

## PRODUCT MANUAL

# ***ELECTRONIC DISPLAYS INC.***

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### **ED400D-E – 111 - 4D – N4-SR1: 4.0 IN. HIGH DIGITS**

#### **DESCRIPTION :**

- 4 digit, alpha/numeric display; 4 inch high characters.
- Serial input (RS232) via a PC/PLC ; 1200BPS
- Standard ASCII text is used for communication.
- Terminal block inside right endplate to wire PC/PLC input.
- NEMA 4 enclosure.

#### **OPERATION :**

This model is designed to receive a serial input via a PC/PLC (RS232). A terminal block inside the right endplate can be used to wire the serial data wires. Two-wire transmission is needed. It is recommended that a PVC jacket with a shield be used. Standard ASCII protocol is used to communicate with the display; Baud rate @ 1200BPS; NO PARITY; 8 DATA BITS; 1 OR 2 STOP BITS. See Appendix E for protocol information.

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 brackets attached to the back of the display for mechanical mounting purposes. The unit is designed to be mounted to a wall.

## 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 1.3 Amperes.

## Power-up Response:

UPON POWER UP, THE UNIT WILL DISPLAY will scroll an power up diagnostic message.  $a = 'XX'$   $b = 'YY'$   $p = 2$ ; where 'XX' is the address of the display, 'YY' is the baud rate of the display (Factory set to 1200), and p is the 2 digit addressing protocol.

See Dip Switch Settings for changing baud rate and address.

## Dip Switch Settings:

This program selects display address, baud rate, type of display hardware, and message protocol based on DIP switch settings. Figure 1 shows the general layout of the 1700-259 CPU board on the back of the display and identifies the 'ADDRESS' switch and the 'FUNCTION' switch. The following pages detail the purpose of each of these switches.

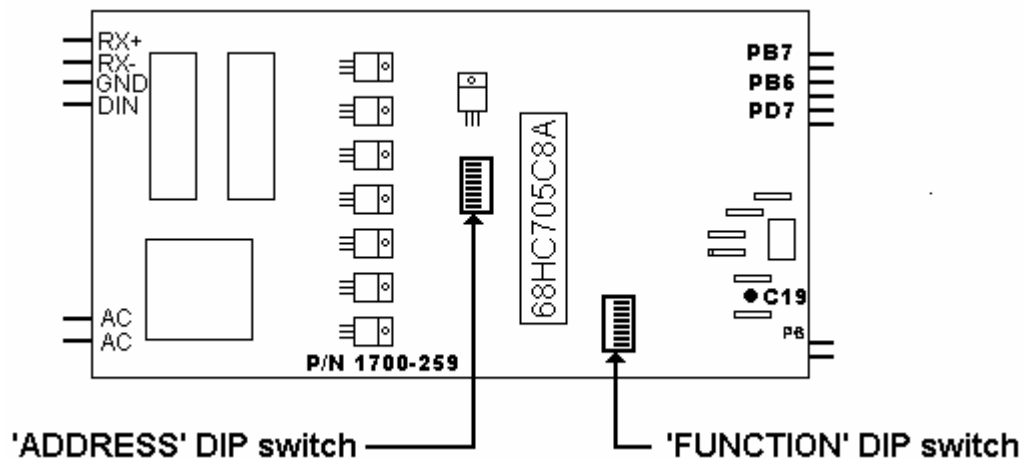


Figure 1

## “FUNCTION” Switch:

“FUNCTION” DIP switches one, two, and three are used to specify the type of display board that is being used. These switches were set at the factory and should not be changed in the field.

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“FUNCTION” DIP switches four and five are used to specify the baud rate of the serial input. The options are shown in Table 1 below.

‘FUNCTION’ DIP SWITCH		BAUD RATE
SW5	SW4	
OFF	OFF	1200
OFF	ON	2400
ON	OFF	4800
ON	ON	9600

**Table 1**

“FUNCTION” DIP switches seven and eight are not used and should be left in the ‘OFF’ position.

“FUNCTION” DIP switch number six determines whether this display is to be used for ‘normal’ serial messages or as the output display for Electronic Displays Analog-to-Digital converter. If “FUNCTION” DIP switch number six is in the OFF position, the “ADDRESS” DIP switch specifies the display address as shown in Tables 2 and 3 below. If “FUNCTION” DIP switch number six is in the ON position, the “ADDRESS” DIP switch specifies what digits to display as shown in the section entitled ““ADDRESS” Switch for Analog-to-Digital converter Displays:” below.

## “ADDRESS” Switch for Serial Input Displays:

“FUNCTION” DIP switch number six must be in the ‘OFF’ position (see above). The “ADDRESS” DIP switches are used in binary fashion to generate an address number. If the address number is zero (all switches in the ‘OFF’ position) or if the address number is larger than 198, the display uses non-addressable ‘flex’ protocol. If the address number is from 1 to 99 (see samples in Table 2 below), the display uses 2-digit addressable ‘flex’ protocol. If the address number is from 100 to 198 (see samples in Table 3 on the next page), the display uses 2-digit addressable protocol.

‘ADDRESS’ DIP SWITCHES								ADDRESS
SW8	SW7	SW6	SW5	SW4	SW3	SW2	SW1	
OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	01
OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	02
OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	03
OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	04
OFF	OFF	OFF	OFF	OFF	ON	OFF	ON	05
OFF	OFF	OFF	OFF	ON	ON	ON	ON	15
OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	16
OFF	OFF	OFF	ON	OFF	OFF	OFF	ON	17
OFF	OFF	OFF	ON	ON	ON	ON	ON	31
OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	32

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OFF	OFF	ON	ON	ON	ON	ON	ON	63
OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	64
OFF	ON	ON	OFF	OFF	OFF	ON	OFF	98
OFF	ON	ON	OFF	OFF	OFF	ON	ON	99

**Table 1**

## Label Definitions:

The following page shows some commonly used labels and their definitions. Not all of these labels will be found in your unit.

LABEL	DEFINITION
DATA	Receive serial input (RS232) from PC/PLC.
GND	Ground reference for RS232 serial input.
L	120VAC LINE IN
N	120VAC NEUTRAL

## 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.

## 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.

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## PROTOCOL FOR NUMERIC DISPLAYS

ASCII CODE	VALUE (Decimal)	FUNCTION
STX	2	'Start of text', also known as a 'control B', this character must be the first character of each message
AD1 AD2	48-57 48-57	These two ASCII decimal digits represent the address of the display as set on the display. See appendix C for address setting information
DATA	48-57	Numeric value to be displayed in ASCII decimal digits. It is also permissible to include space characters (character value 32 decimal), minus sign characters (character value 45 decimal), and one decimal point character (character value 46 decimal) with the digits.
ETX	3	'End of text', also known as a control C, this character must be the last character of each message

### Example:

To set the display that has an address of '01' to a value of "123456", the following `<^B>011234<^C>`

*NOTE: the <>'s not to be included in the message.*

**Or from a terminal program such as PCPLUS, Hyper-terminal, or a TELNET screen if the display has the Ethernet Option.**

The character sequence to be sent will be:

'Ctrl+B' "01" "1234" 'Ctrl+C' (a total of eight characters)

**The leading zeros will remain blank in all cases.**

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