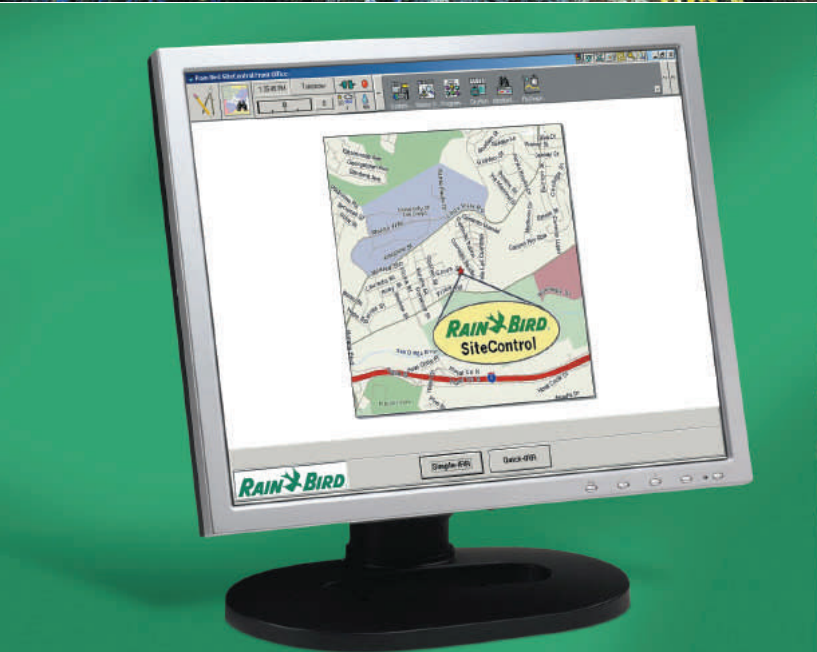
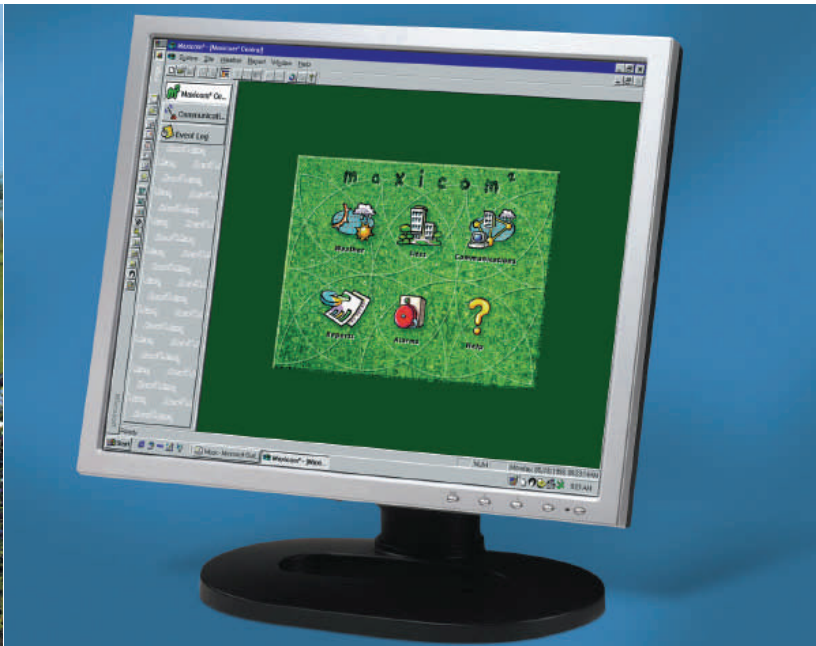




Mountain States Supply Central Control Pre-wired Panel



Mountain States Supply Central Control Pre-wired Panels are quality panels assembled and tested by qualified Mountain States Technicians. The objective of these panels is to assure that the proper equipment and communication devices end up specified and installed correctly for the end users.



Central Control Options

Trust that when you have identified your irrigation management requirements, there is a Rain Bird Central Control System that best meets those requirements.

Maxicom2® - If you're in charge of multi-site commercial or industrial irrigation, you know the challenges of water management. And, if you're like other irrigation professionals, you've wanted a "smart" irrigation system that lets you control multiple sites to your exact specifications. Maxicom2 by Rain Bird makes irrigation management a simple, accurate, and labor-efficient task. It's a central control system that helps you achieve superior water management effectiveness - at up to hundreds of locations. Maxicom2 is ideal for municipalities, school districts, universities, and park and recreation departments.

SiteControl - If you need powerful central control for a large, single contiguous site, SiteControl provides dynamic map-based control and real-time communication between the field and central computer. With customized site graphics, multiple mapping options and the ability to "see" the placement and real-time operation of individual controllers, decoders, valves and sprinklers, SiteControl makes controlling your landscape irrigation system fast and intuitive. Plus, the system is modular, allowing you to invest in only what you need and expand at a later date. Offering both satellite controller and two-wire decoder solutions, SiteControl provides unmatched features and expandability. It is ideal for college or corporate campuses, housing communities, cemeteries, sports fields, resorts and hotels.

What is Central Control?

Irrigation central control enables the programming, monitoring, and operation of irrigation systems from a central location. Central control systems are designed to allow a user to control a single site or a set of sites from a single PC. Central control software allows the water manager to set up programming to automatically control satellite controllers or decoders which operate the irrigation valves. A central control system can monitor and adapt system operation and irrigation run times in response to conditions in the system or surrounding area (weather conditions, pipe breaks, etc.) The system will also provide historical data to allow analysis and reporting of what ran when, how much water was used, and field problems.

Other Options

If a full-featured, fully-automated central control system is more than you need, trust Rain Bird to have a water management solution to fit your requirements.

IQ™ - Smaller commercial or even residential sites can also receive the benefits of central control with the IQ system. IQ is the perfect tool for the Landscape Maintenance Contractor, Property Manager, or Public Agency managing multiple, single irrigation controller sites. IQ is a modular, simple to program and install, cost-effective system that can grow over time with your needs. IQ lets you do anything you could do standing at the controller from the computer, including manual operation, program adjustment and even controlling the dial and switch settings. It has powerful water management features like ET Adjust, Seasonal Adjust, and Cycle+Soak to help you save water while you're saving time.

MDC - MDC is a single-site, two-wire decoder system offering unmatched expandability in a cost-effective system that provides fast and easy installation. High flow shut-off, alarms, sensor inputs, modular expandability, and diagnostic tools are just some of the features of the system. Programming software allows you to remotely download the irrigation schedules from the controller, review system data, make changes, and then upload the new schedules. MDC is ideal for corporate sites, apartments or condominiums, median strips, and other commercial site applications.

Central Control Pre-wired Panels

Each job has its own unique requirements and needs. Things that need to be addressed are: Primary Communication, Secondary Communication, Sensors, Master Valves, Pump Station Management, Handheld Remote Control, and any Special Considerations. Our Goal is to make the system easier to specify on construction documents, simpler to install and easier to maintain. Select the appropriate equipment in each of the following sections, if they apply.

Central Control Type	Sensors
Enclosure Type	Master Valves
Primary Communication	Pump Station Management
Interface Device (s)	Handheld Remote Control
Secondary Communication	Special Considerations
Controllers	

MSSCCP

MOUNTAIN STATES SUPPLY CENTRAL CONTROL PRE-WIRED PANEL

Mountain States Supply Central Control Pre-wired Panels are designed to be easy specification and installation items. Each panel is unique to the needs of the specific site. Because they are custom built to each specific site, this guide will help you to specifically decide what components will be needed for each panel. The following are standard to each MSSCCP:

- Each Panel will be wired as per the Manufactures recommendations.
- All required components will be included to form an integrated working system.
- All panels will be tested to ensure all aspects of the system are functioning properly.
- Each panel will have an AutoCAD generated panel layout to simplify the troubleshooting process.
- Terminal strips for easy valve connection.
- Junction box for 110 Volt power.
- Surge protection as required to protect 110 Volt incoming power.
- Grounding terminal for Rain Bird surge protection equipment.
- Manufacturers operations and maintenance manuals.

Central Control Type

Select one of the following: ☐ (MC) Maxicom ☐ (SC) Site Control ☐ (IQ) ☐ (MDC)

Features	Maxicom2®	Site Control	IQ™	MDC
Type of System	Multi-Site Satellite Control System	Single-Site Satellite/Decoder Control System	N/A	N/A
Computer Included with Software	Yes	Yes	N/A	N/A
Computer Programming	Yes	Yes	Yes	Yes
Computer Monitoring	Yes	Yes	Yes	Yes
24/7 System Monitoring	CCU	Central Controller	Satellite	N/A
Satellite Controllers or Decoder Addresses	ESP-SAT Satellites & FD Decoders	ESP-SAT Satellites & FD Decoders	LXM-DTC Satellites	FD Decoders
Number of Sites per System	>200	1	25 Standard	1
Number of Site Interfaces per System	>200	4	N/A	1
Number of Satellites per System	>5,600	448	250	N/A
Number of Satellites per Site Interface	Up to 28 per CCU	Up to 112 Total	N/A	N/A
Number of Satellite Stations per Site	Up to 672 per CCU	Up to 10,752	Up to 32 per Satellite	N/A
Database Interface	Yes	Yes	Yes	Yes
Program Adjustments by ET	Yes—Automatic	Yes—Automatic	Yes—Automatic	Yes—Automatic
Program Adjustments by Percentage	Yes	Yes	Yes	Yes
Number of Programs	999 per CCU	100 Total per System	4 per Satellite	11 per Controller
Flow Management Capabilities	Yes	Yes	N/A	N/A
Flow Monitoring/Recording Capabilities	Yes	Yes	N/A	Yes
Sensor Input and Manual Bypass	Yes	Yes	Yes	Yes
Number of Sensor Inputs	Up to 56 per CCU	Up to 200 Total	1 per Satellite	3 per Controller
Number of Flow Sensor Inputs	6 per CCU	15 per System	N/A	1 per Controller
High-Flow Shut-Down	Yes	Yes	Yes	Yes
Cycle & Soak	Yes	Yes	Yes	Pause/Repeat Only
Water Window	Yes	Yes	Virtual Only	N/A
Alarms	Yes	Yes	Yes	Yes
Projected Operation (Dry-Run) Utility	Yes	Yes	Yes	Yes

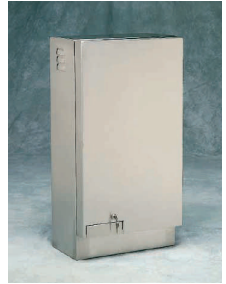
Enclosure Type

Select one of the following: ☐ (H) Hoffman ☐ (SB) Strong Box ☐ (OT) Other



Features & Benefits:

- 14 Gauge Steel
- External Mounting Brackets
- Removable door with continuous hinge
- Seams continuously welded and ground smooth
- External Mounting Brackets
- Rolled Flange around all sides of enclosure opening excludes liquids and contaminants
- All exterior hardware is stainless steel
- Oil-resistant door gasket
- Bonding provision on door
- ANSI 61 gray polyester powder coating
- UL Listed NEMA 4 or 12



Features & Benefits:

- Weather Resistant
- Vandal Resistant
- 100% Stainless Steel Construction
- Three-Point Locking Mechanism
- Flush Mounted Access Handle
- Continuous Carriage Bolted Hinge
- Door Seal & Continuous Carriage Drainage Channel
- Louvers for Cross Flow Ventilation
- Filter Screens
- Removable, Pre-Drilled Backboard
- UL Listed NEMA 3R

Primary Communication Type

Primary Communication is the communication from the Central Control System to the Interface Device(s), in some central control systems the primary control interface is the controller itself, eliminating the need for secondary communication.

Select one of the following:

- ☐ (PH) Standard telephone, analog dial-up service and RJ-11 phone jack.
- ☐ (DC) Direct Connect Communication. Use of RS-232 Cable (Max 50 ft)
- ☐ (CM) Cellular Modem Communication.
- ☐ (FO) Direct Fiber Optic Communication.
- ☐ (RD) Radio system 450 MHz. Point-to-Point system. (Need FCC License)
- ☐ (MDS) 900 MHz Radio.
- ☐ (TCP/IP) TCP/IP via Internet or Intranet.
- ☐ (WiFi) TCP/IP WiFi via Internet or Intranet.
- ☐ (SH) Short Haul Modem. Use a daisy chain 4 wire. (Patton model 1060)

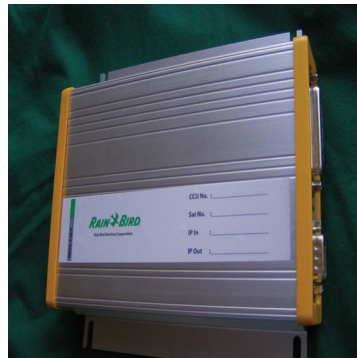
Maxicom2®	Site Control	IQ™	MDC
X		X	X
X	X	X	X
X		X	X
X		X	X
X	X	X	
X	X	X	X
X	X	X	X
X	X	X	X
X	X	X	X



TCP/IP



TCP/IP WiFi



Fiber Optic



900 MHz Radios

Interface Device (s)

Interface Devices allow for 24/7 real time monitoring of Central Control Systems. In some cases the use of Secondary Communication will not be needed with the selection of some devices. **Items that require a Secondary Communication method and Controllers.

Select one of the following:

- ☐ (C28) CCU 28 (28 Channel Cluster Control Unit) use with multiple controllers**
- ☐ (C6) CCU 6 (6 Channel Cluster Control Unit) use with multiple controllers**
- ☐ (SSxx) ESP-SITE Controller (Available in 8,12,16,24,28,32,36,40 Stations)
- ☐ (TWIH) TWI Hardwire - Two wire to SAT Interface Unit**
- ☐ (TWIL) TWI Link - Radio to SAT Interface Unit***
- ☐ (SDI) Small-Decoder Interface - Interface with up to 200 Decoder Addresses
- ☐ (LDI) Large-Decoder Interface - Interface with up to 500 Decoder Addresses
- ☐ (DTCPR) Direct to Central Communication Interface Module (Phone & RS232)
- ☐ (DTCR) Direct to Central Communication Interface Module (RS232 Only)
- ☐ (MDC50) Controls up to 50 Decoder Addresses - Expandable up to 200
- ☐ (MDC200) Controls up to 200 Decoder Addresses

Maxicom ^{2®}	Site Control	IQ™	MDC
X			
X			
X			
	X		
	X		
	X		
	X		
		X	
		X	
			X
			X



CCU



SITE



TWI



SDI or LDI



DTC



MDC

Secondary Communication Type

Secondary Communication is the communication from the Interface Devices to Satellites or controllers in the field. in some central control systems the primary control interface is the controller itself, eliminating the need for secondary communication. Secondary Communication only needed with CCU's and TWI's.

Select one of the following:

- ☐ (TW) Two-Wire Communication inside the Pre-wired Panel Only
- ☐ (TW+) Two-Wire Communication inside the Panel and to other controllers
- ☐ (LK) Radio system 450 MHz. Point-to-Point system. (Need FCC License)
- ☐ (MDS) 900 MHz Radio.
- ☐ (TCP/IP) TCP/IP via Internet or Intranet.
- ☐ (WiFi) TCP/IP WiFi via Internet or Intranet.
- ☐ (FO) Direct Fiber Optic Communication.

[illegible]

Controller(s)

Controllers will need to be used on sites where an Interface Device is needed (ex. CCU's or TWI's). These control boxes communicate through a mode of Secondary Communication back to these Interface Devices. Not all sites will require controllers or the control of the valves are coordinated through the Interface Device.

Select one of the following:

- ☐ (Exx) ESP-SAT type controller. (Indicate number of stations 8,12,16,24,28,32,36,40)

Maxicom2®	Site Control	IQ™	MDC
X	X		

Sensors

Sensors are used to incorporate different types of System Monitoring on a site. These sensors include Weather Stations, Flow Meters, Rain Gauges, Wind Sensors, and Soil Moisture Sensors. If there are any other types of sensors or devices that you wish to control with Central Control, you will have an opportunity to make a note of that under the Special Considerations section.

Select one of the following:

- ☐ (WSxx) Rain Bird Weather Station Pro. (Indicate Communication Method - DC or PH)
- ☐ (RSD) RSD-BEX Rain Sensor. (Switch type sensor)
- ☐ (WRS) Wireless Rain Sensor, distance limitations apply. (Switch Type Sensor)
- ☐ (SRC) Site Rain Gauge. Measures amounts of actual rainfall. (Pulse type sensor)
- ☐ (WSS) Wind Speed Sensor. Measures amounts of wind run. (Pulse type sensor)
- ☐ (ET) ET Manager. Provides pulses to indicate ET amount used. (Pulse type sensor)
- ☐ (SMS) Soil Moisture Sensor. Indicates whether the soil is wet. (Switch type sensor)
- ☐ (FSx) Flow Sensor Only. Model PT 1502 flow monitor will be used unless specified Otherwise. (Indicate Main Line Size - 1", 1-1/2", 2", 3", 4", etc.)

****If you intend on using a Flow Sensor and Master Valve combination unit, skip the Flow Sensor Only model and use a Hydrometer in the following section.**

Maxicom2®	Site Control	IQ™	MDC
X	X		
X	X	X	
X	X	X	
X	X		
X	X		
X		X	X
X			
X	X	X	X

Master Valve(s)

Master Valves are used usually in conjunction with Flow Sensors to help manage sites by isolating sites from water if there is a main or lateral line break, thus saving water.

Select one of the following:

- ☐ (MC) Master Valve in a normally closed (Same size as Flow Sensor Only model).
- ☐ (MO) Master Valve in a normally open (Same size as Flow Sensor Only model).
- ☐ (NHMxC) Netafim Hydrometer Unit, Flow Sensor & Normally Closed Master Valve Unit (Indicate Main Line Size - 2", 3", 4", 6" or 8").
- ☐ (NHMxO) Netafim Hydrometer Unit, Flow Sensor & Normally Open Master Valve Unit (Indicate Main Line Size - 2", 3", 4", 6" or 8").
- ☐ (NHMxCPR) Netafim Hydrometer Unit, Flow Sensor & Normally Closed Master Valve Unit with Pressure Regulator (Indicate Main Line Size - 2", 3", 4", 6" or 8").
- ☐ (NHMxOPR) Netafim Hydrometer Unit, Flow Sensor & Normally Open Master Valve Unit with Pressure Regulator (Indicate Main Line Size - 2", 3", 4", 6" or 8").

****All Netafim Hydrometers will use the PT 1502 Flow Monitor unless otherwise specified..**

[illegible]

Pump Station Management

Booster Pumps and VFD Pumps are becoming more common due to pressure and water shortages. Due to the variety of pump stations out there, it is recommended that you supply Mountain States Supply with the following information so they can determine how the Central Control system will manage the existing or new pump station.

Select one of the following:

- ☐ (EPS) Existing Pump Station. (The information below must be supplied to Mountain States Supply)
- ☐ (NPS) New Pump Station. (The information below must be supplied to Mountain States Supply)
- ☐ (VFD) New VFD Pump Station to be purchased with the MSSCCP. (The information below must be supplied to Mountain States Supply)

1	Job Name:	Job Site (City, State):
	Irrigation Application:	
2	Ambient Air Temperature: (°F)	
3	Elevation at pump: (feet above Sea Level)	
4	Notes: (Application Considerations)	
5	Electrical supply: ☐ 1 phase x 115 V ☐ 3 phase x 208 V (Please check one) ☐ 1 phase x 208 V ☐ 3 phase x 230 V ☐ 1 phase x 230 V ☐ 3 phase x 460 V	Frequency: ☐ 50 Hz ☐ 60 Hz Wiring: ☐ Verify 3-Phase 4-Wire Wye
		For U.S. applications frequency is 60 Hz.
6	Station Requirements Flow Capacity: Maximum: (GPM) Minimum: (GPM) Does the irrigation system have a master valve? ☐ Yes ☐ No If yes, where is it located? ☐ Before Pump ☐ After Pump <i>(It is not recommended placing the master valve before the pump station)</i> Is there an existing filtration system? ☐ Yes ☐ No If yes, what is the flow demand? (GPM) If no, is one needed for the irrigation system? ☐ Yes ☐ No Are you requiring a self-cleaning intake basket? ☐ Yes ☐ No Is there a water feature that requires flow demand? ☐ Yes ☐ No Are any of the above flow demands already included in maximum flow capacity? ☐ Yes ☐ No Maximum Pump Design Pressure: (PSI) City Water Supply: Maximum Static Inlet Pressure: (PSI) Minimum Dynamic Inlet Pressure: (PSI) Flooded Suction: Minimum Inlet Pressure: (PSI) Suction Lift: Maximum Lift (15' or less): (feet) Total Horizontal Run of Pipe (feet) Total Number of 90° Elbows: Total Number of 45° Elbows:	

Handheld Remote Control

Handheld Remote Control allows for the ability for the owner and/or maintenance personnel to control the valves or decoders on an irrigation system without having to go from one controller to another. This gives them maximum flexibility on site.

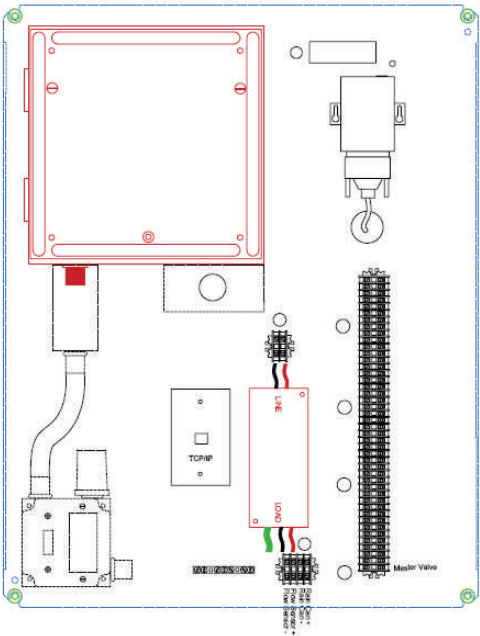
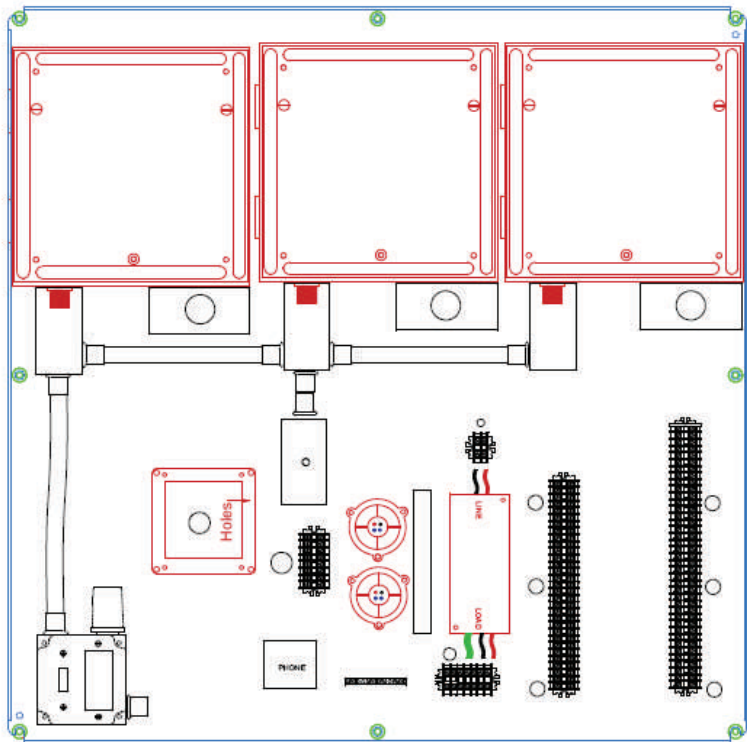
Select one of the following:

- ☐ (FR) Freedom system. Located at the Central Control Computer. (Requires Phone Line)
- ☐ (TRC) Remote Control Technology. TRC Commander System, which comes with one receiver per ESP controller, and one remote transmitter per panel. Antennas are included.
- ☐ (EI) Eicon RLM-RB retro-link receiver. Permanent mount retro-link receiver for the ESP controllers. Comes with one receiver card per controller and one remote per panel. Antennas are included.

Maxicom2®	Site Control	IQ™	MDC
X	X		X
X	X	X	
X	X		

Special Considerations (SC)

Because each project is unique and different, any special considerations, modifications, or request should be noted here. This could be a request for a different enclosure, possibility of different and newly developed communication methods, operation of different sensors like relays to operate ball field lights or the magnetic locks on restrooms. If you have any questions regarding what is or is not possible, contact the Central Control Specialist at Mountain States Supply, Inc. (800) 789-8885 or (801) 484-8885.



****Sample Panel Layouts**

MOUNTAIN STATES SUPPLY CENTRAL CONTROL PRE-WIRED PANEL

Code Summary (Check All That Apply)

If Multiple Quantities of are required, insert the quantity before each code.

Central Control Type

☐ (MC) = Maxicom2® ☐ (SC) = Site Control ☐ (IQ) = IQ™ ☐ (MDC) = MDC

Enclosure Type

☐ (H) = Hoffman ☐ (SB) = Strong Box ☐ (OT) = Other

Primary Communication

☐ (PH) = Standard Phone (RJ-11) ☐ (DC) = Direct Connect (RS-232) ☐ (CM) = Cellular Modem ☐ (FP) = Fiber Optics
☐ (RD) = 450 MHz Radio ☐ (MDS) = 900 MHz Radio ☐ (TCP/IP) = TCP/IP via Intranet ☐ (WiFi) = WiFi via Intranet
☐ (SH) = Short Haul Modem

Interface Device (s)

☐ (C28) = 28 Channel CCU ☐ (C6) = 6 Channel CCU ☐ (SSxx) = ESP SITE Controller ☐ (TWIH) = TWI - Hardwire
☐ (TWIL) = TWI - Link ☐ (SDI) = Small Decoder Interface ☐ (LDI) = Large Decoder Interface ☐ (DTCPR) = Direct to Central
☐ (DTCR) = Direct to Central ☐ (MDC50) = MDC 50 Addresses ☐ (MDC200) = MDC 200 Addresses

Secondary Communication

☐ (TW) = Two-Wire in Panel Only ☐ (TW+) = Two-Wire + Wire Outlet ☐ (LK) = 450 MHz Radio ☐ (MDS) = 900 MHz Radio
☐ (TCP/IP) = TCP/IP via Intranet ☐ (WiFi) = WiFi via Intranet ☐ (FP) = Fiber Optics

Controllers

☐ (Exx) = ESP-SAT type Controller (indicate number of stations in the 'xx' spot)

Sensors

☐ (WSxx) = Weather Station (PH/DC) ☐ (RSD) = RSD-BEX Rain Sensor ☐ (WRS) = Wireless Rain Sensor ☐ (SRC) = Site Rain Gauge
☐ (WSS) = Wind Speed Sensor ☐ (ET) = ET Manager ☐ (SMS) = Soil Moisture Sensor ☐ (FSx) = Flow Sensor Only (Size)

Master Valves

☐ (MC) = Master Valve Normally Closed Only (Same size as Flow Sensor) ☐ (MO) = Master Valve Normally Open Only (Same size as Flow Sensor)
☐ (NHMxC) = Netafim Hydrometer Unit Normally Closed (FS & MV in One) ☐ (NHMxO) = Netafim Hydrometer Unit Normally Open (FS & MV in One)
☐ (NHMxCPR) = Netafim Hydrometer Unit Normally Closed w/ Pressure Regulator ☐ (NHMxOPR) = Netafim Hydrometer Unit Normally Closed w/ Pressure Regulator

Pump Station Management

☐ (EPS) = Existing Pump Station ☐ (NPS) = New Pump Station ☐ (VFD) = New VFD Pump Station to be purchased with Panel

***Don't forget to include pump information sheet with panel request. See page 7.*

Handheld Remote Control

☐ (FR) = Freedom Remote System ☐ (TRC) = TRC Remote System ☐ (EI) = Eicon Remote System

Special Considerations (SC)

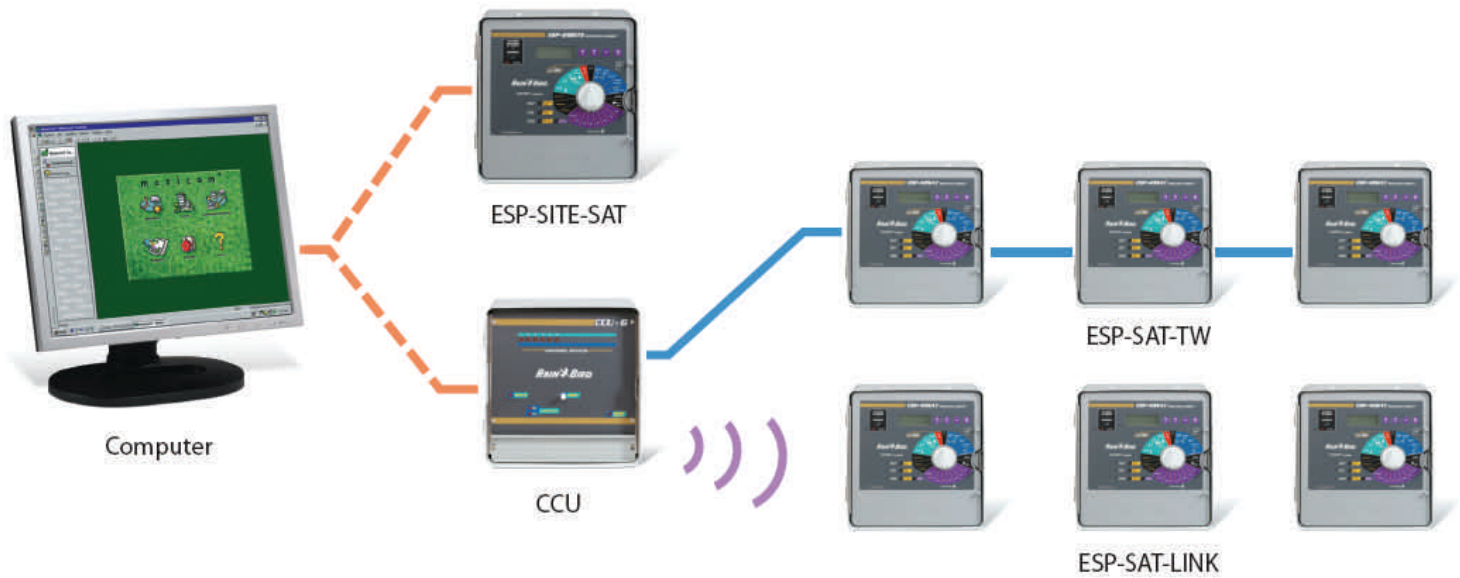
☐ (SC) =
☐ (SC) =

Code Sequence: MSSCCP—Central Control Type—Enclosure Type—Primary Communication—Interface Device (s)—Secondary Communication—Controllers—Sensors—Master Valves—Pump Station Management—Handheld Remote Control—Special Considerations

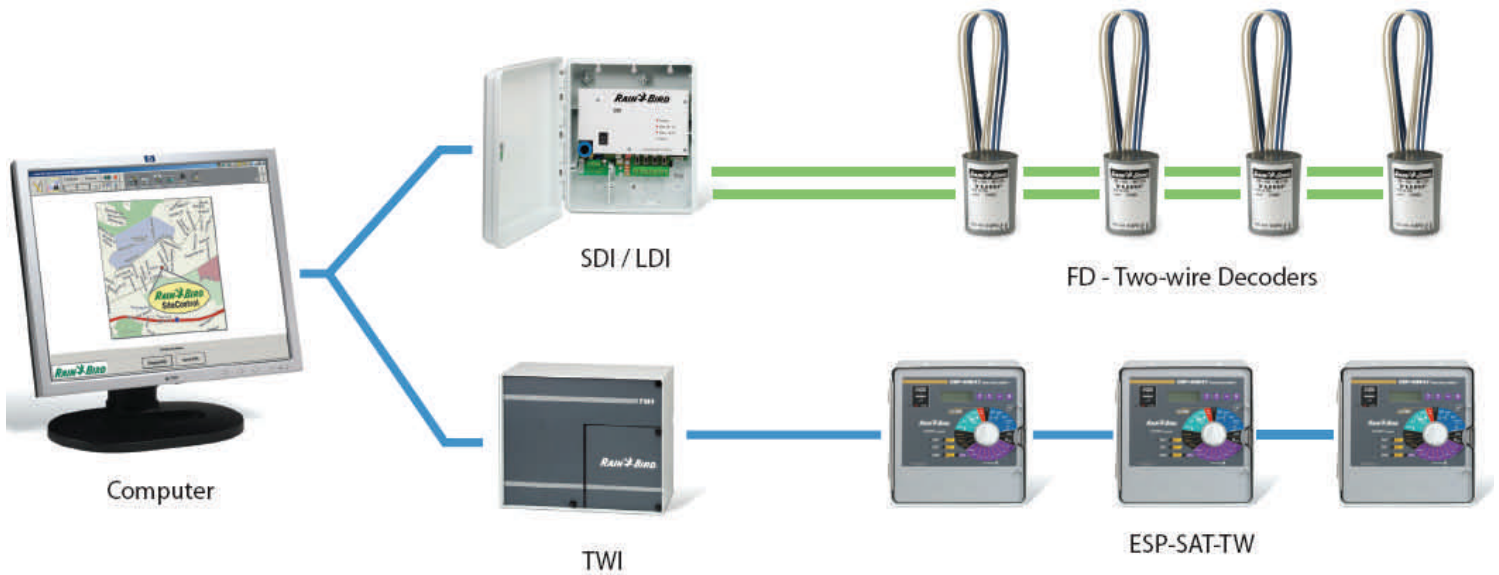
Code Example: MSSCCP—MC—H—PH—C28—TW+—2E32—E24—SRC—NHM4C—TRC

Explanation: Mountain States Pre-wired Panel for Maxicom Central Control System. Use Hoffman Enclosure with Phone Primary Communication, CCU28 Interface Device, Two-Wire Secondary Communication with Line out into the field, 2 ESP-32-SAT controllers, 1 ESP-24-SAT controller, Site Rain Gauge, 4" Netafim Hydrometer that is Normally Closed, and TRC Remote Control Cards and Receiver.

Maxicom²



SiteControlTM



----- Local and/or Remote Site Communication

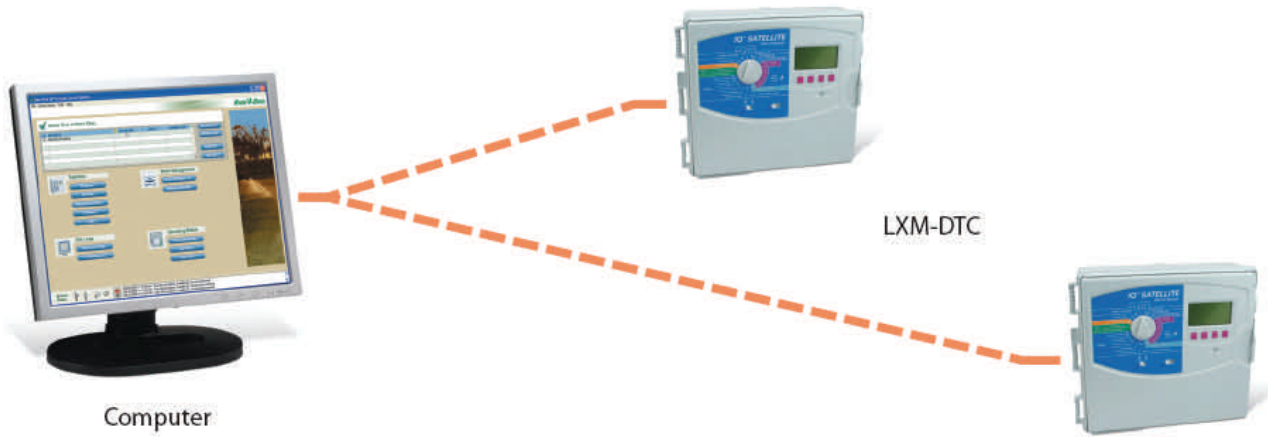
———— Local Site Communication Only

==== Two-Wire Decoder Communication

----- Local and/or Remote Site Communication

———— Local Site Communication Only

))) Link Radio Communication



----- Local and/or Remote Site Communication

———— Local Site Communication Only

===== Two-Wire Decoder Communication

----- Local and/or Remote Site Communication

———— Local Site Communication Only

))) Link Radio Communication



Partnering Together



www.mtnstatessupply.com

Mountain States Supply, Inc.
184 West 3300 South
Salt Lake City, Utah 84115

801.484.8885
800.789.8885
F. 801.484.6954

