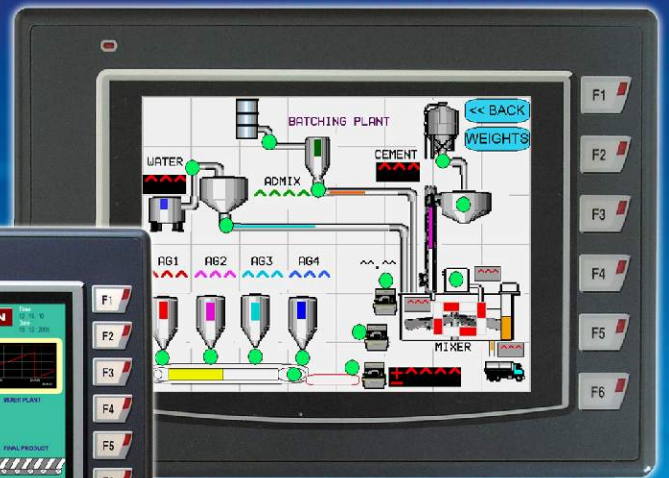


# FlexiPanels

5.7" TFT  
Color LCD



3.5" TFT  
Color LCD



3.1" Multicolor  
Backlight LCD



16x2 Multicolor  
Backlight LCD



Back View of HMI with expansion  
(Up-to 5 Expansions)



Back View of HMI with expansion  
(Up-to 3 Expansions)



Back View of HMI  
with built-in I/O



## Salient Features :-

- 16 x 2 Text to 5.7" Graphical / Touchscreen TFT Color Display
- Integrated / Pluggable Digital Inputs and Outputs
- Support for Digital I/O (OC / Relays)
- High Speed Counters and Timers
- Ladder editor with powerful instruction set
- Support for Recipes and 32K color Bitmaps for color LCD Models
- Communication Ports:  
One / Two serial ports to connect PLC at RS232 / 422 / 485 levels / Printer / Programming Port  
One USB (device) port as Programming Port  
One USB (host) port to connect USB memory stick<sup>#</sup>
- Dual Port communication supported
- User defined Function keys to support various tasks
- Data Logging, Transfer logged data on USB memory stick<sup>#</sup>
- Trending (Real Time & Historical)<sup>#</sup>
- Alarms (Real Time & Historical)
- Multilanguage (Unicode) support with true type Windows® fonts for graphical models
- IP65 design. CE approved
- Common Programming software for the entire FlexiPanels family.....FREE!!



# Operations :-

The FlexiPanels support Operator interface as well as Programmable Logic Controller features. The user can implement logic, specific to application using standard Ladder programming. A PLC logic block can be executed at power up, during every scan, upon receiving an interrupt on specific I/O pins or upon a timer interrupt. The FlexiPanels operator interface functions revolve around Screens and Tasks that can be assigned to screens and application.

## Pluggable I/O (Digital)

FlexiPanels have facility to expand I/O using pluggable I/O modules. The I/O modules can be selected based on the application requirement. Each I/O module can support 2 nos. of High Speed inputs of 25KHz. Maximum 5 I/O modules can be connected to one 5.7" FlexiPanels. Models with integrated I/O can have up-to maximum 2 nos. of High Speed inputs.

## Digital I/O

FlexiPanels Touch Screens can have up-to 80 digital I/O on the unit through the expansion units. Digital inputs are high impedance 24 VDC and outputs are transistor outputs with PNP types.

## Function Keys

Touch Screen based FlexiPanels have 06 function keys with built-in LEDs besides Touch Screen. The function keys are independent of Touch Screen. These function keys are screen dependent Function Keys. User can assign any application related task / actions to these function keys. Some FlexiPanels models are available with only keypad. These models do not support Touch Screen.

## Touch Keys Task

Touch Keys in FlexiPanels can be assigned Tasks for three instances: when the screen is touched, while the screen is touched and when the screen is released. Multiple tasks can be assigned to a touch key. In addition to above, tasks for data entry, alarm management etc. can be defined. These definitions allow Complete flexibility in cursor control and key operations when changing data.

## Alarms

Real time and historical Alarms can be defined in FlexiPanels. User-friendly Alarm object can be defined on the display. Alarms can be real time or historical. Keys can be assigned to acknowledge Alarm, view and scroll.

## Recipes

Recipes data is stored in the FlexiPanels memory. With one button stroke, a set of data can be downloaded to the PLC. Once in the local memory, the recipes data can be edited using simple data entry objects.

## Bitmaps / Wizards

Different bitmaps can be embedded on the FlexiPanels screen. Transparent buttons can be used for data entry and set points on bitmap images. Bitmaps can be imported into the application and displayed on the FlexiPanels screens. In addition, several wizards are supported to create commonly used objects such as Analog meters, Lamps, Buttons and Bar graphs. 32K colors are supported for bitmaps.

## Easy events logging and trend tracking

FlexiPanels support data logging feature. A part of FlexiPanels memory can be allotted for data logging. Real time as well as Historical Trending is also supported. The user can also display multiple trends with different pen color on one screen. Data logging and Historical Trend is supported in FP4035 and FP4057.

## High Speed Counters

FlexiPanels with I/O support High Speed Counter inputs up-to 25 KHz. These High Speed Counter inputs can be used for applications such as Rate Measurement, Speed Measurement, Totalizer, etc. The user can define up-to 2 High Speed inputs.

## Ladder Support

FlexiPanels support ladder functionality. User can define logic in the unit using FlexiSoft software. The execution of ladder could be through communication port or through I/O. Only HMI version of FlexiPanels also support ladder functionality. It is used for critical applications where data is processed before sending it to controller. The FlexiLogics support following different types of instructions :

## I/O Instructions -

NO contact  
Falling Edge  
Inverter Coil  
Positive pulse coil

NC contact  
Rising Edge  
Positive Pulse Contact  
Negative Pulse Coil

Output  
Inverter  
Negative Pulse Contact

Data Transfer -  
MOV word  
Table Initialize  
Data Exchange

MOV DWORD  
Table Block Transfer  
Multiplexer

Invert Transfer  
Table Invert Transfer  
Demultiplexer

Math-  
Addition  
Division  
Increment

Subtraction  
Addition with Carry  
Decrement

Multiplication  
Subtraction with Carry

Compare -  
Greater than  
Not Equal

Greater than or equal  
Less Than

Equal  
Less than or Equal

Logic -  
AND  
Shift

OR  
Rotate

XOR

Data Conversion -  
Hex to Ascii  
7 segment decode  
BCD conversion

Ascii to Hex  
Ascii conversion  
2's complement word

Absolute Value  
Binary Conversion  
2's complement Double word

Timer -  
TON

TOFF

TSS

Counter-  
Up counter

UP Down Counter

Program Control -  
Subroutine CALL  
Next  
Jump Control Set  
Dis Intr  
Step sequence Input

Subroutine RET  
Master Control Set  
Jump Control Reset  
DT  
Step sequence output

For  
Master Control Reset  
En Intr  
Step sequence Init

Function -  
Moving Average  
Upper limit  
Average Value

Digital Filter  
Lower limit  
Function generator

PID1,4  
Maximum Value  
Minimum Value

Special -  
Device Set  
Register Reset  
Encode Decode  
Direct I/O

Device Reset  
Set Carry  
Bit Count  
Set Calender

Register Set  
Reset Carry  
Flip Flop  
Calender Operation

The execution of ladder logic is in microseconds. Ladder monitoring for debugging is also supported in FlexiPanels configuration software.

## Multilanguage / Unicode Support

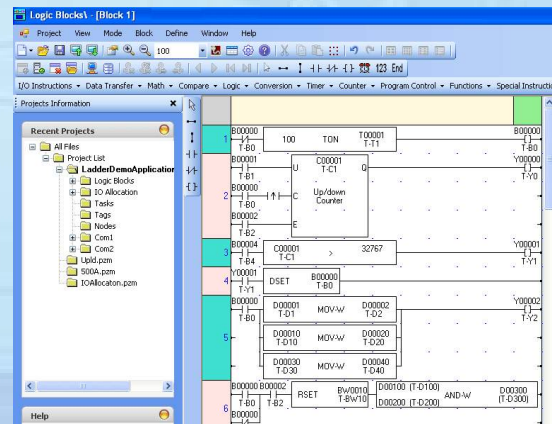
All the languages are supported in the FlexiPanels. The user can now display messages, alarms in any regional language. All Windows® fonts can also be used in an application.

## Communication Ports

FlexiPanels have upto two serial communication ports. Both the ports can be used for programming of FlexiPanels, printing screens (only text), connecting to third party serial devices (barcode readers, temp scanners etc.) or to connect to a PLC or drive. Dual port feature is supported for FlexiPanels models having 2 serial ports. User can configure these serial ports to connect 2 different devices supporting different protocols, such as PLC / Drives / DCS / SCADA etc.

## Configuration Software

FlexiSoft is a compact, Windows® based software to configure the FlexiPanels units. User friendly configuration tools and easy approach, helps user create applications quickly and easily.



To get started with FlexiPanels, user needs:

1. FlexiPanels unit
2. FlexiSoft Software
3. IBM Cable (Part codes: IBM 0909-1-00 or IBM 0925-1-00)

OS requirements for FlexiSoft are:

Windows Version : Microsoft Windows® 2000 or above

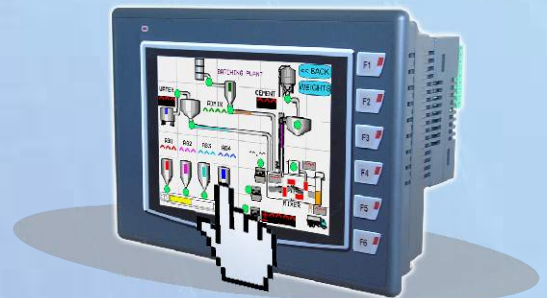


# Operations :-

Supported Task in FlexiPanels are :

Task	Type	Power up	Global	Screen			Key/button		
				Before showing	While showing	After hiding	Press	While Pressed	Release
Go to screen		✓	✗	✓	✗	✓	✓	✗	✓
Go to next screen		✗	✗	✓	✗	✓	✓	✗	✓
Go to previous screen		✗	✗	✓	✗	✓	✓	✗	✓
Write value to tag		✓	✓	✓	✓	✓	✓	✓	✓
Add constant to tag		✓	✓	✓	✓	✓	✓	✓	✓
Subtract constant from tag		✓	✓	✓	✓	✓	✓	✓	✓
Add tag B to Tag A		✓	✓	✓	✓	✓	✓	✓	✓
Subtract tag B from Tag A		✓	✓	✓	✓	✓	✓	✓	✓
Turn bit ON		✓	✓	✓	✓	✓	✓	✗	✓
Turn bit OFF		✓	✓	✓	✓	✓	✓	✗	✓
Toggle bit		✓	✓	✓	✓	✓	✓	✗	✓
Copy Tag B to Tag A		✓	✓	✓	✓	✓	✓	✓	✓
Swap Tag A and tag B		✓	✓	✓	✓	✓	✓	✗	✓
Print Data		✗	✗	✗	✗	✗	✓	✗	✓
Set RTC		✗	✗	✗	✗	✗	✓	✗	✓
Copy tag to STR		✓	✓	✓	✗	✓	✓	✗	✓
Copy tag To LED		✓	✓	✓	✓	✓	✗	✗	✗
Delay		✗	✗	✗	✓	✗	✗	✗	✗
Wait		✗	✗	✗	✓	✗	✗	✗	✗
Copy HMI block to HMI/PLC block		✓	✓	✓	✓	✓	✓	✓	✓
Copy HMI/PLC block to HMI block		✓	✓	✓	✓	✓	✓	✓	✓
Copy RTC to PLC block		✗	✓	✗	✗	✗	✓	✗	✓
GoTo Popup screen*		✗	✗	✗	✗	✗	✗	✗	✗
Keys Specific Tasks		✗	✗	✗	✗	✗	✓	✓	✓
USB Data Log Upload		✗	✗	✗	✗	✗	✗	✗	✗

\* Available only in Touch Screen Models.



# Specifications :-

Power	: + 24V DC $\pm$ 10%
Bezel	: IP 65 rated Keypad / Touch Screen
Operating Temperature	: 0° to 50°C
Storage Temperature	: -20° to 80°C
Humidity	: 10% to 85% (Non condensing)
Communication Ports	: One / Two serial ports (RS232 / RS422 / RS485 levels supported)
USB Device Port	: As programming and monitoring port
USB Host port	: Supports USB Memory stick
Type of LCD	: Multicolor backlight for Function Key based / TFT for Color Touch Screen Models
LCD Life	: 50000 hrs at 25°C
Supported Colors	: 32K for Color TFT LCD
Immunity to ESD	: as per IEC61000-4-2
Immunity to Fast Transients	: as per IEC61000-4-4
Immunity to Radiated electromagnetic field	: as per IEC61000-4-3
Immunity to Conducted disturbances	: as per IEC61000-4-6
Surge	: as per IEC61000-4-5
Radiated emission	: as per EN55011

## Digital Inputs Rated Input Voltage

Rated Input Voltage	For Normal Input 24 VDC (Max is 28 VDC)	For High Speed 24 VDC (Max is 28 VDC)
Impedance	4.7 k	2.3 k

Logic '0' Voltage	: 0 to 5 V
Logic '1' Voltage	: 14 to 28 V

## Rated Input Current at (24 VDC)

	For Normal Input	For High Speed
Rated Input Current	4.89 mA	10 mA

## Digital Outputs (Open Collector)

Maximum Load current	: 500 mA NPN or PNP. Short circuit protected
Voltage drop at ON	: 0.4 V or less

## Digital Outputs (Relay)

Relay Rating	: 230 V AC, 2 Amp. (Max) 5 Amp per common
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# Model Comparison :-

Product	Model	Display	Keys / TS	Memory	PLC Steps	Screen Memory	Logging Memory	Local I/O	Expansion	Serial Ports **	USB	RTC	Dimensions (a x b x c)
FP4020	FP4020MR-L0808P	16x2 Text Multicolor backlight	18 No	512 k	10 k	84 kB	NA	8 DC in 8 PNP 0.5A	No	1	Device	Yes	Drawing A
	FP4020MR-L0808N	16x2 Text Multicolor backlight	18 No	512 k	10 k	84 kB	NA	8 DC in 8 NPN 0.5A	No	1	Device	Yes	Drawing A
	FP4020MR-L0808R	16x2 Text Multicolor backlight	18 No	512 k	10 k	84 kB	NA	8 DC in 6 Relays 2A 2 NPN 0.5A	No	1	Device	Yes	Drawing A
	FP4020MR	16x2 Text Multicolor backlight	18 No	512 k	NA	84 kB	NA	NA	NA	1	Device	Yes	Drawing B
FP4030	FP4030MR-L1208R	128x64 Mono Multicolor backlight	18 No	512 k +1 MB	10 k	1 MB	NA	12 DC in 6 Relays 2A 2 NPN 0.5A	NA	1	Device	Yes	Drawing C
	FP4030MR-E	128x64 Mono Multicolor backlight	18 No	512 k +1 MB	10 k	1 MB	NA	None	3	1	Device	Yes	Drawing D
	FP4030MR	128x64 Mono Multicolor backlight	18 No	512 k +1 MB	NA	1 MB	NA	NA	NA	1	Device	Yes	Drawing D
FP4035	FP4035T-E	320x240 QVGA 3.5" Color TFT	6 Yes	8 MB	160 k	Up-to 6 MB	Yes	None	3	1	Device and Host	Yes	Drawing D
	FP4035T	320x240 QVGA 3.5" Color TFT	6 Yes	8 MB	NA	Up-to 6 MB	Yes	NA	NA	1	Device and Host	Yes	Drawing D
FP4057	FP4057T-E	320x240 QVGA 5.7" Color TFT	6 Yes	8 MB	160 k	Up-to 6 MB	Yes	None	5	2	Device and Host	Yes	Drawing E
	FP4057T	320x240 QVGA 5.7" Color TFT	6 Yes	8 MB	NA	Up-to 6 MB	Yes	NA	NA	2	Device and Host	Yes	Drawing E
Pluggable Expansion Modules (Digital I/O)													Dimensions
FPED0808P	8 Digital inputs (PNP or NPN) and 8 0.5A PNP transistor outputs												Drawing G
FPED0808N	8 Digital inputs (PNP or NPN) and 8 0.5A NPN transistor outputs												Drawing G

\*\* Universal Serial Port supporting RS232/RS485/RS422.

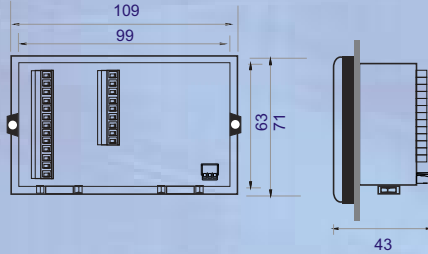
# Supported Printers :-

FlexiPanels support following Dot matrix serial printers:

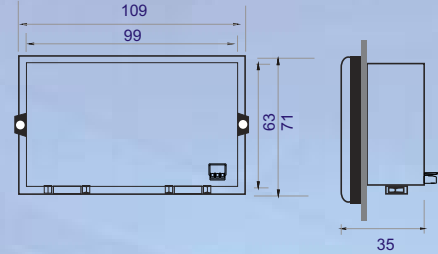
- EPSON
- SAMSUNG
- TVS



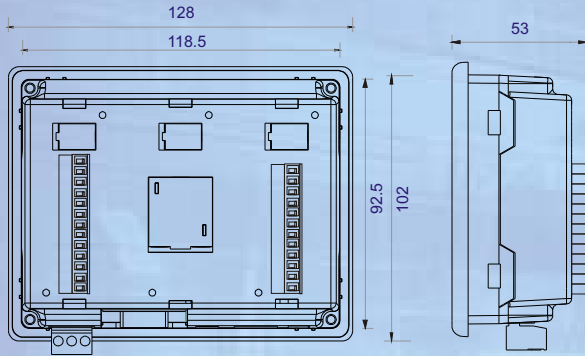
# Dimensions :-



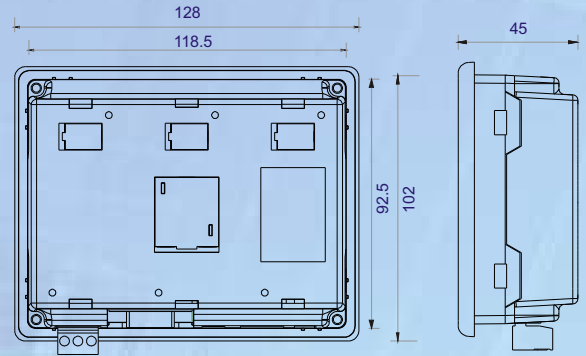
Drawing A



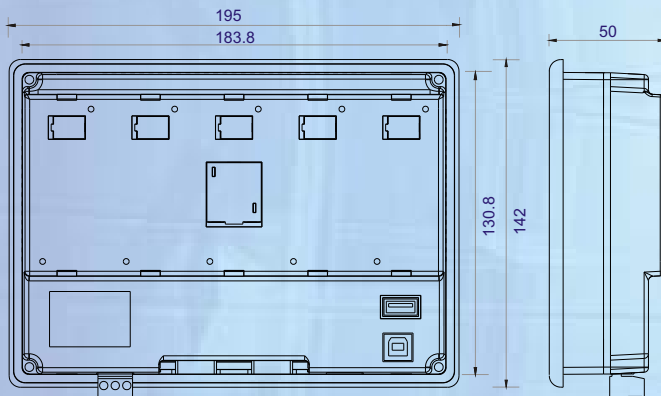
Drawing B



Drawing C

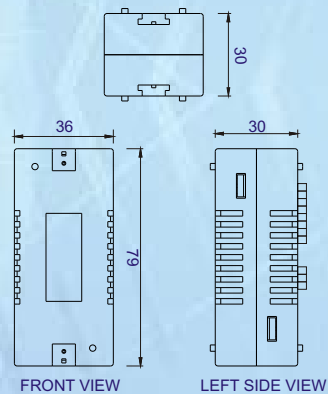


Drawing D  
Depth 75mm with pluggable module



Drawing E  
Depth 80mm with pluggable module

TOP VIEW



FRONT VIEW LEFT SIDE VIEW

Drawing G  
(Can be connected to FP4030, FP4035 and FP4057 models)

All dimensions are in mm.

Please contact factory for more information. We welcome an opportunity to develop new, custom drivers and customized units.



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