

## QUICK START GUIDE

# FlexDisplay™

(FD-1, FD-1Plus, FD-1Advanced)

*Congratulations on choosing the FlexDisplay Gage Interface from  
Midwest FlexSystems, Inc.*

The FlexDisplay Gage Interface and Remote Display (FD-1, FD-1Plus, and FD-1Advanced) is capable of interfacing measuring instruments with SPC output to a computer that is equipped with an RS-232 (EIA-232-D) communication interface (serial port).

Easily configure specification limits for immediate port status feedback. Used for part sorting and loop term date analysis.

### Default Configuration

Gage input: Mitutoyo compatible devices  
Data send: Individual footswitch triggering  
Options: 5V supplied on Pin 9  
Output: Standard RS232 output (9600, N, 8,1)  
9600 baud, no parity, 8 data bits, 1 stop bit

### Standard RS232 Output

Full output format: 26 characters

Character Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	
Data String	#	#	#	#	,	#	#	#	#	#	#	#	#	#	#	,	.	.	.	.	.	.	,	#	#	CR	LF
Field Name	Count		Reading											Reading		Mode						ID					

## Count Reading Mode ID CR/LF (,) Polarity:

- Sequential counter for number of readings sent.
- Measurement data captured from device and sent to PC.
- Displays the setup options that are activated.
- Identifies from which input this reading originated.
- Line termination for output.
- Comma delimited fields for easy data parsing
- Negative numbers are preceded by a '-' sign in reading field.

## Advanced Features

The FlexDisplay units are advanced interfaces with many features not available in other standard interfaces or remote displays. The FlexDisplay units do not require software to operate, but do allow access to advanced features through firmware built into the units. The firmware can be accessed via any terminal software program.

1. **Open Terminal Software.** Select the serial port the FlexDisplay is attached to and set serial settings for 9600 baud, no parity, 8 data bits, 1 stop bit and **flow control to NONE.**
2. **To access firmware type:** MWF
3. Follow on-screen instructions to set up.

This setup routine allows advanced or custom features to be accessed.

The standard FlexDisplay interface can be configured to create a custom data gathering system by simply customizing the many options available.

## Main Screen Menu

FlexDisplay Gage Interface Setup				
Port#	Gage Type(G)	USpec/LSpec(S)	Master	Options(O)
01	Mitutoyo	2.5000/-2.5000	Y	5V,SC
02	Serial (4800,E,7,1,9,1,9)	0.5000/-0.5000	N	--
03	Opto-RS232	1.2500/-1.5000	N	--
04	Maxum	1.0000/-0.2500	N	--

Global Decimal Accuracy: 04  
Pass-Thru Port (No Connection)

Enter column and row to change: (e.g. To change gage type on Port 2 – G02)

Gage Type	= G##	About FlexDisplay	= AB
Spec Limits	= S##	Exit and Save	= EX
Options	= O##	Exit Without Saving	= QU
Pass-Thru Port	= PASS	Default Configuration	= CFG
Decimal Accuracy	= GDA		

Enter Choice: \_\_

## Host Command

Partial list of commands for interaction with the FlexDisplay Gage Interface

Action	Command	Response
Read an input (Ports 1-99)	R##<CR>	Returns gage reading on port ## (Replace ## with 2-digit port ID)
Read ALL inputs	RG<CR>	Reads all gages connected
Reset the unit	!@RST	Resets the CPU of the FlexDisplay unit

## Digimatic Code Connector Pin Assignments

Pin #	Signal Name	Description
1	GND	Reference ground
2	Data	Data
3	Clock	Clock
4	Ready	Data Ready
5	Request	Request for data
9	Optional 5v output	Optional 5v output to gage/cable
10	GND	Reference ground
6, 7, 8	NC	No connection

## RS-232 (DB9F) (EIA-232-D) Output Pin Assignments

Pin Number	Signal Name
2	TxD
3	RxD
7	Ground

## Configuration Options

Partial list – many additional configuration options available:

Type	Description	Results/Options
MWF	Send to FlexDisplay to access configuration menu	Opens configuration menu...allows custom features
<b>Com- mands</b>	<b>Select the feature you want to modify</b>	<b>Allows customization of features</b>
GA	Opens port/gage configuration menu	Allows customization of individual ports/gages

G##	Select the type of gage input connected	Select from list of gages
S##	Select the upper and lower spec limits for Go/No Go status	Select upper and lower limit for pass/fail LEDs
		Select if gage input is critical to overall part pass/fail
O##	Select options, affects only port selected	Force output to IN or MM, regardless of gage output
		Supply gage with 5 volts DC on pin 9 of connector
		Change sign (+/-) of output data
		Set reasonable limits for gage data
SPL	Select special options, affects all inputs	Output baud rate – select 4800, 9600 or 19200 (regardless of input or output formats)
		Output format – Full, ID & Reading, Reading Only and Mitutoyo MIG output
PASS	Set up parameters for the Pass-Thru Port (DB9M)	Default – Pass reading & channel number to PC
GDA	Set global decimal accuracy	Resolution of gage display
AB	Displays manufacturer info	Address and phone # of manufacturer
CFG	Resets unit to default configuration	Reset to factory defaults
EX	Exit and save configuration	Saves configuration and exits program
QU	Exit without saving configuration	Quits program without saving configuration

For more detailed information, download the FlexDisplay User manual at <http://www.midwestflex.com/documents//FlexDisplayUserManual.pdf>

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415 SB Chavez Dr, Flint, MI 48503 • 810.424.0060 • 810.424.0066 fax  
[www.midwestflex.com](http://www.midwestflex.com)

# FlexDisplay I/O Connector

## DB15-HD Female Pin-out - TTL 5vdc level

As viewed from the back

1: GND	6: Spare	11: Gage error (Low ok, high is gage error)
2: Rx (RS232)	7: NC	12: GO/NG (Low is GO, high is NG)
3: Tx (RS232)	8: NC	13: NC
4: Reset (Normally high, pull down to reset)	9: NC	14: NC
5: GDS (Global data send)	10: Reasonable Data (Low normal, high failed test)	15: Power input (7-9 vdc)

