FlexiPanels® - Keypad Based HMI

FP4020
16 x 2 Multicolor LCD

FP4030
3.1" Multicolor LCD

Back view for HMI

Back view for HMI

Salient Features :-

- 16 x 2 Text and 3.1" Graphical / Multicolor Backlight LCD Display

- Floating point support, Bar graph, Built-in RTC

- Ladder editor with powerful instruction set

- Support for Recipes

- Communication Ports:

  One serial port to connect PLC at RS232 / 422 / 485 levels / Printer / Programming Port

  One USB (Device) port as Programming Port

- User defined Function keys to support various tasks

- Alarms (Real Time & Historical)

- Multilanguage (Unicode) support with true type Windows® fonts for graphical model

- IP66 design. CE, UL approved. RoHS compliant

- Common Programming software for the entire FlexiPanels® family.........FREE!!

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Operations :-

The FlexiPanels® support Operator interface features. The user can also implement logic, specific to application using standard Ladder programming. A PLC logic block can be executed at power up, during every scan or upon a timer interrupt. The FlexiPanels® operator interface functions revolve around Screens and Tasks that can be assigned to screens and application.

Function Keys

FlexiPanels HMIs are available with function keys and Numerical keypad for easy data entry. The Function keys also have built-in LEDs. These function keys are screen dependent Function Keys. User can assign any application related task / actions to these function keys.

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 (Graphical Model). 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.

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	NC contact	Output
Falling Edge	Rising Edge	Inverter
Inverter Coil	Positive Pulse Contact	Negative Pulse Contact
Positive pulse coil	Negative Pulse Coil	

Data Transfer -

MOV word	MOV DWORD	Invert Transfer
Table Initialize	Table Block Transfer	Table Invert
Transfer		
Data Exchange	Multiplexer	Demultiplexer

Math-

Addition	Subtraction	Multiplication
Division	Addition with Carry	Subtraction with Carry
Increment	Decrement	

Compare -

Greater than	Greater than or equal	Equal
Not Equal	Less Than	Less than or Equal

Logic -

AND	OR	XOR
Shift	Rotate	

Data Conversion -

Hex to Ascii	Ascii to Hex	Absolute Value
7 segment decode	Ascii conversion	Binary Conversion
BCD conversion	2's complement word	
2's complement Double word		

Timer -

TON	TOFF	TSS

Counter-

Up counter	UP Down Counter

Program Control -

Subroutine CALL	Subroutine RET	For
Next	Master Control Set	Master Control Reset
Jump Control Set	Jump Control Reset	En Intr
Dis Intr	DT	Step sequence Init
Step sequence Input	Step sequence output	

Function -

Moving Average	Digital Filter	PID1,4
Upper limit	Lower limit	Maximum Value
Average Value	Function generator	Minimum Value

Special -

Device Set	Device Reset	Register Set
Register Reset	Set Carry	Reset Carry
Encode Decode	Bit Count	Flip Flop
Direct I/O	Set Calender	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® (Graphical Model). The user can now display messages, alarms in any regional / local language. All Windows® fonts can also be used for text in an application.

Communication Ports

Function Keys based FlexiPanels® have one serial communication port. The serial port can be used for programming of FlexiPanels®, printing screens (alphanumeric data), connecting to third party serial devices (barcode readers, temp scanners etc.) or to connect to a PLC or drive. User can configure serial port for RS232 or RS485 communication.

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.
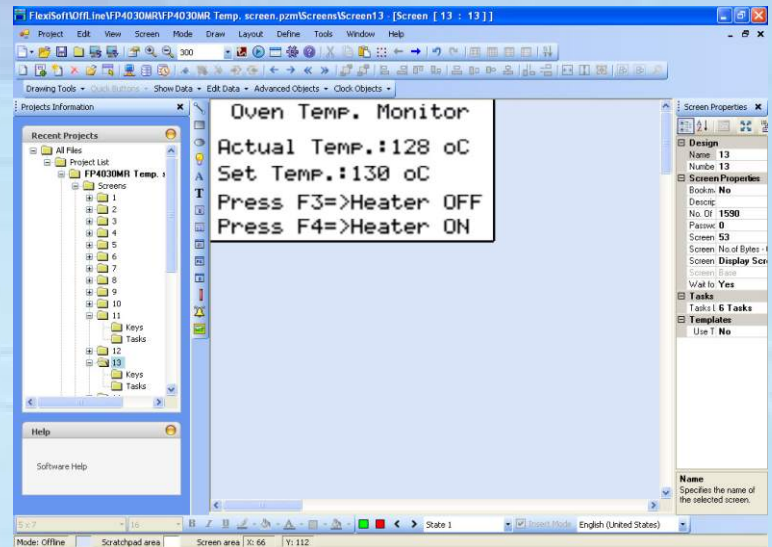
To get started with FlexiPanels®, user needs:
1. FlexiPanels® unit   2. FlexiSoft® Software
3. USB Programming cable (Part no. PC-USBAB-00)

OS requirements for FlexiSoft® are:

Windows Version   : Microsoft Windows® 2000 or above

Operations :-

Supported Task in FlexiPanels® are :

Type / Task	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.

Supported Printers :-

FlexiPanels® support following Dot matrix serial printers:
➢ EPSON
➢ SAMSUNG
➢ TVS

Protocols Supported for :-

Driver	FP4020	FP4030
ABB	✓	✓
Allen Bradley DF1	✓	✓
Aromat FP Series	✓	✓
Baldor	✓	✓
Danfoss Drive	✓	✓
Delta	✓	✓
Fatek	✓	✓
FlexiLogics**	✓	✓
GE Fanuc	✓	✓
GE SNP-X	✓	✓
Idec	✓	✓
LG Master K series	✓	✓
LG Master-K 300S	✓	✓
Mitsubishi FX	✓	✓
Mitsubishi Q series (Serial)	✗	✓
Modbus master	✓	✓
Modbus slave	✓	✓
Serial Monitor	✓	✓
Toshiba Inverters	✓	✓
Toshiba T1	✓	✓
Toshiba T2 Link port	✓	✓
Twido	✓	✓
Unitelway	✓	✓
Universal Serial (ASCII)	✓	✓

**Supported with native programming environment.

Specifications :-

Power	:	+ 24V DC ±15% FP4020 - 2 W Max FP4030 - 3 W Max
Bezel	:	IP66 rated Keypad
Operating Temperature	:	0° to 50°C
Storage Temperature	:	-20° to 80°C
Humidity	:	10% to 85% (Non condensing)
Communication Ports	:	One serial port (RS232 / RS422 / RS485 levels supported)
USB Device Port	:	As programming and monitoring port
Type of LCD	:	Multicolor Backlight LCD

Isolation	:	Isolation between communication and power ports is 500 V DC for 1 Min.
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

Model Comparison :-

Product	Model	Display	LCD Life at 25°C	Keys	Memory	PLC Steps	Screen Memory	Serial Ports	USB	RTC	Power Consumption	Weight	Bezel Dimensions (mm)	Panel Cutout (mm)
FP4020	FP4020MR	16x2 Text Multicolor backlight	40000 hrs	18	Up-to 512 k	10 k	Up-to 84 kB	1	Device	Yes	2 W	172 gms.	109 W x 71 H x 53 D (Drawing A)	99.5 W x 62.5 H
FP4030	FP4030MR	128x64 Graphical Multicolor backlight	30000 hrs	18	Up-to 1.5 MB	10 k	Up-to 1 MB	1	Device	Yes	3 W	255 gms.	128 W x 110 H x 45 D (Drawing B)	119 W x 93 H

Dimensions :-

Drawing A

Depth including power connector

Drawing B

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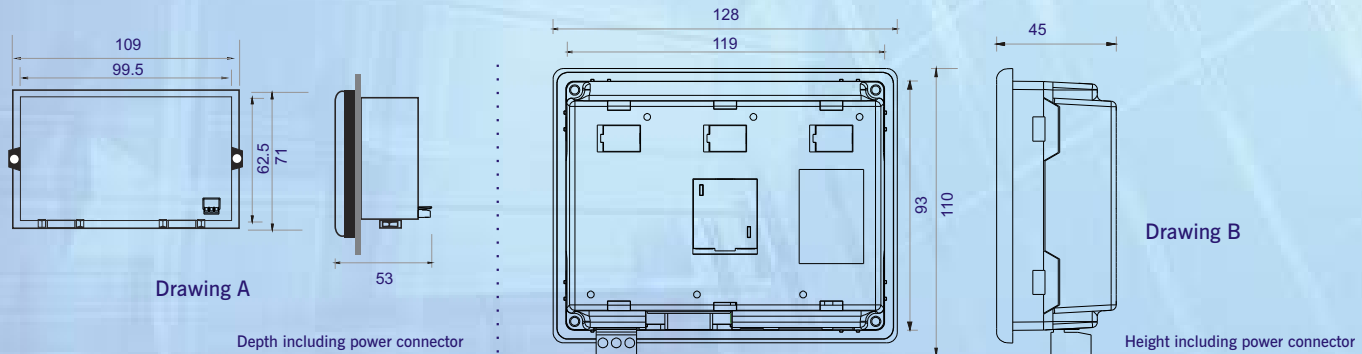
Please contact factory for more information. We welcome an opportunity to develop new, custom drivers and customized units.

All dimensions are in mm.