FN:CC186M2.DOC

CC186 AND CC186/2

STAND-ALONE OR SYSTEM CLOCK

APPLIED TECHNICAL SYSTEMS

CC186 OR CC186/2 STAND-ALONE AND SYSTEM CLOCK REV 05/16/01

DESCRIPTION

The CC186 is a single sided clock with six, 1.8 inch high digits. The CC186/2 is a double sided clock with six, 1.8 inch high digits per side. Each model is for displaying time or elapsed time in hours, minutes, and seconds (HH:MM:SS). This manual covers both single sided and the double sided versions of the clock and will refer to both simply as a CC186. The time on the display can manually be set by switches or may receive a 10-byte time data and control message via an RS232 input signal. Up to 50 CC186 displays can be connected to a single RS232 port at distances of up to 2000 feet away using a simple two-conductor cable such as Belden 8442. CC186 displays require local power to illuminate the digits. The display may be turned ON/OFF at the display and never lose time as long as the power is not disconnected. The 1.8 inch high digits are visible up to 50 feet away.

SPECIFICATIONS

Operating voltage: 12 VAC or 12 VDC, 3 VA maximum. A power jack is provided on the side panel for connecting power. A 120/12 VAC power module (P/N: 0900-7015) with mating connector is included.

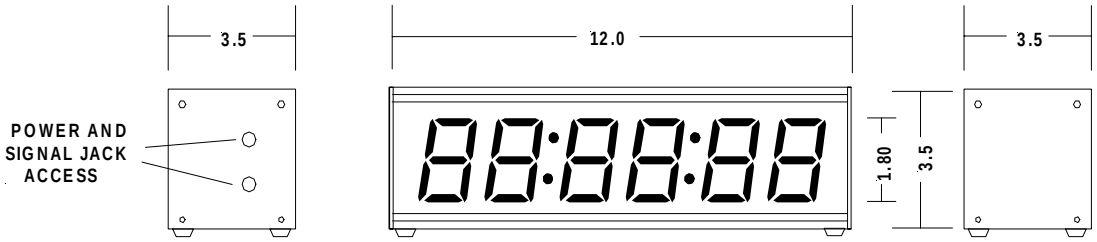
Input Signal: Receives a 10-byte message via a Two-Wire, RS232 signal from the host device. A phone jack is provided on the side panel for connecting the incoming RS232 signal. A signal cable (P/N: 9110-1116) with mating plug and DB9 female connector is provided.

Enclosure: Black, anodized aluminum enclosure with removable rubber feet. Optional mounting brackets for bottom, top, and side mount applications are also available. Dimensions: 12"W x 3.5"H x 3.5"D.

Display: Six, 1.8 inch high, bright red LED, digits display hours, minutes and seconds. Discrete LED colons are located between the hours and minutes, as well as between the minutes and seconds. Visible up to 50 feet away.

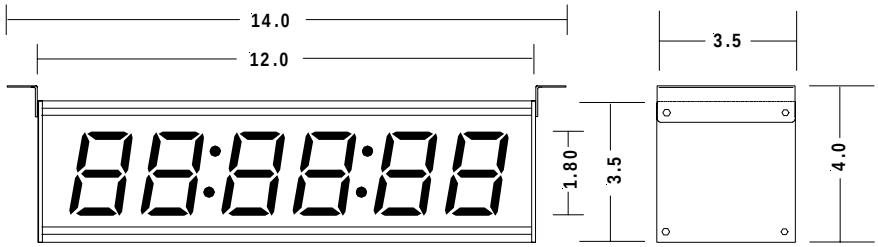
INSTALLATION

MOUNTING: The CC186 has rubber feet so that it sets flat on a desk or tabletop. Optional mounting brackets may be provided for top, bottom, and side mounting applications. See the illustrations below:



For optional bottom mount applications, remove the bottom screws one side at a time and add the optional angle brackets (P/N: 1210-0102) to the bottom of the display as shown.

For optional top mount applications, remove the top screws one side at a time and add the optional angle brackets (P/N: 1210-0102) to the top of the display as shown.



For optional side mount applications, carefully remove the screws from the connector side and add the optional side mounting plate (P/N: 1220-0303-2) to the side of the display as shown. Do not remove the side panel. A clearance hole will be required in the wall or mounting surface for the power and signal connectors.

SIGNAL WIRING: A signal cable with phone plug and DB9 female connector is provided. The phone plug end connects to the Signal jack located on the side panel. The other end of the cable has a DB9 female connector for connection to the host device.

POWER WIRING: A power module is provided for powering the CC186. Plug the power connector from the power module into the 12VAC Power jack on the side panel. The other end of the power module can be plugged into a standard 120 VAC power outlet.

Accessories Included

Hour and Minute Switches
Stand-Alone Version Only

Power and Signal Jacks

BE SURE ALL SYSTEM WIRING IS COMPLETE BEFORE APPLYING POWER TO THE CC186.

OPERATION

Apply power to the CC186 by plugging the power module into the 120 VAC power outlet. The remote display will be blank. The ON/OFF button must then be pressed to turn on the display. The digits will then show "--:--:--". The display is now ready to receive RS232 data (10-byte message) from the host device. Stand-Alone versions can be set manually to the correct time by the set switches located on the end panel. The display may be turned ON and OFF by pressing the button on top of the unit. While OFF the display will maintain the correct time as long as the power is not disconnected from the unit.

10-Byte Message Detail

Computer programs are available on AE-DISK1 for sending time and control data to the CC186. To create your own control programs follow the 10-byte message requirements listed as follows.

The first byte, byte 0, is the preamble. It establishes communications with the CC186. The second byte, byte 1, is the address byte, address 0 or 15. Byte 2 is the mode byte. Up to 256 modes are possible providing complete control of all the 7 segment characters and functions of the CC186. Bytes 3 through 8 are associated with the six, 7-segment displays of the CC186. Byte 9 is the miscellaneous digit, which provides attributes such as colons, flash, etc.

BYTE 0: START CHARACTER - An 11H is required to establish communications.

BYTE 1: ADDRESS BYTE - Address 0 or 15 is required to communicate to the CC186.

BYTE 2: MODE BYTE - Range is from 0 to 255. This byte provides complete control of all AE Series devices with the RS232 option installed. The modes are:

MODE O - ASCII character mode. The AE device will display the AE ASCII characters sent in bytes 3 through 8. See the AE ASCII character set at the back of this manual.

MODE 3 - 12 Hour Time/timer mode. Bytes 3 through 8 are set as the time, and time keeping begins.

MODE 4 - 24 Hour Time/timer mode. Bytes 3 through 8 are set as the time, and time keeping begins.

MODE 6 - Displays the software version installed in the AE device.

MODES 1 and 7 are reserved (AE Series Only)

MODES 8 - 255 are for future use.

BYTES 3 - 8: SIX CHARACTER BYTES - AE devices can have up to 6 digits. The six characters received are for displaying on these six digits. These characters will depend on the mode byte, byte 2, that precedes them. They provide the words for messages, the digits for setting time and variable, and even 7-segment graphic characters.

BYTE 9: MISCELLANEOUS DIGIT BYTE - This byte provides colons, AM/PM indicators, and other attributes such as display flashing.

BIT 1 - Turns on the colons. Colons are automatically turned on in the time/timer mode, i.e. byte 2 = 3.

BIT 7 - Flash display.

Using the AE21 Desktop Controller

The AE21 Desktop Controller has built-in routine for controlling AE & CC Serial Displays Time of Day, Elapsed Time, and Data can be sent to the CC186 via the data cable provided with the AE21 Controller. See the AE21 User's Manual for more details.

TECHNICAL SUPPORT

For questions concerning installation and operation of this product, contact our factory at:

PHONE (800) 444-7161
or
FAX (318) 797-4864

SERVICE POLICY

It is recommended that all service for this product be done by the factory or by a factory authorized service representative. Applied Technical Systems will provide ongoing service support in and out of warranty. Send your repairs to:

APPLIED TECHNICAL SYSTEMS
849 KING PLACE
SHREVEPORT, LA 71115

APPLIED TECHNICAL SYSTEMS
WARRANTY POLICY

ATS warrants its products to be free of defects in material and workmanship for a period of 24 months from the date of purchase. ATS will repair or replace any product returned to its authorized factory service center within the warranty period so long as there is no evidence that the product has been abused, misused, damaged by lightning, overloads of any kind or water, or altered in any way.

Products returned for warranty must be returned with freight prepaid. ATS will pay normal freight charges to return the product to the customer. Special premium freight requested by the customer will be charged to the customer.

ATS disclaims any warranties expressed or implied, including merchantability and/or fitness for a particular purpose. In no event shall ATS be held liable for incidental or consequential damages.