AEXX-479A SERIES

PROJECT / JULIAN CLOCKS

ATS APPLIED
TECHNICAL
SYSTEMS

AEXX-479A SERIES PROJECT / JULIAN CLOCKS
REV 08/21/01

DESCRIPTION

The AEXX-479A Series Project / Julian Clocks are available with 1", 2.3", 4", 8", or 12" high digits, visible from 50 feet to 500 feet away. They consist of a "clock" section and a "day count" section, and are easily configured by the user to display a variety of time and day count functions.

Examples are:

Project Clocks - count down the days, hours, minutes and seconds to a project completion date.

Julian Clocks - display the day of the year with the time of day in 24 hour format.

AEXX-479A Series clocks can also function simultaneously, as a presettable up counting, elapsed timer for numerous other timing applications.

Optional enclosures, labels, operating voltages and add-on functions such as the Master/Driver output are available for all types of installations including wall mount, ceiling mount, rack mount, panel mount and free standing applications. Two sided models are also available.

This manual covers all AE Series displays configured as Project / Julian Clocks. To simplify the manual the term's "clock/timer", or "AE Device" may be used to cover any of the specific models.

The model numbers of the AEXX-479A Series are derived from the digit size and the number of digits in the display, followed by the 479A suffix. For example the AE29-479A is 2.3 inch, nine-digit display and the AE89D-479A is an eight-inch, nine-digit display. For two-sided versions, the model number would have /2. For example: AE49D/2-479A would be the model number for a Two-Sided, Four Inch, Diffused, Nine Digit, Project / Julian Clock. Each AE Display can be configured in a number of ways. For your specific model number and hardware configuration refer to the drawings at the back of this manual.

SPECIFICATIONS

Digits:	1, 2.3, 4, 8 and 12 inch high, seven segment digits are available. For additional digit specifications, see the drawings at the back of this manual for your specific model.
Number of Digits:	Nine-digit versions are typical. Optional configurations are available. Blank spaces separate the days, hours, minutes, and seconds digits (⊓⊓⊓ ⊓⊓ ⊓⊓ ⊓⊓). Colons are optional.
Functions:	Displays day count and time of day in 24-hour format. The day count can be set to increment or decrement as the time passes through ⊓⊓ ⊓⊓ ⊓⊓.
	Counts down elapsed time until Midnight (no preset required).
	Counts up elapsed time to a preset value and holds at the preset value.
Controls:	Two built-in switch panels are provided for setting and controlling all clock/timer functions (not included on bezel mount or flush mount versions, which require the 2101 or 2102 and 2104 Remote Switch Panels or other user provided controls). One set is provided for presetting the day count and the another for setting the Time of day and up counting elapsed timer function. In addition the up counting elapsed timer can be started, stopped, resumed and reset from this switch panel. The elapsed timer preset value can also be set from this switch panel.
	Optional 2101, 2102 and 2104 Remote Switch Panels are available for setting and controlling the clock/timers. They can be mounted up to 30 feet away.
Accuracy:	Synchronous with the AC power line when power is applied. A crystal time base is optional. On battery backup a 0.005% crystal time base is used. Standard operating temperature is 0 to 50 Degrees C.
Power:	Standard power is 120 VAC, 60 HZ – The power required varies with the size and number of digits. Optional power includes 220 VAC, 12 VAC, 12 VDC and 50 HZ.
Battery Backup:	Self-charging, Ni-Cad. Keeps day count and time for up to four hours during power outages. All displays are turned off during power outages.
Enclosures:	Standard enclosures are black anodized aluminum with .118" thick red acrylic lens. The back panel is .125" black ABS plastic. The size varies with the size and number of digits. See drawings at the back of this manual.
	One or more 1210-0101 mounting brackets are provided with all standard enclosures for wall mounting with concealed wiring to a single or double gang box.

Wiring: Clearly labeled, pigtail lead wires (#18 AWG) are provided on most models. Optional terminal blocks, power cords, and connectors are available. For models ordered with the optional remote switch panels, color-coded cables are supplied (30 feet long).
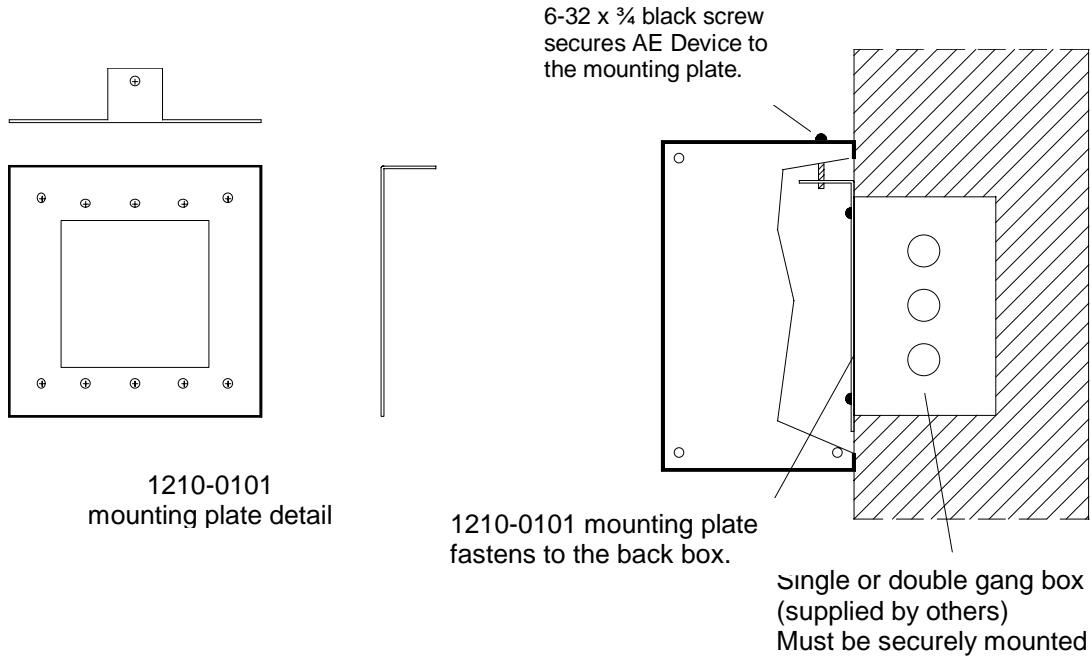
Options: There are numerous options available for the AEXX-479A Clock/Timers. Some include: (/2) Two Sided Version, (348) Master/Driver Output, and (PC8) Add 8 FT. Power Cord. When options are ordered, supplemental information is provided with addenda and additional drawings.

For all other options refer to the drawings at the back of this manual for additional specifications.

INSTALLATION

MOUNTING

The AE Series Displays can be mounted in a variety of ways. Things to consider for mounting include ambient light, viewing area, ambient temperature, dirt or dust. Most models are supplied with one or more 1210-0101 mounting brackets for wall mounting to a single or double gang box. See the detail below. For other mounting options, such as ceiling mounts or double-sided mounts, refer to the specific drawings.

6-32 x ¾ black screw
secures AE Device to
the mounting plate.

1210-0101
mounting plate detail

1210-0101 mounting plate
fastens to the back box.

Single or double gang box
(supplied by others)
Must be securely mounted

WIRING

There are many wiring configurations for the AEXX-479A Clock/Timers, depending on the functions used and the options installed.

On most standard units, clearly labeled pigtail leads wires are provided for the power at the back panel of the unit. For options such as the 2101 or 2102 and 2104 Remote Switch Panels, color-coded cables are supplied (30 feet long). Refer to the addendum sheets and or the wiring diagrams for more details on any options ordered.

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-479A will display ⛛⛛⛛ ⛛ ⛛⛛ ⛛⛛ and begin keeping time. If a charged battery is installed, the self-test will be bypassed.

Set time
switch panel

Set days
switch panel

Optional 2104 and 2102 Remote Switch Panels replace built-in switches on some versions.

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. You must use 24Hr format for any count up/down function which the days will be incremented or decremented. 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. Once again using the INCREMENT switch set the desired seconds and then press ENTER. 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.

SETTING THE DAY COUNT

Using the DAY controls, press the UP button to increment the day count and the DOWN button to decrement the day count. The count will change by one count each time the buttons are pressed. Set the UP/DOWN switch to the UP position if you want the day count to increment at Midnight, or to the DOWN position if you want the day count to decrement at Midnight.

SETTING THE UP COUNTER PRESET TIME

The AEXX-479A Clock/Timer can be programmed to operate as an elapsed timer. 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 00 allows the clock/timer to be used as a standard elapsed timer with a maximum count of 99:59:59. When the maximum count is reached the timer rolls over and continues to count. If a preset other than 00 00 00 is entered, the timer will count up to the preset time and hold.

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. 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.

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 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 00 again. When the timer reaches the preset value, it will stop and hold the time count. If you are using the 2101 or 2102 and 2104 Remote Switch Panels with your clock/timer, the piezo alarm will not be functional, except on custom versions.

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

DOWN COUNTER ELAPSED TIME OPERATION

Once the local time of day has been entered in   the AEXX-479A Clock/Timer, placing the UP/DOWN/CLOCK switch to the DOWN position displays the elapsed time until Midnight. No start/stop functions are available in this mode.

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 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.

APPLICATIONS

COUNT DOWN TO PROJECT COMPLETION

Set the time of day to the desired time in 24-hour format only.

Determine the number of days until the project completion date.

Using the UP and DOWN push buttons on the Day controls, set the number of days to the desired count.

Set the UP/DOWN switch on the Day controls to the DOWN position.

Set the UP/DOWN/CLOCK switch on the Clock controls to the DOWN position.

JULIAN CLOCK

Set the UP/DOWN/CLOCK switch on the Clock controls to the CLOCK position.

Set the time of day to the desired time in 24-hour format only.

Determine the Julian Date.

Using the UP and DOWN push buttons on the Day controls, set the number of days to the Julian Date.

Set the UP/DOWN switch on the Day controls to the UP position.

COUNT UP PROJECT ELAPSED TIME

Set the UP/CLOCK/DOWN switch on the Clock controls to the CLOCK position.

Set the time of day to the desired time in 24-hour format only (real time or project time).

> Example: Project time may start running at 8:00 AM, therefore the timer must be set 8 hours behind of real time. The day counter will then increment when the clock rolls over from 23:59:59 to 00:00:00, which will occur at 8:00 AM each day.

Using the UP and DOWN push buttons on the Day controls, set the number of days to start from.

Set the UP/DOWN switch on the Day controls to the UP position.

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.