FN:XXMFCT1.DOC

AEXX SERIES

MULTI-FUNCTION CLOCK/TIMERS

APPLIED TECHNICAL SYSTEMS

AEXX SERIES MULTI-FUNCTION CLOCK/TIMERS
REV 04/09/09

DESCRIPTION

The AEXX Series of Multi-Function Clock/Timers are available with 1", 2.3", 4", 8", or 12" high digits, visible from 5 feet to 500 feet away. Depending on the model, the AEXX Series clock/timers function as four or six digit, 12 or 24 hour stand alone or secondary clocks, and simultaneously, as presettable up or down counting elapsed, timers. A code blue timer which overrides all other time functions is also included.

In addition there are optional enclosures, operating voltages and add-on functions such as the Master/Driver output. Models 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 Multi-Function Clock/Timers. 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 Series clock/timer are derived from the digit size and the number of digits in the display. For example the AE24 is a 2.3-inch, four-digit display and the AE126 is a twelve-inch, six-digit display. For two-sided versions, the model number would have /2. For example: AE84/2 would be the model number for a Two-Sided, Eight Inch, Four-Digit Clock/Timer. Each AE Display can be configured in a number of ways. For more information on your specific model number and hardware configuration refer to the drawings included 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:	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 versions specify hours and minutes, or minutes and seconds). Counts down elapsed time from a preset value and holds at 00:00 or 00:00:00 (on four digit versions specify hours and minutes, or minutes and seconds). Maximum preset is 30:59:59. A Built-in Code Blue timer overrides all clock/timer functions until it is reset.
Controls:	A built-in switch panel is provided for setting and controlling all clock/timer functions (not included on bezel mount or flush mount versions, which require the 2101 or 2102 Remote Switch Panel). 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. For some versions such as those with the optional NEMA enclosures. these controls could be located on the PCB assembly. See the AEXX Controller Wiring Diagram at the back of this manual. Optional 2101 and 2102 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.
Secondary Clock Correction:	Correction modes for 59th minute, Midnight and Noon correction and others are switch selectable by a rotary switch located on the PCB assembly. See the Mode Wiring Diagrams at the back of this manual for more details.
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

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.

A 1210-0101 mounting bracket is provided with all standard enclosures for wall mounting with concealed wiring to a single or double gang box.

For optional enclosures such as the NEMA12 and NEMA 4X enclosures, see the drawings at the back of this manual for more detail.

Wiring: Clearly labeled, pigtail lead wires (#18 AWG) are provided. Optional terminal blocks, power cords, and connectors are available.

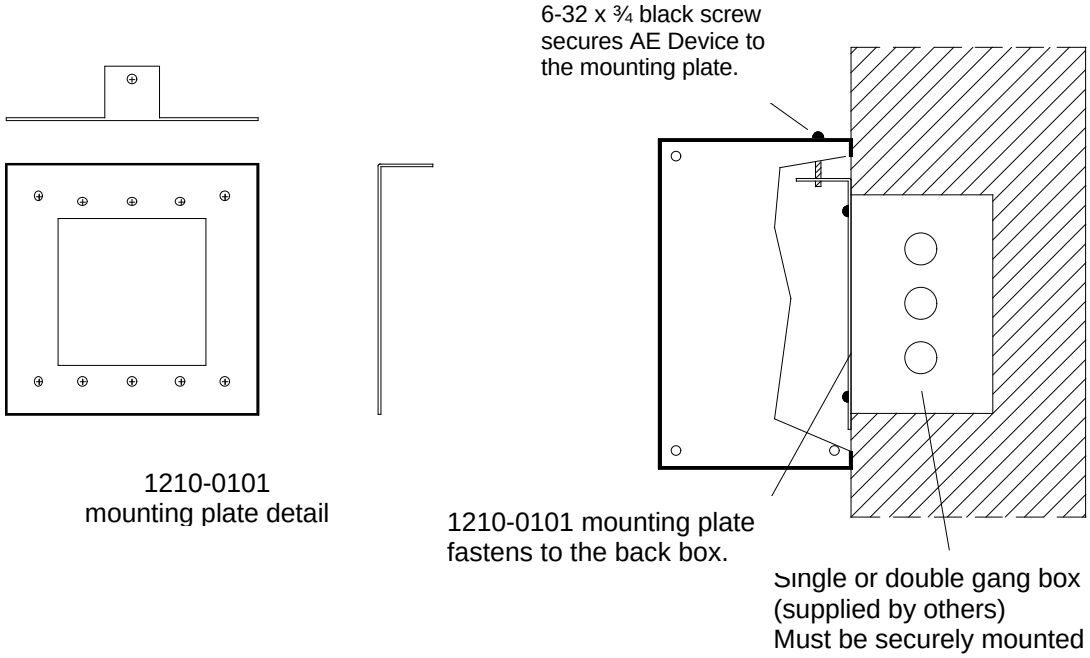
Options: There are numerous options available for the AEXX Series Multi-Function Clock/Timers. Some include: (/2) Two Sided Version, (348) Master/Driver Output, (376) Relay Output, (267) Count Up Hundredths of Seconds and (PC8) Add 8 FT. Power Cord. When options are ordered, supplemental information 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.



WIRING

There are many wiring configurations for the AEXX Series 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. If you are using the AE Device as a secondary clock, such as on a 3 wire synchronous system, additional pigtail leads can be provided (if specified with the order). In this case, connect the secondary correction wiring to the pigtail lead wires marked K1+ and K1-. Otherwise, you can use the terminal blocks provided on the circuit board assembly. For other options such as the 2101 or 2102 Remote Switch Panel, refer to the addendum sheets provided for that option. Also, see the wiring diagrams for more detail at the back of this manual.

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 will display 1:00 or 1:00:00 and 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 . 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 stop and hold the time count. If you are using the 2101 or 2102 Remote Switch Panel with your clock/timer, the piezo alarm will sound for about 3 seconds when the timer reaches the preset value.

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 an 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. If you are using the 2101 or 2102 Remote Switch Panel with your clock/timer, the piezo alarm will sound for about 3 seconds when the timer reaches zero.

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.

SECONDARY CLOCK OPERATION

The AEXX Series Clock/Timer can be used as a secondary clock, simultaneously with the UP and DOWN elapsed time features. The most common secondary clock correction is the 59th Minute, 3-Wire System (Mode 2). Simply connect it to a 3-wire, synchronous master clock system (see the Mode 2 wiring diagrams at the back of this manual), and set the mode switch on the circuit board to position 2. It will free run in between corrections, synchronized to the AC power line. The unit should not be used in the 24-hour format mode, if it is connected to a 3- wire synchronous system, since the 12-hour corrections cannot distinguish AM and PM. During power outages, a backup battery provides time keeping for up to 4 hours (rechargeable Ni-Cad).

SETTING THE SECONDARY CLOCK MODE SWITCH

A small rotary switch on the AEXX circuit board assembly is used to set the secondary clock mode. To gain access to the circuit board assembly on standard units, remove one of the side panels and slide out the back panel. On other versions refer to the specific drawing for instructions. The numbers on this switch correspond to the modes indicated at the back of this manual. For example, if your master clock supports a Simplex 93-9 secondary clock, you will need to set the switch to MODE 2 by turning the switch to position 2. See the circuit board assembly drawing at the back of this manual for details.

CODE BLUE OPERATION

The code blue feature provides an override to the AE Device, which forces it into a special, count up elapsed time mode. A code blue is initiated by applying a signal ranging from 5 VDC to 120 VAC to the K2+ and K2- terminals. If your system has a dry contact output for code blue, the 12 VAC from the AE Device's power terminals can be used in conjunction with your dry contact. See the sample wiring diagram below for more detail.

The code blue timer is the highest priority function of the AE Device while in the RUN mode. No matter which of the 3 normal functions is being displayed, the code blue input will cause the AE Device to begin counting elapsed time from 00:00 or 00:00:00.

The code blue timer can be stopped and the time held for viewing by pressing the START/STOP button on the built-in control panel or the 2101 or 2102 Remote Switch Panel. The code blue timer cannot be restarted from the switch panel.

To reset the AE Device back to normal operation, the RUN/SET switch must be set to the SET position momentarily and then returned to the RUN position.

All other functions of the AE Device continue to operate in the background during a code blue. Time of day and even time corrections from the master clock will not be affected. The standard count up timer and the count down timer will continue as well, however if one of these timers is switched on for display when a code blue occurs, that particular timer will be reset when the AE Device is reset back to normal operation.

IMPORTANT CODE BLUE CONSIDERATIONS

The AE Device must be in the RUN mode for code blue to override.

The code blue contact does not have to open before resetting the AE Device back to normal operation, but must be opened before another code blue can occur. You must have a transition from open contact to closed contact to initiate a code blue.

If the code blue contact opens and closes again before the AE Device is reset back to normal operation, the code blue timer will start over from 00:00 or 00:00:00, even if it had been stopped using the START/STOP switch.

If a power fail occurs during a code blue and the back up battery is in place, and the code blue switch is still closed when power returns, the code blue timer will start over from 00:00 or 00:00:00. If the code blue switch is open when power returns, the code blue timer will continue counting the elapsed time including the time while power was off.

If a power failure occurs during a code blue and the code blue timer had been stopped for viewing, and the code blue switch is still closed when power returns, the code blue timer will start over from 00:00 or 00:00:00. If the code blue switch is open when power returns, the code blue time where the code blue timer was stopped prior to the power failure will be shown**.**

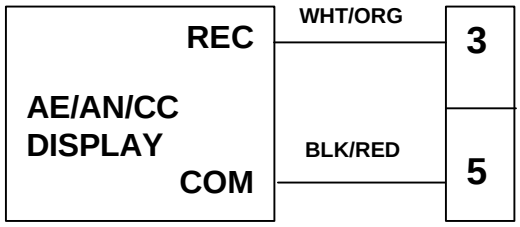
OPTIONAL RS232 SERIAL DATA CORRECTION (MULTI-FUNCTION CLOCK/TIMER)

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.

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:

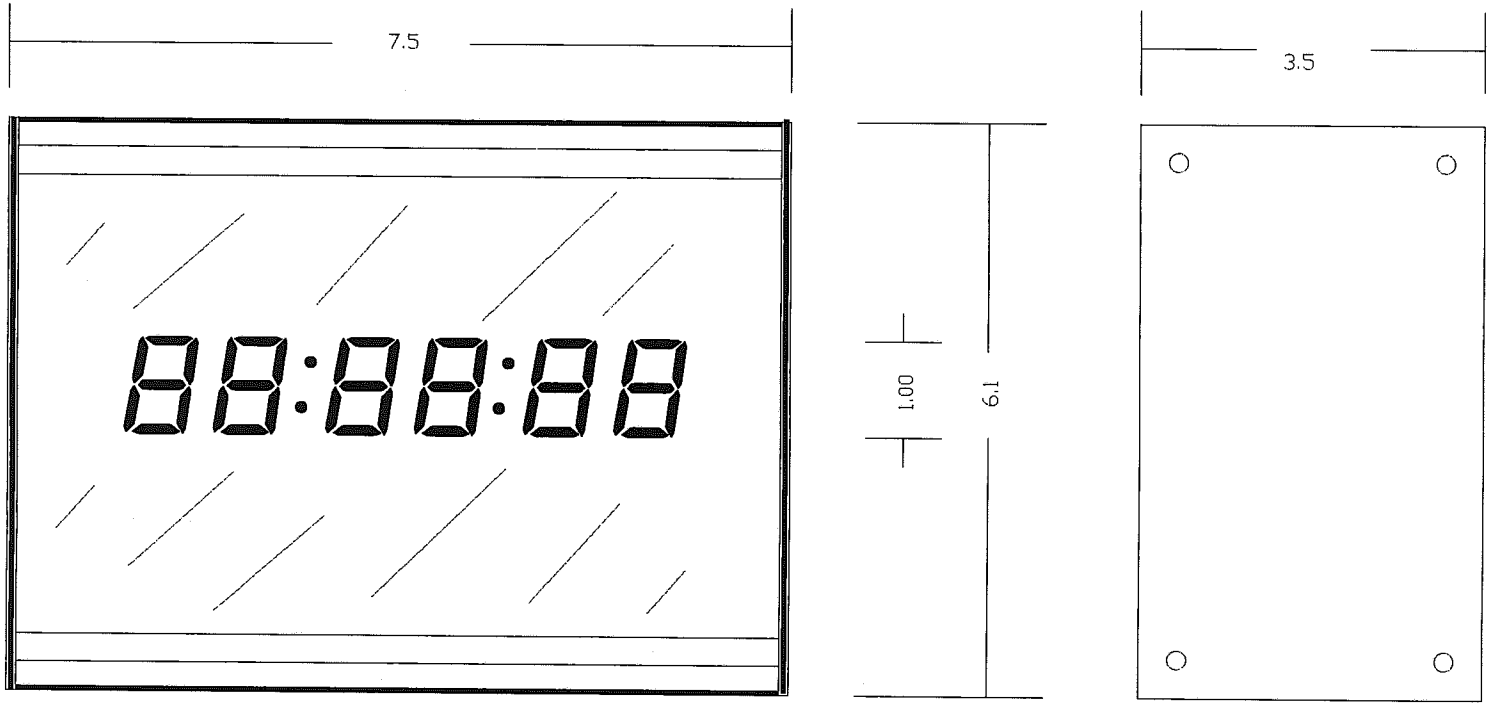
APPLIED TECHNICAL SYSTEMS
849 KING PLACE
SHREVEPORT, LA 71115

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.



APPROVALS	DATE
DRAWN BY JNR	12/20/93
CHECKED BY	
APPROVED BY	

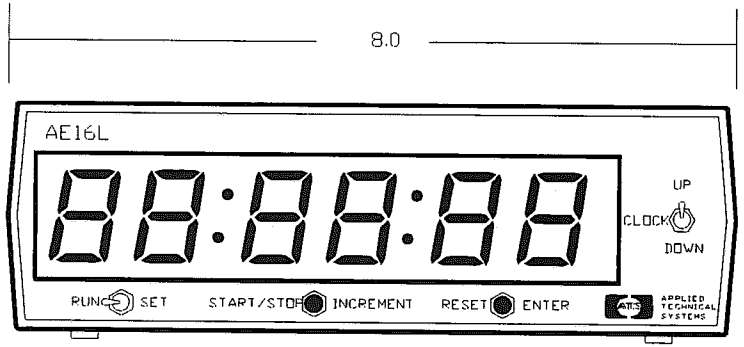
ATS APPLIED TECHNICAL SYSTEMS

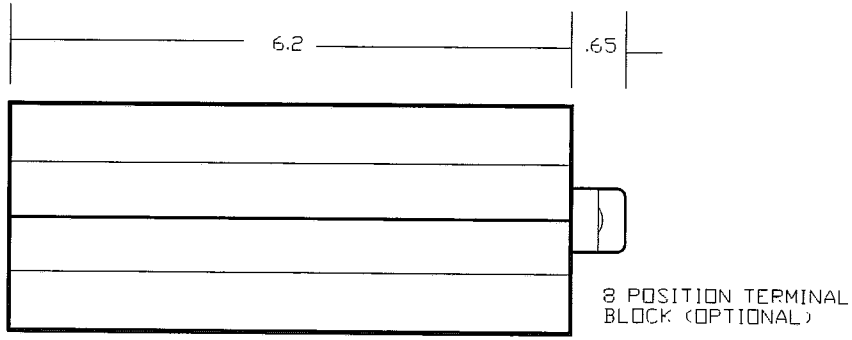
P.O. BOX 5705
SHREVEPORT, LA
71135

PROJECT
AE16 MULTI-FUNCTION CLOCK/TIMER

DESCRIPTION
FG ASSEMBLY

SCALE	1/2
JOB #	
SHEET #	
REVISION	
FILENAME:	16FG1
DRAWING #	





THE AE16L SEPIES LARGE DISPLAYS HAVE SIX, 1 INCH HIGH, SUPER BRIGHT LED DIGITS WITH OR WITHOUT COLONS. AE14L DISPLAYS HAVE FOUR DIGITS. THEY ARE AVAILABLE WITH ANY OF THE AE SERIES FUNCTIONS. THEY CAN BE ORDERED AS: MULTI-FUNCTION CLOCK/TIMERS, COUNTERS, 4-20 MA PROCESS INDICATORS, RS232 INPUT CLOCKS OR READOUTS, AND A VARIETY OF OTHER SPECIAL FUNCTIONS.

THE UNIT SHOWN ABOVE IS THE STANDARD, MULTI-FUNCTION CLOCK/TIMER WHICH HAS BUILT-IN CONTROLS FOR SETTING AND CONTROLLING THE TIME OF DAY AND ELAPSED TIMER FUNCTIONS. A BUILT-IN PIEZO ALARM IS ALSO INCLUDED. OTHER VERSIONS MAY HAVE A DIFFERENT FRONT PANEL LAYOUTS AS SHOWN TO THE RIGHT.

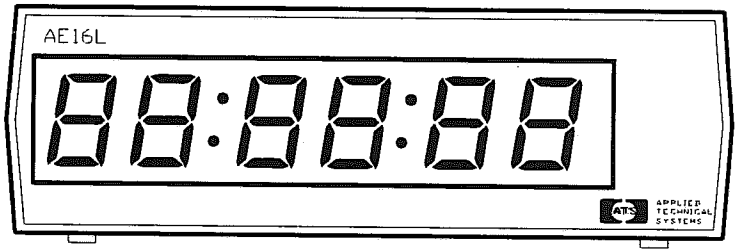
THE 8 OR 9 POSITION TERMINAL BLOCK SHOWN ON THE BACK PANEL IS OPTIONAL ON AE16L'S WITH THE BUILT-IN CONTROLS.

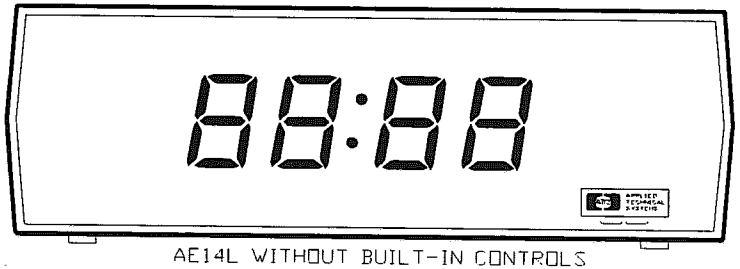
STANDARD POWER IS PROVIDED BY A 120VAC TO 12 VAC 60 HZ POWER MODULE. THE POWER JACK IS LOCATED ON THE BACK PANEL. OPTIONAL POWER: 12 VDC, AND 50 HZ VERSIONS.

ENCLOSURE: HIGH IMPACT PLASTIC, LIGHT GREY.

REFER TO THE SPECIFIC PRODUCT BROCHURES OR MANUALS FOR MORE DETAIL.

AE16L WITHOUT BUILT-IN CONTROLS





AE14L WITHOUT BUILT-IN CONTROLS

APPLIED TECHNICAL SYSTEMS
P.O. BOX 8670
SHREVEPORT, LA
71148-8670

APPROVALS	DATE
DRAWN BY JNR	12/23/96
CHECKED BY	
APPROVED BY	

PROJECT: AE16L SIX DIGIT DISPLAY AND AE14L FOUR DIGIT DISPLAY

DESCRIPTION: ASSEMBLY

SCALE:
JOB #:
SHEET #:
REVISION: 5/9/98JP
FILENAME: AE16L
DRAWING #:

MULTI FUNCTION CLOCK/TIMER/DISPLAY

FEATURES

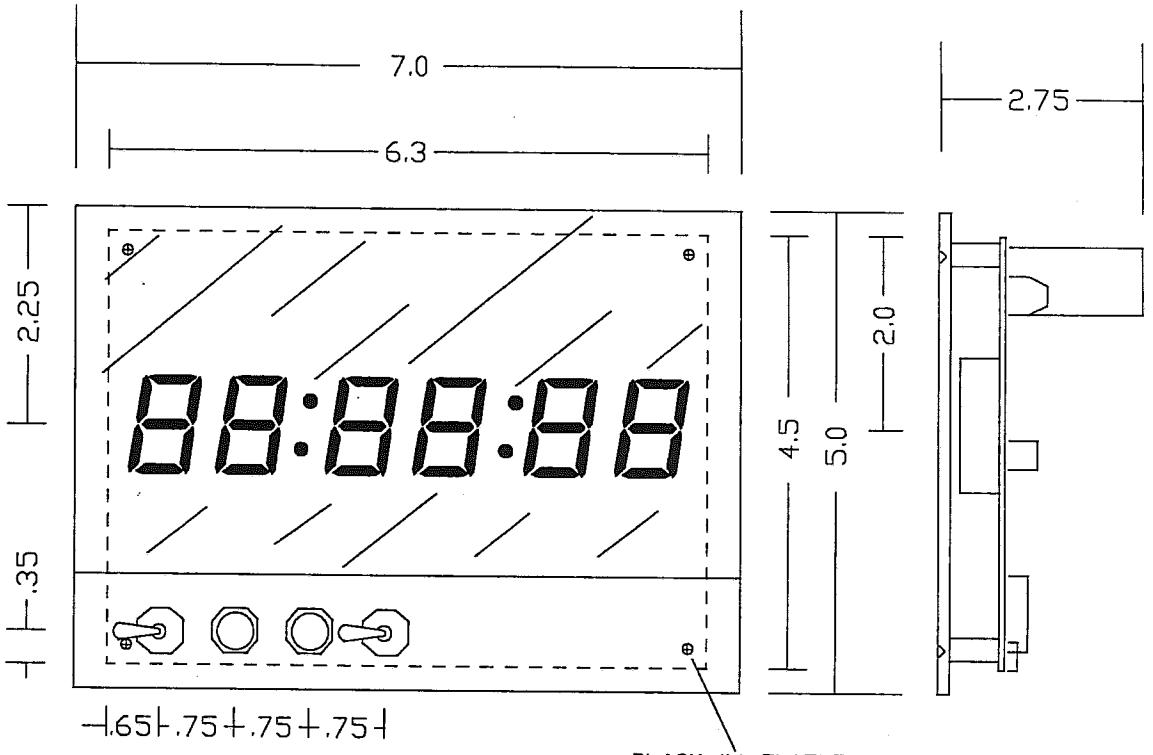
* 1" BRIGHT RED LED DISPLAYS
* VISIBLE UP TO 50 FEET AWAY
* 12 OR 24 HOUR FORMAT
* BUILT-IN CORRECTION MODES, WORKS WITH MOST MASTER CLOCKS.
* BUILT-IN UP AND DOWN COUNT TIMERS WITH PRESETTABLE LIMITS.
* RECHARGEABLE STANDBY BATTERY (OPTIONAL).
* BEZEL MOUNT, WALL/CEILING MOUNT AND RACK MOUNT VERSIONS AVAILABLE.
* 12 VAC POWERED.
* OPTIONS INCLUDE:
  - 120 VAC OPERATION
  - ONBOARD CONTROL SWITCHES
  - REMOTE SWITCH PANELS
  - AUDIBLE ALARM
  - IR REMOTE CONTROL
  - CUSTOMS ENCLOSURES
  - CUSTOM SOFTWARE
  - RS232 INTERFACE
  - .005% CRYSTAL TIME BASE
  - 12 VDC & 50HZ OPERATION

SPECIFICATIONS

POWER: 12 VAC AT LESS THAN 200 MA.
OPERATING TEMPERATURE: 0 TO 50 DEGREES C
ACCURACY: AC LINE SYNCHRONOUS
.005% CRYSTAL DURING POWER FAILURES
(OPTIONAL BATTERY BACKUP REQUIRED)
SIZE: 7" X 5" X 2.75"
WT: LESS THAN 1 LB.
WIRING: ONBOARD TERMINAL BLOCK OR OPTIONAL CONNECTOR.

OPERATION:
STAND ALONE OR SLAVE MODE (SWITCH SELECTABLE MODES TO MATCH MOST MASTER CLOCKS).
12 OR 24 HR FORMAT
COUNTS UP ELAPSED TIME TO A PRESET VALUE AND HOLDS.
COUNTS DOWN ELAPSED TIME FROM A PRESET VALUE AND HOLDS AT ZERO.

PROGRAMMING:
ONBOARD PROGRAMMING SWITCHES OR REMOTE SWITCH PANEL



OPTIONAL ONBOARD SWITCHES AND LABEL SHOWN.

BLACK #4 FLATHEAD SCREWS CENTERED 0.2" FROM EACH SIDE OF THE PCB ASSY (4 PLACES).

PCB ASSY 6.3" X 4.5"
LENS 7" X 5"

OPTIONAL LENS 7.2" X 5.4"

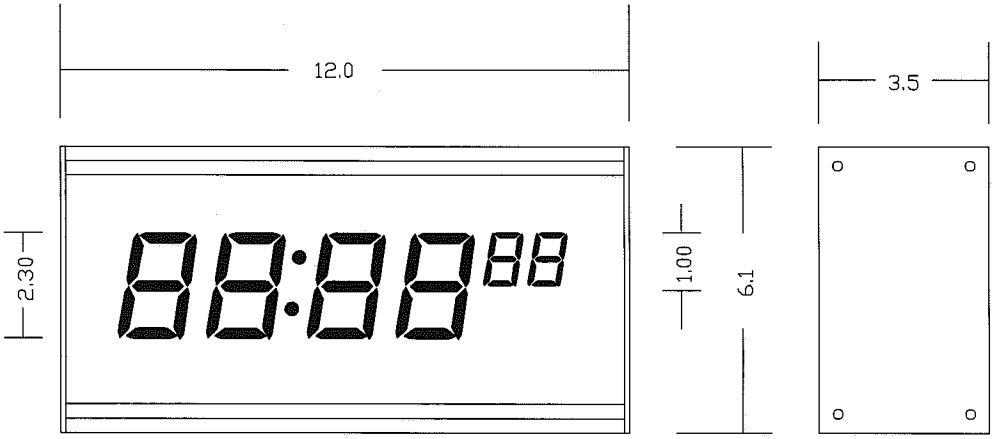
ATS APPLIED TECHNICAL SYSTEMS
P.O. BOX 8670
SHREVEPORT, LA
71148-8670

APPROVALS	DATE
DRAWN BY JNR	1/31/92
CHECKED BY	
APPROVED BY	
REV JNR	2/24/95

PROJECT: AE16B BEZEL MOUNT

DESCRIPTION: ASSEMBLY

SCALE: 1/2
JOB #:
SHEET #:
REVISION: 3/13/97JR
FILENAME: AE16BEZ
DRAWING #:



SPECIFICATIONS

ANODIZED ALUMINUM ENCLOSURE
4 DIGITS, 2.3" HIGH, 2 DIGITS, 1" HIGH, 7 SEGMENT
VISIBLE UP TO 100 FEET AWAY
OPERATES FROM 12 VAC, 500 MA. MAX
TIMER FUNCTIONS ARE LINE SYNCHRONOUS
1/8" RED ACRYLIC FILTER
STANDARD FUNCTIONS: COUNTER, 0-999 SEC TIMER.
OPTIONAL FUNCTIONS: 0-5 VDC SCALABLE READOUT.
0-300 DEGREES F TEMP READOUT.
RS232 INTERFACE
CODE BLUE
OTHER OPTIONS: 120 VAC OPERATION, CUSTOM SOFTWARE

APPLICATIONS

ELAPSED TIME INDICATORS, COUNT DOWN TIMERS, EVENT COUNTERS
PRESET TIMERS/COUNTERS, VISUAL PAGERS, MASTER/SLAVE TIMERS
TOTE BOARDS, PROCESS INDICATORS

ATS APPLIED TECHNICAL SYSTEMS
P.O. BOX 8670
SHREVEPORT, LA
71148-8670

APPROVALS	DATE
DRAWN BY JNR	10/4/94
CHECKED BY	
APPROVED BY	

PROJECT
AE2412
ANODIZED ALUM. ENCLOSURE

SCALE 1/4
JOB #
SHEET #
REVISION 6/12/95 JR
FILENAME: AE2412

DESCRIPTION
ASSEMBLY

DRAWING #

AE2412-H

ATS PN: AE2412-H

12"W x 6.25"H x 3.25"D x 1.65" SLOPING FRONT

PAINTED 18 GA STEEL BLACK LIGHT TEXTURE WITH SILKSCREEN

REMOVE TWO BOTTOM SCREWS TO REMOVE BACK PLATE.

WIRING DETAILS ARE INCLUDED INSIDE ON THE BACK PLATE

FOR BACK PLATE MOUNTING DETAILS REFER TO DWG 2412H-INST2

REFER TO THE INSTRUCTION MANUAL FOR SET UP AND OPERATION

\CAD LT\

APPLIED TECHNICAL SYSTEMS
P.O. BOX 5705
SHREVEPORT, LA
71135

DRAWN BY	
JNR	6/23/04

REVISIONS

PROJECT: AE2412-H CLOCK/TIMER SURFACE MOUNT SLOPING FRONT

DESCRIPTION: ASSEMBLY

SCALE

JOB #

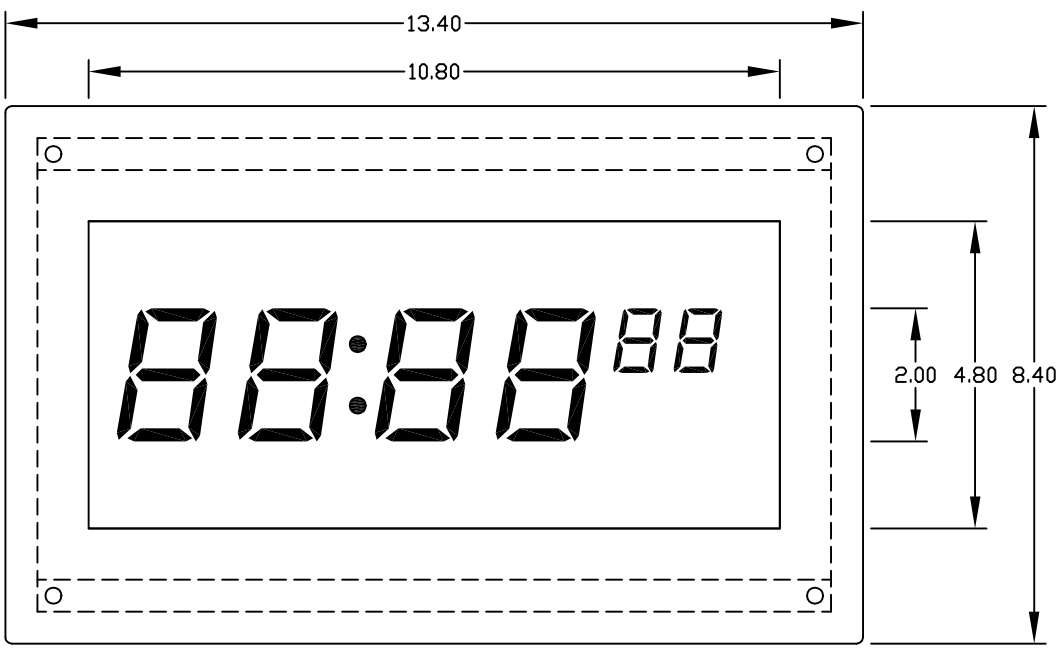
SHEET #

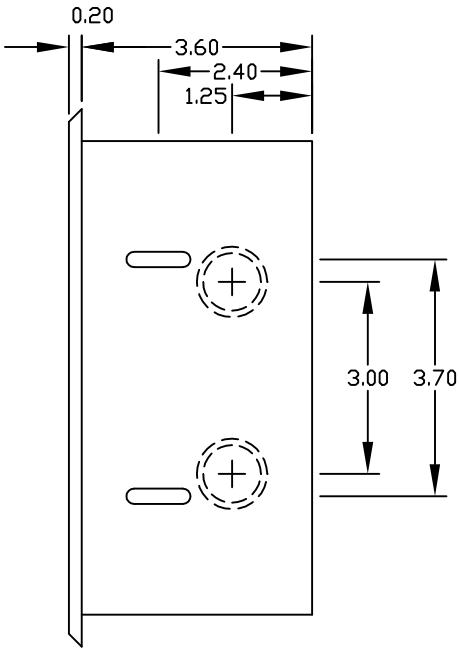
REVISION

FILENAME: 2412H-ASY

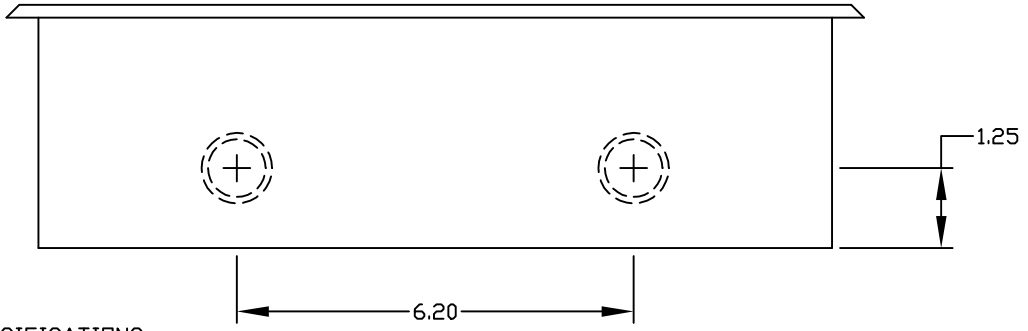
DRAWING #

PN AE24F-





BACK BOX DIMENSIONS:
(12.4"W X 7.4"H X 3.6"D)
APPROXIMATE CUTOUT:
(12.75"W X 7.75"H)



SPECIFICATIONS:

FLUSH MOUNT FRONT PANEL, STEEL-WHITE FINISH
BACK BOX, STEEL-WHITE FINISH
2.3" TALL DIGITS (1-4) AND 1" TALL DIGITS (5,6)
VISIBLE FROM 110 FEET
BATTERY BACKUP
1/8" RED ACRYLIC LENS
STANDARD POWER 120VAC, 60Hz
OPTIONAL POWER AVAILABLE

APPLICATIONS:

MULTI-FUNCTION CLOCK TIMER, ELAPSED TIMER, COUNT DOWN TIEMR, MASTER/SLAVE DISPLAY, RS232 CONTROLLED DISPLAY.....

\CAD LT\ATS DWGS\AE\AE2X\

APPLIED TECHNICAL SYSTEMS

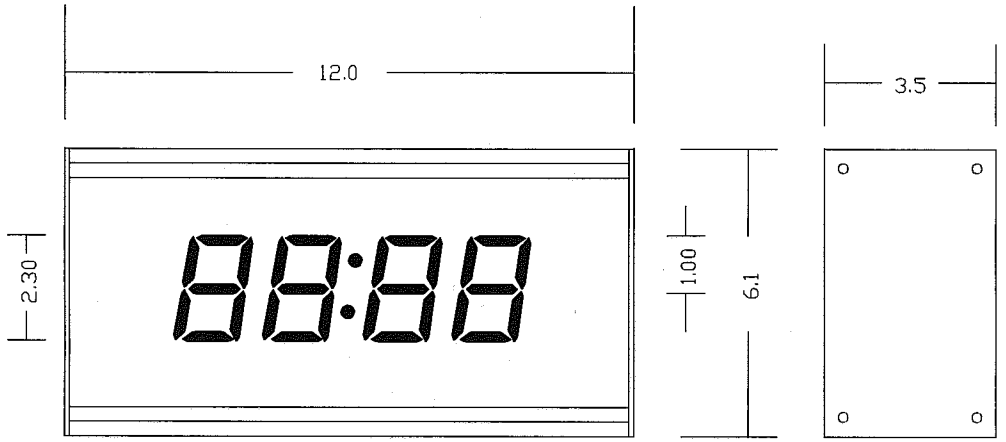
P.O. BOX 5705
SHREVEPORT, LA
71135

APPROVALS	DATE
DRAWN BY DTI	10-24-02
CHECKED BY	
APPROVED BY	

PROJECT: AE2412F-
FLUSH MOUNT

DESCRIPTION: ASSEMBLY

SCALE 1:3
JOB #
SHEET #
REVISION
FILENAME: AE2412F-
DRAWING #



SPECIFICATIONS

ANODIZED ALUMINUM ENCLOSURE
4 DIGITS, 2.3" HIGH, 7 SEGMENT
VISIBLE UP TO 100 FEET AWAY
OPERATES FROM 12 VAC, 500 MA. MAX
TIMER FUNCTIONS ARE LINE SYNCHRONOUS
1/8" RED ACRYLIC FILTER
STANDARD FUNCTIONS: MULTI-FUNCTION CLOCK/TIMER
OPTIONAL FUNCTIONS: 4-20 MA OR 0-5 VDC SCALABLE READOUT.
0-300 DEGREES F TEMP READOUT.
RS232 INTERFACE
CODE BLUE
OTHER OPTIONS: 120 VAC OPERATION, CUSTOM SOFTWARE

APPLICATIONS

ELAPSED TIME INDICATORS, COUNT DOWN TIMERS, EVENT COUNTERS
PRESET TIMERS/COUNTERS, VISUAL PAGERS, MASTER/SLAVE TIMERS
TOTE BOARDS, PROCESS INDICATORS

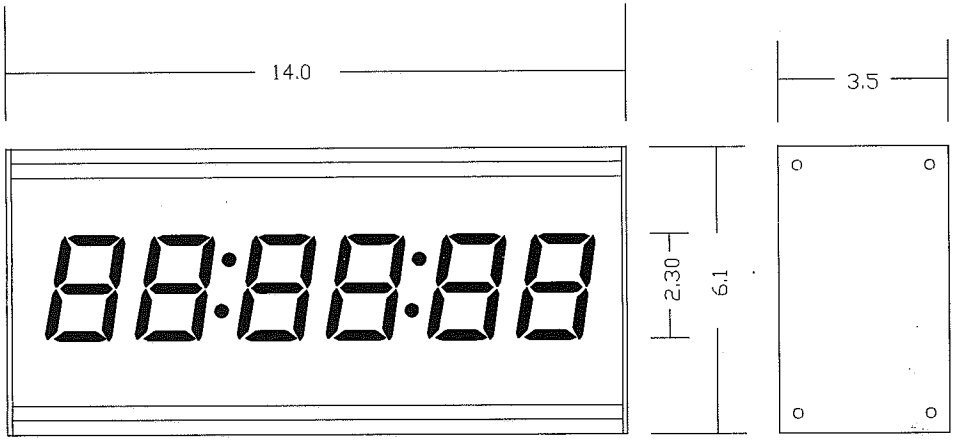
ATS APPLIED TECHNICAL SYSTEMS
P.O. BOX 8670
SHREVEPORT, LA
71148-8670

APPROVALS	DATE
DRAWN BY JNR	5/24/96
CHECKED BY	
APPROVED BY	

PROJECT
AE24
ANODIZED ALUM. ENCLOSURE

DESCRIPTION
ASSEMBLY

SCALE 1/4
JOB #
SHEET #
REVISION
FILENAME: AE24
DRAWING #



SPECIFICATIONS

ANODIZED ALUMINUM ENCLOSURE
6 DIGITS, 2.3" HIGH, 7 SEGMENT
VISIBLE UP TO 100 FEET AWAY
OPERATES FROM 12 VAC, 500 MA. MAX
TIMER FUNCTIONS ARE LINE SYNCHRONOUS
1/8" RED ACRYLIC FILTER
STANDARD FUNCTIONS: MULTI-FUNCTION CLOCK/TIMER
OPTIONAL FUNCTIONS: 0-5 VDC SCALABLE READOUT.
0-300 DEGREES F TEMP READOUT.
RS232 INTERFACE
CODE BLUE
OTHER OPTIONS: 120 VAC OPERATION, CUSTOM SOFTWARE TWO SIDED VERSIONS, CONNECTORS, CONDUIT FITTINGS AND TERMINAL BLOCKS.

APPLICATIONS

ELAPSED TIME INDICATORS, COUNT DOWN TIMERS, EVENT COUNTERS
PRESET TIMERS/COUNTERS, VISUAL PAGERS, MASTER/SLAVE TIMERS
TOTE BOARDS, PROCESS INDICATORS

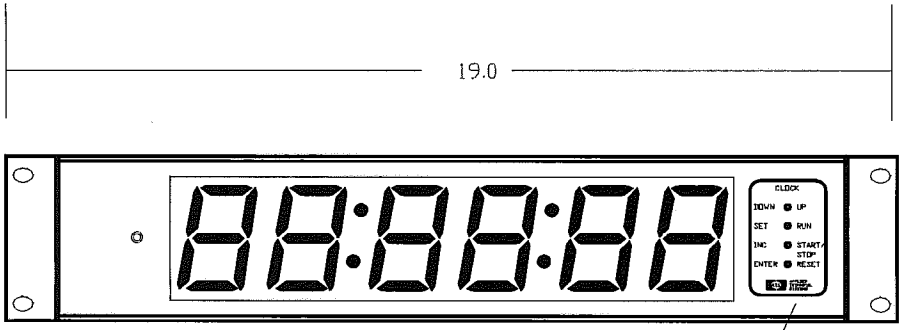
ATS APPLIED TECHNICAL SYSTEMS
P.O. BOX 8670
SHREVEPORT, LA
71148-8670

APPROVALS	DATE
DRAWN BY JNR	11/7/95
CHECKED BY	
APPROVED BY	

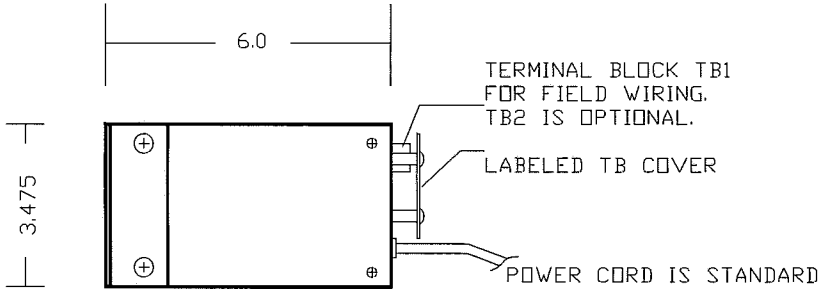
PROJECT
AE26 AND AE26/2
2.3 INCH, SIX DIGIT DISPLAYS

DESCRIPTION
ASSEMBLY

SCALE 1/4
JOB #
SHEET #
REVISION
FILENAME: AE26
DRAWING #



SHOWN WITH BUILT-IN FRONT PANEL CONTROLS.
(INCLUDED ONLY ON MULTI-FUNCTION
CLOCK/TIMER VERSIONS)



SPECIFICATIONS

BLACK ANODIZED ALUMINUM ENCLOSURE (19"W X 3.5"H X 6"D)
FITS STANDARD 19" RACK
6 DIGITS, 2.3" HIGH, 7 SEGMENT
VISIBLE UP TO 100 FEET AWAY
OPERATES FROM 120 VAC, 100 MA. MAX, 6 FT POWER CORD PROVIDED.
TIMER FUNCTIONS ARE LINE SYNCHRONOUS
FIELD WIRING - TERMINAL BLOCK(S)
1/8" RED ACRYLIC FILTER
STANDARD FUNCTIONS: MULTI-FUNCTION CLOCK/TIMER. WITH CODE BLUE
OPTIONAL FUNCTIONS: (OPT 341) 4-20 MA OR 0-5 VDC SCALABLE READOUT.
(OPT 349) REMOTE SECONDARY CLOCK OR DISPLAY.
(OPT 354) RS232 INTERFACE
(OPT 427) GPS MASTER CLOCK

OTHER OPTIONS:
BUILT-IN FRONT PANEL CONTROLS
AMBER OR GREEN DIGITS

APPLICATIONS

MASTER CLOCK SYSTEMS, ELAPSED TIME INDICATORS, COUNT DOWN TIMERS,
PRESET TIMERS/COUNTERS, VISUAL PAGERS, MASTER/SLAVE TIMERS
TOTE BOARDS, PROCESS INDICATORS

ATS APPLIED TECHNICAL SYSTEMS
P.O. BOX 5705
SHREVEPORT, LA
71115

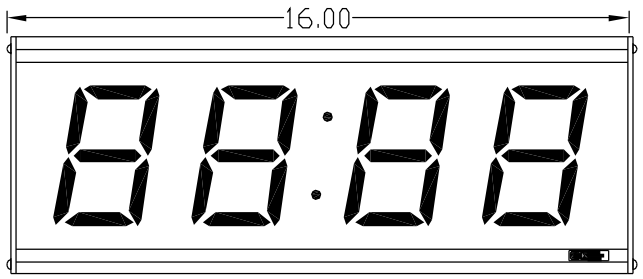
APPROVALS	DATE
DRAWN BY JNR	7/2/96
CHECKED BY	
APPROVED BY	

PROJECT: AE26R SERIES RACK MOUNT ENCLOSURE

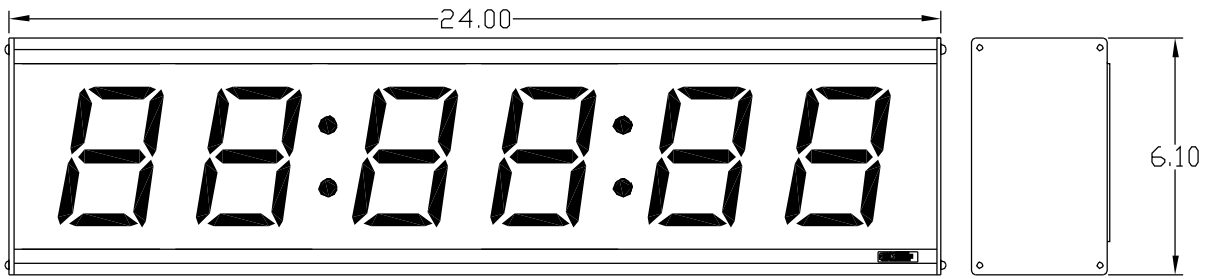
DESCRIPTION: ASSEMBLY

SCALE 1/4
JOB #
SHEET #
REVISION 05/16/00 DW
FILENAME: AE26R
DRAWING #

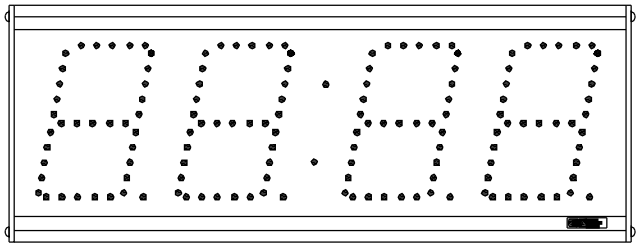
PN AE44S,D AE46S,D



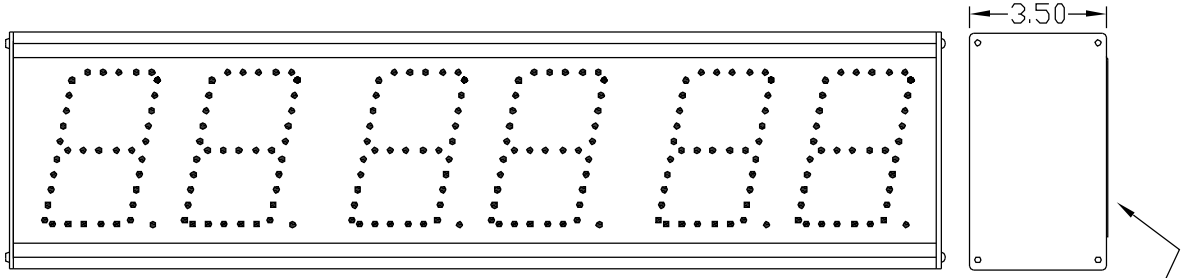
AE44D



AE46D



AE44S



AE46S

SEE MOUNTING BRACKET DETAIL "AEINST01"

SPECIFICATIONS:

AE4XS AND AE4XD SERIES DISPLAY
AVAILABLE AS MULTI-FUNCTION CLOCK TIMER OR WITH AE OPTIONS TO FUNCTION AS ELAPSED TIMERS, COUNTERS, PROCESS INDICATORS, COMPUTER CONTROLLED DISPLAYS.....
BLACK ANODIZED ENCLOSURE
1/8" RED PLEXIGLASS LENS
1/8" BLACK KYDEX BACK PANEL
AE4XS : 4" TALL DIGITS, SUPER BRIGHT RED DOT LEDS
AE4XD : 4" TALL DIGITS, DIFFUSED SUPER BRIGHT RED BAR SEGMENTS
VISIBLE UP TO 200 FEET
POWER: 120VAC 60HZ 15VA STANDARD. OTHER POWER OPTIONS ARE AVAILABLE
STANDARD AE MOUNTING BRACKET PROVIDED
MOUNTS TO SINGLE, DOUBLE GANG AND 4" BOXES
OTHER MOUNTING OPTIONS ARE AVAILABLE

WWW.ATS-USA.COM

\CADLT\ATS DWGS\AE\AE4X\

APPLIED TECHNICAL SYSTEMS
P.O. BOX 5705
SHREVEPORT, LA
71135

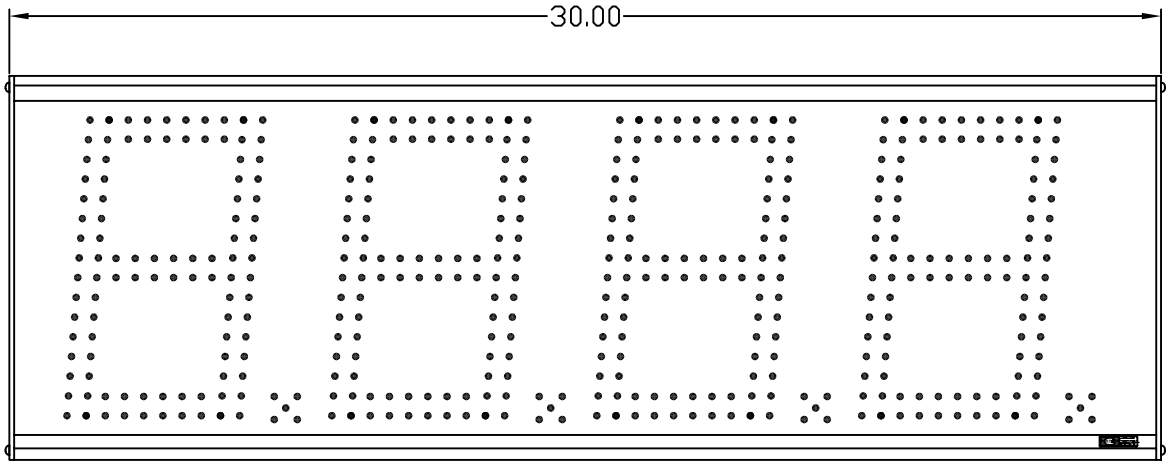
APPROVALS	DATE
DRAWN BY DTI	4-5-01
CHECKED BY	
APPROVED BY	

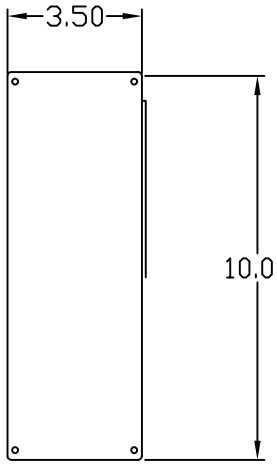
PROJECT
AE4X SERIES
4 AND 6 DIGIT DISPLAYS

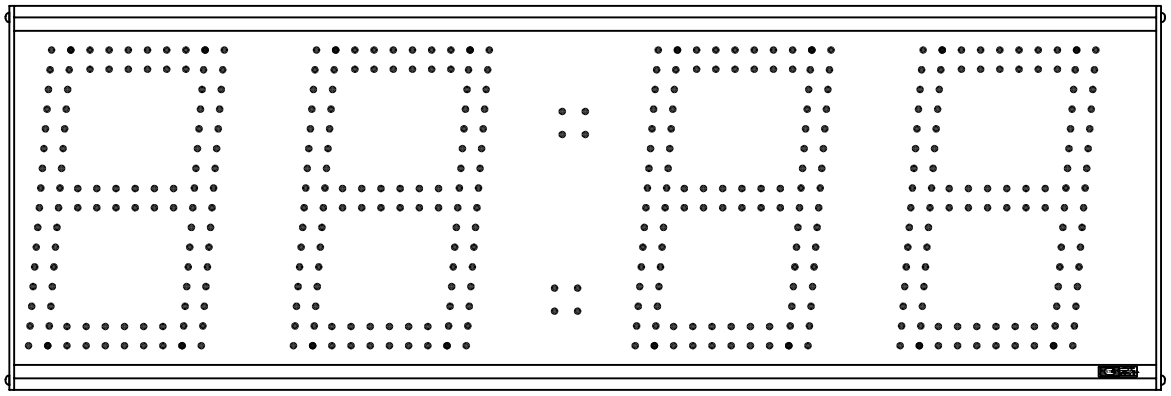
DESCRIPTION
ASSEMBLY

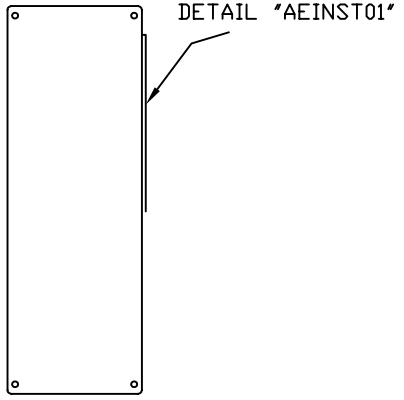
SCALE
JOB #
SHEET #
REVISION 4/9/09BL
FILENAME: AE4446CL
DRAWING #

PN AE84-









SPECIFICATIONS:

AE86 SERIES DISPLAY- AVAILABLE AS MULTI-FUNCTION CLOCK TIMER OR WITH AE OPTIONS TO FUNCTION AS ELAPSED TIMER, COUNTER, PROCESS INDICATOR, RS232 SYSTEM CLOCK...
BLACK ANODIZED ENCLOSURE
1/8" RED PLEXIGLASS LENS
1/8" BLACK ABS BACK PANEL
SIX - 8" TALL DIGITS, SUPER BRIGHT RED DOT LEDS
VISIBLE FROM 400 FEET
STANDARD AE MOUNTING BRACKET PROVIDED
MOUNTS TO SINGLE, DOUBLE GANG AND 4" BOXES OTHER MOUNTING OPTIONS ARE AVAILABLE.

WWW.ATS-USA.COM

\CADLT\ATS DWGS\AE\AE8X\

APPLIED TECHNICAL SYSTEMS
P.O. BOX 5705
SHREVEPORT, LA
71135

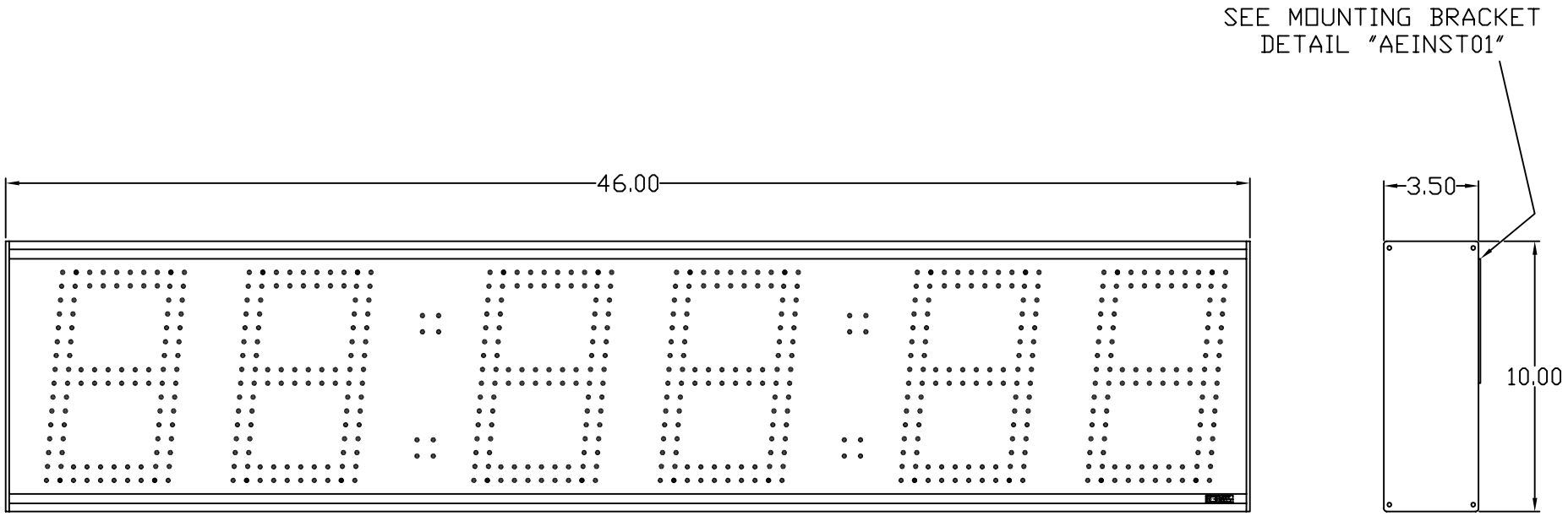
APPROVALS	DATE
DRAWN BY DTI	4-5-01
CHECKED BY	
APPROVED BY	

PROJECT: AE84-

DESCRIPTION: ASSEMBLY

SCALE 1:5
JOB #
SHEET #
REVISION
FILENAME: AE84-
DRAWING #

PN AE86-



SPECIFICATIONS:

AE86 SERIES DISPLAY- AVAILABLE AS
MULTI-FUNCTION CLOCK TIMER OR WITH AE OPTIONS
TO FUNCTION AS ELAPSED TIMER, COUNTER, PROCESS
INDICATOR, RS232 SYSTEM CLOCK...
BLACK ANODIZED ENCLOSURE
1/8" RED PLEXIGLASS LENS
1/8" BLACK ABS BACK PANEL
SIX - 8" TALL DIGITS, SUPER BRIGHT RED DOT LEDS
VISIBLE FROM 400 FEET
STANDARD AE MOUNTING BRACKETS PROVIDED EACH
LOCATED AT 16" FROM CENTER. MOUNT TO
SINGLE, DOUBLE GANG AND 4" BOXES OTHER
MOUNTING OPTIONS ARE AVAILABLE.

WWW.ATS-USA.COM

\CAD LT\ATS DWGS\AE\AE8X\

APPLIED TECHNICAL SYSTEMS
P.O. BOX 5705
SHREVEPORT, LA
71135

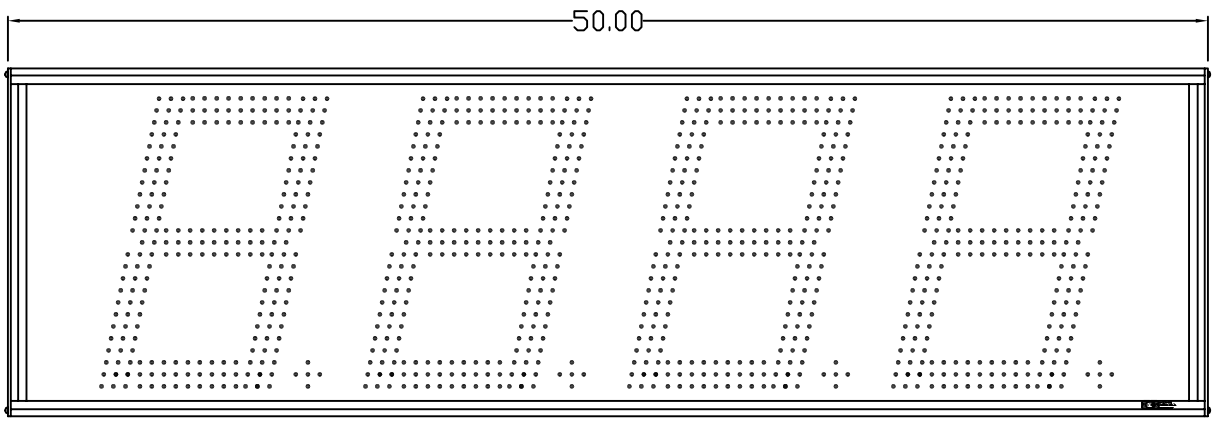
APPROVALS	DATE
DRAWN BY DTI	5-14-01
CHECKED BY	
APPROVED BY	

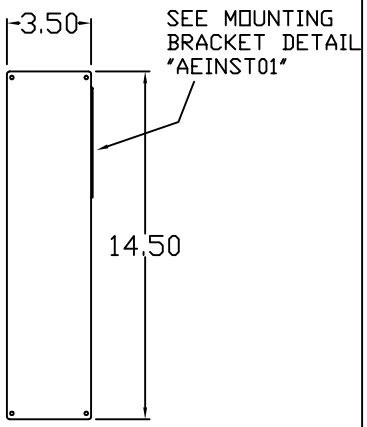
PROJECT: AE86-

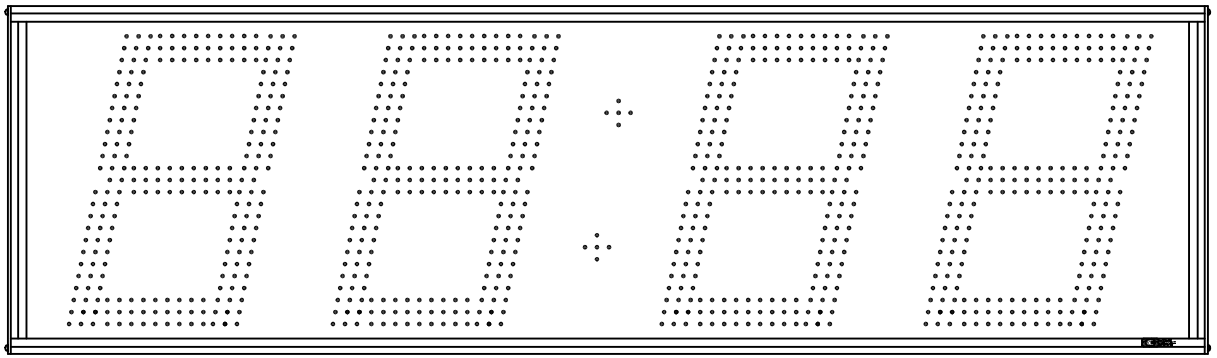
DESCRIPTION: ASSEMBLY

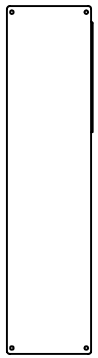
SCALE
JOB #
SHEET #
REVISION
FILENAME: AE86-
DRAWING #

PN AE124-









SPECIFICATIONS:

AE124 SERIES DISPLAY- AVAILABLE AS MULTI-FUNCTION CLOCK TIMER OR WITH AE OPTIONS TO FUNCTION AS ELAPSED TIMER, COUNTER, PROCESS INDICATOR, RS232 SYSTEM CLOCK...
BLACK ANODIZED ALUMINIUM ENCLOSURE
1/8" RED PLEXIGLASS LENS
1/8" BLACK ABS BACK PANEL
FOUR - 12" TALL DIGITS, SUPER BRIGHT RED DOT LEDS
VISIBLE FROM 600 FEET
STANDARD AE MOUNTING BRACKETS PROVIDED EACH LOCATED AT 16" FROM CENTER. MOUNT TO SINGLE, DOUBLE GANG AND 4" BOXES OTHER MOUNTING OPTIONS ARE AVAILABLE.

WWW.ATS-USA.COM

\CADLT\ATS DWGS\AE\AE12X\

APPLIED TECHNICAL SYSTEMS
P.O. BOX 5705
SHREVEPORT, LA
71135

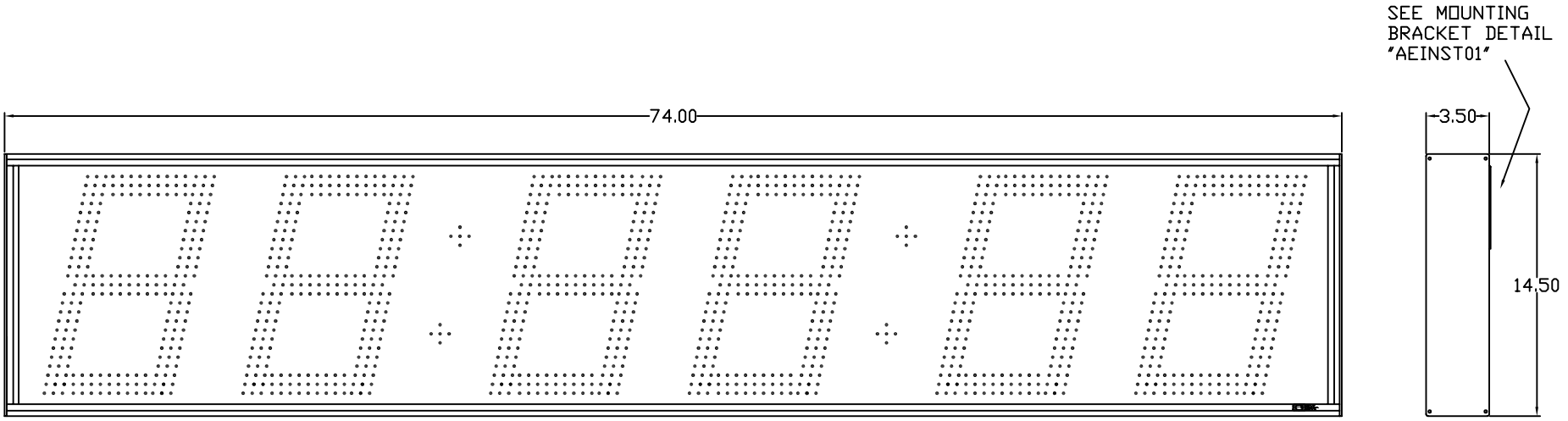
APPROVALS	DATE
DRAWNBY DTI	4-5-01
CHECKEDBY	
APPROVED BY	

PROJECT: AE124-

DESCRIPTION: ASSEMBLY

SCALE 1:8
JOB #
SHEET #
REVISION
FILENAME: AE124-
DRAWING #

PN AE126-



SPECIFICATIONS:

AE126 SERIES DISPLAY- AVAILABLE AS MULTI-FUNCTION CLOCK TIMER OR WITH AE OPTIONS TO FUNCTION AS ELAPSED TIMER, COUNTER, PROCESS INDICATOR, RS232 SYSTEM CLOCK...
BLACK ANODIZED ALUMINIUM ENCLOSURE
1/8" RED PLEXIGLASS LENS
1/8" BLACK ABS BACK PANEL
SIX - 12" TALL DIGITS, SUPER BRIGHT RED DOT LEDS
VISIBLE FROM 600 FEET
STANDARD AE MOUNTING BRACKETS PROVIDED EACH LOCATED AT 16" FROM CENTER. MOUNT TO SINGLE, DOUBLE GANG AND 4" BOXES OTHER MOUNTING OPTIONS ARE AVAILABLE.

WWW.ATS-USA.COM

\CAD LT\ATS DWGS\AE\AE12X

APPLIED TECHNICAL SYSTEMS
P.O. BOX 5705
SHREVEPORT, LA
71135

APPROVALS	DATE
DRAWNBY DTI	5-14-01
CHECKEDBY	
APPROVED BY	

PROJECT: AE126-

DESCRIPTION: ASSEMBLY

SCALE: 1:9
JOB #:
SHEET #:
REVISION:
FILENAME: AE126-
DRAWING #: