FlexiPanels® - TouchScreen Based HMI + Built- in / Pluggable I/O

FP4030MT-L0808R
3" Monochrome Touch Screen
with Multicolor Backlight

Back view for HMI
with built-in Digital & Analog I/O

FP5043T-E
4.3" TFT Color Touch Screen

Back View for HMI with expansion
(Up-to 3 expansions)

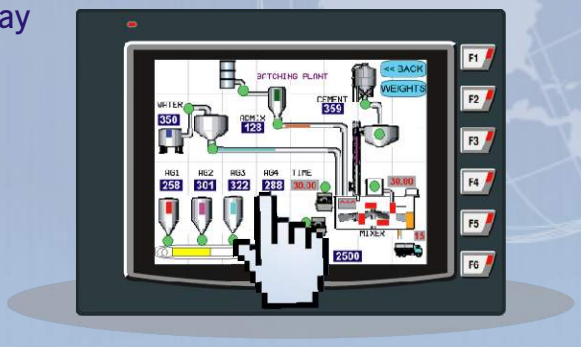
FP4057T
5.7" TFT Color Touch Screen

Back View for HMI with expansion
(Up-to 5 expansions)

FP5070T
7" TFT Color Touch Screen

RENU
ELECTRONICS PVT. LTD.

Salient Features :-



- 3” Monochrome to 7” Graphical Touchscreen TFT Color Display
- Floating point support, Bar graph, Built-in RTC
- Integrated / Pluggable Digital and Analog Inputs and Outputs
- Digital Outputs - OC / Relays
- Analog Inputs for RTD, mV, mA, Thermocouple, 0 to 5 VDC, 0 to 10 VDC, -10 to +10VDC
  Analog Outputs are 4-20 mA / 0-10 VDC
- High Speed Counters and Timers
- Support for Quadrature inputs and PWM output
- 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 drive
  One optional Ethernet port to connect PLC / Programming Port / Remote monitoring
- Dual Port communication supported for units with two serial ports

- User defined Function keys to support various tasks
- Data Logging, Transfer logged data on USB memory drive
- Trending (Real Time & Historical)
- Alarms (Real Time & Historical)
- Multilanguage (Unicode) support with true type Windows® fonts for graphical models
- IP66 design. CE, UL approved. RoHS compliant
- 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 support I/O using pluggable I/O modules. The I/O modules can be selected based on the application requirement. Each high speed I/O module can support 4 nos. of high speed inputs of 25KHz.

Quadrature input of up-to 20KHz is also supported. Each high speed I/O Module can support 1 quadrature input of 20KHz or 2 quadrature inputs of 5KHz. Each high speed I/O Module can support up-to 2 PWM outputs of 10KHz.

Up-to 5 I/O modules can be connected to one FlexiPanels®.

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 NPN/ PNP types.

Analog I/O

FlexiPanels® support pluggable Analog I/O Modules. FlexiPanels® can have up-to 40 Analog inputs and / or 10 Analog outputs. The Analog inputs are 0-5 VDC, 0-10 VDC,4-20 mA, mV, TC, RTD,

- 10 to + 10 VDC and Analog outputs are 4-20mA / 0-10VDC. User can Plug only Analog I/O modules or use them in combination with Digital I/O.

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 4 High Speed inputs in each high speed Digital I/O module.

Built in I/O

Digital I/O

FP4030MT-L0808R can have up-to 08 digital Inputs integrated to the unit. 4 digital inputs can be configured as Normal Digital inputs or High Speed Counters (100 KHz). Digital inputs are high impedance 24 VDC. FP4030MT-L0808R can also have up-to 08 digital outputs integrated to the unit. 2 digital outputs can be configured as Normal Digital outputs or PWM Output (100 KHz). Normal Outputs are relay (NO) and transistor outputs (NPN / PNP).

Analog I/O

FP4030MT-L0808R has two models that supports 2 Analog inputs and 1 Analog output. The Analog inputs are 0-5 VDC, 0-10 VDC,0-20mA, 4-20 mA, mV, TC, RTD and Analog outputs are 4-20mA, 0-10VDC. Analog input has 16 bit resolution. Analog output has 12 bit resolution.

High Speed Counters

FP4030MT-L0808R supports High Speed Counter inputs up-to 100 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 Single Phase High Speed inputs or 2 Quadrature inputs.

PWM Output

FP4030MT-L0808R supports PWM Outputs up-to 100 KHz. These PWM Outputs can be used for applications such as Motor control. The user can define up-to 2 Independent PWM Outputs.

Function Keys

Touch Screen based FlexiPanels® have 06 function keys with bulit-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.

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.

Operations :-

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®. The user can now display messages, alarms in any regional language.

All Windows® fonts can also be used in an application.

Communication Ports

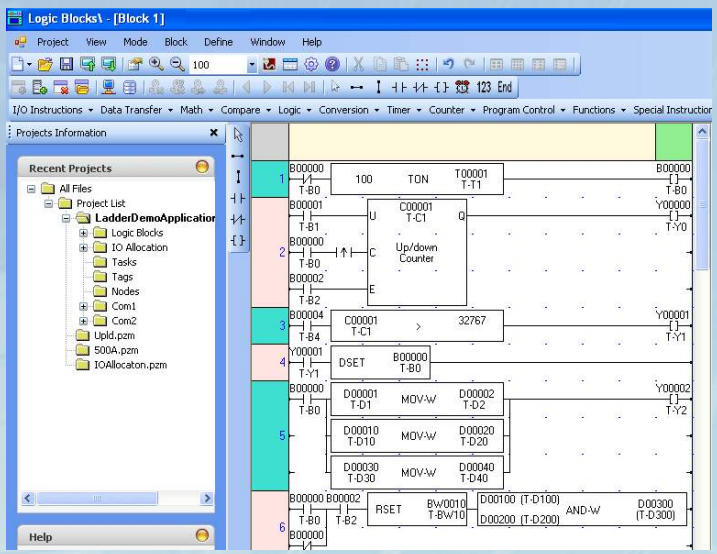
FlexiPanels® have upto two serial communication ports. Both the ports can be used for programming of FlexiPanels®, printing screens (only text), connecting to third party serial devices (barcode readers, temp scanners etc.) or to connect to a PLC or drive. Dual port feature is supported for FlexiPanels® 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.

Ethernet Port:

FlexiPanels® support optional Ethernet port (Modbus TCP/IP). It can be used to connect to a PLC and monitor machine / process status from remote location. The Ethernet port can also be used for remote programming of FP4035 / FP4057.

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 :

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.

Supported Printers :-

FlexiPanels® support following Dot matrix serial printers:

- EPSON
- SAMSUNG
- TVS

Protocols Supported for :-

Driver	FP4030MT-L0808R	FP4035	FP5043	FP4057	FP5070
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	✓	✓	✓	✓	✓
Omron Host Link	✓	✓	✓	✓	✓
Omron Yaskawa Drive	✓	✓	✓	✓	✓
Serial Monitor	✓	✓	✓	✓	✓
Siemens-S7-200	✓	✓	✓	✓	✓
Siemens-S7-300	✓	✓	✓	✓	✓
Toshiba Inverters	✓	✓	✓	✓	✓
Toshiba T1	✓	✓	✓	✓	✓
Toshiba T2 Link port	✓	✓	✓	✓	✓
Twido	✓	✓	✓	✓	✓
Unitelway	✓	✓	✓	✓	✓
Universal Serial (ASCII)	✓	✓	✓	✓	✓

***Supported with native programming environment.

Specifications :-

Power	:	+ 24V DC ±15% FP4030MTL0808R - 10 W Max FP4035 - 4 W Max FP5043 - 6 W Max FP4057 - 10 W Max FP5070 - 9 W Max
Bezel	:	IP66 rated 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 drive
Ethernet Port	:	For connecting to a PLC, programming of FlexiPanels®, a third party device, Drive or remote monitoring (10 / 100 MBPS).
Type of LCD	:	Multicolor backlight / TFT Color TouchScreen
Supported Colors	:	32K for Color TFT 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

Digital Inputs

Rated Input Voltage

	For Normal Input	For High Speed
Rated Input Voltage	24 VDC (Max is 28 VDC)	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

Analog Inputs

Resolution	12-bit
Voltage Mode	Y
Input Range	-10V to +10V
Value of LSB	For 0-10V : 2.44mV For +/- 10V : 4.88mV
Input Impedance	200KΩ
Accuracy at 25°C	0.1% of full scale
Overall accuracy (–25°C to 55°C) % Full Scale	0.3% of full scale
Frequency Limit (-3db)	3.5KHz
Behavior upon sensor failure	Input goes to 0, as if no input is connected
Current Mode	Y
Input Range	4mA – 20mA, 0mA - 20mA
Value of LSB	3.906uA
Input Impedance	120Ω
Accuracy at 25°C	0.2% of full scale
Overall accuracy (–25°C to 55°C) Full scale	0.8% of full scale
Frequency Limit (-3db)	15KHz
Behavior upon sensor failure	Input goes to 0, as if no input is connected
Maximum permissible voltage (surge voltage)	
between analog inputs	500V
between analog inputs and reference	1000V
Reverse Connection Protection	No

Analog Outputs

Resolution	12bit
Voltage Mode	Y
Output Range	0 to +10V
Value of LSB	2.44mV/step
Output Load minimum	1000Ω
Accuracy at 25°C	0.05% of full scale
Overall accuracy (–25°C to 55°C) % Full Scale	±10ppm/°C
Current Mode	
Output Range	4mA to 20mA
Value of LSB	3.9umA
Output Load maximum	500Ω
Accuracy at 25°C	0.13% of full scale
Overall accuracy (–25°C to 55°C) % Full Scale	±10ppm/°C
Current Mode	
Output Range	0mA to 20mA
Value of LSB	4.8umA
Output Load	500Ω
Accuracy at 25°C	0.13% of full scale
Overall accuracy (–25°C to 55°C) % Full Scale	±10ppm/°C

Specifications :-

High Speed Digital inputs and PWM output - FPED-HS-0808N (NPN transistor O/P), FPED-HS-0808P (PNP transistor O/P)

24V DC Digital Inputs		
Number of Inputs		8 Inputs Bi-directional Type (Within which 4 are high speed)
Isolation		Optically isolated from internal circuit. High isolation voltage(BV=3750Vr.m.s.)
Input Impedance		4.9KΩ
Turn OFF time		10msec
Turn ON time		10msec
High Speed Inputs		
Number of HS Inputs		4
High Speed Channels		X0, X5, X2, X7
Max. input frequency		25KHz
Max. input count		4294967295
24V DC Digital Outputs PNP / NPN Transistor type		
Number of Outputs		8 PNP / NPN type (Within which 2 are high speed outputs)
Nominal Output current per channel		500mA Typical [For HS: FPED-HS-0808N: 300mA and FPED-HS-0808P: 250mA]
Isolation		Optically isolated from internal circuit. High isolation voltage(BV=3750Vr.m.s.)
Short Circuit protection		Auto Protection for 6 normal digital output PNP / NPN type channels.
Nominal load	- Ohmic	48 Ω / 12 W
	- Lamp	12 W
	- Inductive	12 VA (1.2 H, 50 W)
Switching frequency with - Inductive nominal load		0.5 Hz (1.2 H, 50 W), maximum
24V DC Auxiliary Power Supply		
Nominal value		24 V DC
Tolerance		-15% / +20% according to EN 61131-2
Safety equipment		Surge voltage, protection against Reversal polarity

Universal Analog Inputs - FPEA-0402U-16

Analog Inputs		
Number of inputs		4
Resolution		16 Bit
Input range	Voltage	0 to 10VDC and 0 to 5VDC
	Current	0 to 20mA and 4 to 20mA
Thermocouple		J type -210 to 1200°C, K type -200 to 1373°C
mV		0 to 50mV and 0 to 100mV
RTD		α (PT100): -200 to 850°C
		α (PT100): -100 to 457°C, PT1000: -200 to 850°C
Overall accuracy		1 % of full scale (Max)
Input Impedance		1MΩ for voltage, thermocouple, mV and RTD input 100Ω for current input (with fuse)
Absolute maximum input		±30VDC, 30mA
Output Type		Analog (voltage and current), non-isolated
Number		2
Resolution		16 bit
Output range	Voltage	0 to 10VDC and 0 to 5VDC
	Current	0 to 20mA and 4 to 20mA
Overall accuracy		1% of full scale (Max)
Load		1KΩ (Min) for Voltage and 500Ω (Max) for current
24V DC Auxiliary Power Supply		
Nominal value		24 V DC
Tolerance		-15% / +20% according to EN 61131-2
Safety equipment		Surge voltage, protection against Reversal polarity

FPEA0800LC

Analog Inputs	
Number of inputs	8
Resolution	12 Bit
Current Mode:	
Input Range	4 - 20mA, 0 - 20mA
Value of LSB	3.906uA
Input Impedance	120 Ω
Accuracy	At 25°C: 0.1% of full scale.
	Overall accuracy (–25°C to 55°C) : 1% of full scale Max.
Behavior upon sensor failure	Input goes to 0, as if no input is connected

FPEA0800LV

Analog Inputs	
Number of inputs	8
Resolution	12 Bit
Voltage Mode:	
Input Range	-10V to +10V, 0V to 10V
Value of LSB	For 0-10V : 2.44mV, For +/- 10V : 4.88mV
Input Impedance	200 KΩ
Accuracy	At 25°C: 0.1% of full scale.
	Overall accuracy (–25°C to 55°C) : 1% of full scale Max.
Behavior upon sensor failure	Input goes to 0, as if no input is connected

FP4030MT-L0808R

Digital Inputs

Rated Input Voltage

	For Normal Input	For High Speed
Rated Input Voltage	24 VDC (Max is 28 VDC)	24 VDC (Max is 28 VDC)
Impedance	4.7 k	2 k

Logic '0' Voltage : 0 to 5 V Logic '1' Voltage : 15 to 30 V

Rated Input Current at (24 VDC)

	For Normal Input	For High Speed
Rated Input Current	4.89 mA	12 mA

High Speed Inputs		
Number of HS Inputs		4
High Speed Channels		X0, X1, X2, X3
Max. input frequency		100KHz
Max. input count		4294967295
Digital Outputs (Open Collector)		
Maximum Load current		300 mA NPN or PNP
Voltage drop at ON		0.4 V or less
Isolation		Optically isolated from internal circuit.
		High isolation voltage(BV=3750Vr.m.s.)
Nominal load	Ohmic	48 Ohm/ 12 W
	Lamp	12 W
	Inductive	12 VA (1.2 H, 50 W)
Digital Outputs (Relay)		
Relay Rating		230 V AC, 2 Amp. (Max) 6 Amp per common
Relay Outputs Channels		Y0, Y1, Y2, Y3, Y4, Y5
High Speed Outputs		
Number of HS Outputs		2
High Speed Channels		Y6, Y7
Max. output frequency		100KHz
Maximum Load current		300 mA NPN or PNP
24V DC Auxiliary Power Supply		
Nominal value		24 V DC
Tolerance		-15% / +20% according to EN 61131-2
Safety equipment		Surge voltage, protection against Reversal polarity
Analog Inputs		
Number of inputs		2
Resolution		16 Bit
Input range:	Voltage	0 to 10VDC and 0 to 5VDC
	Current	0 to 20mA and 4 to 20mA
Thermocouple		J type -210 to 1200°C, K type -200 to 1373°C
mV		0 to 50mV and 0 to 100mV
RTD		α1 (PT100): -200 to 850°C, α2 (PT100): -100 to 457°C
Overall accuracy		1 % of full scale (Max)
Input Impedance		1MΩ for voltage, thermocouple, mV and RTD input 100Ω for current input (with fuse)
Absolute maximum input		±30VDC, 30mA
Analog Output Type (voltage and current), non-isolated		
Number		1
Resolution		12 bit
Output range:	Voltage	0 to 10VDC
	Current	4 to 20mA
Overall accuracy		1% of full scale (Max)
Load		1KΩ (Min) for Voltage and 500Ω (Max) for current

Model Comparison :-

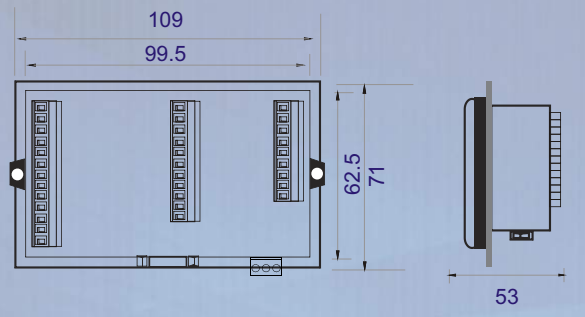
Product	Model	Display	LCD Life at 25°C	Keys / TS	Memory	PLC Steps	Screen Memory	Logging Memory	Local I/O				Expansion	Serial Ports **	USB	Ethernet Port	RTC	Power Consumption	Weight (Approx.)	Bezel Dimensions (mm)	Panel Cutout (mm)
									Digital I/P's	Digital O/P's	Analog I/P's	Analog O/P's									
FP4030MT -L0808R	FP4030MT -L0808RP -A0201U	128x64 3" Multicolor Backlight	30000 hrs	No /Yes	Up-to 1 MB	24 k	Up-to 312 KB	NA	8 DC (Bidirectional)	6 Relays 2A 2 PNP 0.3A	2 Universal	1 Voltage & Current	NA	2**	Device	No	Yes	10W	300 gms.	109 W x 71 H x 53 D (Drawing A)	99.5 W x 62.5 H
	FP4030MT -L0808RN -A0201U	128x64 3" Multicolor Backlight	30000 hrs	No /Yes	Up-to 1 MB	24 k	Up-to 312 KB	NA	8 DC (Bidirectional)	6 Relays 2A 2 NPN 0.3A	2 Universal	1 Voltage & Current	NA	2**	Device	No	Yes	10W	300 gms.	109 W x 71 H x 53 D (Drawing A)	99.5 W x 62.5 H
	FP4030MT -L0808RP -A0201L	128x64 3" Multicolor Backlight	30000 hrs	No /Yes	Up-to 1 MB	24 k	Up-to 312 KB	NA	8 DC (Bidirectional)	6 Relays 2A 2 NPN 0.3A	2 Linear	1 Voltage & Current	NA	2**	Device	No	Yes	10W	300 gms.	109 W x 71 H x 53 D (Drawing A)	99.5 W x 62.5 H
	FP4030MT -L0808RP	128x64 3" Multicolor Backlight	30000 hrs	No /Yes	Up-to 1 MB	24 k	Up-to 312 KB	NA	8 DC (Bidirectional)	6 Relays 2A 2 PNP 0.3A	NA	NA	NA	2**	Device	No	Yes	10W	300 gms.	109 W x 71 H x 53 D (Drawing B)	99.5 W x 62.5 H
	FP4030MT -L0808RN	128x64 3" Multicolor Backlight	30000 hrs	No /Yes	Up-to 1 MB	24 k	Up-to 312 KB	NA	8 DC (Bidirectional)	6 Relays 2A 2 NPN 0.3A	NA	NA	NA	2**	Device	No	Yes	10W	300 gms.	109 W x 71 H x 53 D (Drawing B)	99.5 W x 62.5 H
FP4035	FP4035T-E	320x240 QVGA 3.5" Color TFT	50000 hrs	6 / Yes	Up-to 8 MB	160 k	Up-to 6 MB	Up-to 2 MB##	NA	NA	NA	NA	3	1	Device and Host	No	Yes	4 W	285 gms.	128 W x 110 H x 45 D (Drawing C)	119 W x 93 H
	FP4035TN-E	320x240 QVGA 3.5" Color TFT	50000 hrs	6 / Yes	Up-to 8 MB	160 k	Up-to 6 MB	Up-to 2 MB##	NA	NA	NA	NA	3	1	Device and Host	Yes	Yes	4 W	285 gms.	128 W x 110 H x 45 D (Drawing C)	119 W x 93 H
FP5043	FP5043T-E	480x272 WQVGA 4.3" Color TFT	30000 hrs	No / Yes	Up-to 128 MB	160 k	Up-to 45 MB	Up-to 20 MB	NA	NA	NA	NA	3	2**	Device and Host	No	Yes	6W	330 gms.	128 W x 110 H x 45 D (Drawing C)	119 W x 93 H
	FP5043TN-E	480x272 WQVGA 4.3" Color TFT	30000 hrs	No / Yes	Up-to 128 MB	160 k	Up-to 45 MB	Up-to 20 MB	NA	NA	NA	NA	3	2**	Device and Host	Yes	Yes	6W	330 gms.	128 W x 110 H x 45 D (Drawing C)	119 W x 93 H
FP4057	FP4057T-E	320x240 QVGA 5.7" Color TFT	60000 hrs	6 / Yes	Up-to 8 MB	160 k	Up-to 6 MB	Up-to 2 MB##	NA	NA	NA	NA	5	2	Device and Host	No	Yes	10W	710 gms.	195 W x 150 H x 50 D (Drawing D)	184.3 W x 131.3 H
	FP4057TN-E	320x240 QVGA 5.7" Color TFT	60000 hrs	6 / Yes	Up-to 8 MB	160 k	Up-to 6 MB	Up-to 2 MB##	NA	NA	NA	NA	5	2	Device and Host	Yes	Yes	10W	710 gms.	195 W x 150 H x 50 D (Drawing D)	184.3 W x 131.3 H
FP5070	FP5070T-E	800x480 WVGA 7" Color TFT	30000 hrs	No / Yes	Up-to 128 MB	160 k	Up-to 45 MB	Up-to 20 MB	NA	NA	NA	NA	5	2	Device and Host	No	Yes	9W	620 gms.	195 W x 150 H x 50 D (Drawing D)	184.3 W x 131.3 H
	FP5070TN-E	800x480 WVGA 7" Color TFT	30000 hrs	No / Yes	Up-to 128 MB	160 k	Up-to 45 MB	Up-to 20 MB	NA	NA	NA	NA	5	2	Device and Host	Yes	Yes	9W	620 gms.	195 W x 150 H x 50 D (Drawing D)	184.3 W x 131.3 H

Pluggable Expansion Modules (Digital I/O)		Power Consumption	Weight (Approx.)	Dimensions (mm)
FPED0808P	8 Digital inputs (PNP or NPN) and 8 outputs (0.5A PNP transistor)	0.3 W	70 gms.	36 W x 79 H x 45 D (Drawing G)
FPED-HS-0808P#	8 Digital inputs and 8 Digital Outputs (PNP Type)	0.3 W	70 gms.	36 W x 79 H x 45 D (Drawing G)
FPED0808N	8 Digital inputs (PNP or NPN) and 8 outputs (0.5A NPN transistor)	0.3 W	70 gms.	36 W x 79 H x 45 D (Drawing G)
FPED-HS-0808N#	8 Digital inputs and 8 Digital Outputs (NPN Type)	0.3 W	70 gms.	36 W x 79 H x 45 D (Drawing G)
FPED0012R	12 Digital outputs (Relay)	0.3 W	90 gms.	36 W x 79 H x 45 D (Drawing G)
FPED1600	16 Digital inputs	0.3 W	65 gms.	36 W x 79 H x 45 D (Drawing G)
FPED0016N	16 Digital outputs (0.5A NPN transistor)	0.3 W	65 gms.	36 W x 79 H x 45 D (Drawing G)
FPED0016P	16 Digital outputs (0.5A PNP transistor)	0.3 W	75 gms.	36 W x 79 H x 45 D (Drawing G)
FPED-HS-0808RP	8 Digital inputs (PNP or NPN) and 8 outputs (6 Relay, 2 PNP)	0.3 W	70 gms.	36 W x 79 H x 45 D (Drawing G)
FPED-HS-0808RN	8 Digital inputs (PNP or NPN) and 8 outputs (6 Relay, 2 NPN)	0.3 W	70 gms.	36 W x 79 H x 45 D (Drawing G)

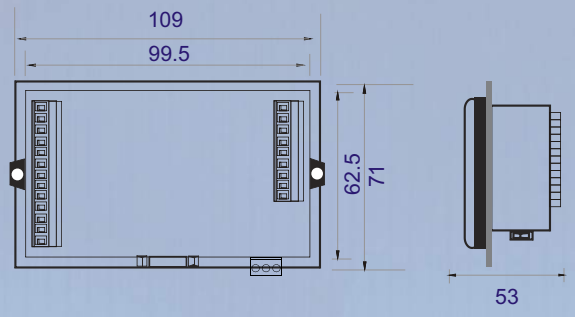
Pluggable Expansion Modules (Analog I/O)		Power Consumption	Weight (Approx.)	Dimensions (mm)
FPEA0202L	2 Analog inputs (4-20mA, 0 – 20mA, 0 – 10 V, -10 to + 10V ranges) 2 Analog Outputs (4-20mA, 0 – 20mA, 0 – 10 V)	0.3 W	85 gms.	36 W x 79 H x 45 D (Drawing G)
FPEA0400L	4 Analog inputs (4-20mA, 0 – 20mA, 0 – 10 V, -10 to + 10V ranges)	0.3 W	80 gms.	36 W x 79 H x 45 D (Drawing G)
FPEA-0402U-16	4 Universal Analog Inputs (4-20mA, 0 – 20mA, TC , RTD, 0-5V, 0 – 10 V, 0-50mV, 0 - 100mv ranges) 2 Analog Outputs (4-20mA, 0 – 20mA, 0 – 10 V). All AI/O 16 bit resolution	0.3 W	90 gms.	36 W x 79 H x 45 D (Drawing G)
FPEA0800LC	8 Analog inputs (4-20mA)	0.3 W	90 gms.	36 W x 79 H x 45 D (Drawing G)
FPEA0800LV	8 Analog inputs (0-10VDC)	0.3 W	90 gms.	36 W x 79 H x 45 D (Drawing G)

4 inputs can be configured as high speed inputs (25KHz) and 2 outputs can be configured for PWM (10 KHz) or 1 quadrature input of 20KHz or 2 quadrature inputs of 5 KHz.
** One "D" type port that supports RS232 and RS485 levels on different pins. "Y" type cable can be used for separate RS232 and RS485 levels simultaneously. ## Data logging memory is a part of the screen memory.

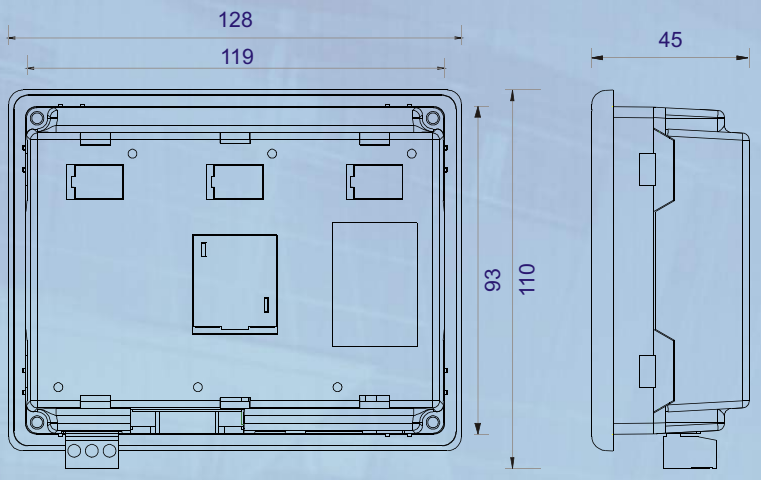
Dimensions :-



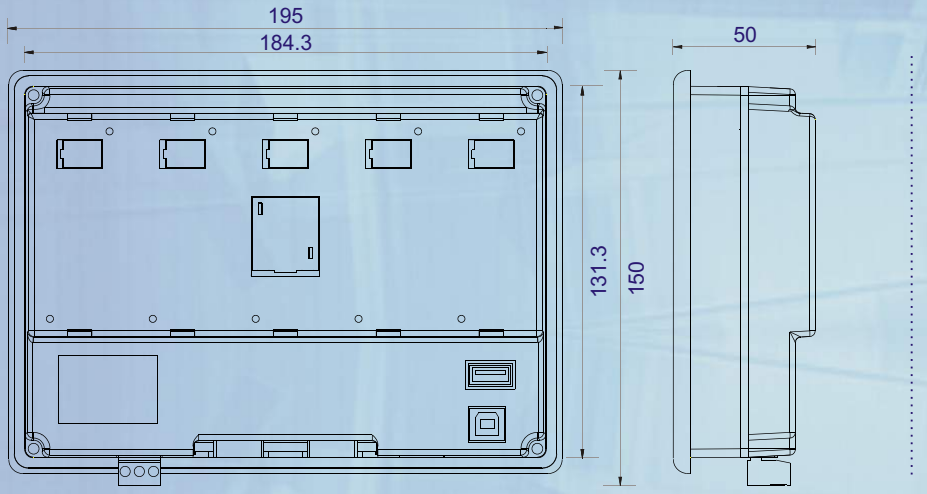
Drawing A
Depth including I/O connector



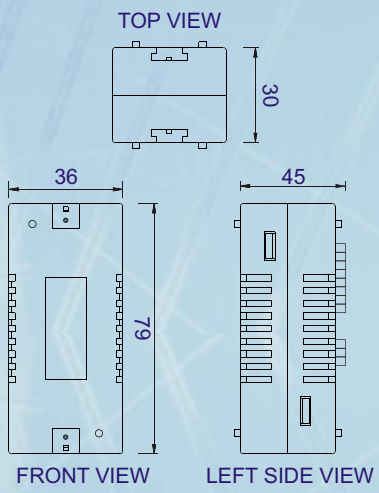
Drawing B
Depth including I/O connector



Drawing C
Depth 90mm with pluggable module. Height including power connector



Drawing D
Depth 95mm with pluggable module. Height including power connector



Drawing G

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

All dimensions are in mm.

RENU ELECTRONICS PVT. LTD.

HEAD OFFICE

ESIS Industrial Electronics
www.esis.com.au
Ph 02 9481 7420
Fax 02 9481 7267
esis.enq@esis.com.au

Website: www.renuelectronics.com

An ISO 9001:2008 and ISO 14001:2004 certified company