

Microframe Corporation

A0262:
RS232 Remote Display



Operating Manual

A0262-7010





A0262

INSTALLATION & SPECIFICATION GUIDE

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Limited Warranty Agreement

Your Microframe System is warranted against failure due to defects in workmanship or material for a period of one (1) year from the date of purchase. Microframe Corporation will repair or replace any defective unit. Obvious abuse or mishandling of the unit is NOT covered by this warranty.

Merchandise Return

If your Unit does not work satisfactorily, please give us a call. We may be able to clear up the problem by phone. If it becomes necessary to return your Unit to the factory, please observe the following.

1. Place Unit in a sturdy box with sufficient packing material.
2. If requested, include the AC power adapter. It is not necessary to return the cable and connectors unless they are the problem.
3. Return the system insured and prepaid since we are not responsible for shipping damages and losses on returned Units.

Warranty Service

For warranty service, please contact Microframe at 1-800-635-3811. A technician will gladly assist you.

Assistance

For any product assistance or maintenance help, contact Microframe by calling 1-800-635-3811 or emailing us at support@microframecorp.com.

Safety

Do not install substitute parts or perform any modification to the product without first contacting Microframe.

Warning

All AC power adapters, line cords, and electrical equipment should be kept out of the reach of children and away from water. (If you are installing cable in an air plenum area, such as a drop ceiling used for air return, you must use plenum-rated cable. The cable supplied from Microframe is rated CL2 and is approved for installation everywhere indoors except plenum areas.)

Life Support Policy

Microframe's products are not authorized for use as components in life support devices or systems without the express written approval of the president of Microframe Corporation. As used herein:

1. Life support devices or systems are defined as systems which support or sustain life, and whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user or any one depending on the system.

2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

Disclaimer

We are constantly striving to improve our products. Due to this, specifications are subject to change without notice.

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MODEL A0262 SPECIFICATIONS

Remote Display

Features

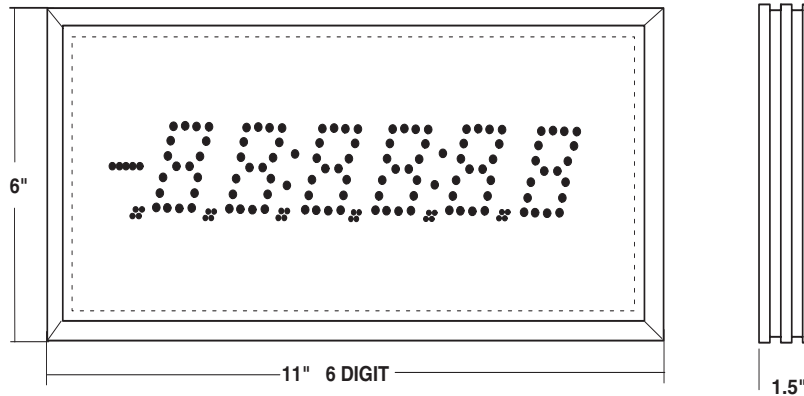
The Model A0262 Remote Display is designed to operate with any standard RS232 input to provide Remote Display capabilities for a computer, PLC or scale display. The Model A0262 Display has 1.5-inch tall digits and is encased in an aluminum extruded cabinet.

Operation

The computer passes ASCII characters and a carriage return (ASCII 13D), and then the characters will be displayed on the Model A0262. To display a blank screen, pass a carriage return (ASCII 13D). Insert the decimal point in the number string and it will light. Pass a colon (:) and the right colon on the Display will light. Pass a percent sign (%) and the left colon will light. Leading zeros will be blanked if the user selectable option switch is enabled.



Microframe® Model A0262 Display



260\AXI9700E.ai

Model 262 Specifications

Protocol	RS232
Power Input Requirements	16-24 VAC
Baud Rate.....	1200 to 9600 Baud Switch Selectable
Maximum Number of Addresses	7 Different Display Addresses
Digit Height	1.5 Inch
Operating Temperature.....	-20° C to 60° C or -4° F to 140° F

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1 INSTALLATION PROCEDURES

1.1 POWER

Powering the Display from 16VAC

The Display ships with a 16VAC power adapter. Connect the wire ends to the board terminals labeled 16VAC.

1.2 SIGNAL

Model 262 accepts RS232 as its only input signal.

Connections should be as follows:

RS232

Display Rx to Computer Tx

Display Tx to Computer Rx

Display Ground to Computer Ground

1.3 POWER ON

The Display power/processor light should flash when the Display is powered.

1.4 SELF-TEST

Pressing the select button one time will cause the display to show all eights. Pressing the select button a second time will cause the display to go into a count mode. Pressing the select button a third time will cause the display to show the current software revision. The fourth button press will return the display to normal operation.

1.5 MOUNTING

This indoor Display can be wall mounted using the two keyhole cutouts in the back of the Display.

2 OPERATION

2.0 SERIAL CONNECTION SETTINGS

All serial data should be sent with:
8 Data bits, No parity bits, 1 or 2 stop bits.

2.1 DISPLAYING A NUMBER

The Display will show as many numbers as it has digits preceding a carriage return.

(CR) = Carriage Return or ASCII 13d or OD hex.

Alpha characters mixed in with numbers will be ignored (SEE CHART 1 BELOW).

2.2 OPERATING THE DECIMAL

The decimal point can be operated by simply placing the decimal in the number string where you want it to display (SEE CHART 1 BELOW).

2.3 OPERATING THE COLON

You may turn the colon "ON" by passing a colon (:). The colon will remain on for the current number only. (SEE CHART 1 BELOW).

2.4 SELF-TEST

Pressing the select button one time will cause the display to show all eights. Pressing the select button a second time will cause the display to go into a count mode. Pressing the select button a third time will cause the display to show the current software revision. The fourth button press will return the display to normal operation.

2.5 COMMAND STRUCTURE

There are two protocols which can be used to control the display: Legacy mode and Standard ASCII mode. Legacy mode does not support all commands but it acts exactly like older Microframe displays. In this way, code

written to drive our older displays will still work. New projects should be written around the "Standard ASCII" format.

Legacy Mode

Descript	On/Off	Command	Address	End
HEX	OE/OF	07/08/30	30-60	03

There are currently three supported commands in "Legacy Mode." Display Address, Output Control, and Momentary Output. Commands are sent to the Display using a 4-byte data structure, which are defined below:

- Byte #2 (Command definition)
 - 07 = Chime output
 - 08 = Momentary Chime on
 - 30(hex) = Display enable/disable
- Byte #3
 - 30-61(hex) = Display address
- Byte #4
 - 03(hex) = Terminating character

2.6 DISPLAY ADDRESSING

To enable Display address number 1, pass the following enable code:
0E 30 31 03 (HEX)

To disable Display address number 1, send the following code:
0F 30 31 03 (HEX)

To enable Display 2 and send "1234," then disable it, send the following hex values:
0E 30 32 03
31 32 33 34
0F 30 32 03

To set the display address, see the programming instructions.

CHART 1

Data Sent to Display	Data Shown On Displays
	262
1(cr)	1
123456789(cr)	456789
:123456(cr)	12:34:56
a1g2df3(cr)	123
1.2(cr)	1.2
1234.56(cr)	1234.56

2.7 OUTPUT CONTROL

This command can be used to control the optional "Triac" output. To turn the Triac output on send:

```
0E 07 XX 03
```

To turn off the output send:

```
0F 07 XX 03 X
```

'XX' is the Display address.

2.8 MOMENTARY OUTPUT

This command turns the Triac output on for approximately half a second and then turns off automatically.

```
0E 08 XX 03
```

'XX' is the Display address.

2.9 STANDARD ASCII MODE

Start	Address	Command	Data	End			
STX	A1	A2	C1	C2	D1	D2	ETX

- STX = (ASCII start byte)
- A1 = Address byte 1(0- 9 ASCII)
- A2 = Address byte 2(0- 9 ASCII)
- C1 = Command Byte 1 (0 -9 ASCII)
- C2 = Command Byte 2 (0-9 ASCII)
- D1 = Data byte 1 (0-9 ASCII)
- D2 = Data byte 2 (0-9 ASCII)
- ETX (ASCII end transmission)

Commands	Data
01 Display active/inactive	01/00
02 Mirror on/off	01/00
03 Chime on/off/momentary	01/00/02
04 Brightness auto/manual	01/00
05 Brightness value % 1-100	00-99

Example:

To enable display address 72, send it a number and disable it again and send the following:

```
STX 72 01 01 ETX
123456 CR
STX 72 01 00 ETX
```

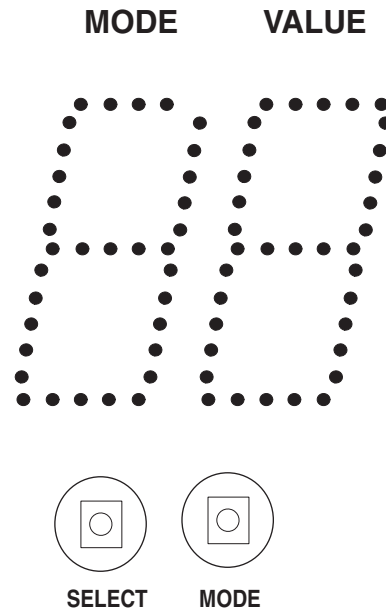
(Note: Displays power up in the *enabled* state.)

To cause a momentary chime output in display 94, send the following:

```
STX 94 03 02 ETX
Brightness 60% on display 15
STX 15 05 59 ETX
```

3.0 PROGRAMMING THE DISPLAY

Pressing the Mode button one time will get you into the programming mode. The current *mode* is shown by the tens digit and the current *value* is shown by the ones digit. Use the Mode button to advance through the mode settings. Use the Select button to change the value of a given mode. When the desired value is set, press the Mode button to advance to the next mode, or press and hold the Mode button to save changes and exit.



220PX19700

Area 1

- *Value 0 no alpha characters
- Value 1 Accept alpha characters

Area 2

- Value 0 Baud Rate = 1200
- Value 1 Baud Rate = 2400
- Value 2 Baud Rate = 4800
- *Value 3 Baud Rate = 9600

Area 3

- *Value 0 Auto Brightness
- Value 1 2% Brightness
- Value 2 3% " "
- Value 3 5% " "
- Value 4 8% " "
- Value 5 13% " "
- Value 6 22% " "
- Value 7 36% " "
- Value 8 60% " "
- Value 9 100% " "

Programming and Truck Scale Modes

Area 4

- *Value 0 Mirror Mode Off
- Value 1 Mirror Mode On

Area 5**

- *Value 0 Zero Suppression/Expansion Off
- Value 1 Show one zero
- Value 2 Show two zeroes
- Value 3 Show three zeroes
- Value 4 Show four zeroes
- Value 5 Show five zeroes
- Value 6 Show six zeroes

Area 6

- *Value 0 Colons operate Together
- Value 1 Independent Colons

Area 7

- Value 0-9 = 10's digit of Address
- *Factory Default 0

Area 8

- Value 0-9= 1's Digit of Address
- *Factory Default 1

Area 9

- Value 0 Legacy Mode Protocol
- *Value 1 ASCII Protocol
- Value 2 General Scale
- Value 3 Specific Scale See Mode "A"

Area A

- *Value 0 Mettler Toledo
- Value 1 Rice Lake
- Value 2 Fairbanks 9200

* Factory Default

**Modes Legacy and ASCII do simple zero suppression; specified zeroes are ignored.

Truck Scale Modes

Microframe is committed to making the model 265 display work with as many different scale indicators as possible. To this end, Microframe has developed a General Scale Receive Logic mode which works with most scales. For those few scales which have been found not to work with the "General Scale" mode, we have written specific receive logic. If your indicator cannot be made to work with any of our existing logic, we will write logic specifically for your indicator.

Please note that "Legacy mode" (Area 9 Mode 0) and "Standard ASCII" mode (Area 9 Mode 1) are full command structure protocols. These protocols are generally used in industrial applications where control over display addressing is necessary. These modes can be used with scale indicators but care must be taken to avoid unintentionally sending data in command format. For information about the "Legacy mode" and "Standard ASCII" mode, please see the "Operation" section.

Area 9 Mode 2 Universal Scale Mode

Example:
Definition:

ASCII	-	1	2	3	4	5	6	CR/ETX
HEX	2d	31	32	33	34	35	36	0d/03

This is the most universal scale mode. In this mode the start byte does not matter. The Display will show the last six characters preceding a Carriage Return or an "ETX." Alpha characters can be ignored based on the "ignore alpha" option. There are no addressing or special display commands in this mode. Negative signs will be placed where they are received in the string.

Area 9 Mode 3 Specific Scale Mode

With area 9 set to a value of 3 the protocol is defined by the choice in area "A."

Area A Mode 0 Mettler Toledo / Lynx / Panther Plus / Fairbanks Series 9200

STX	SWA	SWB	SWC	6 Weight	6 Tare	CR
-----	-----	-----	-----	----------	--------	----

This mode differs from standard mode by looking for the weight 6 bytes before the carriage return and for the negative sign designation in byte 1 of SWB.

Area A Mode 1 Rice Lake

STX	P	7 WEIGHT	U	G/N	S	CR
-----	---	----------	---	-----	---	----

This mode differs from General Scale Mode by looking for the negative sign in the fixed location "P" shown above. P = polarity, " " = +, "-" = -.

NOTE:

- All serial data should be sent with:
- 8 Data bits
- No parity bits
- 1 or 2 stop bits.

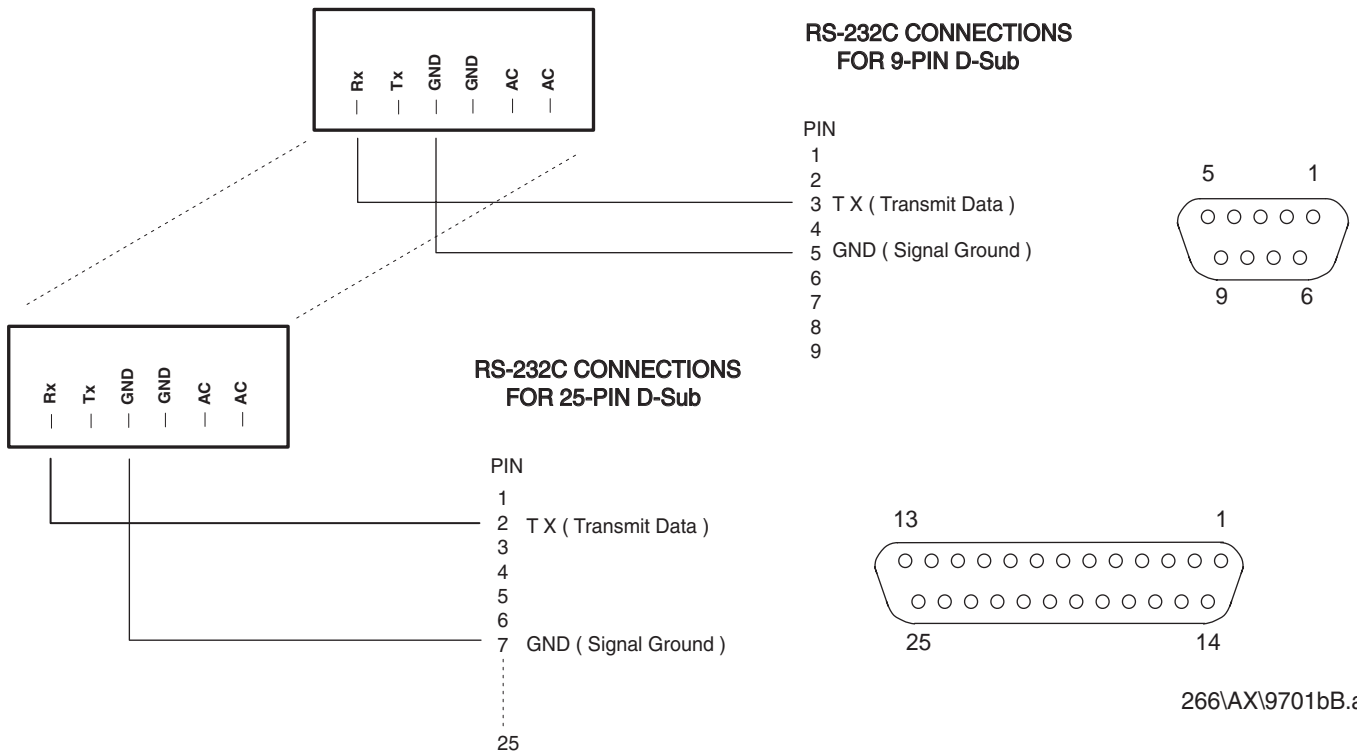
Supported Character Set

Mirrored Characters

Hex	ASCII
Displayed	A
41,61.....	A,a
42,62.....	B,b
43,63.....	C,c
44,64.....	D,d
45,65.....	E,e
46,66.....	F,f
47,67.....	G,g
48,68.....	H,h
49,69.....	I,i
4A,6A.....	J,j
4C,6C.....	L,l
4E,6E.....	N,n
4F,6F.....	O,o
50,60.....	P,p
52,62.....	R,r
53,63.....	S,s
54,64.....	T,t
55,65.....	U,u
56,66.....	V,v
59,69.....	Y,y
20.....	' ' <Blank>
2A.....	'*' <Asterisk>
2D.....	'-' <Dash>
40.....	'@' <AT>
5F.....	'_' <Underscore>
7E.....	'~' <Tilde>

	Normal	Mirrored
0.....	0	0
1.....	1	1
2.....	2	2
3.....	3	3
4.....	4	4
5.....	5	5
6.....	6	6
7.....	7	7
8.....	8	8
9.....	9	9

CONNECTION and OPTION SELECTION



Be sure to set your computer ComPort to [Flow Control=None]. This will allow you to communicate with the display without a null modem. Otherwise, your computer will be looking for a "Clear to Send" from the display which is not connected.

