International edition 11/2006

e-Front runners

MONITOUCH

All of your FA information brilliantly displayed and easily connected

HAKKO OPERATOR INTERFACE PANELS

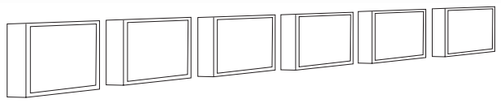
MONITOUCH *V7 & V6 series*

Hakko Electronics Co., Ltd.

www.monitouch.com

MONITOUCH V7 Series for Your Evolving Production Sites

When you consider the accelerating pace of production technology development and the rapid expansion of global networking, it is clear that managing and utilizing information from your production sites is the key to the success of your business.
With the addition of new 15-inch displays, the enhanced MONITOUCH V7 series open up unprecedented possibilities for linking together your office and your plants, supplying your people with all the information they need.



Point 1

3 models (12"/10"/8") have SVGA (800×600 dots) displays, enabling comprehensive sharing of screen data.

Point 2

Analog touch switches give you the freedom to choose the size and layout of your display.

Point 3

100BASE-TX/10BASE-T Ethernet connection lets you integrate all your production data.

Point 4

Compatible with a wide range of controllers such as PLCs and temperature controllers.

55 manufacturers

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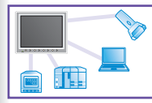
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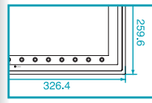

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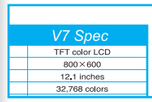

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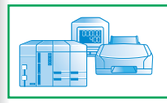
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PLCs, temperature controllers, and compatible units lists

New 15" MONITOUCH screens offer easy viewing. The MONITOUCH range lets you select the size and functions that fit your needs.

V7 series

5.7-inch

V706T

V706C

V706M

7.7-inch

V708C

8.4-inch

V708iS / V708S

10.4-inch

V710iS / V710S

V710iT / V710T

V710C

V6 series

5.7-inch

V606eC

V606eM

7.7-inch

V608CH

8.9-inch

V609E

*Only 24VDC models comply with CE/UL/cUL.

V7 & V6 Lineup

V7 series

12.1-inch

V712iS / V712S

15-inch

V715X

Specifications

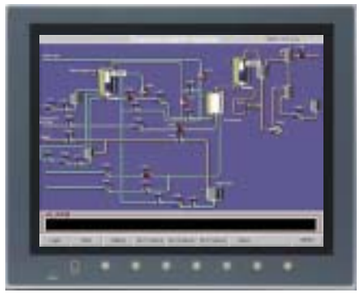
Model	V710					V712		V715
	V710iS	V710S	V710iT	V710T	V710C	V712iS	V712S	V715X
Display size	10.4 inches					12.1 inches		15 inches
Display type	TFT color LCD							
Display resolution (dot)	800×600		640×480			800×600		1024×768
Color	32,768 colors + 16 colors in blink mode				128 colors + 16 colors in blink mode	32,768 colors + 16 colors in blink mode		
Option: Memory expansion cassette	V7EM-F (FLASH: 8M) / V7EM-S (SRAM: 512K) / V7EM-L (FLASH: 4M)							
Option: Video	EU-00	–	EU-00	–		EU-00	–	GU-00
Option: RGB input	EU-01	–	EU-01	–		EU-01	–	GU-01
Option: RGB output	EU-02	–	EU-02	–		EU-02	–	GU-02
Option: Sound output	EU-03	–	EU-03	–		EU-03	–	GU-03
Option: Communication unit	CU-xx (See P20.)							

Model	V706			V708			V6			
	V706T	V706C	V706M	V708C	V708iS	V708S	V606eC	V606eM	V608CH	V609E
Display size	5.7 inches			7.7 inches	8.4 inches		5.7 inches		7.7 inches	8.9 inches
Display type	TFT color LCD	STN color LCD	STN monochrome LCD	STN color LCD	TFT color LCD		STN color LCD	STN monochrome LCD	STN color LCD	High-intensity EL
Display resolution (dot)	320×240			640×480	800×600		320×240		640×480	640×400
Color	32,768 colors +16 colors in blink mode		Monochrome 8 grayscale + blink mode	128 colors +16 colors in blink mode	32,768 colors +16 colors in blink mode		16 colors + blink mode	Monochrome 8 grayscale + blink mode	128 colors +16 colors in blink mode	2 colors + blink mode
Option: Memory expansion cassette	V706EM-F (FLASH: 4M) V706EM-S (SRAM: 512K)			V7EM-F (FLASH: 8M) / V7EM-S (SRAM: 512K) / V7EM-L (FLASH: 4M)			–			
Option: Video	–			–	EU-00	–	–			
Option: RGB input	–			–	EU-01	–	–			
Option: RGB output	–			–	EU-02	–	–			
Option: Sound output	–			–	EU-03	–	–			
Option: Communication unit	CU-ADP + CU-xx (See P20.)			CU-xx (See P20.)			–			

You can opt for the basic model for maximum cost efficiency or go for the top of the range model with large screens and the latest in high-tech functions.

15-inch model

Top of the Range Model with XGA and 16,770,000-Color Video Display



V715X

15 | 1024×768 | TFT | 32K color | 64K | Ethernet | CF | RGB IN | RGB OUT | Cassette | USB

Model	Specifications	Certifications
V715X	TFT color, 32,768 colors, 1024×768 dots, Analog switch, 100-240 VAC	
V715XD	TFT color, 32,768 colors, 1024×768 dots, Analog switch, 24VDC	CE/UL/cUL NK

▶Specifications···See P36. ▶Dimensions···See P34. ▶Symbols···See P8.

High Resolution XGA (1024×768) and 32,768 Colors

With the large screen's enhanced XGA resolution (1024×768 dots), it is now even easier to view 4 channels of video simultaneously. In addition, full 32,768 color screens offer unprecedented clarity for pictures, illustrations and 3D parts. The high resolution displays ensure smooth and accurate processing on the screen.

Built-in Ethernet Port

The V715 comes with an Ethernet 100BASE-TX/10BASE-T port fitted as standard. This allows for high speed communication, as well as obtaining information from production sites in real time with our TELLUS and V-Server software.


Ethernet port

16-Bit Stereo Sound

With a sound output unit (GU-xx) and a speaker connected to MONITOUCH, an alarm will be sounded over a wide area in the event of an error, ensuring timely response and safe operation. 16-bit stereo provides enhanced sound quality.

Certified Marine Industry Standard

V715XD models have been fully certified for use with marine equipment by NK (Nippon Kaiji Kyokai).

High Definition Video Images with 16,770,000 Colors

With a video display unit (GU-00), video images taken at 4 locations can be viewed simultaneously. High definition images with 16,770,000 colors can be displayed.

USB Slave/Master Port

- Slave: can transfer screen data created by "V-SFT" at high speed.
- Master: can output data to a printer or transfer it to a CF card reader.


USB port

SRAM 128K Byte Memory

The V715 has SRAM 128K byte memory fitted as standard. This allows backup of sampling data, memo data, internal memory, etc. as well as transfer of recipe data.

12.1-inch model

SVGA Compatible High Performance Models

V712iS / V712S

12.1 | 800×600 | TFT | 32K color | 64K | Ethernet | CF | RGB IN | RGB OUT | Cassette

Model	Specifications	Certifications
V712iS	TFT color, 32,768 colors, 800×600 dots, Analog switch, High-performance type, 100-240VAC	
V712iSD	TFT color, 32,768 colors, 800×600 dots, Analog switch, High-performance type, 24VDC	CE/UL/cUL
V712iSM	TFT color, 32,768 colors, 800×600 dots, Matrix switch, High-performance type, 100-240VAC	
V712iSMD	TFT color, 32,768 colors, 800×600 dots, Matrix switch, High-performance type, 24VDC	CE/UL/cUL
V712S	TFT color, 32,768 colors, 800×600 dots, Analog switch, Standard type, 100-240VAC	
V712SD	TFT color, 32,768 colors, 800×600 dots, Analog switch, Standard type, 24VDC	CE/UL/cUL
V712SM	TFT color, 32,768 colors, 800×600 dots, Matrix switch, Standard type, 100-240VAC	
V712SMD	TFT color, 32,768 colors, 800×600 dots, Matrix switch, Standard type, 24VDC	CE/UL/cUL

▶Specifications···See P36. ▶Dimensions···See P34. ▶Symbols···See P8.

10.4-inch model

Various Lineups Depending on Display Capacity

V710iS / V710S

10.4 | 640×480 | TFT | 32K color | 64K | Ethernet | CF | RGB IN | RGB OUT | Cassette

V710iT / V710T

10.4 | 640×480 | TFT | 32K color | 64K | Ethernet | CF | RGB IN | RGB OUT | Cassette

V710C

10.4 | 640×480 | TFT | 128 color | 64K | Ethernet | CF | Cassette

Model	Specifications	Certifications
V710iS	TFT color, 32,768 colors, 800×600 dots, Analog switch, High-performance type, 100-240VAC	
V710iSD	TFT color, 32,768 colors, 800×600 dots, Analog switch, High-performance type, 24VDC	CE/UL/cUL
V710S	TFT color, 32,768 colors, 800×600 dots, Analog switch, Standard type, 100-240VAC	
V710SD	TFT color, 32,768 colors, 800×600 dots, Analog switch, Standard type, 24VDC	CE/UL/cUL
V710iT	TFT color, 32,768 colors, 640×480 dots, Analog switch, High-performance type, 100-240VAC	
V710iTD	TFT color, 32,768 colors, 640×480 dots, Analog switch, High-performance type, 24VDC	CE/UL/cUL
V710iTM	TFT color, 32,768 colors, 640×480 dots, Matrix switch, High-performance type, 100-240VAC	
V710iTMD	TFT color, 32,768 colors, 640×480 dots, Matrix switch, High-performance type, 24VDC	CE/UL/cUL
V710T	TFT color, 32,768 colors, 640×480 dots, Analog switch, Standard type, 100-240VAC	
V710TD	TFT color, 32,768 colors, 640×480 dots, Analog switch, Standard type, 24VDC	CE/UL/cUL
V710TM	TFT color, 32,768 colors, 640×480 dots, Matrix switch, Standard type, 100-240VAC	
V710TMD	TFT color, 32,768 colors, 640×480 dots, Matrix switch, Standard type, 24VDC	CE/UL/cUL
V710C	TFT color, 128 colors, 640×480 dots, Analog switch, Standard type, 100-240VAC	
V710CD	TFT color, 128 colors, 640×480 dots, Analog switch, Standard type, 24VDC	CE/UL/cUL
V710CM	TFT color, 128 colors, 640×480 dots, Matrix switch, Standard type, 100-240VAC	
V710CMD	TFT color, 128 colors, 640×480 dots, Matrix switch, Standard type, 24VDC	CE/UL/cUL

▶Specifications···See P36. ▶Dimensions···See P34. ▶Symbols···See P8.

Product

8.4-inch and 7.7-inch models

SVGA Compatible Models are also Available.

V708iS/ V708S

8.4 | 800×600 | TFT | 32K color | 64K | Ethernet | CF | Cassette | RGB IN | RGB OUT

V708C

7.7 | 640×480 | STN | 128 color | 64K | Ethernet | CF | Cassette

Model	Specifications	Certifications
V708iSD	TFT color, 32,768 colors, 800×600 dots, Analog switch, High-performance type, 24VDC	CE/UL/cUL
V708SD	TFT color, 32,768 colors, 800×600 dots, Analog switch, Standard type, 24VDC	CE/UL/cUL
V708CD	STN color, 128 colors, 640300300480 dots, Analog switch, Standard type, 24VDC	CE/UL/cUL

▶ Specifications···See P37. | ▶ Dimensions···See P34.

5.7-inch model

42.5 mm Slim Displays with USB Ports

V706T

5.7 | 320×240 | TFT | 32K color | 128K | Ethernet | CF | Cassette | USB

V706C

5.7 | 320×240 | STN | 32K color | 128K | Ethernet | CF | Cassette | USB

V706M

5.7 | 320×240 | STN | MONO | 128K | Ethernet | CF | Cassette | USB

Model	Specifications	Certifications
V706TD	TFT color, 32,768 colors, 320×240 dots, Analog switch, 24VDC	CE/UL/cUL
V706TMD	TFT color, 32,768 colors, 320×240 dots, Matrix switch, 24VDC	CE/UL/cUL
V706CD	STN color, 32,768 colors, 320×240 dots, Analog switch, 24VDC	CE/UL/cUL
V706CMD	STN color, 32,768 colors, 320×240 dots, Matrix switch, 24VDC	CE/UL/cUL
V706MD	STN monochrome, 8 hues, 320×240 dots, Analog switch, 24VDC	CE/UL/cUL
V706MMD	STN monochrome, 8 hues, 320×240 dots, Matrix switch, 24VDC	CE/UL/cUL

▶ Specifications···See P37. | ▶ Dimensions···See P35.

5.7-inch model

Serial Connection with PLCs: Low Cost Models

V606eC

5.7 | 320×240 | STN | 16 color | 128K

V606eM

5.7 | 320×240 | STN | MONO | 128K

Model	Specifications	Certifications
V606eC20	STN color, 16 colors, 320×240 dots, Analog switch, 24VDC	CE/UL/cUL
V606eM20	STN monochrome, 8 hues, 320×240 dots, Analog switch, 24VDC	CE/UL/cUL
V609E30M	High-intensity EL, 2 colors, 640×400 dots, Matrix switch, 100-240VAC	
V609E30MD	High-intensity EL, 2 colors, 640×400 dots, Matrix switch, 24VDC	CE/UL/cUL
V608CH0	STN color, 128 colors, 640×480 dots, Analog switch, deadman switch, 24VDC	CE/UL/cUL
V608CH1	STN color, 128 colors, 640×480 dots, Analog switch, deadman switch, key switch, 24VDC	CE/UL/cUL
V608CH2	STN color, 128 colors, 640×480 dots, Analog switch, 3-position deadman switch, 24VDC	CE/UL/cUL
V608CH3	STN color, 128 colors, 640×480 dots, Analog switch, 3-position deadman switch, key switch, 24VDC	CE/UL/cUL

▶ Specifications···See P38. | ▶ Dimensions···See P35.

7.7-inch model

A Handy Model for Carrying, Hanging and Standing.

V608CH

7.7 | 640×480 | STN | 128 color | CF

▶ Specifications···See P38. | ▶ Dimensions···See P35.

8.9-inch model

High Brilliance Model with a Wide Viewing Angle

V609E

8.9 | 640×400 | EL | 2 color | 8K

▶ Specifications···See P38. | ▶ Dimensions···See P35.

☐ Legend of Symbols

- 12.1 — Screen size (inch)
- 800×600 — Resolution (WxL) (dots)
- TFT — Display device
- 32K color — Indication colors
- 64K — SRAM (byte)
- Ethernet — Ethernet 100BASE-TX/10BASE-T *CU-03-2 is not compatible with 100BASE.
- Printer interface
- CF — CF card interface
- Video display
- Sound output
- RGB IN — RGB input
- RGB OUT — RGB output
- USB — USB-A USB-B
- Cassette — Memory expansion cassette
- i-series (top of the range model) exclusive option
- Option

High visibility enables quick response to an emergency. Outstanding visual expression capacity

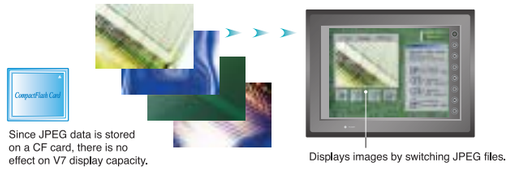
SVGA Compatible (12, 10 and 8-inch models)

Three models (12, 10 and 8 inches) feature high resolution images of SVGA (800×600 dots) and image data sharing capability. Screen data on your MONITOUCH can be copied onto a new unit when changing the unit model.

JPEG File Display*1

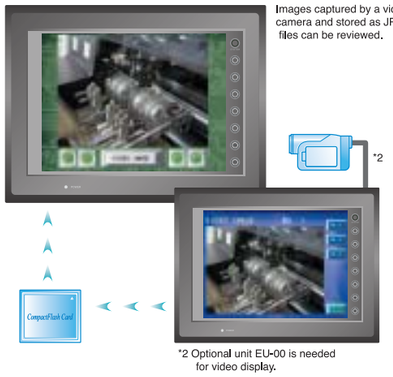
A V7 unit allows you to review images stored as JPEG files in the unit. In addition, images (JPEG files) captured by a video camera can also be displayed on a V7i-series display*2. It is possible to compare a real-time video image with the stored image, as well as uploading JPEG files to your PC to create documents.

*1 Excludes V710C, V708C and V706M.



Since JPEG data is stored on a CF card, there is no effect on V7 display capacity.

Displays images by switching JPEG files.



Images captured by a video camera and stored as JPEG files can be reviewed.

*2 Optional unit EU-00 is needed for video display.

Screen Enlargement/Reduction

JPEG files can be magnified or shrunk in accordance with the area to be displayed. Three kinds of display resolutions can be selected depending on the use; quick editing speed at low resolution or slow editing at high resolution.

《Original image》

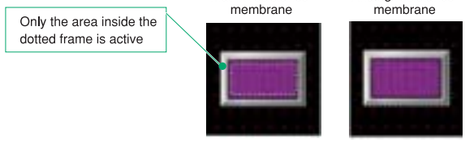
640 x 480 dots

320×240 dots

The image size is adjusted automatically according to the area to be displayed on the screen.

Analog Switches

Analog membrane switches can be edited free from restriction of size and layout.



Memo Pad Function as a Message Board

Analog membrane switches allow you to use the display as a memo pad.
You can draw a picture or a message on a V7 panel for use as a message board at the production site.

Windows Fonts*

Clear and Smooth Fonts

You can select fonts used for Windows PCs. Versatile screen composition using various fonts improves the appearance and usability of your screens.

Changing Font Style for the Nature of Alarms

The font style (color and emphasis) of a message can be changed to reflect the nature of an alarm. Bit order alarming, Alarm logging or Alarm tracking messages can be shown differently.

Font size can be changed.

Changing All Fonts Simultaneously

All the fonts used on the screens can be set, released or changed simultaneously.

Items to be changed simultaneously can be specified.

*Not available for V606e series, V609E and V608CH.

Windows Font List

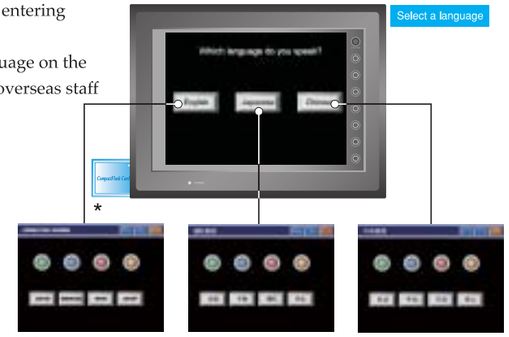
Windows fonts used on V7 screens can be listed. Fonts that do not exist in the PC are shown in red.

Multi-language Display

Eight different languages can be displayed by entering language data beforehand.
Pressing the conversion key switches the language on the screen. This function is useful for sites where overseas staff or workers are working.

Multi-language Editing

Multi-language tabular format means you can input and view words easily.



*CF card is required for multi-language selection.

More convenient and user-friendly MONITOUCH. Various functions to meet the needs of your production sites.

NEW Localization of the Main Menu: Chinese (simplified and traditional)/Korean/English

In addition to Japanese/English characters, Chinese simplified and traditional characters and Korean characters can be indicated on the "Main Menu". This function is useful for the use in overseas to which the systems are to be exported.

Select a desired language from the Font menu.
The Main Menu in the selected language appears.

Simplified Chinese Menu

Traditional Chinese Menu

Korean Menu

English Menu

Japanese Menu

PLC Ladder Program Transfer

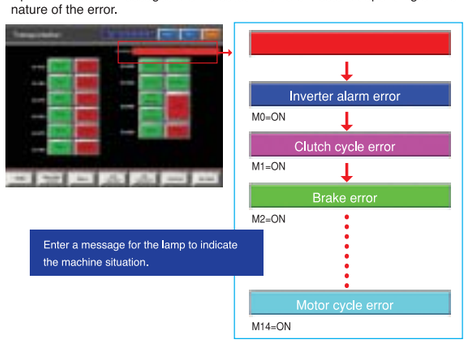
Even though the PLC has only one port, ladder programs can be transferred to your PC via MONITOUCH by connecting MONITOUCH and PC with MJ1/2.

•Compatible models: See P44.

16-State Switches/Lamps

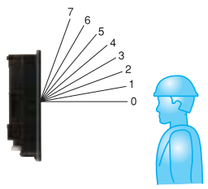
Switches and lamps can be programmed in 16 different patterns and colors to show the exact line condition.

●e.g.
Up to 15 different messages are indicated in different colors depending on the nature of the error.



Adjustable Viewing Angle (V710C only)

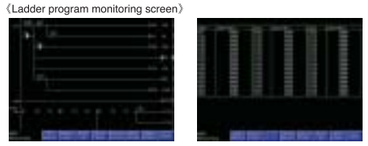
The display has eight different viewing angle options to match the eye level of the operator.



PLC Ladder Program Monitoring (V7 series only*)

In the event of an error, easy access to PLC programs (circuit diagram and I/O status) via MONITOUCH V7 series enables you to locate the cause and solve the problem promptly. •Compatible models: See P46. *Excluding V706

《Ladder program monitoring screen》



Circuit monitoring

I/O monitoring

Link to the Circuit Monitor

When an error message appears on the screen, touch it to go to the ladder monitor and check the circuit diagram to find the cause of the problem. (Link setting is needed beforehand.) This function helps to locate the cause of the problem.

Pin-pointing the problem on the circuit diagram enables a quick response.

For ladder monitor function, V7EM-L (Flash memory cassette) is needed.

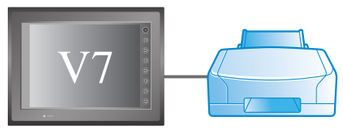
M100: control panel emergency stop

Brilliance Control*

There are 128 degrees of screen brilliance. The brilliance of different screens can be set in accordance with the ambient brightness where the display is located. (The lifespan of the backlight may be slightly shortened by increasing the brilliance) *Excluding V708C, V706C and V706M

Compatible with Color Ink Jet Printer (V7 series only)

In addition to MS-DOS printers, EPSON printers (EPSON STYLUS Series) are compatible. Color printers offer hard copies of realistic images of the screen in 32,768 colors.

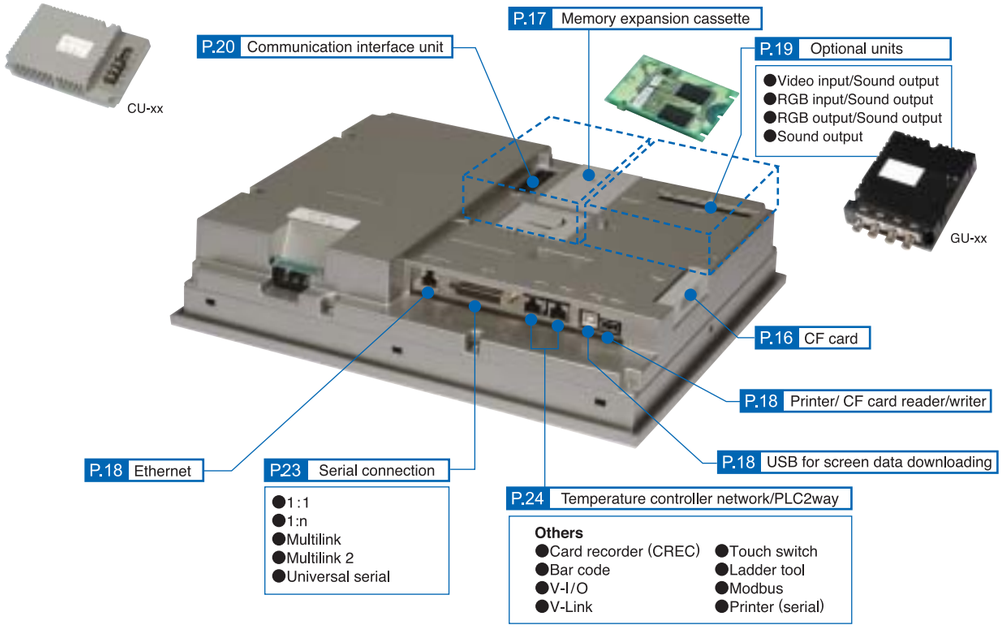


•For further information, please contact Hakko.

Optimal interface capability realizes more user-friendly and efficient system configuration.

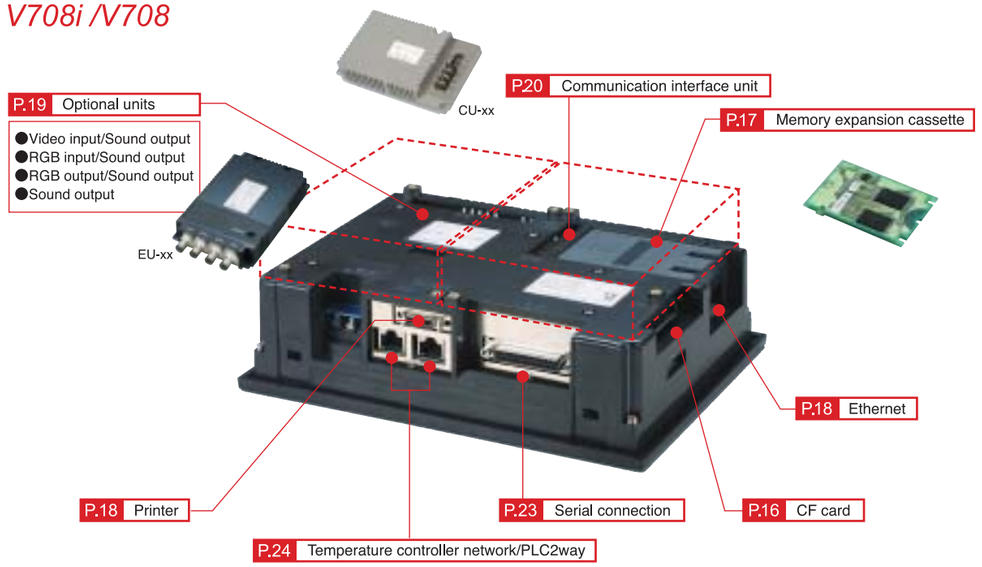
Hardware Configuration Example

V715



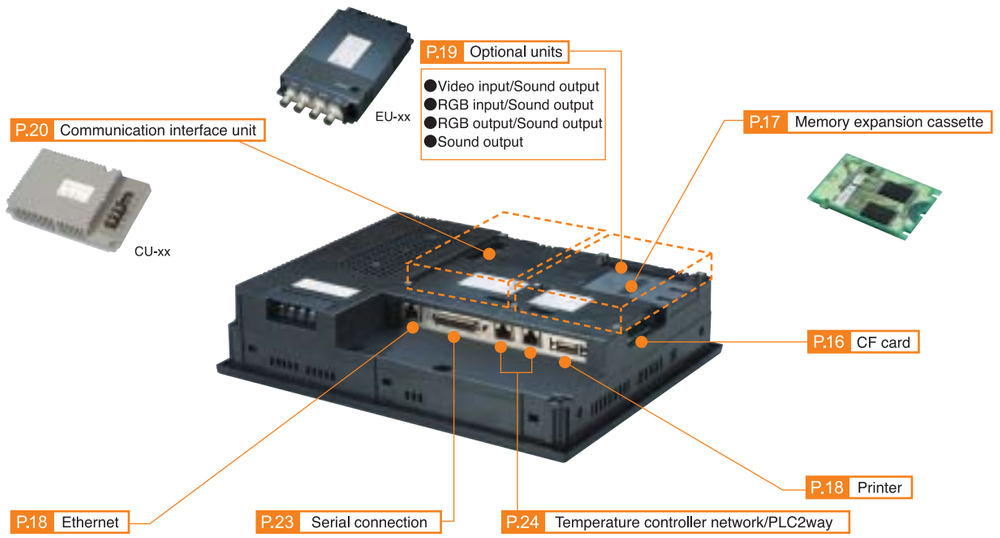
Hardware Configuration Example

V708i /V708



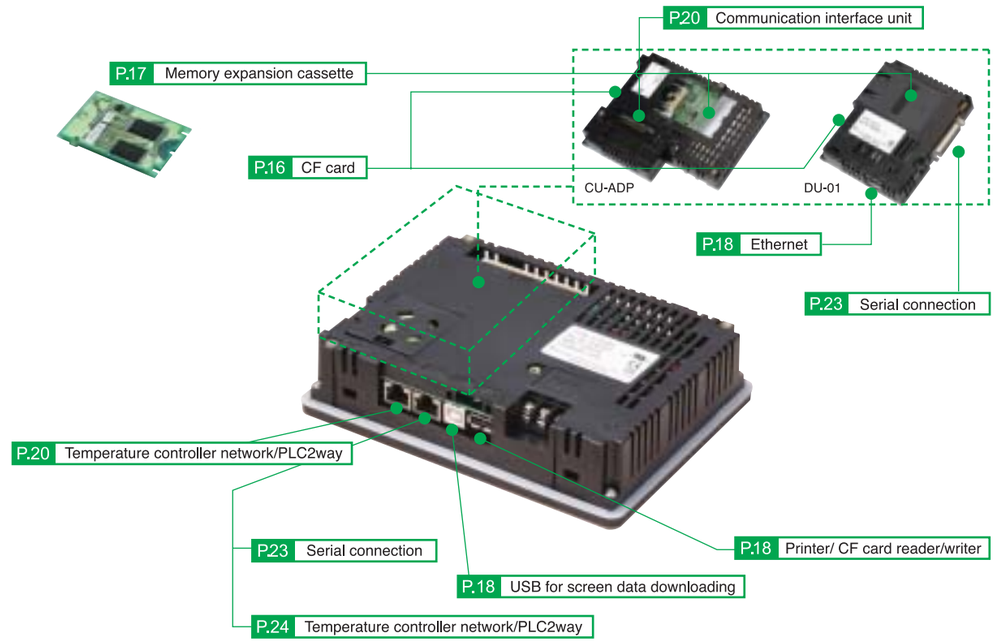
Hardware Configuration Example

V712i /V712 /V710i /V710



Hardware Configuration Example

V706



Standardized CF card slot* for high-level information management

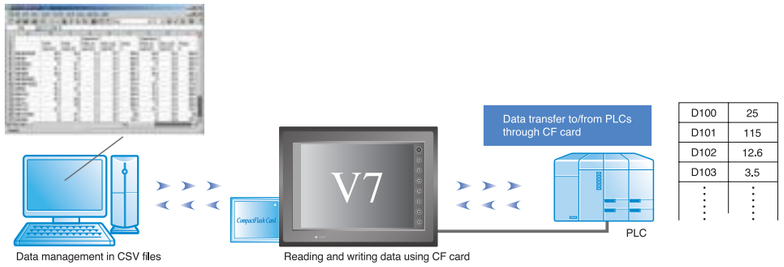
*Optional for V706.

Recipe Data Transfer

Recipe data prepared on a PC can be transferred to PLC for production line modification and PLC setting. Also, PLC data can be transferred into CF card.

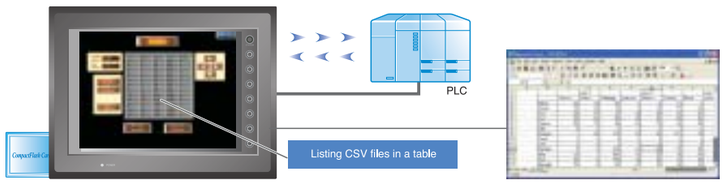
Readout and Writing by Macro Command

Recipe files (CSV files) can be read out to PLC and written back into files by macro command. Data can be saved or displayed at anytime.



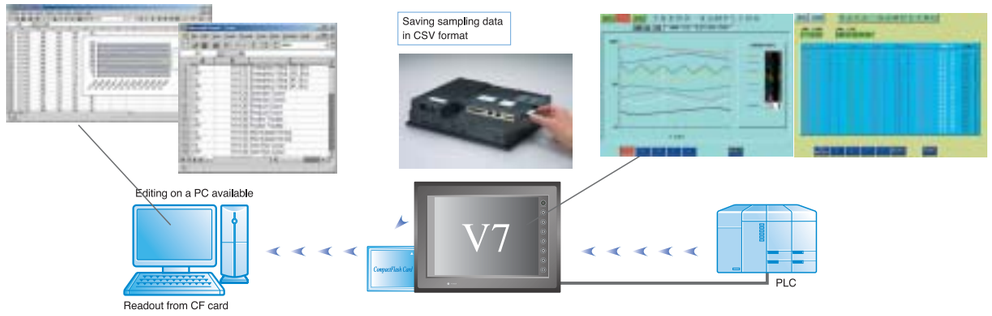
Operation in Recipe Mode

Recipe files (CSV files) can be displayed in tabular format without using macro commands.



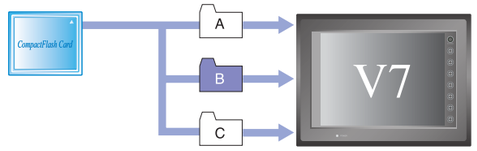
Saving Sampling Data (Data Logging Function)

Log of data and errors can be saved in CSV format, and directly edited on Excel.



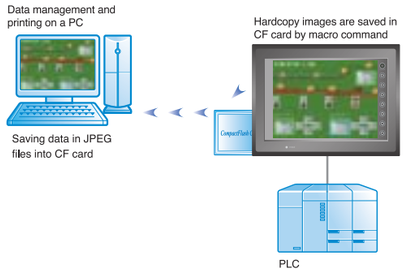
Saving Multiple Screen Data

By saving multiple screen data in CF card, selected V7 screen data can be transferred whenever it is needed.



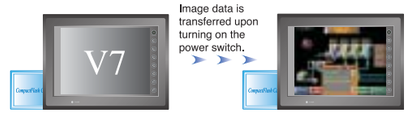
Saving Screen Images

Screen image data can be saved in CF card as a JPEG file and can then be printed out in full color from a PC.



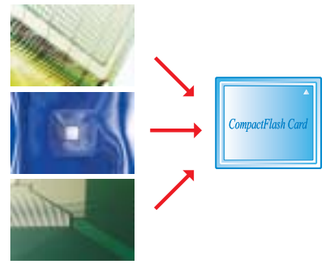
Automatic Uploading of Screen Data

Screen data created on a PC and stored on CF card can be automatically uploaded to V7 by simply inserting the CF card in the slot. This feature enables screen data renewal with CF card even at the production site where our configuration software, V-SFT, is not available.



Storing Bitmap/JPEG Data

Bitmap/JPEG data use a large amount of the V7 screen memory. Saving these large-volume data in CF card prevents memory shortage on V7.



Recommended CF Cards

• List of recommended CF cards (As of June 2006)

Manufacturer	Model	Capacity
SanDisk	SDCFB-64-J60	64MB
	SDCFB-128-J60	128MB
	SDCFB-256-J60	256MB
	SDCFB-512-J60	512MB
	SDCFB-1024-J60	1.0GB
I-O Data	CFS-32M(HI)	32MB
	CFS-64M(HI)	64MB
	CFS-128M(HI)	128MB
	CFS-iV32	32MB
	CFS-iV64	64MB
	CFS-iV128	128MB
	CFS-iV256	256MB
	CFS-iV512	512MB
	CFX-64M	64MB

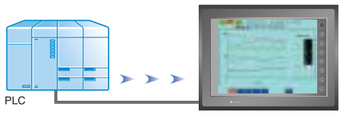
Built-in SRAM available on all models.* Enhanced backup capacity with memory expansion units.

*V712/710/708: 64KB, V715/706: 128KB

SRAM Cassettes (512KB)

Saving Sampling Data

Sampling data such as alarm information and operation conditions can be saved in a SRAM cassette to retain the important data even when the power supply shuts down. Sampling data is also output in CSV files to a CF card.

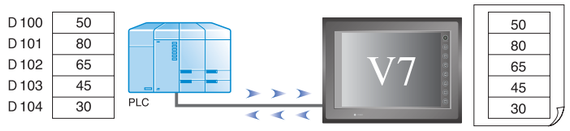


Model

•V7EM-S（V715/712/710/708）
•V706EM-S（V706）

Saving Recipe Data

Recipe data can be saved in SRAM cassette in advance when changing the settings for production items. Saved data can be written on a PLC and PLC data can be saved in SRAM.



FLASH Memory Cassettes

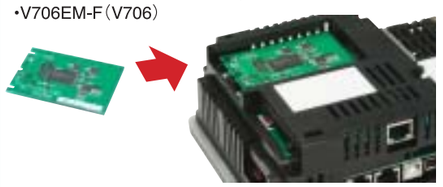
Increasing Screen Data Capacity

Screen data capacity can be expanded.
V715/712/710/708: From 5MB to 13MB
V706: From 1.4MB to 5.4MB

Screen Data Capacity			
《V715/712/710/708》			
V715/712/710/708 (Standard)	5M		
V715/712/710/708 (With V7EM-F)	5M	Flash memory cassette 8 MB	Total13MB
V715/712/710/708 (With V7EM-L)	5M	4MB	Total9MB
《V706》			
V706 (Standard)	1.4M		
V706 (With V706EM-F)	1.4M	4MB	Total5.4MB

Model

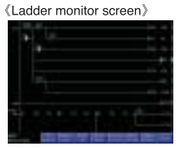
•V7EM-F（V715/712/710/708）
•V706EM-F（V706）



Ladder Monitor Memory Cassette (See P8.)

Circuit or I/O condition can be monitored on V7. This function enables prompt error analysis. Screen data capacity can also be expanded (4MB) with this memory cassette.

《Ladder monitor screen》


Circuit monitor


I/O monitor

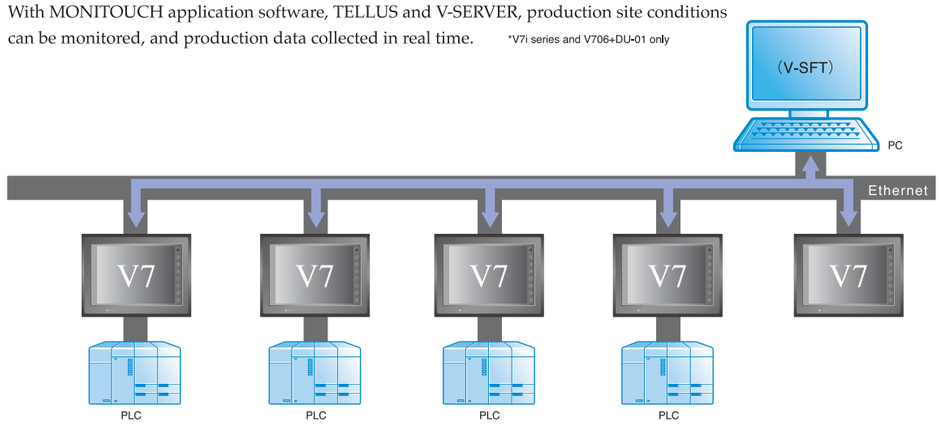
Model

•V7EM-L（V715/712/710/708）

Built-in LAN and USB ports for sharing information and improving functionality.

Ethernet

Interactive communication network among multiple sites. Compatible with Ethernet 100BASE-TX*/10BASE-T. With MONITOUCH application software, TELLUS and V-SERVER, production site conditions can be monitored, and production data collected in real time. *V7i series and V706+DU-01 only



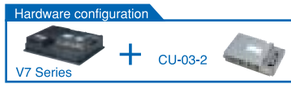
Ethernet connection by models

① V715 and V7i Series:
Built-in LAN port

Hardware configuration
V715 and V7i Series

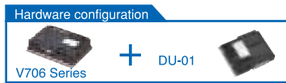
② V7 Series other than V7i Series:
V7 series+CU-03-2

Hardware configuration
V7 Series + CU-03-2



③ V706 Series:
V706+DU-01

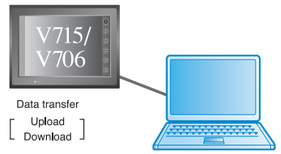
Hardware configuration
V706 Series + DU-01



USB Slave/Master (Only for V715/V706)

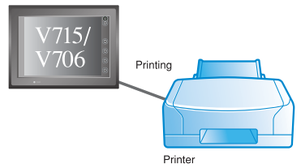
●Slave

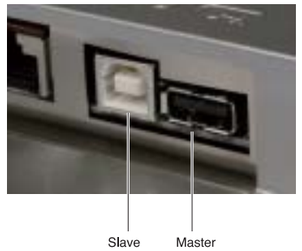
Large volumes of screen data created with V-SFT software can be transferred at high speed.



●Master

USB compatible EPSON STYLUS Series printers and CF card readers can be connected via USB master port for a wide variety of uses on site.





Optional units for animation, sound output, video image input/output make V7 an ideal operator interface panel.

Video Unit

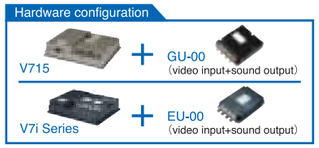
Four different video images from four cameras can be viewed on one screen simultaneously. With the superimposing function, the operation window can be displayed while you watch the video image in the background. In addition, single snapshots and multiple images of up to 16 consecutive snapshots help you analyze problems.

●Simultaneous 4-channel video input

●Superimposing

Even when the entire screen (640 x 480 pixels) is used for video images, an operator window can be superimposed over the video image.

Hardware configuration



Saving composites of video and superimposed images

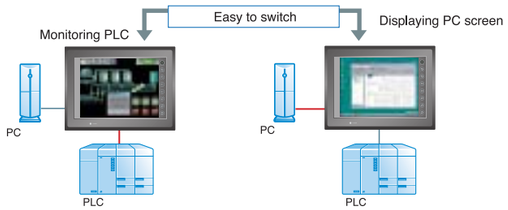
In single snapshots and strobe-snapshots, video images and superimposed images can be combined and saved together.

Macro Commands for Saving Background Video Images

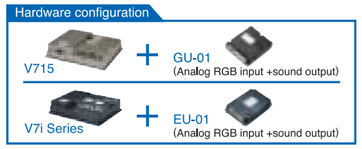
While an operation screen is displayed, video images in the background can be saved by Macro command. This feature is useful when saving the image of error occurrence and image processing failure.

Analog RGB Input Unit

When connected to a PC, V7 display can be easily switched between the monitoring screen and your PC screen.

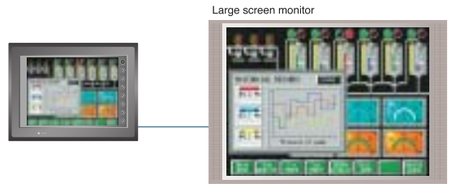


Hardware configuration

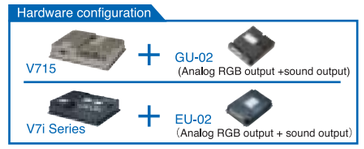


Analog RGB Output Unit

V7 display can be viewed on a PC or projected onto a larger screen.



Hardware configuration



MONITOUCH without a Display(V710iS-009)

Special model of V710iS excluding a display and touch switch function. The V7 screen can be displayed in large format on an external display, when equipped with EU-02 .

The touch switch emulating function allows you to operate controls by touching a specially equipped display (supplied by Gunze).

Sound Output Unit*

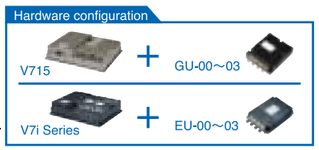
WAV files (sound files) can be replayed through a speaker connected to the sound output unit. This means you can immediately be informed of any errors or malfunctions, ensuring the safety of operations. WAV files can be saved on CF cards.

*Amplified speakers are required.

In case of an error

WAV files can be saved on a CF card.

Hardware configuration



Seven types of communication units for connecting to various networks without programming.

OPCN-1 (JPCN-1) (CU-00)

●For data exchange with a PLC master conforming to JEMA standards

●High-speed communication is possible among multiple slave units and one PLC master.

T-Link (CU-01)

●Long-distance and high speed data exchange with a Fuji Electric MICREX-F Series PLC

CC-Link (CU-02)

●Performs as a local station (intelligent device station) in the open network developed by Mitsubishi Electric Corporation.

●Multiple remote/local stations can be connected to a PLC master station for high speed communication.

Ethernet/ OPCN-2 (FL-net) (CU-03-2)*

●For connecting to the FA control network (FL-net) standardized by FA Open Systems Promotion Forum (FAOP)

●Mutual monitoring and controlling with multiple PLCs and CNCs by different manufacturers

●Can be used as an Ethernet unit (UDP/IP) when used with any models other than V7i Series.

*For 10BASE-T only.

PROFIBUS-DP (CU-04)

●Performs as a slave station in the field-bus network, PROFIBUS-DP developed by Siemens.

●High-speed communication is possible among multiple slave units and one PLC master.

MELSECNET/10 (CU-05)

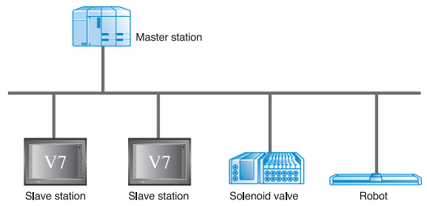
●Performs as a standard station in the MELSECNET/10 network developed by Mitsubishi Electric Corporation.

●Connecting to multiple master and local stations without programming.

DeviceNet (CU-07)

●Performs as a slave station in an open-field network, DeviceNet, for easy two-way communication among control units including PLCs, PCs, sensors and actuators.

●Reduces the cost of wiring with the configuration of operation panels and other control units compatible with DeviceNet over serial connection.

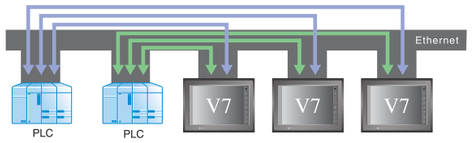


Hardware configuration

Simple and smooth connection of PC, V7 and PLC via Ethernet

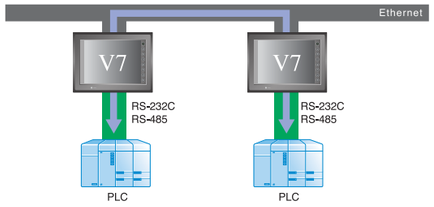
Connection with PLCs

- N:N communication among multiple V7 panels and PLCs is supported.
- High speed communication is possible.
- Communication is available with servers and between V7 panels.



Communication between V7 Panels without a Server

- Data transfer between PLCs, V7s, and PLC and V7
- Easy-to-use and cost effective network

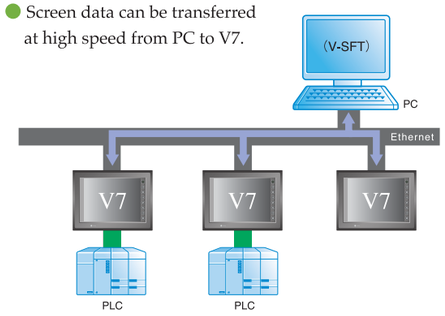


Reciprocal Data Transfer with V7 Using DLL

- Using DLL incorporated in the V-SFT software, you can access the internal memory of your PLC or V7 from a PC. Also, data can be sent to a PC from V7 by Macro command.
- Even if the PLC is not equipped with an Ethernet interface, it is possible to access your PLC from a PC via V7, regardless of the manufacturer or model of PLC.

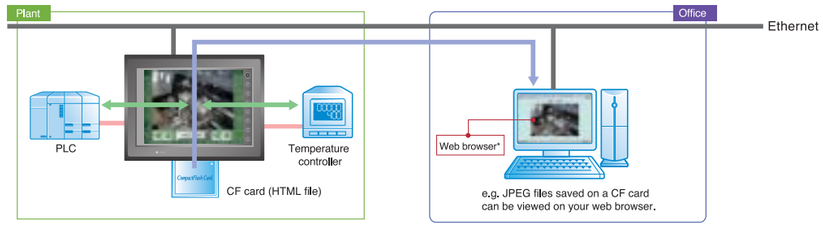
Screen Data Transfer from PC to V7

- Screen data can be transferred at high speed from PC to V7.



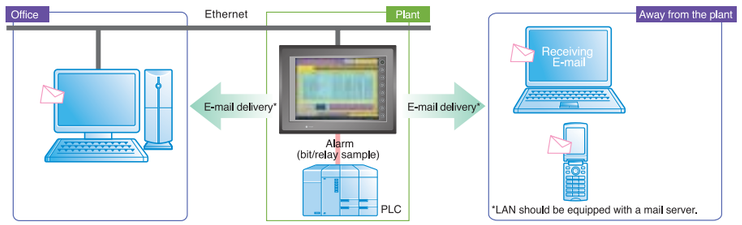
Web Server Function (V715, V7i, V706+DU-01)

Simply by loading previously prepared HTML files onto CF card, it is possible to carry out remote maintenance via the web browser on your office PC, just like viewing a website. The V7 enables you to monitor and alter the values in PLC memory and temperature controller memory from your PC. You can also view JPEG files saved on CF cards.



Alarm E-mail Delivery (V715, V7i, V706+DU-01)

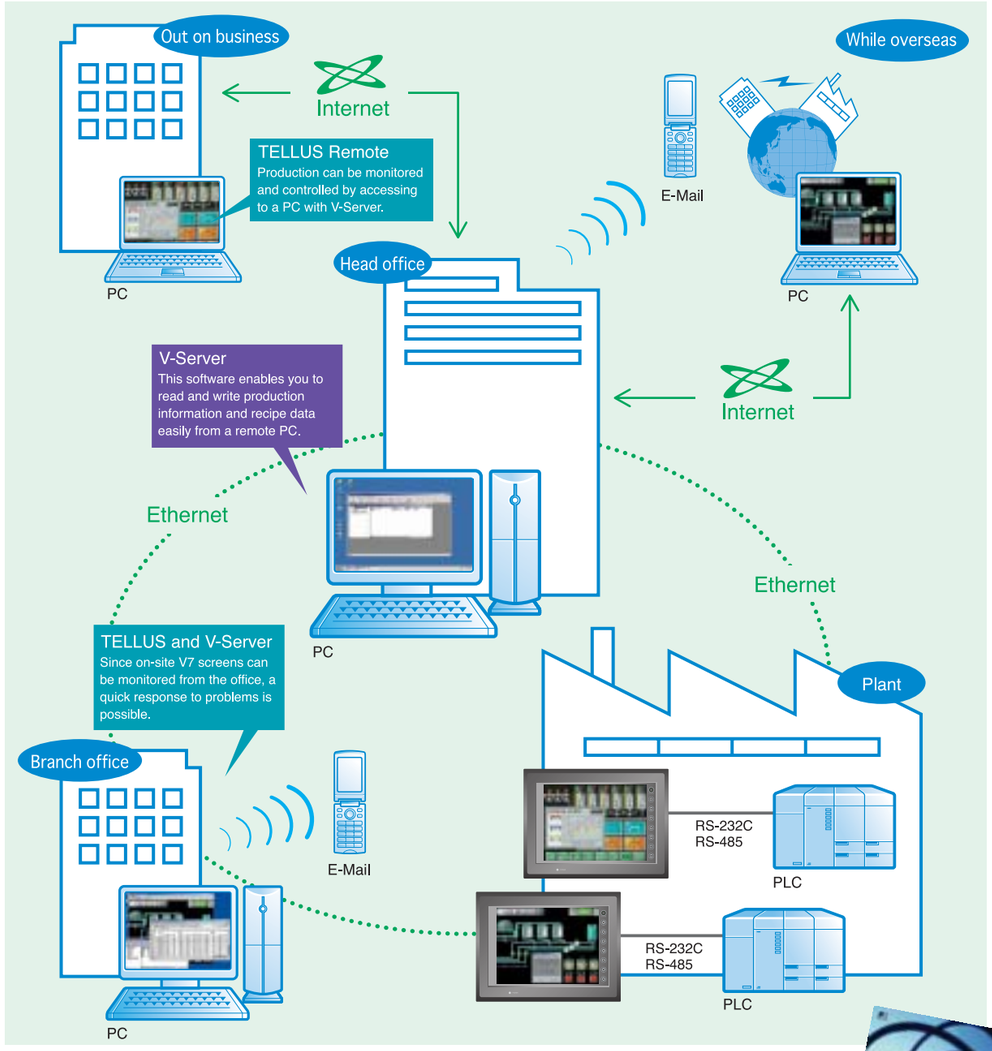
Even while away from the production site, you can be informed of any problems by e-mail, enabling you to respond to the problems immediately.



Real-time production management and data collection on your office PC

TELLUS and V-Server (Optional)

TELLUS enables system monitoring and operation while away from the production site, and V-Server allows you to collect data and issue instructions from a remote location. Simply by installing and connecting your V7 panel to Ethernet, you can gain access to high-level networks in the office and the production site. Wherever you are in the country or in the world, the Internet connection provides real-time access to your system, enabling fast and cost-effective monitoring and troubleshooting. The ability to remotely monitor and interact with the production line improves the overall efficiency of the manufacturing process, and provides tangible economic benefits.



Features of TELLUS and V-Server

- Monitoring and operating on-site V7 and PLC units using a PC.
- No need to create dedicated application data for TELLUS & V-Server; the V7 screen can be reused.
- Effective for monitoring and operating multiple units
- Access from remote locations via the Internet
- Cost-effective

Features of V-Server

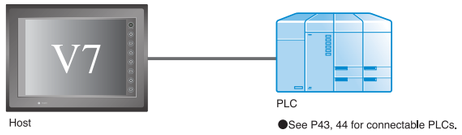
- Collecting PLC data and saving it in files
- Saving V7 logging data in files
- Managing and transferring recipe data
- Alarm monitoring and sending warnings by e-mail
- Data management by PC applications with DDE function
- Transferring V7 screen data via Ethernet

See the TELLUS and V-Server catalog for details.

Choose the system configuration to match your on-site needs.

1:1 Link

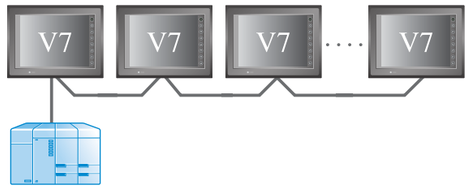
V7 is connected to the communication module or CPU port of a PLC, and communicates as the host with the protocol of the PLC.



●See P43, 44 for connectable PLCs.

Multi-Link

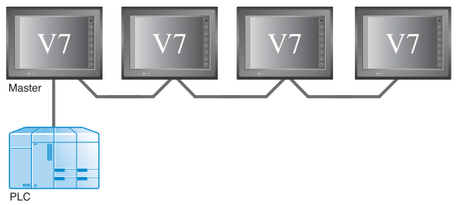
Up to 31 V7 panels can be connected to a PLC via RS-422/RS-485.



●See P43, 44 for connectable PLCs.

Multi-Link 2

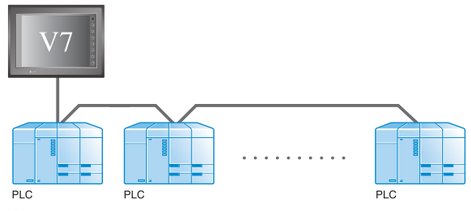
Up to four V7 panels can be connected to a PLC via high-speed serial link. All PLCs which support 1:1 communication are compatible. The V7 master unit and the PLC are connected via RS-232C, 422 or 485.



●See P43, 44 for connectable PLCs.

Multi Drop

Up to 31 PLC units can be connected to a V7 panel via RS-422/RS-485.

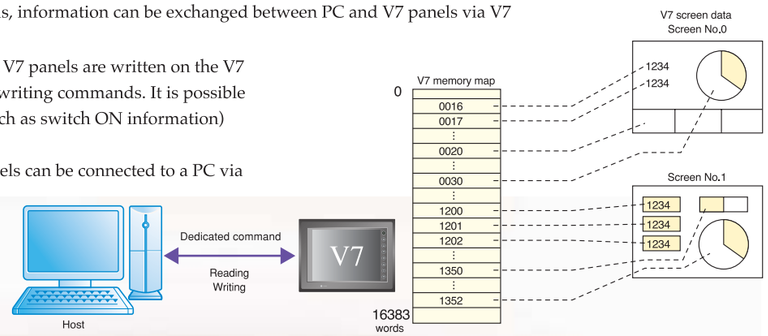


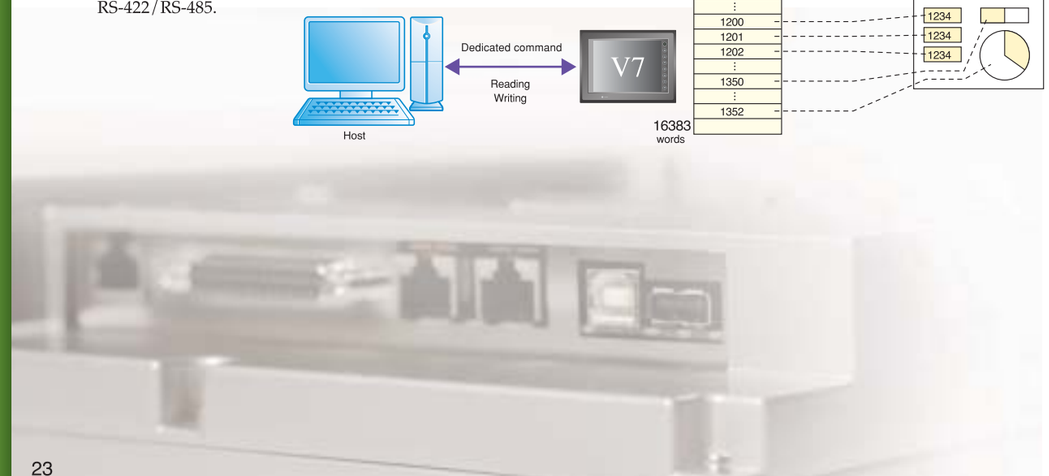
●See P43, 44 for connectable PLCs.

Universal Serial Communication

Using special V7 commands, information can be exchanged between PC and V7 panels via V7 internal memory tables .

- Data to be displayed on V7 panels are written on the V7 internal memory using writing commands. It is possible to send interruption (such as switch ON information) from V7 to the host.
- Up to thirty-one V7 panels can be connected to a PC via RS-422/RS-485.

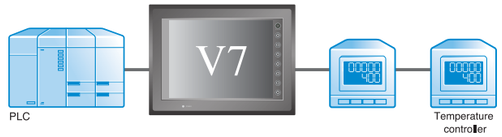




A more extensive network increases the speed and certainty of your production.

Temperature Controller Network

Connecting a PLC and temperature controllers directly to the V7 panel facilitates data exchange between the PLC and temperature controllers and enables memory monitoring, parameter setting, logging and batch control. Various connecting options such as inverters, loadcells etc. are available to meet your system requirements and simplify PLC configuration.



Sampling

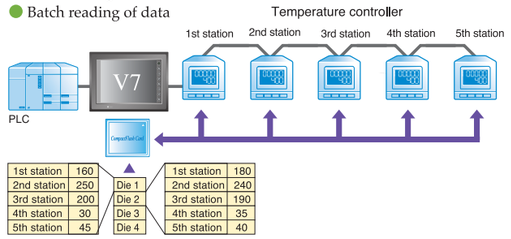
- Sampling the current temperature and error conditions of the temperature controllers

Monitoring and Accessing Temperature Controllers' Memory

- Monitoring memory on numerical data displays
- Setting parameters using a keypad
- Monitoring errors with lamps or alarm displays

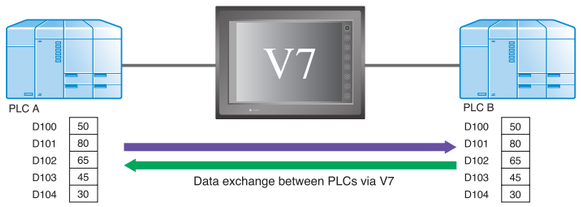
Batch Memory Setting

- Saving recipe data (e.g. die change) on CF cards
- Batch setting of data
- Batch reading of data



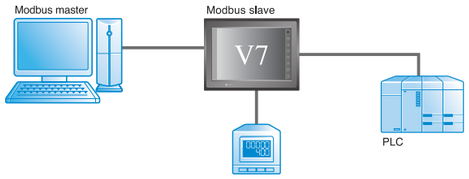
PLC2way

The V7 panel can monitor and control the operation of two different models or different manufacturer's PLCs .

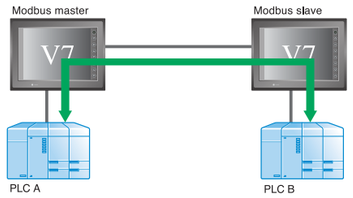


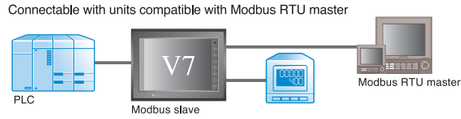
Modbus Slave Communication

- Using Modbus RTU communication, you can read and write the memory of V7 panels, PLCs and temperature controllers from the master.



- Temperature controller network (Modbus Free format protocol) enables reading and writing of data to and from different manufacturer's PLCs via V7 panel.

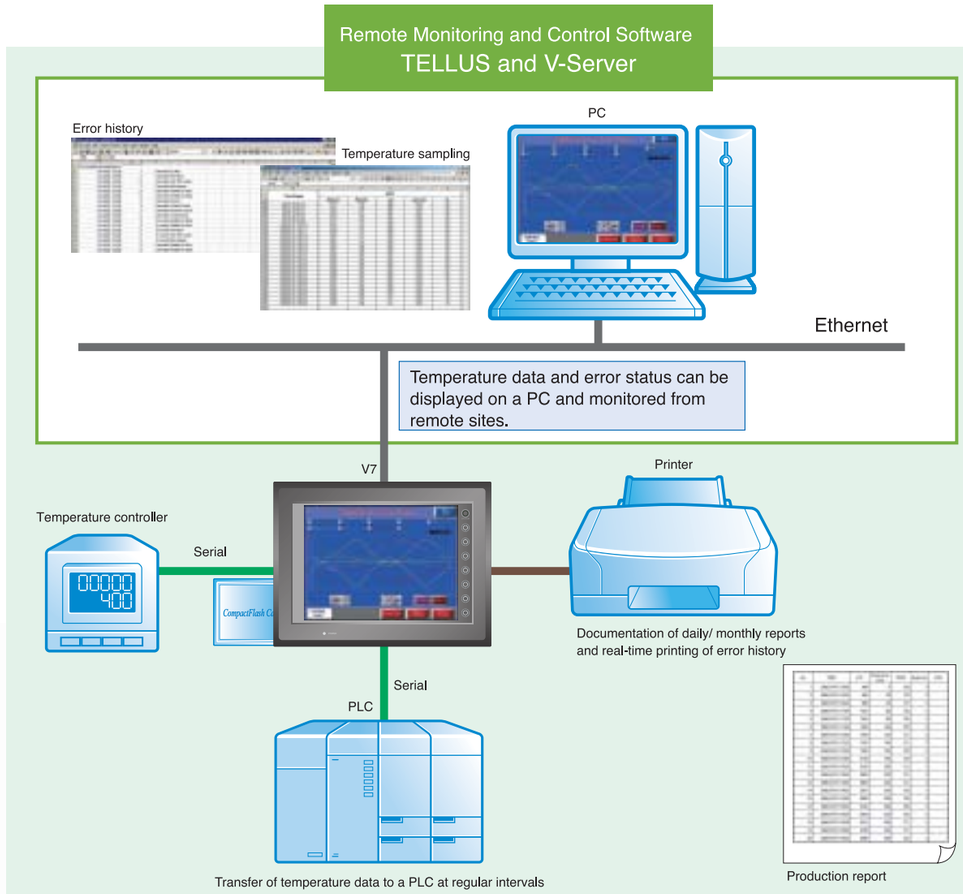




An integrated temperature controller network that lets you monitor data or even control robots from your office.

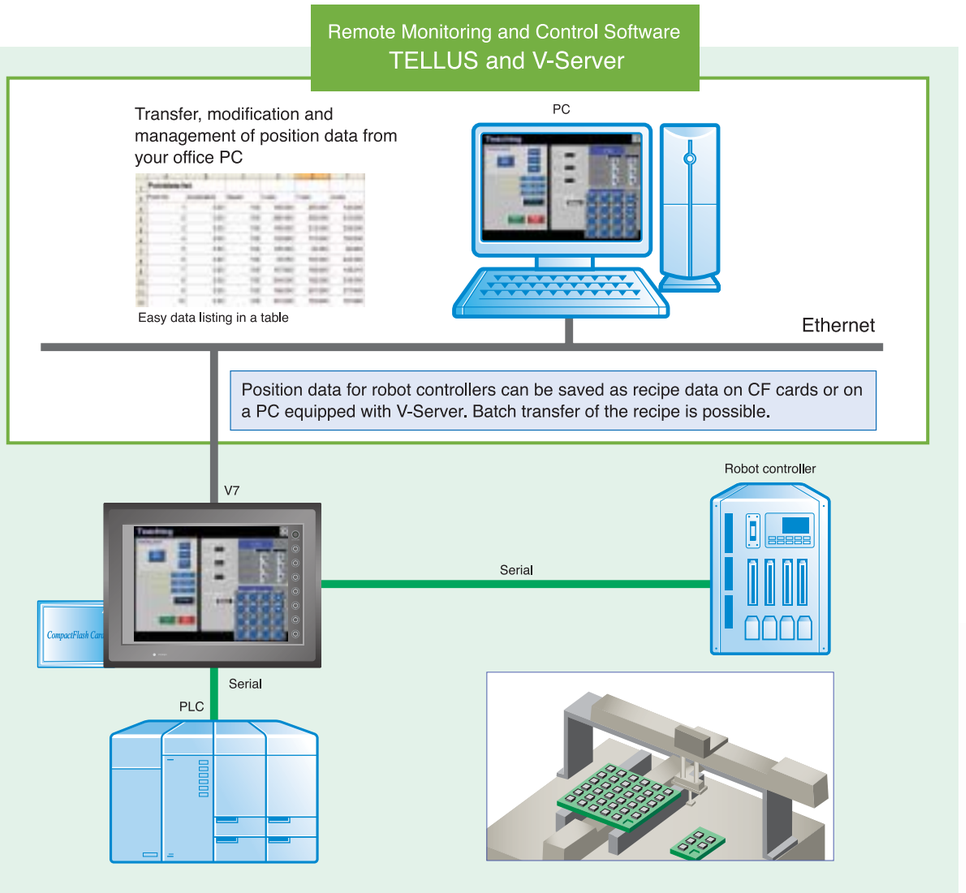
Temperature Controller Network

- Displaying temperature data
- Saving logging data on CF cards for data analysis
- Data can be printed out as a report.
- With TELLUS and V-Server, automatic transfer of real-time temperature data to PC



Temperature Controller Network for Robots

- Batch transfer of robot motion parameters
- Quick changeovers/setups for a new task
- Jog/inching operation instead of using a teaching pendant

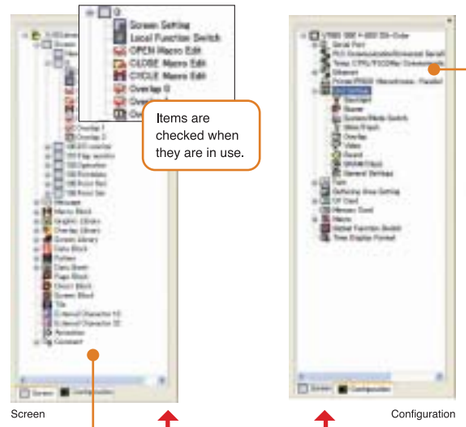


Multiple windows give you immediate access to all the data you need. New V-SFT Ver. 3 makes screen configuration easy.

V-SFT Ver. 3

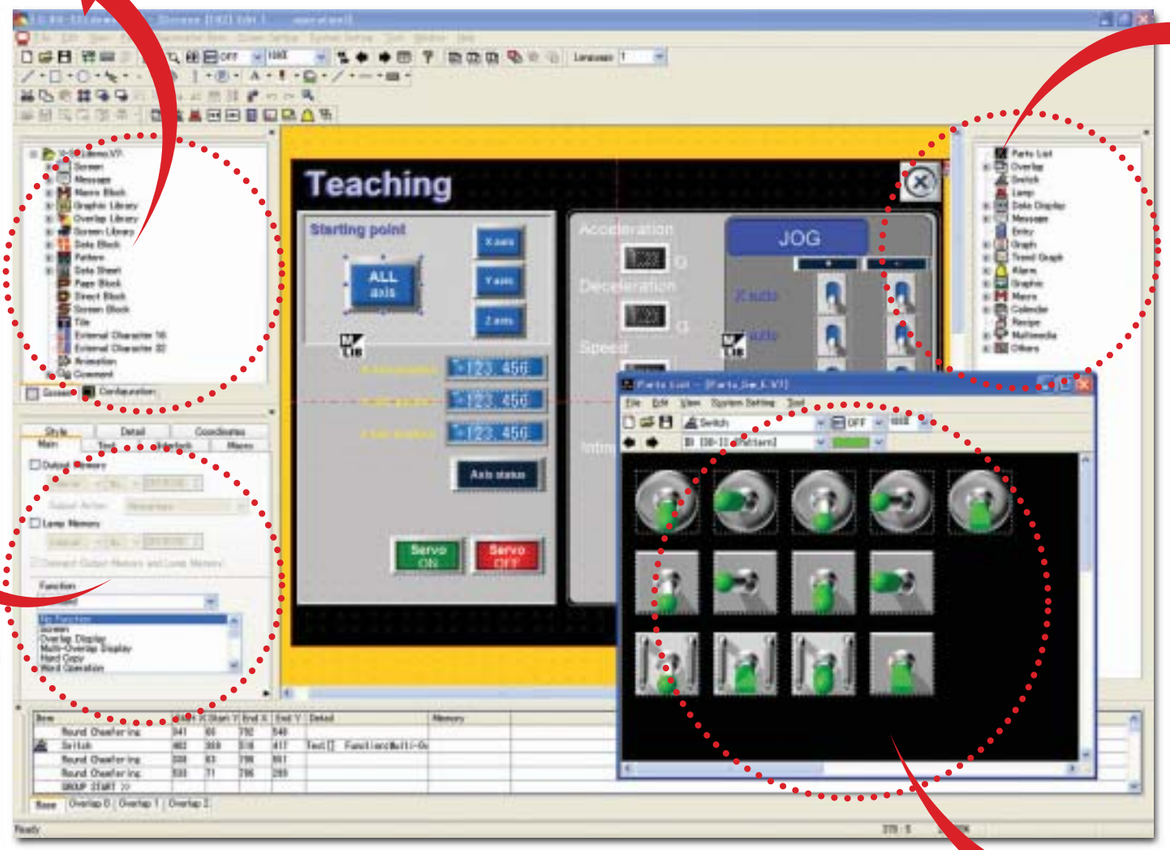
Project View

- System tree diagrams show the configuration of files and screens in the entire system.
- Easy viewing and modification of the contents and configuration of each block



Item View

- Details of a selected item are indicated.
- Additional function! Coordinate setting for easy positioning of items



MONITOUCH V-SFT Ver. 3

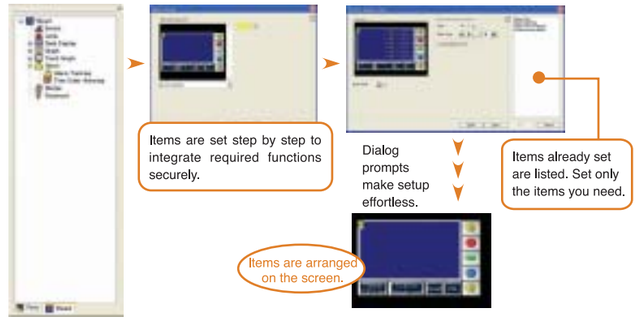
■V-SFT-3 Requirements

PC	PC/AT compatible machine with Windows
OS	Windows 98/Me/NT Version 4.0/2000/XP*
CPU	Pentium III 800 MHz or higher (Pentium IV 2.0 GHz or higher is recommended.)
Memory	512 MB or more
Hard disk	For installation: 700 MB or more available space
CD-ROM Disk drive	24 times or faster
Display	Resolution of 1,024×768 (XGA) or higher
Color indication	High color (16 bits) or higher

*When installing in Windows NT Ver. 4.0/2000/XP, administrator authority is required.

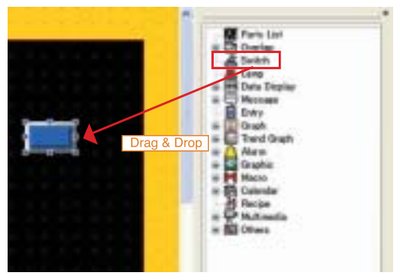
Wizard Function

Select [Wizard] in [Catalog View]. Newly improved wizard enables you to operate the program without any difficulty.



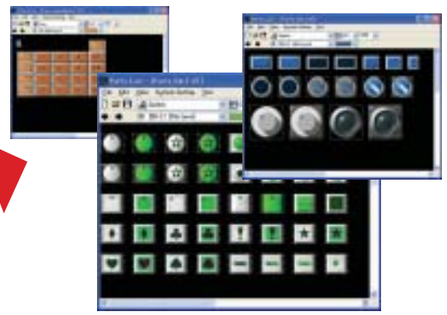
Catalog View

- Tree-structured list of items
- Select an item to set, and drag & drop it where you like on the screen.



Parts View

- Various parts are displayed for each item.
- Select a part, and drag & drop it where you like on the screen.

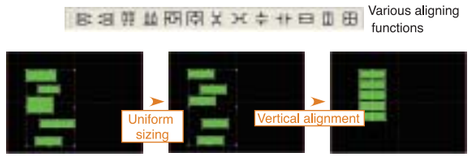


Enhanced editing function for easy screen creation and debugging

Image Editing

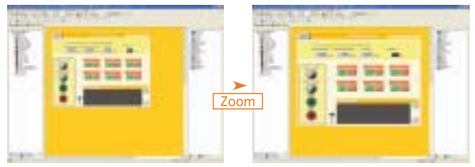
Uniform Sizing and Positioning

Sizes of the selected items are uniform, and positions are automatically aligned after placing the items on the screen. Drawing time can be dramatically reduced.



Auto Size Change

When using screen data from a panel with different screen resolution, screen size is automatically adjusted to your selected model.

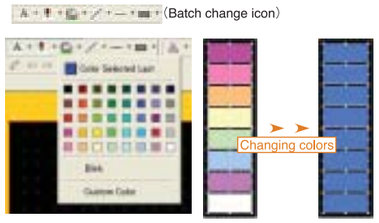


Since the screen size is automatically adjusted, no modification for arrangement is required.

Convenient Icon Bars

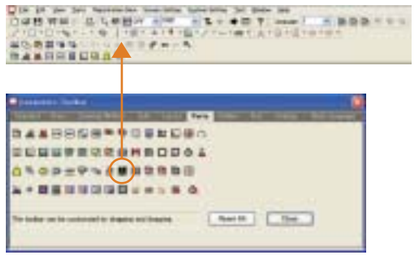
● **Batch change**

Attributes such as color or line type for selected items can be changed collectively.



● **Tool Bar Customization**

Tool bars can be customized according to your needs. Tool bars can be composed of frequently used icons, and the layout can be freely arranged for efficient drawing.

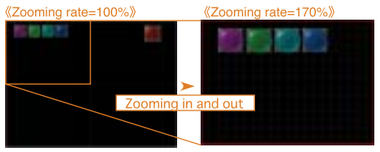


You can insert additional icons in the tool bar by drag & drop as well as removing unnecessary icons from the bar.

● **Versatile Scaling**

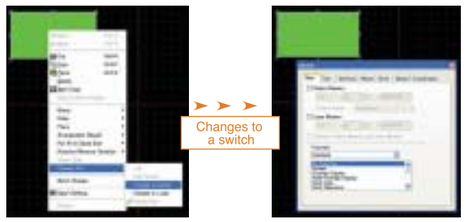
Display size can be scaled according to available space or for minute drawing.

Select a desired zooming rate for efficient drawing.



Creating Switches/Lamps

Original switches and lamps can be easily created by changing drawing items to switches/lamps.

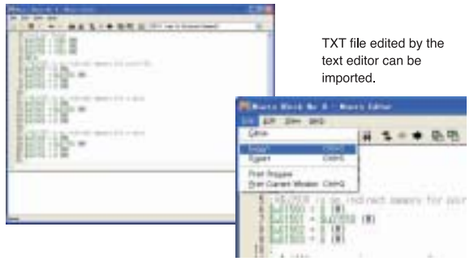


Right-click on an item and select [Change Part].

Macro Commands Edition

Text Input

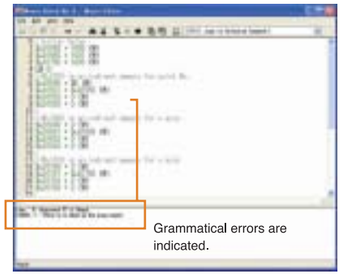
Text can be entered for macro editing. Data modification or addition can be conducted easily.



TXT file edited by the text editor can be imported.

Grammar Check

Grammatical errors in the text are automatically checked. Errors are displayed on the edit window, enabling prompt error correction.



Grammatical errors are indicated.

Various Editing Methods

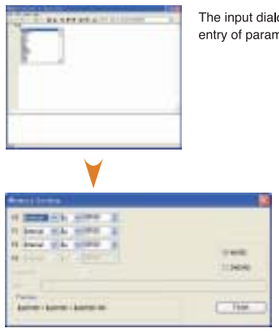
● **Easy Editing Using Support Windows**

The content of macro commands and parameters are indicated in the support windows. Editing is possible without the instruction manual.

Command guidance is easy to understand, so you won't need an instruction manual.

● **Editing by Inputting Macro Commands**

If you have forgotten the details of a macro command, enter an initial letter or abbreviation of the instruction to show the list and get desired information from the list. You can enter parameters through the input dialog windows.

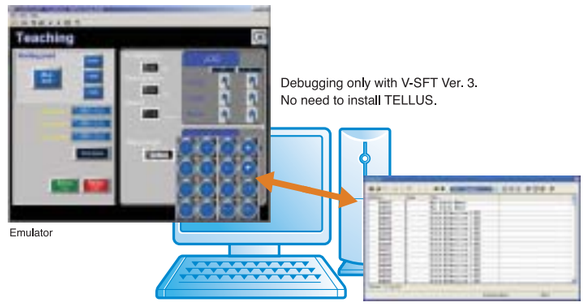


The input dialog is shown for easy entry of parameters.

Emulation Function for Debugging

Locating Bugs Using PC

With the emulating function of V-SFT Ver. 3, data debugging is possible on your PC without V7 panels or PLCs.



Debugging only with V-SFT Ver. 3. No need to install TELLUS.

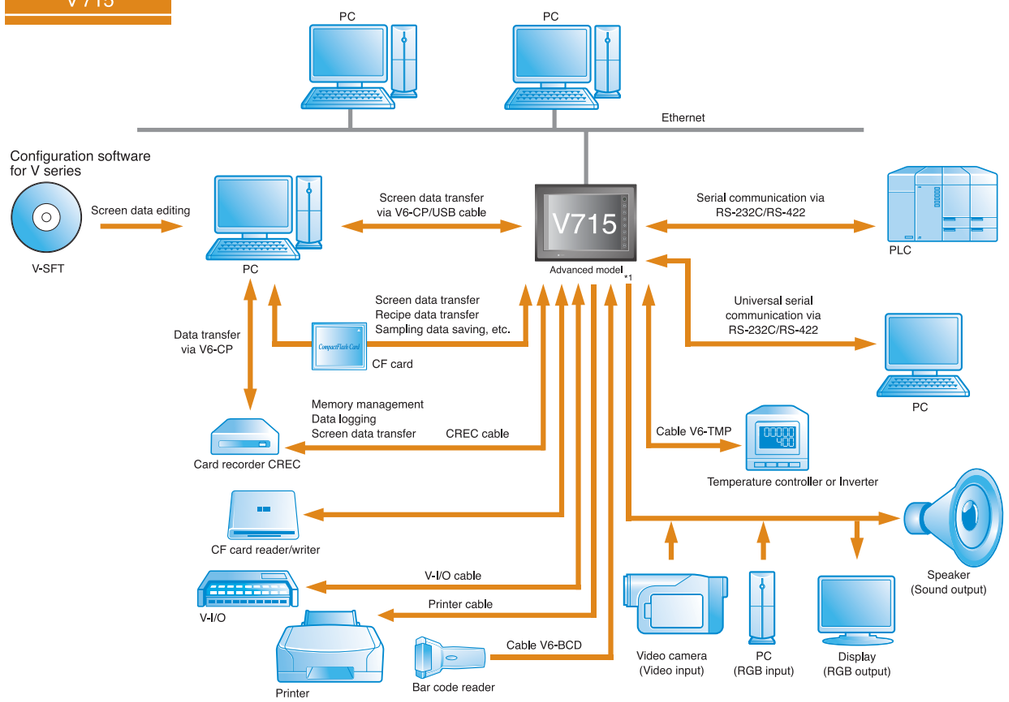
Emulator

Simulated view

Flexible system configuration offers optimum working conditions to meet diversified requirements.

System Configuration

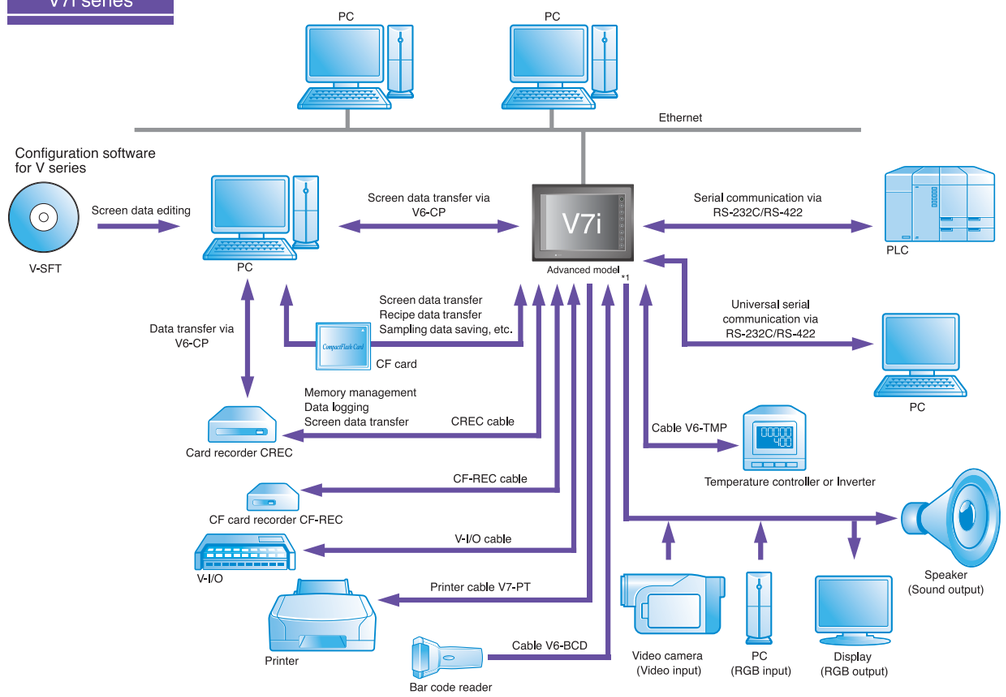
V 715



*1 Optional unit (GU-xx) required.

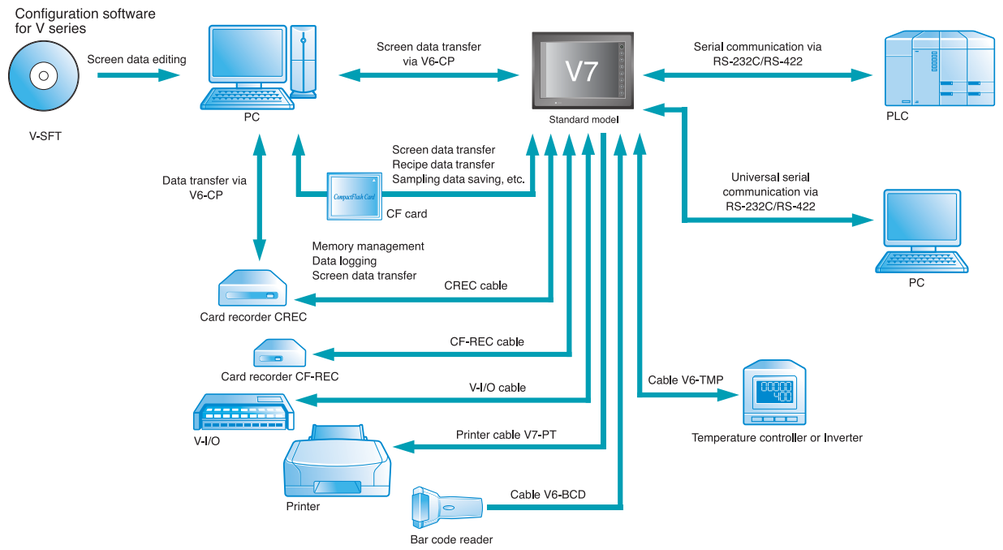
System Configuration

V7i series



*1 Optional unit (GU-xx) required.

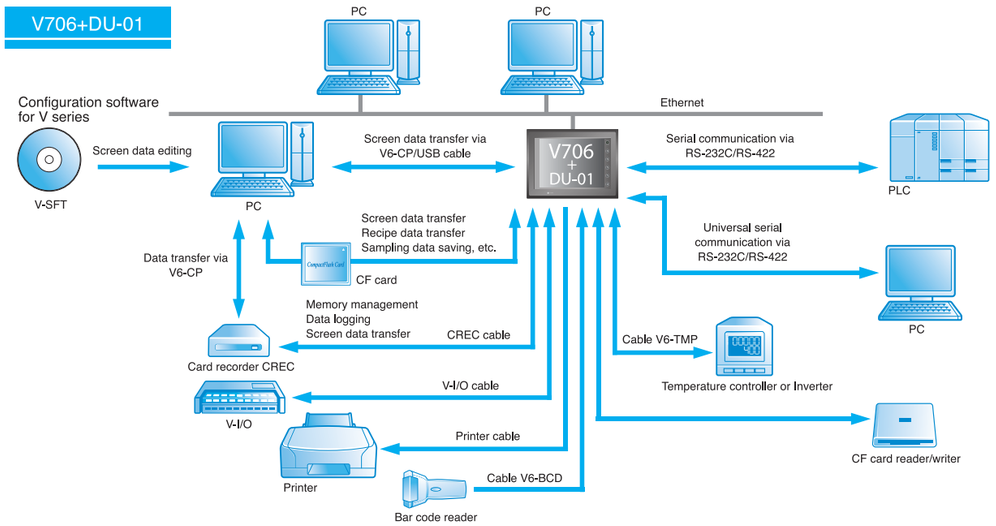
V7 series



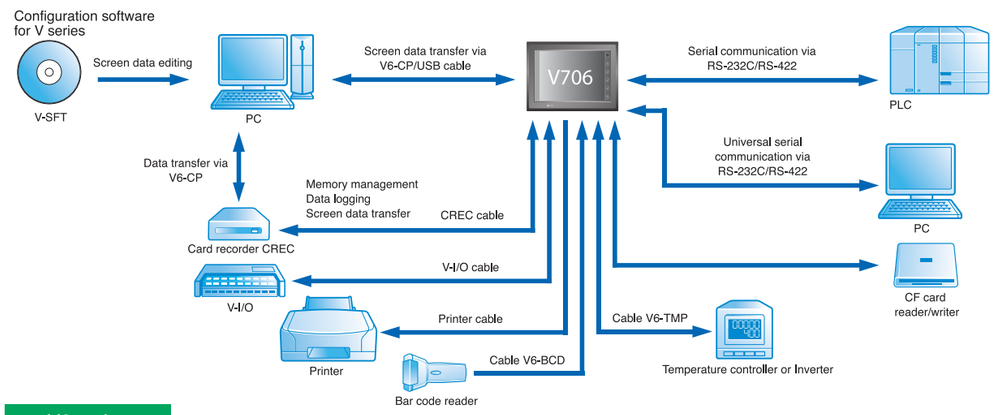
Flexible system configuration offers optimum working conditions to meet diversified requirements.

System Configuration

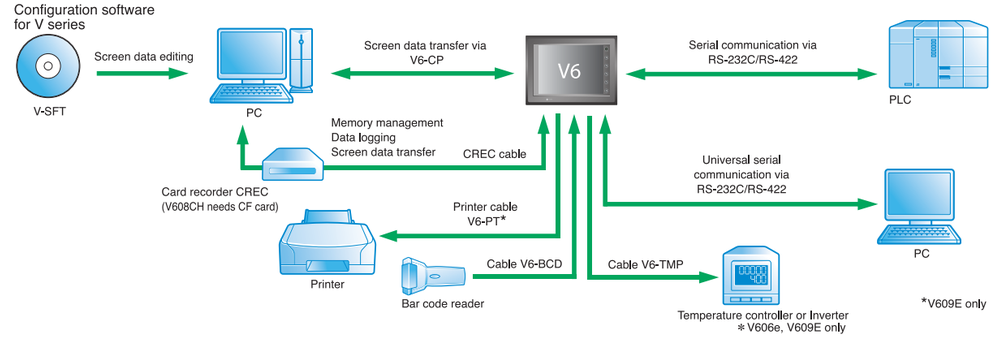
V706+DU-01



V706



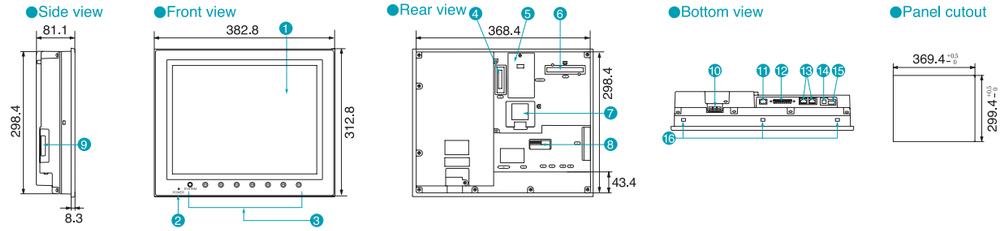
V6 series



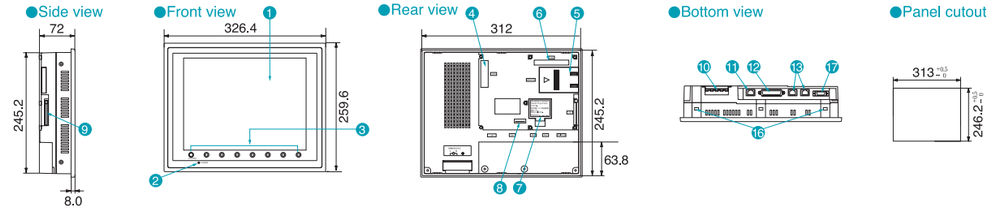
Dimensions

Dimensions (mm) and Part Names

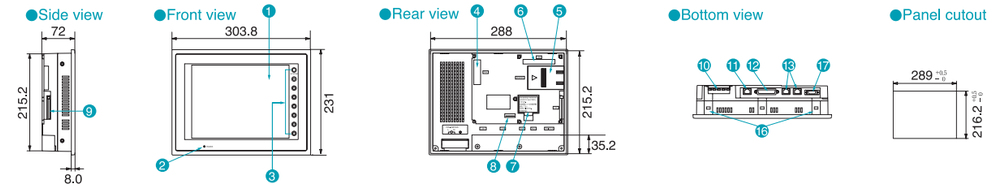
V715X



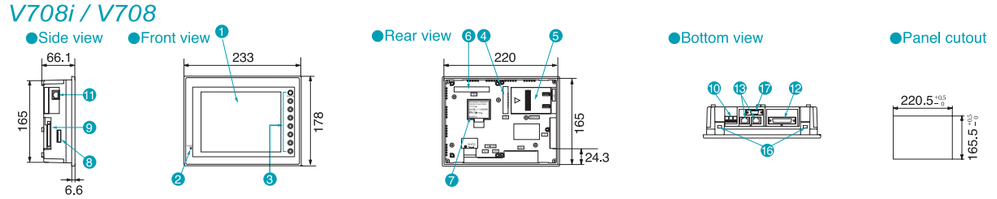
V712i / V712



V710i / V710



V708i / V708

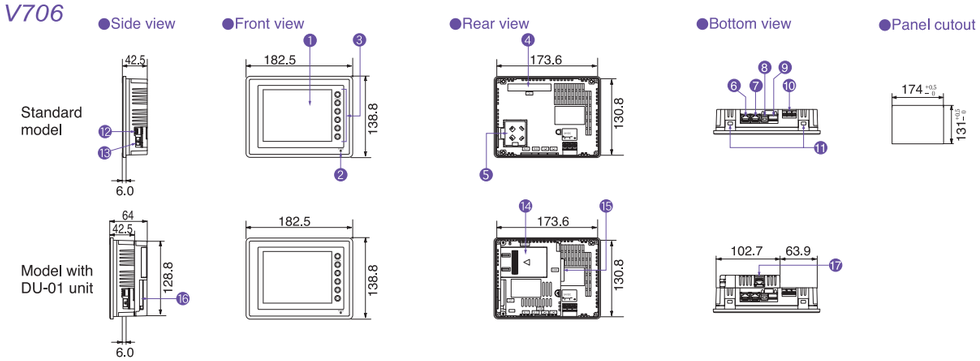


①Display	⑦Battery holder	⑬Modular jack (MJ1, MJ2)
②Power lamp	⑧Dip switch	⑭USB-B (slave port)
③Function switch	⑨CF card slot (CF)	⑮USB-A (master port)
④Communication interface unit connector	⑩Power supply	⑯Mounting hole
⑤Extension memory (MEMORY)	⑪100BASE-TX/10BASE-T connector (LAN)	⑰Printer port (PRINTER)
⑥Connector for an optional unit	⑫PLC connector (CN1)	

High-end specifications opening up new possibilities

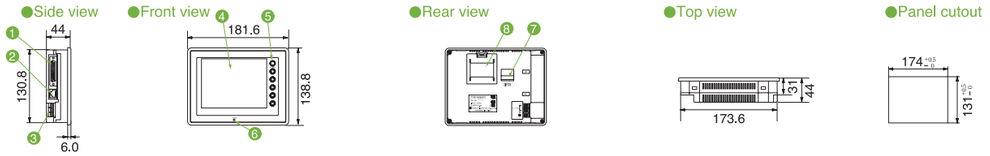
Dimensions (mm) and Part Names

V706

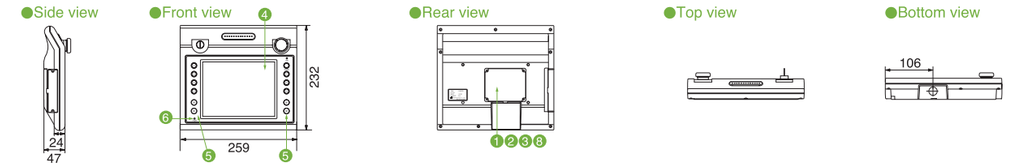


1. Display
2. Power lamp
3. Function switch
4. Connector for an optional unit (CN1)
5. Battery holder
6. Modular jack (MJ1)
7. Modular jack (MJ2)
8. USB-B (slave port)
9. USB-A (master port)
10. Power supply
11. Mounting hole
12. Dip switch
13. Slide switch
14. Extension memory (MEMORY) (option)
15. PLC connector (CN1) (option)
16. CF card slot (CF) (option)
17. 100BASE-TX/10BASE-T connector (LAN) (option)

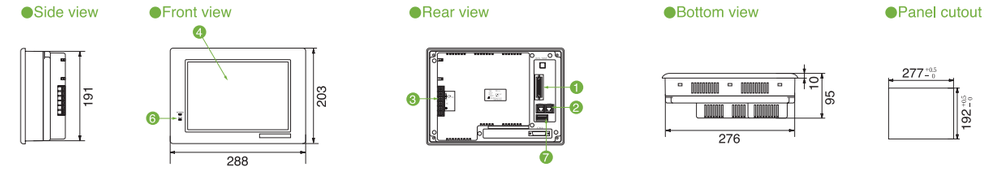
V606eC / V606eM



V608CH



V609E



1. PLC connector (CN1)
2. Modular jack (MJ1, MJ2)
3. Power supply
4. Display
5. Function switch
6. Power lamp
7. Dip switch
8. Battery holder

Specifications

Hardware Specifications V715/V712/V710

Item		V715		V712		V710	
		AC	DC	AC	DC	AC	DC
Power supply	Rated voltage	100-240V AC	24V DC	100-240V AC	24V DC	100-240V AC	24V DC
	Permissible range of voltage	100-240V AC±10%	24V DC AC±10%	100-240V AC±10%	24V DC AC±10%	100-240V AC±10%	24V DC AC±10%
	Permissible momentary power failure	within 20ms	within 1ms	within 20ms	within 1ms	within 20ms	within 1ms
	Demand (maximum rating)	90VA or less	40W or less	60VA or less	30W or less	60VA or less	30W or less
	Inrush current	15A, 10ms (100V AC) 30A, 10ms (200V AC)	30A, 1ms	16A, 6ms (100V AC) 32A, 7ms (200V AC)	30A, 1ms	16A, 6ms (100V AC) 32A, 7ms (200V AC)	30A, 1ms
Insulation resistance		500V DC, 10MΩ or more					
Physical environment	Operation ambient temperature	0℃～+40℃		0℃～+50℃			
	Storage ambient temperature	-10℃～+50℃		-10℃～+60℃			
	Relative humidity	85%RH or less (without dew condensation)					
	Resistance to solvent	No attachment of cutting oil or organic solvent					
	Operating environment	No corrosive gas, excessive dust or conductive dust					
Mechanical *1	Resistance to vibration	Vibration frequency: 10~150Hz, Acceleration: 9.8m/s²(1.0G) Pulsating width: 0.075mm, X,Y,Z: 3 directions 1 hour each way					
	Resistance to impact	Pulse shape: half-sine, Peak acceleration: 147m/s²(15G), X,Y,Z: 3 directions, six times each way					
Electric *2	Noiseproof	1500Vp-p (pulse width 1μs, pulse rise time : 1ns)	1000Vp-p (pulse width 1μs, pulse rise time : 1ns)	1500Vp-p (pulse width 1μs, pulse rise time : 1ns)			
	Static discharge	Complying with IEC61000-4-2, Contact: 6kV, Air: 8kV					
Installation conditions	Grounding	Grounding resistance : 100Ω or less					
	Structure	Protect structure: Front panel: Complying with IP65 (when water-proof gasket is used.) Rear cover: Complying with IP20 Form: Single unit Installation method: Panel mounting					
	Cooling system	Natural air cooling					
	Weight	Approx. 5.2kg	Approx. 5.0kg	Analog type: Approx. 2.7kg Matrix type: Approx. 3.2kg		Analog type: Approx. 2.4kg Matrix type: Approx. 2.8kg	
	Dimensions W×H×D (mm)	382.8×312.8×81.1		326.4×259.6×72.0		303.8×231.0×72.0	
	Panel cutout (mm)	369.4 +0.5 −0 ×299.4 +0.5 −0		313.0 +0.5 −0 ×246.2 +0.5 −0		289.0 +0.5 −0 ×216.2 +0.5 −0	
Case color		-		Black (Munsell N2.0)			
Material		Aluminum		PC/ABS			

*1 Mechanical operating condition *2 Electric operating condition

Performance Specifications V715/V712/V710

Item	Model	V715X	V712xS	V710xS	V710xT	V710C
Display specifications	Screen memory	FLASH memory with 4,992kB (can be increased depending on font)				
	Display device	TFT color LCD				
	Resolution W:H (dots)	1024×768	800×600		640×480	
	Display size	15 inches	12.1 inches		10.4 inches	
	Colors	32,768 colors+16 colors blink			128 colors+16 colors blink	
	Backlight	CCFL (User replaceable)				
	Backlight Auto OFF	Always lit (Set by the user)				
	Power lamp	Lit when power is ON				
	Contrast adjustment	Fixed				
	Brilliance control	128 steps (Changed into 3 levels by function switch and adjusted to 128 grades by macro command)				
Number of characters	1/4 size 1-byte 2-byte	127 columns × 96 lines 127 columns × 48 lines 64 columns ×48 lines	100 columns × 75 lines 100 columns × 37 lines 50 columns × 37 lines		80 columns × 60 lines 80 columns × 30 lines 40 columns × 30 lines	
Enlargement of characters		X: 1～8 times Y: 1～8 times				
Touch switch	Switch resolution (W×H)	Analog: 1024×1024	Analog: 1024×1024 Matrix: 50×30	Analog: 1024×1024	Analog: 1024×1024 Matrix: 40×24	
	Mechanical life	1 million times or more				
	Surface treatment	Hard coating, Non glare finish 5%				
Function switch	Number of function switches	8 switches				
External interface	For PLC (CN1:D-Sub 25 pins)	RS-232C, 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, 57600, 76800, 115200 bps				
	For data transfer/other external interface1,2 (modular 8 pins)	RS-232C, RS-422/485 (two-wire system), CREC, Bar code reader, V-I/O, Multi-link 2, Temperature controller network/PLC2way, V-link				
	Printer interface	–	Complying with centronics, Half pitch 20 pins, NEC: PR201, EPSON: ESC/P-J84 or later, ESC/P24-J84*1, Bar code printer MR400, EPSON stylus			
	CF card interface	Complying with CompactFlash™				
	Ethernet 100BASE-TX, 10BASE-T (V7i standard equipment)	Complying with IEEE802.3 Baud rate: 10Mbps, 100Mbps Cable: 100Ω Unsealed twist pair, Category 5, Max length: 100m				
	USB interface	Type A, Type B (Ver1.1)	–			
Clock &Back up memory	Battery	Coin-type lithium primary battery				
	Back up memory	SRAM 128KB	SRAM 64KB			
	Back up period	5 years (Ambient temperature 25℃)				
	Calendar accuracy	Gap±90 sec per month (Ambient temperature 25℃)				

*1 CBM292/293 printer cannot print out the screen image.

High-end specifications opening up new possibilities

Specifications

Hardware Specifications V708/V706

Item		Model: V708	V706
Power supply	Rated voltage	24V DC	24V DC
	Permissible range of voltage	24V DC±10%	24V DC±10%
	Permissible momentary power failure	within 1ms	within 1ms
	Demand (maximum rating)	V708S/iS 22W or less; V708C 15W or less	16W or less
	Inrush current	25A, 0.7ms or less	20A, 0.1ms or less
Insulation resistance		500V DC, 10MΩ or more	
Physical environment	Operation ambient temperature	0℃～+50℃	0℃～+50℃*3
	Storage ambient temperature	-10℃ ~ +60℃	
	Relative humidity	85%RH or less (without dew condensation)	
	Resistance to solvent	No attachment of cutting oil or organic solvent	
	Operating environment	No corrosive gas, excessive dust or conductive dust	
Mechanical *1	Resistance to vibration	Vibration frequency: 10~150Hz, Acceleration: 9.8m/s2(1.0G) Pulsating width: 0.075mm, X,Y,Z: 3 directions 1 hour each way	
	Resistance to impact	Pulse shape: half-sine, Peak acceleration: 147m/s2(15G), X,Y,Z: 3 directions, six times each way	
Electric *2	Noiseproof	1500Vp-p (pulse width 1μs, pulse rise time : 1ns)	1000Vp-p (pulse width 1μs, pulse rise time : 1ns)
	Static discharge	Complying with IEC61000-4-2, Contact: 6kV, Air: 8kV	
Installation conditions	Grounding	Grounding resistance : 100Ω or less	
	Structure	Protect structure: Front panel: Complying with IP65 (when water-proof gasket is used.) Rear cover: Complying with IP20 Form: Single unit Installation method: Panel mounting	
	Cooling system	Natural air cooling	
	Weight	Approx. 1.5kg	Approx. 0.7kg
	Dimensions W×H×D (mm)	233×178×66.1	182.5×138.8×42.5
	Panel cutout (mm)	220.5 $^{+0.5}_{-0}$ ×165.5 $^{+0.5}_{-0}$	174 $^{+0.5}_{-0}$×131 $^{+0.5}_{-0}$
Case color		Black (Munsell N2.0)	
Material		PC/ABS	PC/PS

*1 Mechanical operating condition *2 Electric operating condition *3 Degradation may occur on STN displays (706C/706M) when used at high ambient temperature (40～50℃) for a long time.

Performance Specifications V708/V706

Item		Model: V708xS	V708C	V706T	V706C	V706M
Display specifications	Screen memory	FLASH memory with 4,992kB (can be increased depending on font)		FLASH memory with 1,472kB (can be increased depending on font)		
	Display device	TFT color LCD	STN color LCD	TFT color LCD	STN color LCD	STN monochrome LCD
	Resolution W:H (dots)	800×600	640×480	320×240		
	Display size	8.4 inches	7.7 inches	5.7 inches		
	Colors	32,768 colors+16 colors blink	128 colors+16 colors blink	32,768 colors+16 colors blink		Monochrome 8 hues + blink
	Backlight	CCFL (User replaceable)		CCFL (User unreplacable)		
	Backlight Auto OFF	Always lit (Set by the user)				
	Power lamp	Lit when power is ON		Lit (green) when power is ON, ALM (red) when power battery is low		
	Contrast adjustment	Fixed	Adjustable*1	Fixed	Adjustable*1	
	Brilliance control	128 steps *2	Fixed	128 steps *2	Fixed	
Number of characters	1/4 size	100 columns × 75 lines	80 columns × 60 lines	40 columns × 30 lines		
	1-byte	100 columns × 37 lines	80 columns × 30 lines	40 columns × 15 lines		
	2-byte	50 columns ×7 lines	40 columns × 30 lines	20 columns × 15 lines		
Enlargement of characters		X: 1～8 times Y: 1～8 times				
Touch switch	Switch resolution (W×H)	Analog: 1024× 1024		Analog: 1024×1024 Matrix: 20×12		
	Mechanical life	1 million times or more				
	Surface treatment	Hard coating, Non glare finish 5%				
Function switch	Number of function switches	8 switches		6 switches		
External interface	For PLC *3 (CN1: D-Sub 25 pins)	RS-232C, 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, 57600, 76800, 115200 bps				
	For data transfer/other external interface1, 2 *5 (modular 8 pins)	RS-232C, RS-422/485 (two-wire system), CREC, Bar code reader, V-I/O, Multi-link 2, Temperature controller network/PLC2way, V-link				
	Printer interface	Complying with centronics, Half pitch 20 pins, NEC: PR201, EPSON: ESC/P-J84 or later, ESC/P24-J84, CBM292/293 Printer*4, Bar code printer MR400, EPSON STYLUS Series		–		
	CF card interface *3	Complying with CompactFlash™				
	Ethernet 100BASE-TX, 10BASE-T (V7i standard equipment) *3	Complying with IEEE802.3 Baud rate: 10Mbps, 100Mbps Cable: 100Ω Unsealed twist pair, Category 5, Max length: 100m				
	USB interface	–		Type A, Type B (Ver1.1)		
Clock & Back up memory	Battery	Coin-type lithium primary battery				
	Back up memory	SRAM 64KB		SRAM 128KB		
	Back up period	5 years (Ambient temperature 25℃)				
	Calendar accuracy	Gap±90 sec per month (Ambient temperature 25℃)				

*1 Adjusted with function switch or by macro-command *2 Changed into 3 levels with function switch and adjusted to 128 grades by macro command
*3 V706: Used only when connecting an optional unit *4 CBM292/293 printer cannot print out the screen image. *5 V706 has MJ1 only (MJ2: for PLC)

Hardware Specifications V6 series

Item		Model: V606e	V608CH	V609E AC	V609E DC
Power supply	Rated voltage	24V DC		100～240V AC	24V DC
	Permissible range of voltage	24V DC±10%		85～265V AC (47～440Hz)	24V DC±10%
	Permissible momentary power failure	within 1ms	within 10ms	within 20ms	within 10ms
	Demand (maximum rating)	10W or less	20W or less	40VA or less	20W or less
	Inrush current	10A, 1ms or less	13A, 2ms or less	10A, 2ms or less	24A, 10ms or less
Insulation resistance		500V DC, 10MΩ or more			
Physical environment	Operation ambient temperature	0℃～+50℃			
	Storage ambient temperature	−10℃～+60℃		−10℃～+65℃	
	Relative humidity	85%RH or less (without dew condensation)			
	Resistance to solvent	No attachment of cutting oil or organic solvent			
	Operating environment	No corrosive gas, excessive dust or conductive dust			
Electric *2 Mechanical *1	Resistance to vibration	Vibration frequency: 10~150Hz, Acceleration: 9.8m/s²(1.0G) Pulsating width: 0.075mm, X,Y,Z: 3 directions 1 hour each way			
	Resistance to impact	Pulse shape: half-sine, Peak acceleration: 147m/s²(15G), X,Y,Z: 3 directions, six times each way			
	Noiseproof	1000Vp-p (pulse width 1μs, pulse rise time : 1ns)		1500Vp-p (pulse width 1μs, pulse rise time : 1ns)	
	Static discharge	Complying with IEC61000-4-2, Contact: 6kV, Air: 8kV			
Installation conditions	Grounding	Grounding resistance : 100Ω or less			
	Structure	Protect structure: Front panel: Complying with IP65*3 Rear cover: Complying with IP20 Form: Single unit Installation method: Panel mounting	Protect structure: Front panel: Complying with IP65 Rear cover:Complying with IP20 Form: Single unit Installation method: Panel mounting	Protect structure: Front panel: Complying with IP65*4 Rear cover: Complying with IP20 Form: Single unit Installation method: Panel mounting	
	Cooling system	Natural air cooling			
	Weight	Approx. 0.8kg	Approx. 1.2kg	Approx. 2.1kg	
	Dimensions W×H×D (mm)	181.6×138.8×44	259×232×47(exd. EM SW)	288×203×95	
	Panel cutout (mm)	174.0 $^{+0.5}_{-0}$×131.0 $^{+0.5}_{-0}$		277.0 $^{+1}_{-0}$ ×192.0 $^{+1}_{-0}$	
Case color		Black		Gray	Black
Material		PC/PS	PC/ABS	ABS	PC/PS

*1 Mechanical operating condition *2 Electric operating condition *3 When water-proof packing is used. *4 When GD-WP80E is used.

Performance Specifications V6 series

Item		Model: V606eC	V606eM	V608CH	V609E
Display specifications	Screen memory	FLASH memory with 760kB (can be increased depending on font)		About 2,812kB	About 760kB
	Display device	STN color LCD	STN monochrome LCD	STN color LCD	High-intensity EL
	Resolution W:H (dots)	320×240		640×480	640×400
	Display size	5.7 inches		7.7 inches	8.9 inches
	Colors	16 colors + blink	Monochrome 8 hues + blink	128 colors+16 colors blink	2 colors + blink
	Backlight	CCFL			–
	Backlight Auto OFF	Always lit (Set by the user)			
	Power lamp	Lit when power is ON			
	Contrast adjustment	Adjustable (Adjusted by function switch and macro command)			Fixed
	Brilliance control	Fixed			
Number of characters	1/4 size	40 columns × 30 lines		80 columns × 60 lines	80 columns × 40 lines
	1-byte	40 columns × 15 lines		80 columns × 30 lines	80 columns × 20 lines
	2-byte	20 columns × 15 lines		40 columns × 30 lines	40 columns × 20 lines
Enlargement of characters		X: 1～8 times Y: 1～8 times			
Touch switch	Switch resolution (W×H)	Analog: 1024 ×1024			Matrix: 40×20
	Mechanical life	1 million times or more			
	Surface treatment	Hard coating, Non glare finish 5%			
Function switch	Number of function switches	6 switches		12 switches (4 switches for external output)	–
External interface	For PLC *3 (CN1: D-Sub 25 pins)	RS-232C, 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, 57600, 76800, 115Kbps (76800 and 115Kbps are not available for V606e, V609E)			
	For data transfer/other external interface1,2 *5 (modular 8 pins)	RS-232C, RS-422/485, CREC, Bar code reader, V-I/O, Multi-link 2, Temperature controller network, V-link*2			
	Printer interface	–			Equipped
	CF card interface	–			
	Ethernet 100BASE-TX, 10BASE-T (V7i standard equipment) *3	–			
	USB interface	–			
Clock & Back up memory	Battery	Coin-type lithium primary battery			
	Back up memory	SRAM 128KB		–	SRAM 8KB
	Back up period	5 years (Ambient temperature 25℃)			
	Calendar accuracy	Gap±90 sec per month (Ambient temperature 25℃)			

*1 V608CH: terminal block *2 V608CH can use bar code and V-link(RS-232C) only. *3 Screen images cannot be printed out directry.

Optional units expanding V7's functions

Optional Accessories

Optional Units

● Optional Units (GU-xx is only for V715, and EU-xx is only for V7i series.)

GU-00
(Video input + sound output unit)
Displays images from a video camera on V715 and outputs sound files through external speakers.

GU-01
(RGB input + sound output unit)
Displays PC images on V715 and outputs sound files through external speakers.

GU-02
(RGB output + sound output unit)
Displays images of V715 on PC display and outputs sound files through external speakers.

GU-03
(Sound output unit)
Outputs sound files through external speakers.

EU-00
(Video input + sound output unit)
Displays images from a video camera on V7i and outputs sound files through external speakers.

EU-01
(RGB input + sound output unit)
Displays PC images on V7i and outputs sound files through external speakers.

EU-02
(RGB output + sound output unit)
Displays images of V7i on PC display and outputs sound files through external speakers.

EU-03
(Sound output unit)
Outputs sound files through external speakers.

DU-TL
(T-Link unit for V706 only)
Connects one PLC with one or more V706.

DU-01
(Option unit only for V706 only)
Equipped with D-Sub 25-pin, CF card and Ethernet interfaces.

● Communication unit (I/F unit)

CU-xx (Communication interface unit)

xx	Compatible network	xx	Compatible network
00	OPCN-1	04	PROFIBUS-DP
01	T-Link	05	MELSECNET/10
02	CC-Link	07	DeviceNet
03-2	Ethernet/FL-net		

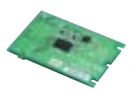
Connects to various networks. One PLC can be connected to one or more V7 panels. Other devices can be linked to the network, improving system's cost-effectiveness.

CU-ADP
(Adapter unit for V706 only)
Adapter for using communication unit CU-xx

● Memory Expansion Cassettes

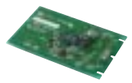
V7EM-F
(Flash memory cassette)
Memory expansion board for screen data memory
Capacity: 8MB

V7EM-L
(Flash memory cassette)
Memory expansion board for PLC ladder monitoring



V7EM-S
(SRAM cassette)
Memory expansion board for SRAM memory
Capacity: 512KB

V706EM-F
(Flash memory cassette for V706 only)
Memory expansion board for screen data memory.
Capacity: 4MB



V706EM-S
(SRAM cassette for V706 only)
Memory expansion board for SRAM memory.
Capacity: 512KB

Optional Accessories

Application Software

● Configuration Software

V-SFT-3 (Ver. 3)
(Windows98/NT4.0/Me/2000/XP)

● Remote Control Monitoring Software

TELLUS and V-Server
TELLUS: enables remote monitoring and control of the manufacturing process.
V-Server: enables remote data collection and transfer of parameter data.
This software helps you to connect your office to production sites.

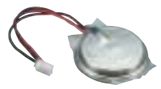
Other Optional Accessories

TC485
(Terminal converter)
Connects V7 panels and PLCs via RS-422/485 terminal.

CREC
(Card recorder)
Used for recording data onto a card for back-up. Also used for recording data by memory manager or data logging functions.

CF-REC
(CF card recorder)
Facilitates reading screen data, sampling data or recipe data. Can be attached to control panel.

V-I/O
(I/O serial expansion)
External I/O unit with 16 inputs and 16 outputs.

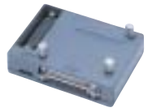


V7-BT
(Battery)
Lithium battery for V7 series panels

REC-MCARD
(Memory card)
Compatible with JEIDA Ver.4.0
Used for data recording via CREC for data backup, memory managing and data logging
SRAM: 256KB, 512KB, 1MB, 2MB, 4MB
FLASH ROM : 4MB

V7xx-GS/V7xx-GSN10
V606-GS/V606-GSN10
Protection sheet for Monitouch panels. N10 is a non-glare type sheet (5 sheets per package).

V7xxx-FL/V6xxx-FL
Replacement backlight for V7 panels
See P41.



V-MDD
(ACPU/QnACPU/FXCPU(Dual port interface)
Splits the interface port enabling dual connection. This is useful to connect to ACPU/QnACPU/FXCPU(MITSUBISHI).

Optional units expanding V7's functions

Optional Accessories

Model	MONITOUCH																
	V7 series														V6 series		
	V715X	V712iS	V712S	V710iS	V710S	V710iT	V710T	V710C	V708iS	V708S	V708C	V706T	V706C	V706M	V609E	V608CH	V606e
●Optional Units																	
GU-00 (Video+Sound)	○																
GU-01 (RGB IN+Sound)	○																
GU-02 (RGB OUT+Sound)	○																
GU-03 (Sound)	○																
EU-00 (Video+Sound)		○		○		○			○								
EU-01 (RGB IN+Sound)		○		○		○			○								
EU-02 (RGB OUT+Sound)		○		○		○			○								
EU-03 (Sound)		○		○		○			○								
DU-01 (Option unit)												○	○	○			
DU-TL (T-Link unit)												○	○	○			
●I/F Units																	
CU-00 (OPCN-1)	○	○	○	○	○	○	○	○	○	○	○	○★1	○★1	○★1			
CU-01 (T-Link)	○	○	○	○	○	○	○	○	○	○	○	○★1	○★1	○★1			
CU-02 (CC-Link)	○	○	○	○	○	○	○	○	○	○	○	○★1	○★1	○★1			
CU-03-2 (Ethernet/FL-net)	○	○	○	○	○	○	○	○	○	○	○	○★1	○★1	○★1			
CU-04 (PROFIBUS-DP)	○	○	○	○	○	○	○	○	○	○	○	○★1	○★1	○★1			
CU-05 (MELSECNET/10)	○	○	○	○	○	○	○	○	○	○	○	○★1	○★1	○★1			
CU-07 (DeviceNet)	○	○	○	○	○	○	○	○	○	○	○	○★1	○★1	○★1			
CU-ADP (Adapter unit)												○	○	○			
●Memory Expansion Cassettes																	
V7EM-F (Flash)	○	○	○	○	○	○	○	○	○	○	○						
V7EM-L (Ladder)	○	○	○	○	○	○	○	○	○	○	○						
V7EM-S (SRAM)	○	○	○	○	○	○	○	○	○	○	○						
V706EM-F (Flash)												○★2	○★2	○★2			
V706EM-S (SRAM)												○★2	○★2	○★2			

*1 CU-ADP is needed. *2 DU-01 or CU-ADP is needed.

Model	MONITOUCH																
	V7 series														V6 series		
	V715X	V712iS	V712S	V710iS	V710S	V710iT	V710T	V710C	V708iS	V708S	V708C	V706T	V706C	V706M	V609E	V608CH	V606e
V-SFT-3	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
TC485 (Terminal converter)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		
TC609															○		
CREC/CREC01	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○
CF-REC (CF card recorder)		○	○	○	○	○	○	○	○	○	○						
V-MDD	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○
V-I/O (Serial extension)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○
V7-BT (Battery)	○	○	○	○	○	○	○	○	○	○	○	○	○	○			○
V6H-RB																○	
V6H-ST																○	
V6H-WF																○	
V6H-WF1																○	
●Protection Sheet																	
V715-GS	○																
V715-GSN10	○																
V712-GS		○	○														
V712-GSN10		○	○														
V710-GS				○	○	○	○	○									
V710-GSN10				○	○	○	○	○									
V708-GS									○	○	○						
V708-GSN10									○	○	○						
V608CH-GSN10																○	
V606-GS												○	○	○			○
V606-GSN10												○	○	○			○
GD-GS80E															○		
GD-WP80E															○		
●Backlight Unit																	
V715X-FL	○																
V712S-FL*1		○	○														
V612T-FL01*1		○	○														
V610S-FL01				○	○												
V710T-FL*1						○	○										
V610T-FL01*1						○	○	○									
V708S-FL									○	○							
V608C-FL											○					○	
●Panel Cut-out Adaptor																	
PAD-V610				○	○	○	○	○									
PAD-V610-01				○	○	○	○	○									
PAD-V608									○	○	○						
PAD-V608-01									○	○	○						
PAD-V606												○	○	○			○
PAD-V609															○		

*1 Compatible units differ depending on panel serial numbers. Contact our Overseas Sales Section for details.

Cables

Cable	MONITOUCH	Specifications	Destination
V6-CP	V7/V6, V706	RS-232C, Modular 8-pin – 9-pin D-sub(F), Cable length: 3m	PC
V7-PT	V7	20-pin Half pitch – 36-pin Centronics, Cable length: 2.5m	Parallel printer
V6-PT	V609E	36-pin Half pitch – 36-pin Centronics, Cable length: 2.5m	Parallel printer
V7-PTCBM-2.5M	V7	20-pin Half pitch – 40-pin LY connector, Cable length: 2.5m	CITIZEN SYSTEMS : CBM-292/293
V6-BCD	V7/V6, V706	RS-232C, Modular 8-pin, Cable length: 3m	Bar code reader
V6-MLT	V7/V6, V706	RS-422, Modular 8-pin, Cable length: 3m	Monitouch V7/V6 series
V6-TMP	V7/V6, V706	RS-232C/485, Modular 8-pin, Cable length: 3,5,10m	Temperature controller, inverter etc.
MJ-D25	V7/V6, V706	RS-232C/485, Modular 8-pin – 25-pin D-sub(F), Cable length: 0.3m	PLCs (for PLC2WAY)
MJ2-PLC	V706	RS-232C/422, Modular 8-pin – 25-pin D-sub(F), Cable length: 0.3m	PLCs
MB-CPUQ-□M □:Cable length	V7/V6, V706 + DU-01	RS-422, 25-pin D-sub(M) – 25-pin D-sub(M), Cable length: 2,3,5,10,15m	MITSUBISHI A series CPU MITSUBISHI QnA series CPU
QCPU2-□M □:Cable length	V7/V6, V706 + DU-01	RS-232C, 25-pin D-sub(M) – 6-pin Mini DIN(M), Cable length: 2,3,5,10,15m	MITSUBISHI QnH(Q) series CPU MITSUBISHI Q00J/00/01CPU
MI4-FX-□M □:Cable length	V7/V6, V706 + DU-01	RS-422, 25-pin D-sub(M) – 8-pin Mini DIN(M), Cable length: 2,3,5,10,15m	MITSUBISHI FX2N/1N/2NC/0N CPU MITSUBISHI FX1S series CPU
V706-ACPU-□M □:Cable length	V706	RS-422, Modular 8-pin – 25-pin D-sub(M), Modular 8-pin, Cable length: 2,3,5,10,15m	MITSUBISHI A series CPU
OM2-09-□M □:Cable length	V7/V6, V706 + DU-01	RS-232C, 25-pin D-sub(M) – 9-pin D-sub(M), Cable length: 2,3,5,10,15m	OMRON C200HS-CPU21,23 C200HX CV500 CJ1H C200HS-CPU31,33 C200HG CV1000 CJ1M CCQM1-CPU21 C200HE CV2000 CQM1-CPU41,42 CPM2A CVM1 CQM1-CPU43,44 SRM1-C02 CS1
V6-SR422	V7/V6, V706	RS-422, Modular 8-pin – Modular 6-pin, Modular 6-pin, Cable length: 3m	RKC INSTRUMENT: SR-mini
CAB-001	V7/V6, V706 + DU-01	RS-232C, 25-pin D-sub(M) – 15-pin D-sub(F), Cable length: 0.5m	MITSUBISHI CPU cable MB-CPU-□M for Monitouch GD-80 series
V6H-C□ □:Cable length	V608CH	Cable length: 3,5,15,20m	PLCs

Compatible with various manufacturers' PLCs

Connectable PLCs V712/V710/V708/V706+DU-01/V706+CU-ADP

As of May 2006

Manufacturer	PLC	1:1	1:n (Multidrop)	Multilink 2	n:1 (Multilink)	Ethernet	Field network	Controller network	PLC2way
Allen-Bradley	PLC-5	○	○	○		○★4			
	SLC500	○	○	○		○★4			
	NET-ENI(SLC500)					○★4			
	Micro Logix 1000	○	○	○					
	ControI Logix/Compact Logix	○		○		○★4			
Automation Direct	Direct LOGIC	○	○	○					
	Direct LOGIC(K-Sequence)	○		○					
FANUC	Power Mate	○		○					
FATEC AUTOMATION	FACON FB series	○	○	○					
Fuji Electric	MICREX-F series	○	○	○	○		T-Link		○
	SPB(N mode)&FLEX-PC series	○	○	○			OPCN-1		○★2
	SPB(N mode)&FLEX-PC CPU	○		○					
	FLEX-PC COM(T)	○	○	○	○				
	FLEX-PC(T)	○		○					
	FLEX-PC CPU(T)	○		○					
GE Fanuc	90 series	○	○	○					
	90 series(SNP-X)	○		○					
Hitachi	HIDIC-H	○	○	○	○	○			
	HIDIC-EHV	○	○	○	○	○			
	HIDIC-S10/2 α	○		○		○★4	OPCN-1		○★7
	HIDIC-S10/4 α	○		○					○★7
	HIDIC-S10/ABS	○		○					
	HIDIC-S10V	○		○		○★4			
IDEC	MICRO3	○	○	○					
	MICRO Smart	○	○	○					
KEYENCE	KZ series link	○	○	○	○				
	KZ-A500 CPU	○		○					
	KZ/KV series CPU	○	○	○					
	KZ24/300CPU	○		○					
	KV10/24CPU	○		○					
	KV-700	○		○		○			
	KV-1000	○		○		○★4			
KOYO ELECTRONICS	SU/SG	○	○	○					
	SR-T	○	○	○					
	SR-T(K protocol)	○		○					
	SU/SG(K-Sequence)	○		○					
LS	MASTER-K10/60/200	○		○		○			
	MASTER-K500/1000	○	○	○					
	MASTER-KxxxS	○		○	○				
	MASTER-KxxxS CNET	○	○	○					
	GLOFA CNET	○	○	○					
	GLOFA GM series CPU	○		○		○			
	XGT/XGK series	○	○	○		○			
Matsushita Electric Works	MEWNET	○	○	○	○	○			○
MITSUBISHI ELECTRIC	A Series link	○	○	○	○		OPCN-1 CC-Link	Net10	○
	A Series CPU	○		○					
	QnA series link	○	○	○		○	CC-Link	Net10	○★2
	QnA series CPU	○		○	○ (with V-MDD)				
	QnH(Q) series link	○	○	○		○	CC-Link	Net10	○★2
	QnH(A) series CPU	○		○					
	QnH(Q) series CPU	○		○					○
	Q00J/00/01 CPU	○		○		○	CC-Link	Net10	
	QnH(Q) series link (Multi CPU)	○	○	○		○			
	QnH(Q) series CPU (Multi CPU)	○		○					
	FX series CPU	○		○					
	FX2N series CPU	○		○					
	FX1S series CPU	○		○					
	FX series link (A Protocol)	○	○	○	○				○★3
	FX-3UC series CPU	○		○					
	A link + Net10	○	○★1		○				
Modicon	Modbus RTU	○	○	○					
OMRON	SYSMAC C	○	○	○			OPCN-1		○★2
	SYSMAC CV	○	○	○					○★2
	SYSMAC CS1/CJ1	○	○	○		○			○★2
	SYSMAC CS1/CJ1 DNA	○	○★1			○			
SAMSUNG	SPC series	○	○	○	○				
	N_plus	○	○	○	○				
	SECNET	○	○	○	○				
SHARP	JW series	○	○	○	○	○		FL-net	○
	JW100/70H COM port	○	○	○					○
	JW20 COM port	○	○	○					○
	JW300 series	○	○	○		○			
SHINKO ELECTRIC	SELMART	○	○	○					
SIEMENS	S5	○		○	○				
	S5 PG port	○		○					
	S7	○		○			PROFIBUS-DP		
	S7-200 PPI	○	○						
	S7-300/400MPI	○	○★5		○★6				
	S7-300MPI(HMI ADP)	○		○					
	S7-300MPI(PC ADP)	○		○					
	S7-300MPI(Helmholtz SSW7 ADP)	○		○					○
	TI500/505	○		○					○
TAIAN	TP02	○	○	○					
TOSHIBA	T series	○	○	○		○			
	EX series	○	○	○	○				
TOSHIBA MACHINE	TC200	○	○	○					
Toyoda Machine Works	TOYOPUC	○	○	○	○	○			○
Yamatake	MX series	○		○					
Yaskawa Electric	MEMOBUS	○	○	○					
	CP9200SH/MP900	○	○	○					
	MP2300					○★4			
Yokogawa Electric	FA500	○	○	○	○				
	FA-M3	○	○	○	○	○		FL-net	○
	FA-M3R	○	○	○	○	○			○

◇1:1 One V7/V6 unit is connected to one PLC.
◇1:n One V7/V6 unit is connected to multiple PLCs.
◇Multi-link2: One PLC is connected to up to four V7/V6 units.
◇n:1 One PLC is connected to multiple V7/V6 units.
◇For Ethernet communication, V7i has the LAN port as standard; V7/V6/V706 must be equipped with a communication interface unit or an optional unit.
◇For field network or controller network, the communication interface unit must be installed.
◇For PLC2way communications, the PLC is connected to the MJ port via RS-232C or RS-485 (two-wire system) .

In addition to the above, PLCs of the following manufacturers are connectable. For details, see PLC Connection Manual (English version).
SAIA, MOELLER, Telemecanique, VIGOR and DELTA

*1 When the V7/V6 series is connected to a PLC on a controller network, communication with other PLCs on the network is possible. *2 Only RS-232C connection is possible.
*3 FX□N-422-BD is not supported. *4 Only built-in LAN and DU-01 are supported. *5 Up to four PLCs can be connected. *6 Up to three V7 panels can be connected.
*7 Converter is needed.

Connectable PLCs V706

As of May 2006

Manufacturer	PLC	1:1	1:n (Multidrop)	Multilink 2	n:1 (Multilink)	Field network	PLC2way
Allen-Bradley	PLC-5	○	○	○			
	SLC500	○	○	○			
	Micro Logix 1000	○	○	○			
	ControI Logix/Compact Logix	○		○			
Automation Direct	Direct LOGIC	○	○	○			
	Direct LOGIC(K-Sequence)	○		○			
FANUC	Power Mate	○		○			
FATEC AUTOMATION	FACON FB series	○	○	○			
Fuji Electric	MICREX-F series	○	○	○	○		○
	SPB(N mode)&FLEX-PC series	○	○	○			○★2
	SPB(N mode)&FLEX-PC CPU	○		○			
	FLEX-PC COM(T)	○	○	○	○		
	FLEX-PC(T)	○		○			
	FLEX-PC CPU(T)	○		○			
GE Fanuc	90 series	○	○	○			
	90 series(SNP-X)	○		○			
Hitachi	HIDIC-H	○	○	○	○		
	HIDIC-S10/2 α	○		○			○
	HIDIC-S10/4 α	○		○			○
	HIDIC-S10/ABS	○		○			
	HIDIC-S10V	○		○			
IDEC	MICRO3	○	○	○			
	MICRO Smart	○	○	○			
KEYENCE	KZ series link	○	○	○			
	KZ-A500 CPU	○		○			
	KZ/KV series CPU	○	○	○			
	KZ24/300CPU	○		○			
	KV10/24CPU	○		○			
	KV-700	○		○			
	KV-1000	○		○			
KOYO ELECTRONICS	SU/SG	○	○	○			
	SR-T	○	○	○			
	SR-T(K protocol)	○		○			
	SU/SG(K-Sequence)	○		○			
LS	MASTER-K10/60/200	○		○			
	MASTER-K500/1000	○	○	○	○		
	MASTER-KxxxS	○		○			
	MASTER-KxxxS CNET	○	○	○			
	GLOFA CNET	○	○	○			
	GLOFA GM series CPU	○		○			
	XGT/XGK series	○	○	○			
Matsushita Electric Works	MEWNET	○	○	○	○		○
MITSUBISHI ELECTRIC	A Series link	○	○	○	○		○
	A Series CPU	○		○			
	QnA series link	○	○	○			○★2
	QnA series CPU	○		○	○ (with V-MDD)		
	QnH(Q) series link	○	○	○			○★2
	QnH(A) series CPU	○		○			
	QnH(Q) series CPU	○		○			○
	Q00J/00/01 CPU	○		○			
	QnH(Q) series link (Multi CPU)	○	○	○			
	QnH(Q) series CPU (Multi CPU)	○		○			
	FX series CPU*6	○		○			
	FX2N series CPU	○		○			
	FX1S series CPU	○		○			
	FX series link (A Protocol)	○	○	○	○		○★3
	FX-3UC series CPU	○		○			
	A link + Net10	○	○★1		○		
Modicon	Modbus RTU	○	○	○			
OMRON	SYSMAC C	○	○	○			○★2
	SYSMAC CV	○	○	○			○★2
	SYSMAC CS1/CJ1	○	○	○			○★2
	SYSMAC CS1/CJ1 DNA	○	○★1				
SAMSUNG	SPC series	○	○	○	○		
	N_plus	○	○	○	○		
	SECNET	○	○	○	○		
SHARP	JW series	○	○	○	○		○
	JW100/70H COM port	○	○	○			○
	JW20 COM port	○	○	○			○
	JW300 series	○	○	○			
SHINKO ELECTRIC	SELMART	○	○	○	○		
SIEMENS	S5	○		○			
	S5 PG port	○		○		PROFIBUS-DP	
	S7	○		○			
	S7-200 PPI	○	○		○		
	S7-300/400MPI	○	○★4		○★5		
	S7-300MPI(HMI ADP)			○			
	S7-300MPI(PC ADP)			○			
	S7-300MPI(Helmholtz SSW7 ADP)			○			
	TI500/505	○		○			
TAIAN	TP02	○	○	○			
TOSHIBA	T series	○	○	○	○		
	EX series	○	○	○			
TOSHIBA MACHINE	TC200	○	○	○	○		
Toyoda Machine Works	TOYOPUC	○	○	○	○		○
Yamatake	MX series	○		○			
Yaskawa Electric	MEMOBUS	○	○	○			
	CP9200SH/MP900	○	○	○			
	MP2300						
Yokogawa Electric	FA500	○	○	○	○		
	FA-M3	○	○	○	○		○
	FA-M3R	○	○	○	○		○

◇1:1 One V7/V6 unit is connected to one PLC.
◇For PLC2way communications, the PLC is connected to the MJ port via RS-232C or RS-485 (2-wire connection) interface.
◇1:n One V7/V6 unit is connected to multiple PLCs.
◇Multi-link2: One PLC is connected to up to four V7/V6 unit.
◇n:1 One PLC is connected to multiple V7/V6 units.

In addition to the above, PLCs of the following manufacturers are connectable. For details, see hardware specifications (English version) .
SAIA, MOELLER, Telemecanique, VIGOR and DELTA

*1 When the V7/V6 series is connected to a PLC on a controller network, communication with other PLCs on the network is possible.
*2 Only RS-232C connection is possible. *3 FX□ N-422-BD is not supported. *4 Up to four PLCs can be connected.
*5 Up to three V7 panels can be connected. *6 Connectable FXON model only. *7 Compatible only when equipped with COMM-2H and RS-422.

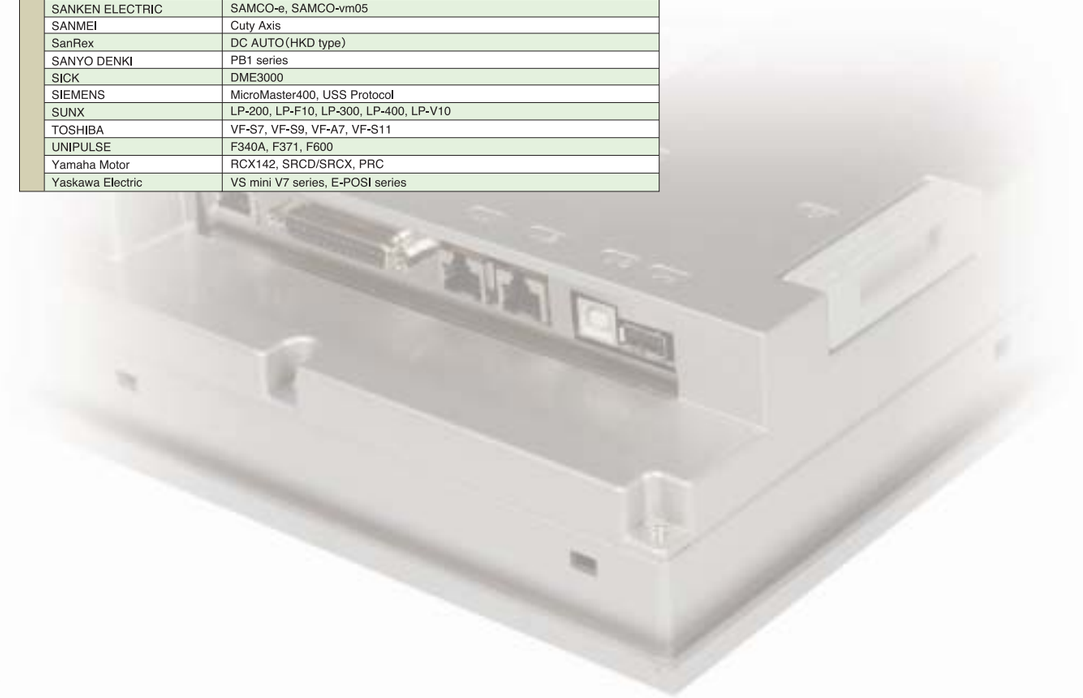
Expanding functions by connecting peripheral equipment

Temperature Controller Network

As of May 2006

Temperature controllers	CHINO	DZ1000(MODBUS RTU), DZ2000(MODBUS RTU) KP1000, LT400 series(MODBUS RTU), DP1000, DB1000
	EUROTHERM	2400 series(MODBUS RTU)
	Fuji Electric	PYX(MODBUS RTU), PYH, PXR(MODBUS RTU), PXG(MODBUS RTU) PXH(MODBUS RTU), PHR(MODBUS RTU)
	Modbus Free	———
	OHKURA	EC5500S, EC5800, EC5600S, EC5900A
	OMRON	E5CK, E5ZE, E5ZD, E5EK, E5EK-T, E5AK, E5AK-T, E5CK-T, E5AN/E5EN/E5CN/E5GN, E5ZN, 5AR,E5ER
	RKC	SR-Mini(MODBUS RTU), CB100/400/500/700/900(MODBUS RTU), SR-Mini(Standard protocol), REX-F400/F700/F900(Standard protocol), REX-B800(Standard protocol) REX-F9000(Standard protocol), SRV(MODBUS RTU), MA900/901
	SHIMADEN	SHIMADEN standard protocol
	SHINKO TECHNOS	C series, FC series, GC series, DCL-33A, JCx-300 series
	TOHO ELECTRONICS	TTM-000
	Yamatake	SDC10/20/21/30/31/40A, DMC10, SDC40G, DMC50, AHC2001, DCP31/32
	Yokogawa Electric	UT100/750/550/520/350/320 UP350/550/750, UM330/350, UT2400/2800

Inverters・Others	A&D	AD4402(MODBUS RTU), AD4404(MODBUS RTU)
	DELTA TAU DATA SYSTEMS	PMAC
	Fuji Electric	F-MPC04P(Loader), F-MPC series/FePSU, FVR-E11S FVR-E11S(MODBUS RTU), FVR-C11S, FVR-C11S(MODBUS RTU), FRENIC5000 G11S/P11S, FRENIC5000 G11S/P11S(MODBUS RTU), FRENIC5000 VG7S, FRENIC5000 VG7S(MODBUS RTU), FRENIC-Mini(MODBUS RTU), FRENIC-Eco(MODBUS RTU), FRENIC-Mulit(MODBUS RTU), HFR-C9K, HFR-C11K, PRMC(MODBUS RTU), FALDIC-α series, FALDIC-W series, PH series, WA5000
	Gammaflux	TTC2100
	Hitachi	SJ300 series, L300P series
	Honeywell	Universal Modbus RTU
	IAI	Super SEL Controller, X-SEL Controller ROBO CYLINDER(RCP2/ERC), ROBO CYLINDER(RCS), TX-C1
	KOGANEI	ABSRCD/ABSRCX, ABPRC
	LS	iS5, iG5
	M-SYSTEM	R1M series (MODBUS RTU), R5 series (MODBUS RTU)
	MITSUBISHI ELECTRIC	FR-*500, FR-V500, MR-J2S-*A, MR-J2S-*CL, MR-J3-*A
	NIKKI DENSO	SQB-6432B
	OMRON	V600/V620, 3G3MV(MODBUS RTU)
	SAMSUNG	MOSCON-E7
	SANKEN ELECTRIC	SAMCO-e, SAMCO-vm05
	SANMEI	Cuty Axis
	SanRex	DC AUTO(HKD type)
	SANYO DENKI	PB1 series
	SICK	DME3000
	SIEMENS	MicroMaster400, USS Protocol
	SUNX	LP-200, LP-F10, LP-300, LP-400, LP-V10
	TOSHIBA	VF-S7, VF-S9, VF-A7, VF-S11
	UNIPULSE	F340A, F371, F600
	Yamaha Motor	RCX142, SRCD/SRCX, PRC
	Yaskawa Electric	VS mini V7 series, E-POSI series



PLC Ladder Transfer

As of May 2006

Manufacturer	Model
Fuji Electric	SPB(N mode)&FLEX-PC CPU
Matsushita Electric Works	MEWNET
MITSUBISHI ELECTRIC	A series CPU QnH(Q) series CPU(Q02(H), Q06H, Q12H, Q25H) QnH(Q) series link (Q00, Q01) Q00J/00/01 CPU(Q00J, Q00, Q01) FX series CPU(FX1/2, FX0N) FX2N series CPU(FX2N, FX2NC) FX1S series CPU(FX1S) FX-3UC series CPU
OMRON	SYSMAC C(CS1/CJ1)
Yokogawa Electric	FA-M3/FA-M3R CPU(Programming tool port)

PLC Ladder Monitor

Manufacturer	PLC	Compatible models
MITSUBISHI ELECTRIC	QnH(Q) series link * QnH(Q) series CPU QnH(Q) series (Ethernet)	Q02(H) CPU, Q06H CPU Q12H CPU, Q25H CPU

*Ladder monitoring is possible in [1:n] connection. (Monitoring is possible on one PLC.)