



Slim Pace Clock

User Guide

Manufacturer:

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Product Identification

Product: Slim Pace Clocks
Model Numbers: MS-0037 through MS-0040

Power Specification

150W power supply: 100-240V, 50/60Hz, max 2A

Information in this manual is subject to change without notice. Pictures and illustrations may not accurately depict your version. Please check our website for the most current information; our user manuals are available online in the customer service section of our website.

FCC Compliance Statement:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Contains: FCC ID OUR-XBEEPRO or MCQ-XBEE3, 2.4GHz transmitter

Contains: Model xBeePRO Radio, IC: 4214-XBEEPRO or xBee3 Radio, IC: 1846A-XBEE3

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Product Description

Slim Pace Clocks display time for time of day and pacing purposes. Six-digit clocks display hours, minutes and seconds. Four-digit clocks can display either hours and minutes, or minutes and seconds.

Clocks set to the same channel and PAN ID will automatically synchronize with each other. Synchronization is controlled by an internal certified radio with an internal patch antenna which is protected from damage. The clocks feature an indoor/outdoor metal enclosure with a slim profile and a plastic weather cover over the digits.

Clocks can display workout reps and sets from a wireless segment timer, or scoreboard data from a wireless tabletop controller or a wireless handheld controller. In order to do so, a clock must be set to the same Channel and PAN as the controller. Additionally, the clock's Module number must be selected as active in the appropriate menu of the controller (see controller manual for more information.)

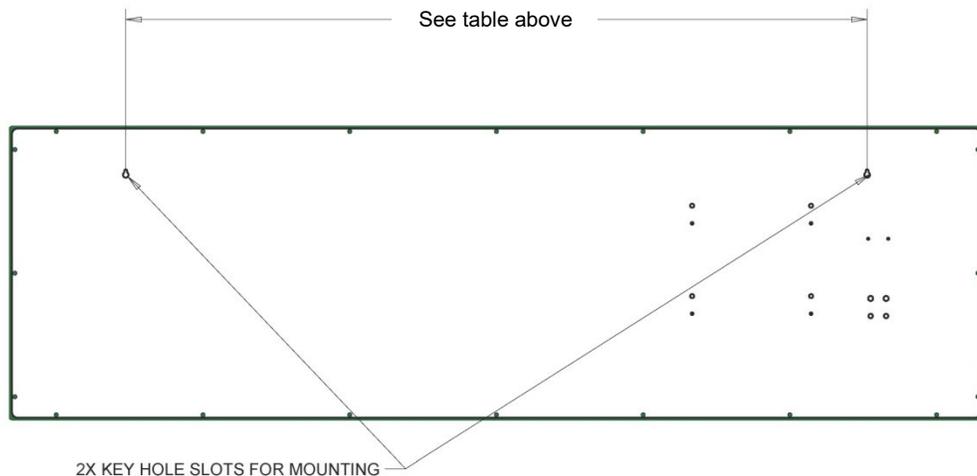
The default factory settings are channel 4, PAN 0 and module address 1. To change these use the clock's push button, described on page 4. You can also set them by changing the switch settings on the clock's control board, as described on page 7.

Mounting and Power Connection

Physical Installation

Determine the location for your pace clock. It is your responsibility to choose a location where the wall composition or mounting structure can support the weight of the slim pace clock. Use appropriate mounting hardware for the weight of the clock and its environment. The keyhole slots in the back of the clock are .359 inches at the bottom to accommodate the head of the screw, and .172 inches at the top, to accommodate the shank of the screw. Installation must meet all national and local codes. The 6-digit slim pace clock is pictured below.

Model	Weight	Distance between keyhole slots
6-digit	28 pounds (12.7 Kg)	48 inches
4-digit	20 pounds (9 Kg)	36.75 inches



Electrical Installation

Loosen strain relief on left side of clock and pull recessed power cord from enclosure. Connect to standard outlet (120V or 230V) no further than 6 feet from left end of clock with the internally wired power cord. The pace clock is grounded through the power connection. For outdoor installation, the clock can only be used with an outdoor rated receptacle.

Hard Wired Installation

Tools required:

Flat head screwdriver

Phillips head screwdriver

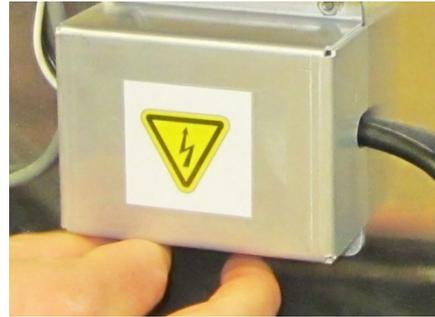
5/16" and 11/32" nut drivers

Note: this step must be done by a qualified electrician.

1. Detach the weather cover by turning the slotted studs a quarter turn using a flathead screwdriver so that they are vertical. Remove the weather cover and set it in a safe place.
2. The Termination Block is located under the second digit from the left of the unit.
3. Remove the digit(s) covering the termination block. Using a Phillips head screwdriver, unscrew the retaining screws and pull the digit partially away from the board. Disconnect the digit cable. Remove the digit and set it and the retaining screws in a safe place.
4. Determine the best location for power to enter the scoreboard. There are knockout locations on the left and right sides of the clock. If the better location is the left side where the power cord with AC plug currently is, skip to step 6.
5. If the right side is the better location, carefully remove the small knock out.
6. Remove terminal block cover by removing the kepnuts holding it in place with the 5/16" nut driver.
7. Use the 11/32" nut driver to loosen the kepnuts securing the wire clamp.
8. Disconnect the power cord with AC plug from the terminal block, and remove it. Save the strain relief for later use.
9. If the power is entering from the right side, fill the hole in the left side with the appropriate size blank.
10. Feed cord or wires from the outside through the scoreboard to the terminal block, using the strain relief provided or its equivalent. Tighten the strain relief nut inside the scoreboard, leaving the outside cable nut loose until later.
11. At power connection, feed wires under the wire clamp as shown. Connect the Line and Neutral wires as labeled, and connect the Ground wire to the ground screw, as shown. Tighten the wire clamp with 11/32" nut driver until just snug. Cover with the terminal block cover, with the wires exiting through the holes in the sides, taking care not to damage the sheath of the power cable or power wires.

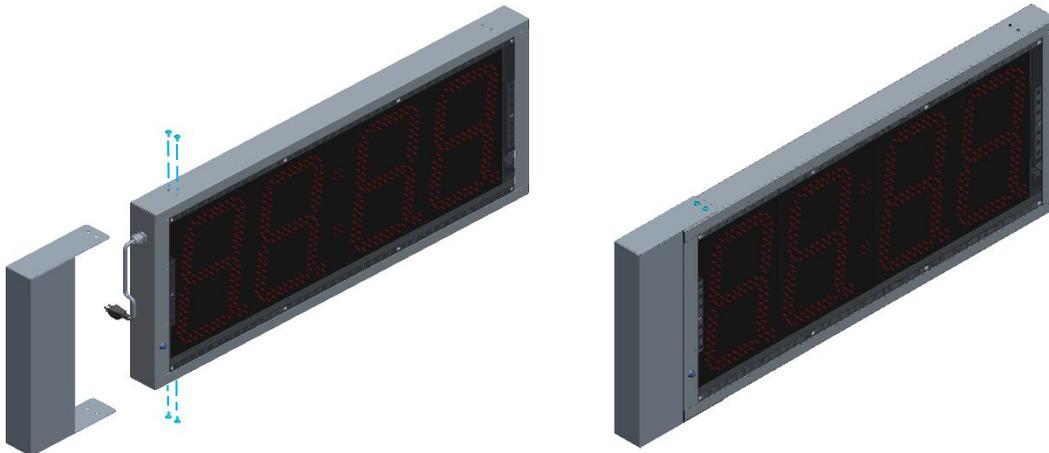


12. Insert excess power cord into enclosure and tighten cable nut of strain relief on



the outside of the scoreboard.

An optional cover for the power cable is available for both the 6 digit and 4 digit slim pace clocks. It can be installed on the right or left. To install, place the cover over the power cable, line up the screw holes on the cover with the holes on the pace clock and secure to the top and bottom of the pace clock using the 4 supplied screws.



Operating Instructions

Synchronizing clocks

To set multiple clocks to the same time, they must be set to the same channel and PAN (see page 5).

Initial Set Up

1. Choose a centrally located clock or scoreboard to designate as Leader
2. Configure Leader and set time
3. Designate all other clocks as Follower
4. Do not set more than one clock as leader; if you do, follower clocks will not behave correctly.

Configuring

Hold the push button for 2 seconds and release to cause the clock to enter the menu. The clock enters Menu 1, as described below. Once in the menu, hold the button for one second to advance to the next menu item. If you continue to hold, the clock will step through the menu options every second. Release the button when you are in the menu option you wish to set.

Menu 1: Leader or Follower

Displays FOLL and alternates to Lead with each button click. When the choice you want is displayed, press and hold the button for one second to advance to the next menu.

Once a clock is designated Leader, the next three menus allow you to set 12 or 24 hour clock format, hours and minutes. Clocks that are designated as Followers do not have these options.

Menu 2: 12 or 24 hour clock format

Displays __ 12 and alternates to __ 24 with each button click. This must be set individually for each clock. When the choice you want is displayed, press and hold the button for one second to advance to the next menu.

Menu 3: Hours

With each button click the clock will increment through the hours 1-12 or 1-24, depending on the previous menu setting. For the 12 hour format, at 12 the decimal of the fourth digit from the left will light or go out. Lit indicates p.m. and unlit indicates a.m. When the choice you want is displayed, press and hold the button for one second to advance to the next menu.

Menu 4: Minutes

Displays __:28. Each click increments by one minute. When the choice you want is displayed, press and hold the button for one second to advance to the next menu.

To change their time, turn all of the clocks on, and set the time on the Leader clock. As soon as time is changed on that clock and you have exited the menu, it will send the selected settings to the Follower clocks.

Setting intensity, channel, PAN and module address

Other settings including, time shifting, intensity (brightness of the digits), module, channel and PAN must be set individually for each clock to accommodate clocks in different environments (shade and sun, for example).

Menu 5: Time shifting

Set a 4-digit clock to display hours and minutes or minutes and seconds. With each button click, displays HH:__ and alternates to __:SS (which looks like __:55). HH will display hours and minutes (HH:MM), and MM will display minutes and seconds (MM:SS). This must be set individually for each clock. *Note: __:SS is not practical on a 6-digit clock; if used, the display will show MM:SS:__* When the choice you want is displayed, press and hold the button for one second to advance to the next menu.

Menu 6: Digit intensity

Displays _int. Intensity switches from low to medium to high to AL (ambient light) with each button click. This must be set individually for each clock. When the choice you want is displayed, press and hold the button for one second to advance to the next menu.

Menu 7: Set Channel

C and the channel number are displayed; 0 – 11 are available. Advancing past 11 will show "--" which indicates that the wireless is turned off. Advance one more to 0. This must be set individually for each clock. When the choice you want is displayed, press and hold the button for one second to advance to the next menu.

Menu 8: Set PAN

P and the PAN are displayed; 0 – 15 are available. Advancing past 15 will cycle around to 0. This must be set individually for each clock. When the choice you want is displayed, press and hold the button for one second to advance to the next menu.

Menu 9: Set Module (Address)

A and the module address are displayed; 1 – 6 are available. Advancing past 6 will cycle around to 0. This must be set individually for each clock. When the choice you want is displayed, press and hold the button for one second to exit the menu.

Exit the menu holding the push button for one second after the address option is set. The clock will display the time of day that you have set. The settings you have chosen are only saved after you exit the menu. Time setting selected in menus 2-4 on the Leader clock will be transmitted to the Follower clocks. When you exit the menu, time of day is set at :00 seconds. It can take a full minute for followers to synchronize with the leader.

Displaying Data on the Clock

The clock can display time of day, synchronized with other scoreboards and clocks set to the same wireless channel and PAN. It can also display game time it receives from a tabletop controller or a handheld controller.

Segment Timer

Follow the instructions in the segment timer manual to set the segment timer to the same channel, PAN and module as the clock(s) and scoreboard(s) you want to control with it. The clock will display the programmed sets.

Tabletop controller

Follow the instructions on the tabletop controller quick reference sheet to set the tabletop controller to the same channel, PAN and module as the clock(s) and scoreboard(s) you want to control with it. The clock will display game time as sent from the controller.

You can also turn off the ambient light sensor and set a specific intensity on the clock with the tabletop controller.

Handheld controller (generic sport)

Follow the instructions in the handheld controller manual to set the handheld controller to the same channel, PAN and module as the clock(s) and scoreboard(s) you want to control with it. The clock will display game time as sent from the controller. Follow the general instructions for all sports.

You can also turn off the ambient light sensor and set a specific intensity on the clock with the tabletop controller.

Changing Module, Channel and PAN at the control board

The most convenient way to change the clock's module, channel and PAN is with the push button (see page 5). You can also change them by changing the switch settings on the clock's control board, as described here.

1. Make certain the unit is disconnected from AC power.
2. Remove the weather cover by turning the slotted studs a quarter turn using a flathead screwdriver so that they are vertical. Remove the weather cover and set it in a safe place
3. Remove the second digit from the left. Using a Phillips head screwdriver, unscrew the retaining screws and set them in a safe place. Carefully lean the digit against the enclosure.
4. Set the channel and PAN using the dip switches on the circuit board:

DIP switch settings (Off = 0, On = 1)

Channels: Switches **1-4 of S2**. 0 to 11 are valid

PAN ID: Switches **5-8 of S2**. 0 to 15 are valid

0000	0	0010	4	0001	8	0011	12
1000	1	1010	5	1001	9	1011	13
0100	2	0110	6	0101	10	0111	14
1100	3	1110	7	1101	11	1111	15

NOTE: switches 6-8 of S1, should not be changed.

Doing so will cause the unit to cease functioning properly.

Switches 1-5 of S1 have no effect for Slim Pace Clocks, and do not need to be set.

5. Reattach the digit and replace the weather cover. Turn the slotted studs to horizontal. They will snap into place with moderate pressure.

Standards followed

UL 48

Issue:2011/09/02 Ed:15 Rev:2012/05/04 UL Standard for Safety Electric Signs

CAN/CSA C22.2#207

Issue:1989/01/01 Portable and Stationary Electric Signs and Displays General Instruction No 1: 1989/10/01 - (R2008)

FCC 47CFR 15B cIB

Issued: 2015/10/01 Title 47 CFR Part 15 Subpart B Unintentional Radiators Class A Verification

ICES 003

Issue:2004/01/01 Issue No.4 Interference-Causing Equipment Standard, Digital Apparatus



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