TORO Count on it.

Sentinel Retro-Link for MC Plus Controller SRL-IR Installation Instructions

WARNING: Disconnect Incoming power to the controller prior to servicing. Failure to comply may result in serious injury due to electrical shock hazard.

IMPORTANT: By installing the Sentinel Retro-Link, the MC Plus controller becomes an FCC Class A device. While sending and receiving radio commands, the MC Plus will now have a maximum total load of **1.0 A** that may be programmed to operate simultaneously.

Sentinel Retro-Link provides two-way radio communication capability and connectivity to the Sentinel Central software for the MC Plus controller. After installation, all of the pre-programmed irrigation functions, including manual ON/OFF capabilities, will be disabled. Programming information after installation of the Retro-Link must be transmitted by the Sentinel central software.

There are two other secondary benefits of installing the Retro-Link. It gives the MC Plus hand-held radio capability with the use of Sentinel Hand-Held remote, and it enables flow monitoring of a single flow meter and weather station input via the sensor input board.

Note: The Sentinel Central software must be in service and the two-way radio coverage confirmed prior to Retro-Link installation.

IMPORTANT: The use of the Sentinel Retro-Link requires a low-power, narrow-band frequency license. Application and renewal of the frequency license are the responsibilities of the end-user. Failure to obtain proper frequency registration and licensure with the FCC subjects the end-user to fines and/or possible immediate system shutdown at the discretion of the FCC.

Step 1 – Disconnect the main power source to the controller.

Step 2 – Remove the bottom panel of the controller and locate the 1/2" (19 mm) conduit access hole plug. See **Figure 1**.

Step 3 – Remove the 1/2" (19 mm) access hole plug.

IMPORTANT: Enclosures with concentric access holes may install the Retro-Link antenna remotely through the use of conduit or directly to the enclosure using locking nuts. Otherwise, only install the provided antenna using the 1/2" (19 mm) conduit knockout.

Step 4 – Install the provided antenna (**Figure 2A**) or the optional Retro-Link Mast Antenna (**Figure 2B**), service kit 102-3262, to the newly created access hole.

IMPORTANT: To avoid damaging the antenna assembly, do not pick up the antenna by the cable end.

Note: Sufficiently tighten the lock nut on the antenna to make sure the lock washer penetrates through the metal cabinet powder coat. It is essential that the lock washer makes adequate contact with the metal cabinet for proper grounding.

Step 5 – Use an Ohm meter to verify continuity of the antenna and the metal cabinet for sufficient ground contact. Probe the antenna lock nut and the transformer metal base for best results. See **Figure 3**.

IMPORTANT: The resistance between the antenna lock nut and the transformer metal base should be less than 2.0 Ohms. With resistance exceeding 2.0 Ohms, the antenna will not function properly.

Step 6 – Affix the Retro-Link Enable/Disable label in the lower right-hand corner of the control panel. (Applies to all MC Plus models.) See **Figure 4**.

IMPORTANT: It is critical to place the label at the right most corner of the control panel to avoid damage to electrical components underneath.

Step 7 – Drill a 1/4" (7 mm) diameter hole using a brad-point type drill bit at the location indicated by **X** on the label. See **Figure 4** insert.

Step 8 – Remove the control panel by unscrewing the two self-retaining screws to access the back panel of the cabinet. See **Figure 5**.

Step 9 – Thoroughly clean the surface for radio installation. It is recommended to use alcohol solution. Remove the adhesive protector from the radio module and radio PCB Velcro. Install the components as shown in **Figure 6**. Press firmly to adhere properly in the cabinet.

Figure 1

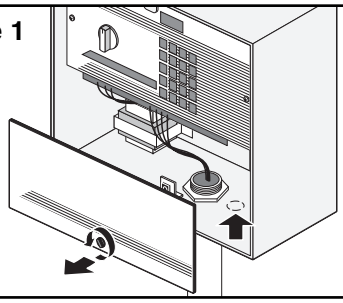


Figure 2

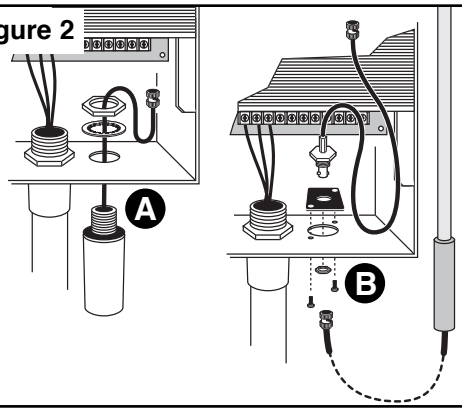


Figure 3

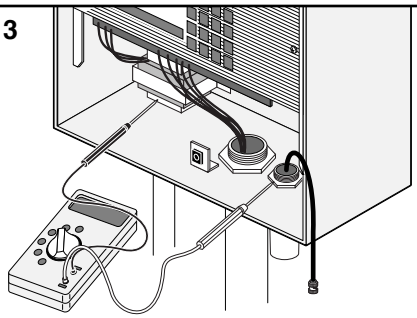


Figure 4

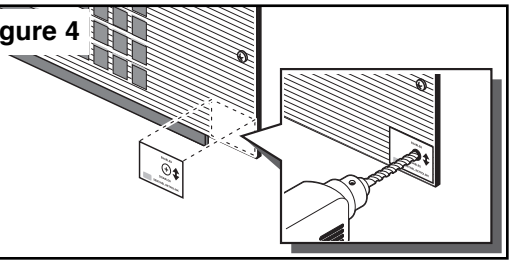
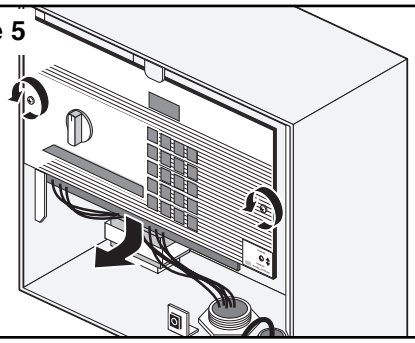
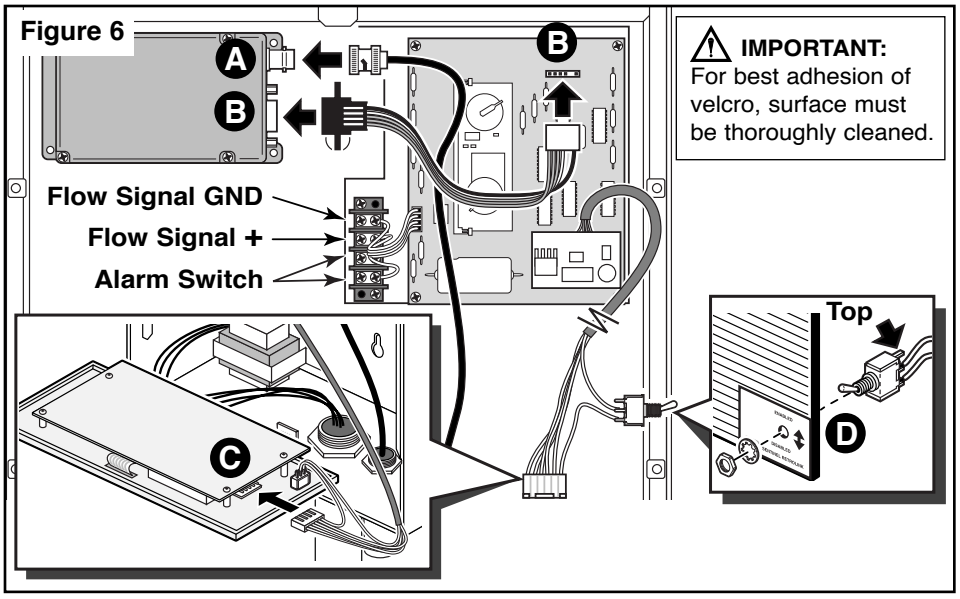
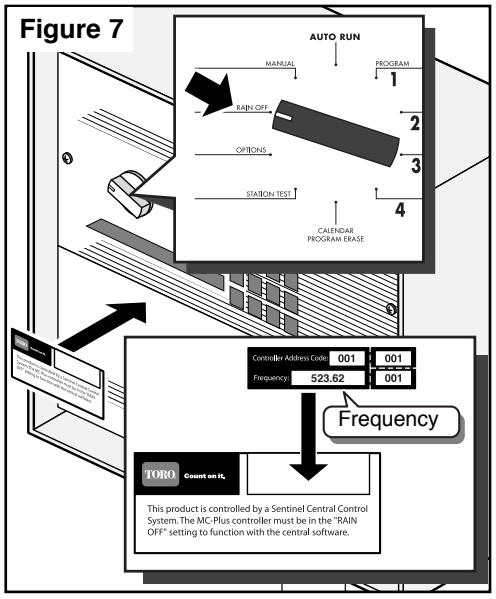


Figure 5







Step 10 – Connect the antenna cable to the radio module. See **Figure 6A**.

Step 11 – Connect the ribbon cable from the radio module to the radio PCB. See **Figure 6B**. Verify that the black wire is aligned with the right-most pin on the PCB.

Step 12 – Connect the radio PCB data cable to the controller. See **Figure 6C**.

Step 13 – Connect the toggle switch to the controller. See **Figure 6D**.

Note: Position the switch with the unwired connector at the top.

Step 14 – Loop the antenna wire so that it will not interfere with the controller circuitry and secure it with wire ties.

Step 15 – Connect any sensor inputs to the data retrieval terminal block.

Step 16 – Replace the control panel and the bottom cabinet panel.

Step 17 – Affix the provided labels on the bottom panel. Write the assigned licensed frequency in the provided space. See **Figure 7**.

Step 18 – Set the hand-held radio frequency to match the Retro-Link frequency for proper communication.

Step 19 – Set the toggle switch to **ENABLE** and place the dial selector to the **RAIN OFF** position. Reconnect the main power source to the controller and test for proper operation.

Troubleshooting Guide

Sentinel Retro-Link does not respond to hand-held or central commands:

- Verify toggle switch is in “ENABLED” position.
- Verify proper and secure wiring and cable installation.
- Verify power to the MC Plus controller.
- Verify continuity of the antenna grounding.
- Verify that the hand-held battery is fully charged.
- Reset the hand-held radios.
- Reset power to the central station.
- Reset power to the MC Plus controller.

More than one station activates when a hand-held command is initiated:

- Verify proper and secure wiring and cable installation.
- Replace Timing Mechanism and retry hand-held commands.

Radio:

Equipment Type – Data radio, MAXON, model SD-125 U2

Frequency Band – UHF

RF Output Power – 2 watt

Current Consumption:

Standby (Muted) – < 65 mA

Transmit 2 watts RF power – < 1.0A

FCC License: FCC ID # MNT - PC - UC

Electromagnetic Compatibility

Radio complies with FCC Part 22 and Part 90 of the FCC Rules

Domestic: This equipment has been tested and found to comply with the limits for a FCC Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. The equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to the radio communications. Operation in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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