microframe

SERIES 208 INSTALLATION & OPERATING MANUAL



Microframe Corporation 604 South 12th Street Broken Arrow, OK 74012

Local: 918-258-4839 Toll Free: 800-635-3811 Website: www.microframecorp.com E-mail: support@microframecorp.com

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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. Call Microframe for an RMA number. This number authorizes you to return the product.

2. Place Unit in a sturdy box with sufficient packing material. Be sure the RMA number is on the outside of the box.

3. If requested, include the AC power adapter. It is not necessary to return the cable and connectors unless they are the problem.

4. Return the system insured and prepaid. Microframe is not responsible for shipping damages and losses on returned Units.

Warranty Service

For warranty service, please contact Microframe toll-free at 800-635-3811. One of our technicians will be glad to assist you.

Assistance

For any product assistance or maintenance help, contact Microframe by either calling 800-635-3811 or e-mailing us at: support@microframecorp.com.

Safety

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

Disclaimer

We constantly strive to improve our products. Specifications are subject to change without notice.

Warning

All 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 indoor installation everywhere 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.

FCC Notice (for wireless products only)

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Series 208 Installation and Specification Guide

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1. Overview

Series 208 displays are serial controlled remote displays. They are targeted to two different markets:

-Computer controlled displays (see section 2.0)

-Scale displays (see section 3.0)

Displays are shipped from the factory with the "General Scale" protocol selected.

a. Installation

We recommend connecting the display and testing it on a bench before installing it permanently.

i. Signal

This display can accept a signal from one of three sources: RS232, RS485, or 20mA Digital Current Loop (4-20mA is not supported). Set the data input switch to match the connected signal.

ii. Power

Connect the supplied 24VAC adapter to the VIN terminals. Alternately, the display may be powered from a 12VDC source, such as a battery. Model 268 displays ship with a 110VAC power cord instead of the 24VAC adapter. Do not use the VIN terminals when using the 110VAC plug.

iii. Power Up

The display will power up showing all 0's. The power light on the bottom right corner will flash slowly when no data is received, and flicker when data is received.

iv. Self-Test Modes

Tap the mode button to select the following test modes:

- 1) Firmware revision, i.e. "r1.0"
- 2) Show all 8's with scrolling decimal
- 3) Count from 0-9

v. Mounting

The indoor version of these displays may be placed on a counter top, or wall mounted using the keyhole cutouts on the back of the display.

The weather resistant case option for this display has flanges on either side with screw holes for wall mounting.

The weatherproof version of this display (268) comes in a ruggedized case with mounting brackets.

2. Computer controlled displays

This display supports three protocols:

0.1 Legacy

0.2 ASCII 1

0.3 ASCII 2

Legacy and ASCII 1 are implemented for backwards compatibility. ASCII 2 makes programming easier by avoiding non-printable characters.

a. Legacy mode

Commands are sent to the display using a 4-byte data structure. Bytes are in HEX (binary) format.

Byte 1	Byte 2	Byte 3	Byte 4
0x0E On	0x07	0x30-0x61	0x03
0x0F Off	Chime	Display	Terminator
		Address	
0x0E On	0x08	0x30-0x61	0x03
	Momentary	Display	Terminator
	Chime	Address	
0x0E Enabled	0x30	0x30-0x61	0x03
0x0F Disable	Enable	Display	Terminator
	Display	Address	

b. ASCII 1

Command Structure:

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

STX = 0x02 Start Byte A1 = Address Byte 1 ('0' to '9') A2 = Address Byte 2 ('0' to '9') C1 = Command Byte 1 ('0' to '9') C2 = Command Byte 1 ('0' to '9') D1 = Command Byte 1 ('0' to '9') D2 = Command Byte 1 ('0' to '9') ETX = 0x03 End Byte See section [0] for a list of the supported commands.

c. ASCII 2

Command Structure:

Start	Address		Command		Data	a	End
"!"	A1	A2	C1	C2	D1	D2	<cr></cr>

This differs from ASCII 1 by replacing STX with "!" and ETX with <CR>. In addition, this protocol will allow multiple decimals to be illuminated, and allows colon control (section 2.3.1).

i. Colon control

Right Colon	:12	
	12:34	
	1234:56	
Left Colon	12:3456	
Both Colons	12:34:56	

d. Supported Commands

Command	Value
"01" Display	00 Disabled
	01 Enabled
<u>"02" Mirror Mode</u>	00 Off
	01 Char
	02 Word
"03" Chime	00 Off
	01 On
	02 Momentary
"04" Brightness	00 Manual
-	01 Auto
"05" Bright Value	00-99

The mirror mode command has been dropped. Use option "Mirror Mode" [4.d].

e. Options for Computer Protocols

- 0 Mode (See section 2.0)
- 1 Baud
- 2 Brightness
- 3 Mirror Mode
- 5 Alpha
- 6 Display Address

3. Scale displays (Scoreboards)

This display supports the following protocols: Cardinal, Condec, Fairbanks, Mettler-Toledo, Rice Lake, Weightronix See Appendix A for protocol formats

a. Setting the protocol

Set your scale to output a continuous weight to a remote indicator, with the following COM port settings: 8 data bits, no parity, 1 stop bit. 7 bits with odd or even parity enabled will also work.

The display defaults to the General Scale mode. If this doesn't work, use the AutoLearn mode, or set the protocol manually. Most scales can be set to output one of the supported protocols.

i. AutoLearn

Press the "SELECT" button. You will see "Lrn" on the screen. When the protocol is detected, you will see a number, such as "P2". Press the "SELECT" button to save the new protocol, or "MODE" to cancel learn mode. Note: The displayed number is used for diagnostic purposes, and does not match the protocol numbers below.

ii. Manual

The following scale protocols can be selected:

0.4 General Scale Mode

0.5 Cardinal

0.6 Fairbanks / Mettler Toledo

0.7 Condex / RiceLake

See Section 4 for instructions on programming display options

b. Options for Scale Protocols

0 Mode (See above) 1 Baud

2 Brightness

3 Mirror Mode

4 Zero Suppression/Expansion

4. Programming Display Options

a. To enter program mode:

From normal mode, press the "MODE" button, then "SELECT" button. You will see an upperscore followed by a two digit number.

b. Setting options

Press the "MODE" button to select the option number (the left digit). Press the "SELECT" button to change the value.

c. Saving Changes

To save changes, press and hold the "MODE" button until the display exits program mode, about 3 seconds. If the user does nothing, program mode will timeout after 30 seconds.

(Please see the next page for the Options Chart.)

d. Options

Name	Area	Value	Example	Note
Mode	0	1 – Legacy 2 – ASCII 1 3 – ASCII 2 4 – General Scale 5 – Cardinal 6 – Mettler-Toledo 7 – RiceLake	0.7 Condec /RiceLake	For scale displays try the Learn Mode.
Baud Rate	1	0 - 1200 1 - 2400 2 - 4800 3 - 9600 4 - 19200 5 - 38400 6 - 57600	1.3 Baud 9600	
Brightness	2	0 - Auto 1 - 2% 2 - 3% 3 - 5% 4 - 8% 5 - 13% 6 - 22% 7 - 36% 8 - 60% 9 - 100%	2.9 Full Bright	
Mirror Mode	3	0 – Off 1 – Char 2 – Word	3.1 Mirrored	For rear-view mirror on truck scales
Zero Suppression /Expansion	4	0 – Off 1 – 1 zero 2 – 2 zeroes 3 – 3 zeroes 4 – four zeroes 5 – five zeroes 6 – six zeroes	4.0 No zero suppression or expansion	Scale: Suppresses leading zeroes and then adds back zeroes to ensure this number of digits are displayed
Alpha	5	0 - No Alpha 1 - Accept Alpha	1.0 No Alpha	Computer protocols
Display Address	6	1-99	6.01 Address 1	Computer protocols

e. Reset to Defaults

To reset to Factory Defaults, press the mode button until you see all 8's, then press and hold the select button until the display counts down to "rSt".

							Appendix A
Bytes	17	13	17	8	11 or 17	13	
End	0×03	0×0D	0×0D	0×0D	0×0D	0×0D	
	0×20						
	0×20						
	G/N						
	0×20						
	UNIT	STAT				STAT	sls
	0x20	G/N				G/N	ale Protoco
	STAT	UNIT				UNIT	ported Sc.
Tare			T(6)		T(6)*		ble 1 - Sup
Weight	W(7)	W(7)	W(6)	W(7)	W(6)	W(7)	Ta int, if any sight.
	-	1-1	STC		STC	۰ <u>-</u> ۱	 imal po Tare Wé
			STB		STB		veight. etc. ps the
			STA		STA		Jative v B, KG, sight. includi rm dro
Start	0x0D	0×02	0x02		0x02	0x02	n for neg et. easure. l aasure. l f weights short fo short fo
Protocol	Cardinal	Condec	Fairbanks	General Scale	Met-Toledo	RiceLake	 Minus sigr G/N Gross / N STAT Status by UNIT Unit of me T(6) 6 digits of W(7) 7 digits of w(7) *=Mettler-Toledo

Appendix B								
TROUBLESHOOTING CHART								
SYMPTOM	POSSIBLE CAUSE	SOLUTION						
Display is blank and no Processor	No power to unit	Make sure the unit is plugged in and the outlet is working.						
Processor LED blinks slowly and display does not	No data received	Check that input select switch is set to correct 232/485/20 input. Check wiring to the specified input.						
update	Input damaged due to lightning	Return unit to Microframe for servicing.						
Processor LED blinks quickly but display does not update	Display set to wrong protocol or baud rate does not match	Verify correct Baud Rate. Verify display mode is set for correct protocol. For scales, try the learn mode by pressing the [Select] button.						
	Display is disabled	Computer control mode only: Send the display enable command, or toggle power to the unit.						
Unit shows 888's all the time or counts on its own	Self-Test Mode	Press the [Mode] button until the unit returns to normal mode, or toggle power to the display.						





D8600-D0260-20mA-S.ai

Appendix E



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Model 268 Scale Display Specifications

Features

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- Remote Display for computer, PLC, and scales.
- Dual row LEDs and 8" tall digits for improved viewing distance.
 - RS232, RS485, and 20mA digital current loop inputs. [4-20mA is not supported at this time.]
- Auto-Learn mode for standard scale protocols.
- 12-gauge steel case and 3/8" Lexan faceplate
- Scale Indicators for LB/KG and GR/NT

Box Contents

- (1) Display w/ mounting brackets
- (1) 115VAC power cord
- (1) Manual, (1) Microframe Screwdriver





Model 268 Specifications	
Case	Powder Coated Steel w/ Lexan Faceplate
Character Height	8 inches, viewable up to 250 feet
Environment	Outdoor Use
Operating Temperature	-4°F to 140°F (-20°C to 60°C)
Power Requirements	0.5A @115VAC; 35W
Weight	44.9 LBS (20.4 KG)