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Flush Mount Installation

Instructions

- 1. Mount the flush mount box into the wall.
- 2. Connect the ground wire into the flush mount box using the tooth lockwasher and The machine screw nut (included in the kit).
- 3. Disconnect the red filter from the display panel.
- 4. Connect the wiring as shown on the wiring diagram.
- 5. **IMPORTANT**: If using a low voltage system (24 volt) make sure that the transformer is an **isolated** transformer.
- 6. Mount the display panel into the flush mount box using the four (4) black machine screws (#6, included in the kit). Make sure the switches are on the right side.
- 7. Snap the red filter into the display panel.



Wall Mount Installation



Instructions

- 1. Mount the wall mount box into the double gang box using four machine screws (#6-32) included in the kit.
- 2. Connect the ground wire into the flush mount box using the tooth lockwasher and machine screw nut (included in the kit).
- 3. Disconnect the red filter from the display panel.
- 4. Connect the wiring as shown on the wiring diagram.
- 5. **IMPORTANT**: If using a low voltage system (24 volt) make sure that the transformer is an **isolated** transformer.
- 6. Mount the display panel into the flush mount box using four (4) black machine screws (#6, included in the kit). Make sure the switches are on the right side.
- 7. Snap the red filter into the display panel.



Double Mount Installation



Instructions

- 1. Screw hanger/mounting rod (included in the kit) into the crossbar (also included in the kit).
- 2. Insert wires through hanger/mounting rod.
- 3. Install crossbar using two (2) #6-32 screws into double gang box.
- 4. Mount the double mount box into the clock base using two (2) #6 nuts and Tooth Lockwasher #6. (The double mount can be mounted either on the wall or on the ceiling).
- 5. Insert the two (2) locking hole plugs (0.187") and the locking hole plug (0.562") into the unused holes.
- 6. Insert double mount case onto the hanger/mounting rod.
- 7. Insert the support bracket onto the hanger/mounting rod.
- 8. Screw the two (2) nuts (included in the kit) onto hanger/mounting rod and secure the clock base to wall.
- 9. Connect the ground wire into the double mount box using the tooth lockwasher and machine screw nut (included in the kit).
- 10. Disconnect the red filter from the display panel.
- 11. Connect the wiring as shown on the wiring diagram.
- 12. **IMPORTANT**: If using a low voltage system (24 volt) make sure that the transformer is an **isolated** transformer.
- 13 Mount the display panel on one side of the double mount box using four (4) black machine screws (#6, included in the kit). Make sure the switches are on the right side.
- 14. Snap the red filter into the display panel.
- 15. Repeat steps 9-13 for the second clock.



Jumper Settings





GPS MASTER CLOCK 2 WIRE DIGITAL COMMUNICATION



SBD 2000 MASTER CLOCK 2 WIRE DIGITAL COMMUNICATION







SMC SERIES MASTER CLOCK 2 WIRE DIGITAL COMMUNICATION





SSM SERIES MASTER CLOCK 2 WIRE DIGITAL COMMUNICATION



GPS Receiver 08:59:52 $\overset{3}{\mathbf{Q}}\overset{4}{\mathbf{Q}}$ Power Common 12 Bh nou Red Brov Output Purple Transformer 110 / 24VAC Black Power Common White Gre Ground Slow-blo fuse White Black 24V SRM Series Analog Clock ØØ Blue 110VAC Red Brown Output Purp Orange Power Yellow Gree Ground 24V SBD 1000 Series Digital Clock or SBD 2000 Series Digital Clock 9 If a transformer is needed Blue nput for a 24 volt system, please select from the following: Red Brown Output Purple Part Number: 35-M015 (6.2A) Black White Gree 35-M020 (10.4A) Ground 35-M025 (20.8A) 35-M030 (31.2A) 24V SRM Series Analog Clock

GPS RECEIVER MASTER CLOCK RS485 24 VOLT





GPS RECEIVER MASTER CLOCK RS485 110 VOLT



SBD 2000 MASTER CLOCK RS485 24 VOLT





SBD 2000 MASTER CLOCK RS485 110 VOLT







SMC SERIES MASTER CLOCK RS485 24 VOLT







SMC SERIES MASTER CLOCK RS485 110 VOLT





SSM SERIES MASTER CLOCK RS485 24 VOLT







Frequently Asked Questions

Can the SBD 1000 digital clock be used as an independent clock?

No, the SBD 1000 requires a communication input and must be used with either a Sapling master clock or a SBD 2000.

Some clocks require a 9 volt battery backup for timekeeping. What happens to the SBD 1000 if a power failure occurs?

Upon restoration of power, the SBD 1000 immediately receives a correction signal from the master clock and resets itself to display the correct time. This occurs within seconds of "power-up", so no battery backup is required for a timekeeping base within the individual clocks. Since the SBD 1000 does <u>not</u> require a battery backup, the clock never needs to be opened.

How can I interface the SBD 1000 with Rauland, Dukane and other systems?

The SBD 2000 digital clock, the SSM master clock, the SMC 3000 series master clock or the STR 2000 wireless transmitter can be used as an interface between other systems and SBD 1000 clocks.

How many clocks can be run on the same communication line using a RS485 protocol? What is the maximum distance between clocks on the communication line?

Each SBD 1000 digital clock has a RS485 input and an output. Each output port can drive up to 32 clocks in parallel. When using a daisy chain method of communication, you can run an unlimited number of clocks on the same communication line by connecting the clocks to each other individually where each clock drives the next clock in line. When using a daisy chain method of connection for communication, the maximum distance between each clock can be up to 3,000 feet. When an output drives more than one clock in parallel, the combined length of all the lines emanating from one clock can not exceed 3,000 feet.

How can I display "BELL" and "FirE" on the clock?

"BELL" displays can be programmed by either the Sapling 2000 or 3000 Series master clocks. To display "FirE", a SMC 3000 Series master clock must be used, which receives a signal from an existing alarm system.

What happens if voltage on the power line drops from 24 VAC to lower voltage?

The clock will still function, and will maintain the same level of brightness. However, the current consumption will increase proportionally to the decrease in voltage.



Troubleshooting

The clock is not running. What do I do?

- a) Measure the input voltage to the clock. The voltage should measure 85-135 volts in the 110 volt model or 10-28 volts in the 2.5"/24 volt model and 16-28 volt in the 4.0"/24 volt model.
- b) Make sure the transformer is an **isolated** transformer if using a 24 volt model.
- c) Make sure the ground wire is not touching other wires.

NOTE: If you fail to follow instructions a and b listed above, the fuses can be blown.

The clock is not receiving an input signal. What do I do?

- a) Make sure that the RS485 is connected properly when using in RS485 slave mode.
- b) Make sure that the polarity of the communication wire is correct when using the clock in 2 wire digital communication slave mode.
- c) If using 2 wire digital communication, make sure the clocks are the 24 volt model.

There is data noise bleeding into the intercom line. What do I do?

Reduce the transmission rate from the master clock to once a minute.