Pro-face
HMI Human Machine Interface

Programmable Operator Interfaces

POWERED

SERIES

32 bit RISC CPU POWER

ISO9001
JQA-1367

GP SERIES
Pro-face

Programmable
Operator Interfaces
GP SERIES

Faster, Smarter, Brighter

Pro-face's New GP77 Series Operator Interfaces with Super High-Speed 100 MHz RISC CPU

Today's rapid pace of high-tech innovation has increased the need for industrial automation.
Pro-face's "GP Series" programmable operator interfaces, in pursuit of more comfortable communication between human and machines, have been striving for the best: high performance and advanced design.
Going through a series of innovation, GP Series have gained popularity among many users.
"From PLC's Face to its Brain" - Pro-face's lineup of new concept programmable display panels each pursues the primary goals of the next generation of industrial automation, "Faster, Smarter, and Brighter".

Power GP Series Full Line up!!

contents

◆◆◆

Next generation programmable operator interface - "From PLC's Face to its Brain" - the Power GP Series!

High Performance Interface GP77 Series

32 bit RISC CPU POWER

GP-577RT

- 100MHz RISC CPU
- Resolution : 640 x 480 pixels
- 10.4 inch TFT Color LCD
- FLASH EPROM 2MB
  (Screen Memory)

GP-577RS

- 100MHz RISC CPU
- Resolution : 640 x 480 pixels
- 10.4 inch STN Color LCD
- FLASH EPROM 2MB
  (Screen Memory)

GP-477RE

- 100MHz RISC CPU
- Resolution : 640 x 400 pixels
- 9 inch High Intensity EL
- FLASH EPROM 2MB
  (Screen Memory)

GP-377RT

- 100MHz RISC CPU
- Resolution : 320 x 240 pixels
- 6 inch TFT Color LCD
- FLASH EPROM 2MB
  (Screen Memory)

Multi Unit E

(Model: GP377RT-MLTE41)

*Only for GP-377R

- 2-Way (via Ethernet) communication
- Printer I/F
- CF card support

new face

GP-377S NEW

- 100MHz RISC CPU
- Resolution : 320 x 240 pixels
- 6 inch STN Color LCD
- FLASH EPROM 1MB
  (Screen Memory)

GP-377L NEW

- 100MHz RISC CPU
- Resolution : 320 x 240 pixels
- 6 inch Monochrome LCD
- FLASH EPROM 1MB
  (Screen Memory)

New Low-Cost, High Performance 6 inch Models

Ultra-fast 100MHz RISC CPU equipped

Quick startup and screen change for smooth operation!
3 times faster overall performance.

2 times brighter*1/ 30,000 hours*2 backlight lifetime

2 times brighter display and 1.5 times longer backlight lifetime.

*1 Compared to GP-370S and GP-370L.
*2 24 hours/day use at normal operating temperatures.

High Quality Asian Fonts

Chinese, Korean and Taiwanese fonts displayed on GP377 S/L units are, now, available with smoother quality of 32 x 32 dots.

China

16×16 32×32

承 骋
赤 翅

Korea

16×16 32×32

겆 겉
결 결

Taiwan

16×16 32×32

迆 迅
辰 並

Back light Burn-out Detection

For your safety operation, the backlight can be monitored on the front panel LED with the Touch panel Input control settings.

32 bit RISC CPU POWER

GP77 Series Standard Features

Faster

Fast screen changes for smooth operation

New 100MHz chip is 3 times faster!*

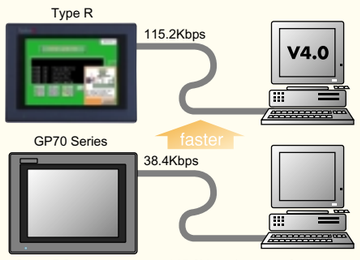
The GP77's RISC CPU calls up and opens screens in a flash, providing smooth, "no-wait" operation.

*Compared with GP70 series unit running demo application.

Reduces overall debugging and maintenance time

Data transfer is twice as fast

The GP77R's blistering 115.2 Kbps * speed cuts your PC to GP data transfer time in half. It also means you spend your valuable time maintaining and debugging, instead of waiting for data to download or screens to change.



*Some PCs do not support 115.2kbps data transfer.

Brighter

Clear viewing in bright areas

Both TFT and STN displays are 2 times brighter*

The GP77's screens are twice as bright as GP70 series units, and rival that of a standard CRT.

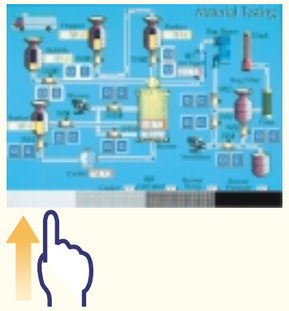
*Compared with GP70 series.

Adjusts to any environment

Select from 4 brightness levels*

You can easily adjust the GP77's brightness level to fit your operation needs.

*GP-477RE has 2 levels of brightness.



Clearer

Create active and vivid applications

64 color TFT and STN Displays

The GP77R's easy-to-read 64 color display allows you to create dynamic application screens.

Alarm types are recognizable at a glance

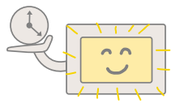
3 Flashing speeds*

Screen data ON/OFF blinking speeds are selectable (slow, medium, fast), making alarms and data easy to recognize.

*Available with GP-577RT, GP-577RS and GP-377RT/S only.

Long-life backlight

In addition to improved brightness, backlight lifetime is significantly longer than GP 70 Series units. Backlights are also user-replaceable and easily changed.*1



GP-377 RT (50,000 hours)*2
GP-577 RT (40,000 hours)*2
GP-377 S/L (30,000 hours)*2
GP-577 RS (25,000 hours)*2

*1 except GP-377RT.
*2 Time required for backlight brightness to decrease 50%.

High speed GP-to PLC communication

GP77 Series supports high speed RS-232C data transfer (115.2kbps)

PLCs supporting 115.2kbps*

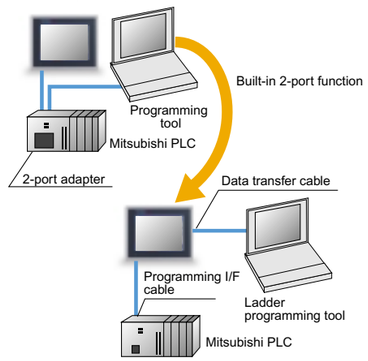
Matsushita FP10SH
Mitsubishi MELSEC QnA series
OMRON CS-1
Sharp JW30 series

*For more details, please contact your sales representative or Pro-face.

Built-in 2-port Function

The 2-port function, using the "Data Transfer Cable" and "Programming I/F Cable", allows direct connections between GP and a Mitsubishi PLC. This reduces your connection costs.

*No 2-port adapter required.

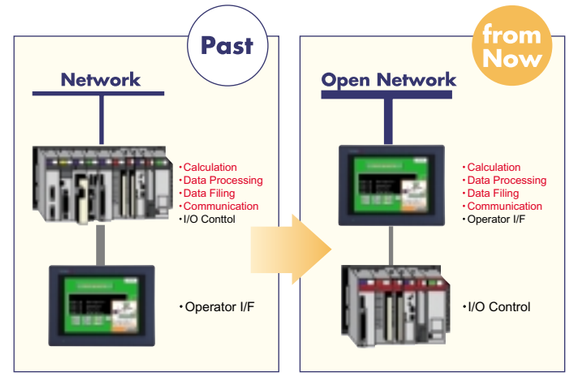


Programmable Operator Interface Revolution!-GP77R Series

Evolving HMI-from PLC's "Face" to its "Brain"

Intelligent operator interface The GP77R Series

Pro-face's GP77R series units help you meet the recent demands put on the workplace by ISO, PL and HACCP requirements. Pro-face's new hardware and software allows you to easily collect vital historical production maintenance data, and helps you perform essential preventive maintenance.
The newly developed GP77R panel transforms the role of an HMI from the "face" of the PLC to its "brain". This adds up to significant cost and man-hour savings for the management and control of your processing information.
Furthermore, the combination of high-speed I/O control between these units and connectable PLCs, and the GP77R's enhanced "intelligence" ensures that your applications perform better than ever.

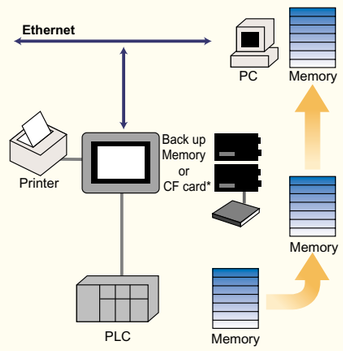


Intelligent Features

Data Filing ◆ Communication

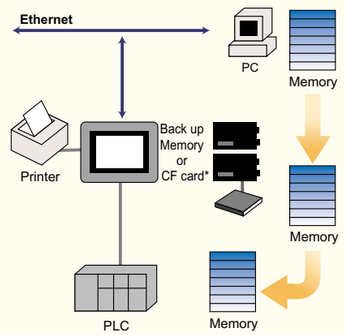
Logging Function

■ Allows you to easily report production information directly from your factory floor.



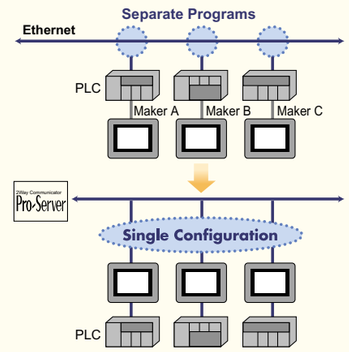
Recipe Function

■ Provides production setting data quickly to PLCs in a Flexible Manufacturing System. Preset values and process conditions can be easily replaced at any time.



2-Way Communication

■ This software allows you to share data with PLCs with no network capability, or between different makes and types of PLCs.



* Optional Multi Unit E required

New Products Supporting the GP77R Series Evolution

100MHz RISC CPU
Programmable Operator Interface
GP77R Series

Screen editor software
GP-PRO/PB III for Windows
(GPW-PB01M-V40 or higher)

Features include the ability to Log and File PLC information. Helps to reduce PLC ladder programming processes/steps and amount of memory used.

Data collection Software
Pro-Server with Pro-Studio
(PSW-ED01-V20 or higher)

This software allows the GP77R to act as a "Ethernet gateway" and provide programless data communication between a host PC, GP77R and multiple different PLCs via an Ethernet network.

Large size / Medium size Multi Unit
MULTI UNIT E
(GP077-MLTE41
GP377R-MLTE41)

Photo: Multi Unit E
(Model : GP377R-MLTE41)

The optional Multi Unit E expands the GP77R Series connectivity with an Ethernet I/F, CF card I/F and Sound output I/F for GP477R/GP577R and Printer I/F for GP377RT.

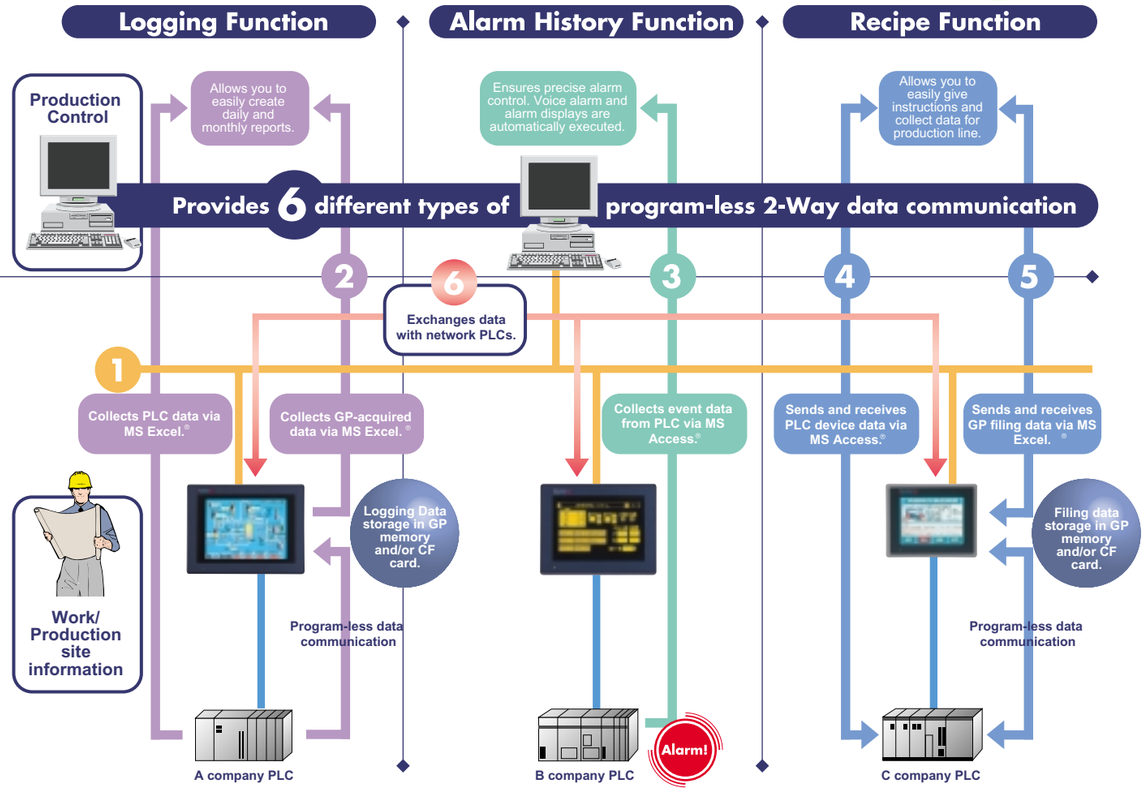
Expansion unit
GP Ethernet Interface Unit
(10BASE-T)
(Model: GP070-ET41)

This interface unit allows GP to transmit data with the host via Ethernet Network.

2-Way Data Collection Software

Allows you to monitor your production site information in real time!

Pro-Server with Pro-Studio V2.0



Polling (Optimization Function)

Data can be read from multiple GP units simultaneously, thereby reducing the number of data read requests from an application. Improves data read performance when using multiple GP units.

Security Function

Passwords are used to prevent data access by personnel other than system administrators, thereby protecting data from problems such as device overwriting, etc.

CF Card File Transfer Function

Logging, filing and alarm data that has been "filed" via the GP's screen editor software can be transferred to another GP77R unit's CF card using an Ethernet network.*

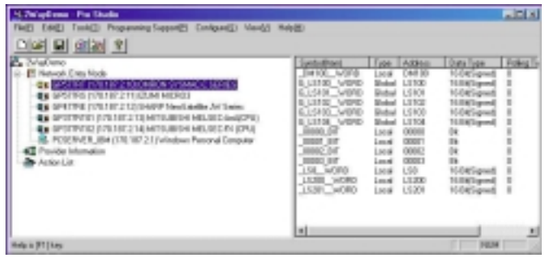
* requires installation of Multi Unit E.

OPC Compatible (OLE for Process Control)

Microsoft's object technology OLE/ActiveX allows manufacturing related industrial applications to be easily connected.

Device Monitoring Function

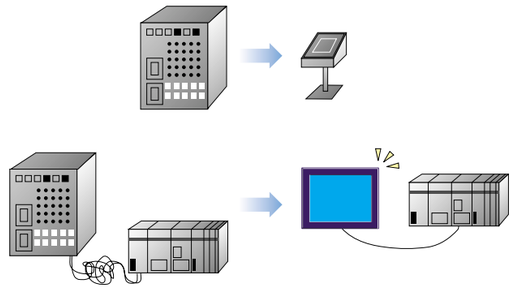
Since PLC devices can be monitored by simply selecting a symbol, on Pro-Studio a simple simulation can be performed prior to starting an application. With this function, multiple screens can be displayed at one time, and the IP address and device address can be input.



Save Development Time and Space while Improving Operability

Downsize and Simplify Your Application

Using the GP Series keep your systems as compact as possible, even though your control programs get more and more sophisticated.
The touchpanel graphic operator interface, GP Series, is a state-of-the-arts intelligent equipment, which has been widely installed as a main operator panel throughout the manufacturing fields. You can operate production systems via numerous data and graphics displayed on the screen, while reducing numbers of control programming and wiring.



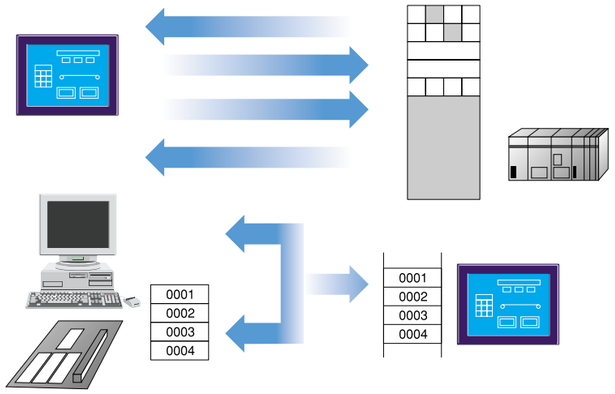
Simple Communication Methods

[Direct Access Method]

Simply select your target PLC when you create screen data. The Direct Access method allows the GP to communicate with Word and Bit devices in the PLC memory directly. Since this method is, also, called as a program-less communication, there will be no extra load on the PLC.

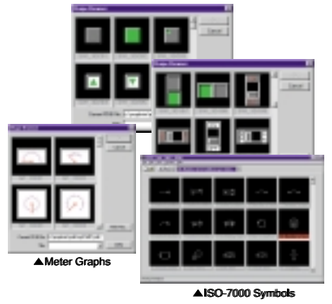
[Memory Link Method]

You can create your own communication programs to connect the GP with your specialized controllers, such as single-board computers and PCs. The GP displays data mapped from the host's memory for monitoring and operation.



Create Unique Screens in Minutes

You can simply and freely create your own operation screens for each requirement in your applications, using a variety of powerful tools, such as the Part Box, Tags and D-Script macro program, on the GP-PRO/PB III for Windows software. The software creation of the operator interface also, allows you easy change, debugging and reuse of the data whenever required.

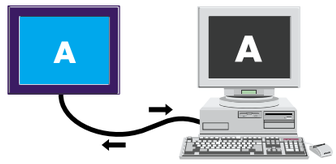


▲Meter Graphs

▲ISO-7000 Symbols

Minimize Your Work for Maintenance and Sytem Expansion

After creating screen data, just download it to the GP unit, then connect the GP with the host via a single cable for immediate operation. You can, also, simulate the GP with your PC for quick debugging, before you take it to the field.



GP Series Screen Editor Software

GP-PRO/PBⅢ for Windows Ver. 4.0 Version UP Features

32 bit RISC CPU POWER

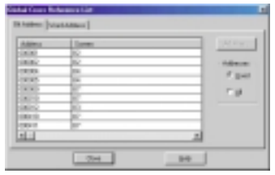
POINT 1 Screen Creation and Editing is Easier and More Powerful Than Ever!

Use Your Device Addresses More Efficiently

◆Global Cross-references!

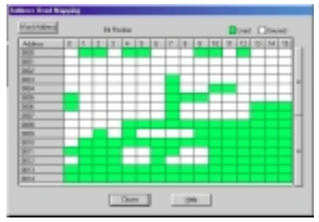
● **Maintenance is easier than ever!**
(List display)

All of a project's device addresses can be checked at a glance.



● **System Upgrades Are Easier!**
(Map display)

Device address usage can also be displayed as a chart, allowing you to easily find unused addresses.



Quickly Check Load Screen Nesting Levels

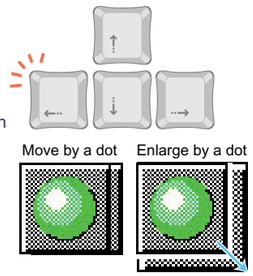
◆Nesting List

Version 4.0 can create a Nesting List for complex project screens containing multiple Load Screens. This will speed up your screen editing as you no longer need to spend time searching for a load screen's original data.

Try These Useful Functions!!

◆Enlarge and Move Objects Via Your Keyboard Cursor

Fine-tuning the position and layout of your screen objects on screen grid points via a mouse could be difficult. Version 4.0 allows you to use your keyboard's arrow keys to enlarge and move objects easily, making detailed screen creation and layout easier than ever.

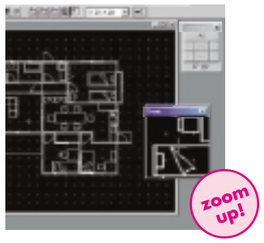


◆Direct Entry of Drawing Object Coordinate Values

To change an object's position or size, just enter the object's coordinate values, guaranteeing 100% accurate screen layout.

◆Cursor Position Zoom

Enlarges the area where the cursor is currently positioned 3 times, allowing easy editing of detailed screen drawings.



◆Hairline Cursor

Use this cursor as a standard when you align screen objects.

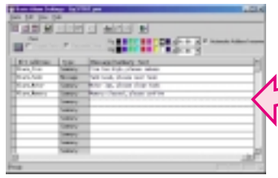
◆Font Selection and Mark Screens

Windows® fonts can be imported as character data to a project's Mark screens via the font selection function, allowing you to create screens with a variety of types of characters.

Text Images

POINT 2 Importing/Exporting Project Alarm Data Improves Efficiency

Improve your efficiency by reducing the amount of repetitious Alarm message editing and registration.



Alarm Editor Screen

◆Version 4.0 allows easy editing and document control via CSV format data.

Using the CSV format, alarm files can be exported to the spread sheet software such as MS-Excel®, where alarm messages can be added and edited more efficiently. Once this work is completed, these CSV format files can then be imported back to GP-PRO/PBⅢ for Windows as Alarm files.

POINT 3 Extended Logging/Filing/ Programming Functions

[Logging]

◆Improved data collection via "Looping"

When the acquired logging data exceeds the GP's memory capacity, data logging can continue by simply overwriting the previously acquired logging data. Also, logging data can be saved automatically to a CF Card with a simple setting.

[D-Script]

Enhanced Data Editing and Functionality

◆Memory Batch Copy

◆Memory Block Initializatio

◆Loop Processing

◆Address Offset Designation

[Filing]

◆Transferable data items are increased.

The number of data items that can be transferred at one time has been increased to 1000 words.

◆Multiple Data Filing Folders.

Multiple folders of filing data can be stored in both the CF-Card and the GP's internal memory.

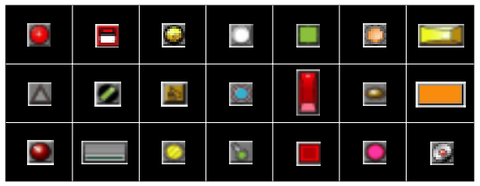
GP-X10 Series screen data can be converted easily!

Up loaded from GP-X10 units to GP-PRO/PB ⅢWindows V4.0 directly and converted for the later GP models.

POINT 4 Expanded Range of Powerful Tools

[Wide Variety Files of Images]

◆270 of 64-color Part images are odded for more sophisticated screens of your applications.



[Useful Sound Messages]

◆Ready-to-use 270 message samples in the WAV format are provided.

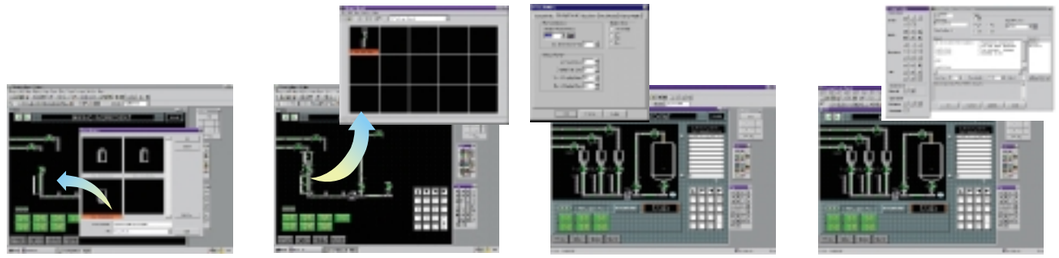
- Alarm has occurred. Confirm status.
- Now opening entrance door.
- Starting operation.
- Temperature alarm.
- Careful - Now rotating.
- Return lowering elevator to upper limit position.
- Now raw materials available.
- This card cannot be used.
- Conveyor is operating.
- Add material to hopper.

GP-PRO/PBⅢ for Windows Features

32 bit RISC CPU POWER

Efficient Screen Editing Saves You Time!

Create Screens in Minutes | High-level Functionality | More Sophisticated Programming



1 Parts Placement
Select from over 1800 pre-made Parts. Choose only the ones you need and place them on your screens.

2 Libraries
Multiple objects can be grouped and registered for your own library.

3 Tag Setup
A wide variety of user applications can be easily created using the Tag functions (active screen).

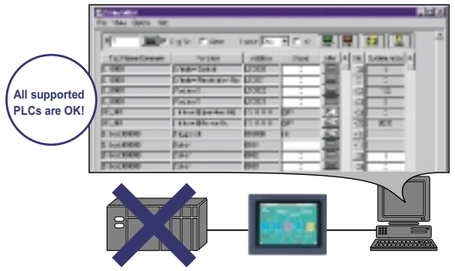
4 D-Script
Easy to use Macro program reduces the host controller's programming load.

Simulation

Reduces GP program debugging time

Even if you don't have a PLC available to test your new GP program, you can still quickly and easily check whether the program works as planned via this feature.

*This feature is not available with Memory Link selection.

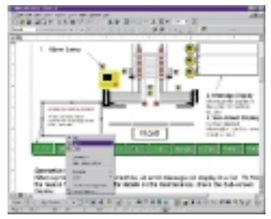


Documentation

[Automatic Documentation]

Reduces time required for creating documents

Just by selecting the items you wish to print out, you can create specification and manual documents easily. You can also use this feature to export project data in RTF format.



Export in RTF format

Just select from the menu...

... and print!

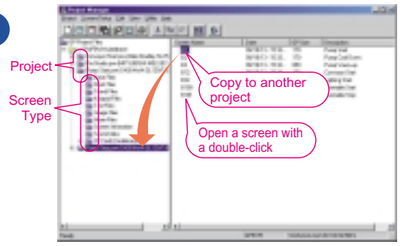
File Management

[Project Manager]

Simplifies Project Screen Management

Screen data can be managed via individual screen files. In addition to moving or copying screen data, simply double-clicking on a file name allows you to edit that screen. You can also make data files sharable through your PC network.

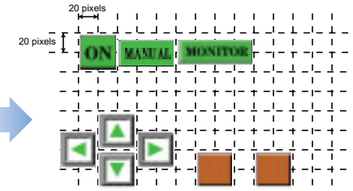
* Individual data files cannot be opened by multiple PCs at the same time.



High Resolution Touch Grid

Adjustable Switch Sizes and Layout

- Minimum Touch Switch Size: 20x20 pixels
- 1 or 2 point touch selectable



Switch size settings are freely adjustable, which allows more flexible screen layout.

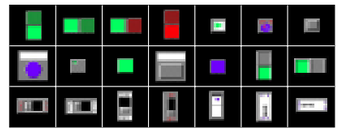
Parts

[1,800 Part to Choose]

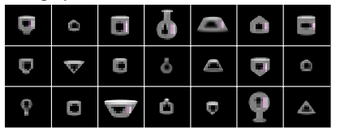
Over 1800 parts and symbols are stored in the GP-PRO/PBⅢ library. Just select the ones you need and place them onto your application screens.

Touch/Switches/Lamps/Graphs/Numeric Displays/Picture Displays/Alarm Displays/Data Displays

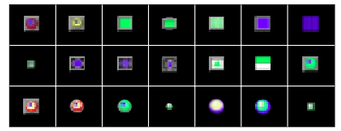
Switches



tank graphs



Lamps



Library Parts

[Historical Alarm Display]

An easy way to troubleshoot machine problems!

- Display Types: Active, Historic, Log
- Time format: hours, minutes, and even seconds* can be displayed.

* Not supported by GP-270 Series.

● Printout

Display screens can be easily printed out for daily reports.
* Supported only by large-sized GP units GP377RT requires the Multi Unit E.

● Data Storage

Alarm data can be backed up in GP's backup memory.
* This feature is supported only by certain large-sized GP and GP377 series.

[Alarm Summary]

Allows easy machine condition monitoring and fast maintenance

Sub-Window Image

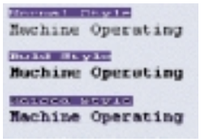
- Alarm Types: summary display, message scrolling
- Sub.Windows can be easily set up for detailed in matim

Detailed information for an individual alarm message can be displayed in a sub-window. You can easily create an on-line manual for quick maintenance.

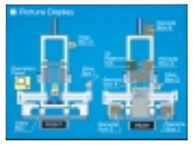
[Text Display]

Multiple character sets supported

- Fonts: ASCII (English & European) Chinese, Japanese, Korean, and Taiwanese fonts
- Font Styles: Normal, Bold, Raised



[Picture Display] Enable to visualizes entire systems

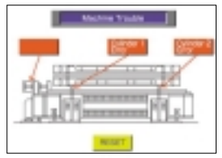


- Graphics: Dot, Line, Polyline, Square/Rectangle, Fill, Polygon, Circle, Oval, Arc, Pie, Scale, Mark, ISO-7000 Mark Libraries
- Attributes: Lighted, blink, reverse, off

[Image Display]

Photo and CAD images can be imported

BMP image display



DXF image display

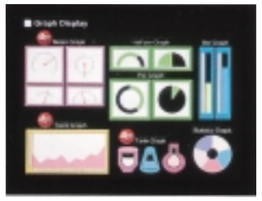
- Importable Files
  DXF: Common file format for CAD and 3D screens
  BMP: Image format for pictures from digital cameras or image scanners

[Graph Display]

Various Types of Graphs to Visualize Important Data

- Data Format : 16-bit absolute/indirect data
- Data Display Format : Binary, BCD
- Warning Display : direct/indirect setup for maximum and minimum ranges

Graph Level Status by Colors
Fill-Below-Line for Trend Graph
Tank Graph (Library parts)
Meter Graph (parts)*
* These features not supported by GP-270 Series

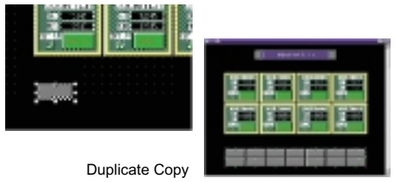


32 bit RISC CPU POWER

Screen Editing

[Duplicate Copy]

Specifying the number of columns and rows to be multiplied will allow you to easily make multiple copies of any object. Address incrementation can also be performed automatically.

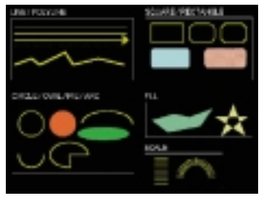


Duplicate Copy

Enlarging and Reducing Drawing Area

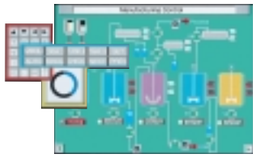
[Object Drawing]

With a rich array of drawing tools, screens can be drawn quickly and easily – like CAD software.



[Active Window]

- Up to 3 window screens can be displayed, a single base screen, all simultaneously displaying animated data.
- Global Window: (1/screen) A common window for all screens
- Local Window: (2/screen) Unique window display for each screen
- Screen overlay order can be changed with a touch



[Video Display]

Video feeds provide live data

* This feature is only supported by GP-570VM.

- Video Display Size: standard mode, zoom mode
- Transparent display of Video Window
- 3 NTSC video input channels
- VGA display (640 x 480 pixel)

VM screen

VGA screen

Powerful Programming Tools

[Tags]

Tags are used for the creation of your screen animation functions. 30 different tag functions have been prepared for the GP Series units. Combinations of these tags produce a wide variety of functionality, allowing you to expand the scope of your applications.

* Depending on the GP models, supported Tag features vary.

Tag Features

Touch Switch
- <touch panel input>
- <keyboard setup>
- <selector switch input>
- <inching function>

Numeric Display
- <numeric display>
- <static data display>
- <alarm boundary display>

Graph Display
- <graph display>
- <static graph display>
- <static data display>
- Trend Graph Display

Setting Input
- <key input>
- <keyboard setup>
- <alarm boundary>

Alarm Summary
- <alarm summary text display>
- <alarm summary display>
- Alarm Message Display

Graphic Display
- <object drawing>
- <library display>
- <library status display>
- <mark display>

Animated Objects
- <free library display>
- <moving mark display>
- <rail settings>

Character Display
- <string display>
- <display text data>

Time Display
- <time display>

Device Write
- <write to device>

Window Display
- <window display>

Video Window Display
- <video window display>

["D-Script"—Macro Programming Language]

Implement a variety of simple control tasks with this powerful tool

Features include:
- Math: +, -, *, /, Remainder, Assign
- Boolean: AND, OR, NOT,<,<=,>, >=, EQUAL, NOT EQUAL
- Triggers: Timer settings, Bit Rising, Bit Falling, when expression becomes True/False
- Functions: Load screen, Draw

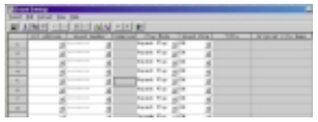
* Some of the above features are not supported by GP-270 Series units.

A Wide Range of Supported Data Formats

Sound Output Function

An optional unit allows WAV format files (i.e. sound, alarm) to be imported to the GP, and played through an external speaker. This feature can be used in a variety of applications, such as multi-media, and machine operator information.

* Multi Unit E required available with GP-477R / 577R



CF Card Support (Compact Flash)

Filing CSV data

Trend data, sampling data and alarm active/history/log data can all be exported to the CF card using the CSV file format. Database and spread sheet applications can then easily import this data for information management and processing.

Screen Data Storage

A Screen project on GP unit can be copied on a CF card for maintenance purpose. Prior to copying the project to another GP unit system, set up on the GP unit is required.

Memory Expansion on CF card.

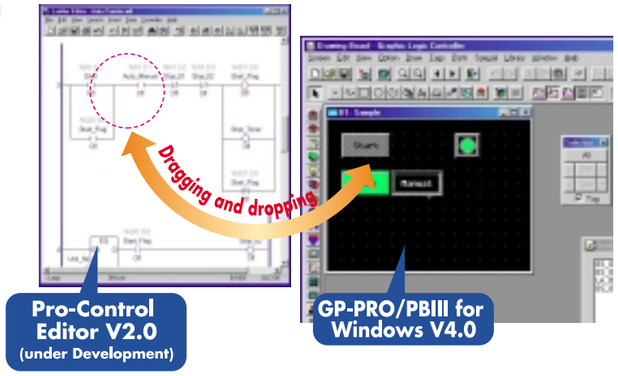
In addition to the internal memory on GP unit, following data can be stored for GP operation :
- ·Filing Data
- ·Logging Data
- ·Sampling Data
- ·Trend Graph Data
- ·Alarm Data
- ·Image Data
- ·Sound Data
- ·Screen Project Data

* Multi Unit E required

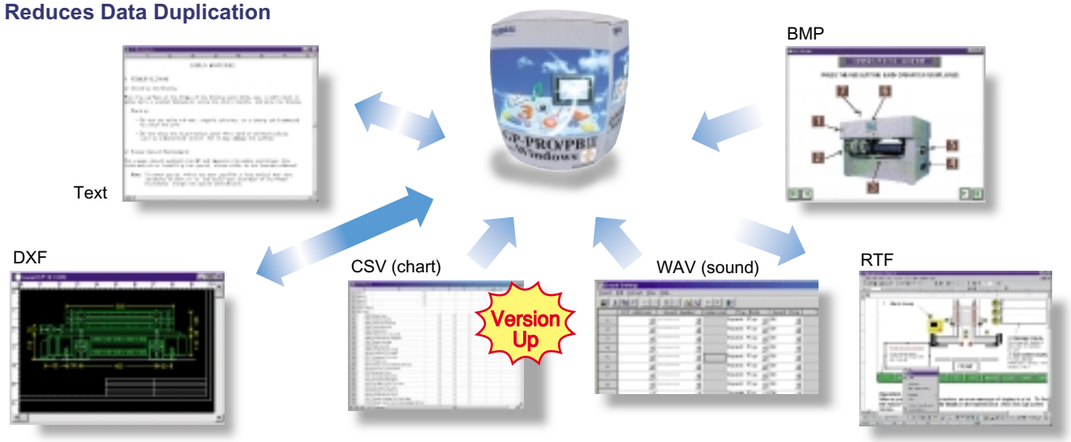
Dynamic Link between Operations and Control

- **Simple input/output operations can be performed by merely dragging and dropping. You need no knowledge of programming.**

All the data required for the parts on the screen (addresses, name plates, and names) are automatically passed by dragging and dropping the corresponding symbols created on the ladder over the screens of the GP-PRO/PBⅢ for Windows. You no longer need to prepare detailed design specifications to notify addresses. This allows for implementing the true integration of display and control features, increasing the work efficiency greatly, and reducing the number of processes significantly.



Universal File Format Support Reduces Data Duplication



Screen Data from all previous GP Series can be converted to the latest models, also.

Fieldbus Network and Peripheral Connections

Direct Connection to Field Network

[Profibus-DP]
Profibus-DP I/F Unit (GP070-PF11)

Max.Baud Rate	12Mbps
Max.Node	64
Max.I/O	IN:64 Words
	OUT:64 Words

[Units Supported]
SIEMENS
SIMATIC S7-300/400 Series, as well as other Profibus-DP supporting PLCs.

[DeviceNet]
Device Net Unit (GP070-DN41)

Max.Baud Rate	500kbps
Max.Node	64
Max.I/O	IN:127 Words
	OUT:127 Words

[Interbus]
Interbus Unit (GP070-IB41)

Max.Baud Rate	500kbps
Max.Node	512
Max.I/O	IN:64 Words
	OUT:64 Words

NEW

[Ethernet]
GP Ethernet I/F Unit <10-Base-T> (GP070-ET41)

[CC-Link]
CC-Link I/F Unit (GP070-CL11)

Max.Baud Rate	10Mbps
Max.Node	64
Max.I/O	IN:128 Bits
	OUT:128 Bits

[Units Supported]
Mitsubishi Electric Corp. PLC
MELSEC A Series
MELSEC QnA Series

[T-Link]
T-Link I/F Unit (GP450-ZB21)

Max.Baud Rate	500kbps
Max.Node	64

[Units Supported]
Fuji Electric Co., Ltd.
MICREX-F Series PLCs

* The above communication interface modules are only for GP-470 or larger units.

Additional Fieldbus Network Units Supported:

Fieldbus	Module *1	GP Model
AB Remote I/O	QPI-ABR-201	GP47*/57* series GP470/570,GP477R/577R Series
	QPJ-ABR-201	GP270/370 series
AB DH+	QPI-ABD-201	GP47*/57* series GP470/570,GP477R/577R Series
	QPJ-ABD-201	GP270 series
ModbusPlus	QPI-MDP-201	GP47*/57* series GP470/570,GP477R/577R Series
	QPJ-MDP-201	GP270 series

*1 Manufactured by Total Control Products, Inc.

Interfaces

[Peripheral Device Connections]

● Direct Connection to Various Networks
Communication Module Interface
Direct connection to various Field networks becomes possible by attaching communication modules.

● Real-time Operation
Auxiliary Input / Output (AUX)
From the touch panel, you can send information to the PLC or to a machine's DIO I/F in real time.
(Touch output: 8 points; system alarm output:1-point; buzzer output: 1-point; RUN output: 1-point; remote reset: 1-point)
* Only supported by GP-47* or larger units

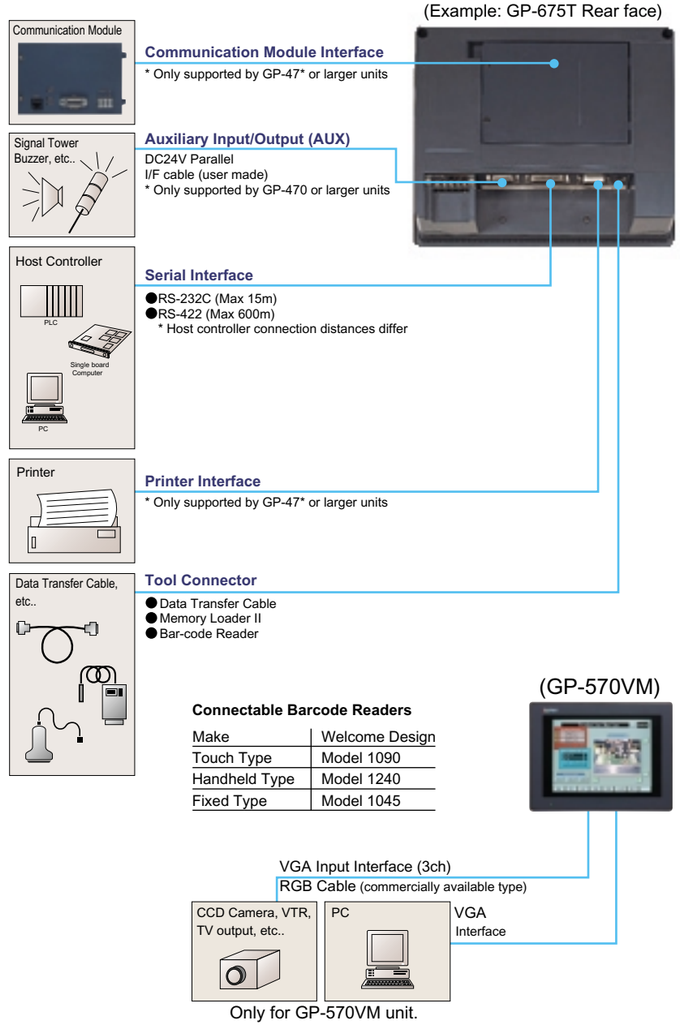
● Communication with a Host Controller
Serial (SIO) Interfaces
A single cable is all you need for host communication, reducing maintenance time.

● Connecting to a Color Printer
Printer Interface
You can printout GP screens while in RUN mode. Alarm history data, including trigger/recovery times can also be printed.

● Screen Data Transfer
Tool Connector
This interface is used for transferring screen data created by GP-PRO/PB Series. Also, you can connect a bar-code reader to the GP.

● PC Screen Data
VGA Input Interface
Your PC's VGA screen can be displayed on GP-570VM unit.

● Video Display from Cameras and Recorders
NTSC Video Input Interface (3 channels)
NTSC Video images can be displayed in a window on certain GPs. Window display size and position can be changed, in addition to zooming and channel switching, from touch panel operation or host controller.
(These features are only supported by GP-570VM unit.)



Connections

Connection with a PLC

Programless Communication
Connections with many different types of PLCs throughout the world

The direct access method supports 76 protocols for PLCs from 25 manufacturers world wide, meeting diverse requirements of customers.

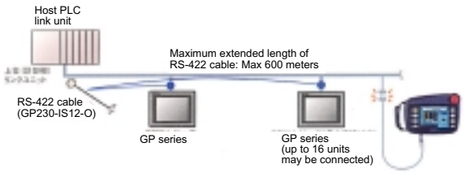
* For the supported PLCs, see the table provided on the right. For further details of each PLC, contact your local GP distributor.

Connections with Multiple PLCs

Multi-link Connections
Neither a dedicated device nor a special program is required.

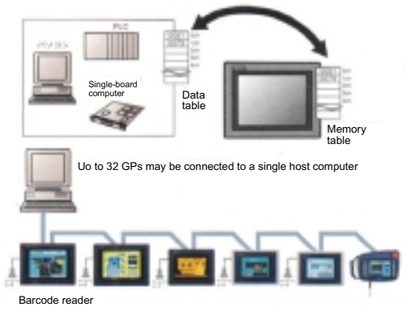
Multiple GP series units may be directly connected at ease to a single host (computer) link unit for PLCs by the direct access method without using any dedicated device or special program.

* For multi-link connections, it is recommended that our multi-link cable (GP230-IS12- O) or RS-422 terminal bracket conversion adapter (GP070-CN10-O) is used.
* For applicable PLCs, see the table provided on the right. For further details of each PLC, contact your local GP distributor.



Memory link expansion capability:

- Multiple GP units may be connected to a single personal computer or microcomputer board.
- Graphic data can be transferred from the host controller to the GP unit.
- The transmitted and received data can be checked for errors including those in check sums, CR, LF, ACK, and NAK.



Direct Connection with a PLC

Direct Connection with the CPU Programming Port
System configuration at low costs

The supported protocol allows the GP series unit to be connected directly to the CPU programming port.

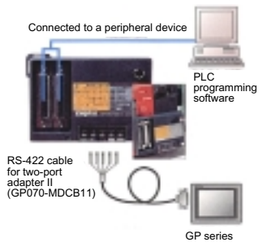
* Applicable PLCs: PLC MELSEC A series/QnA series/FX series of Mitsubishi Electric Corp.

2-port Adapter Ⅱ

This compact adapter allows you to use both the GP series unit and the PLC's peripheral units for the efficient transfer, monitoring, and debugging of a PLC program.

- The direct mode can be selected for high-speed communication.
- Isolaed signals via 2 port Adapter Ⅱ avoids noise interference to PLC' CPU.

* The GP430-IP10-O and GP430-IP11-O are not applicable.
* For further details of each PLC, contact your local GP distributor.
* Applicable PLCs: PLC MELSEC A series/QnA series/FX series of Mitsubishi Electric Corp.



GP Maintenance

[Easy Backlight Replacement]
Service personnel can easily repace the backlight right on the factory floor, reducing maintenance time.

* Not available with GP-570L, GP-H70 and GP377RT Series units.

[Screen Data Exchange]
Memory Loader II (GP070-LD01-O)
You can transfer GP screen data to a Flash Memory Card via on the Memory Loader II. This allows you to update GP screen data without a PC. This device is also handy for duplicating applications.

* Prior to using this tool, the GP must be set up.
* Please check the version for applicable GP unit.

[IP65f Rating]
All GP units are suitable for installation in machines used in wet or dusty areas. (Applies to the front panel of a unit mounted in a flat panel)

* Does not include GP-H70 Series unit.

Connectable PLCs and temperatur Controllers

	Series Name	CPU	Link	Direct
Fanuc	FANUC Power Mate (Motion Controller)	Power Mate-MODEL D		○
	FANUC Series	16-MC	○	

	Series Name	CPU	Direct
FATEK	Facon FB	20MC	○

	Series Name	CPU	T-Link	Link	Direct
Fuji	MICREX-F	F30		○	
		F50		○	
		F60		○	
		F80		○	
		F80H	○	○	○
		F81		○	
		F120		○	
		F120H		○	
		F120S		○	
		F200		○	
		F250	○	○	○
		F70S		○	
	FLEX-PC	NB1		○	○
		NB2		○	○
		NB3		○	○
		NJ		○	○
		NS		○	○

	Series Name	CPU	Link	Direct
GE Fanuc Automation	Series90-30	CPU311/CPU331	○	○
	Series90-70	CPU731/732	○	
		CPU771/772	○	
		CPU781/782	○	

	Series Name	CPU	Link	Direct	Multilink	Device Net
Hitachi	HIDIC-S10α	2α/2αE	○			
		4α/4αF	○			
	HIDIC H	H20		○		
		H28		○		
		H40		○		
		H64		○		
		H-200		○		
		H-252C		○		
		H-300	○	○		
		H-700	○	○		
		H-2000	○	○	○	
		H-2002	○	○	○	
		H-4010	○	○	○	
		EH-150		○		
	HIZAC EC	EC-40HR		○		
	S10mini	S10min	○			○

	Series Name	CPU	Link	Direct	Multilink
Izumi	FA-2	PF2-CPU1			○
		PF2-CPU5M			○
	FA-2J	PF2J-CPU1			○
	FA-3S	PF3S-CP11			○
		PF3S-CP12		○	○
		PF3S-CP13		○	○
	MICRO³	MICRO³			○

	Series Name	CPU	Link	Direct	Multilink
Keyence	KEYENCE	KZ-300	○		○
		KZ-A500	○	○	
		KZ-350	○		○

	Series Name	CPU	Link
Koyo/ PLC Direct	KOSTAC SG	SG-8	○
	KOSTAC SU	SU-5/6/6B	○
	KOSTAC SZ	SZ-4	○
	KOSTAC SR	SR-21/22	○
	DL-205	D2-240	○
	DL-305	D3-330	○
	DL-405	D4-430/440	○

	Series Name	CPU	Link
Matsushita Electric Industrial	Panadac 7000	P7000-PLC-001	○
		P7000-PLC-031H	○
		P7000-PLC-031S	○
		P7000-PLC-A01	○

	Series Name	CPU	Link	Direct	Multilink
Matsushita Electric Works	MEWNET	FP3/5	○		○
		FP10(S)	○		○
		FP1	○	○	
		FP-M	○	○	
		FP10SH	○		○
		FP2	○		
		FPQ-C32CT	○	○	
		FPQ-C16T	○	○	

	Series Name	CPU	Link	Direct	Multilink	Ethernet	CC-Link
Mitsubishi	MELSEC-A	A2A	○	○	○	○	○
		A3A	○	○	○	○	○
		A2U	○		○		
		A4U	○	○	○		
		A2U-S1		○		○	○
		A2US	○	○	○	○	○
		A2US-S1		○			
		AZUSH-S1	○	○	○		○
		A2SH	○	○	○		
		A3U	○	○			
		A0J2	○		○		
		A0J2H	○		○		
		A1N	○	○	○		
		A2N	○	○	○	○	
		A3N	○	○	○		○
		A3H		○			
		A2CJ-S3		○			
		A1S	○	○	○		
		A1SH	○	○	○		
		A1SJ	○	○	○		
		A2CCPUC24	○	○	○		
	MELSEC-F₂	F₂-20M	○				
		F₂-40M	○				
		F₂-60M	○				
	MELSEC-FX	FX₀		○			
		FX₁		○			
		FX₂		○			
		FX$_{2C}$		○			
		FX$_{2N\text{-}64MR}$		○			
		FX$_{2NC\text{-}32MT}$		○			
		FX$_{ON\text{-}60MR}$		○			
		A1FX		○			
		FX$_{1N}$	○		○		
		FX$_{2NC\text{-}64MR}$		○			
	MELSEC-QnA	Q2A	○	○	○		
		Q2A-S1	○		○		
		Q2AS	○	○	○		
		Q2ASH	○		○		
		Q2AS-S1	○	○	○		
		Q3A					○
		Q4A	○	○	○		○

	Series Name	CPU	Direct	Modbus Plus (n:m)
Modicon	Modbus Master	————	○	
	Modbus Slave	————	○	
	884/984	884	○	○
		984 A/B	○	○

	Series Name	CPU	Link	Direct	Multilink
Omron	SYSMAC C	C20H	○		
		C28H	○		
		C40H	○		
		C120	○		○
		C120F	○		○
		C200H	○		○
		C200HS	○	○	○
		C500	○		○
		C500F	○		○
		C1000H	○		○
		C1000HF	○		○
		C2000	○		○
		C2000H	○		○
		CQM1-CPU11		○	
		CQM1-CPU42	○	○	
		CPM1-20CDR-A	○	○	○
		SRM1-C02	○	○	○
		CPM2A	○	○	○
	SYSMAC CCS1	CS1H			
		CS1G			
	SYSMAC α	C200HX-CPU64	○		○
		C200HE-CPU42	○		○
		C200HG-CPU43	○		○
		C200HX-CPU85-Z	○		
		C200HX-CPU44	○		
		C200HG-CPU63	○		
		C200HE-CPU42-Z	○		
		C200HX-CPU64-Z	○		○
	SYSMAC CV	CV500	○		○
		CV1000	○		○
		CVM1	○		○
	SYSMAC CS1	CS1H	○	○	○
		CS1G	○	○	○

	Series Name	CPU	Link
ORIM VEXTA	E1	CPU11	○

	Series Name	CPU	Link	Ch.0	DH+	DH485	Remote I/O	Multilink	Device Net
Rockwell	AB SLC500	SLC-5/01				○			
		SLC-5/02				○			
		SLC-5/03	○			○		○	
		SLC-5/04	○		○	○		○	○
	AB PLC-5	PLC-5/11	○	○					
		PLC-5/20	○	○	○		○		○
		PLC-5/30	○	○					
		PLC-5/40	○	○					
		PLC-5/40L	○	○					
		PLC-5/60	○	○					
		PLC-5/60L	○	○					

	Series Name	CPU	Link	Direct	Multi-Link
Sharp	New Satellite JW	JW20	○		
		JW-32CUH	○		
		JW50	○		
		JW70	○		
		JW100	○		
		JW-32CUH1	○		
		JW-32CUH3	○		○

	Series Name	CPU	Link
Shinko	SELMART	SELMART	○

	Series Name	CPU	Prgm Port	3964R/RK512	Profibus	MPI	Interbus
Siemens (SIMATIC)	S5	90U	○	○			
		95U	○	○			
		100U	○	○			
		115U	○	○			
		135U	○	○			
		155U	○	○			
	S7-200	CPU212	○				
		CPU214	○				
	S7-300	CPU312IFM				○	
		CPU313		○		○	
		CPU314		○		○	
		CPU315		○		○	
		CPU315-2DP		○	○	○	
	S7-400	CPU413-2DP		○	○	○	○

	Series Name	CPU	Link	Multilink	Ethernet
Toshiba	PROSEC EX	EX2000	○		
	PROSEC T	T2E	○		
		T2N	○		○
		T3	○	○	
		T3H	○		○
	PROVISOR B	B200CH	○		
		B200CUF	○		
		B200CURM	○		
		B200CUFRM	○		

	Series Name	CPU	Link
Toshiba Machine	PROVISOR TC200	TCCUH	○
		TCCUL	○

	Series Name	CPU	Link	1:n
Toyota	TOYOPUC-PC2	PC2	○	
		L2	○	
		PC2J	○	○
	TOYOPUL-PC3J	PC3J	○	○

	Series Name	CPU	1:n
RKC	CB Series	CB-100 Z-1021	○
		CB-400 Z-1021	○
		CB-500 Z-1021	○
		CB-700 Z-1021	○
		CB-900 Z-1021	○
	SR-Mini	H-PAP-A Z-1021	○

	Series Name	CPU	Link	Direct	Multilink
Yaskawa	Memocon-SC	U84	○		
		U84J	○		
		U84S	○		
		GL40S	○		
		GL60S	○		
		GL60H	○		
		GL70H	○		
		GL120	○	○	○
		GL130	○		○
	Control Pack	CP-9200		○	
		CP-9200H		○	
		CP-9200SH	○		
	Memocon Micro	Micro		○	
	PROGIC-8	PROGIC-8 PC01	○		
		MP930		○	
		MP920	○	○	

	Series Name	CPU	Link	Direct	n:1	1:n	n:m	Ethernet
Yokogawa	FACTORY ACE	FA500	○			○		
		FA-M3	○	○	○	○	○	○

	Series Name	CPU	1:n
Yamataka	SDC	SDC20	○
		SDC21	○
		SDC30	○
		SDC31	○
		SDC40A	○
		SDC40B	○
		SDC40G	○

* These drivers are included in the "GP-PRO/PB ⅢML for Windows" Version 4.0 software package. Please check with your local Pro-face distributor for recently available drivers not listed here.
* Each driver requires its own communication cable. Also, some drivers require an additional interface unit. For detailed information, please refer to the GP-PRO/PBⅢ "PLC Connection Manual".
* n:1(Multi-link) = multiple GP : 1 PLCs *1:n = 1 GP : multiple PLCs *n:m = multiple GP : multiple PLCs

Global Safety Standard Compliant Products

GP77 Series

GP-577RT

GP-577RS

GP-477RE

GP-377RT

GP-377S

GP-377L

GP70 Series 9"/10.4"/12.1"

GP-675T

GP-675S

GP-571T

GP-570VM

GP-570T

GP-570S

GP-470E

GP 70 Series 5"/6"

GP-370S
GP-370L

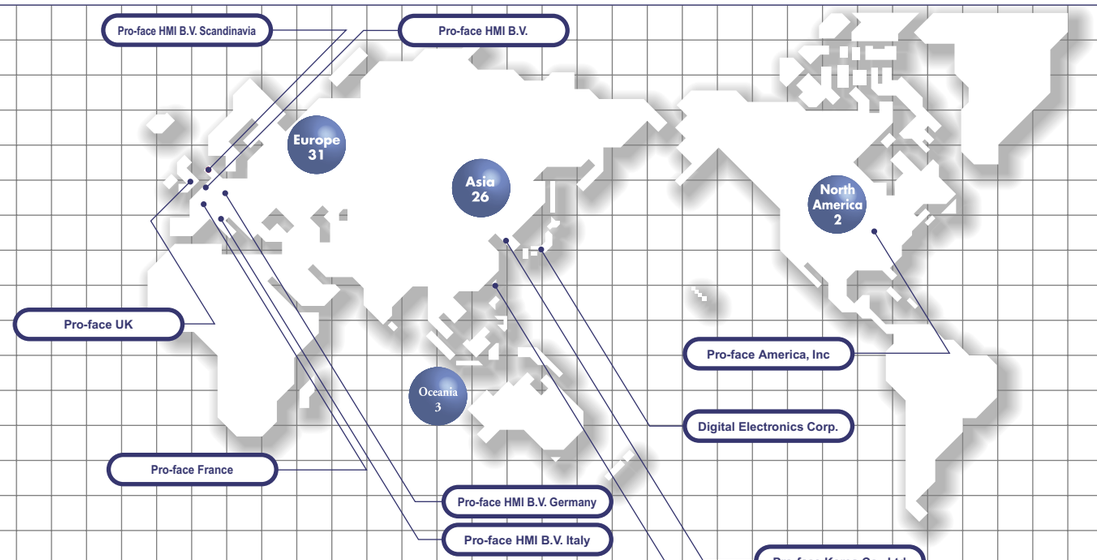
GP-270S
GP-270L

GP-H70S

GP-H70L

		CE Marked Units	UL/c-UL Approved Units	
		CE	UL	cUL
12.1"	GP675T	○	○	
	GP675S			
10.4"	GP577RT	○		○
	GP577RS			
	GP571T			
	GP570VM			
	GP570T	TC21-24VP	TC31-24V	
	GP570S	SC21-24VP	SC31-24V	
9"	GP477RE	○		○
	GP470E	EG21-24VP	EG31-24V	
6"	GP377RT	○		○
	GP377S	○		○
	GP377L	○		○
	GP370S	○		○
	GP370L	○		○
5"	GP270S	SC21-24VP	SC31-24V	
	GP270L	LG21-24VP	LG31-24V	
	GP-H70S	○	○	
	GP-H70L	○	○	

Global Support Network



32 bit RISC CPU POWER

Functional Specifications(GP77 Series Units)

Item		Model	GP577R-TC11 GP577R-TC41-24VP	GP577R-SC11	GP477R-EG11 GP477R-EG41-24VP	GP377R-TC11-24V GP377R-TC41-24V	GP377-SC11-24V GP377-SC41-24V	GP377-LG11-24V GP377-LG41-24V
Display	Type		TFT Color LCD	STN Color LCD	High Intensity EL	TFT Color LCD	STN Color LCD	Monochrome LCD
	Colors		64 colors (Tiling patterns make blends of colors possible)		Amber	64 colors (Tiling patterns make blends of colors possible)		black and white
	Backlight		CCFL (under normal temperatures and humidity, lifespan = more than 40,000) User replaceable	CCFL (under normal temperatures and humidity, lifespan = more than 25,000) User replaceable	———	CCFL (under normal temperatures and humidity, lifespan = more than 50,000)	CCFL (under normal temperatures and humidity, lifespan= more than 30,000) User replaceable	
	Resolution		640 x 480 pixels		640 x 400 pixels	320 x 240 pixels		
	Nominal Display Area		211.2mm(W) x 158.4mm(H)		192mm(W) x 120mm(H)	115.2mm(W) x 86.4mm(H)		
	Attributes		Blink/ Reverse Video					
	Brightness Control		4 levels (via touch panel)		2 levels (via touch panel)	4 levels (via touch panel)		
	Contrast Control		———	8 levels (via touch panel)	———	8 levels (via touch panel)		
	Language Fonts		ASCII: (Code Page 850) Alphanumeric (incl. European fonts) *1 Chinese: (GB2321 – 80 codes) simplified Chinese fonts Japanese: ANK 158 type, Kanji: 6962 (Standard JIS Type 1 & 2) Korean: (KSC5601 – 1992 codes) Hangul font Taiwanese: (Big 5 codes) traditional Chinese fonts					
	No.of Char. Display	8 x 8 dot font	80 characters per row, 60 rows		80 characters per row, 50 rows	40 characters per row, 30 rows		
		8 x 16 dot font	80 characters per row, 30 rows		80 characters per row, 25 rows	40 characters per row, 15 rows		
		16 x 16 dot font	40 characters per row, 30 rows		40 characters per row, 25 rows	20 characters per row, 15 rows		
	Font Sizes		Character Size: Height and width can be expanded 1, 2, 4, or 8					
Application Memory			2MB FLASH EPROM				1MB FLASH EPROM	
Touch Panel (Resistive Film)			32 x 24Keys/ screen; 1 or 2 point touch		32 x 20Keys/ screen; 1 or 2 point touch	16 x 12Keys/ screen; 1 or 2 point touch		
Interfaces	Serial		Asynchronous transmission method: RS-232C/ RS-422 Data length: 8/7 bits: 2/1 bits; stop bits: 2/1 bits; Parity: None/ Even/ Odd; Data Transmission Rate: 2400bps to 115.2kbps					
	Tool Connector		Asynchronous Transmission Method, TTL level, non-procedural command interface [during screen development] used for transferring application screen data [during RUN mode] used as Bar-code Reader or built-in 2-port function interface					
	Auxiliary Input/ Output(AUX)		Touch switch output (inching) DC24V x 8 points System alarm output DC24V x 1 point Buzzer output DC24V x 1 point Run output			———		
	Printer Output		Conforms to Centronix (HP LaserJet PCL4 compatible, NEC PR Series, EPSON ESC/P or equivalent)			———		

General Specifications

Item		Model	GP577R-TC11	GP577R-SC11	GP477R-EG11	GP577R-TC41-24VP	GP477R-EG41-24VP	GP377R-TC11-24V GP377R-TC41-24V	GP377-SC11-24V GP377-SC41-24V	GP377-LG11-24V GP377-LG41-24V
Electrical	Input voltage		AC85V to AC132V 50/60Hz			DC 20.4V to DC 27.6V				
	Power Consumption		50VA or less			50W or less (TYP 20W)		20W or less (TYP 13W)		
	Allowable Voltage Drop		Up to 20 ms			Up to 2 ms				
	Voltage Endurance		AC 1500V -20mA 1 minute			AC 1000V -10mA 1 minute (between charging and FG terminals)				
	Insulation Resistance		Above 10MΩ at DC500V (between charging and FG terminals)					Above 10MΩ at DC500V (between charging and FG terminals)		Above 20MΩ at DC500V (between charging and FG terminals)
Environmental	Ambient Operating Temperature		0°C to 40°C		0°C to 50°C	0°C to 40°C	0°C to 50°C	0°C to 40°C		0°C to 50°C
	Ambient Storage Temperature		-10°C to 60°C							-20°C to 60°C
	Ambient Humidity		30 to 85%RH (non-condensing)		20 to 85%RH (non-condensing)	30 to 85%RH (non-condensing)	20 to 85%RH (non-condensing)			
	Vibration Resistance		10 to 25 Hz (X, Y, Z directions 30 minutes each 2G)							
	Noise Immunity (via noise simulator)		Noise voltage: 1200 Vp-p Pulse length: 1 μs; Arise Time: 1ns			Noise voltage: 1000Vp-p; Pulse length: 1 μs; Arise Time: 1ns				
	Atmosphere		Must not contain corrosive gas							
	Rating		Equivalent to IP65f (Limited to front face of GP installed in panel)							
Structural	External Dimensions		317mm(W) x 243mm(H) x 85mm(D) (GP unit only)		274mm(W) x 216mm(H) x 56.5Dmm(D) (GP unit only)	317mm(W) x 243mm(H) x 85Dmm(D) (GP unit only)	274mm(W) x 216mm(H) x 56.5Dmm(D) (GP unit only)	171 mm(W) x 138mm(H) x 57mm(D) (GP unit only)		
	Weight		Less than 3.5 kg (GP unit only)		Less than 2.5 kg (GP unit only)	Less than 3.5 kg (GP unit only)	Less than 2.5 kg (GP unit only)	Less than 0.95kg (GP unit only)		
	Cooling Method		Natural air circulation							

*1 Japanese character input requires the Japanese version screen editor software.

Functional Specifications (10.4" and 12.1" Display)

Items		Model	GP570-TV11	GP675-TC11 GP675-TC41-24VP	GP675-SC11
Display	Type		TFT Color LCD		STN Color LCD
	Colors		8 colors (white, red, blue, green, yellow, purple, light blue, black) Tiling patterns make blends of colors possible	64 colors (Tiling patterns make blends of colors possible)	
	Backlight		CCFL (under normal temperatures and humidity, lifespan = 20,000 hours) User replaceable	CCFL (under normal temperatures and humidity, lifespan = 25,000 hours) User replaceable	CCFL (under normal temperatures and humidity, lifespan = 25,000 hours) Non-replaceable by user.
	Resolution		640 x 480 pixels	800 x 600 pixels	
	Nominal Display Area		211mm(W) x 158mm(H)	246mm(W) x 184.5mm(H)	
	Features		Blink / Reverse Video		
	Contrast Adjustment		———		8 levels from touch panel
	Language Fonts		ASCII: (Code Page 850) Alphanumeric (incl. European fonts) *1 Chinese: (GB2321 – 80 codes) simplified Chinese fonts Japanese: ANK 158 type, Kanji: 6962 (Standard JIS Type 1 & 2) Korean: (KSC5601 – 1992 codes) Hangul font Taiwanese: (Big 5 codes) traditional Chinese fonts		
	No. of Char. Display	8 x 8 dot font	80 characters per row, 60 rows	100 characters per row, 75 rows	
		8 x 16 dot font	80 characters per row, 30 rows	100 characters per row, 37 rows	
		16 x 16 dot font	40 characters per row, 30 rows	50 characters per row, 37 rows	
	Font Sizes		Character Size: Height and Width can be expanded 1, 2, 4, or 8 times.		
Application Memory			1MB FLASH EPROM	2MB FLASH EPROM	
Touch Panel (Resistive Film)			32 x 24 keys/ screen; 1 or 2 point touch	40 x 30 keys/ screen; 1 or 2 point touch	
Interfaces	Serial		Asynchronous transmission method: RS-232C/ RS-422; Data length: 8/7 bits; stop bits: 2/1 bits; Parity: None/ Even/ Odd; Data Transmission Rate: 2400 to 38400 bps		
	Tool Connector		Asynchronous Transmission Method, TTL level, non-procedure command interface <during screen development> used for downloading application screens <during RUN mode> used as Bar-code Reader interface		
	Auxiliary Input / Output(AUX)		Touch Switch Output: DC24V x 8 points; System Alarm Output: DC24V x 1 point; Buzzer Output: DC24V x 1 point RUN Output: DC24V x 1 point; Remote Reset Input: DC24V x 1 point		
	Printer Output		Conforms to Centronix (HP LaserJet PCL4 compatible, NEC PR Series, EPSON ESC/P or equivalent)		

General Specifications

Items		Model	GP570-TV11	GP675-TC11 GP675-TC41-24VP	GP675-SC11
Electrical	Input Voltage		AC85 to AC132V 50/60Hz	GP675-TC11: AC85 to AC132V 50/60Hz GP675-TC41: DC19.2V to DC28.8V	AC85 to AC132V 50/60Hz
	Power Consumption		50VA or less	GP675-TC11: 50W or less GP675-TC41: 50VA or less	50VA or less
	Allowable Voltage Drop		Up to 20ms	GP675-TC11: Up to 20 ms GP675-TC41: Up to 2 ms	Up to 20ms
	Voltage Endurance		AC1500V 20mA 1minute (between charging and FG terminals)	GP675-TC11: AC1500V 20mA 1minute GP675-TC41: AC1000V 10mA 1minute (between charging and FG terminals)	AC1500V 20mA 1minute (between charging and FG terminals)
	Insulation Resistance		Above 10MΩ at DC500V (between charging and FG terminals)		
Environmental	Operation Temperature		0°C to 40°C		
	Storage Temperature		-10°C to 60°C		
	Ambient Humidity		30 to 85% RH (non-condensing)		
	Vibration Resistance		10 to 25 Hz (X,Y,Z directions 30 minutes 2G)		
	Noise Immunity (via noise simulator)		Noise voltage: 1200Vp-p(GP675-TC41:1000Vp-p) Pulse length: 1 μs Arise Time: 1ns		
	Atmosphere		Must not contain corrosive gas		
	Rating		Equivalent to IP65f (Limited to front face of GP installed in panel)		
Structural	External Dimensions		317mm(W) x 243mm(H) x 85mm(D) (GP only)	346mm(W) x 272mm(H) x 81mm(D) (GP only)	
	Weight		Less than 3.5kg (GP only)	Less than 3.8Kg (GP only)	
	Cooling Method		Natural Air Circulation		

VM Display Specifications

Items		Model	GP570-TV11
Video Display	Display Colors		32768 colors
	Input Channels		3 channels
	Transmission Method		NTSC
	Number of Video Screens		1 (size, location, and channel are adjustable)
	Color Control		tone, brightness, and contrast
	Special Features		still (freezes video display), transparent color settings, and zoom
Input Signal Method			Analog RGB
Input Signal Characteristic	Synchronous Signal		TTL level, negative true or positive true
	Scanning Type		Non-interlaced
Adjustment Controls	Flicker		8 level
	Brightness		4 level
	Horizontal Display Positioning		-16 to 15 pixels
	Vertical Display Positioning		-8 to 7 pixels
Resolution			640 x 480 pixels
Dot-clock Range			25.175 MHz +/- 1%

*1 Japanese character input requires the Japanese version screen editor software.

32 bit RISC CPU POWER

Functional Specifications

Items		Model	GP571-TC11	GP570-TC**	GP-570-SC**	GP570-LG**	GP470-EG**
Display Functions	Type		TFT Color LCD		STN Color LCD	Monochrome LCD	High Intensity EL
	Color		64 colors (Tiling patterns make blends of colors possible)	8 colors (white, red, blue, green, yellow, purple, light blue, black) Tiling patterns make blends of colors possible		black and white	Amber (monochrome)
	Backlight		CCFL (under normal temperatures and humidity, lifespan = 20,000 hours) *1 User replaceable.			CCFL (under normal temperatures and humidity, lifespan = 25,000 hours) Non-replaceable by user.	———
	Resolution		640 x 480 pixels				640 x 400 pixels
	Nominal Display Area		211mm(W) x 158mm(H)				192mm(W) x 120mm(H)
	Features		Blink/ Reverse Video				
	Brightness Control		———				2 levels from touch panel
	Contrast Control		———		8 levels from touch panel		———
	Language Fonts		ASCII: (Code Page 850) Alphanumeric (incl. European fonts) *1 Chinese: (GB2321 – 80 codes) simplified Chinese fonts Japanese: ANK 158 type, Kanji: 6962 (Standard JIS Type 1 & 2) Korean: (KSC5601 – 1992 codes) Hangul font Taiwanese: (Big 5 codes) traditional Chinese fonts				
	No. of Char. Display	8x8 dot font	80 characters per row, 60 rows				80 characters per row, 50 rows
		8x16 dot font	80 characters per row, 30 rows				80 characters per row, 25 rows
		16x16 dot font	40 characters per row, 30 rows				40 characters per row, 25 rows
	Font Size		Character Size: Height and Width can be expanded 1, 2, 4, or 8 times.				
Application Memory			3MB FLASH EPROM	1MB FLASH EPROM			
Touch Panel (Resistive Film)			32 x 24 keys/ screen; 1 or 2 point touch				32 x 20 keys/ screen; 1 or 2 point touch
Interfaces	Serial		Asynchronous transmission method: RS-232C/ RS-422; Data length: 8/7 bits; stop bits: 2/1 bits; Parity: None/ Even/ Odd; Data Transmission Rate: 2400 to 38400				
	Tool Connector		Asynchronous Transmission Method, TTL level, non-procedure command interface <during screen development> used for downloading application screens <during RUN mode> used as Bar-code Reader interface				
	Auxiliary Input / Output(AUX)		Touch Switch Output: DC24V x 8 points; System Alarm Output: DC24V x 1 point; Buzzer Output: DC24V x 1 point RUN Output: DC24V x 1 point; Remote Reset Input: DC24V x 1 point				
	Printer Output		Conforms to Centronix (HP LaserJet PCL4 compatible, NEC PR Series, EPSON ESC/P or equivalent)				

General Specifications

Items		Model	GP571-TC11	GP570-TC**	GP570-SC**	GP570-LG**	GP470-EG**
Electrical	Input Voltage		AC85 to AC132V 50/60 Hz	GP570-*C11: AC85 to AC132V 50/60Hz GP570-*C21/ *C31: DC19.2 to DC28.8V		DC19.2 to DC28.8V	GP470-EG11: AC85 to AC132V 50/60Hz GP470-EG21/ EG31: DC19.2 to DC28.8V
	Power Consumption		50VA or less	GP570-*C11: 50VA or less GP570-*C21/ *C31: 50W or less		50W or less	GP470-EG11: 50VA or less GP470-EG21/ EG31: 50W or less
	Allowable Voltage Drop		Up to 20ms	GP570-*C11: Up to 20ms GP570-*C21/ *C31: Up to 2ms		Up to 2ms	GP470-EG11: Up to 20ms GP470-EG21/ EG31: Up to 2ms
	Voltage Endurance		AC1500V 20mA 1 minute (between charging and FG terminals)	GP570-*C11: AC1500V 20mA 1 minute GP570-*C21/ *C31: AC1000V 10mA 1 minute (between charging and FG terminals)		AC1000V 10mA 1 minute (between charging and FG terminals)	GP470-EG11: AC1500V 20mA 1 minute GP470-EG21-24VP/ EG31-24VP: AC1000V 10mA 1 minute (between charging and FG terminals)
	Insulation Resistance		Above 10MΩ at DC500V (between the live wire and ground terminals)				
Environmental Specifications	Operation Temperature		0°C to 40°C				0°C to 50°C
	Storage Temperature		-10°C to 60°C				
	Ambient Humidity		30 to 85% RH (non-condensing)				20 to 85% RH (non-condensing)
	Vibration Endurance		10 to 25 Hz (X,Y,Z directions 30 minutes 2G)				
	Noise Endurance		Noise voltage: 1200Vp-p; Pulse length: 1 μs; Arise Time: 1ns	Noise voltage: GP570-*C11: 1200Vp-p, GP570-*C21-24VP/ *C31-24VP: 1000Vp-p; Pulse length: 1 μs; Arise Time: 1ns		Noise voltage: 1000Vp-p; Pulse length: 1 μs; Arise Time: 1ns	Noise voltage: GP470-EG11: 1200Vp-p, GP470-EG21-24VP/ EG31-24VP: 1000Vp-p; Pulse length: 1 μs; Arise Time: 1ns
	Atmosphere		Must not contain corrosive gas				
	Rating		Equivalent to IP65f (Limited to front face of GP installed in panel)				
Structural Specifications	External Dimensions (mm)		317mm(W) x 243mm(H) x 85mm(D) (GP only)				274mm(W) x 216mm(H) x 56.5mm(D) (GP only)
	Weight		Less than 3.5Kg (GP only)				Less than 2.5Kg (GP only)
	Cooling System		Natural Air Circulation				

*1 With GP570-TC21-24VP units that are Rev. E or later, the estimated lifetime of the backlight is 40,000 hours (assuming 24 hour operation).
*2 Japanese character input requires the Japanese version screen editor software.

Functional Specifications (Medium Size Display Units)

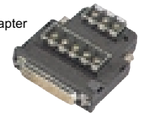
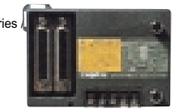
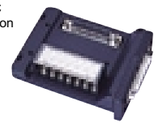
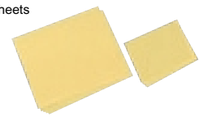
Items		Model	GP370-SC**-24V*	GP370-LG**-24V*	GP270-SC**-24V*	GP270-SC**-24V*	GPH70-SC**-24V	GPH70-LG**-24V
Display Functions	Type		STN Color LCD	Monochrome LCD	STN Color LCD	Monochrome LCD	STN Color LCD	Monochrome LCD
	Color		8 colors (white, red, blue, green, yellow, purple, light blue, black) Tiling patterns make blends of colors possible	black and white	8 colors (white, red, blue, green, yellow, purple, light blue, black) Tiling patterns make blends of colors possible	black and white	8 colors (white, red, blue, green, yellow, purple, light blue, black) Tiling patterns make blends of colors possible	black and white
	Backlight		CCFL (under normal temperatures and humidity, lifespan = 20,000 hours) User replaceable.				CCFL (under normal temperatures and humidity, lifespan = 25,000 hours) Non-replaceable by user.	
	Resolution		320 x 240 pixels					
	Nominal Display Area		115mm(W) x 86mm(H)		96mm(W) x 72mm(H)		115mm(W) x 86mm(H)	
	Features		Blink/ Reverse Video					
	Brightness Control		2 levels from touch panel		———			
	Contrast Control		8 levels from touch panel					
	Language Fonts		ASCII: (Code Page 850) Alphanumeric (incl. European fonts) *1 Chinese: (GB2321 – 80 codes) simplified Chinese fonts Japanese: ANK 158 type, Kanji: 6962 (Standard JIS Type 1 & 2) Korean: (KSC5601 – 1992 codes) Hangul font Taiwanese: (Big 5 codes) traditional Chinese fonts					
	No. of Char. Display	8x8 dot font	40 characters per row, 30 rows					
		8x16 dot font	40 characters per row, 15 rows					
		16x16 dot font	20 characters per row, 15 rows					
	Font Size		Character Size: Height and Width can be expanded 1, 2, 4, or 8 times.					
Application Memory			1MB FLASH EPROM		256KB FLASH EPROM		1MB FLASH EPROM	
Touch Panel (Resistive Film)			16 x 12 keys/ screen; 1 or 2 point touch					
Function Keys			———				12	
Operation Switches			———				One is located on the back of the case; the other is the front face's function switch (OP.) key	
Push Button Switch			———				Push-Lock (E-Stop) type switch	
Interfaces	Serial		Asynchronous transmission method: RS-232C/ RS-422; Data length: 8/7 bits; stop bits: 2/1 bits; Parity: None/ Even/ Odd; Data Transmission Rate: 2400~38400 bps					
	Tool Connector		RS-232C Asynchronous Transmission Method, TTL level, non-procedure command interface <during screen development> used for downloading application screens <during RUN mode> used as Bar-code Reader interface					
	External Outputs		———				DOUT: Two-point Open Controller: 5~24VDC, 50mA max OP. : One-point Controller: 5~24VDC, 50mA max Buzzer: One-point Controller: 5~24VDC, 0.1~0.3A Push-Lock Switch: Single B-contact, rated 30V DC, 0.3A	

General Specifications

Items		Model	GP370-SC**-24V*	GP370-LG**-24V*	GP270-SC**-24V*	GP270-SC**-24V*	GPH70-SC**-24V	GPH70-LG**-24V
Electrical	Input Voltage		DC20.4V to DC27.6V					
	Power Consumption		20W or less (TYP10W)		12W or less (TYP8W)		12W or less (TYP10W)	
	Allowable Voltage Drop		UP to 2ms					
	Voltage Endurance		AC1000V 10mA 1 minute (between the live wire and ground terminals) *2					
	Insulation Resistance		Above 20MΩ at DC500V (between the live wire and ground terminals)					
Environmental Specifications	Operation Temperature		0°C to 50°C				0°C to 40°C	
	Storage Temperature		-20°C to 60°C					
	Ambient Humidity		20 to 85% RH (non-condensing)					
	Vibration Endurance		10 to 25 Hz (X,Y,Z directions 30 minutes 2G)					
	Noise Endurance		Noise voltage: 1000Vp-p; Pulse length: 1 μs; Arise Time: 1ns					
	Atmosphere		Must not contain corrosive gas					
	Rating		Equivalent to IP65f(Limited to front face of GP installed in panel)				Equivalent to IP63	
Structural Specifications	External Dimensions (mm)		171mm(W) x 138mm(H) x 57mm(D) (GP only)		172mm(W) x 127mm(H) x 58mm(D) (GP only)		237mm(W) x 173mm(H) x 52mm(D) (GP only)	
	Weight		Less than 0.9Kg (GP only)		Less than 0.8Kg (GP only)		Less than 0.87Kg (GP only)	
	Cooling System		Natural Air Circulation					

*1 Japanese character input requires the Japanese version screen editor software.
*2 With GPH70-**41-24V units, the allowable power failure is AC500V, 10mA for 1 minute.

Optional Items

Item	Screen Editor Software GP-PRO/PB Ⅲ for Windows 	2 Way Comunicator Pro-Server with Pro-Studio for Windows 	Data Transfer Cable 	Memory Loader Ⅱ (Memory card included) 
Catalog code	GPW-PB01M-V40	PSW-ED01-V20	GPW-CB02	GP070-LD01-O
Item	for PLC communication RS-232C Cable (5m) 	for PLC communication RS-422 Cable (5m) 	for GP-H70 Series RS-232C Cable (3m) 	for GP-H70 Series RS-422 Cable (3m) 
Catalog code	GP410-IS00-O (some PLCs require a different cable)	GP230-IS11-O GP230-IS12-O (For Multi-link)	GPH70-C232-O	GPH70-C422-O
Item	useful for multi-link connection RS-422 Connector Terminal Exchange Adapter 	for easy debugging Mitsubishi PLC A Series /QnA Series FX Series 2 Port Adapter Ⅱ 	RS-422 Cable for 2 Port Adapter Ⅱ 	
Catalog code	GP070-CN10-O	GP070-MD11	GP070-MDCB11	
Item	direct connection to programming port Mitsubishi A Series PLC Programming I/F Cable (5m) 	direct connection to programming port Mitsubishi FX Series PLC Programming I/F Cable (5m) 	direct connection to programming port Siemens S5 Series PLC Programming I/F Cable (5m) 	
Catalog code	GP430-IP10-O	GP430-IP11-O	GP000-IS11-O	
Item	connector type RS-232C Cable for GP-H70 Series With D-SUB connector (3m) 	for GP-H70 RS-232C Conversion Adapter 	connector type RS-422 Cable for GP-H70 Series With D-SUB connector (3m) 	for GP-H70 RS-422 Conversion Adapter 
Catalog code	GPH70-D232	GPH70-AP232-O	GPH70-D422	GPH70-AP422-O
Item	CF Card 	CF Card Front Maintenace Unit 	Protective Screen Cover 	
Catalog code	GP077-CF10 (8MB) GP077-CF20 (16MB)	GP070-CFFM10 (Under development)	GP370-DC10	
Item	Cover Sheets 	Backlight Bulbs 	User's Manual 	
Catalog code	Soft type 10 sheets / set GP570-COVER-10P GP470-COVER-10P GP570/577-COVER-10P GP470/477-COVER-10P 20 sheets / set GP370-COVER-20P GP270-COVER-20P Hard type 5 sheets / set GP675-DF10-O GP570-DF10-O GP470-DF10-O GP570/577-DF10 GP470/477-DF10 10 sheets / set GP370-DF10-O GP270-DF10-O GPH70-DF10-O	GP675S-BL00-MS GP675T-BL10-MS GP570-BL00-MS *1 GP577RT-BL00-MS GP370-BL00-MS GP270-BL00-MS *1 With GP570-TC21-24VP units that are Rev. E or later, use backlight model: GP577RT-BL00-MS	GP-H70(S/L) GP-270(S/L) GP-370(S/L) GP-470E GP-570(T/S/L) GP-571T GP-675T GP-477R/577R GP-377R GP-377(S/L) GPH70-MM11-STD-ENG GP270-MM11-ENG GP370-MM11-ENG GP470/570-MM21-ENG GP470/570-MM21-ENG GP470/570-MM21-ENG GP675-MM21-ENG GP477R/577R-MM11-ENG GP377R-MM11-ENG GP377-MM11-ENG	

Operation Environment for Software

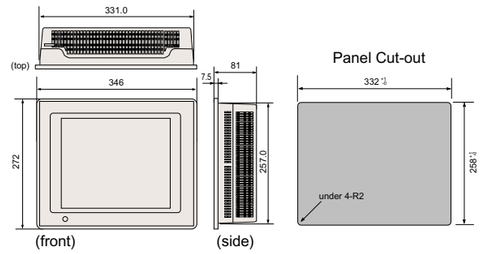
	GP-PRO/PB Ⅲ for Windows
PC	IBM Compatible
OS Version	MS-Windows 95/98/NT®
Memory	16MB, or higher
Disk Space	30MB minimum 53MB maximum *1
Mouse	Windows 95/98/NT®compatible
Printer	Windows 95/98/NT®compatible *2

*1 40MB maximum for CD-ROM version
*2 Printers with only Windows drivers cannot be used.

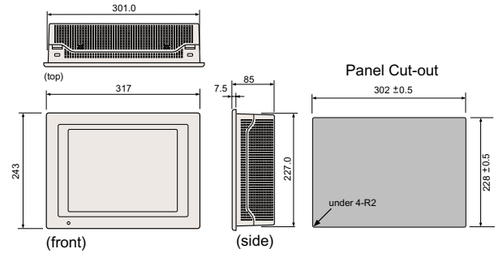
	Pro-Server with Pro-studio
PC	IBM compatible
OS Version	MS-Windows® 95/98/NT
Memory	16MB,or higher
Disk Space	10MB,or higher
Mouse	Windows® 95/98/NT compatible
Printer	Windows® 95/98/NT compatible
Ethernet	10BASE-2/5/T
Protocol	TCP/IP
Others	Ethernet Hub,Ethernet cable

External Dimensions (mm)

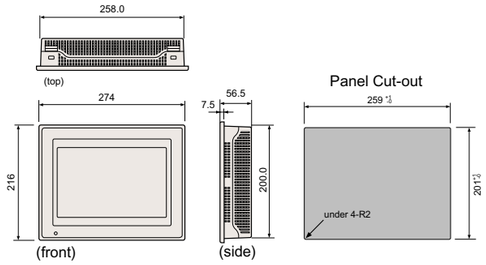
● GP-675T
GP-675S



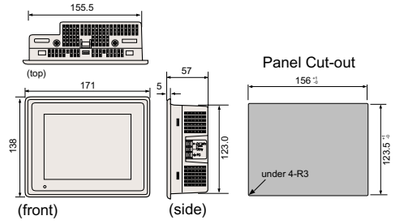
● GP-577RT
GP-577RS
GP-571T
GP-570VM
GP-570T
GP-570S
GP-570L



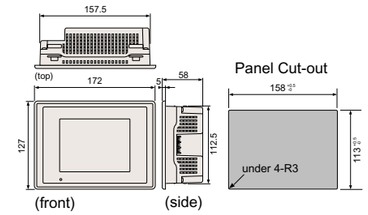
● GP-477RE
GP-470E



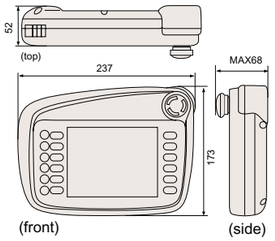
● GP-377RT
GP-377S
GP-377L
GP-370S
GP-370L



● GP-270S
GP-270L



● GP-H70S
GP-H70L



The Pro-face Family—HMI that you can count on

Panel Computer PL Series

IBM Compatible Industrial Panel Computers

PL-6700 Series

PL-X900 Series

PL-5700 Series

PL-3700S

PL-B900 Series

Flat Panel Display FP Series

Panel displays that can replace your CRT, keyboard and mouse, and save valuable space

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VGA Display

FP-770T/FP-775S
XGY Display

Graphic Panel GP Series

Programmable Operator Interface for Industrial Controllers

GP77R Series
100MHz RISC CPU
and 2-way Networking

GP70 Series
32bit RISC CPU

GP-PRO/PBⅢ for Windows
Screen Editor

Graphic Logic Controller GLC Series

Programmable Operator Interface with I/O control features

GLC300T

GLC100 Series

Pro-Control Editor

⚠ Caution: Before operating any of these products, please be sure to read all related manuals thoroughly.

- For printing purposes, the colors in this catalog may differ from those of the actual unit.
- Actual user screens may differ from the screens shown here.
- LCD screens may exhibit minute grid-points (light and dark) on the Display Panel surface. Also, "Contouring" - where some parts of the screen are brighter than others, producing a wavelike pattern - may occasionally occur. Both are normal for an LCD display and are not defects.
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