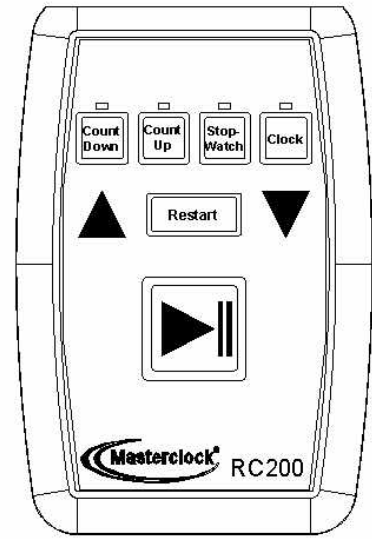# Masterclock®

RC200 REMOTE CONTROL

USER GUIDE

INTRODUCTION

The Masterclock RC200 remote control is designed to work with Masterclock *Series II* Time Code Display (TCD) and Network Time Display (NTD) Digital Clocks.

The RC200 allows the user to control the mode of the clock and to utilize the Count-Down Timer, Count-Up Timer, Stop-Watch, and Clock functions.

Package Contents:
1	RC200 digital clock remote controller
1	DB9 to RJ12 adapter for TCD series II digital clock.
1	50ft (15m) 6 conductor, 6P6C cable
1	User Guide
2	AA Alkaline Batteries

POWERING OPTIONS

The RC200 can either be powered from
a) a Masterclock TCD or NTD *series II* digital clock, using standard 6P6C (6 conductor) cable
b) an (optional) external transformer supply, or
c) two AA batteries [Alkaline recommended].

CONNECTING THE RC200 to the TCD or NTD series II clock
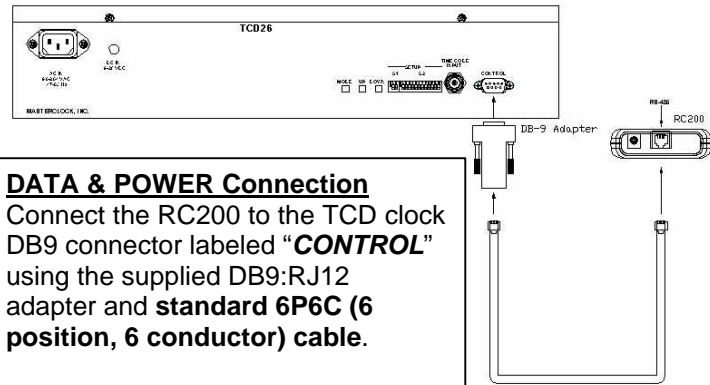
DATA & POWER Connection
Connect the RC200 to the TCD clock DB9 connector labeled "*CONTROL*" using the supplied DB9:RJ12 adapter and **standard 6P6C (6 position, 6 conductor) cable**.

DATA Only Connection
Connect the RC200 to the TCD clock DB9 connector using the supplied DB9:RJ12 adapter and **standard 4P4C (4 position, 4 conductor)**
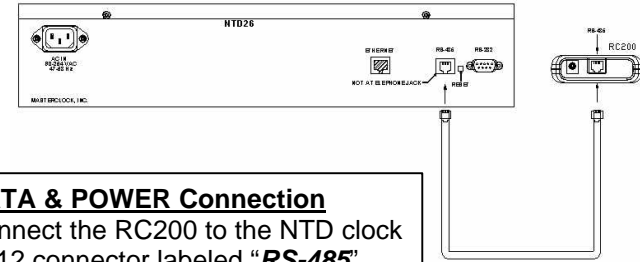

DATA & POWER Connection
Connect the RC200 to the NTD clock RJ12 connector labeled "*RS-485*" using **standard 6P6C (6 position, 6 conductor) cable**.
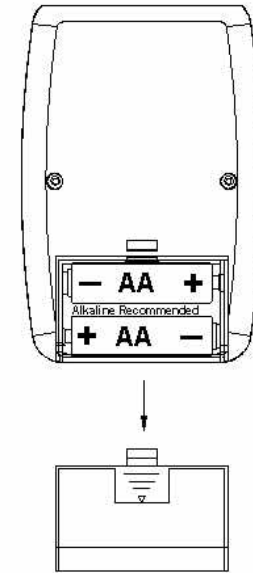
DATA Only Connection
Connect the RC200 to the NTD clock RJ12 connector labeled RS-485 using **standard 4P4C (4 position, 4 conductor) cable**

Powering the RC200 from an external (optional) transformer supply

Optional transformer supply – sold separately
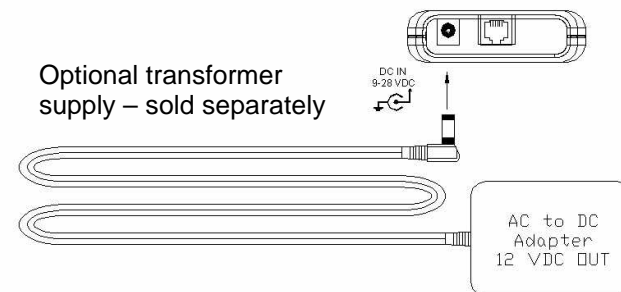
INSTALLING BATTERIES

1. On the rear of the RC200, push the battery compartment cover and pull in the direction of the arrow to access the battery compartment.
2. Insert two (2) fully charged AA batteries. [Alkaline Recommended] Match the + and – marks on the batteries to the + and – marks in the battery compartment as shown.
3. Press the battery compartment cover back into place. The tab should click when the cover is locked.
4. Test the unit by pressing the Clock mode button twice, without the external power supply or tether attached. If the batteries are inserted correctly, the LED indicator above the Clock mode will blink once per second.

Battery Conservation Features
The RC200 is designed to utilize battery power when a 4P4C, 4 conductor cable is used for communications. The RC200 has been designed with special features to conserve the battery power.

Note: The RC200 will flash the LED indicator above the currently selected mode once per second when using battery power.

External Power Battery Disable
The RC200 will disable the battery circuit when powered from either from the TCD or NTD clock using the 6P6C, 6 conductor cable, or when using the optional external transformer supply.

Sleep Mode
If the RC200 is left on for 1 (one) hour with no keypad activity, the RC200 will go into sleep mode to conserve battery power. **The LED indicator will turn off.**
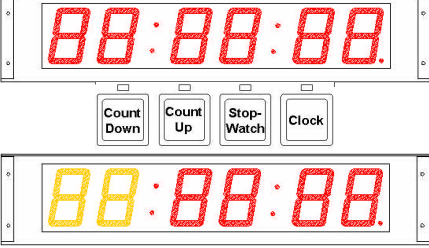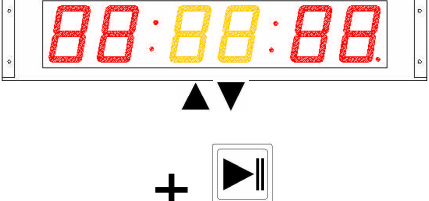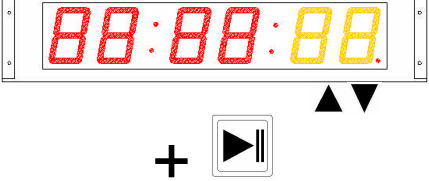
Note: To wake the RC200 from sleep mode, press any key once.

FEATURES AND FUNCTIONS

Key Chart

Key	Function
▢	The **LED** (red light) mode indicator lights up above the current mode selected. • Blinks to indicate that the unit is operating in battery mode. • On solid to indicate that the unit is operating from an external supply.
Count Down	**Count Down Timer Mode** Select Use to initiate a count down timer from a set value to zero. Press once to enter mode. Press and hold for 3 seconds to program time.
Count Up	**Count Up Timer Mode** Select Use to initiate a count up timer from zero to a set value. Press once to enter mode. Press and hold for 3 seconds to program time.
Stop-Watch	**Stop-Watch Mode** Select Use to start a timer from zero with no set point. The display/count stops at 23:59:59 after 24 hours. Press once to enter mode. Press and hold for 3 seconds to program time.
Clock	**Clock Mode** Select Use to view the clock time. Press once to enter mode. Press and hold for 3 seconds to program time.
▲	**Up Arrow – Increment** Use to increment the value of the currently selected digits Press once to increment by 1 (one) Press and hold to increment rapidly.
▼	**Down Arrow – Decrement** Use to decrement the value of the currently selected digits Press once to decrement by 1 (one) Press and hold to increment rapidly.
Restart	**Restart** – Use to Stop the current timing sequence and re-initialize to the last set value.
▶❚❚	**Play/Pause** Use to start or initiate a timing cycle. Use to pause and/or continue a timing cycle. Use to advance forward to the next set of digits while programming the timer value.

PROGRAMMING

Select Display MODE	Count Down / Count Up / Stop-Watch / Clock	Select the desired mode by pressing one of the four mode select keys. The LED indicator above the mode key will light indicating the current mode of operation.
Enter Program Mode to Set the Time/Timer Sequence	88:88:88 Count Down / Count Up / Stop-Watch / Clock 88:88:88	Enter/program the desired time/timer value while viewing the front LED display of the clock. Press and Hold the desired mode key for 3 seconds to enter the program mode. The mode indicator will blink once and the front LED display of the clock will flash the HH (hours) digits.
• **Set Hours**	88:88:88 ▲▼ + ▶❙	Enter the desired HH (hours) using the **UP/DOWN arrow** keys. ▲▼ **Press Play/Pause** ▶❙ key once to accept the value and advance to the MM (minutes) digits.
• **Set Minutes**	88:88:88 ▲▼ + ▶❙	Enter the desired MM (minutes) using the **UP/DOWN arrow** keys. ▲▼ **Press Play/Pause** ▶❙ key once to accept the value and advance to the SS (seconds) digits.
• **Set Seconds**	88:88:88 ▲▼ + ▶❙	Enter the desired SS (seconds) using the **UP/DOWN arrow** keys. ▲▼ **Press Play/Pause** ▶❙ key once to accept the value.
Program Complete	88:88:88	The time is now programmed. The clock display will no longer flash the digits.

OPERATION

Start Sequence	▶❙	Start the timing sequence by pressing the **Play/Pause** ▶❙ key once**.
• **Pause**	▶❙	The timing sequence may be paused by pressing the **Play/Pause** ▶❙ key once**.
• **Resume**	▶❙	The timing sequence may be resumed by pressing the **Play/Pause** ▶❙ key once.
Sequence Complete	88:88:88	The clock display will flash 3 (three) times to indicate that the timing sequence is complete.
Restart Sequence	Restart + ▶❙	The timing sequence may be stopped and/or reset to the start point by pressing the **Restart** Restart key. Then, **Press** the **Play/Pause** ▶❙ key once to start the sequence.

TROUBLESHOOTING

Problem: The RC200 unit does not power up when using a 4 conductor, 4P4C data cable.

Answer: Check batteries. Replace with new batteries.

Answer: The RC200 may be in sleep mode after being left inactive for 1 hour.
Press any button on the RC200 to wake the unit from sleep mode.

Problem: The RC200 unit does not power up when using a 6 conductor, 6P6C data/power cable.

Answer: Check that the cable is connected to the proper port on the clock.
• If using a TCD series II clock, the cable must be connected to the DB9 connector labeled "Control" using the DB9 to RJ12 adapter supplied.
• If using an NTD series II clock, the cable must be connected to the RJ12 port labeled "RS-485".

Answer: Ensure that the power to the clock is turned ON. The RC200 requires that the clock be powered in order to draw power.

Answer: If the above items do not correct the problem, the internal fuse of the clock, which allows for powering the RC200, may have blown.

• You may continue to use the RC200 by switching to the battery power or by using an optional external AC:DC power supply.

• Or, you may return your clock for service. Contact technical support at Masterlclock. support@masterclock to return the clock for repair. Note: the clock has no user serviceable parts inside and must be returned for service.

Problem: The RC200 cannot be powered by my NTD or TCD clock ; or when operating with an alternate supply such as batteries or optional external AC:DC supply, the clock cannot be controlled by the RC200.

Answer: Check that you are using a Masterclock NTD or TCD *series II* model digital clock. Previous versions of the NTD or TCD clock cannot power or communicate with the RC200. You may be able to upgrade your clock to work with the RC200. The serial number label of your unit will help identify the model type. Please contact technical support for additional information. support@masterclock.com

Problem: I programmed the mode and the clock timer, but the TCD clock unit periodically reverts to clock mode or the timer of 15 seconds.

Answer: This is normal operation if the clock has experienced a power cycle. You have likely powered off the clock or have had a power failure. The TCD clock will not retain the mode or timer values thru a power cycle.

You can set the default display mode of the TCD clock using the DIP switches on the rear of the unit. The unit will read the switch settings upon power up and set the display accordingly. Please consult the user's manual for the TCD clock for details

Note: The default value for the timer which has been pre-programmed into the unit is 15 seconds. This has been designed for use by broadcasters to time out of a 15 second commercial.

Problem: I was running a timer sequence in count-up [count-down] mode. When I pressed any of the mode keys to set another timer sequence, the currently running timer sequence stopped.

Answer: This is normal operation. The RC200 can run or set/program only one timer sequence at a time. You cannot con-currently program another timer sequence while the current sequence is running or paused. When pressing any of the mode keys, the currently running sequence will be stopped and set to the initial count value. Allow the currently running sequence to complete before changing modes or programming new timer values.

SPECIFICATIONS

Communications:
    Type: RS-485
    Connection: RJ12
    Cable: (works with standard flat phone cable)
    Length (max)   500 ft (152 m)
                DATA only   4P4C, 4 conductor
                DATA & POWER   6P6C, 6 conductor

Physical:
    Size   3.11"x4.615"x 0.975" (7.9cm x 11.7cm x 2.47cm)
    Weight   6 oz (170 g) ; batteries installed

Power:
    Batteries: (2), AA, Alkaline Recommended
    External DC input: 9-28VDC, center pin +
    Power Consumption   18mA, at 12VDC

Environmental:
    Operating Temperature   0°C to +40 °C
    Storage Temperature   -40 °C to +70 °C
    Relative Humidity   up to 90%, non-condensing@25 °C

PRECAUTIONS:
• **Do not immerse any part of this unit, power &/or data cord or plug in water or other liquid.**
• **Do not operate this device with a damaged data &/or power cord or plug**
• **Use this device only for its intended use and only with intended equipment.**
• **Do not use this device on wet or hot surfaces, or near a heat source.**
• **Do not connect this device to home telephone or business phone lines**