
AEXX/CC SERIES

STAND-ALONE

MULTI-FUNCTION CLOCK/TIMERS

AEXX/CC SERIES STAND-ALONE MULTI-FUNCTION CLOCK/TIMERS
REV 08/23/10

DESCRIPTION

The AEXX/CC Series Stand-Alone Multi-Function Clock/Timers are available with 2.3", 4", 8", or 12" high digits, visible from 5 feet to 500 feet away. The series includes four digit and six digit models, which can function as, 12 or 24 hour stand alone clocks, and simultaneously, as presettable up or down counting elapsed, timers.

For complete synchronized clock systems see our full line of master clocks and synchronized system clocks.

This manual covers the following models:

AE26/CC Six Digit Stand-Alone Multi-Function Clock/Timer with 2.3-Inch High Digits.

AE44D/CC Four Digit Stand-Alone Multi-Function Clock/Timer with 4-Inch High Digits.

AE46D/CC Six Digit Stand-Alone Multi-Function Clock/Timer with 4-Inch High Digits.

AE84/CC Four Digit Stand-Alone Multi-Function Clock/Timer with 8-Inch High Digits.

AE124/CC Four Digit Stand-Alone Multi-Function Clock/Timer with 12-Inch High Digits.

For more information, see the specific product brochures.



AE26/CC (14"W x 6.1"H x 3.5"D)



AE44D/CC (16"W x 6.1"H x 3.5"D)



AE46D/CC (24"W x 6.1"H x 3.5"D)



Typical Back Panel for 2.3" and 4" models

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AE84/CC (30"W x 10"H x 3.5"D)



Typical Back Panel for AE84/CC



AE124/CC (48"W x 15"H x 3.5"D)



Typical Back Panel for AE124/CC

SPECIFICATIONS

- Digits:** 2.3, 4, 8 and 12 inch high, seven segment digits are available.
- Number of Digits:** Four and six digit versions are available. Colons separate each pair of digits.
- Functions:** Displays time of day in 12 or 24-hour format - stand alone or as a secondary clock on a master clock system. Counts up elapsed time to a preset value and holds (on four digit models minutes and seconds are displayed). Counts down elapsed time from a preset value and holds at 00:00, or 00:00:00 (on four digit models minutes and seconds are displayed). Maximum preset is 59:59 for four digit models, and 30:59:59 for six digit models.
- Controls:** A built-in switch panel is provided for setting and controlling all clock/timer functions. Time of day in 12 or 24-hour format can be set from switch panel. The up and down elapsed timers can be started, stopped, resumed, and reset from switch panel. The up and down elapsed timer preset values can be set from switch panel.

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Accuracy: Synchronous with the AC power line when power is applied. On battery backup a 0.005% crystal time base is used. Standard operating temperature is 0 to 50 Degrees C.

Power: 12 VAC, 60 HZ. A plug-in power module with a 6 foot cord is included. Plugs in to a standard 120 VAC outlet. The power required varies with model number. Typical 15 to 25 watts.

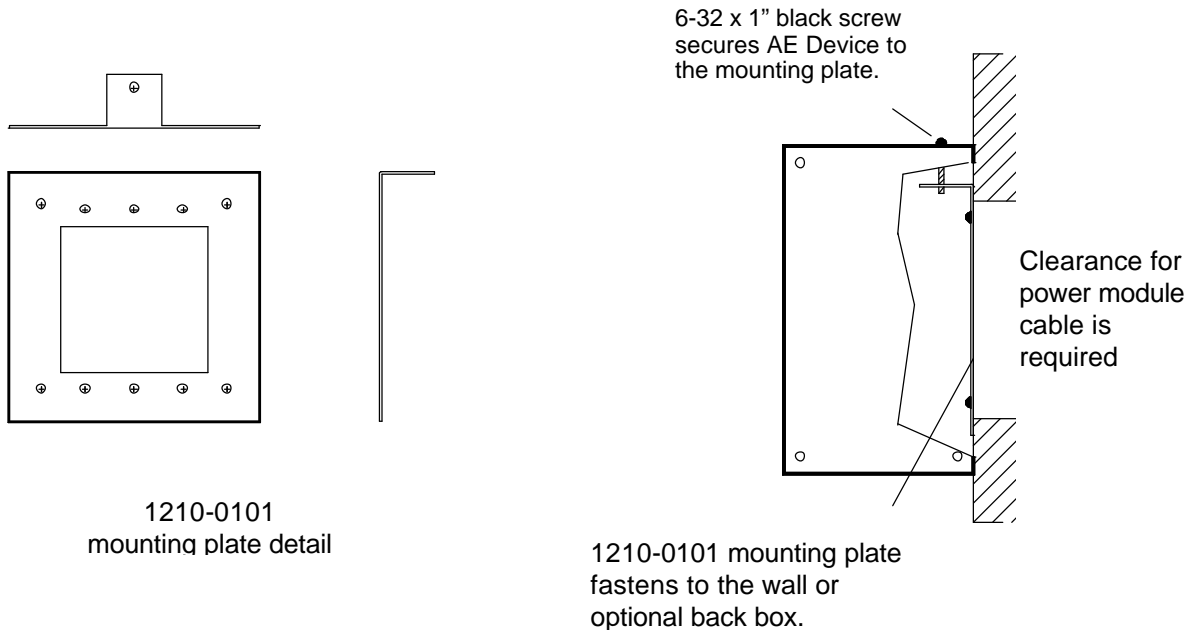
Battery Backup: Self-charging, Ni-Cad

Enclosures: Black anodized aluminum with, Wall Mount or Free Standing
.118" thick Red acrylic lens, .125" thick Black ABS back panel.
A 1210-0101 Wall Mount bracket is included with all models.
For Indoor Use Only

INSTALLATION

MOUNTING

The AEXX/CC Series Displays can be wall mounted using the 1210-0101 mounting bracket. Be sure to provide clearance for the power module cable.



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OPERATION

Before applying power, place the SET/RUN switch to the RUN position and the UP/DOWN/CLOCK switch to the CLOCK position. Apply power to the unit. The displays will rotate during the power on self-test and then a version number will appear for a few seconds. The AEXX/CC will begin keeping time. If a charged battery is installed, the self-test will be bypassed.

SETTING TIME

With the UP/DOWN/CLOCK switch still in the CLOCK position, place the SET/RUN switch to the SET position. The clock will now prompt for a 12 or 24 hour format. It will display 24Hr for 24 hour and 12Hr for 12 hour format. To change formats, press the INCREMENT switch until the desired format is shown and then press ENTER. The clock will now prompt for time. The hours' digits will be flashing. Using the INCREMENT switch, set the hours to the desired hours, then press ENTER. The minutes' digits will be flashing. Again using the INCREMENT switch, set the desired minutes and then press ENTER. If this is a six-digit model, once again using the INCREMENT switch set the desired seconds and then press ENTER. On four digit units, the display is normally configured for Hours and Minutes and only hours and minutes will be prompted. In each case after your preset is entered, press ENTER until the display flashes dONE. Set the SET/RUN back to the RUN position. The display will flash dONE. Set the SET/RUN switch back to RUN the instant you want time keeping to begin at the time you just entered. The clock will now keep time as a free running clock or as a secondary clock, if connected to a master clock.

SETTING THE UP COUNTER PRESET TIME

The AEXX Series Clock/Timer can be programmed to operate as an elapsed timer. On six digit models it can count Hours, Minutes and Seconds of elapsed time. Four digit models count Minutes and Seconds of elapsed time. Special four-digit version can count Hours and Minutes of elapsed time. If you want to use the "count up to a preset and hold" feature with the UP timer, you will need to set a preset time for the UP timer. A preset of 00:00 or 00:00:00 allows the clock/timer to be used as a standard elapsed timer with a maximum count of 59:59 or 99:59:59 depending on whether it is a four or six digit model. When the maximum count is reached the timer rolls over and continues to count.

Set the UP/DOWN/CLOCK switch to the UP position. Set the SET/RUN switch to the SET position. The hours' digits will be flashing. Using the INCREMENT switch, set the desired hours for the preset time, then press ENTER. The minutes' digits will now be flashing. Set the desired minutes the same way, then press ENTER. The seconds' digits will then be flashing. If this is a six-digit model, once again using the INCREMENT switch set the desired seconds and then press ENTER. The display will then flash dONE. Set the SET/RUN switch back to the RUN position.

If this is a four-digit model, the AE Device will only prompt for the minutes and seconds.

UP COUNTER ELAPSED TIME OPERATION

Once the desired preset value has been set, the unit is now ready to function as an UP count elapsed timer.

Be sure the SET/RUN switch is in the RUN position. Press RESET to display 00:00 or 00:00:00. Press the START/STOP switch to begin counting elapsed time. Press the START/STOP switch again to stop and hold the count. Press the START/STOP switch again to resume elapsed time counting. To start over, press RESET to display 00:00 or 00:00:00 again. When the timer reaches the preset value, it will

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stop and hold the time count. During an UP count elapsed time operation, you can display any of the other time functions using the UP/DOWN/CLOCK switch as desired.

SETTING THE DOWN COUNTER PRESET TIME

If you are using the AEXX Series Clock/Timer as a Down counting elapsed timer, you will need to set a preset time to count down from. In this mode, the alarm and hold will occur at 00:00 or 00:00:00.

Set the UP/DOWN/CLOCK switch to the DOWN position. Set the SET/RUN switch to the SET position. The hours' digits will be flashing. Using the INCREMENT switch, set the desired hours for the preset time, then press ENTER. The minutes' digits will now be flashing. Set the desired minutes the same way, then press ENTER. The seconds' digits will then be flashing. Set the desired seconds the same way, then press ENTER. The display will then flash DONE. Set the SET/RUN switch back to the RUN position.

If this is a four-digit model, the AE Device will only prompt for the minutes and seconds.

DOWN COUNTER ELAPSED TIME OPERATION

Once the desired preset value has been set, the unit is now ready to function as a DOWN count elapsed timer.

Be sure the SET/RUN switch is in the RUN position. Press RESET to display the preset value, which was set previously. Press the START/STOP switch to begin counting down elapsed time. Press the START/STOP switch again to stop and hold the count. Press the START/STOP switch again to resume elapsed time counting. To start over press RESET to display the preset value again. When the timer reaches 00:00 or 00:00:00 it will stop and hold the count. During a DOWN count elapsed time operation, you can display any of the other time functions using the UP/DOWN/CLOCK switch as desired.

FREE RUNNING CLOCK OPERATION

The AEXX/CC Series Clock/Timer can be used as a free running clock, simultaneously with the UP and DOWN elapsed time features. No additional connections are required. It will run as a line synchronous clock once time has been set.

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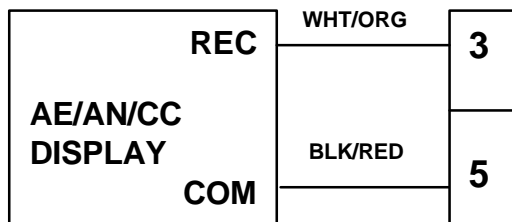
OPTIONAL RS232 SERIAL DATA CORRECTION (MULTI-FUNCTION CLOCK/TIMER)

For RS232 Serial Data Correction a 10 Byte Message is required from a master clock or other control device such as a computer.

| | |
|-----------------|--------------------------------------|
| Features: | Corrects Time - 12/24Hr |
| 12/24Hr Format: | Sets and displays 12 or 24 Hr Format |

This feature allows AE Series Multi-Function Clock/Timers to communicate with Master Clocks, host computers, process computers (PLC'S), industrial instruments, and other equipment with RS232 output ports, via a 10-byte message. This 10-byte message provides address and mode selection, sends 6 characters of data, and sets display attributes sent by the host device.

RS232 WIRING DIAGRAM



Typical connection from DB9 Serial port from computer to AE device shown on left. Some DB9 connectors require pins 4, 6, and 8 to be jumpered.

On ATS Master Clocks connect Wh/Org to XMIT Terminal and Blk/Red to COM. See Master Clock manual for details.

2400 BAUD, NO PARITY, 8 DATA BITS, 1 STOP BIT

OPERATION

Before applying power, be sure all wiring is completed. Apply power to the unit.

A 10-byte instruction is required to communicate with the AE Series Multi-Function Clock/Timer. The first byte, byte 0, is the preamble. It establishes communication. The second byte, byte 1, is the address byte that is used for addressing purposes. This AE device uses addresses 15 and 0. Byte 2 is the mode byte. See Mode 3 for 12 hour time information. See Mode 4 for 24 hour time information. Bytes 3 through 8 are associated with the six numbers required for setting time. Byte 9 is the miscellaneous digit, which provides attributes such as colons, AM/PM indicators, flash, etc.

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- BYTE 0: START CHARACTER - An 11H is required to establish communications.
- BYTE 1: ADDRESS BYTE - Range is from 0 to 15. AE Series Multi-Function Clock/Timers respond to addresses 15 and 0, only.
- 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 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.
- BYTES 3 - 8: SIX CHARACTER BYTES – The six characters received provide the digits for setting the time.
- BYTE 9: MISCELLANEOUS DIGIT BYTE - This byte provides colons, AM/PM indicators, and other attributes such as display flashing.
- BIT 0 - Turns on the AM/PM indicator.
- 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.

SET TIME (SAMPLE PROGRAM)

```
5 REM 232TIME.BAS SETS TIME IN A CC2000 OR AN AE DEVICE WITH RS232 INPUT
6 REM WRITTEN BY JIM RECCELLI, APPLIED TECHNICAL SYSTEMS, 1/22/94
10 OPEN "COM1:2400,N,8,1" AS 1
20 H1$=MID$(TIME$,1,1)
30 H2$=MID$(TIME$,2,1)
40 H1H2$=MID$(TIME$,1,2)
45 PRINT H1H2$
46 IF VAL(H1H2$)=22 THEN H1$="1":H2$="0":GOTO 60
47 IF VAL(H1H2$)=23 THEN H1$="1":H2$="1":GOTO 60
50 IF VAL(H1H2$)>12 THEN H1H2=VAL(H1H2$)-12:
H1H2$=STR$(H1H2):H1$=MID$(H1H2$,1,1):H2$=MID$(H1H2$,2,1):PRINT H1H2$,H1H2
60 PRINT TIME$
70 M1$=MID$(TIME$,4,1)
80 M2$=MID$(TIME$,5,1)
90 S1$=MID$(TIME$,7,1)
100 S2$=MID$(TIME$,8,1)
120 PRINT#1, CHR$(0);CHR$(0);CHR$(17);CHR$(0);CHR$(3);H1$;H2$;M1$;M2$;S1$;S2$;CHR$(0)
130 CLOSE 1
140 END
```


TECHNICAL SUPPORT

For any 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.