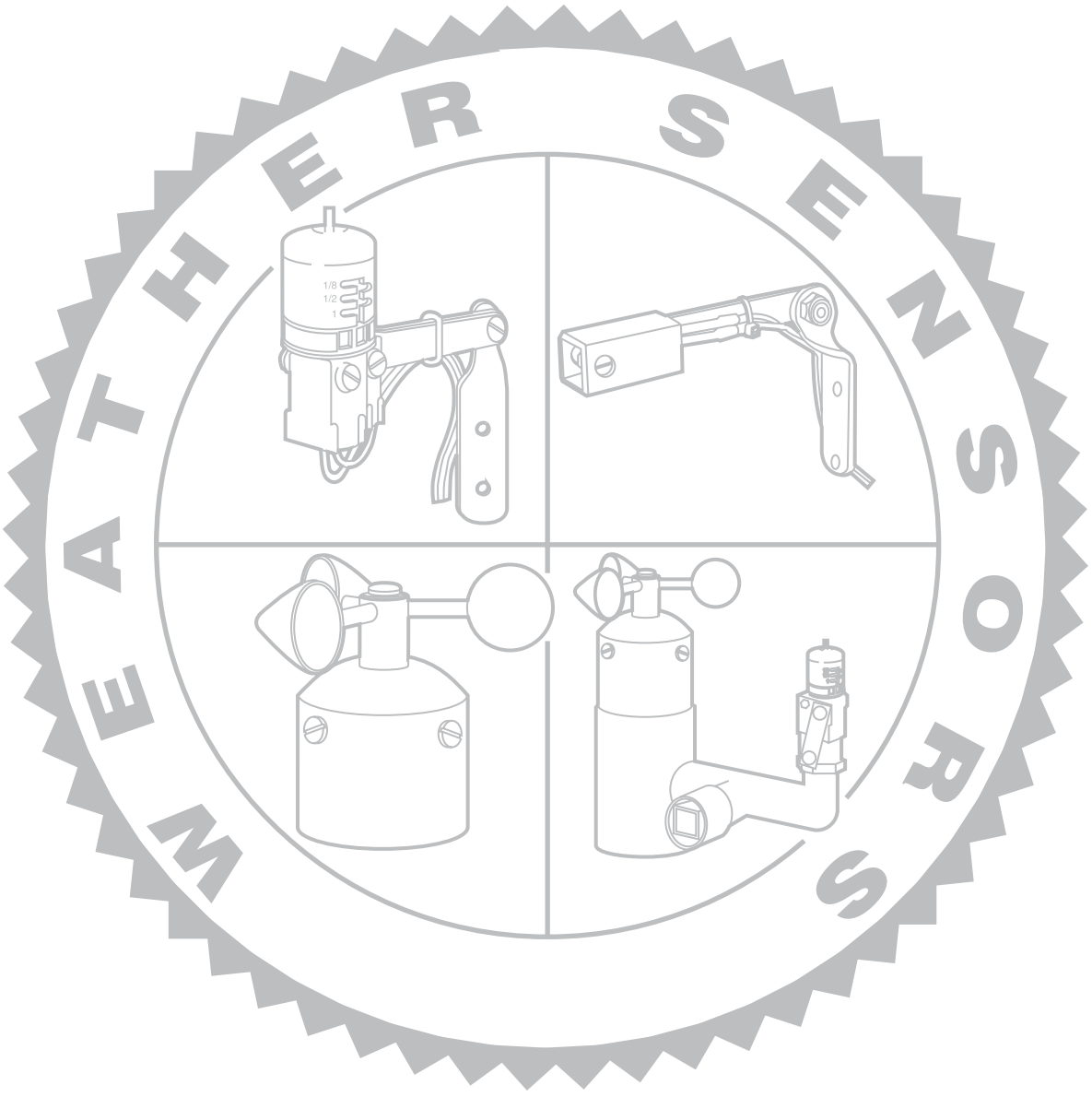
Hunter®

PRODUCT INFORMATION

# Weather Sensors

*The world's most simple, accurate, rugged and reliable rain, freeze and wind sensors*



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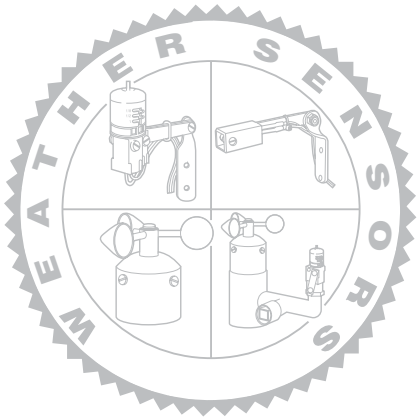
# PRODUCT OVERVIEW

The simplest, most effective way to prevent an irrigation system from operating during or after inclement weather is to use the Hunter Weather Sensor Devices. Easily installed on any automatic irrigation system, the Weather Sensors shut sprinklers off during rain, wind, sleet, and freezing temperatures. These sensors are designed to automatically reset without ever affecting the irrigation system controller. Built to withstand the harshest conditions, there's no better way to ensure that your system isn't watering when it shouldn't be. When you are concerned with water waste, Hunter's sensing devices backed by a 5-year warranty, need to be a part of your irrigation system.

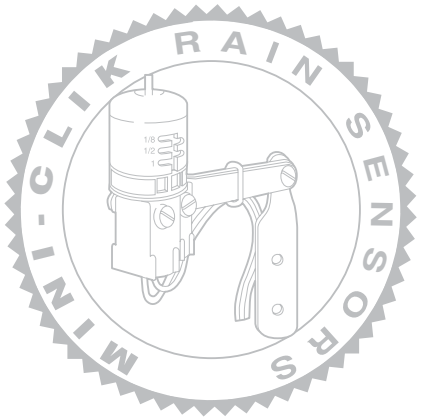


# MINI-CLIK RAIN SENSOR

### *The World's Most Simple, Accurate, Rugged and Reliable Rain Sensor*

In most installations, the Mini-Clik acts as a switch to break the circuit to the solenoid valves of the irrigation system when it has rained. This allows the timer to advance as scheduled, but keeps the valves from activating and allowing water to flow.

The Mini-Clik Rain Sensor automatically compensates for the amount of rainfall that occurred before reactivating. Hydroscopic disks absorb water and then expand proportionally to the amount of rain that fell. As the moisture-laden disks expand, they activate a switch that interrupts the electrical circuit from the controller to the valves. Once the Mini-Clik has dried sufficiently, the switch closes again to allow for normal operation. The time it takes the Mini-Clik to reset for normal sprinkler operation after the rain has stopped is determined by weather conditions such as sunlight, wind, humidity, etc. These conditions will determine how fast the discs dry out. The irrigated turf also experiences the same conditions. So when the turf needs more water, the Mini-Clik is already reset to allow the sprinkler system to go at the next scheduled cycle.




# PRODUCT FEATURES AND BENEFITS

***Easily Installs on any Automatic Irrigation System…***
*Simple to add on to an existing or new installation.*

The Mini-Clik is versatile enough to work with all popular irrigation controllers. The Mini-Clik is available in two versions or SKU's. One is wired for "normally closed" sensor terminals and the other is wired for "normally open" sensor terminals. Each unit will have two wires attached to it, connected to a 25-foot extension.

If the controller has a sensor bypass switch or dial setting, then both extension wires will be connected to the controller sensor terminals. If the controller does not have a sensor bypass switch or a dial setting, then one extension wire is connected to the controller common terminal and the other extension wire is connected to the common wire(s) from the field.

***Available in 24 Volt and 110/220 Volt UL Listed Models…***
*Four different models to accommodate your particular wiring needs.*

**Mini-Clik** – The standard "normally closed" Mini-Clik model for use on most 24 volt applications.

**Mini-Clik-NO** – The standard "normally open" Mini-Clik model for use on most 24 volt applications.

**Mini-Clik-C** – Features a ½" female threaded inlet at the bottom to accommodate conduit.

**Mini-Clik-HV** – The C model with added code approved liquid-tight electrical fittings for 110/220 volt wiring applications and systems using pumps drawing less than 10 amps peak. Also includes 18 inches of 16 AWG wire. Ready to mount on any standard junction box.

***Constructed of High Impact Thermoplastic…***
*Dependable operation built to last.*

The Mini-Clik is constructed of heavy-duty materials including a thermoplastic that can withstand all extremes of weather from direct scorching sun to freezing ice storms.

***Maintenance-Free Patented Sensing Mechanism…***
*No callbacks, set it and forget it.*

Unlike other rain sensors that use collection cups, the Mini-Clik does not collect debris, so it does not require cleaning. And, for those in cold climates, the Mini-Clik does not have to be removed or covered for "winterizing" purposes. This means no required maintenance for the unit and no callbacks to clean it.

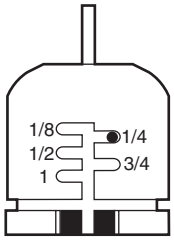
The sensing mechanism is ingenious but simple. Disks absorb water and then expand proportionally to the amount of rainfall that fell (e.g., a small cloudburst would result in little absorption, a thunderstorm with 2" of rainfall would lead to more absorption and thus more expansion). As the moisture-laden disks expand, they eventually activate a switch that interrupts the circuit from the controller to the valves. As the disks dry out, they contract and release the switch.

***5 Year Warranty…***
*Hunter Industries backs up its products.*

A full five-year warranty by Hunter communicates to our customers that the Mini-Clik is a rain sensor that stands up to the environment. The end-user can be assured of a quality product with a guarantee of dependable operation.

***Adjusts To Actuate At Various Rainfall Quantities…***
*Versatile and accurate.*

Depending on local conditions, the Mini-Clik can keep the irrigation system from starting or continuing after rainfall quantities of ⅛", ¼", ½", ¾", 1" (3 mm, 6 mm, 13 mm, 19 mm, 25 mm). To adjust it to the desired shutoff quantity, rotate the cap on the switch housing so that the pins are located in the proper slots.




***Includes 25 Feet of 20 Gauge Two Conductor Wire…***
*Fast and easy mounting out of sight.*

Hunter supplies wire needed for installation within 25 feet of the controller. Whether you pre-install on poles or install at the job, with 25 feet of wire already attached to the Mini-Clik, installation is fast and easy. When contractors go out to the job site with the Mini-Clik, they don't have to worry about forgetting the wire! If longer wire runs are needed for installation, no problem! Just add an extension.

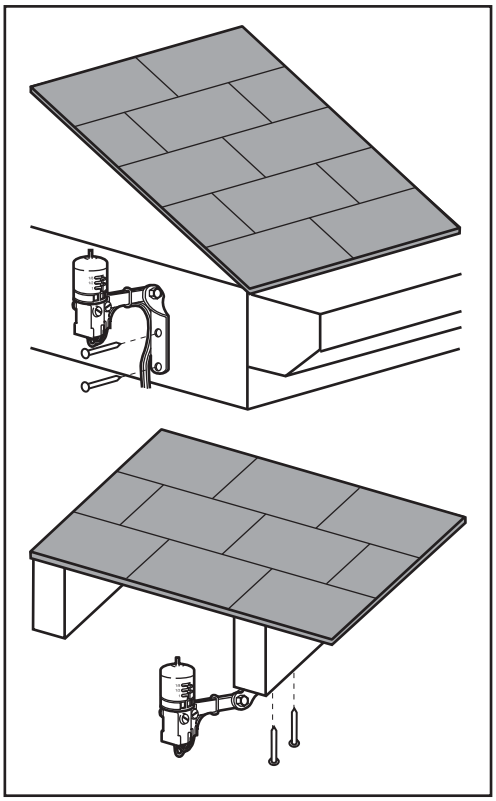
If the extension needed is:

| | | |
|---|---|---|
| 25-50 feet | use: | 20 gauge |
| 50-100 feet | use: | 18 gauge |
| 100 feet or more | use: | 16 gauge |

# MINI-CLIK INSTALLATION INSTRUCTIONS

In most installations, the Mini-Clik acts as a switch to break the electrial circuit to the solenoid valves of the irrigation system when it has rained. 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 for normal operation.

The Mini-Clik has two blue wires connected to a 25 foot extension.



**For the Model Mini-Clik-C:** This rain sensor unit is the same as the standard model except for the lack of an aluminum mounting bracket and the addition of a ½" threaded cap, which allows for the easy use of electrical conduit to totally enclose the wires. Unless local code states otherwise, plumbing grade PVC pipe can be used as well as electrical grade conduit.

**For the 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 (as pictured), but the swivel-bracket can be moved for mounting on any angled surface. Loosen the locknut and screw before swiveling bracket, and then retighten.

**For the Conduit 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.

**For the High-Voltage 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 "Carlon" flexible conduit piece can be substituted with a slightly longer piece (up to 8" length with no support or up to 11" with support).

***Helpful hints for mounting:***

A. 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 also minimize the chance for wire breaks.

B. The ideal location for mounting is not always the most practical location. In the case where a compromise must exist (such as low location on a side wall rather than the preferred high location), note that the Mini-Clik will still work as it will always receive some rainfall – it just will not be as accurate in its gauging as it could be.

C. 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 should 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, and fasten it every few feet with wire clips or stapled 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 feet | use: | 20 gauge |
| 50-100 feet | use: | 18 gauge |
| 100 feet or more | use: | 16 gauge |

## *WIRING TO YOUR IRRIGATION SYSTEM*

*Important:* The Standard Model Mini-Clik is sold and designed for hook up to 24 Volt irrigation controllers only. For wiring to 110V or 220V irrigation controllers, please consult your distributor or this factory. All wiring must conform to National Electrical Code or applicable local codes.

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

**For the 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 125-250VAC 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.

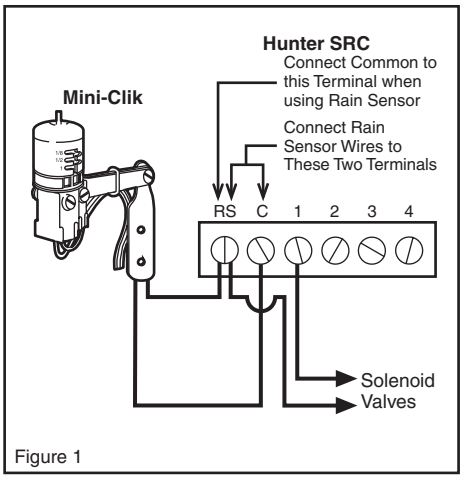


Figure 1

### *Wiring to the Hunter SRC*

The Mini-Clik connects directly to the SRC. This allows you to easily override the sensor by using the RUN (BYPASS SENSOR) position on the dial.

1. Route the wires from the Mini-Clik up through the same opening used for valve wiring.
2. Connect one wire to the RS terminal and other to the C terminal (See Figure 1).
3. Connect the valve common to the RS terminal.

# MINI-CLIK INSTALLATION INSTRUCTIONS *(cont.)*

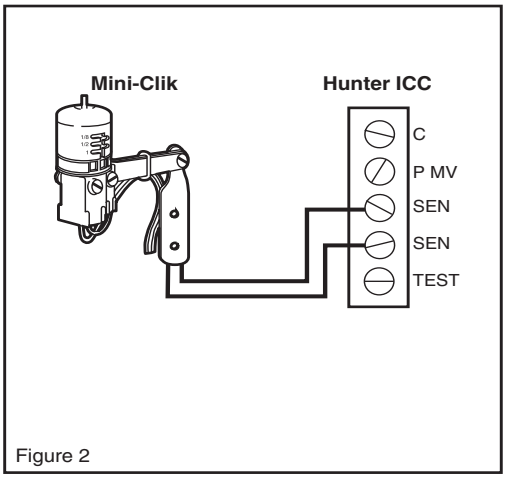


Figure 2

***Wiring to the Hunter ICC***

The Mini-Clik connects directly to the ICC. This allows you to easily override the sensor by using the Sensor switch on the front panel.

1. Remove the jumper from the two "SEN" terminals.
2. Route the wires from the rain sensor up through the same conduit opening used for valve wiring.
3. Connect one wire to the terminal labeled "SEN" and the other wire to the other "SEN" terminal (See Figure 2).

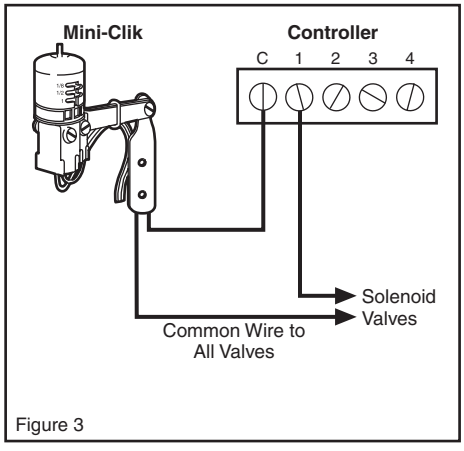


Figure 3

***Other Controllers***

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

A. 24 Volt Solenoid Valves Only (No booster pump) (See 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 may be wired anywhere along the common wire line.

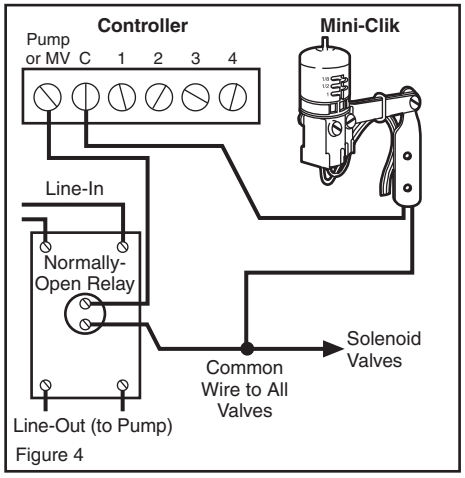


Figure 4

B. 24 Volt Solenoid Valves with Booster Pump (See 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 together these two wires 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.

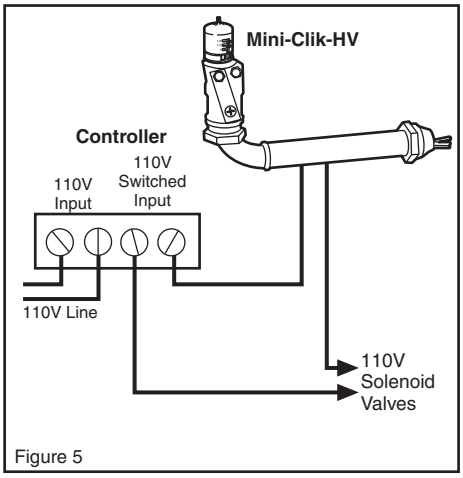


Figure 5

C. Special Instructions for Mini-Clik-HV (See Figures 5 and 6)

The two taped and stripped wires are the ones to be used when following these accompanying diagrams. All wire connections with the Mini-Clik should be made with wire nuts and located in a junction box.

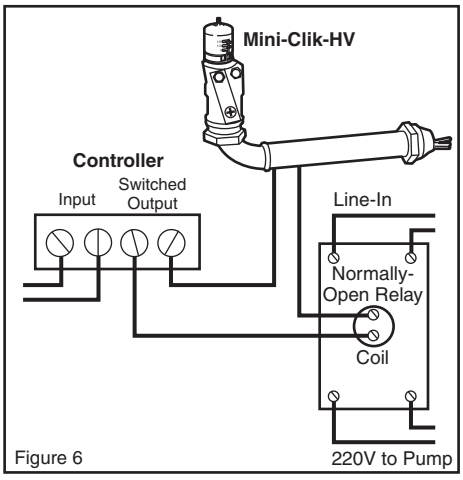


Figure 6

Where the timer is controlling a pump, the relay may be inside the timer, external or non-existent. 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.

***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 fine, if desired.

## *ADJUSTMENTS AND OPERATION*

The Mini-Clik can keep the irrigation system from starting or continuing after rainfall quantities of ⅛", ¼", ½", ¾" or 1". 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 (see Figure 7). Do not forcibly twist the cap as this might break the pins.

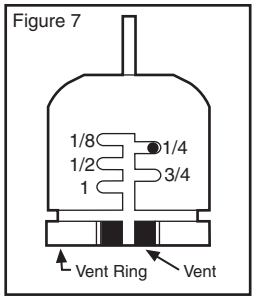


Figure 7

The time that it takes the Mini-Clik to reset for normal sprinkler operation after the rain has stopped is determined by weather conditions (wind, sunlight, humidity, etc.) These conditions will determine how fast the hygroscopic discs dry out, and since the turf is also experiencing the same conditions, their respective drying rates will roughly parallel each other. So 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" (see Figure

# MINI-CLIK INSTALLATION INSTRUCTIONS *(cont.)*

7) to completely or partially cover the ventilation holes, the hydroscopic 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.

# TROUBLESHOOTING THE MINI-CLIK

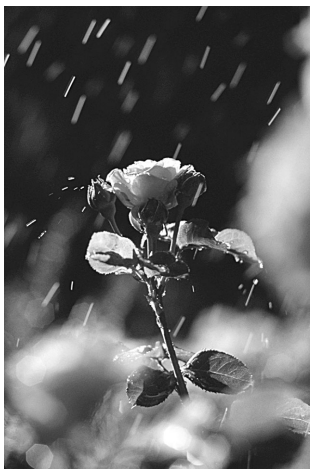
**System will not come on at all:**

A. Make sure the Mini-Clik is not installed in the path of any watering from the system's sprinklers.

B. 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.

C. Look for breaks in the wire leading to the Mini-Clik and check all wire connections.

D. 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.



**System will not shut off even after heavy rainfall**:

A. If a Hunter controller is used, check the dial position. If the dial is on the RUN (Bypass Sensor) position the controller will disregard sensor.

B. Check Bypass Switch position. If the switch is on the BYPASS position the controller will disregard sensor activity.

C. Check wiring for correctness. Check by depressing the spindle at the top of the cap until the switch is heard "clicking" off. When the switch "clicks" off, the sprinkler zone should stop immediately.

D. Check the sensitivity setting on the Mini-Clik. If the setting is set for high rainfall amounts, 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.

E. Is rainfall actually hitting the Mini-Clik? Check for obstructions to rainfall such as overhangs, tree branches or walls.

## FREQUENTLY ASKED QUESTIONS

**Q:** Two days ago it rained and the sprinklers came on this morning, how do I get them to stay off longer?

**A:** There is a "vent ring" located just below the cap that can be closed or partially closed to restrict airflow through the Mini-Clik. Make sure this ring covers the holes on the Mini-Clik, and it will allow the disks to dry more slowly, thus keeping the Mini-Clik shut off longer. This adjustment can compensate for an "overly sunny" installation location.

**Q:** How much water and money can be saved?

**A:** The amount saved varies, but in a temperate climate with average rainfall, savings are usually substantial. There are several factors involved in determining how much a Mini-Clik can reduce water usage: how often it rains, whether or not the controller is left on for automatic operation, and the amount of water applied by the system per cycle.

Basically, if you know the water costs in your area and how much water is being applied per watering cycle by the whole system, then you will know how much is being saved each time the Mini-Clik interrupts the sprinkling cycle because of rainfall.

As an example, take a system that irrigates 15,000 square feet of turf and is set to run each zone so that the equivalent of ¼" of water is applied per cycle. Volumetric calculations determine that 2500 gallons of water are being applied over the 15,000 square feet of turf per cycle. Using an average water cost table for the San Marcos, California area, it costs **$3.47**/thousand gallons (or, for our example, **$8.68** for the 2500 gallons). Therefore, every time the Mini-Clik prevents the sprinkling cycle from proceeding because of rainfall, $8.68 is saved, and 2500 gallons of fresh water are not wasted. Multiply this by the number of substantial rainfalls that occur in your area over one growing season and you can see the potential for savings of money and water. The Mini-Clik pays for itself in a short time, and the installed irrigation system is the most efficient it can be.

**PRODUCT EXPLANATION**

EXAMPLE: **MINI-CLIK-HV**

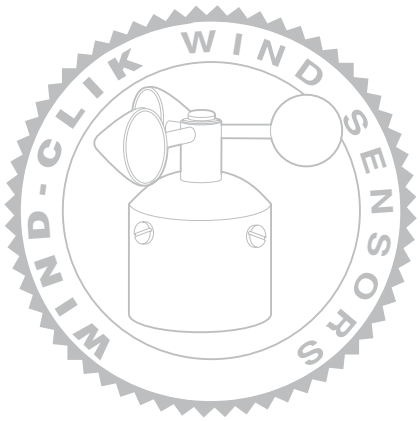
| MODEL | OPTIONS |
|---|---|
| MINI-CLIK | **-HV** = High voltage model for 110/220 VAC applications<br>**-C** = Conduit mount |

**Note:** For Mini-Clik in Sensor Guard Enclosure, specify SG-MC. To add bypass switch box to any installation, specify BPSW with sensor.

# WIND-CLIK WIND SENSOR

### *Control Irrigation System Operation During High Winds*

The Wind-Clik Wind Sensor acts as a switch to break the circuit to the solenoid valves of the irrigation system during windy conditions. This allows the timer to advance as scheduled, but stops the valves from activating (not allowing water to flow). Once the wind conditions drop below the reset point, the switch closes again to allow for normal operation. The Wind-Clik can be used in conjunction with other sensors to enhance the overall automation of any irrigation system. Mount the unit in an area that receives prevailing winds without hindrance.




# PRODUCT FEATURES AND BENEFITS

***Installs Simply and Easily…***
*No adjustments necessary.*

The Wind-Clik is designed to install directly to a "normally closed" or "normally open" controller's sensor terminals or in the common wire circuit between the zone valves and the controller. If multiple commons are used in the system, the Wind-Clik must be tied in to the end of all the common wires, then connected to the controller. If the Mini-Clik or Freeze-Clik is already installed or is to be part of the system, the Wind Sensor is to be wired in series with the other sensors so either or both devices can control the circuit.

***Designed for "Normally Closed" or "Normally Open" Operation…***
*Versatile to meet the needs of all controllers.*

The type of controller used on the job will not be a concern for the installer because the Wind-Clik is designed to work with either "normally closed" or "normally open" sensor circuits. The unit comes from Hunter with three colored wires attached ready for installation. Depending on what the controller sensor circuitry is, the installer will hook up the green and red wires for "normally closed" and hook up the green and blue wires for "normally open" systems.

***Adjustable Shutoff for Wind Speeds Between 12 and 35 mph…***
*Effectively control irrigation system operation during windy conditions.*

A simple turn of the side adjustment on the Wind-Clik allows the irrigation system to shut down between wind speeds of 12 and 35 mph. Wind speeds often vary according

to ground height, so for irrigation system control, the wind speed about 6 feet above the ground would be a good representative height for the Wind-Clik placement.

***Automatic Reset of System at Wind Speeds From 8 To 24 mph…***
*Select the setting that is best for your area.*

A feature just as important as a shutoff speed is the reset speed. This is the speed that the wind will have to slow down to in order to reset the switch. The Wind-Clik allows the user to adjust a reset speed between 8 and 24 mph with a turn of the side adjustment.

***Automatic Damping Feature…***
*Eliminates erratic system operation due to gusty winds.*

The built-in damping feature allows for short wind gusts to occur without affecting the performance of the system, thus keeping the system from repetitively shutting on and off. Therefore, the wind speed settings, while accurate under controlled conditions, are actually relative averages when set up in the field.

***Reduces Liability Hazards of Wet Walkways and Roadways…***
*Wind-blown water will no longer be a safety concern.*

Today, with litigation a prominent factor in how business is conducted, reducing liability hazards of wet sidewalks and roadways in our landscapes is something Hunter takes seriously. With the Wind-Clik installed in the system, wind blown water is not an issue. Irrigation water should set down where it was designed to land.

***Cut Down on Overspray When Used With Fountains…***
*Keep surrounding areas safe and dry.*

A common non-irrigation related installation of the Wind-Clik is utilizing the product with fountain systems. With a quick adjustment of the dial water can be stopped from blowing outside the fountain containment area where doesn't belong.

***5 Year Warranty…***
*Hunter Industries backs up its products.*

A full five-year warranty by Hunter communicates to our customers that the Wind-Clik is a wind sensor that stands up to the environment. The end-user can be assured of a quality product with a guarantee of dependable operation.

# WIND-CLIK INSTALLATION INSTRUCTIONS

In most installations, the Wind-Clik acts as a switch to break the circuit to the solenoid valves of the irrigation system during high wind conditions. This allows the timer to advance as scheduled, but keeps the valves from opening the water flow. Once the wind conditions drop below the reset point, the switch closes again to allow for normal operation. This is performed by the wind action of the vanes. They rotate about 180°, and DO NOT SPIN. There are arrow indicators on the top part of the housing that indicate the direction of rotation from rest. The switching action occurs about midway in the range of rotation.

## *MOUNTING*

The housing of the Wind-Clik is designed to slip over the end of 2" PVC pipe. The length and the fixing of the pipe is then up to the user depending on the situation. For example, the pipe could be inserted directly into the ground as a post, or a short length could be screwed into a wooden deck post.

### *Mounting Location*

Wind obstructions should be avoided, of course; however, when buildings are nearby, the Wind-Clik should be located so that the prevailing wind direction is not obstructed. Going up high is not always necessary; however, it is a good way to avoid obstructions. Wind speeds often vary according to ground height, and for irrigation system control the wind speed about 6 feet above ground would be a good representative height for the Wind-Clik placement.

## *WIRING TO YOUR IRRIGATION SYSTEM*

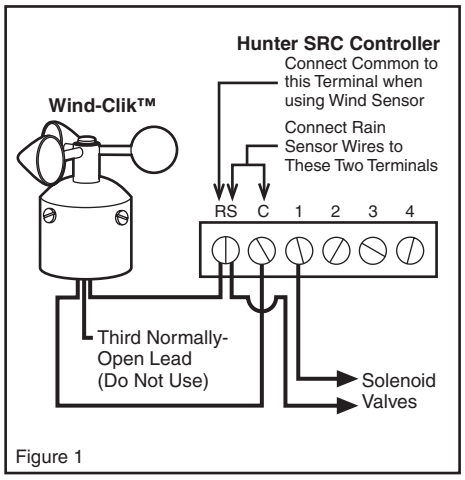



Figure 1

### *Wiring to the Hunter SRC Controller*

The Wind-Clik connects directly to the SRC. This allows you to easily override the sensor by using the RUN (BYPASS SENSOR) position on the dial.

1. Route the wires from the Wind-Clik up through the same opening used for valve wiring.
2. Connect one wire to the RS terminal and other to the C terminal (See Figure 1).
3. Connect the valve common to the RS terminal.

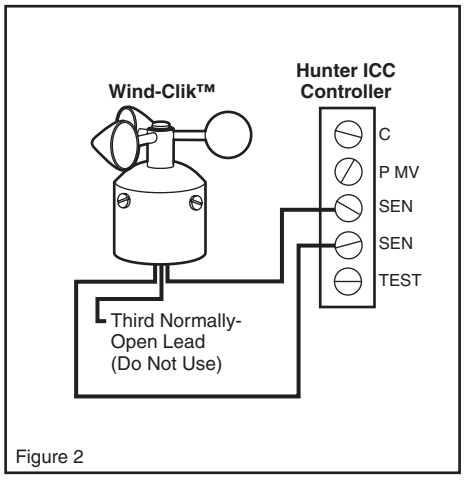



Figure 2

***Wiring to the Hunter ICC Controller***

The Wind-Clik connects directly to the ICC. This allows you to easily over-ride the sensor by using the Sensor switch on the front panel.

1. Remove the jumper from the two "SEN" terminals.
2. Route the wires from the rain sensor up through the same conduit opening used for valve wiring.
3. Connect one wire to the terminal labeled "SEN" and the other wire to the other "SEN" terminal (See Figure 2).

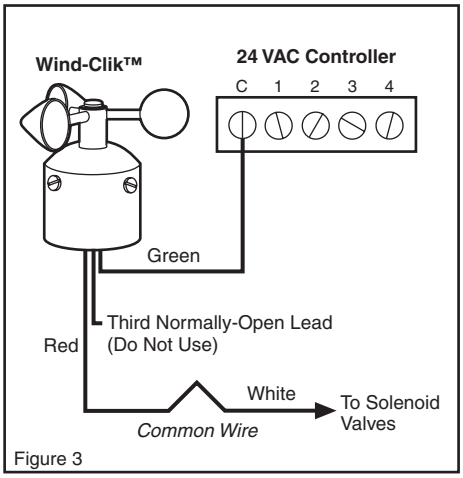


Figure 3

***Other Controllers***

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

For sprinkler systems, use the common and normally closed wire to break the solenoid common circuit (See Figure 3). For a controller with sensor inputs, use either the N.C. or N.O. wire depending on the controller's instructions (See Figure 4).

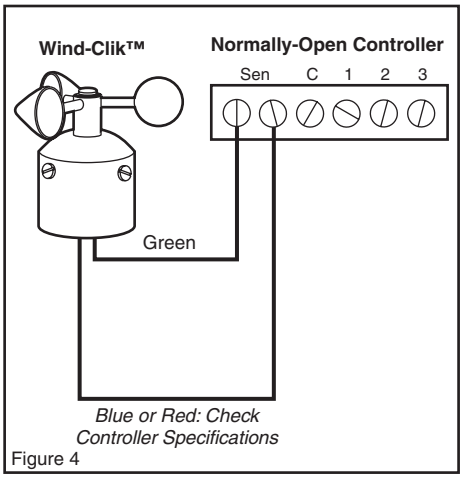


Figure 4

## *ADJUSTMENTS*

The large knob is the switching (actuation) speed in mph. For example, if the unit is wired "normally closed," the dial will indicate the wind speed that the unit will switch open. The small knob is the reset speed. This is the wind speed that the wind will have to slow down to in order to reset the switch (closed, in this example). The reset speed should always be set lower than the switching speed. If the reset speed is set the same or higher than switch-ing speed, extreme switch chatter could occur (on-off-on-off etc). The difference between the two settings will largely determine the cycling of the system being controlled. The larger the difference, the longer the cycle. Do not try to move the dial knobs counter-clockwise past the lowest speed setting, nor go past the highest speed setting.

# WIND-CLIK INSTALLATION INSTRUCTIONS *(cont.)*

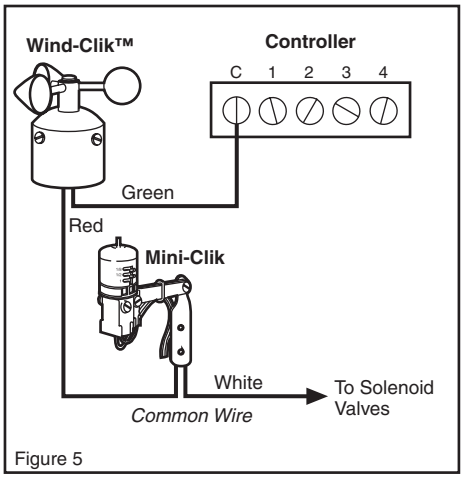


Figure 5

## *OPERATION*

There is built in damping in the unit to alleviate the problem of short gusts of wind. Therefore, the wind speed settings, while accurate under controlled conditions, are actually relative averages when set up in the field. The user should make initial wind speed settings and then observe to make sure the Wind-Clik is switching as desired. Incremental adjustments can then be made. Manual operation or testing of the unit can be done by manually rotating the vanes in the direction of the arrows. Switching will occur about 90° from the rest position and stay switched to the end of its travel range (180° from rest). Allowing the vanes to rotate backwards to the rest position will deactivate the switch (about 45° from the rest position).

**PRODUCT EXPLANATION**

EXAMPLE: **WIND-CLIK**

| MODEL | |
|---|---|
| WIND-CLIK | **Note:** To add bypass switch box, specify BPSW with sensor. |

## FREEZE-CLIK FREEZE SENSOR

### *Control Irrigation System Operation During Freezing Temperatures*

In most installations, the Freeze-Clik Sensor acts as a switch to break the circuit to the solenoid valves of the irrigation system near freezing. This allows the timer to advance as scheduled, but stops the valves from activating not allowing water to flow. Once the low temperature period climbs above 37°F (3°C), the switch closes again to allow for normal operation.


## PRODUCT FEATURES AND BENEFITS

***Installs Simply and Easily…***
*No adjustments necessary.*

The Freeze-Clik is designed to install directly to a "normally closed" controller's sensor terminals or in the common wire circuit between the zone valves and the controller with two-conductor wire. No adjustments are necessary. If multiple commons are used in the system, the Freeze-Clik must be tied in to the terminus of all the common wires, then connected to the controller.

***Available in 24 Volt Standard and Reverse Switching Models…***
*Two different models to accommodate your particular wiring needs.*

**Freeze-Clik** – The standard Freeze-Clik model for use on most 24 volt applications.

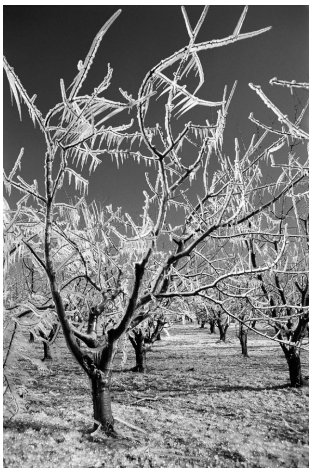
**Freeze-Clik-Rev** – The 401R model designed for opposite switching designed to turn a device on when temperatures approach freezing (example: to protect vegetation from a damaging freeze)

***Note:*** *The Freeze-Clik is not designed for crop protection*

# PRODUCT FEATURES AND BENEFITS *(cont.)*

***Accurate Shutoff Before Water Turns to Ice…***
*Reduces liability hazards for walkways and roadways by preventing icing.*

Accurate, double-epoxy sealed temperature-sensing element automatically stops system water flow at near freezing temperatures and resets system when temperatures rises above the set point of 37°F (3°C) (+/- 2°C).



***Reduces Liability Hazards of Iced Walkways and Roadways…***
*"Wayward" water that freezes over is never a safety issue.*

Water from irrigation systems that lands on pavement and freezes over can create serious liability hazards. Reducing or eliminating this concern is important to any irrigation installer. With the Freeze-Clik installed in the system, running water that freezes on traffic areas is not an issue.

***Includes 25 Feet of 20 Gauge Two Conductor Wire…***
*Fast and easy mounting out of sight.*

Hunter supplies wire needed for installation within 25 feet of the controller. When contractors go out to the job site with the Freeze-Clik, they don't have to worry about forgetting the wire, making the installation fast and easy! If longer wire runs are needed for installation, no problem! Just add an extension

If the extension needed is:

| | | |
|---|---|---|
| 25-50 feet | use: | 20 gauge |
| 50-100 feet | use: | 18 gauge |
| 100 feet or more | use: | 16 gauge |

***Can Be Used in Conjunction With Other Sensors…***
*Enhances the overall automation of irrigation systems.*

If the Mini-Clik or Wind-Clik is already installed or is to be part of the system, the Freeze Clik is to be wired in series with the other sensors so either or both devices can control the circuit.

***5 Year Warranty…***
*Hunter Industries backs up its products.*

A full five-year warranty by Hunter communicates to our customers that the Freeze-Clik is an irrigation sensor that stands up to the environment. The end-user can be assured of a quality product with a guarantee of dependable operation.

# FREEZE-CLIK INSTALLATION INSTRUCTIONS

***Note:*** *Both the standard Freeze-Clik and the Freeze-Clik-Rev (a "reverse" model where instead of switching system operation "off" at a set temperature point, the system is switched "on") are installed and wired in the same manner.*

The correct placement of the Freeze-Clik is critical for accurate temperature sensing. It must be mounted out of direct sunlight, and where free outdoor air circulation is possible. Examples would be the north wall of a building or under eaves or overhangs.

If the best location for temperature sensing is not a feasible location for mounting the Freeze-Clik, an alternate location may be chosen if, in addition, a "sun guard" is used (a piece of flashing, for example) to shade the Freeze-Clik during that time of day that the sun could hit it (see Figure 1)

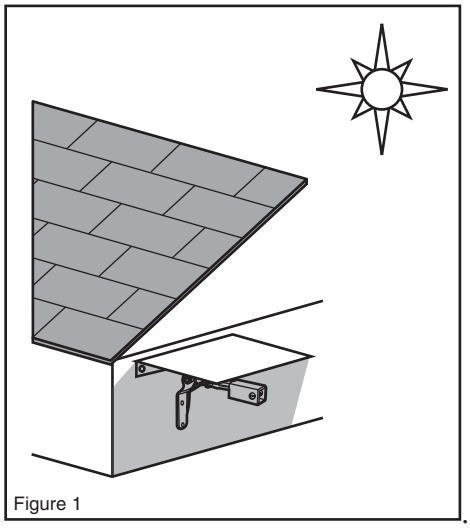


Figure 1

The Freeze-Clik housing is designed so that it provides the sensing element some amount of shaded protection from direct or indirect radiation, while allowing air to move freely around it. This feature, along with the best possible placement, will allow the Freeze-Clik Freeze sensor to respond at the correct temperature.

The aluminum swivel bracket allows angling of the housing away from a thermal mass, such as an uninsulated masonry wall of a heated structure. The air along the outer inch or so can be a few degrees warmer than the actual outdoor air. To swivel the bracket, loosen the locknut first, then retighten.

Using the screws provided, attach the Freeze-Clik to the chosen surface. Run the extension wire to the controller. If an extension to the wire is needed, use wire no lighter than 20 AWG.

## *WIRING*

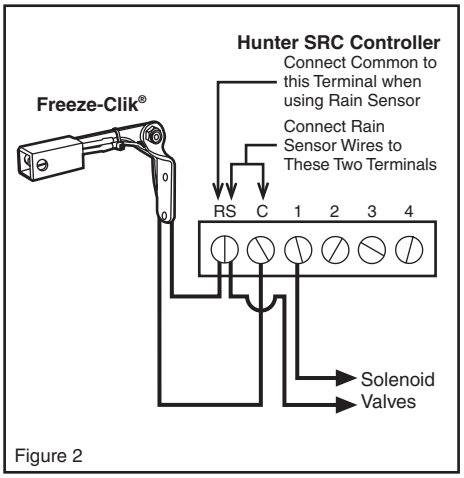



Figure 2

***Wiring to the Hunter SRC Controller***

The Freeze-Clik connects directly to the SRC. This allows you to easily override the sensor by using the RUN (BYPASS SENSOR) position on the dial.

1. Route the wires from the Freeze-Clik up through the same opening used for valve wiring.
2. Connect one wire to the RS terminal and other to the C terminal (See Figure 2).
3. Connect the valve common to the RS terminal.

# FREEZE-CLIK INSTALLATION INSTRUCTIONS *(cont.)*

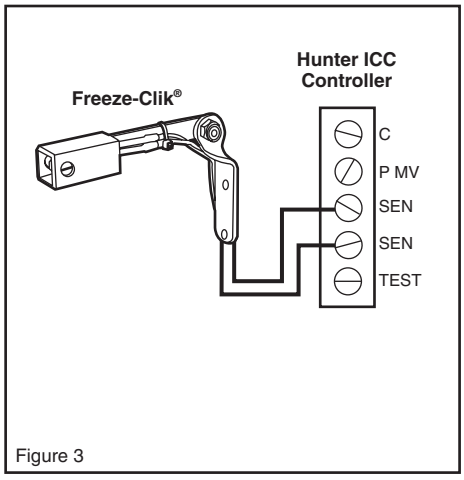


Figure 3

***Wiring to the Hunter ICC Controller***

The Freeze-Clik connects directly to the ICC. This allows you to easily override the sensor by using the Sensor switch on the front panel.

1. Remove the jumper from the two "SEN" terminals.
2. Route the wires from the rain sensor up through the same conduit opening used for valve wiring.
3. Connect one wire to the terminal labeled "SEN" and the other wire to the other "SEN" terminal (See Figure 3).

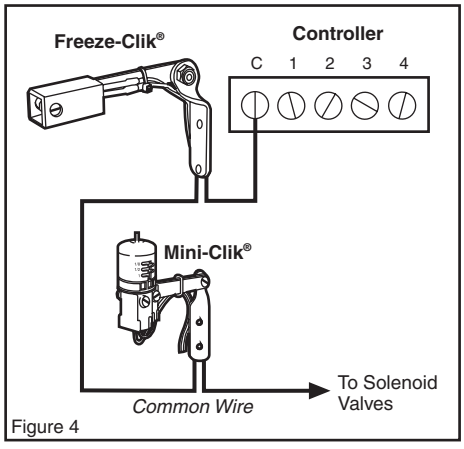


Figure 4

***Other Controllers***

The Freeze-Clik freeze sensor is wired to the 24 VAC common ground circuit of the solenoid valves (as shown in Figure 4).

Locate the common ground wire of the solenoid valves. If it is connected to the common terminal on the controller, disconnect it.

Attach one lead of the Freeze-Clik to the common terminal on the controller and the other lead to the common ground wire of the solenoid valves.

If a Mini-Clik Rain Sensor is already installed or is to be part of the installation (see Figure 5), the Freeze Sensor is to be wired in series with the Rain Sensor so that either (or both) devices can control the circuit.

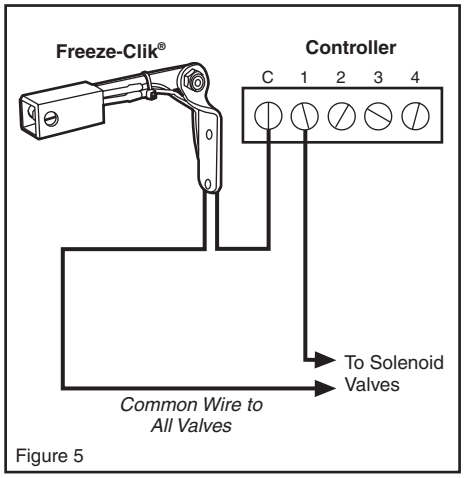


Figure 5

## *OPERATION*

The Freeze-Clik is preset and is not adjustable. It will break the common ground circuit, thereby keeping the sprinkler system from operating at, or below, 3°C (37°F). At temperatures above 3°C, it will close the circuit for normal sprinkler operation.

For Freeze-Clik-Rev Model: The temperature setting works in reverse on this model with the circuit not allowing operation of the sprinkler system above 3°C (37°F). Once the temperature reaches this point or goes below, it will activate the system and commence watering for whatever amount of time you have set on your controller.

***Note:*** *the factory tolerance for the set-point on both the standard Freeze-Clik and the Freeze-Clik-Rev models is ± 2 ℃, therefore your particular unit will switch at a temperature in this range.*

***Special usage note:*** *For landscape applications only. Not for crop protection. A freeze sensor should only be used as part of a sound irrigation management program, including regular system visual checks.*

## *BYPASSING THE FREEZE-CLIK*

The Hunter ICC and SRC controllers are equipped with a built-in bypass that allows you to override an active sensor. For controllers not equipped with this feature, should you desire to bypass the operation of the Freeze-Clik for any reason (i.e., turn on your system even though the Freeze-Clik has shut "off" due to low temperature), there are two simple ways to do this. The first is to add our Bypass Switch Box which mounts on, or next to, the controller. By simply moving the switch, the Freeze-Clik is bypassed.

The second method is to simply heat the Freeze-Clik with your hand or some other mild heat source.

***Note:*** *Using the manual switch on the controller will not bypass the sensor.*

**PRODUCT EXPLANATION**

EXAMPLE: **FREEZE-CLIK-REV**

| MODEL | OPTIONS |
|---|---|
| **FREEZE-CLIK** | **-REV** = Reverse switching |

**Note:** To add bypass switch box, specify BPSW with sensor.

# MINI-WEATHER STATION

### *Each Of Hunter's Three Sensors in One Convenient Unit*

A must for commercial and municipal sites, but certainly a great investment for any site that requires more than one sensor. The Mini-Weather Station-which includes the Mini-Clik, Freeze-Clik, and Wind-Clik in one convenient package-will save water and money, paying for itself within a short time. A tremendous benefit of this station is the ease in which it is installed, with a variety of mounting options and just two wires attaching to the controller's sensor or common wire terminal connections.


# PRODUCT FEATURES AND BENEFITS

***Easy to Install on Any Automatic Irrigation System…***
*Versatile enough to meet your particular needs.*

The Mini-Weather Station is designed to install directly to a "normally closed" controller's sensor terminals or in the common wire circuit between the zone valves and the controller. If multiple commons are used in the system, the Mini-Weather Station must be tied in to the terminus of all the common wires then connected to the controller.

***Two Different Models to Accommodate Your Weather Sensing Needs…***
*Available with or without a Freeze Sensor.*

**MWS** – Weather Station combines wind and rain sensors for use on 24 volt applications.
**MWS-FR** – Weather Station incorporates rain, wind and freeze sensors for use on 24 volt applications.

***Heavy Duty Construction…***
*Built sturdy for years of trouble-free operation.*

The Mini-Weather Station is molded from SCH 40 PVC plastic parts with a 2" inlet. The inlet is designed to slip over a standard piece of 2" PVC pipe (2.375", 60.4 mm O.D.). The inlet can be reduced in size using a common PVC slip bushing if needed.

# Mini-Weather Station

***Shuts System off in Rainy Conditions…***
*Sets from 1/8" to 1" based on local conditions.*

Depending on local conditions, the Mini-Weather Station can keep the irrigation system from starting or continuing after rainfall quantities of 1/8", ¼", ½", ¾", 1" (3 mm, 6 mm, 13 mm, 19 mm, 25 mm).

***Sets to Shut Down System from 12 to 35 mph Winds…***
*Adjusts to actuate at various wind speeds.*

A simple turn of the side adjustment knob on the Mini-Weather Station allows the irrigation system to shut down between wind speeds of 12 and 35 mph. Wind speeds often vary according to ground height, so for irrigation system control, the wind speed about 6 feet above the ground would be a good representative height for the Mini-Weather Station placement.

***Automatically Shuts Off Water at 37°F (3°C)…***
*Eliminates ice on landscapes, walkways, and roadways.*

Accurate, double-epoxy sealed temperature-sensing element automatically stops system water flow at near freezing temperatures and resets system when temperatures rises above the set point of 37°F (3°C) (+/- 2°C).

***Two Wiring Options Available…***
*For special monitoring needs.*

The Mini-Weather Station is available in two wiring configurations. One with all sensors wired in series with two wire hook-up and the other wired separately so each sensor can be monitored separately.

***5 Year Warranty…***
*Hunter Industries backs up the products.*

A full five-year warranty by Hunter communicates to our customers that the Mini-Weather Station stands up to the environment. The end-user can be assured of a quality product with a guarantee of dependable operation.

**PRODUCT EXPLANATION**

EXAMPLE: **MWS-FR**

| MODEL | OPTIONS |
|---|---|
| **MWS** | Wind and rain sensors<br>**-FR** - Combines wind, rain and freeze sensors<br>**-A** - Wired in a series with two wire hook-up<br>**-B** - Wired separately so each sensor can be monitored separately |

**Note:** To add bypass switch box to any installation, specify BPSW with sensor.

# WEATHER SENSOR OPTIONS

## *SENSOR BYPASS SWITCH BOX*

***Complete control over the system***

The Bypass Switch Box for rain, wind or freeze sensors is an easy way to give any automatic controller bypass capabilities for its remote sensors. During system servicing of troubleshooting it is often necessary to bypass any sensors, and for the end user it provides an easy way to put their irrigation system in a manual mode, independent of sensor control. It mounts next to the controller and, by simply moving the switch, any sensor is bypassed.


**Model: BPSW**

## *Bypass Switch Box Installation Instructions*

The Bypass Switch Box for rain, wind or freeze sensors is an easy way to give any automatic controller bypass capabilities for its remote sensors. During system servicing or troubleshooting it is often necessary to bypass any sensors, and for the end user it provides an easy way to put their irrigation system in a manual mode, independent of sensor control.

***Mounting***

The box may be mounted quickly and easily by using the adhesive tape on the back. Simply peel the liner off and press the box to any smooth, clean and dry surface. The side of the timer-controller box itself might be a suitable location or just to the side of the controller so the switch box is visible. If desired, the box can be screwed to a surface by using the two mounting holes located at the top and bottom of the box.

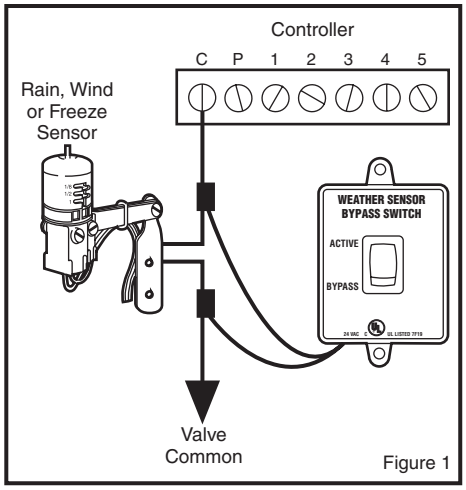



Figure 1

***Wiring***

One wire of the Bypass Switch Box needs to be connected along one leg of the sensor anywhere between the common terminal on the controller and the sensor. The other wire of the Bypass Switch Box is connected along the second leg of the sensor that leads to the solenoid valves (Figure 1). If possible, make the wire connections using the "T-Tap" connectors as shown (Figure 2). Simply lay the wire in the channel and close down the top half with pliers. No wire stripping is required. Any wire size between 20 and 14 AWG can be inserted in the T-Tap. The T-Tap can also be used to make an extension if necessary.

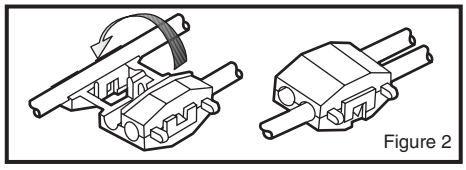


Figure 2

***Operation***

Put the Bypass Switch in the "Auto" position for normal sensor control of the system. Putting the switch in "Bypass" position closes the circuit to the solenoid valves independent of the rain sensor switching.

## *SENSOR GUARD*

***Vandal resistance and rain sensor all-in-one***

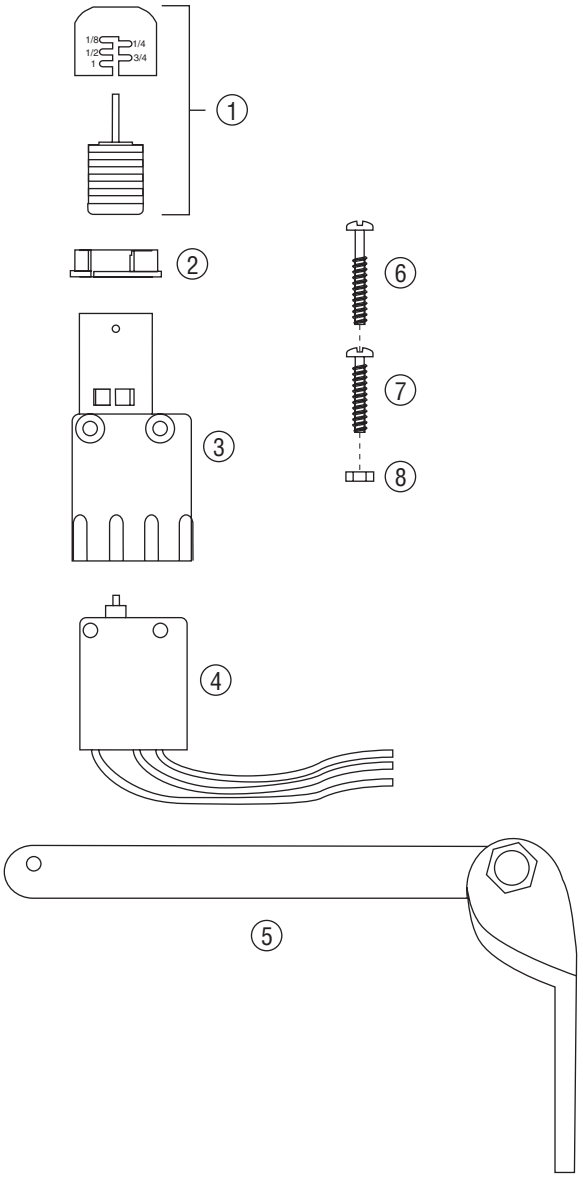
Combining the reliability of a Mini-Clik rain sensor with the security of a compact vandal resistant enclosure, the Sensor Guard is perfect for sports facilities, golf courses and municipal sites. Easy to install, the Sensor Guard includes a Mini-Clik model 502C conduit rain sensor plus stainless steel mounting bolts and a drill template. A great way to keeps hands off the Mini-Clik when mounting the unit on pedestal controllers or controller enclosures.

**Model: SG**

# MINI-CLIK REPLACEMENT PARTS

| Item | Description | Part No. |
|---|---|---|
| 1 | Cap and Spindle Assembly | 440200 |
| 2 | Vent Ring | 440100 |
| 3 | Switch Housing | 440000 |
| 4 | Switch | 206431 |
| 5 | Bracket | 439700 |
| 6 | Inside Housing Bracket Screw | 194986 |
| 7 | Outside Housing Bracket Screw | 201532 |
| 8 | Housing Bracket Locknut Set (2) | 206498 |

**Note:** Part numbers 1 through 4 are common to Mini-Clik and Mini-Clik-C.



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