The Baseline Commander

Irrigation Remote Control
Operation and Installation Manual

BASE·LINE™
IRRIGATION SOLUTIONS

Table of Contents

INTRODUCTION

Congratulations! You have just purchased the most advanced irrigation remote control available - the **Baseline Commander.** We welcome you to the growing family of satisfied **Baseline** Irrigation product users who appreciate the importance of high standards, product quality and timely service. All of our remote control products do not require site surveys, base stations or FCC licensing.

WARRANTY

All Baseline Commander products carry a “THREE YEAR WARRANTY”.

For three years from the date of purchase. **Baseline** Irrigation will repair or replace any of its products or parts to be found defective due to workmanship or materials. This warranty does not extend to damage to a **Baseline** Irrigation Remotes product resulting from misuse, neglect or abuse, improper installation or accident.

This warranty extends only to an original user of Baseline Commander product(s). In no event shall **Baseline** Irrigation be liable for incidental or consequential damages. All implied warranties are limited in duration to three years following date of purchase. These exclusions or limitations apply only in those states where permitted by law.

FCC REGULATIONS

The user of this remote control device does not need an FCC license. The Receiver has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. The Transmitter has been tested and found to comply with Part 95 Subpart E. These
limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

Canadian Certification #32151021261

Models and Description

Transmitter

Baseline Commander Transmitter is the hand-held part of your remote system. Any 24VAC solenoid valve sprinkler system equipped with a **Baseline Commander** or compatible Universal Receiver can be operated with this Transmitter. The Transmitter operates on one replaceable 9-volt alkaline battery.

Note: The battery must be alkaline or the transmitter will not operate.

Receivers

Baseline Commander Mobile Receiver Units attach easily to the controller. Attaching the Baseline Commander Mobile Receiver allows all zones of the controller to be operated. The Baseline Commander Mobile Receiver comes with direct connects and remotely connected external antennas. Maximum range is achieved by installing the external antenna to the controller cabinet.

Baseline Commander-Universal Receiver is compatible with all 24VAC solenoid valve sprinkler systems and is capable of operating 32 stations per controller. This portable Receiver connects easily with a permanent connector hard wired to the terminal strip and a custom housing mounted on the controller for quick plug in.

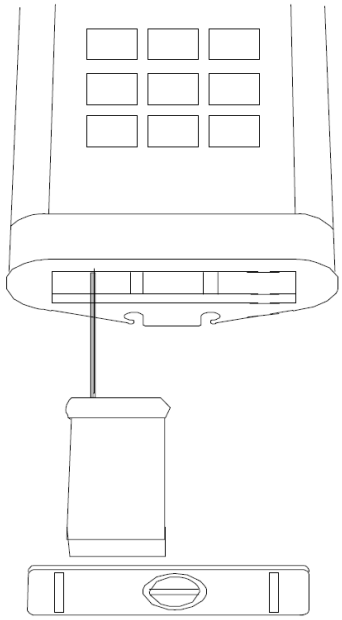
Special Features:

- Connects to any 24VAC sprinkler system
- Silent Running
  -Turn off all of the zones from 1 - 7 days
- Adjustable Time Duration
  -2 Minutes to 2 Hours (default 20 minutes)
- Multiple Receiver operation from a single Transmitter
  - Field programmable dipswitches offer 199 unique Receiver numbers
- Programmable security codes
  -9999 different security group codes
- Audible low power indicator
  -Field replaceable 9 volt battery
- Master Valve disable key
  -Pump Start/Master Valve

Getting To Know the Transmitter

The **Baseline Commander** Transmitter sends a proprietary FM signal to the Commander Receiver(s) turning on or off selected valves. With each valve activation or deactivation, the Pump Start/Master Valve station, when used, is automatically turned on or off unless "MV Off" has been pressed.

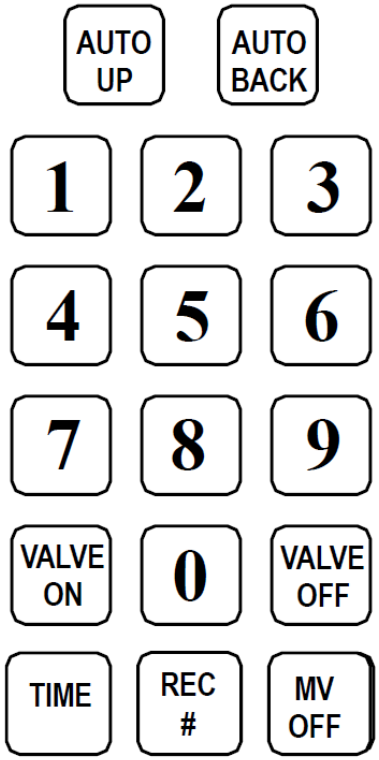
The Transmitter is designed for minimal power consumption to extend the life of the battery. The Transmitter power is normally off. Once any key has been pressed, power is automatically turned on for about ten seconds to allow your command sequence to be completed before the Transmitter automatically turns the power off and erases the command sequence from memory.



Transmitter uses one replaceable **9V Alkaline**

The Transmitter Key Pad

The Commander Transmitter keypad has an audible beep to clearly indicate when a key is pressed. The Transmitter will beep once when a Number Key or the Receiver Number Key is pressed. The Transmitter will beep twice, with about two seconds between beeps, after a transmit key is pressed for ("VALVE ON", "VALVE OFF", "AUTO UP", "AUTO BACK", "M-V OFF" or "TIME"). The first beep indicates that the transmission is starting, and the second beep indicates that transmission has been completed.



Transmitter Operating Instructions

Error Tone

You will hear a “squawk” error tone if an incorrect series of keys has been pressed. When the error tone is heard, wait 10 seconds and simply restart the series of commands.

Low Battery Tone

A rapid sequence of beeps after the transmission beep indicates low battery power. **Replace with a new alkaline 9V battery.**

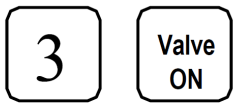
Valve On/Valve Off

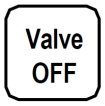
To turn a valve on press the desired zone number and then press the "Valve On" key. Pressing "Valve Off” will turn off the last zone activated.

When "Valve Off" is pressed by itself the current zone will turn off. To turn that zone back on just press "Valve On". The Transmitter remembers which valve you were testing.

Pressing "0", "Valve Off" will turn off all zones.

Example:

To turn on valve 3: 

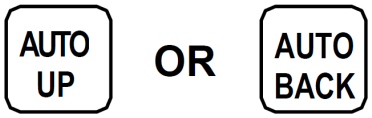
To turn off valve 3: 

Turns zone 3 back on: 

Auto Up/Auto Back

These functions allow forward and backward advancement through each station. This will turn on the next sequential station number.

To operate press:

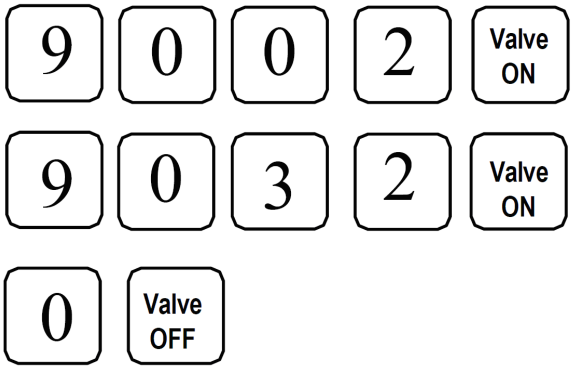


Multiple Zones

Press the "9" key before a two digit zone number to turn on a multiple zone. Example: "903", "Valve On" will turn zone 3 on. You may have up to six multiple zones on at a time and a single zone plus a master valve. Multiple zones cannot be changed by the "Auto Up" or the "Auto Back" functions, but they can have an independent time duration.

A station registered for multiple mode operation will **not** be turned off automatically when other stations on the same Receiver are turned on. Also, the single mode station will **not** be automatically turned off when multiple mode stations are turned on. If you try to turn on a seventh multiple mode valve, the first multiple mode valve turned on will be automatically turned off.

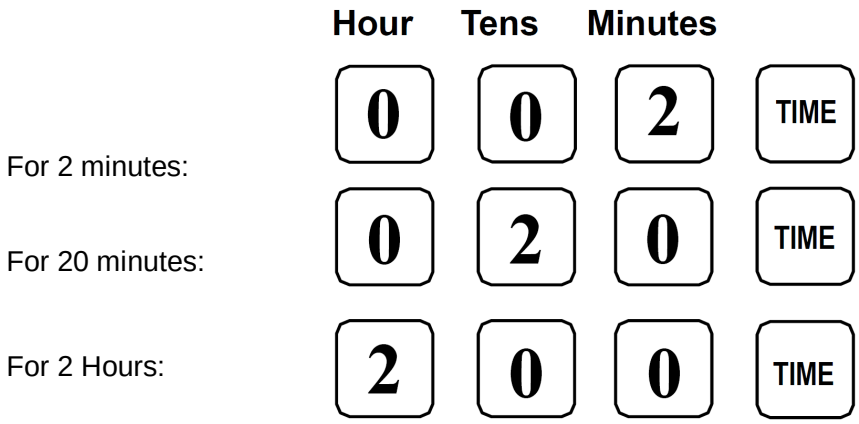
WARNING: Make sure your controller has adequate power to operate the number of multiple stations you intend to have on at one time. Otherwise, you may overload the circuit breaker at your controller.



Time Duration

You can set a time duration anywhere from two minutes to two hours. Press three digits of time in the following format:

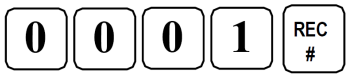
Hour, Tens Minutes, Minutes. The range of allowed entries for time duration is from two minutes "002" to two hours "200". Then press the "Time" key, followed by the desired zone # and then "Valve On."



Reprogramming the Transmitter

You must first wait at least 10 seconds after any key has been pressed before reprogramming. The following example reprograms the Transmitter to the factory defaults. ***YOU DO NOT NEED TO CHANGE ANYTHING TO MAKE YOUR UNITS OPERATE!***

Step 1: 

Step 2: 

Step 3: 

Step 1 gives you access to the Transmitter's memory.

Step 2 sets the Group Code to "0001".

Step 3 sets the Receiver Number to "1".

The units come from the factory set to communicate with each other on Group Code #1, and Receiver #1. ***YOU DO NOT NEED TO CHANGE ANYTHING TO MAKE YOUR UNITS OPERATE!***

You only need to reprogram your Transmitter if you change the dipswitch settings on the Receiver. If you choose to do so, you will need to follow the steps above, making sure you change the Group Code and Receiver Number (steps 2 and 3) to match that of the Receivers, as explained on the next page.

If the battery is removed for more that 2 minutes (or if it has died) you only have to reprogram the Transmitter if you have previously changed your Group Code or Receiver Number settings from the factory defaults. The Transmitter will remember the Group Code and Receiver Number for approximately 2 minutes with battery removed for replacement. 800-275-8558 www.irrigationremotes.com

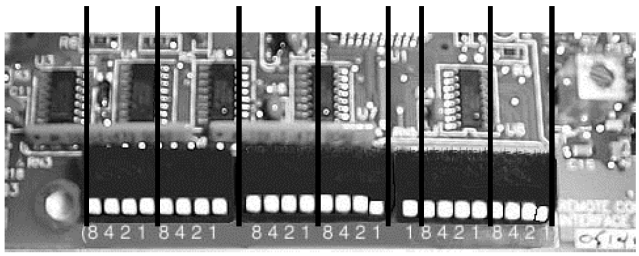
Setting the Receiver's Dip Switches

YOU DO NOT NEED TO CHANGE ANYTHING TO MAKE YOUR UNITS OPERATE! The units come from the factory set on Group Code # 1, Receiver # 1. If you change the dipswitches, you must reprogram you transmitter to the same settings, as explained on the previous page.

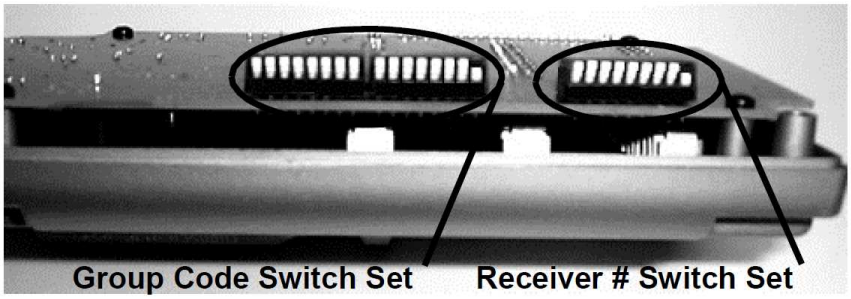
Should you be using multiple receivers in close proximity to each other, or if you are getting interference from someone else's remote, you may need to change your Group Code # or Receiver # dipswitch settings to prevent unwanted interference as follows:

To Change the Receiver #: Remove the four phillips head screws and separate the Receiver case to expose the Receiver number dipswitch set. Look on the back of the Receiver board; you will see three boxes of dipswitches as shown in the photo (Example 1). The dipswitches are exposed on the circuit board on Permanent Receiver Cards (Example 2). The Receiver # switch set is the box on the far right. ***The switches are read from right to left***, (see below) and are grouped in sets of four. Adding the numbers of the depressed switches together in each set of four will give you the total for that digit.

To Change the Group Code #: The Group Code switch set is the middle and left-hand boxes***. These switches also read from right to left,*** starting with the middle box and working toward the left (see below) and are also grouped in sets of four. Adding the numbers of the depressed switches together in each set of four will give you the total for that digit.



Factory Default - Universal Receiver shown
Group Code Switch Set is switched to **Group Code #1**,
Receiver Switch Set is switched to **Receiver #1**



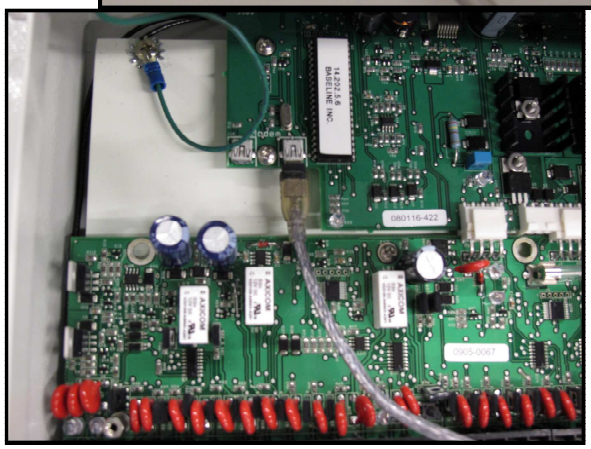
Installing the Mobile Receiver

Connecting the Baseline Commander Mobile Receiver

The Baseline Commander Receiver works with any Baseline BL3200 Series irrigation controller by plugging into the face plate of the BL3200X family of controllers and into the Mini-USB port of earlier controllers.

For locations where minimal operating range is needed, connect the 8”whip antenna directly to the top of the Receiver. For locations where more range is needed, use the magnetic base antenna and included tuned antenna with threaded base. (Other antenna options are available). For maximum performance, all antennas should be mounted far away from power transformers, electric motors, VFD’s and overhead power lines. This type of equipment causes interference.

The BL3200X family – the serial cable from the Baseline Mobile Receiver plugs into the face plate as shown.



Previous Generations of BL3200 Controllers The optional Interface Cable is plugged into the controller board as shown – the cable should be left in place once it is installed .

NOTE: The optional Interface Cable and external power module, used to power the BL-CMDR, must be installed to the Baseline Commander Mobile Receiver.

Installing the Universal Receiver

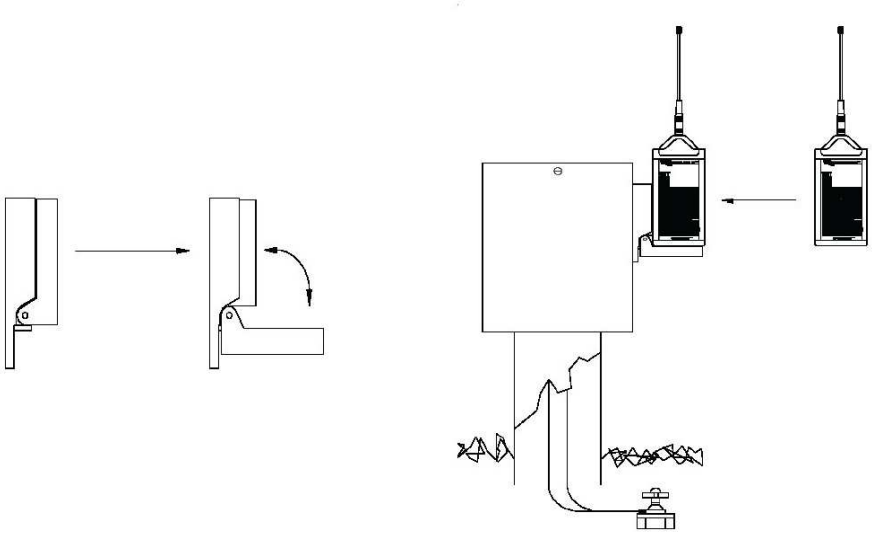
Connecting the Baseline Commander Universal Receiver

The Baseline Commander Universal Receiver works with any 24VAC solenoid valve sprinkler system. The Baseline Universal Receiver connects to individual valves at the controller's terminal strip or directly to the valve wires at the controller, and bypasses the controller's functions by directly activating the valves. Once the connector is installed, simply plug the Receiver into the Black Receptacle.

For locations where minimal operating range is needed, connect the 8"whip antenna directly to the top of t he Receiver. For locations where more range is needed, use the magnetic base antenna and included tuned antenna with threaded base. (Other antenna options are available). For maximum performance, all antennas should be mounted far away from power transformers, electric motors, VFD's and overhead power lines. This type of equipment causes interference.

Warning!

Never connect directly to 110VAC. Damage to the receiver will occur, may be a fire hazard and will void the warranty.



Wiring Your Universal Receiver Connection System

Instructions also provided with Universal Receiver Connection Assembly

Warning

Do not have the Receiver plugged into connector cable while installing connector or damage may occur.

Do not have 24VAC transformer plugged into Receiver with the connector when the connector has 24VAC from the controller!

Step 1: Use (figure 4 from the pamphlet with your PCC) as a pattern to locate the mounting holes to be drilled through the controller.

Step 2: Peel off sticker and attach gasket on back of housing.

Step 3: Peel off sticker and attach gasket to inside door. Make sure gasket is snug against side walls for maximum seal.

Step 4: Locate 1" socket head cap screw and insert though the hole on door. Slip on retainer ring approximately 3/16" from threaded end of cap screw.

Step 5: Mount housing to controller using two 6-32 x 3/4" machine screws, two flat washers, two lock washers, and two hex nuts.

Step 6: Attach D-Sub connector to the inside housing with two 4-40 x 9/16" machine screws. Do so by first inserting the end of wires through the 1/2" hole in the sprinkler controller. Attach connector with the longer row of pins to the left. Hold connector to highest position while tightening. Follow wiring code for connecting cables.

Trouble Shooting Chart

Use the following chart to determine if your problem can be corrected in the field. If you have a problem that cannot be fixed in the field:

• Call the toll free Baseline Customer Service number **(866) 294-5847** and

• You must obtain a Return Material Authorization **RMA #** prior to sending any unit in for repair.

Fault Indication Correction

A squawk from the transmitter

- An improper key sequence has been entered and confused microprocessor. Press "0" then "Valve Off" and then continue with a proper key sequence.

Rapid beeps from the transmitter or not sound.

- An audible rapid sequence of beeps after transmission indicates low battery power. Change the battery. (Must be alkaline!)

Receiver "Power On" indicator does not come on.

- Check the 24VAC pins on the controller connector with a volt meter to ensure that power is available.
- If not, thoroughly check out the wiring.
- Check the circuit breaker at your controller.

Controller's circuit breaker fails.

- Check your controller manual for its power output capacity. If the transformer voltage output exceeds 28VAC permanent damage may occur.

Receiver fails to respond, but the power light is on.

- Check if the Receiver number was inadvertently changed. Reprogram the Transmitter codes to match the Receiver codes. (Press "1", "REC #")
- Check the Group Code and Receiver Code dipswitches on the Receiver. Reprogram the Transmitter to match the Receiver codes. (See page 13).

Receiver's "Valve On" indicator lights during initial test, but no valve or wrong valve comes on.

- Use an ohmmeter to check that your connector's wire assignment matches your controller's valve assignment.

Receiver turns off when one station is activated.

- Check solenoid. Current drain is more than 3 amps and is tripping the resetting fuse.

Short Range

- Ensure that the antennas are firmly attached to the Receiver and Transmitter.
- Ensure that the antenna is clear from obstructions. The three feet immediately surrounding the antenna are the most crucial and should be kept clear of obstructions, power lines, or electrical conduits, electric motors etc.
- Keep the antenna as high as possible on the controller and avoid situations where the antenna can be shadowed by buildings or large metal structures.
- Ensure that the Receiver's antenna is as far away from electric motors, V.F.D.'s and overhead power lines as this type of equipment causes interference.

Optional Parts

BL-CCBL

Interface cable – One per BL3200 non-X versions. To be left attached to each controller.

BL-PMBL

Power Module used to power the Baseline Commander Mobile Receiver. Previous product generations do not provide power for the Baseline Commander Mobile Receiver and this power supply must be used to provide necessary power.

BL-CMDR-U

Universal Receiver interfaces the Baseline Commander to non baseline clocks. One receiver is moved from clock to clock as required.

BL-CMDR-UCON

The wiring harness is permanently attached to each clock.

32 Station Connector Wiring Color Codes

Valve	Wire Color	Valve	Wire Color
1	Black	19	Green w/ black and white stripe
2	White	20	Orange w/ black and white stripe
3	Red	21	Blue w/ black and white stripe
4	Green	22	Black w/ red and green stripe
5	Orange	23	White w/ red and green stripe
6	Blue	24	Red w/ black and green stripe
7	White w/ black stripe	25	Green w/ black and orange stripe
8	Red w/ black stripe	26	Orange w/ black and green stripe
9	Green w/ black stripe	27	Blue w/ white and orange stripe
10	Orange w/ black stripe	28	Black w/ white and orange stripe
11	Blue w/ black stripe	29	White w/ red and orange stripe
12	Black w/ white stripe	30	Orange w/ white and blue stripe
13	Blue w/ red stripe	31	White w/ red and blue stripe
14	Red /w green stripe	32	Black w/ white and green stripe
15	Orange / green stripe		
16	Black /w white and red stripe	Com	Orange w/ red stripe
17	White w/ Black and red stripe	M.V.	Green w/ white stripe
18	Red w/ Black and white stripe	24 V	Blue w/ white stripe

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