

FP4 Series Advanced HMI with I/Os

SALIENT FEATURES

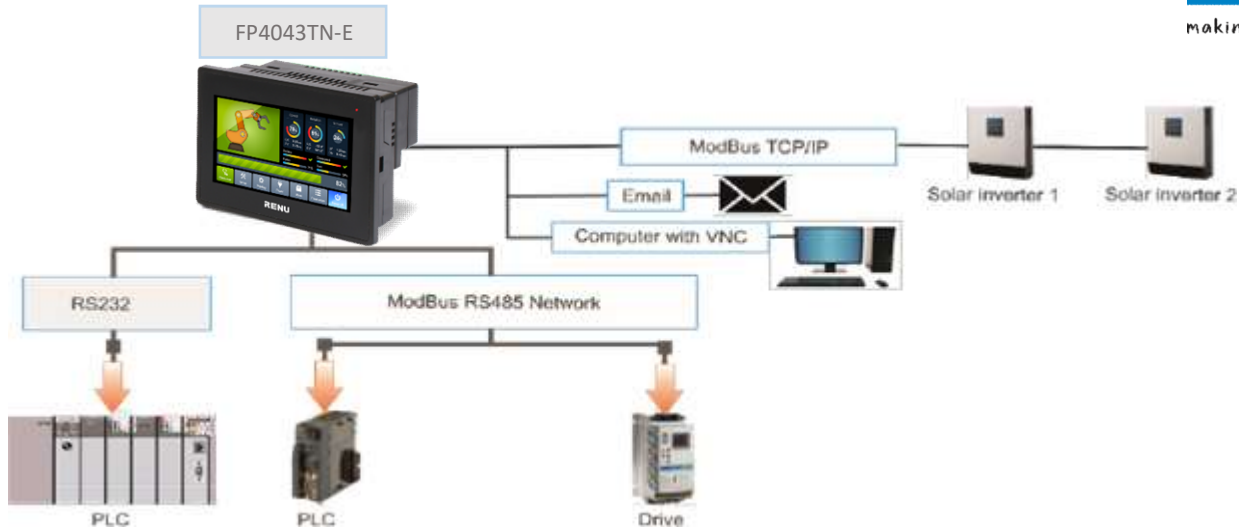
- 4.3", 7" and 10.1" Color TFT display options
- Pluggable I/O Module Support
- Suitable for Complex applications, trending, alarms, logging, IEC 61131-3 programming environment
- Recipe Management, VNC Server, Email, MQTT
- eMMC: 4GB, RAM: 512MB
- Approvals: CE, UL Class I Div 2, IP66



MODEL COMPARISON

Part Number	FP4043T-E	FP4043TN-E	FP4070T-E	FP4070TN-E	FP4101T-E	FP4101TN-E
Size	4.3" Color TFT, WQVGA		7" Color TFT, WVGA		10.1" WSVGA Color TFT	
Resolution	480 x 272 pixels		800 x 480 pixels		1024 x 600	
Panel Cutout	111.00 x 80.00 mm		175.00 x 127.00 mm		256.00 x 178.00 mm	
Touch Screen	Analog Resistive					
CPU and Power						
CPU	32-bit RISC processor					
eMMC	4GB					
RAM	512MB					
Power Supply	24VDC (±15%)					
RTC	Built-in					
Communication						
Serial	1 x RS232, RS485 [#]		2 x RS232 / RS485		2x RS232 / RS485	
USB Device	1x USB Type-C					
USB Host	1x 2.0					
SD Card	NA	1x microSDHC supported	NA	1x microSDHC supported	NA	1x microSDHC supported
Ethernet	NA	1x 10/100Mbps	NA	1x 10/100Mbps	NA	1x 10/100Mbps
Pluggable I/O						
	1		3		5	
Environment & Approvals						
Operating Temperature	-10°C to 60°C					
Storage Temperature	-20°C to 85°C					
Humidity	10 to 90% noncondensing					
Shock	IEC 60068-2-27, 25g, 11ms, 6 shocks per axis, total 18 shocks (X, Y, Z)					
Vibration	5~150Hz, 3g peak, (X, Y, Z)					
Protection	IP66 for front panel mounting					
Approvals	CE, UL Class I Div.2 & RoHS					

[#]FP4043-E supports one DB9 port that supports RS232 and RS485 levels on different pins. "Y" type cable can be used for separate RS232 and RS485 levels simultaneously



ORDERING INFORMATION

Models	Description
FP4043T-E	4.3" TFT, 24VDC, 2 Serial ports# (1 RS232, 1 RS485), 1 USB Device, 1 USB Host, 1 Pluggable I/O Module
FP4043TN-E	4.3" TFT, 24VDC, 2 Serial ports# (1 RS232, 1 RS485), 1 USB Device, 1 USB Host, 1 Ethernet, 1 Pluggable I/O Module
FP4070T-E	7" TFT, 24VDC, 2 Serial ports (RS232 / RS485), 1 USB Device, 1 USB Host, 3 Pluggable I/O Modules
FP4070TN-E	7" TFT, 24VDC, 2 Serial ports (RS232 / RS485), 1 USB Device, 1 USB Host, 1 Ethernet, 3 Pluggable I/O Modules
FP4101T-E	10.1" TFT, 24VDC, 2 Serial ports (RS232/RS485), 1 USB device, 5 Pluggable I/O Modules
FP4101TN-E	10.1" TFT, 24VDC, 2 Serial ports (RS232/RS485), 1 USB device, 1 Ethernet, 5 Pluggable I/O Modules

#FP4043-E supports one DB9 port that supports RS232 and RS485 levels on different pins. "Y" type cable can be used for separate RS232 and RS485 levels simultaneously.

SUPPORTING OBJECTS

Drawing Tools
Line, Rectangle, Ellipse
Rounded Rectangle
Text, Multilingual text
Picture

Data Entry / Data Display
Numeric data
Bit data

Clock Objects
Time
Date

Advanced Objects
Buttons
Lamps
Bargraph
Multiple Bargraph
Analog Meter
Alarm
Numeric Keypad
ASCII Keypad
Custom Keypad

Supported Tasks
Button specific tasks
Global tasks
Screen specific tasks
Data exchange tasks

	FPEM-1616P	FPEM-1614RP	FPEM-1212P-A0200L	FPEM-1212RP-A0200L
Power Supply	Powered from FP4 base Modules			
DC Inputs	16 (Sinking)	16 (Sinking)	12 (Sinking)	12 (Sinking)
High Speed Inputs	2, 32 Bit, 200kHz	2, 32 Bit, 200kHz	2, 32 Bit, 200kHz	2, 32 Bit, 200kHz
DC Outputs	16 PNP	12 Relay, 2 PNP	12 PNP	10 Relay, 2 PNP
High Speed Pulse Outputs	2, Normal PWM Mode: 1kHz, Fixed Pulse Mode: 5kHz	2, Normal PWM Mode: 1kHz, Fixed Pulse Mode: 5kHz	2, Normal PWM Mode: 1kHz, Fixed Pulse Mode: 5kHz	2, Normal PWM Mode: 1kHz, Fixed Pulse Mode: 5kHz
Analog Inputs	NA	NA	Linear Type 2 Inputs, Voltage Inputs [16 Bit]: 0 to 10VDC, 0 to 5VDC	Linear Type 2 Inputs, Voltage Inputs [16 Bit]: 0 to 10VDC, 0 to 5VDC
			Current Inputs [16 Bit]: 0 to 20mA, 4 to 20mA	Current Inputs [16 Bit]: 0 to 20mA, 4 to 20mA
Analog Outputs	NA	NA	NA	NA
Isolation	Digital: Isolated from 24VDC power			
	Analog: Non-Isolated from 24VDC power and Communication, USB ground			
Operating Temperature	0°C to 50°C (While using FPEM Modules with FP4 Base models)			
Storage Temperature	-20°C to 85°C			
Humidity	10 to 90% non condensing			
Approvals	CE, UL Class I Div 2			
Dimensions (mm)	48W x 108H x 41D			

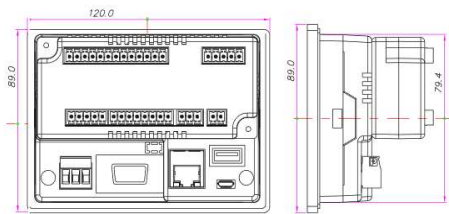
	FPEM-1210P-A0201L	FPEM-1210RP-A0201L	FPEM-0808P-A0401U	FPEM-0808RP-A0401U
Power Supply	Powered from FP4 base Modules			
DC Inputs	12 (Sinking)	12 (Sinking)	8 (Sinking)	8 (Sinking)
High Speed Inputs	2, 32 Bit, 200kHz	2, 32 Bit, 200kHz	2, 32 Bit, 200kHz	2, 32 Bit, 200kHz
DC Outputs	10 PNP	8 Relay, 2 PNP	8 PNP	6 Relay, 2 PNP
High Speed Pulse Outputs	2, Normal PWM Mode: 1kHz, Fixed Pulse Mode: 5kHz	2, Normal PWM Mode: 1kHz, Fixed Pulse Mode: 5kHz	2, Up-to 200kHz each	2, Up-to 200kHz each
Analog Inputs	Linear Type 2 voltage Inputs [16 bit]: 0 to 10VDC, 0 to 5VDC	Linear Type 2 voltage Inputs [16 bit]: 0 to 10VDC, 0 to 5VDC	Universal Type 4 Inputs, Voltage Inputs [16 Bit]: 0 to 10VDC, 0 to 5VDC, 0 to 50mV, 0 to 100mV, RTD - PT100, Thermocouple J & K type	Universal Type 4 Inputs, Voltage Inputs [16 Bit]: 0 to 10VDC, 0 to 5VDC, 0 to 50mV, 0 to 100mV, RTD - PT100, PT1000, Thermocouple J & K type
	2 Current Inputs [16 Bit]: 0 to 20mA, 4 to 20mA		4 Current Inputs [16 Bit]: 0 to 20mA, 4 to 20mA	
Analog outputs	1 Voltage / Current Output [12 Bit]: 4 to 20mA, 0 to 10VDC			
Isolation	Digital: Isolated from 24VDC power			
	Analog: Non-Isolated from 24VDC power and Communication, USB ground			
Operating Temperature	0°C to 50°C (While using FPEM Modules with FP4 Base models)			
Storage emperature	-20°C to 85°C			
Humidity	10 to 90% non condensing			
Approvals	CE, UL Class I Div 2			
Dimensions (mm)	48W x 108H x 41D			

	FPEM-0404P-A0402U	FPEM-0806P-A0402U
Power Supply	Powered from FP4 base Modules	
DC Inputs	4 (Sinking & Sourcing)	8 (Sinking & Sourcing)
High Speed Inputs	2, 32 Bit, 200kHz	2, 32 Bit, 200kHz
DC Outputs	4 PNP	6 PNP
High Speed Pulse Outputs	2, Up-to 200kHz each	2, Up-to 200kHz each
Analog Inputs	Universal Type 4 Inputs, Voltage Inputs [16 Bit]: 0 to 10VDC, 0 to 5VDC, 0 to 50mV, 0 to 100mV, RTD- PT100, Thermocouple J & K type	Universal Type 4 Inputs, Voltage Inputs [16 Bit]: 0 to 10VDC, 0 to 5VDC, 0 to 50mV, 0 to 100mV, RTD- PT100,PT1000, Thermocouple J & K type
	Current Inputs: 0 to 20mA, 4 to 20mA	Current Inputs: 0-20mA, 4-20mA
Analog Outputs	2 Voltage / Current Output [12 Bit]: Current: 0 to 20mA, 4 to 20mA Voltage: 0 to 5VDC, 0 to 10VDC	2 Voltage / Current Output [12 Bit]: Current: 0 to 20mA, 4 to 20mA Voltage: 0 to 5VDC, 0 to 10VDC
Isolation	Digital: Isolated from 24VDC power	
	Analog: Non-Isolated from 24VDC power and Communication, USB ground	
Operating Temperature	0°C to 50°C (While using FPEM Modules with FP4 Base models)	
Storage Temperature	-20°C to 85°C	
Humidity	10 to 90% non condensing	
Approvals	CE, UL (Class I Div 2)	
Dimensions (mm)	48W x 108H x 41D	

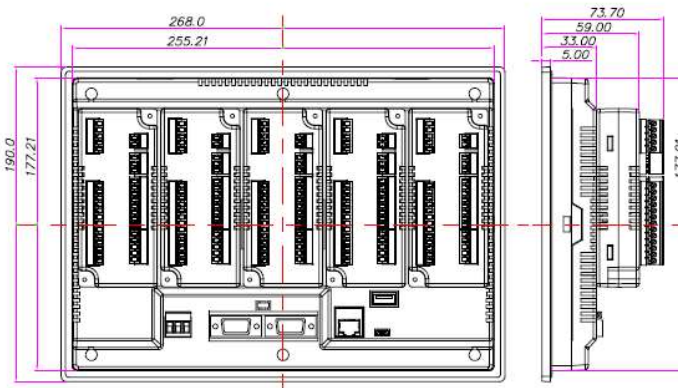
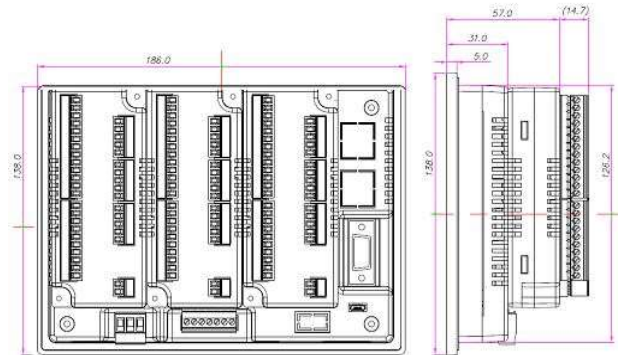
SUPPORTED PROTOCOLS

AB PLC EIP PCCC (Ethernet IP)	Delta PLCs
Modbus/TCP Master (Client)	Modbus ASCII (Unit as Master)
FlexiLogics Master Driver	Modbus RTU (Unit as Master)
FlexiLogics Slave Driver	Modbus RTU (Unit as Slave)
Siemens Profinet PLCs	Universal Serial Driver (ASCII)
Allen Bradley DF1	Universal Ethernet Driver (ASCII)
Panasonic FP Series	Logix 5000 PLC

DIMENSIONS



FP4043-E



FP4101-E

Note: Details shown here are subject to change.

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



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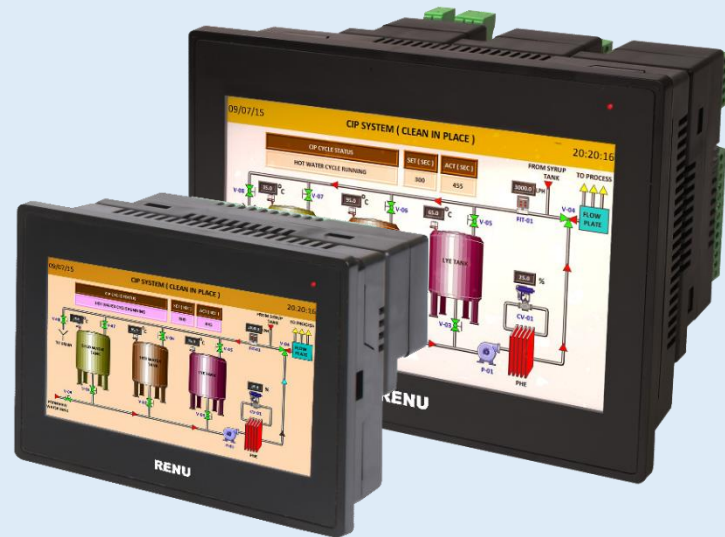
- USA
- Europe
- Asia Pacific

FlexiPanels® FP2 series HMI with I/Os



SALIENT FEATURES

- 4.3" and 7" Color TFT display options
- Pluggable I/O Module Support
- Suitable for basic applications, trending, tasks, alarms, logging, IEC 61131-3 programming environment
- Flash: 16MB, RAM: 16MB
- Approvals: CE, UL Class I Div 2, IP66

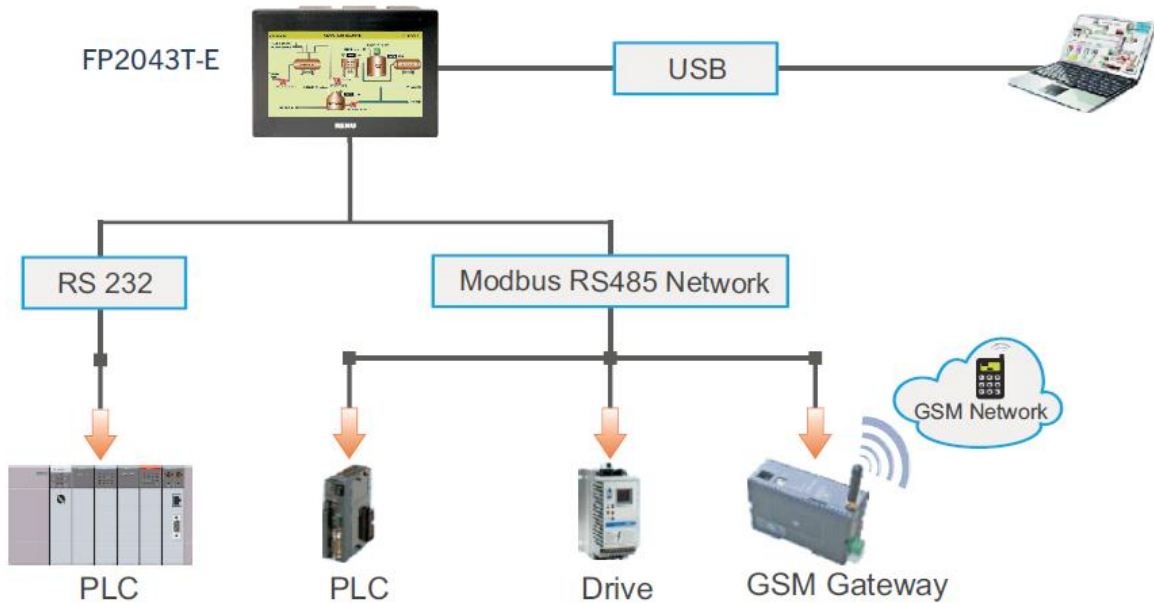


MODEL COMPARISON

Part Number	FP2043T-E	FP2043TN-E	FP2070T-E	FP2070TN-E
Size	4.3" Color TFT, WQVGA		7" Color TFT, WVGA	
Resolution	480 x 272 pixels		800 x 480 pixels	
Touch Screen	Analog Resistive			
CPU and Power				
CPU	32-bit RISC processor			
Flash	16MB			
RAM	16MB			
Power Supply	24VDC (+20%, -15%)			
RTC	Built-in			
Communication				
Serial	1 x RS232, RS485#		2 x RS232 / RS485	
USB Device	1x micro 2.0			
USB Host	1x 2.0			
Ethernet	NA	1x 10/100Mbps	NA	1x 10/100Mbps
Pluggable I/O				
	1		3	
Environment & Approvals				
Operating Temperature	0°C to 50°C			
Storage Temperature	-20°C to 85°C			
Humidity	10 to 95% (Noncondensing)			
Shock	IEC 60068-2-27, 25g, 11ms, 6 shocks per axis, total 18 shocks (X, Y, Z)			
Vibration	5~150Hz, 3g peak, (X, Y, Z)			
Protection	IP66 for front panel mounting			
Approvals	CE, UL Class I Div.2 & RoHS			

FP2043-E support one DB9 port that supports RS232 and RS485 levels on different pins. "Y" type cable can be used for separate RS232 and RS485 levels simultaneously

APPLICATION EXAMPLE



ORDERING INFORMATION

Models	Description
FP2043T-E	4.3" TFT, 24VDC, 2 Serial ports# (1 RS232, 1 RS485), 1 USB Device, 1 USB Host, 1 Pluggable I/O Module
FP2043TN-E	4.3" TFT, 24VDC, 2 Serial ports# (1 RS232, 1 RS485), 1 USB Device, 1 USB Host, 1 Ethernet, 1 Pluggable I/O Module
FP2070T-E	7" TFT, 24VDC, 2 Serial ports (RS232 / RS485), 1 USB Device, 1 USB Host, 3 Pluggable I/O Modules
FP2070TN-E	7" TFT, 24VDC, 2 Serial ports (RS232 / RS485), 1 USB Device, 1 USB Host, 1 Ethernet, 3 Pluggable I/O Modules

FP2043-E support one DB9 port that supports RS232 and RS485 levels on different pins. "Y" type cable can be used for separate RS232 and RS485 levels simultaneously.

SUPPORTING OBJECTS

Drawing Tools
Line, Rectangle, Ellipse
Rounded Rectangle
Text, Multilingual text
Picture

Data Entry / Data Display
Numeric data
Bit data

Clock Objects
Time
Date

Advanced Objects
Buttons
Lamps
Bargraph
Multiple Bargraph
Analog Meter
Alarm
Numeric Keypad
ASCII Keypad
Custom Keypad
Trends

Supported Tasks
Button specific tasks
Global tasks
Screen specific tasks
Data exchange tasks

Supported Printer
FlexiPanels supports following Dot Matrix serial printers:
EPSON
SAMSUNG
TVS

Pluggable Expansion Modules Comparison

	FPEM-1616P	FPEM-1614RP	FPEM-1212P-A0200L	FPEM-1212RP-A0200L
Power Supply	Powered from FP2 base Modules			
DC Inputs	16 (Sinking)	16 (Sinking)	12 (Sinking)	12 (Sinking)
High Speed Inputs	2, 32 Bit, 200kHz	2, 32 Bit, 200kHz	2, 32 Bit, 200kHz	2, 32 Bit, 200kHz
DC Outputs	16 PNP	12 Relay, 2 PNP	12 PNP	10 Relay, 2 PNP
High Speed Pulse Outputs	2, Normal PWM Mode: 1kHz, Fixed Pulse Mode: 5kHz	2, Normal PWM Mode: 1kHz, Fixed Pulse Mode: 5kHz	2, Normal PWM Mode: 1kHz, Fixed Pulse Mode: 5kHz	2, Normal PWM Mode: 1kHz, Fixed Pulse Mode: 5kHz
Analog Inputs	NA	NA	Linear Type 2 Inputs, Voltage Inputs [16 Bit]: 0 to 10VDC, 0 to 5VDC	Linear Type 2 Inputs, Voltage Inputs [16 Bit]: 0 to 10VDC, 0 to 5VDC
			Current Inputs [16 Bit]: 0 to 20mA, 4 to 20mA	Current Inputs [16 Bit]: 0 to 20mA, 4 to 20mA
Analog Outputs	NA	NA	NA	NA
Isolation	Digital: Isolated from 24VDC power			
	Analog: Non-Isolated from 24VDC power and Communication, USB ground			
Operating Temperature	0°C to 50°C (While using FPEM Modules with FP2 Base models)			
Storage Temperature	-20°C to 85°C			
Humidity	10 to 95% non condensing			
Approvals	CE, UL Class I Div 2			
Dimensions (mm)	48W x 108H x 41D			

Pluggable Expansion Modules Comparison

	FPEM-1210P-A0201L	FPEM-1210RP-A0201L	FPEM-0808P-A0401U	FPEM-0808RP-A0401U
Power Supply	Powered from FP2 base Modules			
DC Inputs	12 (Sinking)	12 (Sinking)	8 (Sinking)	8 (Sinking)
High Speed Inputs	2, 32 Bit, 200kHz	2, 32 Bit, 200kHz	2, 32 Bit, 200kHz	2, 32 Bit, 200kHz
DC Outputs	10 PNP	8 Relay, 2 PNP	8 PNP	6 Relay, 2 PNP
High Speed Pulse Outputs	2, Normal PWM Mode: 1kHz, Fixed Pulse Mode: 5kHz	2, Normal PWM Mode: 1kHz, Fixed Pulse Mode: 5kHz	2, Up-to 200kHz each	2, Up-to 200kHz each
Analog Inputs	Linear Type 2 voltage Inputs [16 bit]: 0 to 10VDC, 0 to 5VDC	Linear Type 2 voltage Inputs [16 bit]: 0 to 10VDC, 0 to 5VDC	Universal Type 4 Inputs, Voltage Inputs [16 Bit]: 0 to 10VDC, 0 to 5VDC, 0 to 50mV, 0 to 100mV, RTD - PT100, Thermocouple J & K type	Universal Type 4 Inputs, Voltage Inputs [16 Bit]: 0 to 10VDC, 0 to 5VDC, 0 to 50mV, 0 to 100mV, RTD - PT100, PT1000, Thermocouple J & K type
	2 Current Inputs [16 Bit]: 0 to 20mA, 4 to 20mA	2 Current Inputs [16 Bit]: 0 to 20mA, 4 to 20mA	4 Current Inputs [16 Bit]: 0 to 20mA, 4 to 20mA	4 Current Inputs [16 Bit]: 0 to 20mA, 4 to 20mA
Analog outputs	1 Voltage / Current Output [12 Bit]: 4 to 20mA, 0 to 10VDC	1 Voltage / Current Output [12 Bit]: 4 to 20mA, 0 to 10VDC	1 Voltage / Current Output [12 Bit]: 4 to 20mA, 0 to 10VDC	1 Voltage / Current Output [12 Bit]: 4 to 20mA, 0 to 10VDC
Isolation	Digital: Isolated from 24VDC power			
	Analog: Non-Isolated from 24VDC power and Communication, USB ground			
Operating Temperature	0°C to 50°C (While using FPEM Modules with FP2 Base models)			
Storage Temperature	-20°C to 85°C			
Humidity	10 to 95% non condensing			
Approvals	CE, UL Class I Div 2			
Dimensions (mm)	48W x 108H x 41D			

Pluggable Expansion Modules Comparison

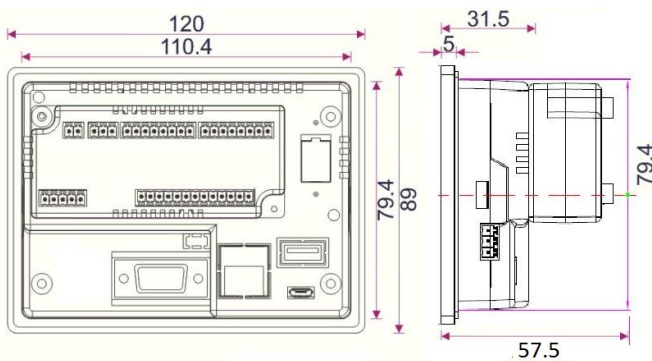
	FPEM-0404P-A0402U	FPEM-0806P-A0402U
Power Supply	Powered from FP2 base Modules	
DC Inputs	4 (Sinking & Sourcing)	8 (Sinking & Sourcing)
High Speed Inputs	2, 32 Bit, 200kHz	2, 32 Bit, 200kHz
DC Outputs	4 PNP	6 PNP
High Speed Pulse Outputs	2, Up-to 200kHz each	2, Up-to 200kHz each
Analog Inputs	Universal Type 4 Inputs, Voltage Inputs [16 Bit]: 0 to 10VDC, 0 to 5VDC, 0 to 50mV, 0 to 100mV, RTD- PT100, Thermocouple J & K type	Universal Type 4 Inputs, Voltage Inputs [16 Bit]: 0 to 10VDC, 0 to 5VDC, 0 to 50mV, 0 to 100mV, RTD- PT100,PT1000, Thermocouple J & K type
	Current Inputs: 0 to 20mA, 4 to 20mA	Current Inputs: 0-20mA, 4-20mA
Analog Outputs	2 Voltage / Current Output [12 Bit]: Current: 0 to 20mA, 4 to 20mA Voltage: 0 to 5VDC, 0 to 10VDC	2 Voltage / Current Output [12 Bit]: Current: 0 to 20mA, 4 to 20mA Voltage: 0 to 5VDC, 0 to 10VDC
Isolation	Digital: Isolated from 24VDC power	
	Analog: Non-Isolated from 24VDC power and Communication, USB ground	
Operating Temperature	0°C to 50°C (While using FPEM Modules with FP2 Base models)	
Storage Temperature	-20°C to 85°C	
Humidity	10 to 95% non condensing	
Approvals	CE, UL (Class I Div 2)	
Dimensions (mm)	48W x 108H x 41D	

SUPPORTED PROTOCOLS

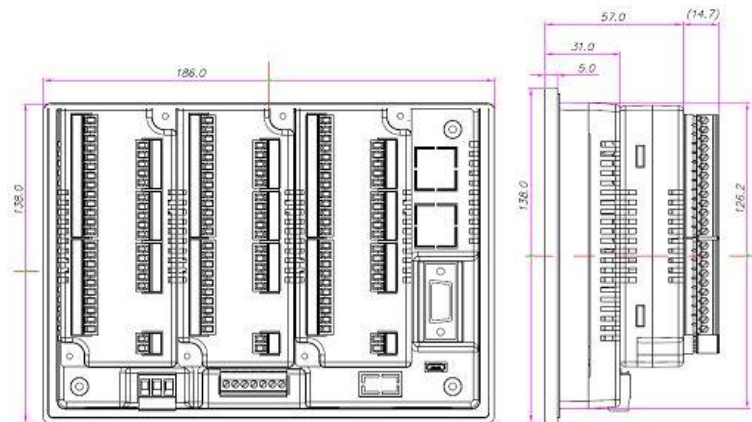
Allen Bradley DF1
Panasonic FP Series
Baldor
Danfoss Drive
Delta PLCs
Fatek PLCs
FlexiLogics Master Driver
FlexiLogics Slave Driver
G9SP Safety Controller
GE SNP
GE SNP-X
Idec PLCs
Keyence KV Series
LG Master K Series PLC
LG Master-K 300S
Mitsubishi FX
Mitsubishi Q series PLCs (Serial)
Modbus ASCII (Unit as Master)
ABB PLCs

Modbus RTU (Unit as Master)
Modbus RTU (Unit as Slave)
Modbus/TCP Master (Client)
Modbus/TCP Server (Slave)
Omron Host Link
Omron Inverter Memobus
Siemens Micromaster Driver (USS)
Siemens Step-7 Micro
Siemens Profinet PLCs
Toshiba (Link Port) Series PLCs
Toshiba Inverters PLC
Toshiba T Series
Toshiba PLC Ethernet Driver
Twido PLCs
Unitelway PLCs
Universal Serial Driver (ASCII)
Tri PLC
AB PLC EIP PCCC
Logix 5000 PLCs
Universal Ethernet Driver (ASCII)

DIMENSIONS



FP2043-E



FP2070-E

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



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