
AEXX-514 SERIES

COMPUTER CONTROLLED PACE COUNTER

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REV 05/07/01

DESCRIPTION

AEXX-514 Series Computer Controlled Pace Counters are available with 1", 2.3", 4", 8", or 12" high digits, visible from 5 feet to 500 feet away. Versions are available with as few as 2 digits and up to 12 digits. Computer Software ("AE Pace") is provided which allows your PC to communicate via a standard RS232 serial port to the AEXX-514 Series Computer Controlled Pace Counter. Using the "AE Pace" Software, the user can set the count rate (from 0.01 to 7.99 counts/second), and the default or starting count. The Pace Counter will increment indefinitely to its maximum digit value at the user-defined rate. Once the maximum count is reached, the counter rolls over and continues to increment at the specified rate.

Note: "AE Pace" Software provides basic communication and control functions for operating the AEXX-514 Series Computer Controlled Pace Counters. The user may write other control programs that provide operational functions specific to the user's requirements. See the details on the 18 Byte message for controlling the AEXX-514 Series Computer Controlled Pace Counters.

This manual covers all AE Series displays from two digits to twelve digits, including two-sided versions with the Computer Controlled Pace Counter Option (514) installed. It will use the terms "AE DEVICE", or "AEXX-514" in some cases to cover all versions of displays.

The model numbers of the AEXX-514 Series are derived from the digit size and the number of digits in the display, followed by the suffix, 514. For example the AE24-514 is 2.3 inch, four-digit display and the AE129-514 is a twelve-inch, nine-digit display. For two-sided versions, the model number would have /2. For example: AE84/2-514 would be the model number for a Two-Sided, Eight Inch, Four Digit Computer Controlled Pace Counter. Each AE Display can be configured in a number of ways. Some will have different enclosures including wall mount, rack mount, two sided wall or ceiling mount, and NEMA type enclosures for all applications. For your specific model number and hardware configuration refer to the drawings at the back of this manual.

For multiple display system the Master/Driver Option (348) can be added. This option allows you to connect up to 40 remote displays to the AE Series Computer Controlled Pace Counter for displaying the same variable in many locations.

Applications include: population counters, production pace counters, money lost / gained indicators, etc.

The AEXX-514 Series Computer Controlled Pace Counters are configured from standard modules to provide specific size, number of digits, color, brightness, enclosure type, mounting, wiring, and power requirements.

For more information on your specific model number and hardware configuration refer to the drawings included at the back of this manual.

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SPECIFICATIONS

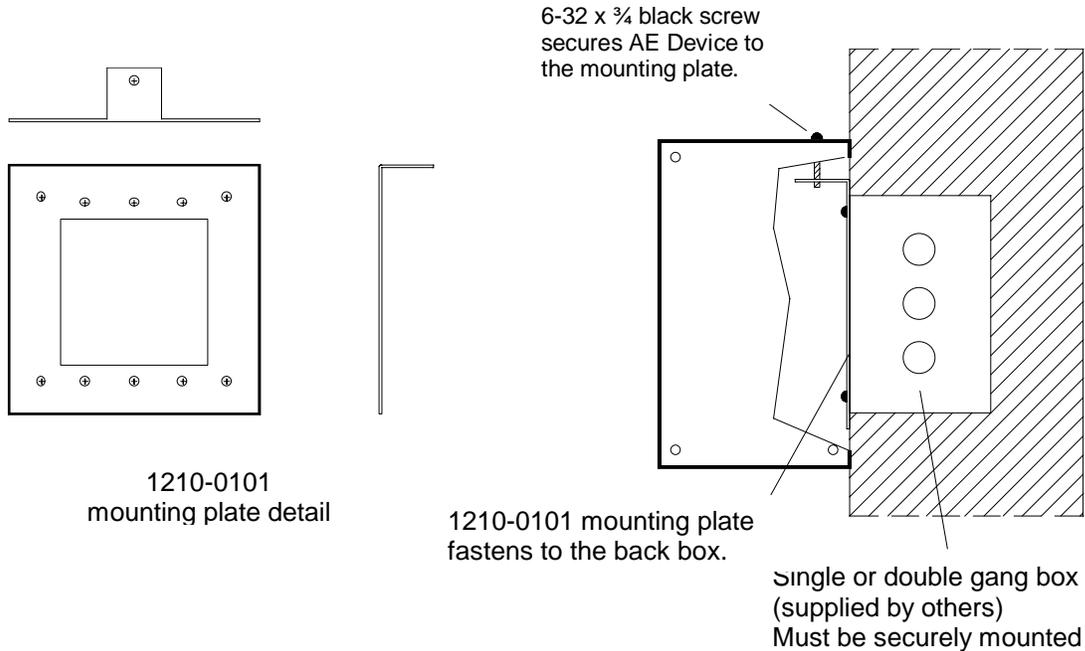
Digits:	1, 2.3, 4, 8 and 12 Inch High, Seven Segment Digits are available. For additional digit specifications, see the drawings at the back of this manual for your specific model.
Number of Digits:	Models are available from 2 digit to 12 digit versions. See the drawings at the back of this manual for your specific model.
Functions:	Counts up from zero or from a predetermined starting point at a user-defined rate (from 0.01 to 7.99 counts/second). The starting point and rate settings are set from a computer using the "AE Pace" Software provided.. The count will continue to the maximum count (determined by the number of digits), at which point it rolls over to zero and continues to count. For example a 12-digit model will count up to 999,999,999,999 at which point it rolls over to 000,000,000,000 and continues to count.
Controls:	The AEXX-514 is controlled by a computer (user supplied), via a standard RS232 serial port, using the "AE Pace" Software provided. The software allows the user to easily set the rate (counts/second), default or starting point, as well as the com port which will be used to interface with the AE Device.
Power:	120 VAC – The power required varies with the size and number of digits. Optional power includes 50 HZ, 12 VAC, 12 to 15 VDC and 220 VAC.
Accuracy:	Synchronous with the AC power line when power is applied. On battery backup a 0.005% crystal time base is used.
Battery standby:	Self-charging, 9V Ni-Cad.
Operating Temperature:	0 to 50 Degrees C
Enclosure:	Black anodized aluminum with .118" thick red acrylic lens. The back panel is .125" thick black, ABS plastic. The size varies with the size and number of digits. See the drawings at the back of this manual. 1210-0101 mounting bracket/s are provided for wall mounting to a single or double gang box. <u>Optional enclosures are available.</u>
Wiring:	Clearly labeled, pigtail lead wires (#18 AWG) are provided. Optional terminal blocks, power cords, and connectors are available.

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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.

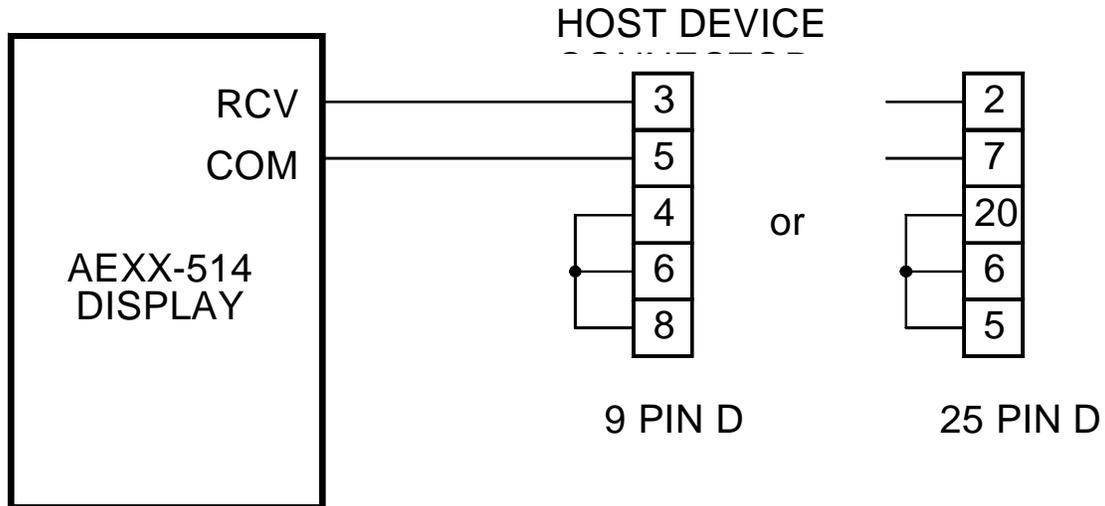


WIRING

There are many wiring configurations for the AEXX Series Displays, 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. Additional pigtail leads or data cables are provided for connection to the computer. See the wiring diagrams for more detail at the back of this manual.

RS232 WIRING DIAGRAM



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

Connect the RS232 output from the host computer or system to the wires labeled "RCV" (WHT/ORG) and "COM" (BLK/RED) on the AE Device. The connector at the host computer must be wired and have the jumpers as shown above. 9-Pin Cables are available from ATS. (PN's: 9110-1109 or 9110-1115).

OPERATION

Before applying power, be sure all wiring is completed. 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 counter will display all zeros. If a charged battery is installed, the self-test will be bypassed.

This AE Device requires a computer and a control program for initial setup, or for changing the system counts. "AE Pace" Software is provided for setting the count starting point and the count rate.

Users can create their own control programs by sending the following 18-Byte message to the display in the following format:

- BYTE 0: Start Character – An 11 Hex is required to establish communications
- BYTE 1: Address Byte – Requires a Binary 0 - all call
- BYTE 2: Function Byte – Requires a Binary 7 - Preset the Counter
- BYTES 3-14: Twelve Character Bytes – Requires an ASCII character from "0" to "9" for each byte to create the desired twelve digit number.
- BYTES 15-16: Two Rate Bytes – The first byte is the Rate's whole number – valid numbers are from Binary 0 to Binary 7. The second byte is the Rate's decimal numbers – valid numbers are from Binary 0 to Binary 99.
- BYTE 17: Leading Zero Blanking Byte – Requires a Binary 64 to blank the leading "0"s, any other number will leave them on.

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“AE PACE” SOFTWARE

INSTALLATION

Make sure the computer is not running any other programs when ready to install “AE Pace” Software. “AE Pace” Software comes on two 3 ½” floppy disks (AE-DISK4, disks 1 and 2). Insert disk 1 into the floppy drive. From Windows 95/98 **Start** menu, select **Run**. Type X:\Setup (where X = drive containing the disk) and press ENTER. Follow the auto-prompting sequence of the Setup to install the software. Insert the second disk when prompted.

OPERATION

From the Windows 95/98 **Start** menu, select “AE Pace” Software from the **Programs** list. A window will open labeled “Population Counter” or “Counter” with a text box labeled “Starting Count” in the center and a scroll bar labeled “Rate: X.XX (counts/sec.)” across the bottom half of the window (X.XX = 0.01 to 7.99). Enter a number from which to begin counting in the “Starting Count” text box from the keyboard or the up/down buttons on the right of the text box. Slide or click the scroll bar to select the rate, which is shown just above the scroll bar.

Now click on **Setup** from the menu and select **Comm Port** and enter the Port # from which to transmit to the AE Device. Also under **Setup** is the choice **Leading Zero Blanking**, if this is checked it has been selected and will blank all zeros to the left of the most significant digit used. Finally, Click the “Send Comm#” button at the bottom of the window to transmit the required data to the AE Device.

SETTINGS

Choose **Setup** from the menu then select **Settings**. This will open a window with the options “Counter” and “Population Counter”. “Counter” will default the Start Count to 0 and “Population Counter” defaults it to 6 billion. To customize the heading, uncheck the “Use Standard Headings” check box and enter the desired heading in the text box directly above it.

COMMUNICATION FORMAT

An 18-byte message must be sent in the following format.

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- BYTE 17: Leading Zero Blanking Byte – Requires a Binary 64 to blank the leading “0”s, any other number will leave them on.

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.