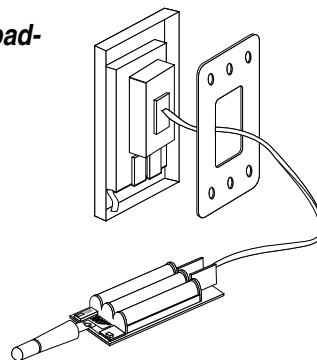
If using an RF Wall Mounted Keypad or RF Wall Switch, first test for reception and successful operation of the switch in the desired location, then cut hole in appropriate location, attach transmitter module to switch or keypad using modular cable, and attach switch to wall.

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

Please see Fig. 2, and information provided with the RF Receiver for more information. Three AAA batteries required.

RF Keypad-RFTM



RF Receiver-SC1

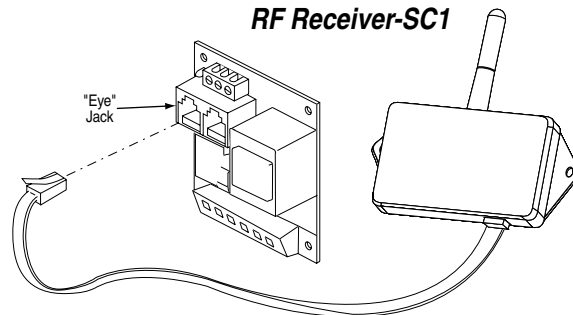
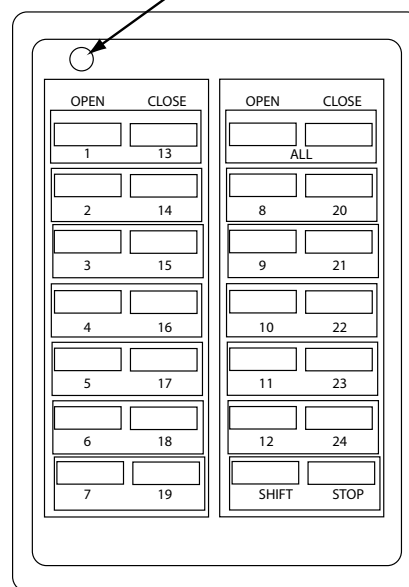


Figure 2

Pressing "Stop + 7 + 7" puts the keypad into program mode: the red LED will flash as long as it is in this mode.

LED Indicator



Please Note:

Draper recommends using a PDA or PC to program your IntelliFlex controls. Software is available at www.draperinc.com.

For button press sequences to manually program, see "SC1 Quick Reference Guide" at www.draperinc.com

Please see page 2 for information on radio frequencies and codes for RF Keypad, and IR codes for all Keypads.

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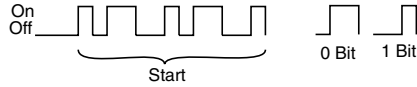
A Note on Interference (RF Keypads Only)

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 or the transmitter antenna if RF Transmitter is being used.
 - ② Decrease 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 for RF Keypad

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 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 RF 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.

IR Codes for Wall Mountable Keypads

IR wavelength is 950 nm. Light is modulated at 38 KHz with 1/3 duty cycle.

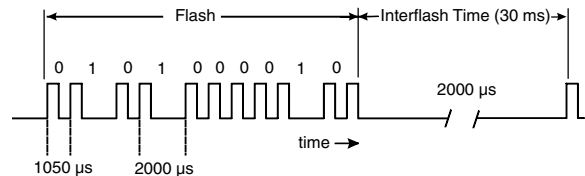
An on pulse must be at least 158 µseconds (µs) long (6 cycles) and should not be longer than 448 µs (17 cycles).

From the start of a pulse till the start of the next pulse is 1050 µs for a "0 bit", and 2000 µs for a "1 bit".

A Flash is 11 pulses (10 bits), minimum time between flashes (interflash time) is 11 mseconds (ms), when using the small eye the minimum interflash time is 25 ms, 30 ms is recommended. There is NO preamble.

Channel 1 OPEN sequence is 0101000010. The sequence always starts with 01, so for simplicity strip that off, and we get 0100 0010 = hex 42 (see figure below).

Please Note: low = off, high = 38 KHz signal on.



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

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

Pressing "Stop + 7 + 7" puts the keypad into program mode: the red LED will flash as long as it is in this mode.

Please Note:

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