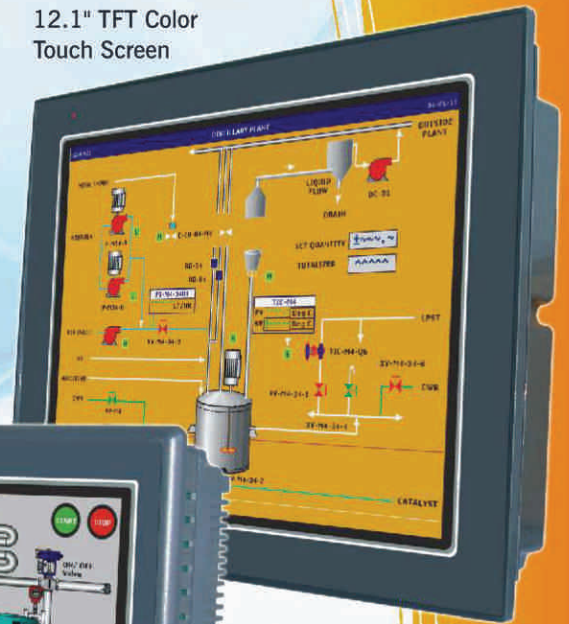
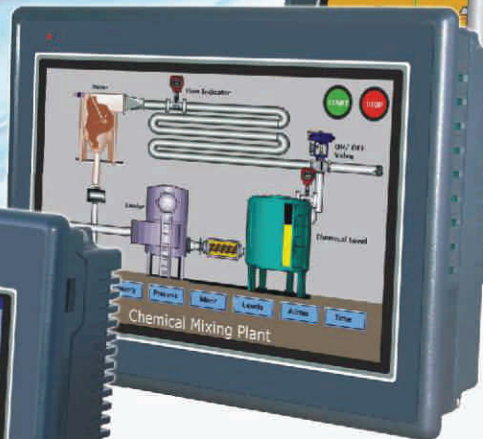


Flow Computer Data Logger

12.1" TFT Color
Touch Screen



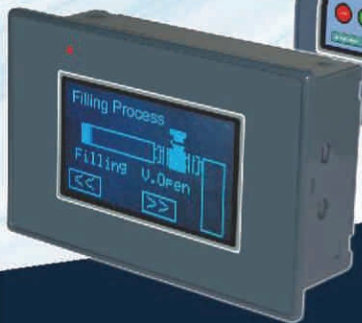
7" TFT Color
Touch Screen



4.3" TFT Color
Touch Screen



3" Multicolor Backlight
Touch Screen



Salient Features :-

- 3", 4.3", 7" and 12.1" Graphical Touchscreen Monochrome / TFT Color Display
- Pluggable Digital and Analog Input and Output Modules
- Communication Ports:
Two serial ports to connect PLC at RS232 / 422 / 485 levels / Printer / Programming Port
One USB (device) port as Programming Monitoring Port
One USB (host) port to connect USB memory drive*
One optional Ethernet port (10/100 Mbps. Modbus TCP/IP)*
- Support for Digital I/O (OC / Relays)
- Analog inputs for TC, RTD, mA, mV, 0-10 VDC
- Analog outputs for 0-10 VDC / 4-20 mA (12 bits)
- High Speed Counters and Timers
- Dual Port communication supported
- Ladder editor with powerful instruction set
- Support for Recipes and 32K color Bitmaps for color LCD Models
- Data Logging, Transfer logged data on USB memory drive*
- Alarms and Trending (Real Time and Historical), RTC
- IP66 design. CE, UL approved. RoHS compliant
- Multilanguage (Unicode) support with true type Windows® fonts for graphical models
- Common Programming software for the entire FlexiPanels™ family.....FREE!!



Back View of FlexiPanels™ with
Pluggable I/O Modules

*Not supported in FP4030MT

Operations

The FlowComputer 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 FlowComputer operator interface functions revolve around Screens and Tasks that can be assigned to screens and application.

Pluggable I/O (Digital)

FlowComputer 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 4 nos. of High Speed inputs of 25KHz. Maximum 5 I/O modules can be connected to one 7" FlowComputer

Digital I/O

FlowComputer 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 or relay types.

Touch Keys Task

Touch Keys in FlowComputer 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 FlowComputer. User-friendly Alarm object can be defined on the display. Alarms can be real time or historical.

Recipes

Recipes data is stored in the FlowComputer 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 FlowComputer 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 FlowComputer 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

FlowComputer support (Color Touchscreen based models) data logging feature. A part of FlowComputer 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.

High Speed Counters

FlowComputer with pluggable 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 expansion module.

Ladder Support

FlowComputer support ladder functionality. User can define logic in the unit using FlowComputersSoft software. The execution of ladder could be through communication port or through I/O. Only HMI version of FlowComputer also support ladder functionality. It is used for critical applications where data is processed before sending it to controller. The FlowComputer Logics 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 FlowComputer configuration software.

Multilanguage / Unicode Support

All the languages are supported in the FlowComputer (Color Touchscreen based models). The user can now display messages, alarms in any regional language. All Windows® fonts can also be used in an application.

Communication Ports

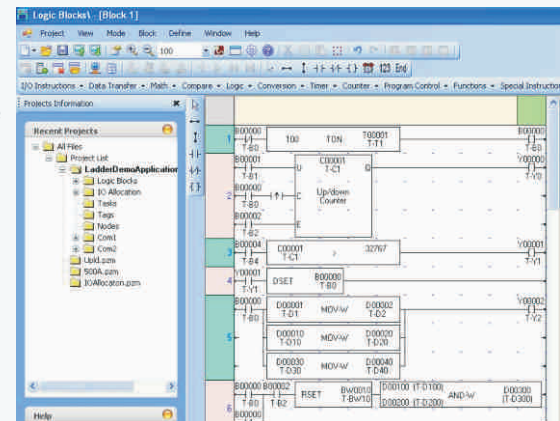
FlowComputer have two serial communication ports. Both the ports can be used for programming of FlowComputer, printing screens (only text), connecting to third party serial devices (barcode readers, temp scanners etc.) or to connect to a PLC or drive. Dual port feature is supported for FlowComputer models.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

Ethernet Port*

FlowComputer support 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 FlowComputer.

Configuration Software

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



- To get started with FlowComputer, user needs:
1. FlowComputer unit
 2. FlowComputers Soft
 3. IBM Cable (Part codes: IBM 0909-1-00 or IBM 0925-1-00)

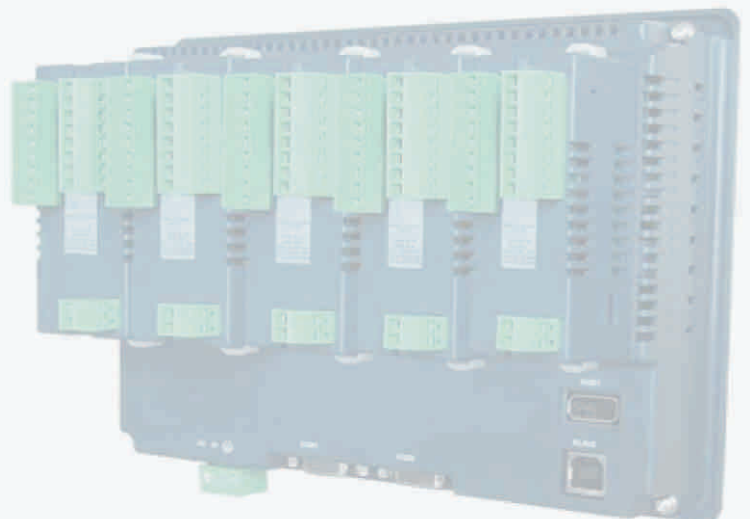
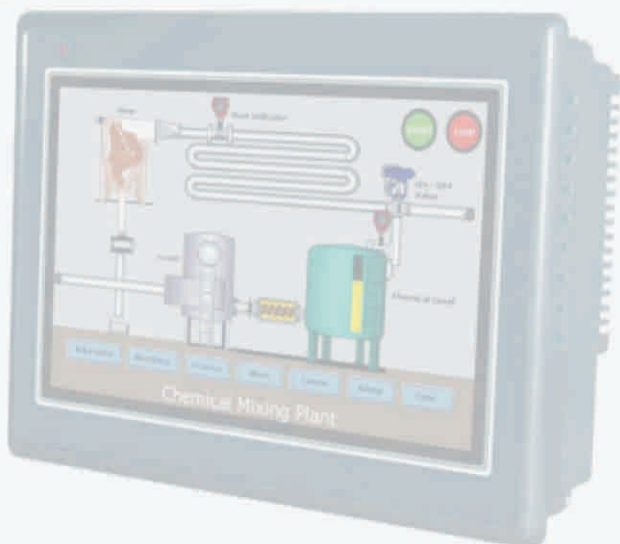
OS requirements for FlowComputers Soft are:
Windows Version : Microsoft Windows® 2000 or above

*Not supported in FP4030MT

Operations

Supported Task in FlowComputer are :

Task	Type	Power up	Global	Screen		
				Before showing	While showing	After hiding
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		✗	✗	✗	✗	✗
USB Data Log Upload		✓	✓	✓	✓	✓



Specifications

Power	: + 24V DC \pm 15% FP4030 - 5W FP5043 - 6W FP5070 - 9W FP5121 - 16W
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	: 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 FlowComputer a third party device, Drive or remote monitoring (10 / 100 MBPS).
Type of LCD	: Mono / TFT Color Touch Screen
LCD Life	: 30000 hrs at 25°C / 50000 hrs at 25°C for FP5121 models
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

	For Normal Input 24 VDC (Max is 28 VDC)	For High Speed 24 VDC (Max is 28 VDC)
Rated Input Voltage		
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	200K
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	120
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	1000
Accuracy at 25°C	0.05% of full scale
Overall accuracy (-25°C to 55°C) % Full Scale	\pm 10ppm/°C
Current Mode	
Output Range	4mA to 20mA
Value of LSB	3.9uA
Output Load maximum	500
Accuracy at 25°C	0.13% of full scale
Overall accuracy (-25°C to 55°C) % Full Scale	\pm 10ppm/°C
Current Mode	
Output Range	0mA to 20mA
Value of LSB	4.8uA
Output Load	500
Accuracy at 25°C	0.13% of full scale
Overall accuracy (-25°C to 55°C) % Full Scale	\pm 10ppm/°C



Model Comparison

Product	Model	Display	Memory	PLC Steps	Screen Memory	Logging Memory	Expansion	Serial Ports	USB	Ethernet Port	Power Ratings at 24 VDC	Weight (Approx.)	Dimensions (mm)	Panel Cutout (mm)
FP4030	FP4030MT	128x64 3" Multicolor Backlight	512 k +1 MB	5 k	1 MB	NA	NA	2**	Device	No	5W	156 gms.	109 W x 71 H x 35 D (Drawing A)	99 W x 63 H
FP5043	FP5043T	480x272 WQVGA 4.3" Color TFT	Up-to 128 MB	160 k	Up-to 10 MB	Yes	NA	2**	Device and Host	No	5W	330 gms.	128 W x 102 H x 45 D (Drawing B)	118.5 W x 92.5 H
	FP5043TN	480x272 WQVGA 4.3" Color TFT	Up-to 128 MB	160 k	Up-to 10 MB	Yes	NA	2**	Device and Host	Yes	5W	330 gms.	128 W x 102 H x 45 D (Drawing B)	118.5 W x 92.5 H
	FP5043TE	480x272 WQVGA 4.3" Color TFT	Up-to 128 MB	160 k	Up-to 10 MB	Yes	3	2**	Device and Host	No	6W	330 gms.	128 W x 102 H x 45 D (Drawing B)	118.5 W x 92.5 H
	FP5043TNE	480x272 WQVGA 4.3" Color TFT	Up-to 128 MB	160 k	Up-to 10 MB	Yes	3	2**	Device and Host	Yes	6W	330 gms.	128 W x 102 H x 45 D (Drawing B)	118.5 W x 92.5 H
FP5070	FP5070T	800x480 WVGA 7" Color TFT	Up-to 128 MB	160 k	Up-to 10 MB	Yes	NA	2	Device and Host	No	9W	642 gms.	195 W x 142 H x 50 D (Drawing C)	183.8 W x 130.8 H
	FP5070TN	800x480 WVGA 7" Color TFT	Up-to 128 MB	160 k	Up-to 10 MB	Yes	NA	2	Device and Host	Yes	9W	642 gms.	195 W x 142 H x 50 D (Drawing C)	183.8 W x 130.8 H
	FP5070TE	800x480 WVGA 7" Color TFT	Up-to 128 MB	160 k	Up-to 10 MB	Yes	5	2	Device and Host	No	9W	642 gms.	195 W x 142 H x 50 D (Drawing C)	183.8 W x 130.8 H
	FP5070TNE	800x480 WVGA 7" Color TFT	Up-to 128 MB	160 k	Up-to 10 MB	Yes	5	2	Device and Host	Yes	9W	642 gms.	195 W x 142 H x 50 D (Drawing C)	183.8 W x 130.8 H
FP5121	FP5121T	800x600 SVGA 12.1" Color TFT	Up-to 128 MB	160 k	Up-to 10 MB	Yes	NA	2	Device and Host	No	16W	1.680 Kg	312 W x 246 H x 48 D (Drawing D)	293 W x 225 H
	FP5121TN	800x600 SVGA 12.1" Color TFT	Up-to 128 MB	160 k	Up-to 10 MB	Yes	NA	2	Device and Host	Yes	16W	1.680 Kg	312 W x 246 H x 48 D (Drawing D)	293 W x 225 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 30 D (Drawing E)
FPED-HS-0808P #	8 Digital inputs and 8 Digital Outputs (PNP Type)	0.3 W	70 gms.	36 W x 79 H x 30 D (Drawing E)
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 30 D (Drawing E)
FPED-HS-0808N #	8 Digital inputs and 8 Digital Outputs (NPN Type)	0.3 W	70 gms.	36 W x 79 H x 30 D (Drawing E)
FPED0012R	12 Digital outputs (Relay)	0.3 W	90 gms.	36 W x 79 H x 30 D (Drawing E)
FPED1600	16 Digital inputs	0.3 W	65 gms.	36 W x 79 H x 30 D (Drawing E)
FPED0016N	16 Digital outputs (0.5A NPN transistor)	0.3 W	65 gms.	36 W x 79 H x 30 D (Drawing E)
FPED0016P	16 Digital outputs (0.5A PNP transistor)	0.3 W	75 gms.	36 W x 79 H x 30 D (Drawing E)

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 30 D (Drawing E)
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 30 D (Drawing E)
FPEA0402U-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 30 D (Drawing E)
FPEA0800LA*	8 Analog inputs (4-20mA)	0.3 W	90 gms.	36 W x 79 H x 30 D (Drawing E)
FPEA0800L V*	8 Analog inputs (0-10VDC)	0.3 W	90 gms.	36 W x 79 H x 30 D (Drawing E)

4 inputs can be configured as high speed inputs (25KHz) and 2 outputs can be configured for PWM (10 KHz). * Coming Soon.

** 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.

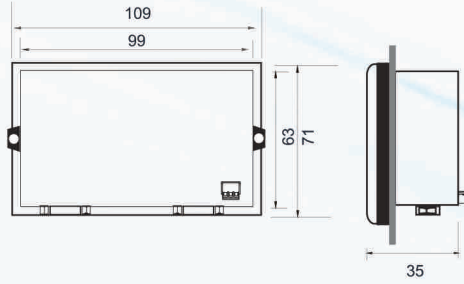
Supported Printers :-

FlowComputer support following Dot matrix serial printers :

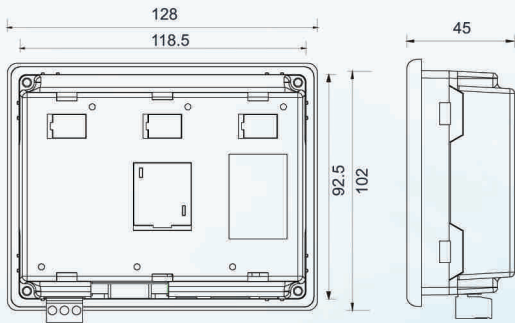
- 🖨️ EPSON
- 🖨️ SAMSUNG
- 🖨️ TVS



Dimensions

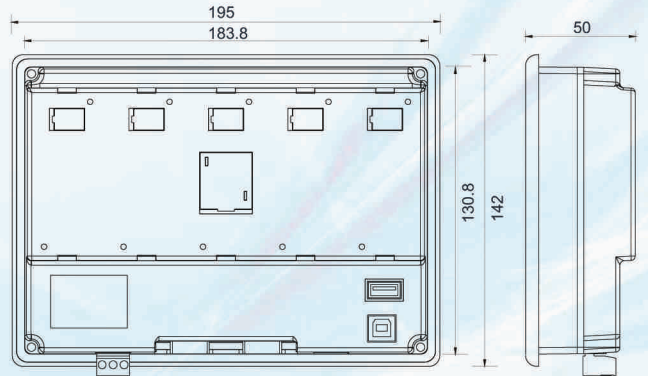


Drawing A



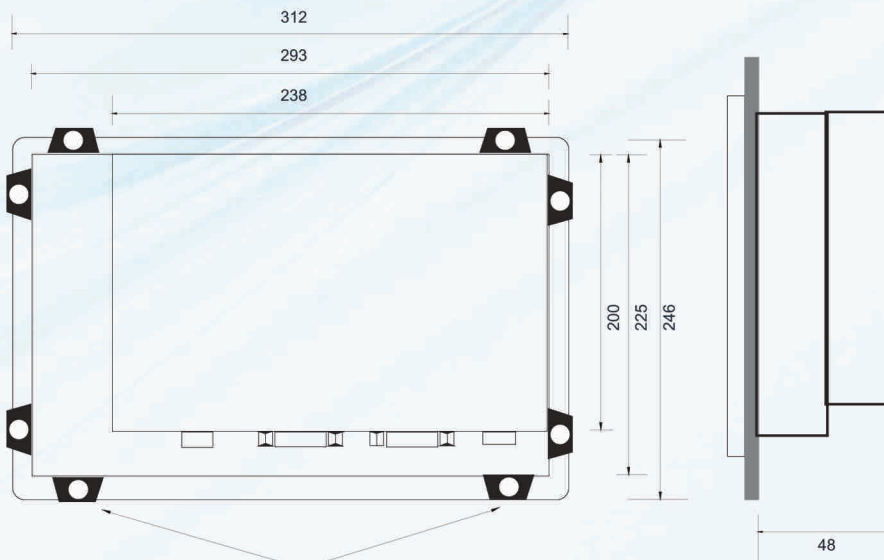
Drawing B

Depth 75mm with pluggable module



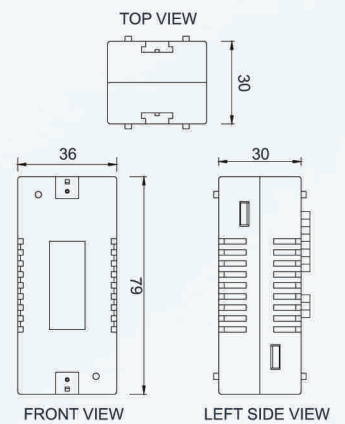
Drawing C

Depth 80mm with pluggable module



Mounting Clamp

Drawing D



Drawing E

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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