

## Introduction

In most installations, the Mini-Clik acts as a switch that breaks the circuit to an irrigation system's solenoid valves in response to rain. This allows the timer to advance as scheduled, but keeps the valves from opening the water flow. Once the Mini-Clik has dried sufficiently, the switch closes again to allow normal operation.

The Mini-Clik has 25' (8 m) of cable attached to it. The cable terminates with a red and a black lead. These leads will be wired to the SEN terminals of the controller. The order in which they are wired does not matter (Figure 1).

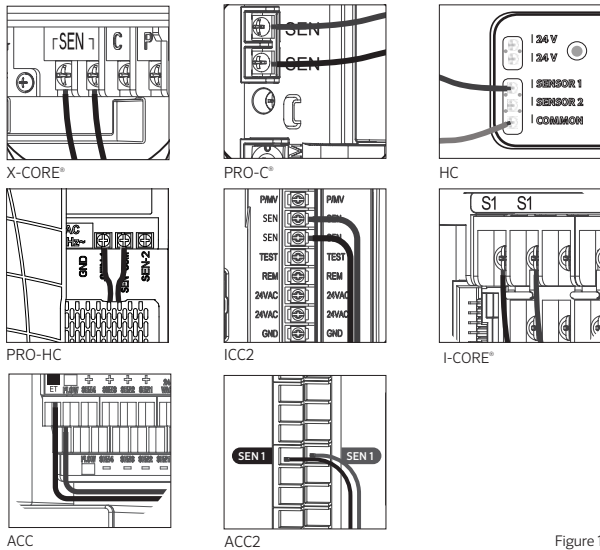


Figure 1

For the conduit model, Mini-Clik-C: This rain sensor unit is the same as the standard model, except there is no aluminum mounting bracket and a ½" threaded cap that allows for electrical conduit to totally enclose the wires has been added. Unless local code states otherwise, plumbing-grade PVC pipe can be used, as well as electrical-grade conduit.

For the high-voltage model, Mini-Clik-HV: This rain sensor unit is designed to be used with automatic irrigation systems of two principle designs: 1) single-station electrical timer (e.g., Intermatic) that switches power to a pump, either directly or through a relay; or 2) single-station electrical timer that switches power to a solenoid valve.

## Mounting

### Standard Model

Using the screws provided, mount the Mini-Clik on any surface where it will be exposed to unobstructed rainfall, but not in the path of sprinkler spray. The switch-housing portion must be upright (Figure 2), but the swivel bracket can be moved for mounting on any angled surface. Loosen the locknut and screw before swiveling the bracket, and then re-tighten.

For model Mini-Clik-C: The conduit acts as the mounting support for the unit. Therefore, place and mount the conduit to allow for the desired sensor location as described in the main instructions for the standard model. Be sure to support the conduit sufficiently along its various lengths.

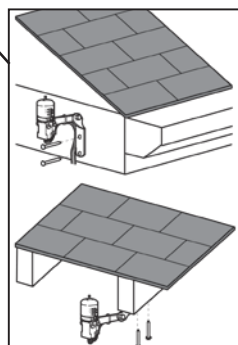


Figure 2

For model Mini-Clik-HV: The mounting of this unit is primarily made by screwing the fitting end into the threaded holes of covers to rectangular junction boxes (for outdoor use) or the covers of round junction boxes commonly used for outdoor spotlights. Locate the junction box so that with the Mini-Clik attached, unobstructed rainfall will hit the outermost sensing end of the unit. If a longer reach is needed, the "Carlton" flexible conduit piece can be substituted with a longer piece — up to 8" (20 cm) length with no support, or up to 11" (28 cm) with support.

### Helpful Hints for Mounting

- When looking for a suitable location (such as on the side of a building or post), the closer the Mini-Clik is to the controller, the shorter the wire run will be. This will minimize the chance for wire breaks.
- The ideal location for mounting is not always the most practical location. In the case where a compromise must exist (such as a low location on a side wall rather than a preferred higher location), note that the Mini-Clik will still work because it will always receive some rainfall — it just will not be as accurate in its gauging as it could be.
- As described in the "Operation" section of this manual, "reset rate" refers to the amount of time it takes the Mini-Clik to dry out sufficiently for the sprinkler system to be allowed to come back on. The mounting location will affect this rate and must be taken into consideration should extreme conditions exist. For example, mounting the Mini-Clik on a very sunny, southern end of a building may cause the Mini-Clik to dry out sooner than desired. Similarly, mounting on the northern end of a building with constant shade may keep the Mini-Clik from drying soon enough.

Once the Mini-Clik is mounted, run the wire to the controller. Fasten it every few feet with wire clips or staples for best results. If an extension to the wire provided is needed, use the following table to determine the minimum wire gauge needed:

|                             |               |                 |            |
|-----------------------------|---------------|-----------------|------------|
| If the extension needed is: | 25-50'/8-15 m | 50-100'/15-30 m | 100'+/30 m |
| use:                        | 20 AWG        | 18 AWG          | 16 AWG     |

## Wiring to Your Irrigation System

**IMPORTANT:** The standard model Mini-Clik is sold and designed for hooking up to 24-volt irrigation controllers only. For wiring to 110- or 220-volt irrigation controllers, consult your distributor or this factory. All wiring must conform to National Electrical Code or applicable local codes.

For model Mini-Clik-C: **WARNING!** This unit is designed to be installed in conjunction with 24 VAC circuits only. Do not use with 110 or 220 VAC circuits.

For model Mini-Clik-HV: **WARNING!** This unit must be installed by a qualified electrician in accordance with National Electrical Code and applicable local codes. The electrical rating of this device is 125-250 VAC at 10.1 amps. Do not let current pass through this device that exceeds this rating. Do not install directly in line with any pump.

### Other Controllers

The two most common situations are shown below. For non-standard wiring situations, consult your distributor or request our non-standard wiring information packet.

### A. 24-Volt Solenoid Valves Only (No Booster Pump) — Figure 3

With the two wires from the Mini-Clik at the controller, locate the “common ground” wire of the solenoid valves. If it is connected to the common terminal on the controller, disconnect it. Attach one wire of the Mini-Clik to the “common” terminal (usually marked “C”) on the controller. Attach the other wire of the Mini-Clik to the common wire leading to the valves. *Note: The common wire to the valves does **not** have to be interrupted at the controller. The Mini-Clik can be wired anywhere along the common wire line (an example would be at the valve box location).*

### B. 24-Volt Solenoid Valves with Booster Pump — Figure 4

Locate the common wire to the solenoid valves and the common wire leading to the coil of the relay that starts the pump. If these two wires are connected to the “common” terminal on the controller, disconnect both of them. Twist these two wires together along with one wire from the Mini-Clik, and secure with a wire nut. Attach the other wire of the Mini-Clik to the “common” terminal on the controller. *Note: The pump circuit output **must** be 24 Volts in this situation. Do not proceed if 110V.*

### C. Special Instructions for Mini-Clik-HV — Figures 5 and 6

All wire connections with the Mini-Clik should be made with wire nuts and located in a junction box. Where the timer is controlling a pump, the relay may be inside the timer, external or nonexistent. If there is no relay in the circuit, one must be added. The wiring for an internal or external relay is the same: the Mini-Clik breaks the circuit to the coil of the relay only. Either wire of the coil may be broken.

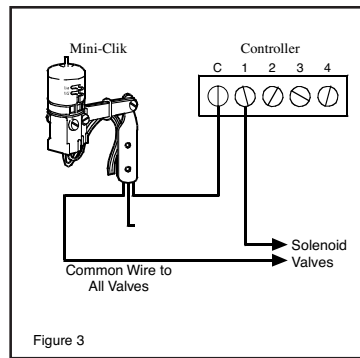


Figure 3

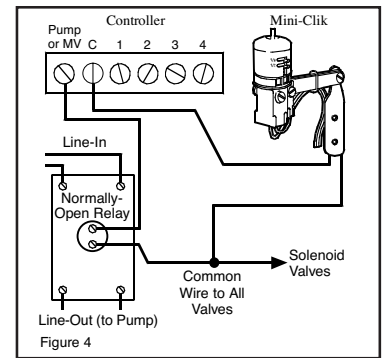


Figure 4

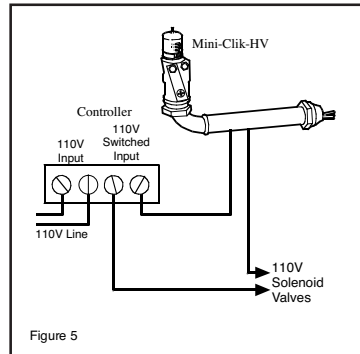


Figure 5

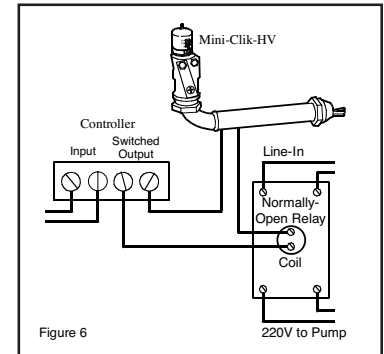


Figure 6

## Operation Check to Verify Correct Wiring

Turn on one zone of the irrigation system that is visible while you are in reach of the Mini-Clik. Manually depress the spindle at the top of the Mini-Clik until you hear the switch “click” off. The sprinkler zone should stop instantaneously. If it does not, check wiring for correctness. It is not necessary to “wet” test the Mini-Clik, although it will test the operation accurately, if desired.

## Adjustments and Operation

The Mini-Clik can keep the irrigation system from starting or continuing after rainfall quantities of  $\frac{1}{8}$ ",  $\frac{1}{4}$ ",  $\frac{1}{2}$ ", and  $\frac{3}{4}$ ". To adjust it to the desired shut-off quantity, rotate the cap on the switch housing so that the pins are located in the proper slots (Figure 7). Do not forcibly twist the cap, as this could break the pins. The time that it takes the Mini-Clik to reset for normal sprinkler operation after the rain has stopped is determined by weather conditions (e.g., wind, sunlight, humidity). These conditions will determine how fast the hygroscopic discs dry out. Since the turf is also experiencing the same conditions, their respective drying rates will roughly parallel each other. This means when the turf needs more water, the Mini-Clik is already reset to allow the sprinkler system to go at the next scheduled cycle. There is an adjustment capability on the Mini-Clik that will slow down the reset rate. By turning the “vent ring” (Figure 7) to completely or partially cover the ventilation holes, the hygroscopic discs will dry more slowly. This adjustment can compensate for an “overly sunny” installation location, or peculiar soil conditions. Experience will best determine the ideal vent setting.

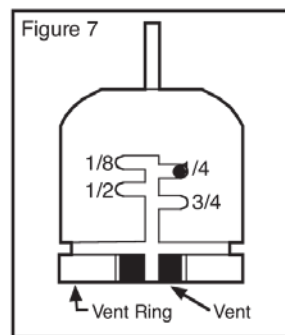


Figure 7

## Bypassing the Sensor

On Hunter controllers, move the rain sensor switch to “Bypass.” *Note: Using the “manual” switch on non-Hunter controllers typically will not bypass the sensor.*

## Maintenance

There is no required maintenance for the unit. The Mini-Clik does not have to be removed or covered for “winterizing” purposes.

## Troubleshooting

Follow these simple checks first before assuming the unit is bad and replacing it. If the system will not come on at all:

- First, check to see that the Mini-Clik discs are dry and the switch “clicks” on and off freely by pressing the top of the spindle.
- Next, look for breaks in the wire leading to the Mini-Clik and check all wire connections.
- Finally, if the Mini-Clik is dry and the wire leading to it is good, check the Mini-Clik switch by nicking the insulation of the two “outer” wires near the unit to expose copper. Turn one sprinkler zone on, and apply a “jumper wire” across the two exposed wires. If the sprinkler now comes on, the switch is bad. Wrap all nicked wires with electrical tape.

### If the System Will Not Shut Off Even After Heavy Rainfall:

- Check wiring for correctness (see “Operation Check to Verify Correct Wiring”).
- Check the sensitivity setting (move the cap to a more sensitive setting). The Mini-Clik is an accurate rain gauge and can be verified by setting up a tube-type rain gauge in the same vicinity and making periodic readings.
- Is the rainfall actually hitting the Mini-Clik? Check for obstructions to rainfall (e.g., overhangs, trees, or walls).

