

# FlexiPanels® - FP3 With I/O

- ✓ NEW HIGH PERFORMANCE HMI SERIES FROM RENU ELECTRONICS
- ✓ ATTRACTIVE SLIM HOUSING
- ✓ OPTIONAL PLUGGABLE I/O MODULES
- ✓ REAL VALUE FOR YOUR MONEY









## Salient Features - HMI

- ✓ 4.3" to 10.2" TFT Color display with touch screen
- ✓ Two serial communication ports
- ✓ One USB programming port, One USB Host port
- ✓ One Ethernet port
- ✓ One SD card slot
- ✓ Supports Horizontal and Vertical display orientation
- ✓ High quality color display
- ✓ Front Panel mounting with IP66 rating
- ✓ Multilanguage support with true type Windows fonts
- ✓ IEC61131-3 compliant with LD, FBD, SFC, ST and IL support
- ✓ Common Programming software FlexiSoft® .....FREE!!
- ✓ CE, UL Class I Div 2, RoHS

## Salient Features - Pluggable I/O Modules

- ✓ Easy connectivity to FlexiPanels® FP3 Series
- ✓ Digital Inputs, Digital Outputs (PNP / Relay Type)
- ✓ Analog Inputs (Linear / Universal), Analog Output (Voltage / Current)
- ✓ 2 High Speed Inputs (32-bit, 200KHz) with Quadrature Support (4x mode)
- ✓ 2 High Speed Output Channels with Pulse Output (Up-to 200KHz) and CW / CCW Support
- ✓ Retains memory at power down

Models		FP3043T-E	FP3043TN-E	FP3070T-E	FP3070TN-E	FP3102T-E	FP3102TN-E	
Display		4.3" WQVGA Color TFT	4.3" WQVGA Color TFT	7" WVGA Color TFT	7" WVGA Color TFT	10.2" WVGA Color TFT	10.2" WVGA Color TFT	
Brightness		400 cd/m²	400 cd/m²	300 cd/m²	300 cd/m²	350 cd/m²	350 cd/m²	
Resolution		480x272 Pixels	480x272 Pixels	800x480 Pixels	800x480 Pixels	800x480 Pixels	800x480 Pixels	
Backlight		LED Backlight	LED Backlight	LED Backlight	LED Backlight	LED Backlight	LED Backlight	
CPU		32-bit RISC processor	32-bit RISC processor	32-bit RISC processor	32-bit RISC processor	32-bit RISC processor	32-bit RISC processor	
Memory		Up to 128MB	Up to 128MB	Up to 128MB	Up to 128MB	Up to 128MB	Up to 128MB	
Screen Memory		Up to 45MB	Up to 45MB	Up to 45MB	Up to 45MB	Up to 45MB	Up to 45MB	
Historical Alarms		2700 Alarms	2700 Alarms	2700 Alarms	2700 Alarms	2700 Alarms	2700 Alarms	
Retentive Memory		22000 Words (EEPROM)	22000 Words (EEPROM)	22000 Words (EEPROM)	22000 Words (EEPROM)	22000 Words (EEPROM)	22000 Words (EEPROM)	
Data Log		Up to 20 MB	Up to 20 MB	Up to 20 MB	Up to 20 MB	Up to 20 MB	Up to 20 MB	
Pluggable I/O Module		1	1	3	3	5	5	
Serial Comm- unication	Number of ports	2 <sup>#</sup>	2 <sup>#</sup>	2	2	2	2	
	Com1	RS232	RS232	RS232 / RS485	RS232 / RS485	RS232 / RS485	RS232 / RS485	
	Com2	RS485	RS485	RS232 / RS485	RS232 / RS485	RS232 / RS485	RS232 / RS485	
USB Interfaces	USB Device	1 USB Device Type B micro port for programming	1 USB Device Type B micro port for programming	1 USB Device Type B micro port for programming	1 USB Device Type B micro port for programming	1 USB Device Type B micro port for programming	1 USB Device Type B micro port for programming	
	USB Host	1 USB Host port	1 USB Host port	1 USB Host port	1 USB Host port	1 USB Host port	1 USB Host port	
SD Card Slot	Type	NA	microSD HC	NA	microSD HC	NA	microSD HC	
	Capacity	NA	High Capacity (4GB to 32GB)	NA	High Capacity (4GB to 32GB)	NA	High Capacity (4GB to 32GB)	
	Speed Class	NA		NA		NA		
	UHS Speed Class	NA		NA		NA		
Ethernet Interface		NA	One 10/100 Mbps	NA	One 10/100 Mbps	NA	One 10/100 Mbps	
RTC		Yes	Yes	Yes	Yes	Yes	Yes	
Power Supply		24VDC (±15%)	24VDC (±15%)	24VDC (±15%)	24VDC (±15%)	24VDC (±15%)	24VDC (±15%)	
Power Rating		8W (With 1 expansion)	8W (With 1 expansion)	20W (With 3 expansions)	20W (With 3 expansions)	25W (With 5 expansions)	25W (With 5 expansions)	
Operating Temperature		0 to 60°C <sup>**</sup>	0 to 60°C <sup>**</sup>	0 to 60°C <sup>**</sup>	0 to 60°C <sup>**</sup>	0 to 60°C <sup>**</sup>	0 to 60°C <sup>**</sup>	
Storage Temperature		-20 to 85°C	-20 to 85°C	-20 to 85°C	-20 to 85°C	-20 to 85°C	-20 to 85°C	
Humidity		10 to 95% non condensing	10 to 95% non condensing	10 to 95% non condensing	10 to 95% non condensing	10 to 95% non condensing	10 to 95% non condensing	
Approvals		CE, UL Class I Div 2	CE, UL Class I Div 2	CE, UL Class I Div 2	CE, UL Class I Div 2	CE, UL Class I Div 2	CE, UL Class I Div 2	
Mounting		Front Panel Mounting, IP66 rated	Front Panel Mounting, IP66 rated	Front Panel Mounting, IP66 rated	Front Panel Mounting, IP66 rated	Front Panel Mounting, IP66 rated	Front Panel Mounting, IP66 rated	
Weight (Approximate)		200 gms.	200 gms.	400 gms.	400 gms.	900 gms.	900 gms.	
Bezel Dimensions (mm)		120W x 89H x 31.5D (Drawing A)	120W x 89H x 31.5D (Drawing B)	186W x138H x 31D (Drawing C)	186W x138H x 31D (Drawing D)	268W x190H x 33D (Drawing E)	268W x190H x 33D (Drawing F)	
Panel Cutout (mm)		111W x 80H	111W x 80H	175W x 127H	175W x 127H	256W x 178H	256W x 178H	

# FP3043 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. ##For UL, operating temperature range is 0 to 50°C

# Pluggable Expansion Modules Comparison :-

	FPEM-1616P	FPEM-1614RP	FPEM-1212P-A0200L	FPEM-1212RP-A0200L	FPEM-1210P-A0201L	FPEM-1210RP-A0201L
Power Supply	Powered from FP3 base Modules					
DC Inputs	16 (Sinking)	16 (Sinking)	12 (Sinking)	12 (Sinking)	12 (Sinking)	12 (Sinking)
High Speed Inputs	2, 32 Bit, 200 KHz	2, 32 Bit, 200 KHz	2, 32 Bit, 200 KHz	2, 32 Bit, 200 KHz	2, 32 Bit, 200 KHz	2, 32 Bit, 200 KHz
DC Outputs	16 PNP	12 Relay, 2 PNP	12 PNP	10 Relay, 2 PNP	10 PNP	8 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	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 voltage Inputs [16 bit], 0 to 10VDC, 0 to 5VDC	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	Linear Type 2 voltage Inputs [16 bit], 0 to 10VDC, 0 to 5VDC
			2 Current Inputs [16 Bit], 0 to 20mA, 4 to 20mA	2 Current Inputs [16 Bit], 0 to 20mA, 4 to 20mA	2 Current Inputs [16 Bit], 0 to 20mA, 4 to 20mA	2 Current Inputs [16 Bit], 0 to 20mA, 4 to 20mA
Analog outputs	NA	NA	NA	NA	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 24 VDC power Analog: <b>Non</b> -Isolated from 24 VDC power, Communication and USB ground					
Operating Temperature	0 to 60 ℃ **					
Storage Temperature	-20 to 85 ℃					
Humidity	10% to 95% Non-cendensing					
Approvals	CE, UL (Class I Div 2)					
Dimensions	48W x 108H x 41D (Drawing G)					

	FPEM-0808P-A0401U	FPEM-0808RP-A0401U
Power Supply	Powered from FP3 base Modules	Powered from FP3 base Modules
DC Inputs	8 (Sinking)	8 (Sinking)
High Speed Inputs	2, 32 Bit, 200 KHz	2, 32 Bit, 200 KHz
DC Outputs	8 PNP	6 Relay, 2 PNP
High Speed Pulse Outputs	2, Up-to 200 KHz each	2, Up-to 200 KHz each
Analog Inputs	Universal Type 4 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 Voltage Inputs [16 Bit], 0 to 10VDC, 0 to 5VDC, 0 to 50mV, 0 to 100mV, RTD - PT100, Thermocouple J & K type
	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
Isolation	Digital: Isolated from 24 VDC power Analog: <b>Non</b> -Isolated from 24 VDC power, Communication and USB ground	
Operating Temperature	0 to 60 ℃ **	
Storage Temperature	-20 to 85 ℃	
Humidity	10% to 95% Non-cendensing	
Approvals	CE, UL (Class I Div 2)	
Dimensions	48W x 108H x 41D (Drawing G)	

##For UL, operating temperature range is 0 to 50°C

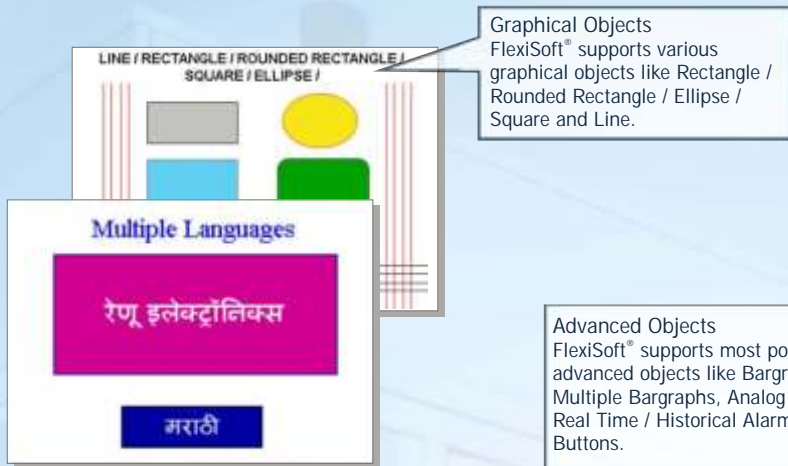
## HMI Ordering Information

Models	Description
FP3043T-E	4.3" TFT, 24VDC, 2 Serial ports (1 RS232, 1 RS485), 1 USB device, 1 USB host
FP3043TN-E	4.3" TFT, 24VDC, 2 Serial ports (1 RS232, 1 RS485), 1 USB device, 1 USB host, 1 Ethernet, 1 SD Card Slot
FP3070T-E	7" TFT, 24VDC, 2 Serial ports (RS232/RS485), 1 USB device, 1 USB host
FP3070TN-E	7" TFT, 24VDC, 2 Serial ports (RS232/RS485), 1 USB device, 1 USB host, 1 Ethernet, 1 SD Card Slot
FP3102T-E	10.2" TFT, 24VDC, 2 Serial ports (RS232/RS485), 1 USB device, 1 USB host
FP3102TN-E	10.2" TFT, 24VDC, 2 Serial ports (RS232/RS485), 1 USB device, 1 USB host, 1 Ethernet, 1 SD Card Slot
Programming SW	FlexiSoft® v2.3 and later (Free)

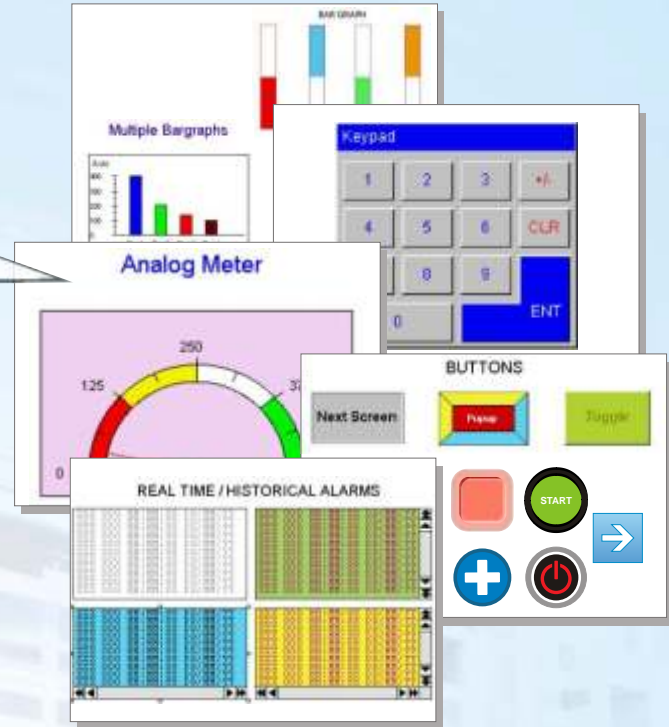
## Pluggable I/O Module Ordering Information

Models	Description
FPEM-1616P	16 Digital Inputs, 16 Digital Outputs (14 PNP, 2 outputs can be configured for PWM)
FPEM-1614RP	16 Digital Inputs, 14 Digital Outputs (12 Relay, 2 outputs can be configured for PWM)
FPEM-1212P-A0200L	12 Digital Inputs, 12 Digital Outputs (10 PNP, 2 outputs can be configured for PWM), 2 Analog Inputs (Voltage / Current)
FPEM-1212RP-A0200L	12 Digital Inputs, 12 Digital Outputs (10 Relay, 2 outputs can be configured for PWM), 2 Analog Inputs (Voltage / Current)
FPEM-1210P-A0201L	12 Digital Inputs, 10 Digital Outputs (8 PNP, 2 outputs can be configured for PWM), 2 Analog Inputs (Voltage / Current), 1 Analog Output (Voltage / Current)
FPEM-1210RP-A0201L	12 Digital Inputs, 10 Digital Outputs (8 Relay, 2 outputs can be configured for PWM), 2 Analog Inputs (Voltage / Current), 1 Analog Output (Voltage / Current)
FPEM-0808P-A0401U	8 Digital Inputs, 8 Digital Outputs (6 PNP, 2 outputs can be configured for PWM), 4 Analog Inputs (Universal), 1 Analog Output (Voltage / Current)
FPEM-0808RP-A0401U	8 Digital Inputs, 8 Digital Outputs (6 Relay, 2 outputs can be configured for PWM), 4 Analog Inputs (Universal), 1 Analog Output (Voltage / Current)

# HMI Software Features



**Advanced Objects**  
FlexiSoft® supports most popular advanced objects like Bargraphs, Analog Meter, Real Time / Historical Alarms, Buttons.



## Windows Fonts for Data Entry and Data Display

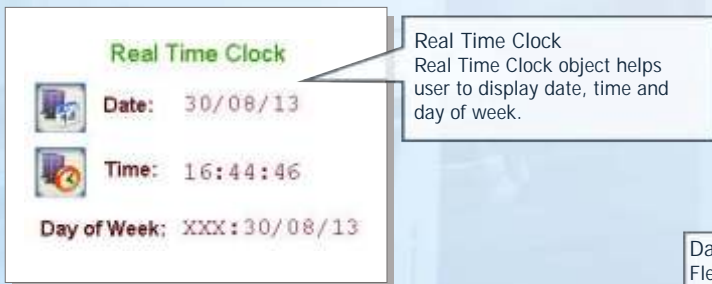
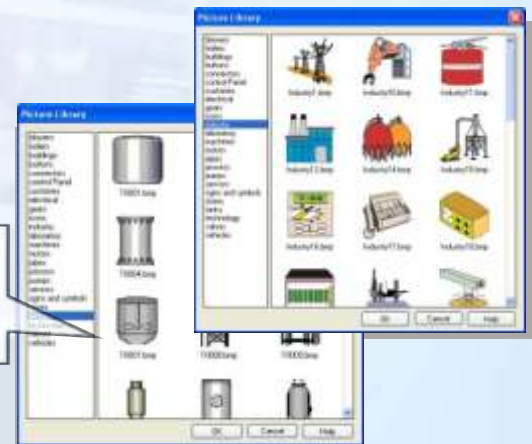
Arial, 12pt  
Arial, 14pt  
Arial, 18pt

**Windows Font for Display Data and Data Entry**  
FlexiSoft® supports True type Windows font for Data Entry and Data Display objects. Supported fonts are 'Arial', 'Times New Roman' and 'Tahoma'.

Times New Roman, 22pt  
30pt  
50pt 62pt

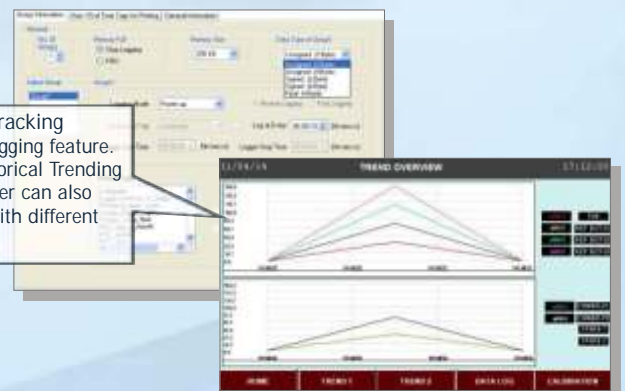
Tahoma  
72pt  
90pt

**Picture Library**  
FlexiSoft® provides rich picture library. It includes many popular image categories widely used for industrial application development.



**Real Time Clock**  
Real Time Clock object helps user to display date, time and day of week.

**Data Logging & Trend Tracking**  
FlexiSoft® support data logging feature. Real time as well as Historical Trending is also supported. The user can also display multiple trends with different pen color on one screen.





## Supported Objects

Drawing Tools
• Line, Rectangle, Ellipse
• Rounded Rectangle
• Text, Multilingual text
• Picture
Data Entry / Data Display
• Numeric data
• Bit data
Clock objects
• Time
• Date

### Advance 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

FlexiPanels® support following Dot

Matrix serial printers:

- EPSON
- SAMSUNG
- TVS



## Protocols Supported Include

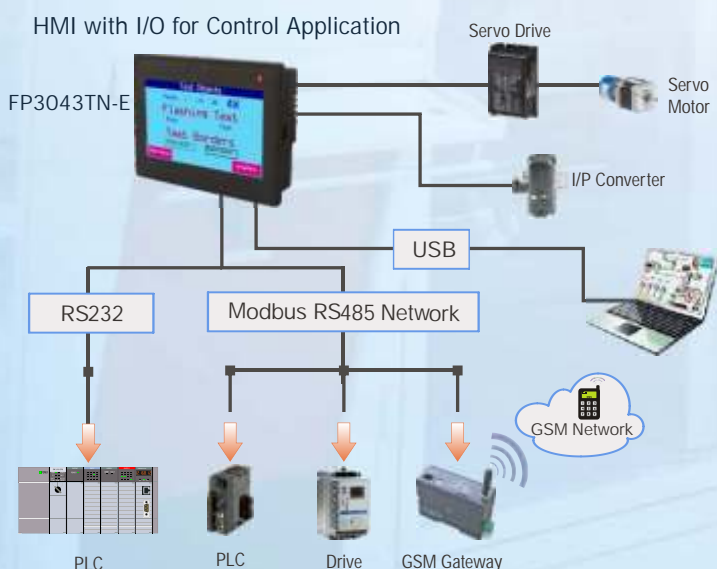
Serial Driver	FP3 Series
ABB PLCs	✓
Allen Bradley DF1	✓
Panasonic FP Series	✓
Baldor	✓
Danfoss Drive	✓
Delta PLCs	✓
Fatek PLCs	✓
Renu FlexiLogics*	✓
FlexiLogics Slave Driver*	✓
G9SP Safety Controller	✓
GE SNP	✓
GE SNP-X	✓
Idec PLCs	✓
LG Master K Series PLC	✓
LG Master-K 300S	✓
Mitsubishi FX	✓

Serial Driver	FP3 Series
Mitsubishi Q series PLCs (Serial)	✓
Modbus ASCII (Unit as Master)	✓
Modbus RTU (Unit as Master)	✓
Modbus RTU (Unit as Slave)	✓
Omron Host Link	✓
Omron Inverter Memobus	✓
Siemens Micromaster Driver (USS)	✓
Siemens Step-7 Micro	✓
Toshiba (Link Port) Series PLCs	✓
Toshiba Inverters PLC	✓
Toshiba T Series	✓
TriPLC	✓
Twido PLCs	✓
Unitelway PLCs	✓
Universal Serial Driver (ASCII)	✓

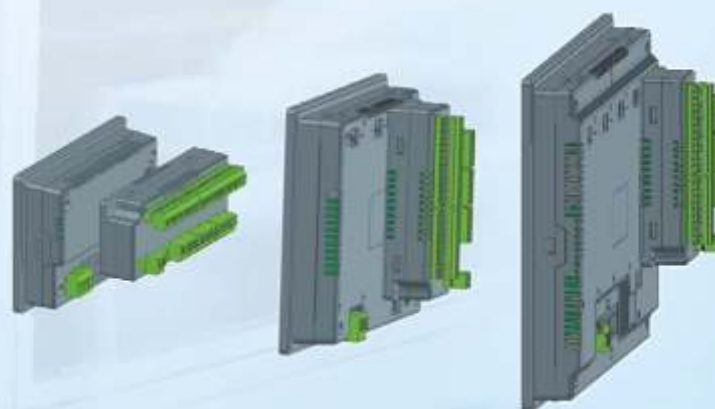
Ethernet Driver	FP3 Series
AB PLC EIP PCCC (Ethernet IP)	✓
FlexiLogics*	✓
FlexiLogics Slave Driver*	✓
Logix 5000 PLCs	✓
Modbus/TCP Master (Client)	✓
Modbus/TCP Server (Slave)	✓
Universal Ethernet Driver (ASCII)	✓

\*Supported with native programming environment.

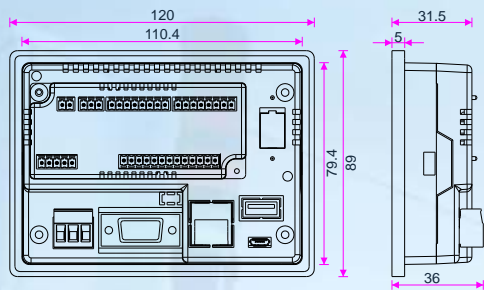
## Application Example



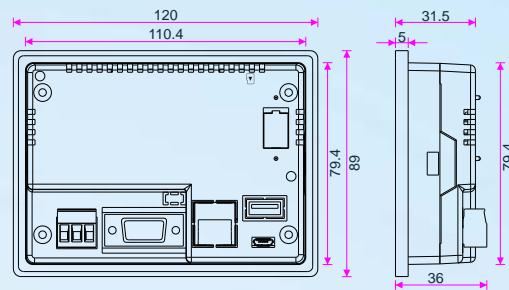
## Expansions Connectivity



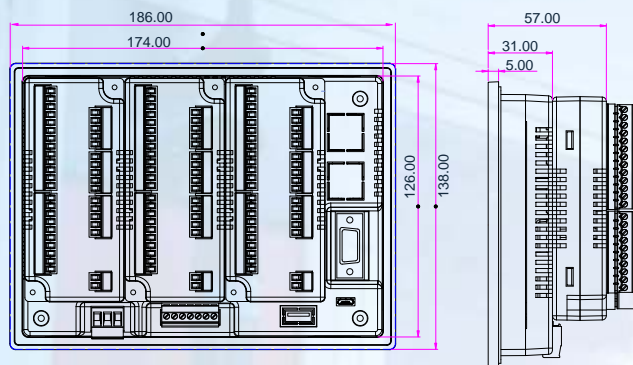
# Dimensions



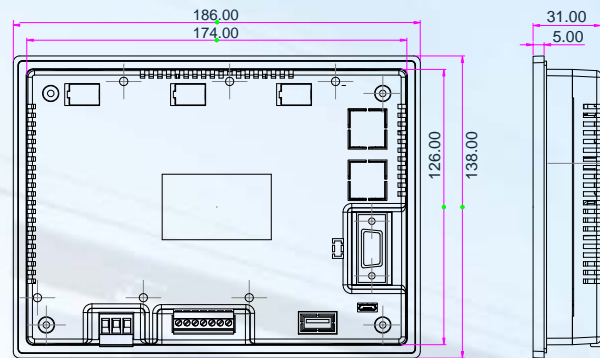
Drawing A



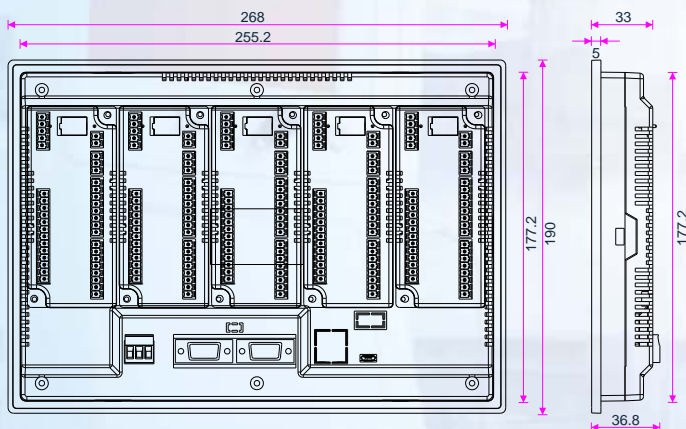
Drawing B



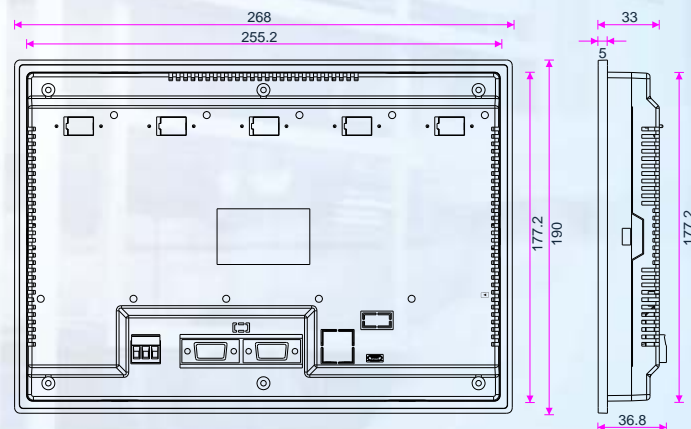
Drawing C



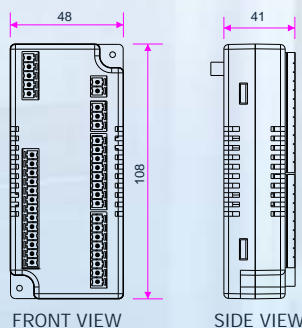
Drawing D



Drawing E

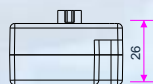


Drawing F



FRONT VIEW

SIDE VIEW



TOP VIEW

Drawing G  
Expansion Module

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



**RENU**  
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## HEAD OFFICE

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