

Programmable Operator Interface

MONITOUCH

V9 series
V9 makes automation complete.



Satisfying, intuitive control Impressive ability to convey data. Boosts efficiency in the field through enhanced performance.

On its release in 1988 as the first ever programmable display*, MONITOUCH ushered in a new era of human-machine interface technology. It is now used as an information terminal for countless different purposes in production sites all over the world. The total number of shipments has reached around one million.

We have continuously pioneered the field of programmable displays through an impressive array of exciting new cutting-edge features specifically designed to meet the needs of our clients. MONITOUCH THE PREMIUM.

We are confident that this new lineup will meet your requirements for all types of application.

*According to our own research.



V9 Standard
High performance model



V9 Advanced
High resolution widescreen LCD with wireless LAN



V9 Lite
Basic model

MONITOUCH V9 series

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Meeting customer needs with a product lineup suited to all kinds of applications.

V9 Advanced

10.1 inches

- V9101iWRLD **DC**
- V9101iWLD **DC**



7 inches

- V9071iWRLD **DC**
- V9071iWLD **DC**



V9 Standard

15 inches

- V9150iX **AC**
- V9150iXD **DC**



12.1 inches

- V9120iS **AC**
- V9120iSB **AC** **BLACK**
- V9120iSD **DC**
- V9120iSBD **DC** **BLACK**



V9 Lite

10.4 inches

- V9100iS **AC**
- V9100iSB **AC** **BLACK**
- V9100iSD **DC**
- V9100iSBD **DC** **BLACK**



8.4 inches

- V9080iSD **DC**
- V9080iSBD **DC** **BLACK**



10.4 inches

- V9100iC **AC**
- V9100iCB **AC** **BLACK**
- V9100iCD **DC**
- V9100iCBD **DC** **BLACK**



8.4 inches

- V9080iCD **DC**
- V9080iCBD **DC** **BLACK**



5.7 inches

- V9060iTD **DC**
- V9060iTBD **DC** **BLACK**



Model	V9101iW	V9071iW	V9150iX	V9120iS
Display Size	10.1" widescreen	7" widescreen	15"	12.1"
Display Device	TFT color	TFT color	TFT color	TFT color
Resolution W:H (dots)	1024x600	800x480	1024x768	800x600
Display Colors	16.7 million ^{*1}	16.7 million ^{*1}	16.7 million ^{*1}	16.7 million ^{*1}
Touch Switch	Capacitance	Capacitance	Analog resistance film	Analog resistance film
Screen Memory (FROM)	64MB	64MB	64MB	64MB
Backup Memory (SRAM)	800KB	800KB	800KB	800KB
Ethernet(LAN)	✓	✓	✓	✓
Extended Cable LAN	✓	✓	△ ^{*2}	△ ^{*2}
Wireless LAN	△ ^{*2}	△ ^{*2}	△ ^{*2}	△ ^{*2}
Serial (CN1)	RS-232C/422/485	RS-232C/422/485 ^{*3}	RS-232C/422/485	RS-232C/422/485
Serial (MJ1)	RS-232C/485	RS-232C/485	RS-232C/485	RS-232C/485
Serial (MJ2)	RS-232C/485	RS-232C/422/485	RS-232C/485	RS-232C/485
Communication I/F	✓	✓	✓	✓
Expansion Unit I/F (GUR-XX)	✓	—	✓	✓
SD Card I/F	✓	✓	✓	✓
USB(Type A)	✓	✓	✓	✓
USB(Type mini-B)	✓	✓	✓	✓
Sound Output	✓	—	✓	✓

Please refer to page 26 for the details of each model.

V9100iS	V9080iSD	V9100iC	V9080iCD	V9060iTD
10.4"	8.4"	10.4"	8.4"	5.7"
TFT color	TFT color	TFT color	TFT color	TFT color
800x600	800x600	640x480	640x480	640x480
16.7 million ^{*1}	16.7 million ^{*1}	16.7 million ^{*1}	16.7 million ^{*1}	260 thousand ^{*1}
Analog resistance film	Analog resistance film	Analog resistance film	Analog resistance film	Analog resistance film
64MB	64MB	64MB	64MB	64MB
800KB	800KB	800KB	800KB	800KB
✓	✓	✓	✓	✓
△ ^{*2}	△ ^{*2}	—	—	—
△ ^{*2}	△ ^{*2}	—	—	—
RS-232C/422/485	RS-232C/422/485	RS-232C/422/485	RS-232C/422/485	RS-232C/422/485 ^{*3}
RS-232C/485	RS-232C/485	RS-232C/485	RS-232C/485	RS-232C/485
RS-232C/485	RS-232C/485	RS-232C/485	RS-232C/485	RS-232C/422/485
✓	✓	✓	✓	✓
✓	✓	—	—	—
✓	✓	✓	✓	✓
✓	✓	✓	✓	✓
✓	✓	—	—	—

*1 For pictures, 3D parts, video and RGB input (excluding high-speed mode) only. Other items are displayed in 65,536 colors. *2 Depending on the model. *3 When optional unit DUR-00 is installed.

Network

Enhanced safety features while connecting to various types of network

VNC Server

Remote Connection from Tablet PCs

All of the V9 family has remote monitoring/maintenance capabilities via Ethernet, thanks to its VNC feature.

Direct communication with your tablet PC

Wireless LAN models have built-in access point so that you can establish connection with wireless LAN devices without setting up extra access points.



Wireless LAN *1

Wireless Data Transfer

By connecting a PC to a V9 via wireless LAN, transmission of screen program and the reading and writing of files through FTP server/client function becomes available. On-site debugging can be conducted easily, without the need for a cable connection.



*1 Wireless LAN-compatible products only.

DHCP Server *2 / DHCP Client

Easy Communication with DHCP

The information required for network connectivity can be acquired from a server as a DHCP client or can assign to a client as a DHCP server.

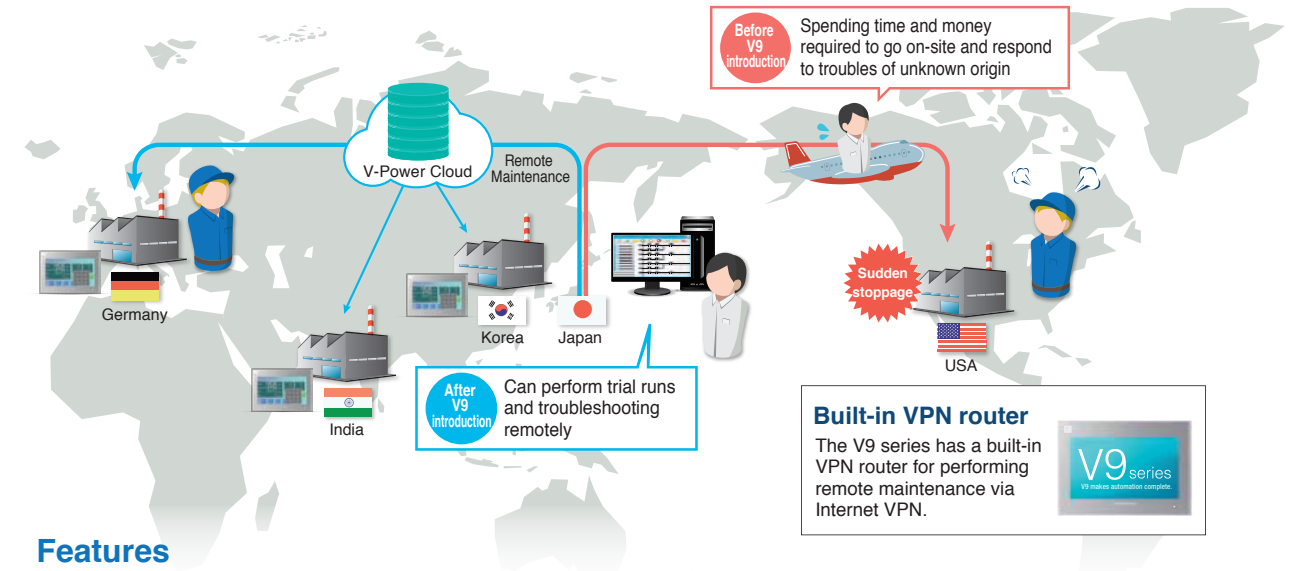


*2 The DHCP server is only available for wireless LAN-compatible products.

Web Machine Interface

VPN Remote Access / Cloud Data Utilization Solution

The Web Machine Interface is a solution service that makes remote monitoring safe, easy, and inexpensive. It consists of two services: "VPN Remote Access Service" which enables secure remote monitoring by VPN and "Cloud Data Utilization Service" which can receive various types of data via a cloud server. By performing remote maintenance, it is possible to check for signs of abnormality in advance and ensure proper maintenance of the machine. It also helps to reduce the number of sudden stoppages and implements preventive maintenance.



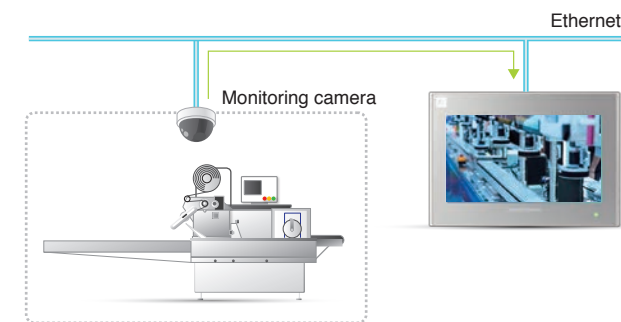
Features

- \$ Creates remote connectivity inexpensively**
If you have an Internet connection, you can build a VPN environment only by the V9 series without using a VPN router.
- 🔒 Provides highly secure remote access**
SSL-VPN enables you to securely connect to remote locations without worrying about eavesdropping or tampering.
- 🔄 Makes it easy to access peripheral devices remotely**
The built-in routing function allows easy remote access to PLC and various devices connected to the V9 series by Ethernet.

Network Camera Compatible

Real-time Monitoring of Remote Site

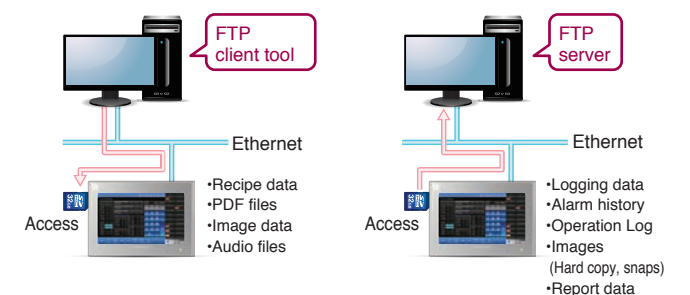
By connecting to a network camera, it is possible to display camera images in real time on the V9 series screen. It is especially useful for monitoring and checking the inside of clean rooms.



FTP Compatible

Easily Retrieve Files in Storage from Remote Locations

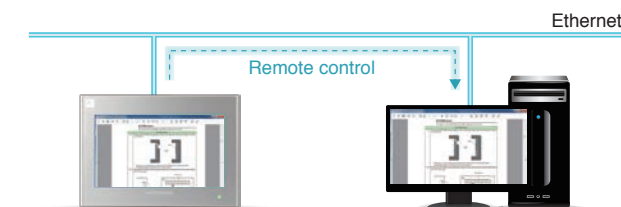
- FTP Server Function**
Files in a storage media inserted in a V9 can be read out and written using a PC.
- FTP Client Function**
Files on an FTP server can be read and written using the V9 series.



Remote Desktop

Control the PC Screen from the V9 series

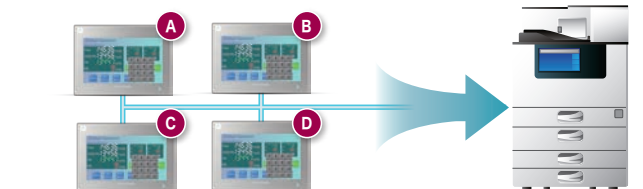
By connecting to Ethernet, you can display the screen of the PC directly on the V9 series. You can view work instructions and manuals located on PCs even at manufacturing sites that do not allow you to carry in PCs. It improves the efficiency of maintenance.



Network Printer Compatible *3

Share Printers with Multiple V9 series

Printing jobs from multiple V9 series can be shared via a single network printer. Network printer connection supports both wired and wireless LAN, and that helps to achieve space and cable savings.

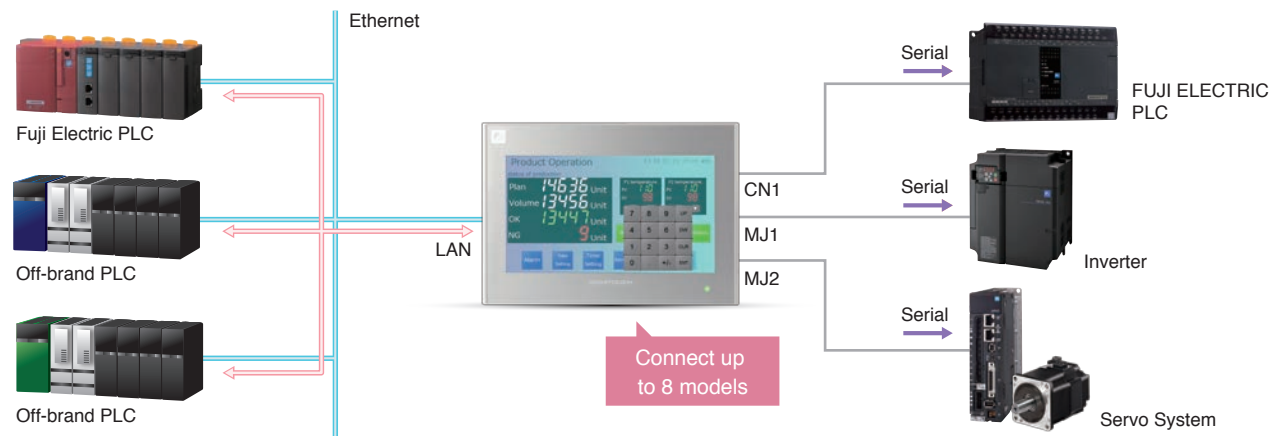


*3 Compatible only with EPSON ESC/P-R. Wireless LAN connection is possible for wireless LAN compatible products.

8-Way Communication

Connection and Data Transmission with Multiple Devices

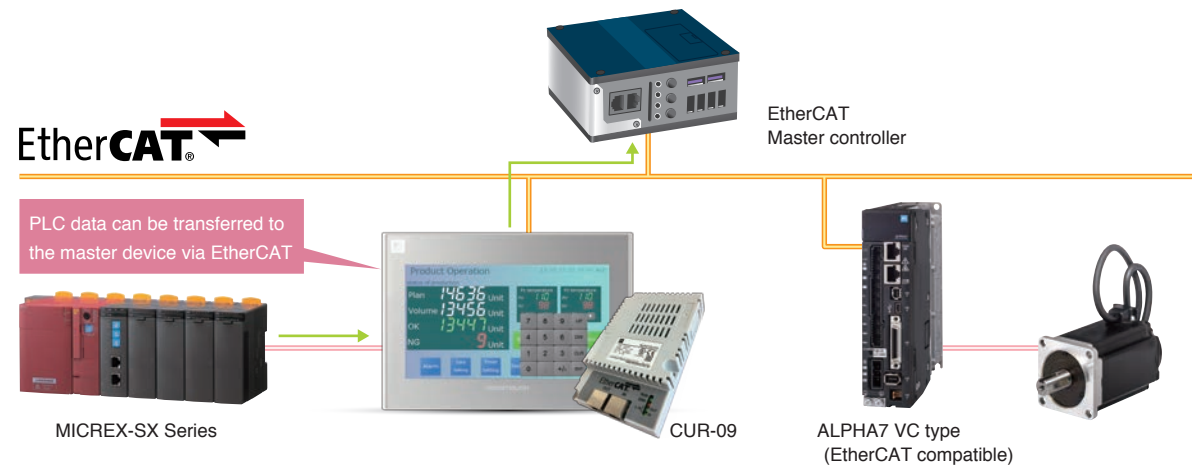
You can connect up to eight different models, off-brand PLC and other peripheral devices at the same time via both Ethernet and serial connection.



Supports EtherCAT Connections

EtherCAT (Slave) Connections

The "CUR-09" communication unit for EtherCAT connection allows for general connection to EtherCAT compatible models. It can also serve as a gateway between devices connected to the V9 series and the EtherCAT master equipment.

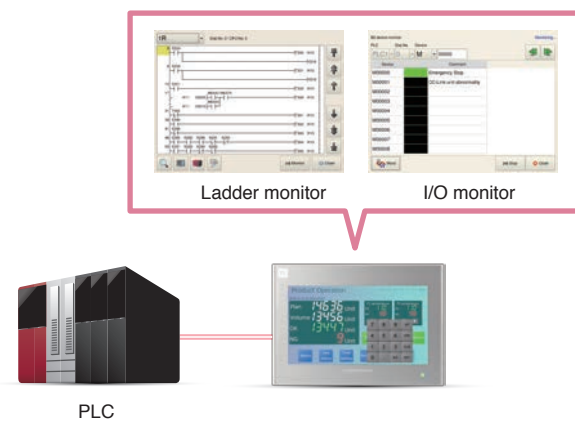


* EtherCAT® is a patented technology and registered trademark licensed by Beckhoff Automation GmbH (Germany).

Ladder Monitoring Function

Enable PLC Monitoring

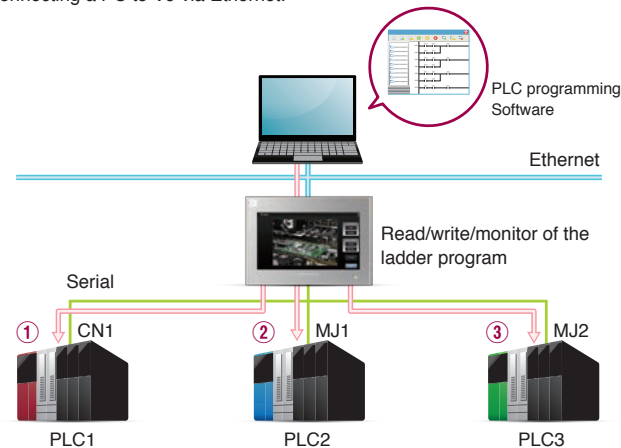
PLC ladder monitoring is available on the V9 series screen. Freely search for the address you want to see, or if you have more than one program, it is possible to switch programs during RUN mode.



Path-through Programming

Ladder Program Transmission (3-way)

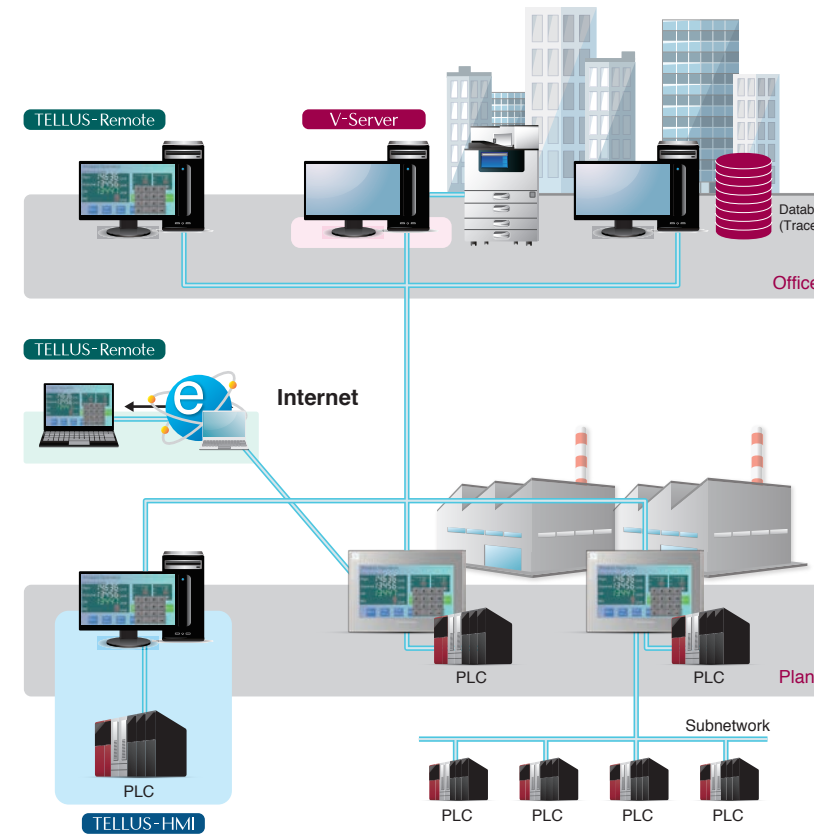
Up to 3 PLCs are accessible to monitor and revise PLC programs by connecting a PC to V9 via Ethernet.



TELLUS and V-Server

Remote Monitoring and Operation Solutions

This application software connects remotely located V9 series to office computers in order to provide on-site information and to monitor and control equipments. You can allocate jobs based on the operation conditions of the line, respond quickly to trouble, and achieve more efficient and cost-effective production.



V-Server

Real-time collection of on-site information

- Data can be collected in real time by capturing site status and production information.
- It can be linked with databases such as SQL Server. Or save data in CSV or Excel format.
- It supports operations suited to the site via various operation directives based on event monitoring.

TELLUS-Remote

Easy, low-cost monitoring and operation from remote locations

- You can use the same screen data as the on-site V9 series, eliminating the need to create a new remote monitoring screen.
- Multiple startups allow you to monitor and operate more than one V9 series via a single PC.

TELLUS-HMI

Use V9 series features directly on your PC

- Display and operation can be performed on your PC instead of on the V9 series.
- It enables you to easily connect to peripheral devices such as printers. There is no need to worry about selecting peripheral devices.

MES Interface Features

Operation Monitoring and Production Management Solutions

Various types of information such as aggregation of production results, number of defects and stoppage factors are sent to the database using SQL statements from the V9 series through the V-Server. Communication with the database can be accomplished without a gateway PC or cumbersome programming.

Programming not required

By simply specifying the data to be stored in the database on V-SFT, you can communicate with the database without the need for programming.

Prevents data loss

If transmission fails, it will produce an error log, so you do not have to worry about losing important data.

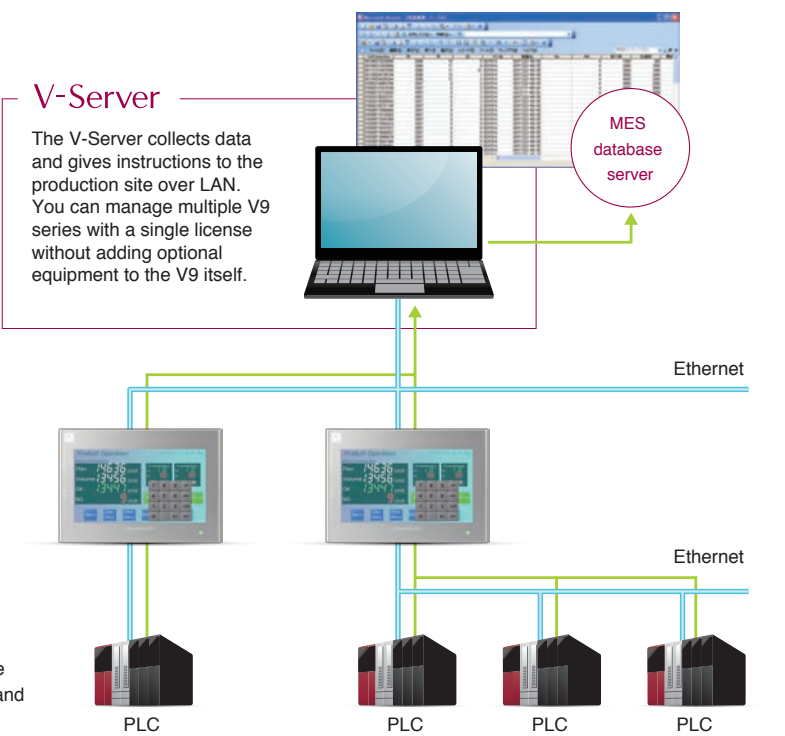
Reduces system load

When various conditions are fulfilled, data can be transmitted from the V9 series. It reduces the load on the system by eliminating the need for constant monitoring on the higher-level side.

(MES:Manufacturing Execution System)
This "Manufacturing Execution System" has been designed to optimize quality, production volume, delivery time, and cost as a management and production control system for manufacturing sites.

V-Server

The V-Server collects data and gives instructions to the production site over LAN. You can manage multiple V9 series with a single license without adding optional equipment to the V9 itself.



Usability & Graphics

Render overwhelming beauty and outstanding visibility to the finest detail



Smooth Operation with Your Fingers

Zooming In and Out with Two Fingers

V9 Advanced

The displayed image can be magnified up to 200% by pinching out the screen^{*1}. It can be reduced to its original size by pinching it in.



Enlarge up to 200%

^{*1} Images can be scaled up and down by double tapping when using V9 Standard/Lite.

Scrolling Magnified Images

You can view a particular part of a magnified image in close-up while scrolling around the screen.

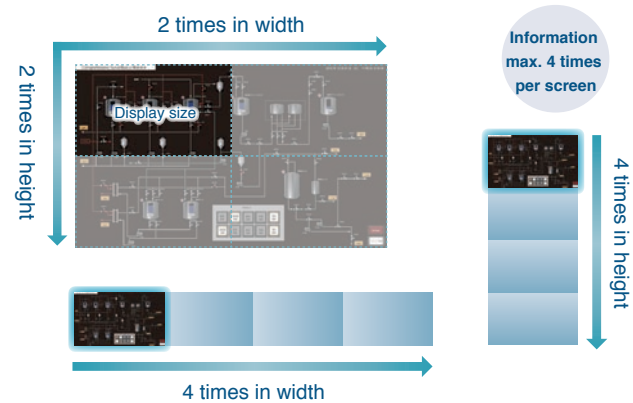


Abundant Quantity of Information

Displaying Four Times the Screen Size

First in industry^{*2}

The whole area of a large image can be confirmed easily by scrolling the screen without the need of switching it. The navigation window helps you to recognize the current displayed position instantly.



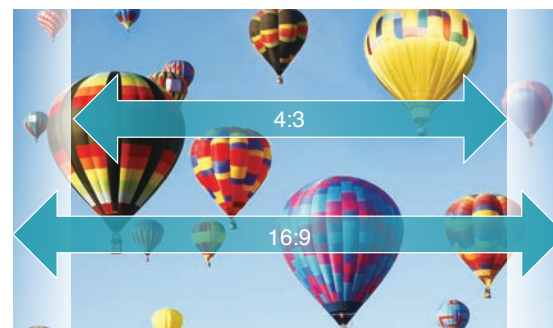
Images can be laid out four times the screen size in height or width according to your needs.

^{*2} According to our own research.

Widescreen LCD

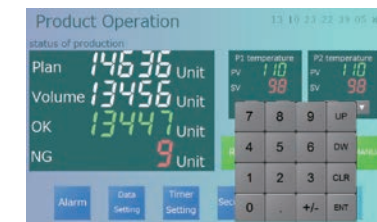
V9 Advanced

V9 Advanced models are equipped with a high-precision, high-resolution widescreen (16:9). Greater volume and variety of information can be displayed on the screen.



Expression and Beauty

7-segment Fonts for Realistic Expression



7-segment fonts allow for realistic, highly visible expression of measuring instruments. Non-illuminated segments can be shown in a subtle color.

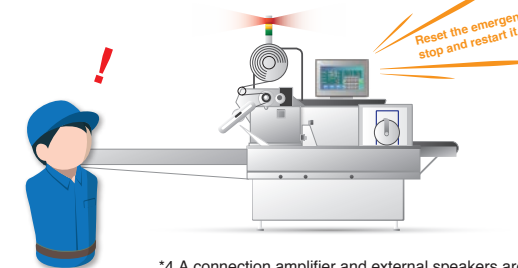
TrueType Font as Standard

TrueType font has been added to the standard fonts. Smoother display is possible via antialiasing. Furthermore, space can be reduced relative to Windows fonts, thus enabling you to work without worrying about screen data memory.



Audio Playback Function^{*4}

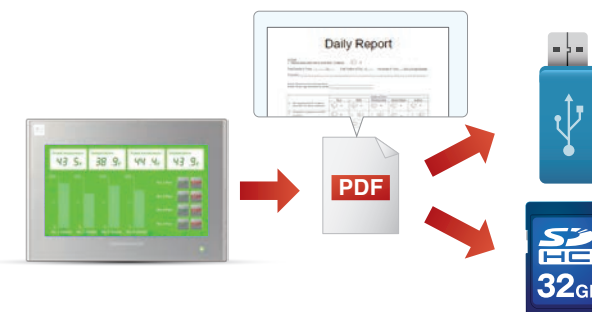
It comes standard with an output port for audio playback that allows you to play audio files saved to storage without any optional units.



^{*4} A connection amplifier and external speakers are required.
^{*5} V9101W/V9 Standard only

Extended Datasheets

It also supports PDF output in addition to standard printer output. By converting various forms such as daily reports to PDF, the printer is no longer needed. It helps to achieve paper and space savings. PDF files saved on storage can be transferred to PC in office using FTP server/client functions, which allows you to check data without having to go to the production site.



Compatible with Vertical Placement

The screen can also be displayed and edited while the panel is placed vertically (by left or right turning).

E. g.)



Main Menu Screen can also be displayed vertically.

For all models

Video/RGB Input-Output

By attaching an optional unit, videos and RGB images can be displayed on the V9. Also, images displayed on the V9 can be sent to external displays.



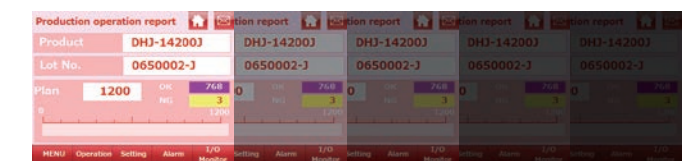
Supports 16.7 million colors

Model	Item
GUR-00	Video input 4ch
GUR-01	RGB input 1ch
GUR-02	RGB output 1ch
GUR-04	Video input 1ch
GUR-10	Video input 2ch + RGB input 1ch
GUR-11	RGB input 2ch

^{*3} For displaying pictures, 3D parts, video, and RGB input (excluding high-speed mode) only. Other parts are displayed in 65,536 colors.

Dimmer Function

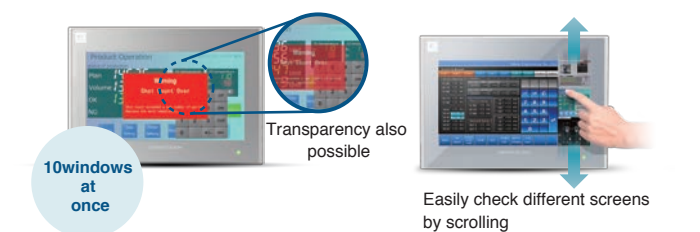
Fine-grained adjustment is possible via 128-step setting. Even at night or in dark places, the screen is easy to see and not too dazzling, thus enabling smooth operation.



Bright ← → Dark

Overlap Function

Up to 10 pop-up windows can be displayed on the screen at the same time. All of them can be displayed transparently without limiting the overlap size of each window. You can also use overlap screens as subscreens or check them by scrolling without switching to the main screen.



10 windows at once

Transparency also possible

Easily check different screens by scrolling

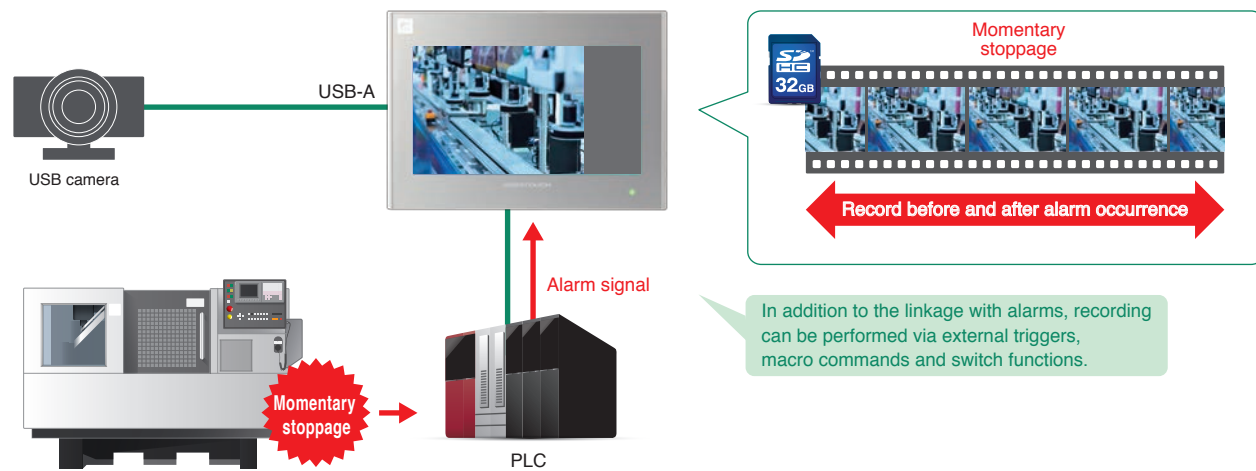
Storage

Store and manage data and develop it with scalable functions.

Compatible with Event Record Functions Under development

Instantaneous Video Recording and Playback

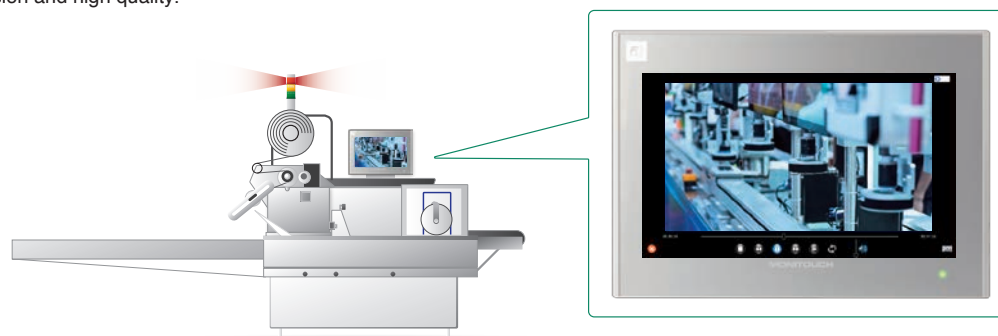
By using a commercially available USB camera, you can record video before and after alarm occurrences, such as those due to momentary stoppages, and save it in an SD card to support cause investigation and improve the operating efficiency of equipment.



Equipped with Video Player

Play Video Data Saved to Storage

By playing videos used for troubleshooting at time of abnormalities, operators can easily learn how to react to the issues quickly. In addition to viewer initiated playback from the system menu, video can also be played via switch and PLC controller commands. It supports MP4 (MPEG-4) video files to ensure high compression and high quality.



Trend Data Display

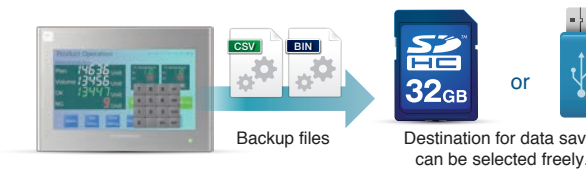
Backup Data Display

Backup files can be loaded and displayed on V9. Alarm backup data can also be displayed.



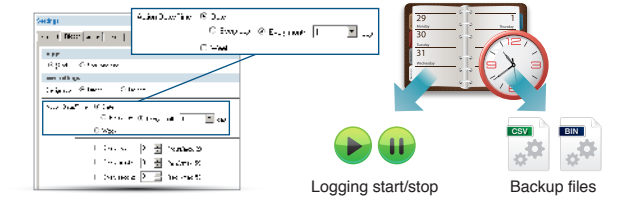
Easy Creation of Backup Files

By using the scheduler, backup files are automatically created at scheduled timings.

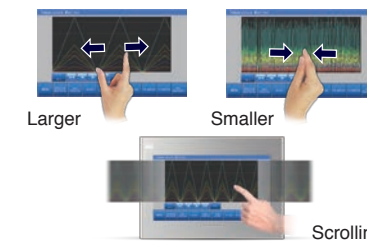


Coordination with the Scheduler

Operations such as bit output and execution of macro programs can be scheduled on a specific date and time. Also, start and stop of logging, and data saving can be conducted by setting the logging conditions.



Zoom In and Out of Graphs



You can zoom in and out on the vertical and horizontal axes of trend graphs. You can also scroll*1 by touching and dragging zoomed-in graphs.

*1 Supports only horizontal scrolling.

Alarm Display

Scrolling of the Alarm Messages



Scrolling the alarm messages

The entire alarm message can be displayed by scrolling the screen with touch and drag.

Running Emergency Messages



Alarm messages run automatically at a specified position when alarms are occurred.

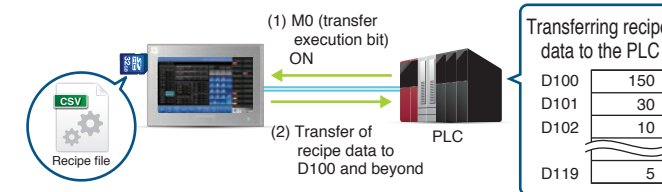
Convenient tools for scrolling



Recipe

Global Control Function

It is possible to read and write to specified files and record data, regardless of the screen displayed, by turning on or off a bit.



Filter Settings

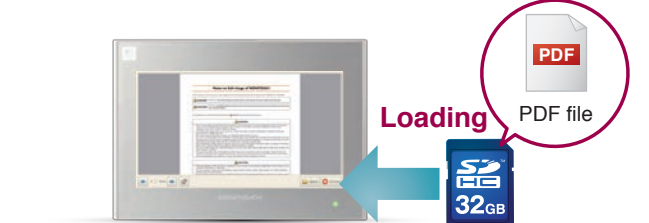
The required data can be easily extracted using the recipe selection list dialog to narrow down file and record searches.



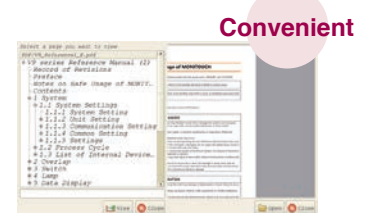
PDF Viewer Function

PDF Viewer Function

PDF files stored on an SD card can be displayed. PDF instruction manuals can be used for troubleshooting.



Fast navigation to the desired page, using bookmarks.



Security

Various setting functions for improving usability



Operation Log

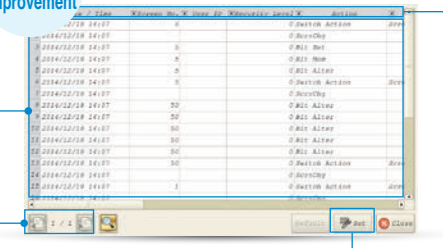
Improved Operation Log Viewer

The operability and visibility of the log viewer have been improved.

Operability
Visibility
Improvement

Log display area
Double-tapping for
displaying details

File change
A log file selected for
display

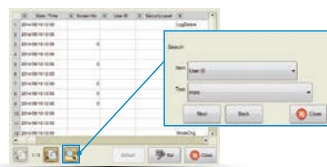


Title line
Filtering for each
item

Setting
Viewer display
setting

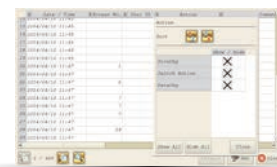
Search Function

Operation log can be searched for by specifying an operator or date and time.



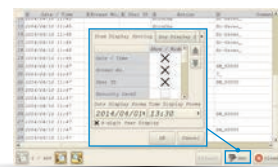
Filter/Sort Settings

Filter and sort can be set for displayed items.



Display Item Settings

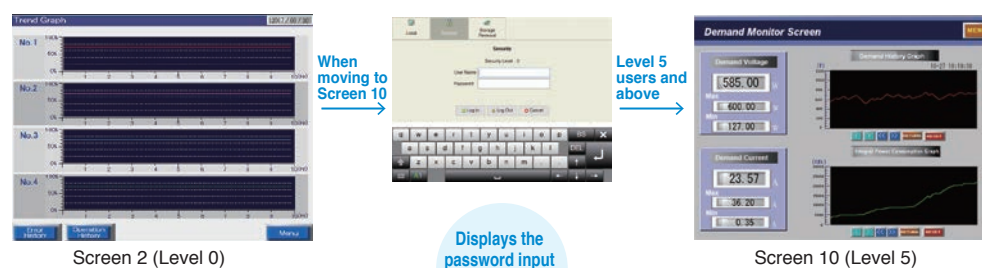
It is possible to select items to display in the operation log.



Security Features

Security Level Setting

A security level between 0 and 15 can be set for each screen. You can create a high-level security environment by restricting features based on security level.



Displays the
password input
screen
automatically

Switch Interlock

A security level can also be set for a switch. Only users who log in at the authorized level will be able to operate the switch.

Information

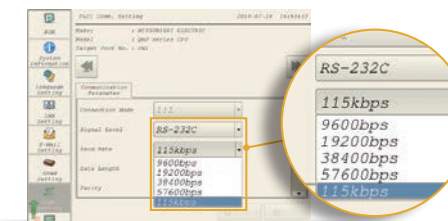
Visualizing information for prompt recognition



Local Screen Settings

Transmission Setting

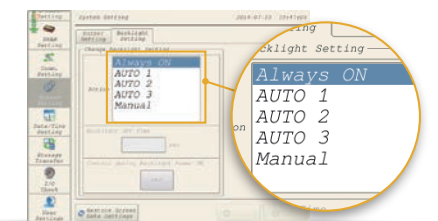
Transmission settings with connected devices can be modified on the V9.



Communication Setting

Backlight Setting

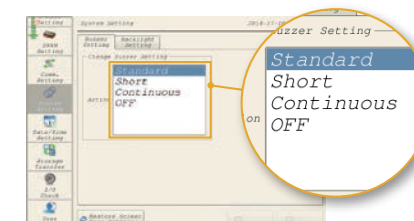
Backlight settings can be modified on the V9.



Backlight Setting

Buzzer Setting

Buzzers settings can be modified on the V9.



Buzzer Setting

Network Query

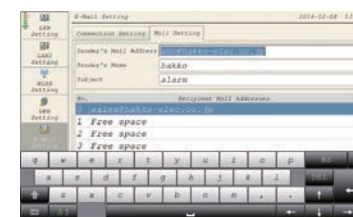
Ethernet network status and IP redundancy within the network can be verified.



Network Test

E-mail Setting

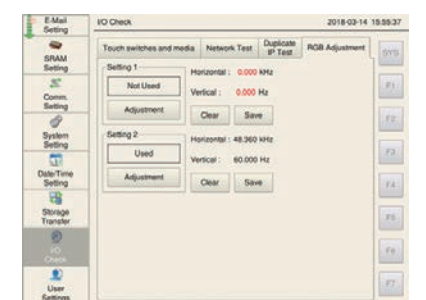
E-mail addresses and SMTP IP addresses can be modified.



E-mail Setting

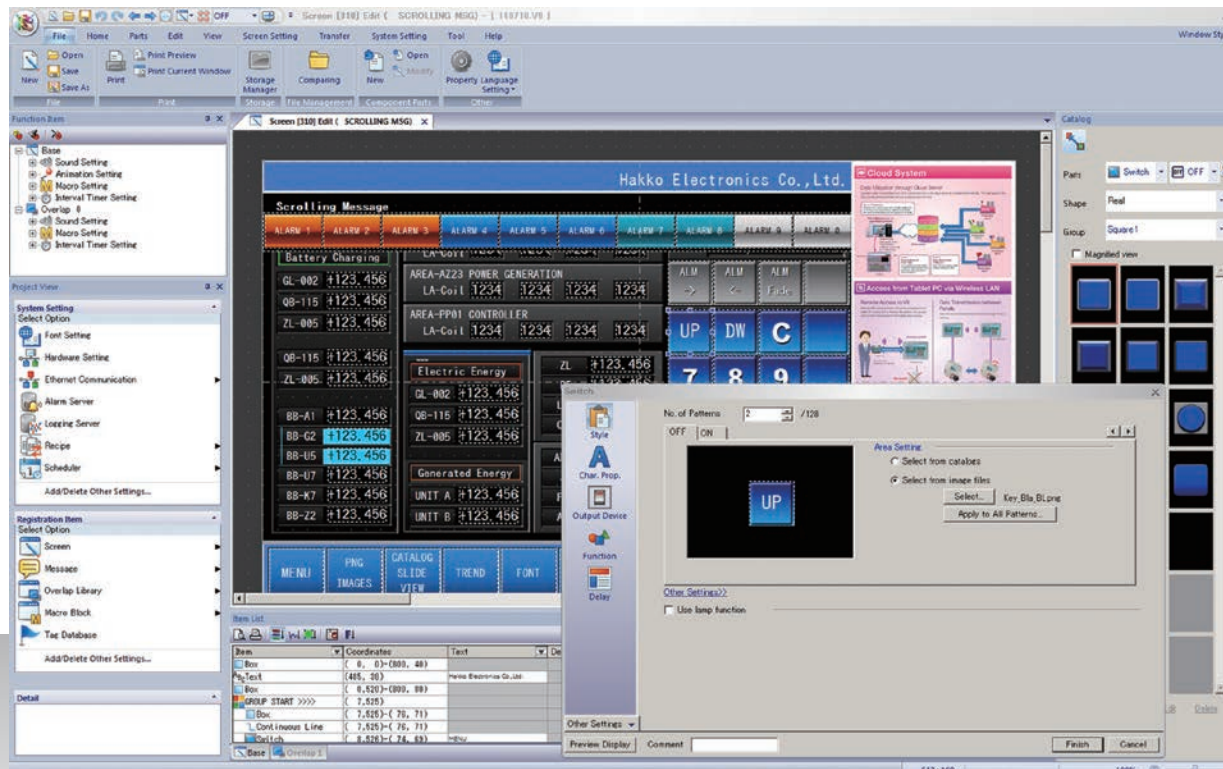
RGB Adjustment

It displays the frequency of the connected device as a real value. Frequencies that cannot be displayed on the screen are displayed in red, so you can check the availability of a connection at a glance.



RGB Adjustment

Achieve Sleeker Screens with Simple, Easy-to-Understand Operations



V-SFT Ver. 6

Computer	PC/AT compatible computer running Windows
OS*	Windows XP/XP 64Edition/Windows Vista(32bit, 64bit)/Windows 7(32bit, 64bit)/Windows 8(32bit, 64bit)/Windows 8.1(32bit, 64bit)/Windows 10(32bit, 64bit)
CPU	Pentium 4 2.0 GHz or higher is recommended
Memory	1.0 GB or higher (2.0 GB or higher is recommended)
Hard disk	When installed: 2.0 GB or higher

Disc drive	DVD-ROM drive
Display	1024 × 768 (XGA) resolution or higher
Display colors	High color (16 bits) or higher
Others	Microsoft .NET Framework 4.0 or 4.5 (Microsoft .NET Framework 4.0 is installed automatically on computers that do not have either Microsoft .NET Framework 4.0 or 4.5 installed.)

*Administrator privileges are required for installation.

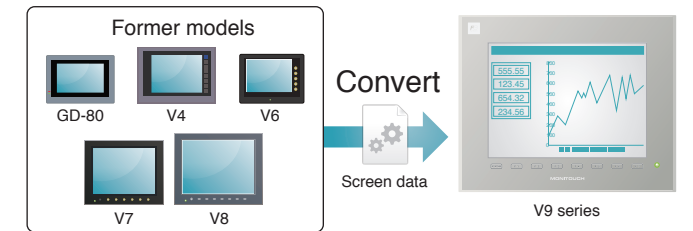
Backward Compatibility with Previous Models

V8 series Compatibility

V-SFT Ver. 6 provides intuitive operation, with easy-to-use visual tools and refined displays. In addition to the V9 series, V-SFT Ver. 6 is also compatible with the V8 series.

Compatible with Program from Legacy Products

Screen data from previous models created in an older version of V-SFT can be converted as is to data for the current model. This allows anyone to leverage their screen data assets from previous models.



Configuration of Easy-to-view Screens

Wider Range of Parts

The number of picture icons has been increased, and the icons with plain design have been added. Pick from the wide range of ready-made icons for sophisticated representation.



Simple icons added

A wide range of icon designs have been newly added with a design that closely resembles smartphones and other familiar devices.



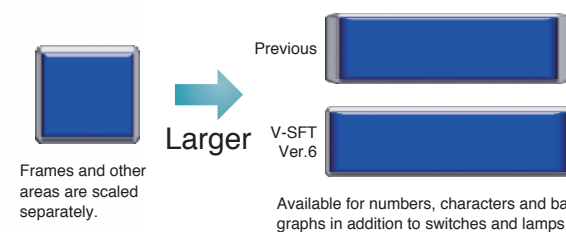
Increased picture icons

V-SFT expands conventional real icons even further.



Improved 3D Parts Scaling Function

3D parts can be scaled up and down without changing the widths of frames. Frame size can be modified by batch, or individually according to the item type.



* For V9 series square picture icons and 3D parts with frames (excluding some icons and parts)

Line Width Setting

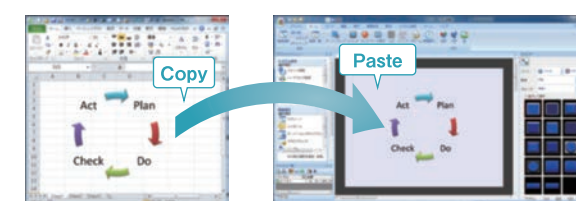
The line widths of graphic items and trend items (graph lines, reference lines) can now be set in eight steps. Effective screens can be created using a variety of drawing tools and graph representations.



* Excluding thick lines

Copy/Paste of Microsoft Office Data

Graphics created in Microsoft Office Word, Excel and PowerPoint can be copied and pasted into V-SFT files by converting them to pictures, patterns or parts.

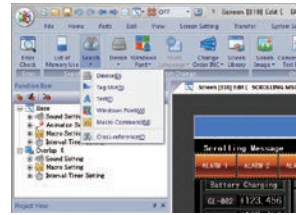


Pasting of an Image File

It is possible to paste a PNG file directly onto the screen. JPG, BMP and GIF formats are also supported as image files, allowing you to create whatever visually impressive screen you choose.

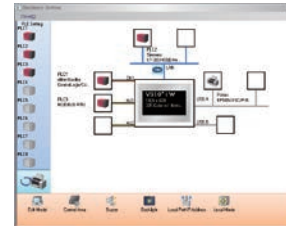
Upgraded Operability

Integration of Search Menu



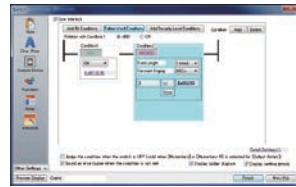
The search menu, which used to be displayed separately, has now been integrated for easy operation.

Intuitively Grasp the Connection Device Configuration



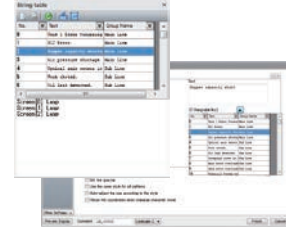
The improved hardware setting screen makes it easy to grasp exactly how devices are connected together in the system.

Enhanced Interlock Setting



Interlock can be set with a ladder drawing screen. The condition settings are easy to understand and convenient even when setting multiple conditions. It is possible to set interlocking for keypad indication conditions in addition to switch conditions. Up to five conditions (AND or OR) for a bit device, word device or security level can be set, which is suitable for setting complicated conditions.

Character String Table



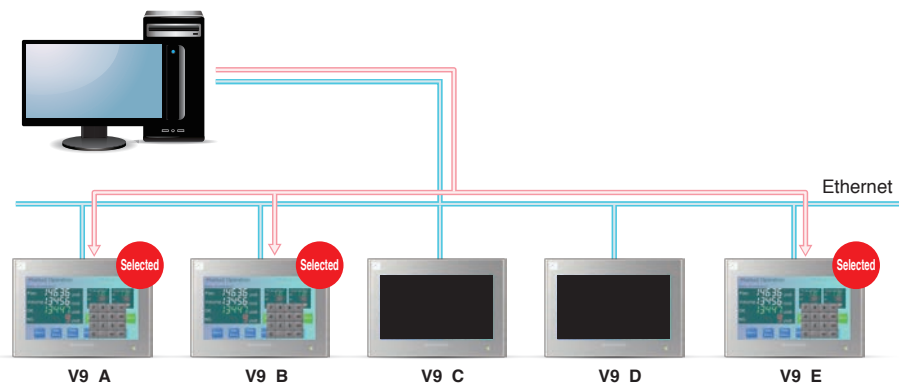
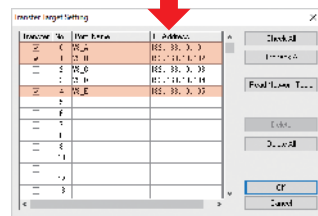
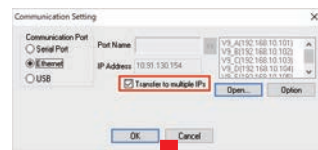
Text for switches, lamps and other parts can be managed centrally using the character string table. Frequently used text can be registered in the table for easy reference and batch modification. When a change occurs, you can make bulk changes simply by changing the string table.

* Switches, lamps, text and multi text only.

Data Batch Transfer Function

Screen Data Batch Transfer (Ethernet)

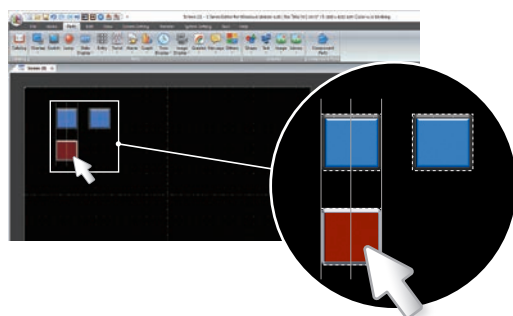
Screen data can be transferred sequentially to multiple V9 series selected from the network.



V-SFT Ver.6 New Functionality

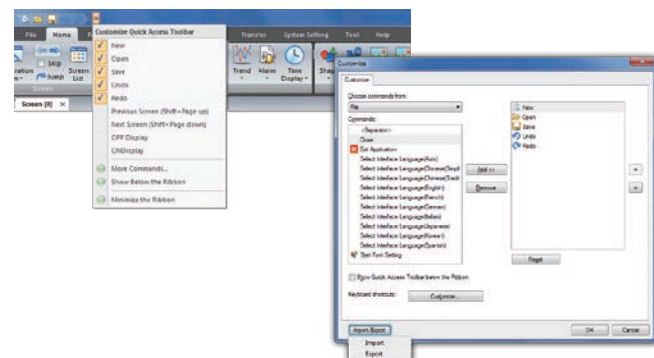
Guideline Function

After arranging the items, it displays guidelines by searching through surrounding items as you move and scale them. It increases your work efficiency when aligning items in a single row or arranging them in the center.



Quick Access Toolbar

Quick Access toolbar is displayed at the top of the toolbar. The display icons can be freely customized by the user, as well as exported and imported. Therefore, they can be edited in the same environment even when switching or replacing computers.



Optional Accessories

Expansion Units

GUR-00 (Video input 4ch)
Displays images from video cameras on V9 directly.

GUR-01 (RGB input 1ch)
Displays RGB input on V9.

GUR-02 (RGB output 1ch)
Displays images of V9 on a monitor.

GUR-04 (Video input 1ch)
Displays images from video cameras on V9 directly.

GUR-10 (Video input 2ch + RGB input 1ch)
Displays images from video camera and RGB input on V9 simultaneously.

GUR-11 (RGB input 2ch)
Displays RGB images such as PC images through two channels on V9 simultaneously.

Communication Units

- | | |
|--------------------|------------------|
| CUR-00 OPCN-1 | CUR-06 SX Bus |
| CUR-01 T-Link | CUR-07 DeviceNet |
| CUR-02 CC-Link | CUR-08 FL-net |
| CUR-03 Ethernet | CUR-09 EtherCAT |
| CUR-04 PROFIBUS-DP | |

Other Accessories

TC-D9 (Terminal converter)
Connects V9 with other units via RS-422/485 terminal.

V7-BT
A replacement lithium battery for the V907xiW, V9060iTD and V8 series.

D9-D25
Replacement cable for CN1 cable of V6/V7 series.
Length: 0.3m

V9-ANT
Antenna for V9 models compatible with wireless LAN.
Length: 3m

Configuration Software

V-SFT Ver.6
Windows XP/XP 64Edition/Windows Vista(32bit, 64bit)/
Windows 7(32bit, 64bit)/Windows 8(32bit, 64bit)/
Windows 8.1(32bit, 64bit)/Windows 10(32bit, 64bit)

Editable Models
V9/TS2000/V8/TELLUS Ver.4/TELLUS Ver.3

Cables

Model	Configuration	Connected to
V-CP	RS-232C Modular 8pin D-Sub9pin(♂) Length: 3m	PC
V6-BCD	RS-232C Modular 8pin Length: 3m	Barcode reader
V6-MLT	RS-485 Modular 8pin Length: 3m	MONITOUCH V9/V8/V7/V6 /TS2000
V6-TMP	RS-232C/485 Modular 8pin Length: 3·5·10m	Temperature controller, Inverter, etc.
UA-FR	Type A Length: 1m	Card reader/writer, USB memory, etc.

DUR-00 (Dedicated optional unit for V907xiW, V9060iTD, TS2060i)

Used for serial connection with D-Sub9pin.

V9-BT
A replacement lithium battery for V9 series.
* Excluding the V907xiW and V9060iTD.

V9xxx-GS/V9xxx-GSN10
Protection sheets for panels. N10 is a non-glare type sheet.
(5 sheets per set). See P.27 for details.

Panel adapter (PAD-Vxxx)
Used when fitting V9 into V4/GD-80/GD-65/GD-64
panel cutout.
Contact our technical helpdesk for details.

High-end specifications realize smooth and accurate operation.

General Specifications

Item	V9 Advanced		V9 Standard				
	V9101IW	V9071IW	V9150IX	V9150IXD	V9120IS/V9120ISB	V9120ISD/V9120ISBD	
Power Supply	Rated Voltage	DC24V		AC100~240V	DC24V	AC100~240V	DC24V
	Permissible Range of Voltage	±10%		-15%,+10%	±10%	-15%,+10%	±10%
	Permissible Momentary Power Failure	Within 1ms		Within 20ms (100VAC or higher)	Within 1ms	Within 20ms (100VAC or higher)	Within 1ms
	Power Consumption (Max. Rating)	27W or less	22W or less	90VA or less	40W or less	70VA or less	28W or less
	Rush Current	17A or less, 6ms	10A or less, 6ms	30A or less, 3ms	19A or less, 7ms	30A or less, 3ms	18A or less, 5ms
Insulation Resistance	DC500V 10MΩ or more						
Physical Environment	Ambient Temperature	0~50°C *1		0~40°C *1		0~50°C *1	
	Ambient Humidity	85%RH or less (without dew condensation) *1					
	Operating Altitude	2,000m or less					
	Operating Atmosphere	No exposure to corrosive gas or conductive dust					
	Storage Temperature	-10~60°C *1		-10~50°C *1		-10~60°C *1	
	Storage Humidity	85%RH or less (without dew condensation) *1					
Contamination Level	Contamination level2						
Mechanical Operating Conditions	Resistance to Oscillation	JIS B 3502 (IEC61131-2) compliant, Vibration frequency: 5 to 9 Hz, Half amplitude: 3.5 mm, Vibration frequency: 9 to 150 Hz, Constant acceleration 9.8 m/s ² (1G), X, Y, Z: 3 directions (10 times each)					
	Resistance to Shock	JIS B 3502 (IEC61131-2) compliant, Peak acceleration: 147 m/s ² (15G), X,Y,Z: 3 directions, 3 times each (18 times in total)					
Electric Operating Conditions	Resistance to Noise	Noise voltage:1,000Vp-p, pulse width:1μs, pulse rise time : 1ns	Noise voltage:1,500Vp-p, pulse width:1μs, pulse rise time : 1ns	Noise voltage:1,000Vp-p, pulse width:1μs, pulse rise time : 1ns	Noise voltage:1,500Vp-p, pulse width:1μs, pulse rise time : 1ns	Noise voltage:1,500Vp-p, pulse width:1μs, pulse rise time : 1ns	Noise voltage:1,000Vp-p, pulse width:1μs, pulse rise time : 1ns
	Resistance to Static Discharge	Complies with IEC61000-4-2, contact: 6kV, air: 8kV					
Installation Conditions	Grounding	Grounding resistance: Less than 100Ω, FG/SG separation		Grounding resistance: Less than 100Ω, FG=SG		Grounding resistance: Less than 100Ω, FG/SG separation	
	Structure	Protection structure: Front case: IP66, Type 4X/13 ² 3 (when water-proof gasket is used), Rear case: IP20, single unit, installation method: panel mounting					
	Cooling System	Natural air cooling					
	Dimensions W*H*D (mm)	278.5 x 198.5 x 54.4	201.6 x 147.6 x 60.3	382.8 x 312.8 x 80.8		327.8 x 261.0 x 54.9	
	Panel Cutout (mm)	257.0 x 183.0 (+0.5/-0) mm	187.2 x 133.4 (+0.5/-0) mm	369.4 x 299.4 (+0.5/-0) mm		313.0 x 246.2 (+0.5/-0) mm	
Weight	Approx. 1.7 kg	Approx. 1.0kg	Approx. 4.7kg		Approx. 2.5kg		
Case Color	Light gray		Front case: Silver, Rear case: Light gray		Light gray (black front housing for black model)		
Material	PC resin		Front case: Aluminum, Rear case: PC resin		PC resin		

*1 Use at a wet-bulb temperature of 39°C or less because higher temperatures may cause failure.

V9 Standard			V9 Lite			
V9100IS/V9100ISB	V9100ISD/V9100ISBD	V9080ISD/V9080ISBD	V9100IC/V9100ICB	V9100ICD/V9100ICBD	V9080ICD/V9080ICBD	V9060ITD/V9060ITBD
AC100~240V	DC24V	DC24V	AC100~240V	DC24V	DC24V	DC24V
-15%,+10%	±10%	±10%	-15%,+10%	±10%	±10%	±10%
Within 20ms (100VAC or higher)	Within 1ms		Within 20ms (100VAC or higher)	Within 1ms		
70VA or less	28W or less		50VA or less	17W or less		13W or less
30A or less, 3ms	17A or less, 6ms		30A or less, 3ms	17A or less, 6ms		8A or less, 7ms
DC500V 10MΩ or more						
0~50°C *1						
85%RH or less (without dew condensation) *1						
2,000m or less						
No exposure to corrosive gas or conductive dust						
-10~60°C *1						
85%RH or less (without dew condensation) *1						
Contamination level2						
JIS B 3502 (IEC61131-2) compliant, Vibration frequency: 5 to 9 Hz, Half amplitude: 3.5 mm, Vibration frequency: 9 to 150 Hz, Constant acceleration 9.8 m/s ² (1G), X, Y, Z: 3 directions (10 times each)						
JIS B 3502 (IEC61131-2) compliant, Peak acceleration: 147 m/s ² (15G), X,Y,Z: 3 directions, 3 times each (18 times in total)						
Noise voltage: 1,500Vp-p, pulse width: 1μs, pulse rise time: 1ns						Noise voltage:1,000Vp-p, pulse width:1μs, pulse rise time : 1ns
Complies with IEC61000-4-2, contact: 6kV, air: 8kV						
Grounding resistance: Less than 100Ω, FG/SG separation						
Protection structure: Front case: IP66, Type 4X/13 ² 3 (when water-proof gasket is used), Rear case: IP20, single unit, installation method: panel mounting						
Natural air cooling						
303.8x231.0x54.0		235.0x180.0x48.9		303.8x231.0x54.0		182.5x138.8x53.0
289.0 x 216.2 (+0.5/-0) mm		220.5 x 165.5 (+0.5/-0) mm		289.0 x 216.2 (+0.5/-0) mm		174.0 x 131.0 (+0.5/-0) mm
Approx. 2.0kg		Approx. 1.3kg		Approx. 2.0kg		Approx. 1.3kg
Light gray (black front housing for black model)						
PC resin						

Performance Specifications

Item	V9 Advanced		V9 Standard	
	V9101IW	V9071IW	V9150IX	V9120IS
Screen Memory (FROM)	64MB			
Backup Memory (SRAM)	800KB			
Display	Display Device	TFT color		
	Resolution W:H (dots)	1024x600	800x480	1024x768
	Display Size	10.1" widescreen	7" widescreen	15 Inch
	Display Colors	16.7 million *4		
	Backlight	LED		
Backlight Life	50,000 hours	100,000 hours		70,000 hours
Touch Switch	Capacitance		Analog resistance film	
Function Switch	-		8	
External Interface	D-Sub 9-pin (CN1) *5	RS-232C/RS-422/RS-485 Asynchronous, Data length: 7, 8 bits Parity: Even, odd, none Stop bit: 1, 2 bits Baud rate: 4800, 9600, 19200, 38400, 57600, 76800, 115200, 187500 *6 bps		
	Modular 8-pin (MJ1/MJ2)	RS-232C/RS-422/RS-485 (2-wire type) *7 Asynchronous, Data length: 7, 8 bits Parity: Even, odd, none Stop bit: 1, 2 bits Baud rate: 4800, 9600, 19200, 38400, 57600, 76800, 115,200 bps		
	SD Card	One card slot provided as standard		
	Ethernet	2ch, Baud rate: 100Mbps, 10Mbps	1ch, Baud rate : 100Mbps, 10Mbps	
	Wireless LAN	Complies with IEEE802.11b/g/n (2.4GHz) *8		
	USB	Type A, Type mini-B (Ver.2.0)		
Sound Output	1ch provided as standard	-	1ch provided as standard	
Clock	Backup Period	5 years (Ambient temperature 25°C)		
	Calendar Accuracy	Gap ±90 sec. per month (Ambient temperature 25°C, When the battery is backed up)		
Standard	CE Marking *2	EN61000-6-2, EN61000-6-4, EN50581		EN61000-6-2, EN61000-6-4, EN50581 *9
	UL-cUL *2	UL508		UL508, ANSI/ISA12.12.01 *10
	KC	Compatible		Compatible *9 *11
	Radio Act *8	Japan: TELEC USA: FCC Canada: IC RSS	Europe: RE South Korea: KC	Japan: TELEC
Classification Standard *2	-		Nippon Kaiji Kyokai (NK) Lloyd's Register of Shipping (LR)	American Bureau of Shipping (ABS) *9 Det Norske Veritas (DNV) *12

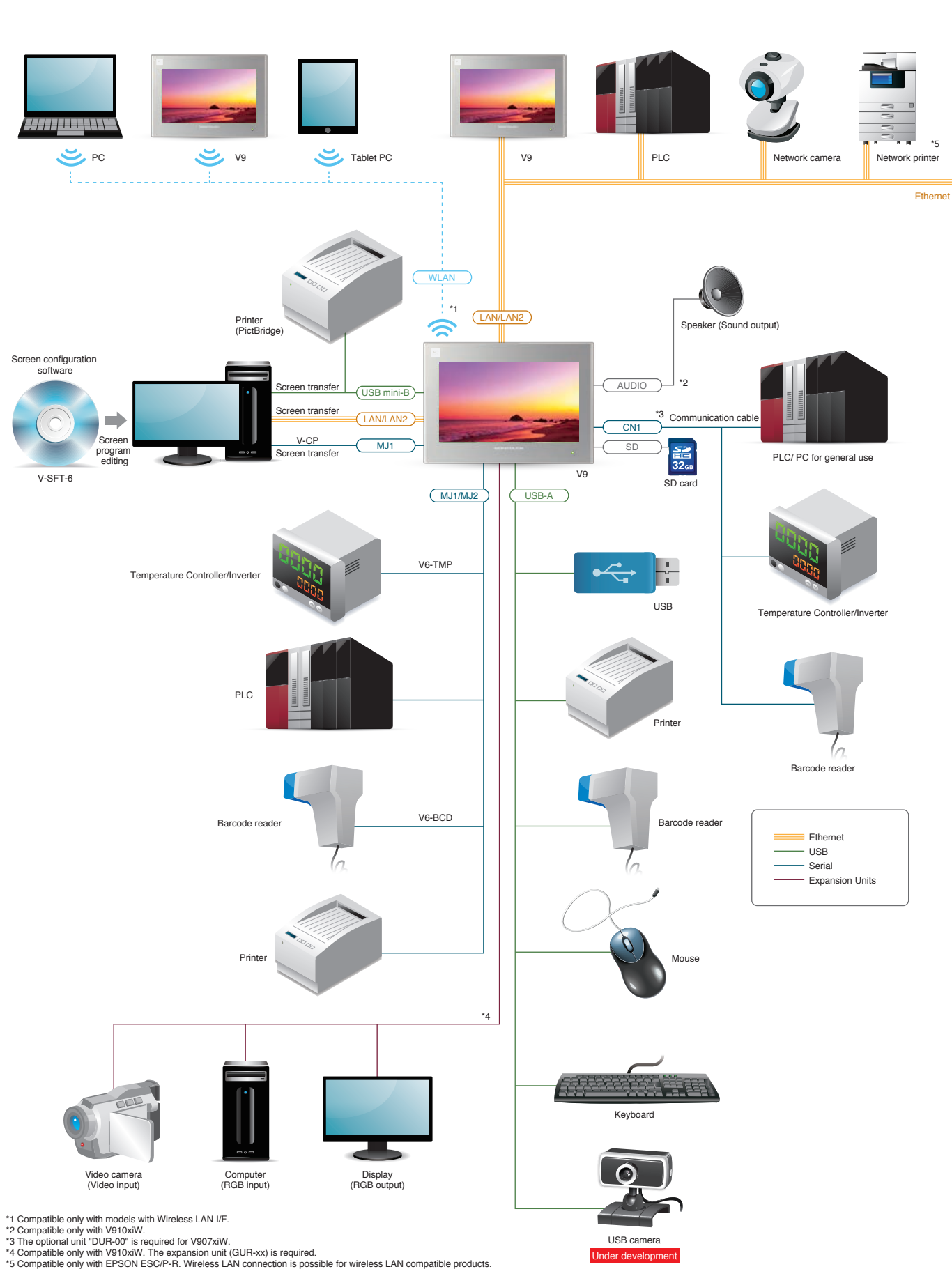
*2 DC products only. *3 V9101IW: Hardware of Ver.c or later V9120ISD/V9100ISD/V9080ISD/V9100ICD/V9080ICD: Hardware of Ver.b or later V9071IW/V9150IXD/V9060ITD: All versions *4 For displaying pictures, 3D parts, video, and RGB input (excluding high-speed mode) only. Other parts are displayed in 65,536 colors. *5 Optional unit (DUR-00) is required for the V9071IW and V9060ITD. *6 Only for Siemens MPI (Incompatible with DUR-00).

V9 Standard		V9 Lite		
V9100IS	V9080ISD	V9100IC	V9080ICD	V9060ITD
64MB				
800KB				
TFT color				
800x600		640x480		
10.4 Inch	8.4 Inch	10.4 Inch	8.4 Inch	5.7 Inch
16.7 million *4				260 thousand *4
LED				
70,000 hours				50,000 hours
Analog resistance film				
8				
6				
RS-232C/RS-422/RS-485 Data length: 7, 8 bits Parity: Even, odd, none Stop bits: 1, 2 bits Baud rate : 4800, 9600, 19200, 38400, 57600, 76800, 115200, 187500 *6 bps				
RS-232C/RS-422/RS-485 (2-wire type) *7 Asynchronous, Data length: 7, 8 bits Parity: Even, odd, none Stop bit: 1, 2 bits Baud rate: 4800, 9600, 19200, 38400, 57600, 76800, 115,200 bps				
One card slot provided as standard				
1ch, Baud rate : 100Mbps, 10Mbps				
Complies with IEEE802.11b/g/n (2.4GHz) *8			-	
Type A, Type mini-B (Ver.2.0)				
1ch provided as standard		-		
5 years (Ambient temperature 25°C)				
Gap ±90 sec. per month (Ambient temperature 25°C, When the battery is backed up)				
EN61000-6-2, EN61000-6-4, EN50581 *9 *11		EN61000-6-2, EN61000-6-4, EN50581		
UL508, ANSI/ISA12.12.01 *10		UL508		
Compatible *9 *11		Compatible *11		
Japan: TELEC		-		
Nippon Kaiji Kyokai (NK) Lloyd's Register of Shipping (LR)	American Bureau of Shipping (ABS) *9 Det Norske Veritas (DNV) *12	-		Nippon Kaiji Kyokai (NK) Lloyd's Register of Shipping (LR) American Bureau of Shipping (ABS) Det Norske Veritas (DNV)

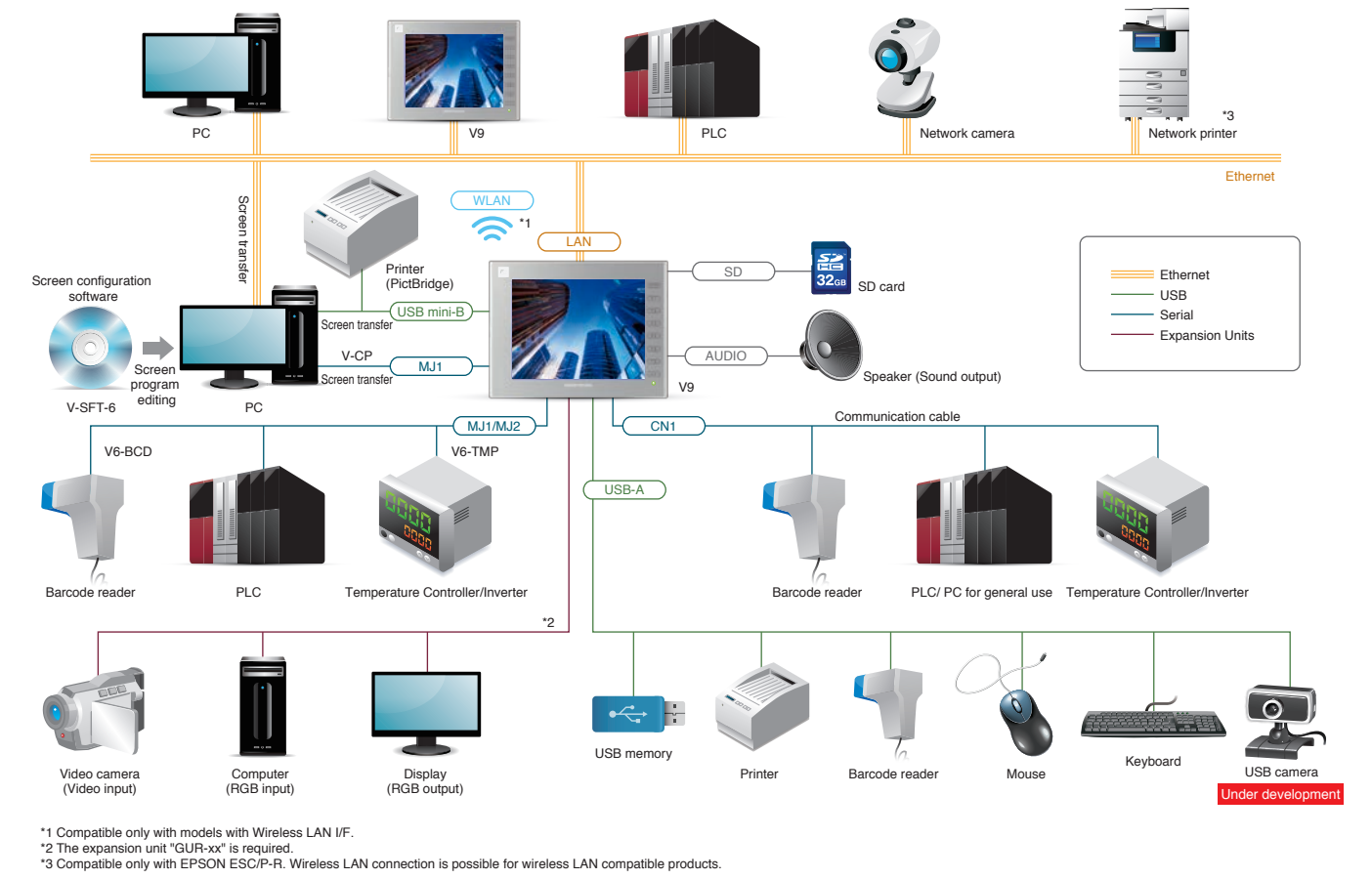
*7 187,500 bps (four-wire system) for the V9071IW and V9060ITD MJ2 only. *8 Wireless LAN-compatible products only. *9 Wireless LAN compatible products are not supported. *10 V9120ISD/V9100ISD/V9080ISD: Hardware of Ver.b or later V9060ITD: All versions *11 Black model not certified *12 V9150IXD/V9060ITD: All V9120ISD: Hardware Ver.b or higher, V9100ISD/V9080ISD: Hardware Ver.c or higher.

Flexible system configuration meets diversified requirements.

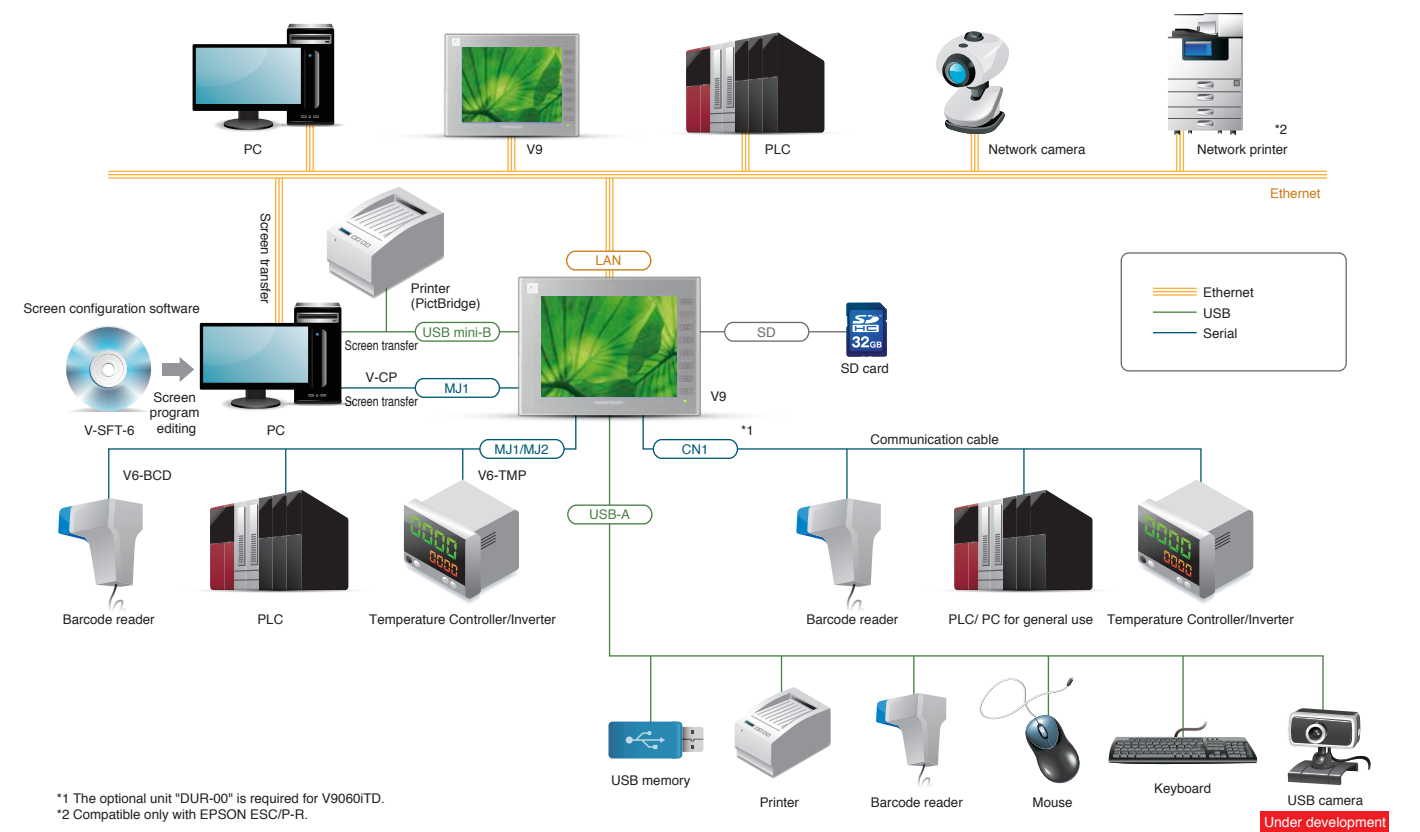
Advanced Model System Configuration



Standard Model System Configuration

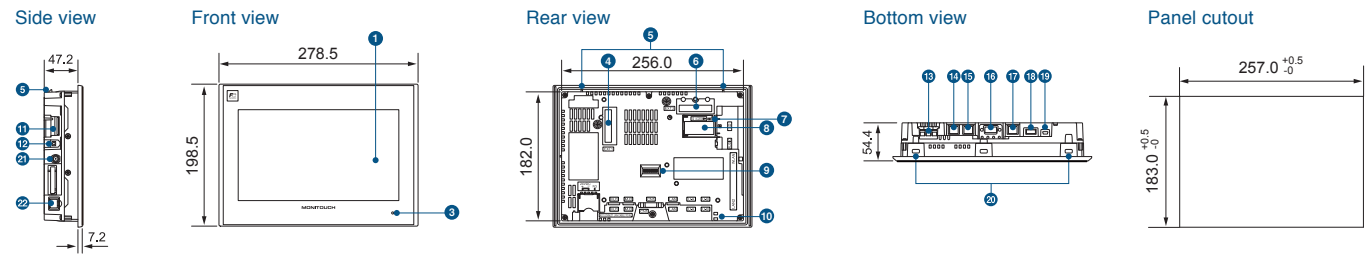


Lite Model System Configuration

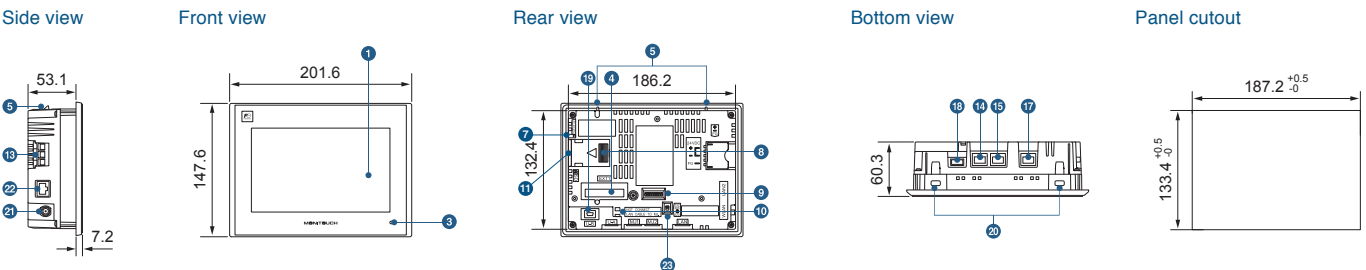


Dimensions & Part Names

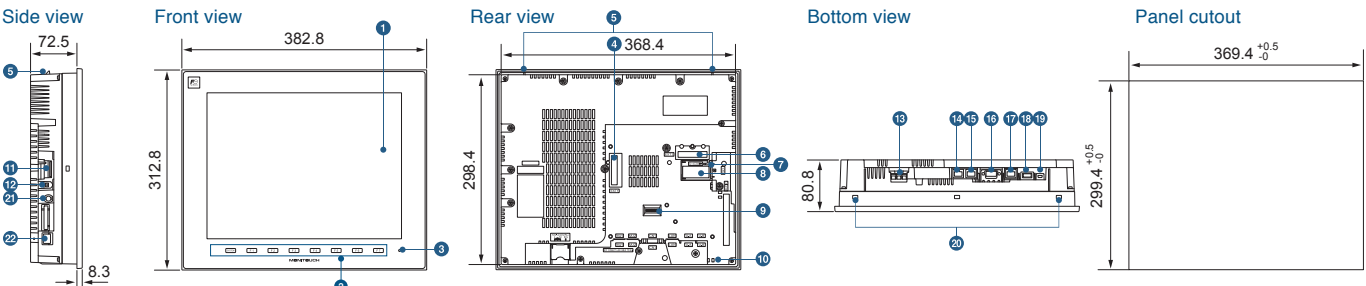
V9 Advanced V9101iW (Unit: mm)



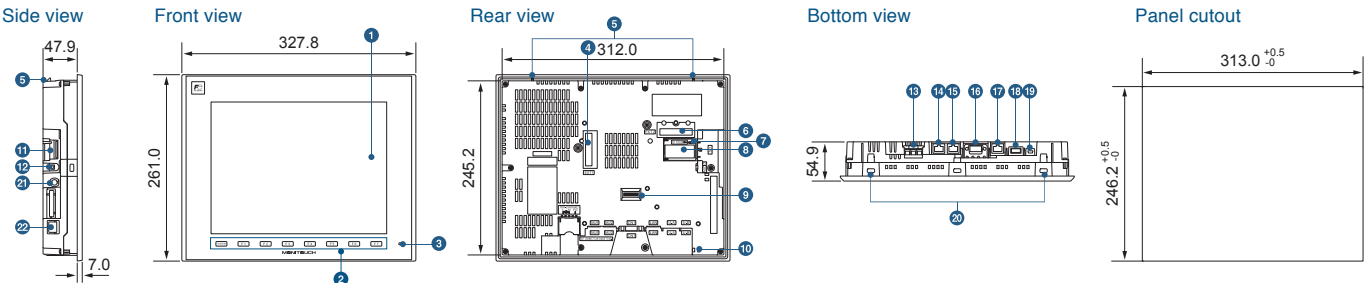
V9 Advanced V9071iW (Unit: mm)



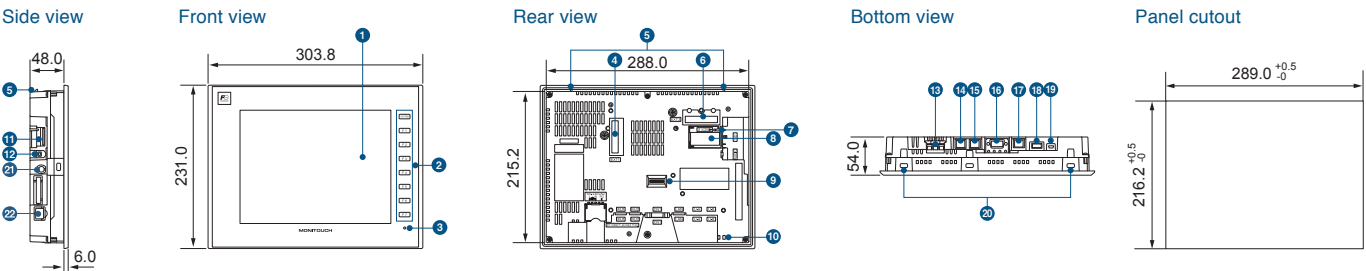
V9 Standard V9150iX (Unit: mm)



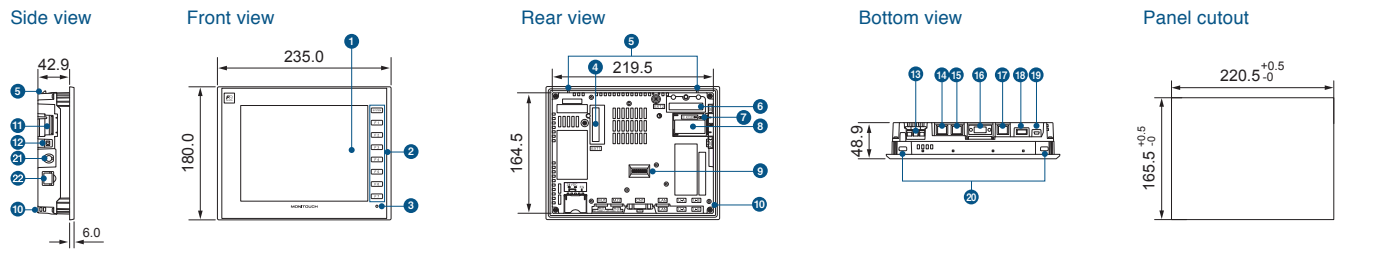
V9 Standard V9120iS/V9120iSB (Unit: mm)



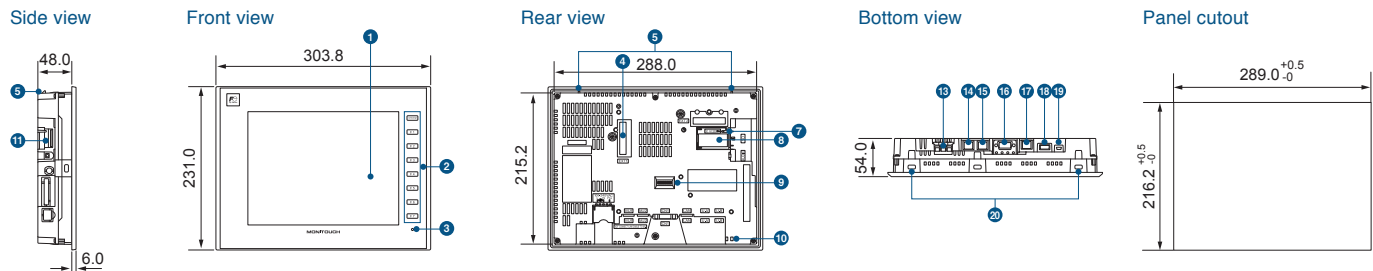
V9 Standard V9100iS/V9100iSB (Unit: mm)



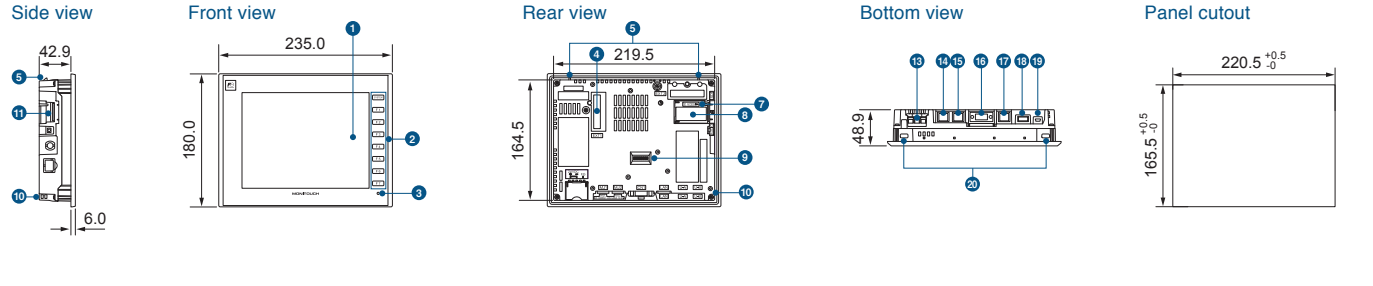
V9 Standard V9080iSD/V9080iSBD (Unit: mm)



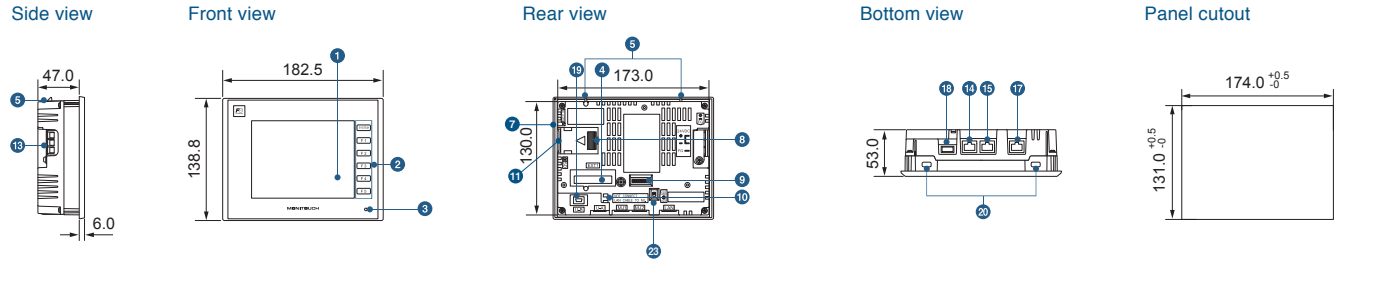
V9 Lite V9100iC/V9100iCB (Unit: mm)



V9 Lite V9080iCD/V9080iCBD (Unit: mm)



V9 Lite V9060iTD/V9060iTBD (Unit: mm)



Part Names

1 Display	7 SD card access LED	13 Power input terminal block	19 USB mini-B(U-B)
2 Function switch	8 Battery compartment	14 Modular jack 1 (MJ1)	20 Mounting point
3 Power lamp	9 DIP switch	15 Modular jack 2 (MJ2)	21 Wireless LAN external antenna connector (WLAN)
4 Communication unit connector (EXT1)	10 USB cable retention	16 PLC connector (CN1)	22 100BASE-TX/10BASE-T connector (LAN2)
5 Fall prevention hook	11 SD card connector	17 100BASE-TX/10BASE-T connector (LAN)	23 Slide switch
6 Expansion unit connector (EXT2)	12 Sound output connector (AUDIO)	18 USB-A(U-A)	

Remarkable cost effectiveness enabled by our product lineup and optional units.

Product Details

Advanced

type	Display Size	Resolution	Specifications									Delivery Standard: ✓ Made to order: △
			Touch screen	Video/RGB ^{*1}	AUDIO Output	Wireless LAN	Extended Cable LAN	UL508	CE	KC	Power supply	
V9101WRLD	10.1" widescreen	1024x600	Capacitance	✓	✓	✓	✓	✓	✓	✓	DC	✓
V9100IWRD			Analog resistance film	✓	✓	✓	✓	✓	✓	✓		△
V9101IWRD			Capacitance	✓	✓	-	✓	✓	✓	✓		✓
V9100IWLD			Analog resistance film	✓	✓	-	✓	✓	✓	✓		△
V9071IWRLD	7" widescreen	800x480	Capacitance	-	-	✓	✓	✓	✓	✓	DC	✓
V9070IWRD			Analog resistance film	-	-	✓	✓	✓	✓	✓		△
V9071IWLD			Capacitance	-	-	-	✓	✓	✓	✓		✓
V9070IWLD			Analog resistance film	-	-	-	✓	✓	✓	✓		△

Standard

Model	Display Size	Resolution	Specifications									Delivery Standard: ✓ Made to order: △	
			Touch screen	Video/RGB ^{*1}	AUDIO Output	Wireless LAN	Extended Cable LAN	UL508	CE	KC	Power supply		
V9150iX	15"	1024x768	Analog resistance film	✓	✓	-	-	-	-	✓	AC	✓	
V9150iXD				✓	✓	-	-	✓	✓	✓		✓	✓
V9150iXLD				✓	✓	-	✓	✓	✓	✓		✓	△
V9150iXRD				✓	✓	✓ ^{*2}	-	✓	-	-		-	△
V9120iS	12.1"	800x600	Analog resistance film	✓	✓	-	-	-	-	✓	AC	✓	
V9120iSB				✓	✓	-	-	-	-	-		-	△
V9120iSD				✓	✓	-	-	✓	✓	✓		✓	✓
V9120iSBD				✓	✓	-	-	✓	✓	✓		✓	△
V9120iSLD				✓	✓	-	✓	✓	✓	✓		✓	△
V9120iSLBD				✓	✓	-	✓	✓	✓	✓		✓	△
V9120iSRD				✓	✓	✓ ^{*2}	-	✓	-	-		-	△
V9120iSRBD				✓	✓	✓ ^{*2}	-	✓	-	-		-	△
V9100iS	10.4"	800x600	Analog resistance film	✓	✓	-	-	-	-	✓	AC	✓	
V9100iSB				✓	✓	-	-	-	-	-		-	△
V9100iSD				✓	✓	-	-	✓	✓	✓		✓	✓
V9100iSBD				✓	✓	-	-	✓	✓	✓		✓	△
V9100iSLD				✓	✓	-	✓	✓	✓	✓		✓	△
V9100iSLBD				✓	✓	-	✓	✓	✓	✓		✓	△
V9100iSRD				✓	✓	✓ ^{*2}	-	✓	-	-		-	△
V9100iSRBD				✓	✓	✓ ^{*2}	-	✓	-	-		-	△
V9080iSD	8.4"	800x600	Analog resistance film	✓	✓	-	-	✓	✓	✓	DC	✓	
V9080iSBD				✓	✓	-	-	✓	✓	✓		✓	△
V9080iSLD				✓	✓	-	✓	✓	✓	✓		✓	△
V9080iSLBD				✓	✓	-	✓	✓	✓	✓		✓	△
V9080iSRD				✓	✓	✓ ^{*2}	-	✓	-	-		-	△
V9080iSRBD				✓	✓	✓ ^{*2}	-	✓	-	-		-	△

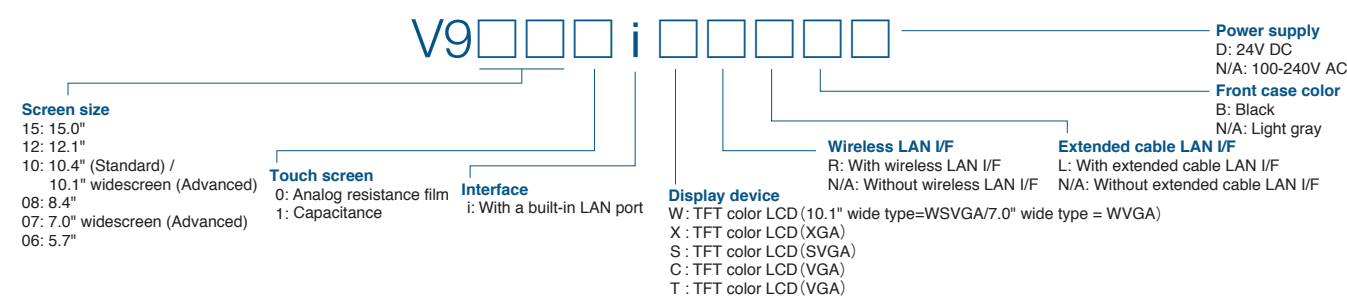
Lite

Model	Display Size	Resolution	Specifications									Delivery Standard: ✓ Made to order: △	
			Touch screen	Video/RGB ^{*1}	AUDIO Output	Wireless LAN	Extended Cable LAN	UL508	CE	KC	Power supply		
V9100iC	10.4"	640x480	Analog resistance film	-	-	-	-	-	-	✓	AC	✓	
V9100iCB				-	-	-	-	-	-	-		-	△
V9100iCD				-	-	-	-	✓	✓	✓		✓	✓
V9100iCBD				-	-	-	-	✓	✓	✓		✓	△
V9080iC	8.4"	640x480	Analog resistance film	-	-	-	-	✓	✓	✓	DC	✓	
V9080iCB				-	-	-	-	✓	✓	✓		✓	△
V9080iCD				-	-	-	-	✓	✓	✓		✓	✓
V9080iCBD				-	-	-	-	✓	✓	✓		✓	△
V9060iTD	5.7"	640x480	Analog resistance film	-	-	-	-	✓	✓	✓	DC	✓	
V9060iTD				-	-	-	-	✓	✓	✓		✓	△

*1 Supported via the expansion unit GUR-xx.

*2 Only for use in Japan.

V9 Models



Optional Accessories List

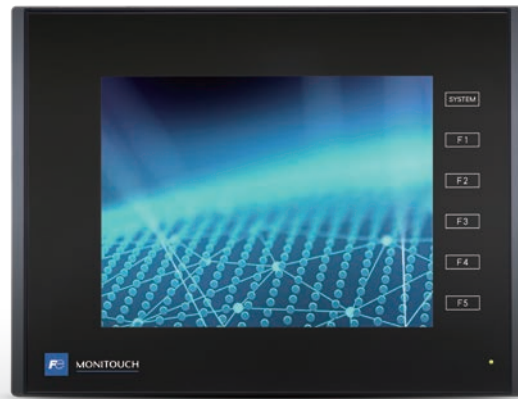
Model	Product	Compatible Model									
		Advanced		Standard				Lite			
		V9101iW	V9071iW	V9150iX	V9120iS	V9100iS	V9080iS	V9100iC	V9080iC	V9060iT	
Configuration software											
V-SFT-6	V9/TS2000/V8 screen configuration software Ver.6 (Manual not included)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Expansion Units											
GUR-00	Video 4ch input	✓		✓	✓	✓	✓				
GUR-01	RGB 1ch input	✓		✓	✓	✓	✓				
GUR-02	RGB 1ch output	✓		✓	✓	✓	✓				
GUR-04	Video 1ch input	✓		✓	✓	✓	✓				
GUR-10	Video 2ch input/ RGB 1ch input	✓		✓	✓	✓	✓				
GUR-11	RGB 2ch input	✓		✓	✓	✓	✓				
DUR-00	Optional unit for V907xiW/V9060iTD/TS2060i		✓							✓	
Communication Units											
CUR-00	OPCN-1 (V9/TS2060i)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CUR-01	T-Link (V9/TS2060i)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CUR-02	CC-Link (V9/TS2060i)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CUR-03	Ethernet (V9/TS2060i)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CUR-04	PROFIBUS-DP (V9/TS2060i)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CUR-06	SX Bus (V9/TS2060i)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CUR-07	DeviceNet (V9/TS2060i)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CUR-08	FL-net (V9/TS2060i)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
CUR-09	EtherCAT (V9)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Cables^{*1}											
V-CP	Screen transfer cable (3m)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
UA-FR	USB-A extension cable (1m)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
USB-CFREC	USB port connected CF card recorder	✓	✓	✓	✓	✓	✓	✓	✓	✓	
V6-MLT	Multi-link 2 master cable (3m)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
V6-TMP	Temperature controller cable (3m)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
V6-TMP-5M	Temperature controller cable (5m)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
V6-TMP-10M	Temperature controller cable (10m)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
V6-BCD	Barcode reader cable (3m)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
D9-MB-CPUQ-2M	MITSUBISHI ELECTRIC A series / QnA series CPU (Dsub25) RS-422	✓	△ ^{*2}	✓	✓	✓	✓	✓	✓	✓	△ ^{*2}
D9-MB-CPUQ-3M		✓	△ ^{*2}	✓	✓	✓	✓	✓	✓	✓	△ ^{*2}
D9-MB-CPUQ-5M		✓	△ ^{*2}	✓	✓	✓	✓	✓	✓	✓	△ ^{*2}
D9-MB-CPUQ-10M		✓	△ ^{*2}	✓	✓	✓	✓	✓	✓	✓	△ ^{*2}
D9-MB-CPUQ-15M		✓	△ ^{*2}	✓	✓	✓	✓	✓	✓	✓	△ ^{*2}
D9-QCPU2-2M	MITSUBISHI ELECTRIC Q series CPU (Mini DIN6) RS-232C	✓	△ ^{*2}	✓	✓	✓	✓	✓	✓	✓	△ ^{*2}
D9-QCPU2-3M		✓	△ ^{*2}	✓	✓	✓	✓	✓	✓	✓	△ ^{*2}
D9-QCPU2-5M		✓	△ ^{*2}	✓	✓	✓	✓	✓	✓	✓	△ ^{*2}
D9-QCPU2-10M		✓	△ ^{*2}	✓	✓	✓	✓	✓	✓	✓	△ ^{*2}
D9-QCPU2-15M		✓	△ ^{*2}	✓	✓	✓	✓	✓	✓	✓	△ ^{*2}
D9-MI2-09-2M	MITSUBISHI ELECTRIC link unit (Dsub9) RS-232C	✓	△ ^{*2}	✓	✓	✓	✓	✓	✓	✓	△ ^{*2}
D9-MI2-09-3M		✓	△ ^{*2}	✓	✓	✓	✓	✓	✓	✓	△ ^{*2}
D9-MI2-09-5M		✓	△ ^{*2}	✓	✓	✓	✓	✓	✓	✓	△ ^{*2}
D9-MI2-09-10M		✓	△ ^{*2}	✓	✓	✓	✓	✓	✓	✓	△ ^{*2}
D9-MI2-09-15M		✓	△ ^{*2}	✓	✓	✓	✓	✓	✓	✓	△ ^{*2}
D9-MI4-FX-2M	MITSUBISHI ELECTRIC FX series CPU (Mini DIN8) RS-422	✓	△ ^{*2}	✓	✓	✓	✓	✓	✓	✓	△ ^{*2}
D9-MI4-FX-3M		✓	△ ^{*2}	✓	✓	✓	✓	✓	✓	✓	△ ^{*2}
D9-MI4-FX-5M		✓	△ ^{*2}	✓	✓	✓	✓	✓	✓	✓	△ ^{*2}
D9-MI4-FX-10M		✓	△ ^{*2}	✓	✓	✓	✓	✓	✓	✓	△ ^{*2}
D9-MI4-FX-15M		✓	△ ^{*2}	✓	✓	✓	✓	✓	✓	✓	△ ^{*2}
D9-D25	Dsub9-Dsub25 conversion cable (0.3m)	✓	△ ^{*2}	✓	✓	✓	✓	✓	✓	✓	△ ^{*2}
MJ2-PLC	MJ2-Dsub25 conversion cable		✓							✓	
Communication Terminal Block											
TC-D9	V9/TS2000/V8 serieterminal converter	✓	△ ^{*2}	✓	✓	✓	✓	✓	✓	✓	△ ^{*2}
Battery											
V9-BT	Replacement battery for V9	✓		✓	✓	✓	✓	✓	✓	✓	✓
V7-BT	Replacement battery for V907xiW/V9060iTD/V8		✓								✓
Wireless LAN Antenna											
V9-ANT	V9 external antenna with cable (3m)	✓	✓								
Protection Sheets											
V715-GS	V9150iX/V815/V715 Surface protection sheet			✓							
V715-GSN10	V9150iX/V815/V715 Surface protection sheet (Non-glare)			✓							
V912S-GS	V9120iS protection sheets				✓						
V912S-GSN10	V9120iS protection sheets (Non-glare)				✓						
V910S-GS	V9100iS/V9100iC protection sheets					✓				✓	
V910S-GSN10	V9100iS/V9100iC protection sheets (Non-glare)					✓				✓	
V910W-GS	V9100iW protection sheets	✓									
V908S-GS	V9080iS/V9080iC protection sheets						✓				✓
V908S-GSN10	V9080iS/V9080iC protection sheets (Non-glare)						✓				✓
V907W-GS	V9070iW protection sheets		✓								
V906T-GS	V9060iTD/TS2000 protection sheets										✓
V906T-GSN10	V9060iTD/TS2000 protection sheets (Non-glare)										✓

*1 PLC connection cables other than those listed above are also available. For details, please contact our technical helpdesk.

*2 Optional unit DUR-00 is required.

MONITOUCH wide-variety product lineup

TS2000 series



TECHNOSHOT

5.7 inch QVGA 64K Color TFT LED Backlight 2ch Serial USB miniB DC Power supply



With Ethernet port
TS2060i
No Ethernet port
TS2060

10.5M FROM 512k SRAM USB A SD Card Ethernet Communication Units

2.5M FROM 128k SRAM

*1 "DUR-00" or "CUR-xx" is mountable.

Specifications

	TS2060	TS2060i
Screen Memory (FROM)	2.5Mbyte	10.5Mbyte
Backup Memory (SRAM)	128Kbyte	512Kbyte
Stroke Font	-	Compatible
Display	Display Device	TFT color
	Resolution W:H (dots)	320 x 240
	Display Size	5.7 inch (QVGA)
	Display Colors	65,536 colors(The software is compatible with displays in 32K colors, 256 colors, 128 colors and monochrome.)
	Backlight	LED
	Backlight Life	50,000 hours
	Touch Switch	Type Analog resistance film
Function Switch	Quantity 6	
External Interface	D-Sub 9-pin ²	RS-232C/RS-422/RS-485, asynchronous type, Data length: 7, 8 bits, Parity: odd, even, none, Stop bit: 1, 2 bits, Baud rate: 4800, 9600, 19200, 38400, 57600, 76800, 115200 bps
	Modular 8-pin(MJ1/2)	RS-232C/RS-422 (4-wire system) ³ /RS-485 (2-wire system), Asynchronous type, Data length: 7, 8 bits, Parity: even, odd, none Stop bit: 1, 2 bits, Baud rate: 4800, 9600, 19200, 38400, 57600, 76800, 115200, 187500 bps ⁴
	SD Card	-
	Ethernet	-
	USB	Type mini-B(Ver. 2.0)
	Communication Units	-
	Power Supply	Permissible Range of Voltage 24 V DC ± 10% Power Consumption (max. rating) 13W or less
Physical Environment	Ambient Temperature	0°C to +50°C ⁵
	Ambient Storage Temperature	-10°C to +60°C ⁵
	Ambient Humidity	85% RH or less (without dew condensation) ⁵
	Ambient Storage Humidity	85% RH or less (without dew condensation) ⁵
	Operating Altitude	2,000 m or less
	Operating Atmosphere	Not exposed to corrosive gas or excessive dust (free of conductive dust)
Installation Conditions	Contamination Level	Contamination level2
	Grounding	Grounding resistance: Less than 100 Ω, FG/SG separation
	Protective Structure	Front panel: Compatible with IP65 (when gasket is used), Rear cover: Compatible with IP20
	Cooling System	Natural air cooling
	Dimensions WxHxD	182.5 x 138.8 x 45.8 mm
Panel Cutout	174.0 ^{+0.5} x 131.0 ^{+0.5} mm (equivalent to V806/V606e/S806/V706/V606)	
Standard	CE/KC/UL61010-1, UL61010-2-201, EN50581	
Case Color	Black	
Battery	Built-in button battery / Battery life: 5 years (ambient temperature 25°C)	

*2 Only when mounting the optional unit (DUR-00) to the TS2060i. *3 Only MJ2 is compatible with 4-wire system.

*4 187500 bps only applies to Siemens MPI/PPi connections. MPI/PPi supports only MJ2. *5 Use at a wet-bulb temperature of 39°C or less because higher temperatures may cause failure.

V8 Handy Type



V808CH

7.5 inch VGA 64K Color TFT LED Backlight 2ch Serial CF Card USB B DC Power supply



With Ethernet port
V808iCH
No Ethernet port
V808CH

12.5M FROM 512k SRAM Ethernet

4.5M FROM 128k SRAM

V808CH Models

V808 CH

	Key switch	Deadman switch	
		Type	External output
0	N/A	Momentary	N/A
1	Equipped	Momentary	N/A
2	N/A	3-position	1-contact
3	Equipped	3-position	1-contact
4	N/A	3-position	2-contact

Feature Specifications
N/A: No built-in LAN port
i: Built-in LAN port

Specifications

	V808iCHx	V808CHx
Basic Specs	Display Size	7.5 inch (VGA)
	Display Device	TFT color LCD
	Resolution W:H (dots)	640 x 480 dots
	Display Colors	65,536 colors (no blink) / 32,768 colors (with blink)
	Screen Memory(FROM)	FROM (12.5M byte)
	Backup Memory(SRAM)	SRAM (512K byte)
	Clock	Equipped
	Ethernet	100BASE-TX/10BASE-T provided as standard
	CF Card I/F	Equipped
	USB I/F	Type B (Ver 1.1)
Function Switch	Quantity	12 (4 : external output)
	Type	Membrane switch
	Mechanical Life Expectancy	1,000,000 times or more
Touch Switch	Type	Push lock system (b-contact, 2 circuits)
	Mechanical Life Expectancy	100,000 times or more
	Rated Voltage	DC24V
	Rated Current	1 A (load resistance)
Key Switch	Contact	a-contact, 1 circuit
	Mechanical Life Expectancy	250,000 times or more
	Electrical Life Expectancy	100,000 times or more (operating cycles: 1200 times/hour)
Deadman Switch	Type	3-position output (a-contact, 2 circuits ²)
	Rated Voltage	DC24V
	Rated Current	1 A (load resistance)
External I/F	TB2	RS232C, Data length: 7, 8 bits, Parity: Even, odd, none Stop bit: 1, 2 bits Baud rate: 4800, 9600, 19200, 38400, 76800, 115,200 bps
	TB3	RS-422/485, Asynchronous type; Data length: 7, 8 bits Parity: Even, odd, none Stop bit: 1, 2 bits Baud rate: 4800, 9600, 19200, 38400, 76800, 115200, 187500 ³ bps
Applicable Standards	CE Marking	EN61000-6-2, EN61000-6-4, EN50581
	UL, cUL	UL508 ¹

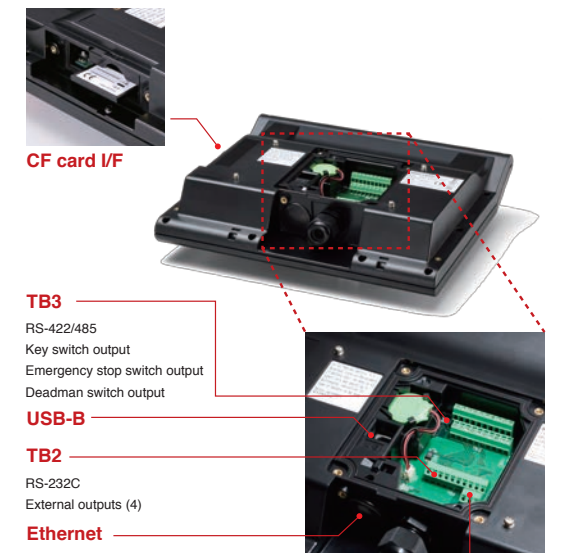
*1 Contact our sales office for information on UL508 compliant products.

*2 Only V808(i)CH4 comes with a-contact and 2 circuits. V808(i)CH2,3 only have 1 circuit.

*3 187500 bps only applies to Siemens MPI/PPi connections.

Optional Accessories List

Model	Product
V8H-C□	V808CH external connection cable (□ =3, 5,15, 20 m)
V7-BT	V8, V7, V606e battery
V8H-SWG	V808CH switch guard
V6H-WF	V808CH wall mounting bracket set
V6H-WF1	V808CH wall mounting bracket (wall side)
V8H-WFV	V808CH fixing bracket (VESA compliant)
V8H-ST	V808CH stand
V608CH-GSN10	V808CH/V608CH protection sheets (Non-glare)



CF card I/F

TB3

RS-422/485
Key switch output
Emergency stop switch output
Deadman switch output

USB-B

TB2

RS-232C
External outputs (4)

Ethernet

TB1

Power supply (24 V)

Manufacturer	Models	Connection form				Compatible models				
		1:1	1:n Multi-drop	n : 1 Multi-link2	n : 1 Multi-link	V9	TS2060i	TS2060	V8i	V8
Fuji Electric	MICREX-F series	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MICREX-F series V4-compatible	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MICREX-F T-Link	✓	✓	✓	✓	✓ ¹	✓ ¹	✓ ¹	✓ ¹	✓ ¹
	MICREX-F T-Link V4-compatible	✓	✓	✓	✓	✓ ¹	✓ ¹	✓ ¹	✓ ¹	✓ ¹
	SPB (N mode) & FLEX-PC series	✓	✓	✓	✓	✓	✓	✓	✓	✓
	SPB (N mode) & FLEX-PC CPU	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MICREX-SX (T-Link)	✓	✓	✓	✓	✓ ¹	✓ ¹	✓ ¹	✓ ¹	✓ ¹
	MICREX-SX (OPCN-1)	✓	✓	✓	✓	✓ ¹	✓ ¹	✓ ¹	✓ ¹	✓ ¹
	MICREX-SX (SX bus)	✓	✓	✓	✓	✓ ¹	✓ ¹	✓ ¹	✓ ¹	✓ ¹
	MICREX-SX SPH/SPB/SPM/SPE/SPF series	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MICREX-SX SPH/SPB/SPM/SPE/SPF CPU	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MICREX-SX (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	PLC-5	✓	✓	✓	✓	✓	✓	✓	✓	✓
Allen-Bradley	PLC-5 (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	SLC500	✓	✓	✓	✓	✓	✓	✓	✓	✓
	SLC500 (Ethernet TCP/IP)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	NET-ENI (SLC500 Ethernet TCP/IP)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	NET-ENI (MicroLogix Ethernet TCP/IP)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MicroLogix	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MicroLogix (Ethernet TCP/IP)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	ControlLogix / CompactLogix	✓	✓	✓	✓	✓	✓	✓	✓	✓
	ControlLogix (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Micro800 Controllers	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Micro800 Controllers (Ethernet TCP/IP)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Direct LOGIC (K-Sequence)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Direct LOGIC (Ethernet UDP/IP)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
Direct LOGIC (MODBUS RTU)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²	
Azbil	MX series	✓	✓	✓	✓	✓	✓	✓	✓	✓
	BMx-x-PLC	✓	✓	✓	✓	✓	✓	✓	✓	✓
Baumuller	ADS protocol (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓ ²	
BECKHOFF	BP series	✓	✓	✓	✓	✓	✓	✓	✓	✓
	CP series	✓	✓	✓	✓	✓	✓	✓	✓	✓
	S series	✓	✓	✓	✓	✓	✓	✓	✓	✓
	S series (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
DELTA	DVP series	✓	✓	✓	✓	✓	✓	✓	✓	✓
	DVP series (MODBUS ASCII)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	DVP series (MODBUS TCP/IP)	✓	✓	✓	✓	✓	✓	✓	✓	✓
EATON Cutler-Hammer	ELC	✓	✓	✓	✓	✓	✓	✓	✓	
EMERSON	EC10/20/20H (MODBUS RTU)	✓	✓	✓	✓	✓	✓	✓	✓	
FANUC	Power Mate	✓	✓	✓	✓	✓	✓	✓	✓	
Fatek Automation	FACON FB series	✓	✓	✓	✓	✓	✓	✓	✓	
FESTO	FEC	✓	✓	✓	✓	✓	✓	✓	✓	
FUFENG	APC series Controller	✓	✓	✓	✓	✓	✓	✓	✓	
GE Fanuc	90 series	✓	✓	✓	✓	✓	✓	✓	✓	✓
	90 series (SNP-X)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	90 series (SNP)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	90 series(Ethernet TCP/IP)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hitachi	RX3i (Ethernet TCP/IP)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	HIDIG-S10/2a,S10mini	✓	✓	✓	✓	✓	✓	✓	✓	✓
	HIDIG-S10/2a,S10mini (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
	HIDIG-S10/4a	✓	✓	✓	✓	✓	✓	✓	✓	✓
	HIDIG-S10 (OPCN-1)	✓	✓	✓	✓	✓ ¹	✓ ¹	✓ ¹	✓ ¹	✓ ¹
Hitachi Industrial Equipment Systems	HIDIG-S10V	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
	HIDIG-S10V (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
	HIDIG-H	✓	✓	✓	✓	✓ ³	✓ ³	✓ ³	✓ ³	✓ ³
	HIDIG-H (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
	HIDIG-EHV	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
HYUNDAI	HIDIG-EHV (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
	Hi5 Robot (MODBUS RTU)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Hi4 Robot (MODBUS RTU)	✓	✓	✓	✓	✓	✓	✓	✓	✓
IDEC	MICRO 3	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MICRO Smart	✓	✓	✓	✓	✓	✓	✓	✓	✓
Jetter	MICRO Smart pentra	✓	✓	✓	✓	✓	✓	✓	✓	✓
	JetControl series2/3 (Ethernet UDP/IP)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
JTEKT	TOYOPUC	✓	✓	✓	✓	✓	✓	✓	✓	✓
	TOYOPUC (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
	TOYOPUC (Ethernet PC10 mode)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
	TOYOPUC-Plus	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
	TOYOPUC-Plus (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
KEYENCE	TOYOPUC-Nano (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
	K2 series Link	✓	✓	✓	✓	✓	✓	✓	✓	✓
	K2-A500 CPU	✓	✓	✓	✓	✓	✓	✓	✓	✓
	K2/KV series CPU	✓	✓	✓	✓	✓	✓	✓	✓	✓
	K224/300 CPU	✓	✓	✓	✓	✓	✓	✓	✓	✓
	KV10/24 CPU	✓	✓	✓	✓	✓	✓	✓	✓	✓
	KV-700	✓	✓	✓	✓	✓	✓	✓	✓	✓
	KV-700 (Ethernet TCP/IP)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	KV-1000	✓	✓	✓	✓	✓	✓	✓	✓	✓
	KV-1000 (Ethernet TCP/IP)	✓	✓	✓	✓	✓	✓	✓	✓	✓
KOYO ELECTRONICS	KV-3000/5000	✓	✓	✓	✓	✓	✓	✓	✓	✓
	KV-3000/5000 (Ethernet TCP/IP)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	KV-7000 (Ethernet TCP/IP)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	SU/SG	✓	✓	✓	✓	✓	✓	✓	✓	✓
	SR-T (K protocol)	✓	✓	✓	✓	✓	✓	✓	✓	✓
LS	SU/SG (K-Sequence)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	SU/SG (MODBUS RTU)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MASTER-KxxxS	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MASTER-KxxxS CNET	✓	✓	✓	✓	✓	✓	✓	✓	✓
	MASTER-K series(Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
	GLOFA CNET	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GLOFA GM7 CNET	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GLOFA GM series CPU	✓	✓	✓	✓	✓	✓	✓	✓	✓
	GLOFA GM series (Ethernet UDP/IP)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
	XGT/XGK series CNET	✓	✓	✓	✓	✓	✓	✓	✓	✓
MITSUBISHI ELECTRIC	XGT/XGK series CPU	✓	✓	✓	✓	✓	✓	✓	✓	✓
	XGT/XGK series (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
	XGT/XGI series CNET	✓	✓	✓	✓	✓	✓	✓	✓	✓
	XGT/XGI series CPU	✓	✓	✓	✓	✓	✓	✓	✓	✓
	XGT/XGI series (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
	A series link	✓	✓	✓	✓	✓	✓	✓	✓	✓
	A series CPU	✓	✓	✓	✓	✓	✓	✓	✓	✓
	A series (OPCN-1)	✓	✓	✓	✓	✓ ¹	✓ ¹	✓ ¹	✓ ¹	✓ ¹
	QnA series link	✓	✓	✓	✓	✓	✓	✓	✓	✓
	QnA series CPU	✓	✓	✓	✓	✓	✓	✓	✓	✓
QnA series (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²	
QnH (Q) series link	✓	✓	✓	✓	✓	✓	✓	✓	✓	
QnH (Q) series CPU	✓	✓	✓	✓	✓	✓	✓	✓	✓	
QnU series CPU	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Q00J/00/01 CPU	✓	✓	✓	✓	✓	✓	✓	✓	✓	
QnH (Q) series (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²	
QnH (Q) series link (multi CPU)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
QnH (Q) series (multi CPU) (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²	
QnH (Q) series CPU (multi CPU)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
QnH (Q) series (Ethernet ASCII)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²	
QnH (Q) series (multi CPU) (Ethernet ASCII)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²	
QnU series (built-in Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²	
L series link	✓	✓	✓	✓	✓	✓	✓	✓	✓	
L series (built-in Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²	

Manufacturer	Models	Connection form				Compatible models				
		1:1	1:n Multi-drop	n : 1 Multi-link2	n : 1 Multi-link	V9	TS2060i	TS2060	V8i	V8
MITSUBISHI ELECTRIC	L series CPU	✓	✓	✓	✓	✓	✓	✓	✓	✓
	A series (CC-LINK)	✓	✓	✓	✓	✓ ¹	✓ ¹	✓	✓ ¹	✓ ¹
	QnA series (CC-LINK)	✓	✓	✓	✓	✓ ¹	✓ ¹	✓	✓ ¹	✓ ¹
	QnH (Q) series (CC-LINK)	✓	✓	✓	✓	✓ ¹	✓ ¹	✓	✓ ¹	✓ ¹
	FX series CPU	✓	✓	✓	✓	✓ ³	✓ ³	✓	✓ ⁴	✓ ⁴
	FX2N/1N series CPU	✓	✓	✓	✓	✓	✓	✓	✓	✓
	FX1S series CPU	✓	✓	✓	✓	✓	✓	✓	✓	✓
	FX series link (A protocol)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	FX-3U/3UC/3G series CPU	✓	✓	✓	✓	✓	✓	✓	✓	✓
	FX-3U/3UC/3UG series link (A protocol)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	FX-5U/5UC series	✓	✓	✓	✓	✓	✓	✓	✓	✓
	FX-5U/5UC series (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
	A-link + Net10	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Q170M/CPU (multi CPU)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Q170 series (multi CPU) (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
	iQ-R series (built-in Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
	iQ-R series link	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
iQ-R series (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²	
MODICON	MODBUS RTU	✓	✓	✓	✓	✓	✓	✓	✓	✓
	PS4	✓	✓	✓	✓	✓	✓	✓	✓	✓
MOELLER	SYSMAC C	✓	✓	✓	✓	✓	✓	✓	✓	✓
	SYSMAC C (OPCN-1)	✓	✓	✓	✓	✓ ¹	✓ ¹	✓	✓ ¹	✓ ¹
OMRON	SYSMAC CV	✓	✓	✓	✓	✓	✓	✓	✓	✓
	SYSMAC CS1/CJ1	✓	✓	✓	✓	✓	✓	✓	✓	✓
	SYSMAC CS1/CJ1 DNA	✓	✓	✓	✓	✓	✓	✓	✓	✓
	SYSMAC CS1/CJ1 (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
	SYSMAC CS1/CJ1 (Ethernet Auto)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
	SYSMAC CS1/CJ1 DNA (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
	NJ Series (EtherNet/IP)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	FP series (RS232C/422)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Panasonic	FP series (TCP/IP)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	FP series (UDP/IP)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
	FP-X (TCP/IP)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	FP7 series (RS232C/422)	✓	✓	✓	✓	✓	✓	✓	✓	✓
RS Automation	FP7 series (Ethernet)	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
	NX7/NX Plus series (70P/700P/CCU+)	✓	✓	✓	✓	✓	✓	✓	✓	✓
	N7/NX series (70/700/750/CCU)	✓	✓	✓	✓	✓	✓	✓	✓	✓
SAIA	NX700 series (Ethernet)	✓								

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To the purchasers of Hakko Electronics products:

The warranty of this product is as follows, unless there are special instructions that state otherwise in the quote, contract, catalog, or specifications at the time of the quote or order.

The purpose or area of use may be limited, and a routine checkup may be required depending on the product. Please contact the distributor from which you purchased the product, or Hakko Electronics for further information.

Please conduct inspection of the product promptly upon purchase or delivery. Also, please give sufficient consideration to management and maintenance of the product prior to accepting it.

1 Period and Coverage of the Warranty

1-1 Period

- (1) The period of the warranty is effective until twenty-four (24) months from the date of manufacture printed on the plate.
- (2) The above period may not be applicable if the particular environment, conditions or frequency of use affects the lifetime of the product.
- (3) The warranty for the parts repaired by Hakko Electronics' service department is effective for six (6) months from the date of repair.

1-2 Coverage

- (1) If malfunction occurs during the period of warranty due to negligence on the part of Hakko Electronics, the malfunctioning parts are exchanged or repaired free of charge at the point of purchase or delivery. However, the warranty does not apply to the following cases:
 - 1) The malfunction occurs due to inappropriate conditions, environment, handling or usage that is not specified in the catalog, instruction book or users' manual.
 - 2) The malfunction is caused by factors that do not originate in the purchased or delivered product.
 - 3) The malfunction is caused by another device or software design that does not originate in a Hakko Electronics product.
 - 4) The malfunction occurs due to an alteration or repair that was not performed by Hakko Electronics.
 - 5) The malfunction occurs because the expendable parts listed in the instruction book or catalog were not maintained or replaced in an appropriate manner.
 - 6) The malfunction occurs due to factors that were not foreseeable by the practical application of science and technology at the time of purchase or delivery.
 - 7) The malfunction occurs because the product is used for a purpose other than that for which it is intended.
 - 8) The malfunction occurs due to a disaster or natural disaster that Hakko Electronics is not responsible for.
- (2) The warranty is only applicable to the single purchased and delivered product.
- (3) The warranty is only valid for the conditions stated in (1) above. Any damage induced by the malfunction of the purchased or delivered product, including damage or loss to a device or machine and passive damage, is not covered by the warranty.

1-3 Malfunction Diagnosis

The initial diagnosis of malfunction is to be made by the purchaser. The diagnosis can be conducted by Hakko Electronics or its delegated service provider with due charge upon the request of the purchaser. The charge is to be paid by the purchaser at the rate stipulated in the rate schedule of Hakko Electronics.

2 Liability for Opportunity Loss

Regardless of the time of occurrence, Hakko Electronics is not liable for damage caused by factors that Hakko Electronics is not responsible for, opportunity loss on the part of the purchaser caused by the malfunction of a Hakko Electronics product, passive damage, damage due to a special situation regardless of whether it was foreseeable or not, or secondary damage, accident compensation, damage to products that were not manufactured by Hakko Electronics, or compensation towards other operations.

3 Period for Repair and Provision of Spare Parts after Production is Discontinued (Maintenance Period)

Discontinued models (products) can be repaired for seven (7) years from the date of discontinuation. Also, most spare parts used for repair are provided for seven (7) years from the date of discontinuation. However, some electric parts may not be available due to their short life cycle. In this case, it may be difficult to repair or provide the parts during the seven-year period. Please contact Hakko Electronics or its service providers for further information.

4 Delivery

Standard products that do not entail application setting or adjustment are regarded as received by the purchaser upon delivery. Hakko Electronics is not responsible for local adjustments and test runs.

5 Service

The price of the delivered or purchased products does not include the service fee for the technician. Please contact Hakko Electronics or its service providers for further information.

6 Scope of Application

The above contents shall be assumed to apply to transactions and product use in the country where a Hakko Electronics product is purchased. Please consult your local supplier or Hakko Electronics for details.

Safety Considerations

- For safe operation, read the instruction manual or user manual that comes with the product carefully or consult the distributor from which you purchased the product, before using the product.
- Products introduced in this catalog have not been designed or manufactured for such applications in a system or equipment that will affect human bodies or lives.
- Customers, who want to use the products introduced in this catalog for special systems or devices such as for atomic-energy control, aerospace use, medical use, passenger vehicle, and traffic control, are requested to consult the Hakko Overseas Sales Section.
- Customers are requested to prepare safety measures when they apply the products introduced in this catalog to such systems or facilities that will affect human lives or cause severe damage to property if the products become faulty.
- For safe operation, wiring should be conducted only by qualified engineers who have sufficient technical knowledge about electrical work or wiring.

Notes to consider before purchasing

- Appearance and specifications are subject to modification without prior notice due to technical improvements.
- Colors in the catalog may differ from the actual colors due to printing inaccuracies.
- Consult your distributor or us for further information about products in this catalog.

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