



# FACTORY AUTOMATION



- FlexiPanels - HMI
- FlexiPanels - HMI with I/O
- FlexiLogics - Modular PLC
- Gateway - Protocol Converters
- Field I/O - Analog and Digital

Automation Simplified 



# About Us

**Renu Electronics** offers products for Factory Floor Automation.

Renu Electronics is a pioneer in designing and manufacturing of Factory Automation products like a wide range of Text and Touch Screen based HMI, Programmable Logic Controllers (PLC), HMI with built-in PLC, Technology based Protocol Converters, Analog and Digital Field I/O, SCADA, Signal converters and Repeaters, Port Multiplexers, Flow products and many more.

Renu Electronics is an ISO 9001:2008 and ISO 14001:2004 certified company and proud to be one of the few RoHS compliant manufacturing organizations in India. All the products are designed to meet CE, UL Class 1 Div 2 listings. Renu Electronics' Global Sales and Support channel provide prompt and valuable support to its esteemed business associates.

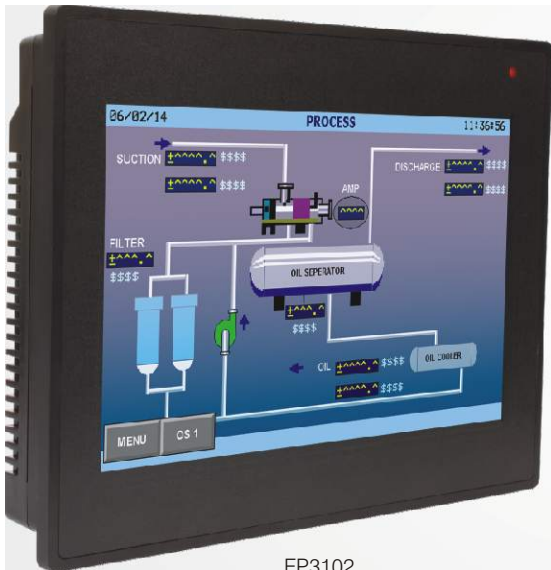
# FlexiPanels® - FP3 Series

## FlexiPanels® - FP3 Series HMI

### Salient Features :

- ▶ 3.5" to 10.2" Graphical Touch Screen TFT Color Display
- ▶ New attractive slim housing
- ▶ Floating point support, Bar graph, Built-in RTC
- ▶ Ladder editor with powerful instruction set\*
- ▶ Two serial communication ports (one RS232, one RS232/RS485)
- ▶ One USB (device) port for programming
- ▶ One USB (Host) port to connect memory drive\*
- ▶ One optional Ethernet port (10/100 Mbps. Modbus TCP/IP)\*
- ▶ Supports Horizontal and Vertical display orientation
- ▶ Large Application memory
- ▶ Data Logging, Transfer logged data on USB memory drive\*
- ▶ Alarms (Real Time & Historical)
- ▶ Trending (Real Time & Historical)
- ▶ Multilanguage (Unicode) support with true type Windows® fonts
- ▶ IP66 design. CE, UL Class I Div 2 approved. RoHS compliant
- ▶ Common Programming software for the entire FlexiPanels® family.. FREE!!

\*Not supported in FP3035 model



FP3102  
10.2" WVGA Color TFT



FP3035  
3.5" HVGA Color TFT



FP3043  
4.3" WQVGA Color TFT



FP3070  
7" WVGA Color TFT







FP4020



16 x 2 Multicolor LCD with built-in Digital I/O



FP4030MT



3" Mono Touch Screen Multicolor Backlight with built-in Digital and Analog I/O



FP5043



4.3" Color TFT with Pluggable I/O Modules



FP5070



7" Color TFT with Pluggable I/O Modules

## FlexiPanels® - HMI OR HMI with Pluggable I/O

### Salient Features :

- ▶ 16 x 2 Text to 12.1" Graphical Touchscreen Monochrome / TFT Color Display
- ▶ Models available as only HMI or HMI with Pluggable Digital and Universal Analog I/O Modules
- ▶ Communication Ports:
  - One / 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 to 5 VDC, 0 to 10 VDC, -10 to +10 VDC. Analog outputs for 0-10 VDC / 4-20 mA
- ▶ High Speed Counters and Timers
- ▶ Support for Quadrature inputs and PWM output
- ▶ Floating point and Dual Port communication supported
- ▶ Ladder editor with powerful instruction set
- ▶ Support for Recipes and true 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 Class 1 Div 2 approved. RoHS compliant
- ▶ Multilanguage (Unicode) support with true type Windows® fonts for graphical Models
- ▶ Common Programming software for the entire FlexiPanels® family..... FREE!!

\*Not supported in FP4020, FP4030 models





PC5043TN-E



4.3" TFT Color LCD with Pluggable I/O Modules



PC5070TN  
7" TFT Color LCD



PC5070TN-E

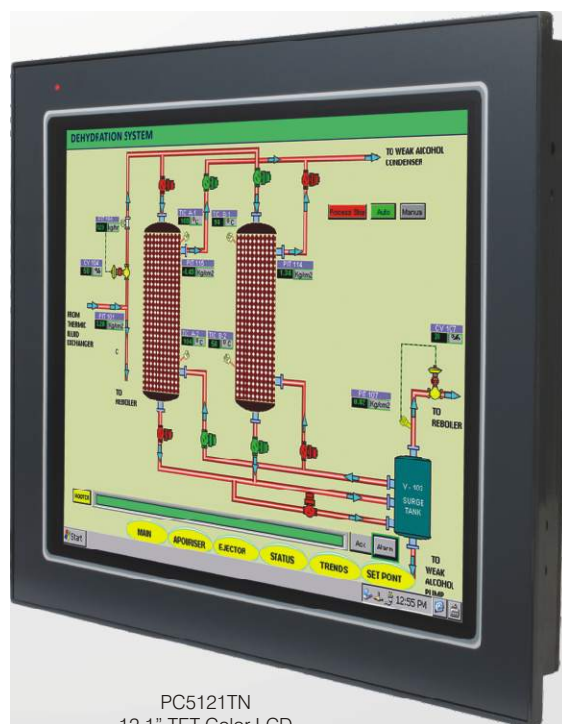


7" TFT Color LCD with Pluggable I/O Modules

## ▶ WinCE based FlexiPanels® - HMI OR HMI with Pluggable I/O

### Salient Features :

- ▶ 4.3" WQVGA (480x272 pixels), 7" WVGA (800x480 pixels), 12.1" SVGA (800x600 pixels) TFT Color Touch screen Graphical Display
- ▶ Support for Windows CE runtime software
- ▶ Support for 65K color, Built-in RTC
- ▶ Dual Port communication supported
- ▶ Serial Communication Ports:  
Serial ports to connect PLC at RS232 / 485 levels
- ▶ USB Ports:  
One USB device port  
One USB host port: Can be used for Extended Memory / USB Keyboard / USB Mouse
- ▶ Ethernet Port:  
One Ethernet port (10/100 Mbps)
- ▶ Memory:  
Up-to 128 MB RAM  
Up-to 128 MB flash memory
- ▶ 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
- ▶ Support for Quadrature inputs and PWM output
- ▶ IP66 design. CE / UL approval. RoHS compliant



PC5121TN  
12.1" TFT Color LCD



# GATEWAY



CAN to Serial



Serial to Serial



Profibus to Serial



LonWorks to Serial



HART to Serial



HART to Ethernet



Ethernet to Serial



GSM to Serial

## ▶ Gateway (Protocol Converters)

**Programmable Industrial Protocol Converters**  
**Make your Serial Device such as PLC / Drives / DCS / PID Controllers / Energy Meters etc. compatible with:**

- ▶ Other Serial Devices
- ▶ LonWorks Network
- ▶ CAN Open / CAN Network
- ▶ Profibus Network
- ▶ Ethernet Network (Modbus TCP/IP)
- ▶ HART Devices
- ▶ GSM Network
- ▶ CE and UL certified
- ▶ Windows® based Common Programming Software for the entire Gateway family.....FREE!!



# FIELD I/O



## Analog I/O Modules



Universal Analog I/O Module



RTD Input Module

## ▶ Field I/O Modules - Analog

### Salient Features :

- ▶ Low cost compact Analog I/O modules with DIN rail mounting
- ▶ Programmable inputs allow same modules to accept RTD, Thermocouple, mA, mV and Volts
- ▶ 12 / 16 bits analog inputs with analog outputs
- ▶ High Speed Modbus RTU (Slave) communication
- ▶ User definable Address, Baud rate and Parity
- ▶ 2 wire RS485 port provided on pluggable terminal block
- ▶ Can be multi dropped as Modbus Slave on RS485 Network
- ▶ Indication for Diagnostics, Power and Communication
- ▶ CE marked with optional UL certification

## Digital I/O Modules



## ▶ Field I/O Modules - Digital

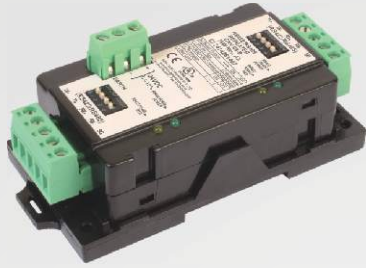
### Salient Features :

- ▶ Low cost compact Digital I/O modules with DIN rail mounting
- ▶ 2 wire RS485 port provided on pluggable terminal block
- ▶ User definable Address, Baud rate and Parity through DIP Switch
- ▶ High Speed Modbus RTU (Slave) communication
- ▶ LED indication for each Input, Output, Communication and Power ON
- ▶ No configuration software required
- ▶ Relay and Transistor outputs available
- ▶ CE marked with optional UL certification





## SIGNAL REPEATER



RS422 / 485 to RS422 / 485 Repeater

### ▶ Universal RS422 / RS485 Repeater

#### Salient Features :

- ▶ DIN rail or panel mounted compact Repeater
- ▶ External powered design
- ▶ Isolation of power and communication ports
- ▶ Automatic detection of communication baud rate
- ▶ Automatic control of transceiver direction
- ▶ CE / UL certification
- ▶ Easy to use plug and play device (no configuration software required)

## SIGNAL CONVERTER



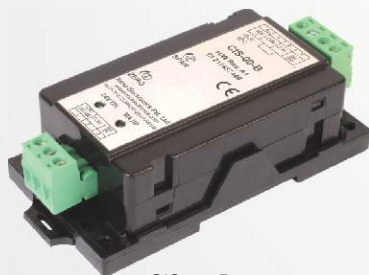
RS232 / CMOS to RS422 / 485 Converter

### ▶ RS232 / CMOS to RS422 / RS485 Signal Converter

#### Salient Features :

- ▶ DIN rail or panel mounted compact Converter
- ▶ Port powered or external powered design
- ▶ Isolation of power and communication ports
- ▶ Automatic detection of communication baud rate
- ▶ Automatic control of transceiver direction
- ▶ CE / UL certification
- ▶ Easy to use plug and play device (no configuration software required)

## CURRENT ISOLATOR



CIS-00-B

### ▶ Current Isolator

#### Salient Features :

- ▶ DIN rail or Panel Mounted compact Current Isolator
- ▶ Isolated Input, Output and Power Supply (3 Port Isolation)
- ▶ 4-20 mA Input
- ▶ 4-20 mA isolated output
- ▶ Output zero and span set by use of potentiometer
- ▶ Additional isolated 24 V DC power source for loop powering

## PORT MULTIPLEXER

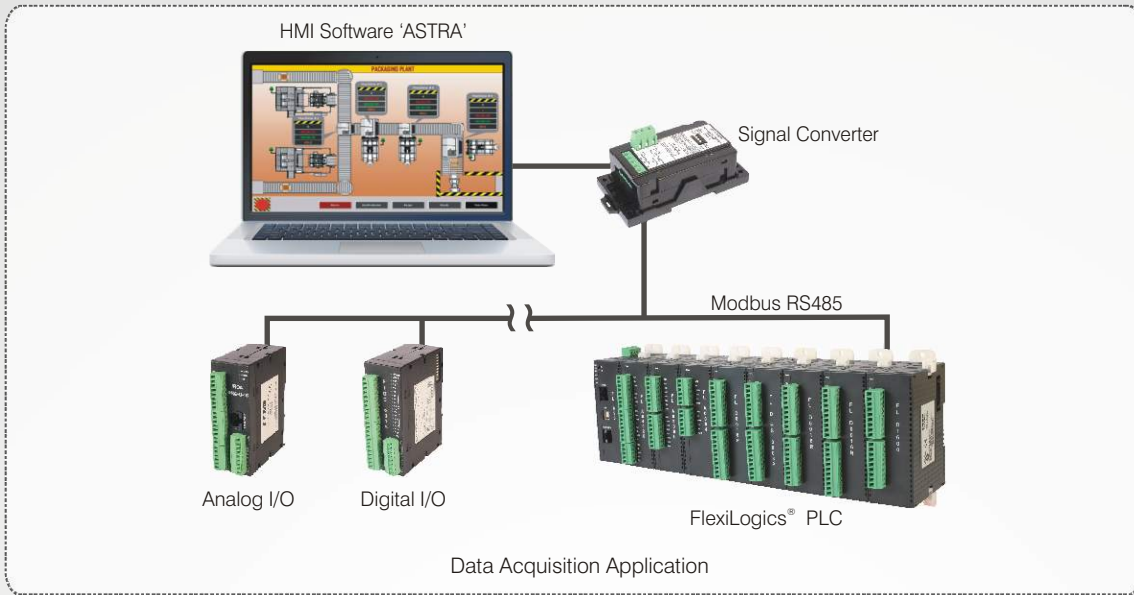


PMX-00-B

### ▶ Port Multiplexer

#### Device to connect Two Masters to One or more than One Slaves :

- ▶ DIN rail or Panel Mounted compact Port Multiplexer
- ▶ Connect Two Master devices to any serial slave device (e.g. PLC, Drive) on same protocol
- ▶ Hardware with three communication ports
- ▶ RS232 support for Master Ports. PLC port with RS232 / RS422 / 2 or 4 wire RS485 / CMOS
- ▶ Ideal for PLCs / Drives which have only one communication port
- ▶ Same model can be configured for different supported protocols
- ▶ CE marked with optional UL certification
- ▶ Free Programming software for Port Multiplexer !!



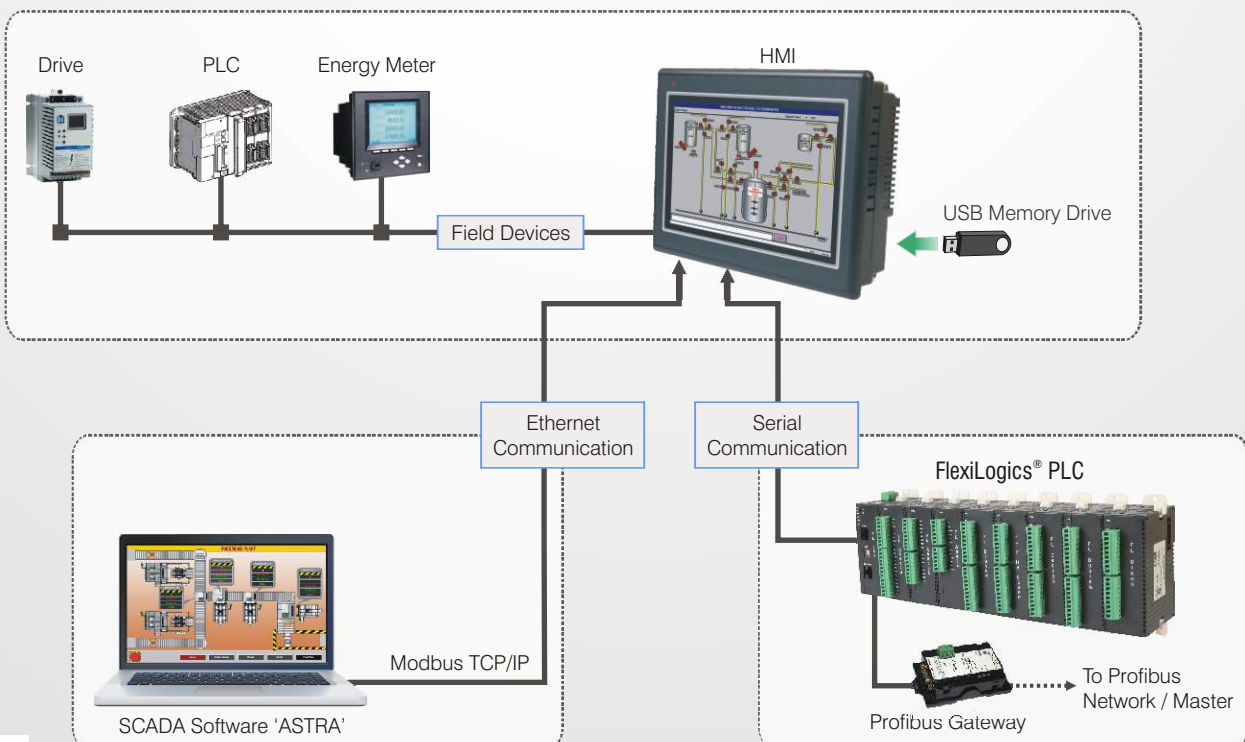
## ▶ HMI / SCADA Software (ASTRA)

### Salient Features :

- ▶ Powerful SCRIPT
- ▶ Recipe Management, 256 Levels of Security
- ▶ Alarms and Reports Management
- ▶ Extensive Data and Event Logging
- ▶ Real Time and Historical Trending
- ▶ Wizards for Screen Development
- ▶ Extensive Tags and Database Management
- ▶ HTTP Web Server, Excel Report Generator
- ▶ Script Based Report, Advanced Component Library
- ▶ Open Data Based Connectivity (ODBC)
- ▶ OLE for Process Control (OPC Client)
- ▶ Software and Hardware Lock Support

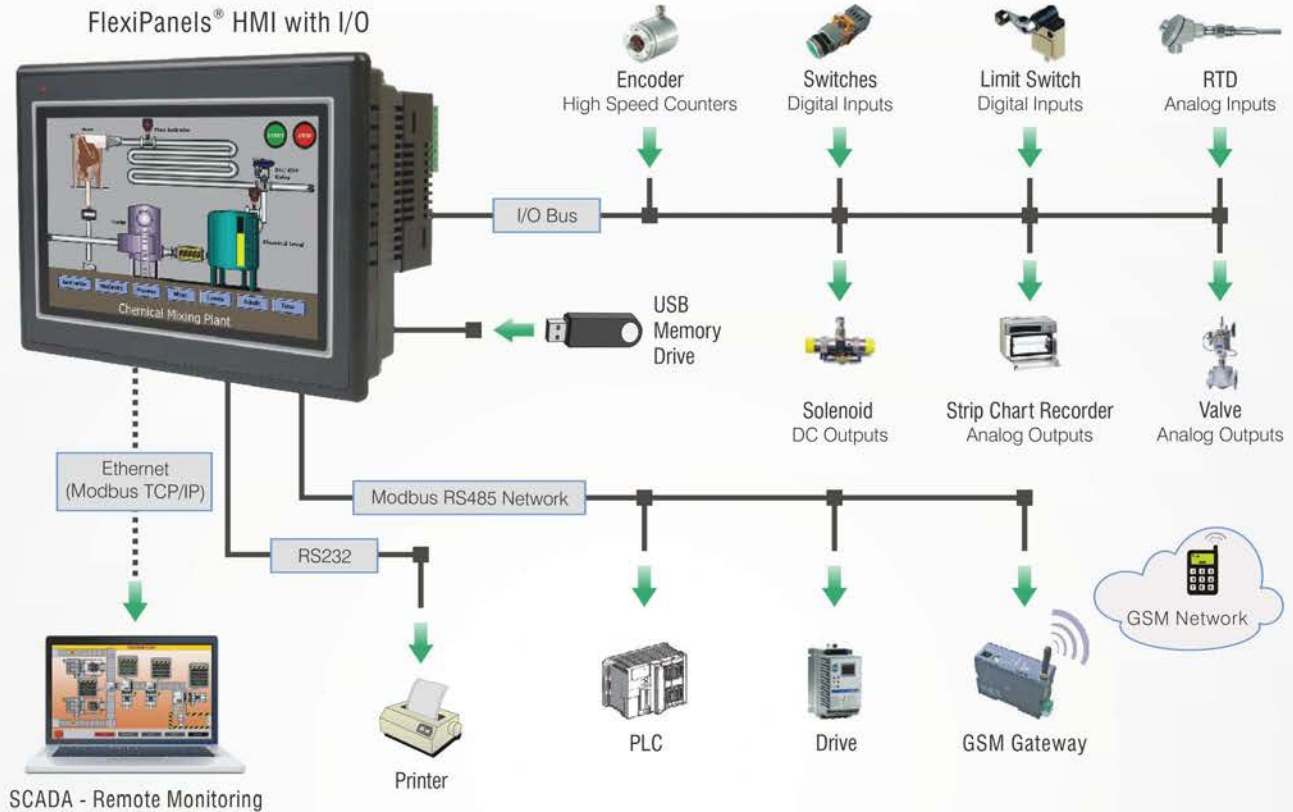
# APPLICATION EXAMPLE

## ▶ PLC Based Control Application



# Application Example

## HMI with I/O for Control Application



## Protocols Supported include

- ▶ ABB PLCs
- ▶ Allen Bradley DF1
- ▶ Aromat FP Series
- ▶ Baldor
- ▶ Danfoss Drive
- ▶ Delta PLCs
- ▶ Fatek PLCs
- ▶ GE SNP
- ▶ GE SNP-X
- ▶ Idec PLCs
- ▶ LG Master K Series PLC
- ▶ LG Master K 300S
- ▶ Logix 5000 PLCs
- ▶ Mitsubishi FX
- ▶ Mitsubishi Q Series PLCs (Serial)
- ▶ Mitsubishi Q Series PLCs (Ethernet)
- ▶ Modbus ASCII (Unit as Master)
- ▶ Modbus RTU (Unit as Master)
- ▶ Modbus RTU (Unit as Slave)
- ▶ Modbus / TCP Master (Client)
- ▶ Modbus / TCP Server (Slave)
- ▶ Omron Host Link
- ▶ Omron Inverter Memobus
- ▶ Serial Printer
- ▶ Siemens S7-300 Series PLCs
- ▶ Siemens Step-7 Micro
- ▶ Toshiba (Link Port) Series PLCs
- ▶ Toshiba Inverters PLCs
- ▶ Toshiba T Series
- ▶ TriPLC
- ▶ Twido PLCs
- ▶ Unitelway PLCs
- ▶ Universal Serial Driver (ASCII)

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



# FLEXIPANELS® - FP3 SERIES

- ✓ NEW HIGH PERFORMANCE HMI SERIES FROM RENU ELECTRONICS
- ✓ BRAND NEW ATTRACTIVE SLIM HOUSING
- ✓ SUITABLE FOR VARIETY OF APPLICATIONS
- ✓ HUGE MEMORY FOR SCREENS AND GRAPHICS
- ✓ GIVES REAL VALUE FOR YOUR MONEY

FP3102



FP3070



FP3043



## Salient Features

- ✓ 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
- ✓ CE, UL Class I Div 2, RoHS





# Model Comparison

Gross Automation

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Brookfield, WI 53005  
Toll-Free: 877-268-3700

Fax: 262-252-1616  
sales@grossautomation.com  
www.renusales.com



Models	FP3043T	FP3043TN	FP3070T	FP3070TN	FP3102T	FP3102TN
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
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

Serial Comm- unication	Number of ports	2*	2*	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	4W	4W	9W	9W	7W	7W
Operating Temperature	0 to 60° C**	0 to 60° C**	0 to 60° C**	0 to 60° C**	0 to 60° C**	0 to 60° C**
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 85% non condensing	10 to 85% non condensing	10 to 85% non condensing	10 to 85% non condensing	10 to 85% non condensing	10 to 85% 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 x 138H x 31D (Drawing C)	186W x 138H x 31D (Drawing D)	268W x 190H x 33D (Drawing E)	268W x 190H 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



LINE / RECTANGLE / ROUNDED RECTANGLE /  
SQUARE / ELLIPSE /

**Graphical Objects**  
FlexiSoft® supports various graphical objects like Rectangle / Rounded Rectangle / Ellipse / Square and Line.

### Multiple Languages

रेणू इलेक्ट्रॉनिक्स

मराठी

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

### Multiple Bargraphs

### Analog Meter

### Keypad

### BUTTONS

### REAL TIME / HISTORICAL ALARMS

### Windows Fonts for Data Entry and Data Display

Arial, 12pt

Arial, 14pt

Arial, 18pt

### Windows Fonts for Data Entry and Data Display

Times New Roman, 22pt

30pt

42nt

50pt 62

Tahoma

72pt  
90pt

**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'.

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

### Picture Library

### Picture Library

### Real Time Clock



Date: 30/08/13



Time: 16:44:46

Day of Week: XXX: 30/08/13

**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.





Drawing Tools	Advance Objects
<ul style="list-style-type: none"> <li>Line, Rectangle, Ellipse</li> <li>Rounded Rectangle</li> <li>Text, Multilingual text</li> <li>Picture</li> </ul>	<ul style="list-style-type: none"> <li>Buttons</li> <li>Lamps</li> <li>Bargraph</li> <li>Multiple Bargraph</li> <li>Analog Meter</li> <li>Alarm</li> <li>Numeric Keypad</li> <li>ASCII Keypad</li> <li>Custom Keypad</li> </ul>
Data Entry / Data Display	
<ul style="list-style-type: none"> <li>Numeric data</li> <li>Bit data</li> </ul>	
Clock objects	
<ul style="list-style-type: none"> <li>Time</li> <li>Date</li> </ul>	

Supported tasks
<ul style="list-style-type: none"> <li>Button specific tasks</li> <li>Global tasks</li> <li>Screen specific tasks</li> <li>Data exchange tasks</li> </ul>

FlexiPanels® support following Dot Matrix serial printers:

- EPSON
- SAMSUNG
- TVS



## Protocols Supported Include

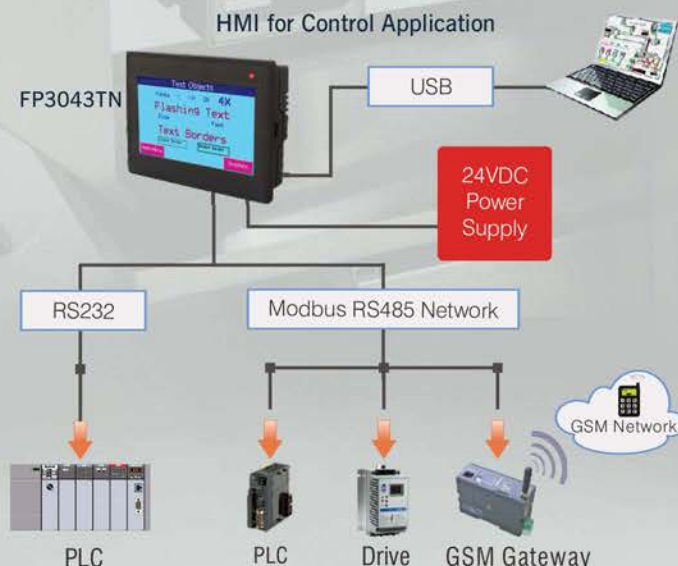
Serial Driver	FP3 Series
ABB PLCs	✓
Allen Bradley DF1	✓
Aromat FP Series	✓
Baldor	✓
Danfoss Drive	✓
Delta PLCs	✓
Fatek PLCs	✓
FlexiLogics*	✓
FlexiLogics Slave Driver*	✓
G9SP Safety Controller	✓
GE SNP	✓
GE SNP-X	✓
Idec PLCs	✓
LG Master K Series PLC	✓
LG Master-K 300S	✓
Mitsubishi FX	✓

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 Gas Analyser (Master)	✓
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

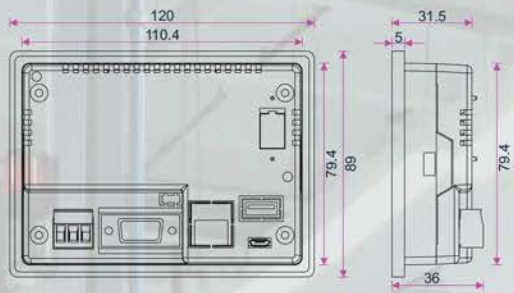


## Ordering Information

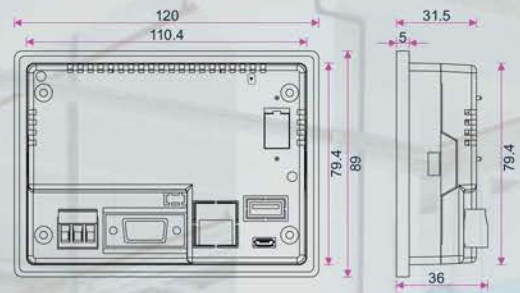
Models	Description
FP3043T	4.3" TFT, 24VDC, 2 Serial ports (1 RS232, 1 RS485), 1 USB device, 1 USB host
FP3043TN	4.3" TFT, 24VDC, 2 Serial ports (1 RS232, 1 RS485), 1 USB device, 1 USB host, 1 Ethernet, 1 SD Card Slot
FP3070T	7" TFT, 24VDC, 2 Serial ports (RS232/RS485), 1 USB device, 1 USB host
FP3070TN	7" TFT, 24VDC, 2 Serial ports (RS232/RS485), 1 USB device, 1 USB host, 1 Ethernet, 1 SD Card Slot
FP3102T	10.2" TFT, 24VDC, 2 Serial ports (RS232/RS485), 1 USB device, 1 USB host
FP3102TN	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)



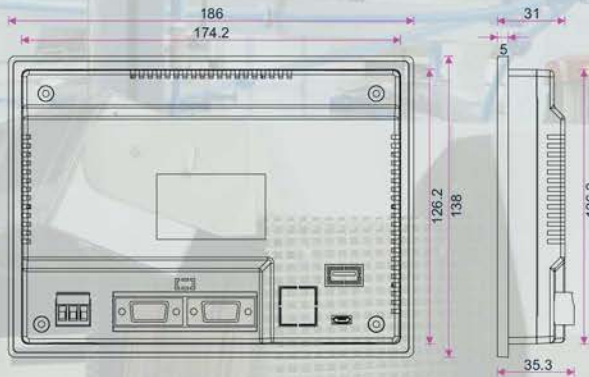
# Dimensions



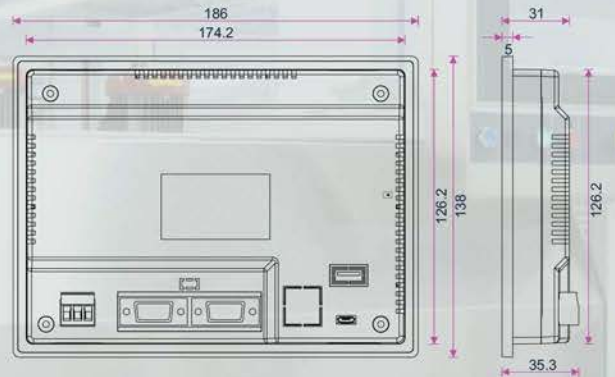
Drawing A



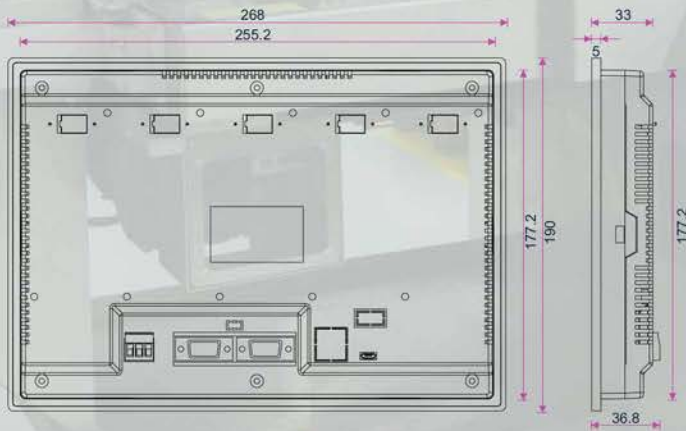
Drawing B



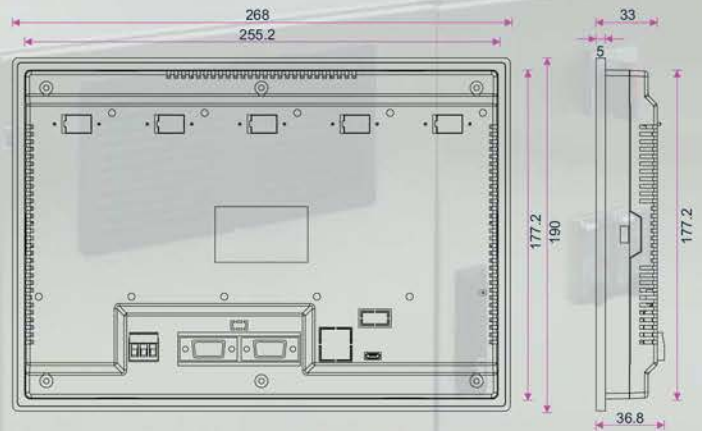
Drawing C



Drawing D



Drawing E



Drawing F

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

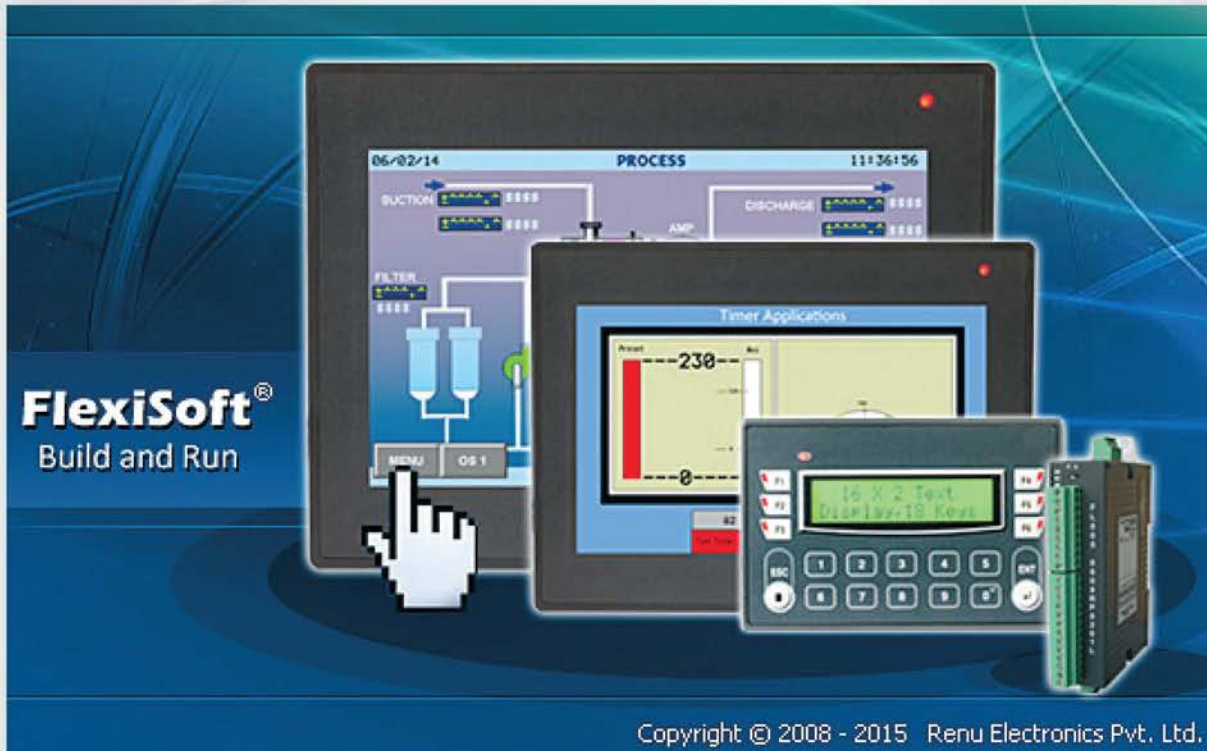


Gross Automation  
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Toll-Free: 877-268-3700

Fax: 262-252-1616  
sales@grossautomation.com  
www.renusaes.com

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

(Preliminary Datasheet. Specifications subject to change without prior notice. DS-FP3-Series-Rev.H)



## Features

- ◆ One software program for configuring any Renu HMI, PLC or combination HMI/PLC
- ◆ Common tag database for HMI and PLC programming
- ◆ Extensive set of communication drivers
- ◆ Program the built-in web server with HMI tools
- ◆ Powerful logic debugging tools
- ◆ Logic and HMI simulation
- ◆ Import HMI screens and logic blocks from other applications
- ◆ Import or export the tag database to a .CSV file
- ◆ Download and use the full featured version for **FREE!**
- ◆ FREE technical support
- ◆ No annual subscription charges



## Common Features

- ◆ One tag database for logic and HMI programming
- ◆ Up to 1,000 user tags can be power off retentive EEPROM
- ◆ 1,400 flash retentive tags
- ◆ Designate a power up value for tags
- ◆ Simulate both logic blocks and HMI screens in software
- ◆ Simulation allows you to force real input values
- ◆ Import and export screens, logic blocks and tags across applications
- ◆ Conversion tool to convert 3.5", 4.3", 7", 10.1" and 12.1" applications to another screensize
- ◆ Up to 45 Mb of application space
- ◆ Program download over USB, serial, Ethernet or USB. Programs can also be downloaded with a microSD HC card on models equipped with a microSD port

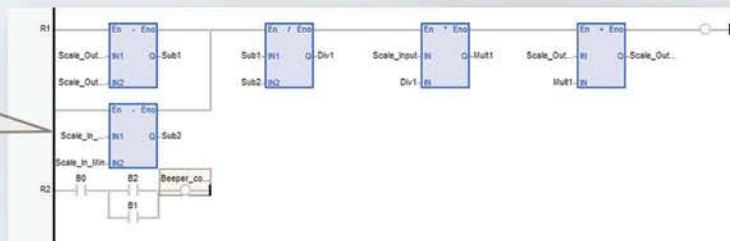
## HMI Software Capabilities

- ◆ Supports up to 9 languages and it includes a export/import tool for easier translations
- ◆ Landscape or Portrait orientation for graphical, touch screen HMIs
- ◆ Number of screens is limited by the available application memory
- ◆ Create screen templates for smaller applications and faster programming
- ◆ Apply multiple templates to a screen
- ◆ Up to 256 historical or real time alarms
- ◆ Upload historical alarm file
- ◆ Log up to 120 tags with the built in data logger
- ◆ Declare up to 20 Mb of memory for data logging
- ◆ Log on a time basis or a tag event
- ◆ Download the data log to a USB memory stick
- ◆ Build your own pop-up screens and import them into other applications
- ◆ Built-in web server for devices with an Ethernet port
- ◆ Program the web server with HMI tools - no HTML coding is required
- ◆ Java based web server updates only changed data - it doesn't "push" the whole screen making it faster and it requires less data usage

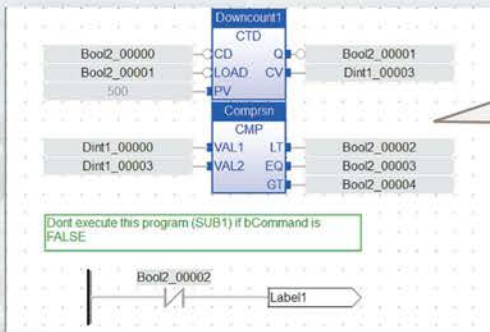
# Logic Programming in IEC 61131

- ◆ Create multiple logic blocks to make program readability and maintenance easier
- ◆ Each logic block can be programmed in a different 61131 language
- ◆ User Defined Function Blocks (UDFBs) allow you to create your own functions that can be used in other programs

Create application using LD language



Create application using FBD language



Create application using IL language

```

BEGIN_IL
Op1: CAL MyCmp (Dint2, Dint3)
      LD MyCmp.LT
      ST bTrig
      LD MyCmp.EQ
      ST bool2
      LD MyCmp.GT
      ST bool3

Op2: CAL MyTimer (bTrig, t#10s)
      LD MyTimer.Q
      ST TimerOutput
      LD MyTimer.ET
      ST ElapsedTimer

Op3: CAL MyTPR (bool2, t#100s, b2)
      LD MyTPR.Q
      ST B10
      LD MyTPR.ET
      ST ElapsedTimer2

Op4: CAL MyTP (bool3, t#10s)
      LD MyTP.Q
      ST B11
      LD MyTP.ET
      ST ElapsedTimer3

END_IL
    
```

Create application using ST language

```

//Create some constants
C2F := DINT#1;
F2C := DINT#2;
C2K := DINT#3;
K2C := DINT#4;
F2K := DINT#5;
K2F := DINT#6;

Case Temp_Conv_Type of
  (** Centigrade to Fahrenheit **)
  1:
    Temp_Conv_Out := (Temp_Conv_In * 9/5)+32.00;

  (** Fahrenheit to Centigrade **)
  2:
    Temp_Conv_Out := (Temp_Conv_In - 32.00)*5/9;

  (** Centigrade to Kelvin **)
  3:
    Temp_Conv_Out := Temp_Conv_In - 459.69;

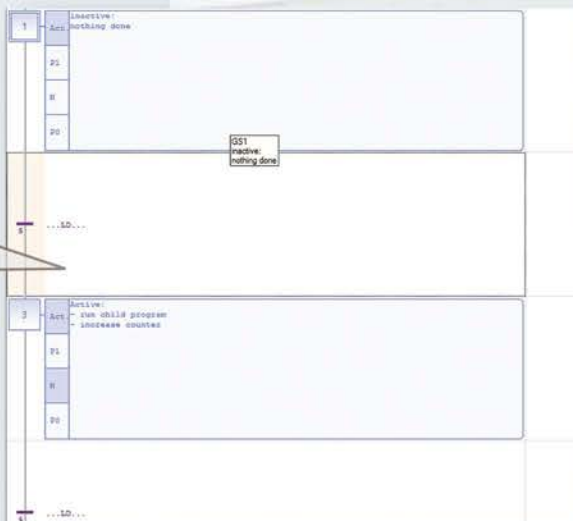
  (** Kelvin to Centigrade **)
  4:
    Temp_Conv_Out := Temp_Conv_In + 459.69;

  (** Fahrenheit to Kelvin **)
  5:
    Temp_Conv_Out := ((Temp_Conv_In - 32.00) * 5/9) - 459.69;

  (** Kelvin to Fahrenheit **)
  6:
    Temp_Conv_Out := ((Temp_Conv_In + 459.69) * 9/5) + 32.00;

End_Case;
    
```

Create application using SFC language





# Communications

- ◆ Large selection of communications protocols. Many more than those listed.
- ◆ Each communications port can have a different protocol.
- ◆ Communications are interrupt driven to minimize PLC scan time and screen update problems.
- ◆ PLCs and HMIs have the same set of drivers available
- ◆ Create your own ASCII driver. Use the wizard to define Start of Frame, End of Frame, checksums, and byte order formats.
- ◆ PLC communications are checked for each node on each port
- ◆ PLC values on the screens are updated only when they change
- ◆ Internal bits can be used to control when communications tasks are to be performed and report the success or failure of the communications transaction
- ◆ You can have two protocols running at the same time on your Ethernet port – TCP/Modbus Server for your SCADA network and another Ethernet protocol for your LAN.

## Protocols Supported

- ◆ ABB PLCs - Serial
- ◆ Allen Bradley DF1
- ◆ Allen Bradley Compact Logix - EIP scanner
- ◆ Allen Bradley EIP PCCC
- ◆ Panasonic (Aromat) - FP PLCs
- ◆ Baldor
- ◆ Danfoss Drive
- ◆ Delta PLCs
- ◆ Fatek PLCs
- ◆ GE SNP
- ◆ GE SNP-X
- ◆ Idec
- ◆ LG Master K Series PLC
- ◆ LG Master K 300S
- ◆ Mitsubishi FX
- ◆ Mitsubishi Q (Serial & Ethernet)
- ◆ Modbus ASCII
- ◆ Modbus Enron Master
- ◆ Modbus RTU Master
- ◆ Modbus RTU Slave
- ◆ Modbus/TCP Client
- ◆ Modbus/TCP Server
- ◆ Omron Host Link
- ◆ Omron G9SP Safety
- ◆ Omron Inverter Memobus
- ◆ Serial Printers
- ◆ Siemens S7-300 & Step 7 Micro PLCs
- ◆ Siemens MicroMaster Drive (USS)
- ◆ Toshiba (Link Port)
- ◆ Toshiba Inverters
- ◆ Toshiba T Series
- ◆ Triangle Research
- ◆ Twido PLCs PLCs
- ◆ Unitelway PLCs
- ◆ Universal ASCII Driver (serial & Ethernet)

*Please contact us if the protocol you need is not listed*



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