

PRODUCT MANUAL

ELECTRONIC DISPLAYS INC.

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ADDISON, ILL. 60101

www.electronicdisplays.com



ED206 – 101 – 4D – N1 / N12 / N4 / PM

ED406 – 101 – 4D – N1 / N12 / N4 / PM

DESCRIPTION:

- Four-digit time of day clock in 12 hour mode. HH:MM Format.
- Two pushbuttons on the endplate to set hours and minutes.
- Terminal block on endplate to wire remote contacts.
- Receives from Windows based software program via RS485 serial interface.
- MASTER sends an RS485 data signal to secondaries (SLAVES).
- NEMA Rated or Panel Mount enclosure.

OPERATION:

This 4-digit MASTER will receive serial RS232 data from a time keeping software program. This master will transmit data through RS485 interface to the SLAVES (secondary). Slaves can be connected in a multi-drop network for up to 30 displays. A terminal strip is provided to allow wiring between PC Master and the Master clock. See appendix G for cabling diagram of RS232 comports. Two pushbuttons are located on the right endplate for fast/slow set. A terminal block inside the endplate can be used to wire remote switches and RS485 serial inputs and outputs. See the wiring diagram in this manual for installing the switches.

If there are any questions or comments regarding this order, please call our Toll-Free number @ 1-800-367-6056

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Unpacking Instructions:

A copy of these instructions is packed with each unit. Open carefully to avoid scratching the unit's paint and plastic lens or cutting the line cord.

Mechanical Mounting Instructions:

This unit is equipped with two rivnuts in the top of the unit for mechanical mounting purposes. The bolts that are screwed into these rivnuts are standard 5/16 by 1 1/4" bolts. To avoid damaging the rivnuts, do not tighten these bolts more than 10 ft/lbs. For a panel mount model, the display is attached to red acrylic and could be placed in a panel cutout.

Power Requirements:

This unit is equipped with a standard, eighteen-gauge, three-wire line cord that is designed to be plugged into a standard, 120 VAC, 60 Hertz, grounded outlet. The maximum current draw for this unit (at 120 VAC) is 1 Ampere for ED400-101-4D-N1 and 3/4 Ampere for ED225-101-4D-N1.

Power-up Response:

UPON POWER UP, THE UNIT WILL DISPLAY " 12:00" AND START TIMING. SET THE DISPLAY BY PRESSING THE FAST AND SLOW SET SWITCHES. THE DISPLAY IS IN A 12 HOUR FORMAT.

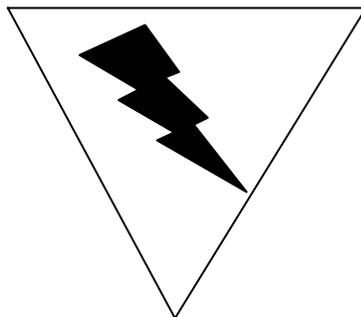
Label Definitions:

The following table shows some commonly used labels and their definitions. These labels are right next to the terminal block on the inside of right end plate.

| LABEL | DEFINITION |
|-------|--|
| FAST | Advances hour's digits. Optically coupled input, active high, requires 12 milli-amperes of current to activate. |
| SLOW | Advances minute's digits. Optically coupled input, active high, requires 12 milli-amperes of current to activate. |
| GND | "COMMON" – When using customer power supply, connect ground of your power supply to this terminal. Also used for remote switches with external power supply. |
| 232IN | RS232 data signal. |
| GND | Ground for RS232 data signal |
| TX+ | Positive side of balanced data line for RS-422 or RS-485 serial output signals. TX+ to RX+ |
| TX- | Negative side of balanced data line for RS-422 or RS-485 serial output signals. TX- to RX- |

WARNING – SHOCK HAZARD!

Always completely disconnect power from the display before opening the unit. Do not reapply power to the display until the unit has been securely closed.



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FOR SWITCHES: Customer Power Supply

This unit is equipped with optically coupled inputs that prevent any electrical or electronic signal from passing directly from the outside world into the logic circuits on the printed circuit boards that we have supplied.

For your convenience, we have also supplied this board with an 'isolated customer power supply' that can be used to drive the customer side of these optically coupled inputs. This isolated supply does not have a direct current connection to the power supply that is used to power the display and logic chips. It will provide 12 VDC to 14 VDC at up to 500 milli-amperes of current. This voltage is unregulated.

FOR SWITCHES: 'Dry' Contact Configuration

To use 'dry' contacts, the user need only supply a contact closure between the desired optically coupled input and the positive terminal of the 'isolated customer power supply'. The negative terminal of the isolated supply is already connected to the negative side of each optically coupled input. See Figure A.

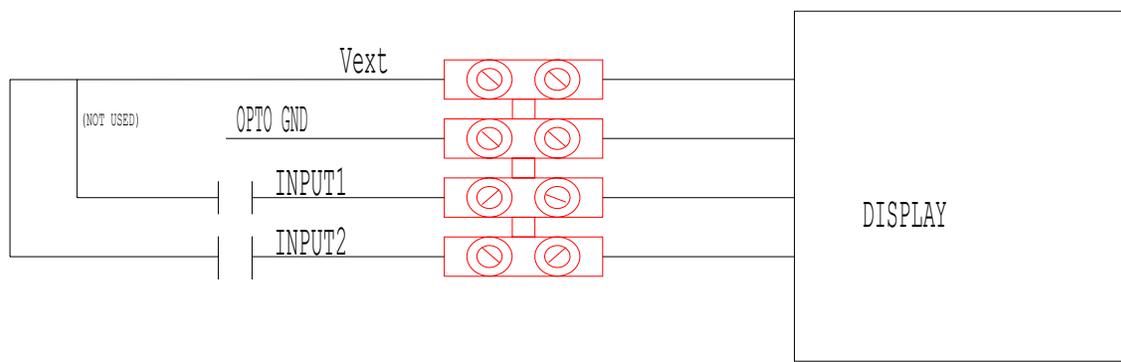


Figure A

Service:

There are no parts in your unit classified as 'user serviceable' parts. The plastic or glass cover can be cleaned using a soft cloth and a gentle glass cleaning solution.

If there are any questions or comments regarding this order, please call our Toll-free number: 1 - 800 - 367 - 6056

Warranty:

The standard warranty for all products is one year on all parts and labor at our facilities. All products are designed and manufactured by Electronic Displays Inc. If you need assistance, please call or FAX us and we will be happy to provide technical assistance. If you feel that your unit needs repair, please call us first and then ship the unit to:

Electronic Displays Inc.
135 South Church Street
Unit A
Addison, Ill. 60101
Attn: Repair department

Our telephone number is:

(630) 628-0658

Our FAX number is:

(630) 628-0936

PROUDLY MADE IN THE U.S.A.

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APPENDIXES:

APPENDIX E: **SLAVE DISPLAYS:**

ADDRESS DIP

Switches 1 & 2 are used to control baud rate

1 OFF & 2 OFF = 1200 baud

1 ON & 2 OFF = 2400 baud

1 OFF & 2 ON = 4800 baud

1 ON & 2 ON = 9600 baud

Switches 5, 6, 7, & 8 ARE NOT USED

FUNCTION DIP

Switches 1, 2, 3, & 4 are used for Time Zone Adjustments (add all values)

1 ON adds or subtracts 1 hour

2 ON adds or subtracts 2 hours

3 ON adds or subtracts 4 hours

4 ON adds or subtracts 8 hours

Switch 5 (30 Minute Time Zone)

ON = 30 MINUTES WILL BE ADDED OR SUBTRACTED BASED ON SWITCH 8

OFF = THER WILL BE NO 30 MIN ADDITION OR SUBTRACTION.

Switch 6 IS NOT USED

Switch 7 is 12/24- hour select

7 ON = 12-hour mode

7 OFF = 24-hour mode

Switch 8 is used to select ADD or SUBTRACT Time Zone Adjustment

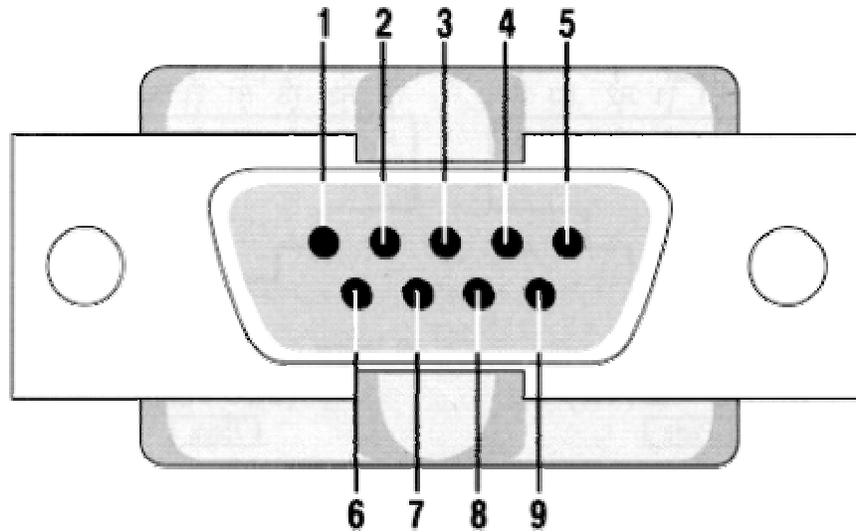
8 ON = SUBTRACT switches 1 through 4

8 OFF = ADD switches 1 through 4

APPENDIX G

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PC Com Port - RS-232 pin out DB-9 pin

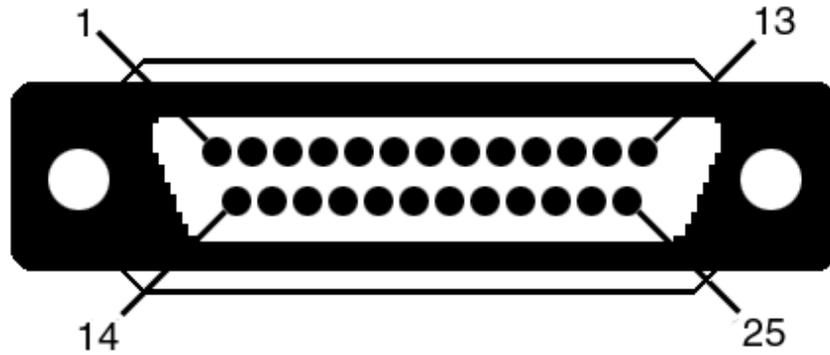


| Pin | Signal | Pin | Signal |
|-----|---------------------|-----|-----------------|
| 1 | Data Carrier Detect | 6 | Data Set Ready |
| 2 | Received Data | 7 | Request to Send |
| 3 | Transmitted Data | 8 | Clear to Send |
| 4 | Data Terminal Ready | 9 | Ring Indicator |
| 5 | Signal Ground | | |

Pin 3 from your PC to Pin 3 on our DB-25 or DATA on our terminal block.
Pin 5 from your PC to Pin 7 on our DB-25 or GND on our terminal block.

PC Com Port - RS-232 pin out DB-25 pin

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**RS232 Cable - DB25 Male
(on Cable)**

| RS232 - 25 Pin | | |
|-----------------------|-----|------------------------|
| 1 | GND | Chassis / Frame Ground |
| 2 | TD | Transmitted Data |
| 3 | RD | Receive Data |
| 4 | RTS | Request to Send |
| 5 | CTS | Clear to Send |
| 6 | DSR | Data Set Ready |
| 7 | GND | Signal Ground |
| 8 | DCD | Data Carrier Detect |
| 9 | TD+ | Transmit + |
| 11 | TD- | Transmit - |
| 18 | RD+ | Receive + |
| 20 | DTR | Data Terminal Ready |
| 22 | RI | Ring Indicator |
| 25 | RD- | Receive - |

Pin 2 from your PC to Pin 3 on our DB-25 or DATA on our terminal block.
Pin 7 from your PC to Pin 7 on our DB-25 or GND on our terminal block.