

# ***PRO EX 2.0***

**MODULAR CONTROLLER REMOTE CONTROL**

*Residential/Light Commercial  
Remote Control System*



**K**  
**RAIN®**

**OWNER'S MANUAL AND INSTALLATION INSTRUCTIONS**



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## INTRODUCTION

### ***You asked for help on the job site so here I am!***

You can now start and stop manual water from anywhere on the job with the new Pro EX 2.0 Remote System.\*

Season start ups, routine maintenance, repairs, winterization can all be performed at the touch of a button. The large easy to read LCD display and touch button design make this remote easy to use.



*\*Remote and Controller must have matching Pin Codes and be within signal range of each other.*

### **Pro EX 2.0 Remote**

- Status indicators including Battery and Signal
- Auto power-off (battery saving feature)
- Custom programmable 4 digit passcode
- Activate full program
- Activate single station/zone
- Advance to next station/zone
- Skip over unwanted station/zone
- Increase/decrease active station/zone run time
- Stop active station/zone
- User replaceable AAA batteries
- Removable belt clip
- Touch operation technology
- Operational range up to 1,000 feet
- Optional extended range kit
- Large easy to see LCD display



## SYSTEM COMPONENTS

### REMOTE (Transmitter)

**ANTENNA**  
Transmits and receives signals.

**LCD DISPLAY**

**ACTIVATION BUTTON**  
Used to execute commands

**CONTROL BUTTONS**  
Used to increase or decrease station run times and number

Increase Run Times

Decrease Station Number

Increase Station Number

Decrease Run Times

**BELT CLIP**  
Helpful transportation Aid

**BATTERY DOOR**  
Access to four AAA Alkaline batteries



## SYSTEM COMPONENTS

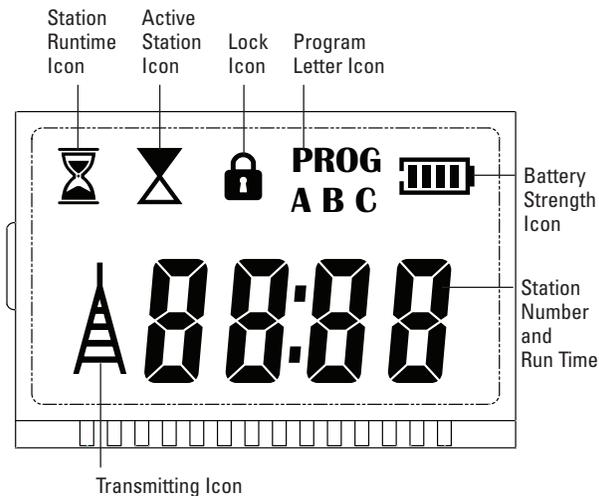
### RF MODULE (Receiver)

The RF Module was designed for installation within the Pro EX 2.0 controller cabinet therefore providing permanent placement and maximum protection. Many factors influence operating range. Listed below are options to consider to assure you experience the maximum range possible.

1. Do not install Pro EX 2.0 near large sources of metal such as power meters, water pipes, and aluminum siding.
2. Do not install Pro EX 2.0 in a basement or underground location. The higher the location the better chance of strong reception.
3. To receive maximum range in all directions, the antenna should be pointed straight up. (vertical)
4. When operating the the remote, hold as vertical as possible and face the direction of the receiver.



### LCD DISPLAY



## NO WIRING INSTALLATION OF THE RF MODULE

The Pro EX 2.0 Remote Control System was designed to work right out of the box. Its “plug and play” installation eliminates the need for complicated wiring and installation. You’ll find no installation templates, lengthy tool list or the need to drill any through-holes in any walls.

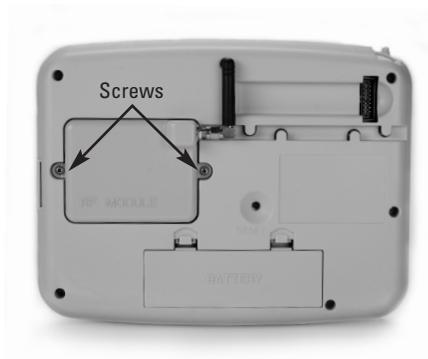
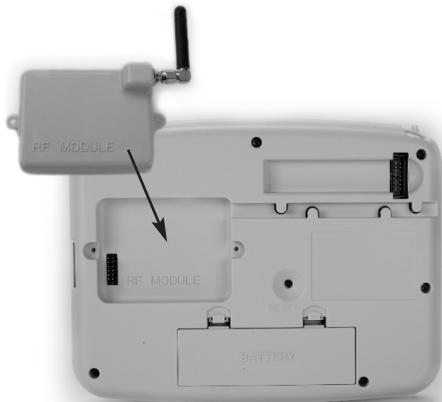
The RF Module receives and transmits communication between the controller and remote. It has no wires to connect and no batteries to replace because it is powered by the controller once installed.

Installation is a simple three step process which only requires a screwdriver.

**STEP #1** Remove the protective pin connector cover located at the rear of the controller face.

**STEP #2** With the antenna pointing upward and to the right, gently press the RF Module into the recess.

**STEP #3** Finger tighten only using a Philips head screwdriver the two mounting screws.



## INSTALLING REMOTE BATTERIES

Your remote requires four AAA alkaline batteries.

To install the batteries, remove the Belt Clip by gently pulling either side freeing it from the remote.

Next, slide the battery cover down and lift to expose the battery compartment.

Please note when installing/changing batteries the proper orientation.

After battery installation, replace the battery cover and slide it up to lock it back into position.

To reinstall the Belt Clip, place one side into position then press the other side until it snaps into its locking Position.

**⚠ WARNING:** Risk of explosion.  
Potential risk if battery is replaced with an incorrect type. Battery must be removed and disposed of properly.



## POWERING UP REMOTE

**Turn on the Remote by touching and holding any button for two seconds.** While the remote powers up, it will automatically attempt to match pin codes with any and all controllers within signal range.



### **NOTES:**

- 1.) *The default pin code is 1111. Any and all controllers within signal range with matching pin codes will accept remote commands.*
- 2.) *After installation we recommend changing your code to avoid interference with other like controllers in the area. See page 8.*

## POWERING DOWN REMOTE

The Remote has an auto shut off feature which helps extend the life of the batteries. The auto shut off or power saving feature will automatically power down the remote after one minute from the last touch of any button.



## PIN CODE

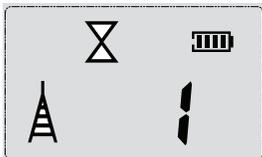
### DIFFERENT PIN CODE

After powering up the remote if no controllers with matching pins codes are found within the signal range the stored remote pin code will be displayed.



### SAME PIN CODE

After powering up the remote, if a controller(s) with matching pins code is found within the signal range the remote will display the first station number with a run time.



**NOTE:** Only stations with a programmed run time in the controller will be displayed and operational from the remote.

### CHANGING THE PIN CODE ON THE REMOTE

The Pin Code default setting (out of the box) is factory set at 1111 but can be changed to any combination between 0001 – 9999.

This allows a single remote the ability to operate many controllers by simply matching the controllers pin code.

To change the Pin Code:

- Power up the remote

**OR**

- Press the LEFT and RIGHT arrow buttons simultaneously and hold for two seconds. The pin code will begin to flash.
1. Press the UP arrow button to increase the flashing number value and the DOWN arrow button to decrease the flashing number value.

2. Press the RIGHT arrow button to advance to the next pin number or the LEFT arrow button.

3. Once the desired pin code has been entered, press the ON/OFF SELECT button.



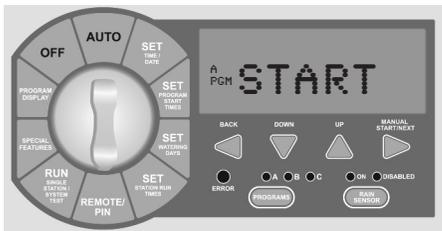
## PIN CODE

### CHANGING THE PIN CODE ON THE CONTROLLER

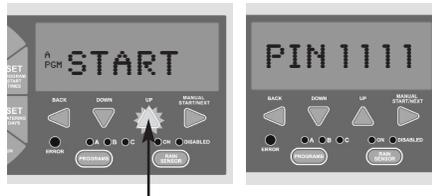
#### NOTES:

- 1.) To use this feature the controller must be connected to AC power. Battery operation will not allow the user to access this screen.
- 2.) The pin codes of the Controller and Remote must match in order for the units to pair (communicate).
- 3.) Both units have a factory installed default pin code of "1111". We recommend changing the pin code to avoid interference with other like controllers in the vicinity.

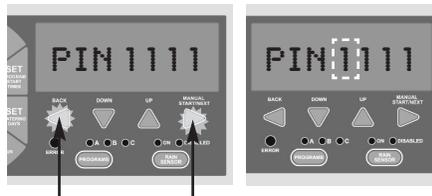
1. Turn the controller dial to the Remote/Pin location.



2. Press the UP  button one time, and the controller displays the saved pin code.



3. Press the BACK  and MANUAL START/NEXT  buttons simultaneously. One of the the digits will flash indicating that it is ready to be changed.



4. Press either the UP ▲ or DOWN ▼ button to change the flashing digit.



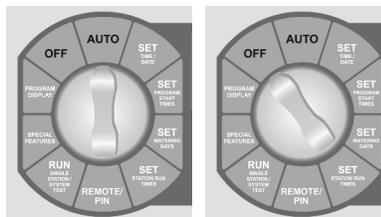
Pressing the BACK ◀ or MANUAL START/NEXT ▶ button will switch to the next digit.



5. Once the desired pin code has been entered the user can confirm the new pin code by pressing the BACK ◀ and MANUAL START/NEXT ▶ buttons simultaneously. The non-flashing new pin code will be displayed.



6. Turn the controller dial back to either AUTO or OFF. Remote will operate the controller in these positions only.



## STATION OPERATIONS

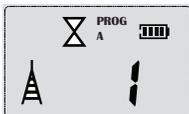
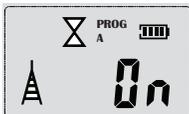
### RUN STATION

Once the remote has established communication with a controller within signal range and a matching Pin Code, the remote will display the first available station.

**NOTE:** Only stations with a programmed run time on the controller will be displayed and available.

To begin station operation, use the ◀ and ▶ buttons to display the station you would like to start. Touch the ON/OFF Select button (ON/OFF SELECT) anytime to turn on selected station.

The remote will first briefly display "ON" followed by the Station number and remaining Station Run Time. The display will alternate between the station number and remaining run time.



### ADJUSTING STATION RUN TIMES

Your remote can adjust station run times while in operation without changing the programmed run time in the controller. Run Times can be increased to run longer or decreased if shorter run time is needed.

To adjust station run times during station operation use the up ▲ and ▼ down buttons. Confirm change by pressing the Select button. Any change to the run time will become the new run time default for all remaining stations.

### CHANGING STATIONS

Your remote can change stations during operation with a single touch. You can quickly advance to the next station during operation or go back to a previous station with a single touch.

To advance to the next station touch the forward ▶ button. To go back to a previous station touch the back ◀ button.

#### **NOTE:**

The Pro EX Remote can:

- Activate any station on the controller with a programmed run time.
- Activate any station on the controller whether the controller dial is in the "AUTO" or "OFF" position.

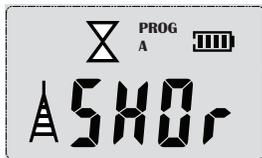
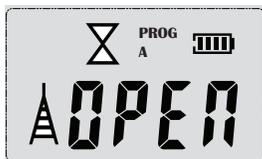


## PROGRAM OPERATIONS

### OPEN AND SHORT DETECTION

One of the many features found in the Pro EX 2.0 Controller is its advanced electrical diagnostics. The Pro EX 2.0 looks at each and every station at start up for any signs of trouble which could prevent station operation or cause harm to anyone or to the systems components.

Two commonly found electrical issues are an "OPEN" or "SHORTED" circuit. When either of these issues are found at station activation, the controller and remote will automatically advance to the next station which has a programmed run time.



### STOP A STATION

To stop a station during operation, just touch the ON/OFF Select Button . The remote will briefly display "OFF" and return back to the first available station with a programmed run time.

### START A PROGRAM

The remote can also start and run a complete program. To start a program, use the back  and forward  buttons until the display reads "ALL." Touch the ON/OFF SELECT  to start the program.



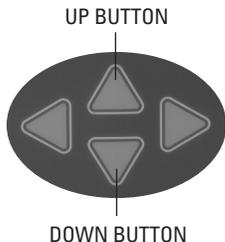
**NOTE:** Only the program currently selected on the controller can be started.



## PROGRAM OPERATIONS

### SWITCHING BETWEEN PROGRAMS A, B AND C

Press the remote UP ▲ and ▼ DOWN buttons simultaneously for more than 2 seconds and the controller will switch from one program to another.



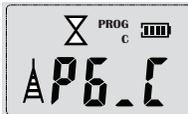
Once the program is switched, the LCD will display for a second the program the user is on.



PROGRAM A



PROGRAM B



PROGRAM C

### NOTES:

- 1.) The remote only allows the user to go through zones within each program that have set run times established. Only one program can be selected at the time. If the user has different zones set on different programs, the user will need to switch from one program to the other in order to operate the zones.
- 2.) If a program (Either A, B or C ) does not have zones set with a run time, the remote LCD will display "OFF" for that program alerting you that no zones are set to run for that program.



## SPECIFICATIONS

### OPERATING SPECIFICATIONS

- Pin code range: 0001-9999
- Maximum number of stations: 16
- Run times: 1 second – 99 minutes
- Range: short range antenna, line of sight up to 500'
- Range: long range antenna: line of sight up to 1000'

### ELECTRICAL SPECIFICATIONS

- Power Supply Remote:  
(4) AAA Alkaline Batteries
- Power Supply RF Module: 24 VAC, Controller
- Remote System frequency: 433 MHZ

### DEFAULT SETTINGS

- Pin Code: 1111
- Number of stations: Up to 16  
(all stations with a programmed run time)
- Station Run Time: 2 minutes

### DIMENSIONS

Remote: w/Belt Clip

- Height: 6.4"
- Width: 2.7"
- Depth: 1.4"

RF Module: w/o antenna

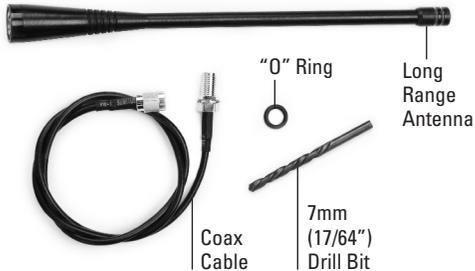
- Height: 2.5"
- Width: 3.8"
- Depth: 1.0"



## OPTIONAL LONG RANGE ANTENNA

### OPTIONAL LONG RANGE ANTENNA COMPONENTS

Used to increase range of operation



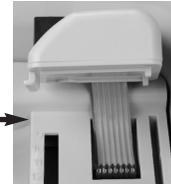
## INSTALLATION OF OPTIONAL LONG RANGE ANTENNA

- STEP #1** Remove all expansion modules with a Phillips head screw driver.
- STEP #2** Carefully disconnect the ribbon cable from the main enclosure.
- STEP #3** The main enclosure should be clear of all expansion modules before drilling.

**STEP #1**



**STEP #2**



**STEP #3**



- STEP #4** Using the 7mm drill bit drill a hole on the top of the housing in the area indicated.

**STEP #4**

before drilling



after drilling



## INSTALLATION OF OPTIONAL LONG RANGE ANTENNA

**STEP #5** Remove the plastic caps from the RF Module cavity.

**STEP #6** Place the RF Module in the cavity, press down gently to connect. Using a Phillips head screw driver, tighten the two screws to secure module.

**STEP #5**



**STEP #6**



**STEP #7** Connect the female end (A) of the coax cable into the male connector (B) of the RF Module.

**STEP #8** Align the coax cable into the channel.

**STEP #7**



**STEP #8**



**STEP #9** Introduce the male end connector (C) of the coax cable into the previously drilled hole on the top of the housing.

**STEP #9**



**STEP #10** Place the "O" ring over the protruding connector.

**STEP #10**



**STEP #11** Hand tighten the Long Range Antenna onto the male connector.

**STEP #12** Reinstall the expansion module(s).



## TROUBLESHOOTING

<b>PROBLEM</b>	<b>CAUSES</b>	<b>SOLUTIONS</b>
<b>Remote display is blank</b>	Remote is off	Press and hold any button for three seconds
	Batteries are dead	Replace with fresh batteries
	Battery orientation incorrect	Correct battery orientation +/-
<b>LCD displays four digit pin code after activation</b>	Remote pin code doesn't match any controller within range of remote	Enter matching controller pin code
<b>LCD displays "ERR"</b>	No power to controller	Check controller power supply
	No RF Module	Install controller RF Module
	Out of range, or too much interference	Get closer to the controller
<b>Station number doesn't appear</b>	Transmitting error	Move closer to the controller
	No station run time in controller	Add station run time in controller
<b>Can't run correct program "ALL"</b>	Controller program switch Incorrect program selected	Press up ▲ / down ▼ arrow buttons simultaneously until desired program has been selected.



**NOTES**



## WARRANTY

The manufacturer guarantees to the original purchaser that any product supplied by the manufacturer will be free from defects in material and workmanship for a period of two years from the date of purchase. Any product found to have defects in material or workmanship within the warranty period shall be repaired or replaced by the manufacturer.

The manufacturer does not guarantee the use for a particular purpose of its products and does not make any guarantee, expressed or implied, other than the warranty contained herein. The manufacturer shall not be liable for any loss from use of the product or incidental or consequential damages to other parts of any installation of which this product is part.

The warranty shall not apply to any equipment which is found to have been improperly installed, set up or used in any way not in accordance with the instructions supplied with this equipment, or to have been modified, repaired or altered in any way without the expressed consent of the manufacturer. This warranty shall not apply to any batteries or accessories used in the equipment covered under this warranty or to any damage which may be caused by such batteries.

If the controller develops a fault, the product or main panel must be returned in adequate packing with:

1. a copy of your original invoice;
2. a description of any fault; and
3. contact name and information.

It is the purchasers responsibility to return the controller to the manufacture or their agent by prepaid freight.

**KRAIN** Manufacturing Corporation

Hereby, K-Rain Manufacturing Corporation declares that this Pro EX 2.0 RF Module/Remote is in compliance with the essential requirements and other provisions of Directive 1999/5/EC.



Certificate of Conformity  
to European Directives



**K-Rain Manufacturing Corp.**

ATTN: WARRANTY

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