## Operator Interface    Touchscreen Family

### Smart design to fit your needs
From the large 12.1" TFT LCD Screen, to the com[...]
4.6" STN LCD, our screens support either mono-
chrome or 256 colors with high pixel resolution t[...]
give you sharp images and excellent visibility. In
keeping with IDEC's attention to detail, our slim-
body design adapts to applications where space [...]
limited. With up to 8MB of memory and a 200MH[...]
32-bit RISC CPU, IDEC Touchscreens put control,
power and speed at your fingertips.

### Versatile, High functionality
IDEC Touchscreens can function as either a stand[...]
alone controller or communicate with IDEC PLCs[...]
and a wide array of major manufacturers' PLCs.
Touchscreens interface with any of your equipm[...]
to provide graphical data presentations in vivid [...]
and to display bar graphs and meters to represe[...]
analog data. Illuminated pushbuttons can replac[...]
physical mechanical switches; pilot lamps can di[...]
play on/off states and show almost any producti[...]
information you need to monitor.

### Programming power made easy
IDEC's powerful WindO/I-NV2 software lets you c[...]
ate colorful graphical interfaces for easier produ[...]
tion supervision and control. A built-in library of
5000 bitmap images helps you easily display alm[...]
every manufacturing activity you want to contro[...]
Our programming software is intuitive and user-
friendly. With re-sizeable pop-up screens, Windo[...]
compatible fonts, and multilingual text capabilit[...]
you enjoy the utmost flexibility in designing and
programming.
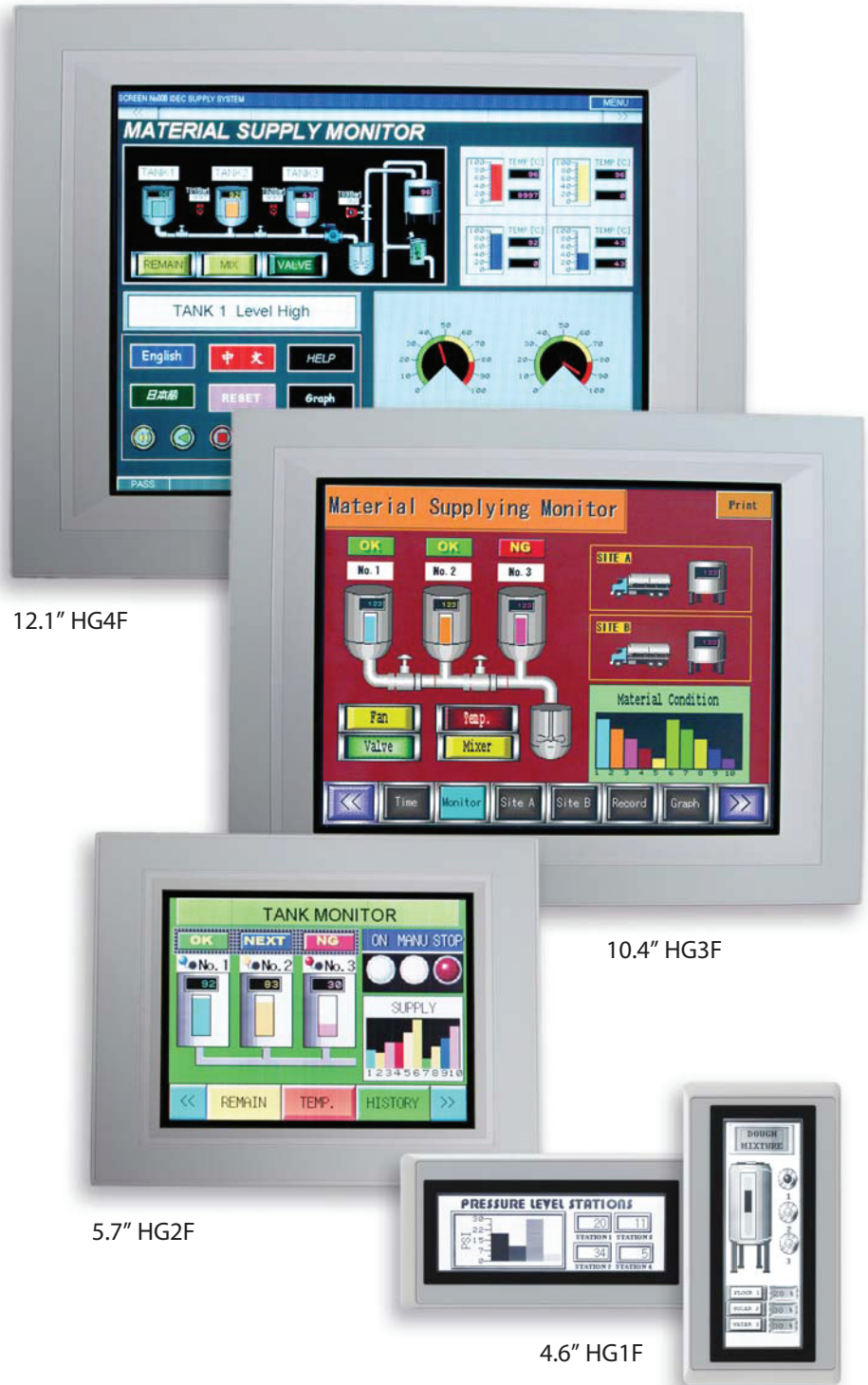
12.1" HG4F

10.4" HG3F

5.7" HG2F

4.6" HG1F

PLCs

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Automation Software

Power Supplies

Sensors

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**Features**

The OI Touchscreen Family is ideally matched to today's sophisticated technology. Using a wide range of graphical options, you can represent specific equipment, make production information immediately apparent and instantly display safety problems. Consolidating controls on an IDEC touchscreen eliminates costly investments in wiring and installation of multiple pushbutton indicators on a traditional control panel. Just think how you can benefit with touchscreens.

**Expansion I/O**
An expansion digital I/O module gives you the option of expanding your system with 16 DC inputs and 16 transistor outputs for basic PLC control (excluding 4.6" HG1F touchscreen).

**Basic Data Representation**
A built-in software library of over 5000 bit-mapped images lets you graphically represent almost any plant activity or equipment that you want to monitor or control. In addition to representing meters, bar graphs and switches, you can also incorporate keypads to facilitate changing values. Our user-friendly programming software lets you design each screen by simply selecting objects from a pull-down menu or from a row of object icons and dropping it onto the screen work area. All bitmap images are available in 256 colors and are easily re-configurable.

**Ethernet Support**



Remote Network

Local Area Network
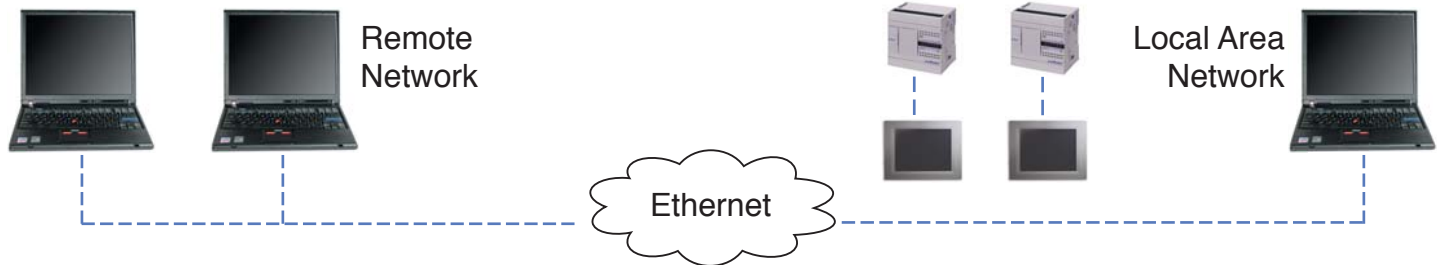
Ethernet

The built-in 10BaseT Ethernet port found on the 10.4" and 12.1" touchscreens allow communications with PLCs using Ethernet/IP, Modbus TCP/IP or IDEC networking protocol. The touchscreens also allow you to remotely monitor machine-operating status via the Internet or your Local Area Network using any web browser. Regardless of your location, you can use your PC's browser (Netscape or Internet Explorer) to collect data about any touchscreen project. You can efficiently monitor and manage production activity from your office without the time or expense of travel.

**Recipe, Alarm and Trend Logging**
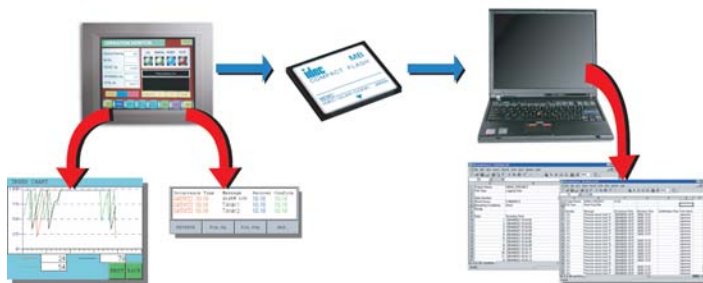


The Recipe function allows you to conveniently set operational parameters, which can be individually defined for different processes. The Alarm function stores historical events with a date and time stamp compliant to the ISA (Instrument Society of America) Standards, adding additional options to display and manage alarm messages. Trend Logging expresses data in graphical form according to the time period you define. Using these functions, you can quickly view production information and collect and manage data.

**Compact Flash Card**



OI Touchscreens (excluding 4.6" HG1F) support Compact Flash (CF) Cards with up to 512 MB of memory. In addition to storing recipe, alarm and trending data, the CF Card can also store screen captures in a BMP format for documentation purposes. The CF Card can hold one or more projects and you can easily transfer a project directly to another touchscreen by simply inserting the card into the second touchscreen and downloading what you need.

## Features, con't

To meet your application needs, IDEC offers 12.1" and 10.4" TFT LCD screens, and 4.6" and 5.7" STN LCD screens that come with 256 colors or in monochrome to provide you with either multicolored or gray scale graphics. All screens have high pixel resolution and super bright LCD screens with 400 cd/m$^2$ for the 12.1", 450 cd/m$^2$ for the 10.4" screen, 250 cd/m$^2$ for the 5.7" and 500 cd/m$^2$ for the 4.6" screen to provide sharp quality images, with RS-232 / RS-485 / RS-422 communication. In addition, all IDEC Touchscreens communicate with IDEC as well as many other industry leading PLC manufacturers.

Their slim body style of: 35.3mm depth for the 4.6" HG1F, 50mm depth for the 5.7" HG2F, 49.6mm depth for the 10.4" HG3F, and 52.1mm depth for the 12.1" HG4F, provide an advantage in space in a panel.

### OI Link Communication



This permits a single PLC to communicate with multiple IDEC touchscreens, where one touchscreen serves as the master and up to 15 as slaves. An OI Link will accommodate communications over a maximum distance of 200 meters. The OI Link should be used whenever you are using more than one touchscreen in a location to monitor and control a single PLC.

### 1:N PLC Communication



This mode allows a single IDEC touchscreen to communicate with multiple PLCs. It is used when you need only one centrally located touchscreen to monitor and control PLCs in different locations. Depending on the PLC type, a maximum of 31 PLCs can be connected to one touchscreen. PLC manufacturers supported for 1:N communication are: IDEC OpenNet Controller and MicroSmart family, Automation Direct (Koyo): DirectLogic-DL205/405 and Modicon: Modbus RTU.

### Pass Thru Function
This function lets you download a PLC program from a PC through the touchscreen without interrupting operations. Only one cable is needed to program both units. The Pass Thru communications function is applicable to the following PLCs: IDEC OpenNet Controller and MicroSmart family, and Mitsubishi MELSEC-FX, FX3UC and Q.

### Support of Leading Manufacturer's PLCs
IDEC Touchscreen communications capabilities expand well beyond IDEC brand PLCs. Other major PLC manufacturers supported are: Allen Bradley, Mitsubishi, Omron, Automation Direct (Koyo), Keyence, GE, Modicon, Siemens, Sharp, Hitachi, Schneider, Yaskawa, Fanuc, Matsushita Electric Works (Panasonic) and Yokogawa.

The 10.4" and 12.1" IDEC Touchscreens can remotely communicate with multiple devices or PLCs over an Ethernet network, using Ethernet/IP, Modbus TCP/IP, or IDEC 1:N drivers. Only one centrally located IDEC touchscreen is necessary to communicate with up to 16 PLCs that are located in different locations. The Ethernet/IP driver supports the following Allen Bradley Series PLCs: Micrologix, SLC500, PLC5 and ControlLogix.

### Approvals and International Ratings
The OI Touchscreen Family is UL listed for use in hazardous locations (Class I Div. 2). In addition the 4.6" and 5.7" screens are IP65 and Nema Type 13 rated, while the 10.4" and 12.1" screens are IP66, Nema Type 4, 4X, 13 rated so they can be used in the most demanding industrial applications.



### Printer Function



Use this capability to print alarm data so a hard-copy record of specific events can be maintained. Copies of screens can also be printed when needed for documentation. Serial printers are supported on all OI Touchscreens, while Parallel Printers are supported on 10.4" and 12.1" models.

### Barcode Reader Support
IDEC Touchscreens provide a serial port that you can configure for use by special communication devices such as barcode readers. A barcode reader can send data directly to the touchscreen, where it can be used for quick viewing before being transferred to the PLC for further data manipulation.



### Debugging Functions
Two modes are available for either monitoring data or troubleshooting. Once you download the project you created in WindO/I-NV2 to the touchscreen, you can use the Debugging Mode to communicate directly with the touchscreen and switch between screens or view and modify batch data from the controls of your PC. In Simulation Mode, you can use simple On/Off control without connecting to the PLC.

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# WindO/I-NV2

## Programming Software

### Easy Programming: Intuitive Drag & Drop Functionality

The WindO/I-NV2 software for all OI Touchscreens is the programming tool that lets you create colorful graphical interfaces to visualize operating conditions. The software is very intuitive with drag and drop functionality. The Help menus are a great source of information and a built-in library of bitmaps provides over 5000 images to help expand your creativity. The software also includes a debug function where you can go online with the touchscreen for monitoring and changing data.

### Flexible Screen Display for Efficient Editing

With WindO/I-NV2 software, screens can be easily arranged. A total of 3000 base screens can be created (as allowed by the memory size). Sub-screens known as pop-up menus can be resized, made (showing backgrounds) using the superimpose function, and can be made to appear anywhere inside the base screen.

### Easy to manage Projects and Screens

#### Screens and Project Settings List:

- Screens can be duplicated and their properties can be changed easily.

- Project settings can be edited.

- Devices, text, and images can be imported or exported.

#### Screen Preview List:

- Screens can easily be selected using the preview image function.

#### Object List:

- Each object displays its properties such as; type of device used, conditions and operations.

#### Buttons:

- A button selected from an object list is shown on the editing screen.
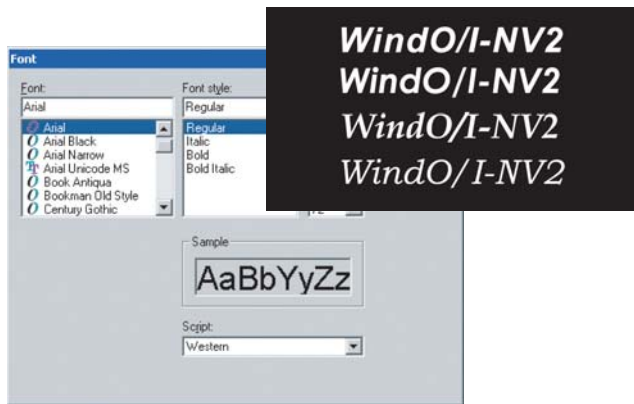
### Extensive Image Library

A built-in symbol library provides over 5000 symbols to help you create cutting-edge graphical screens. Image data from BMP, JPG, DXF, WMF, and ICO files can also be imported.
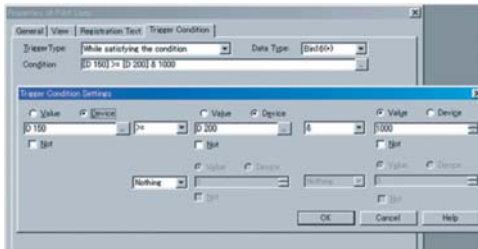
## WindO/I-NV2 Software, con't

### Compatible with Standard Windows™ Fonts



Fonts used in Windows™ can be used on the OI Touchscreens, making it possible to choose from a variety of text styles.

### Easy Programming of Operating Conditions



- Operating conditions for objects such as switches, lamps, bit/word write, screen switching, and many more are easy to use. Step by step wizards guide the user through the set-up process.

### Create Recipes to set parameters for different processes

- Upload or download parameters to and from the PLC

- 1,024 available channels; store up to 8,000 parameters per channel

### Set up Alarm Log function for messages and alerts

- Monitors alarm conditions from a PLC and stores historical events with a date and time stamp

- Meets ISA standards for visual alarm management

- Select size and contrast of alarm message and status

- Scroll a list of alarm messages

### Create Trend Graphs to monitor critical data points

- Quickly view production information

- Collect and manage data

- Up to 16 channels in a graph

### Multilingual Capabilities for Worldwide Applications



- The OI Touchscreen family can support other languages. With the text group function you can create a text database in different languages. Once the touchscreen is in a different country (e.g. China or Mexico) the customer can easily switch all text messages from English to Chinese or Spanish by a touch of a button.

- Windows 2000, Vista and XP make it possible to input Japanese, Simplified Chinese, Traditional Chinese, and Korean languages, Western European languages (English, German, French, Italian, Spanish, Dutch, Norwegian, Danish, Finnish, Swedish, etc.) Central European languages (Czech, Hungarian, Romanian, Croatian, Slovene, Polish, and Slavic), Baltic languages, Cyrillic languages (Russian, Ukranian, Bulgarian, Macedonian).

### Script function
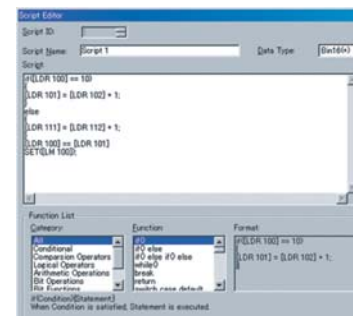


- Users with programming knowledge in C can combine conditional statements, mathematical operations and other functions to create simple and complex processes.

- Greatly reduce the programming required in the PLC.

- A syntax check function is also available to provide easy program troubleshooting.

### Security function

- Provides different levels of security and restrictions for multiple users on editing projects or displaying screens and objects.

PLCs

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# Available Functions

| Category | Item | HG1F | HG2F Standard | HG2F CC Switch Option | HG3F | HG4F |
|---|---|---|---|---|---|---|
| **Communication** | PLC link communication | √ | √ | √ | √ | √ |
| | DM link communication | √ | √ | √ | √ | √ |
| | OI link communication | √ | √ | √ | √ | √ |
| | Ethernet | — | — | — | √ | √ |
| | No host | √ | √ | √ | √ | √ |
| **User Memory** | | 1 MB | 2 MB | 2 MB | 8 MB* | 8 MB* |
| **Interface** | RS232C/RS485 (422) | √ | √ | √ | √ | √ |
| | Ethernet | — | — | — | √ | √ |
| | CF card slot | — | √ | √ | √ | √ |
| | Parallel | — | — | — | √ | √ |
| **Display Color** | 256 colors | — | √ | √ | √ | √ |
| | Monochrome | √ | √ | √ | — | — |
| **Brightness** | (cd/m²) | 500 | 250 | 250 | 450 | 400 |
| **Resolution** | (pixels) | 300 x 100 | 320 x 240 | 320 x 160** | 640 x 480 | 800 x 600 |
| **Touch Switch** | | — | 16 x 12 | 16 x 8 | 32 x 24 | 40 x 30 |
| **CC Switch** | | — | — | 4 x 1 row (bottom) | — | — |
| **Expansion Unit** | Digital I/O unit | — | √ | √ | √ | √ |
| **Features** | System program download | √ | √ | √ | √ | √ |
| | Font download | √ | √ | √ | √ | √ |
| | Download via Ethernet | — | — | — | √ | √ |
| | Download via OI link | √ | √ | √ | √ | √ |
| | Project transfer via CF card | — | √ | √ | √ | √ |
| | Printer output | √ | √ | √ | √ | √ |
| | Backlight replacement | √ | √ | √ | √ | √ |
| | Environment resistance | √ | √ | √ | √ | √ |
| **Functions** | Simulation | √ | √ | √ | √ | √ |
| | Pass through | √ | √ | √ | √ | √ |
| | Device monitor | √ | √ | √ | √ | √ |
| | Web server function | — | — | — | √ | √ |
| | Overlapped screens | √ | √ | √ | √ | √ |
| | Sub-screen superimpose | √ | √ | √ | √ | √ |
| | Text group switching | √ | √ | √ | √ | √ |
| | Script | √ | √ | √ | √ | √ |
| | Part operating condition setting | √ | √ | √ | √ | √ |
| | Alarm log | √ | √ | √ | √ | √ |
| | Logging | √ | √ | √ | √ | √ |
| | Recipe | √ | √ | √ | √ | √ |
| | Password setting | √ | √ | √ | √ | √ |
| **Parts** | Bit button | √ | √ | √ | √ | √ |
| | Word button | √ | √ | √ | √ | √ |
| | Goto screen button | √ | √ | √ | √ | √ |
| | Print button | √ | √ | √ | √ | √ |
| | Key button | √ | √ | √ | √ | √ |
| | Keypad | √ | √ | √ | √ | √ |
| | Selector switch | √ | √ | √ | √ | √ |
| | Potentiometer | √ | √ | √ | √ | √ |
| | Numerical input | √ | √ | √ | √ | √ |
| | Character input | √ | √ | √ | √ | √ |
| | Pilot lamp | √ | √ | √ | √ | √ |
| | Picture display | √ | √ | √ | √ | √ |
| | Message display | √ | √ | √ | √ | √ |
| | Message switching display | √ | √ | √ | √ | √ |
| | Alarm list display | √ | √ | √ | √ | √ |
| | Alarm log display | √ | √ | √ | √ | √ |
| | Numerical display | √ | √ | √ | √ | √ |
| | Bar graph | √ | √ | √ | √ | √ |
| | Trend chart | √ | √ | √ | √ | √ |
| | Pie chart | √ | √ | √ | √ | √ |
| | Meter | √ | √ | √ | √ | √ |
| | Calendar | √ | √ | √ | √ | √ |
| | Bit write command | √ | √ | √ | √ | √ |
| | Word write command | √ | √ | √ | √ | √ |
| | Goto screen command | √ | √ | √ | √ | √ |
| | Timer | √ | √ | √ | √ | √ |
| | Print command | √ | √ | √ | √ | √ |
| | Screen print command | √ | √ | √ | √ | √ |
| **WindO/I-NV2 Functions** | Debugging | √ | √ | √ | √ | √ |
| | Log data upload tool | √ | √ | √ | √ | √ |
| | Graphic library tool | √ | √ | √ | √ | √ |
| | Screen import | √ | √ | √ | √ | √ |
| | Text browser | √ | √ | √ | √ | √ |
| | Device browser | √ | √ | √ | √ | √ |
| | Script browser | √ | √ | √ | √ | √ |
| | Picture browser | √ | √ | √ | √ | √ |
| | Basic/advanced mode | √ | √ | √ | √ | √ |
| | Preview | √ | √ | √ | √ | √ |
| | Windows font | √ | √ | √ | √ | √ |
| | Library function | √ | √ | √ | √ | √ |
| | Global replace | √ | √ | √ | √ | √ |
| | Work space | √ | √ | √ | √ | √ |

*2MB used for OS
**four tactile push regions (40 x 70 pixels)

Sidebar categories: PLCs · Operator Interfaces · Automation Software · Power Supplies · Sensors · Communication & Networking · Available Functions

# Part Numbers

## OI Touchscreen

| | Part Numbers | Bezel Color | Description |
|---|---|---|---|
| **12.1"** | HG4F-JT22TFW | Light Gray | Color TFT LCD Touchscreen |
| | HG4F-JT22TFB | Black* | Color TFT LCD Touchscreen |
| | HG4F-JT22TFW-DH485-500 | Light Gray | Color TFT LCD Touchscreen with DF1 / DH485 converter/cable package for SLC 500 (w/RJ45 connector) |
| **10.4"** | HG3F-FT22TFW | Light Gray | Color TFT LCD Touchscreen |
| | HG3F-FT22TFB | Black* | Color TFT LCD Touchscreen |
| | HG3F-FT22TFW-DH485-500 | Light Gray | Color TFT LCD Touchscreen with DF1/DH485 converter/cable package for SLC 500 (w/RJ45 connector) |
| **5.7"*** | HG2F-SS22VCF | Light Gray | Color STN LCD Touchscreen |
| | HG2F-SB22VCF | Light Gray | Monochrome STN LCD Touchscreen |
| | HG2F-SS22VCF-DH485-500 | Light Gray | Color STN LCD Display with DF1 / DH485 converter/ cable package for SLC500 (w/RJ45 connector) |
| | HG2F-SB22VCF-DH485-500 | Light Gray | Monochrome STN LCD Display with DF1 / DH485 converter / cable package for SLC500 (w/RJ45 connector) |
| **5.7" with CC Click** | HG2F-SS52VCF | Light Gray | Color STN LCD Touchscreen w/ CC Click Tactile Touchbutton Technology |
| | HG2F-SB52VCF | Light Gray | Monochrome STN LCD Touchscreen w/ CC Click Tactile Touchbutton Technology |
| **4.6"** | HG1F-SB22BF-W | Light Gray | Monochrome STN LCD Touchscreen, RS-232 comm. |
| | HG1F-SB22BF-B | Black | Monochrome STN LCD Touchscreen, RS-232 comm. |
| | HG1F-SB22YF-W | Light Gray | Monochrome STN LCD Touchscreen, RS-485/RS-422 comm. |
| | HG1F-SB22YF-B | Black | Monochrome STN LCD Touchscreen, RS-485/RS-422 comm. |

*Black bezel models available upon request.

# Accessories

## Accessories

| Accessory | Description | Part Number |
|---|---|---|
| Programming Tools | WindO/I-NV2 Programming software for all IDEC Touchscreen Series | HG9Y-ZSS2W |
| | Cable connecting PC to Touchscreen via RS-232 Serial Port | HG9Z-XCM1A |
| Converters | USB to RS-232 Convertor for PCs without Serial Ports | FC4A-USB |
| | AB SLC500 (w/RJ45 connector) DF1 / DH485 Communication Package for HG2F/3F/4F | HG9Z-GWDF1DH485-3 |
| | AB SLC500 (w/RJ45 connector) DF1 / DH485 Communication Package for 4.6" HG1F | HG9Z-GWDF1DH485-4 |
| Protective Sheet | For 12.1" HG4F (minimum order quantity is 2 pcs.) | HG9Z-4DAP |
| | For 10.4" HG3F (minimum order quantity is 2 pcs.) | HG9Z-3DAP |
| | For 5.7"HG2F (minimum order quantity is 5 pcs.) | HG9Z-2D2 |
| | For 4.6" HG1F (minimum order quantity is 5 pcs.) | HG9Z-1D |
| Mounting Clips | For 10.4" HG3F & 12.1" HG4F (minimum order quantity is 10 pcs.) | HG9Z-4K1 |
| | For 5.7" HG2F (minimum order quantity is 4 pcs.) | HG9Z-2K1 |
| | For 4.6" HG1F (minimum order quantity is 10 pcs.) | SLD-K02 |
| Replacement Backlight | For 12.1" HG4F | HG9Z-4FB |
| | For 10.4" HG3F | HG9Z-3FB2 |
| | For 5.7" HG2F | HG9Z-2B1 |
| | For 4.6" HG1F | HG9Z-1FB |
| OI Link Unit | For all OI touchscreens | HG9Z-2G1 |
| 32 Point Digital I/O | For 10.4" HG3F & 12.1" HG4F (16 Inputs & 16 Outputs) | HG9Z-3P102 |
| | For 5.7" HG2F (16 Inputs & 16 Outputs) | HG9Z-2P101 |
| Compact Flash Card | 128MB CF Card for 5.7" HG2F, 10.4" HG3F, 12.1" HG4F | HG9Z-MF128 |
| Replacement Battery | Lithium Battery for 4.6" HG1F | HG9Z-XR1 |

**Cables**

*Sidebar tabs: PLCs | Operator Interfaces | Automation Software | Power Supplies | Sensors | Communication & Networking*

| Manufacturer | Series | Applicable CPU | Communication Type | Communication Module Required | HG1F Comm. Cable P/N | HG2F/3F/4F Comm. Cable P/N |
|---|---|---|---|---|---|---|
| IDEC | FA-3S | PF3S-CP12/CP13 | RS232 | PF2-CLA | Contact IDEC* | Contact IDEC* |
| | | | | PF3S-SIF2 | | |
| | | | RS485 | PF3S-SIF4 | | |
| | | PF3S-CP11/CP11T | RS232 | PF2-CLA | | |
| | FA-2J | PF2J | | | | |
| | Micro3 | FC2A | RS485 | Built-in Port | HG9Z-1C121A | HG9Z-3C115A |
| | Micro3C | FC2A-%C | RS232 | Built-in Port | HG9Z-XC183 | HG9Z-3C125A |
| | | | RS485 | Built-in Port | HG9Z-1C131A | HG9Z-2C145A |
| | OpenNet | FC3A | RS232 | Built-in Port | HG9Z-XC183 | HG9Z-3C125A |
| | | | RS485 | Built-in Port | HG9Z-1C131A | HG9Z-2C145A |
| | | | Ethernet | FC4A-SX5ES1E | Not Supported | CAT 5 Ethernet Crossover cable |
| | MicroSmart/Pentra MicroSmart | FC4A, FC5A | RS232 | Built-in Port | FC4A-KC1CA | FC4A-KC2CA |
| | | | | FC4A-PC1/HPC1 | HG9Z-XC183 or FC4A-KC1CA | |
| | | | RS485 | FC4A-PC2/HPC2 | HG9Z-1C121A | HG9Z-3C115A |
| | | | | FC4A-PC3/HPC3 | HG9Z-1C131A | HG9Z-2C145A |
| | | | Ethernet | FC4A-SX5ES1E | Not Supported | CAT 5 Ethernet Crossover cable |
| Allen Bradley | PLC-5 | 1785 | RS232 | Built-in Port | Contact IDEC* | Contact IDEC* |
| | | | | 1770-KF2 | | |
| | | | RS422 | Built-in Port | | |
| | | | | 1770-KF2 | | |
| | | | Ethernet | 1785-ENET | Not Supported | CAT 5 Ethernet Crossover cable |
| | PLC-5E | 1785 | Ethernet | Built-in Port | Not Supported | CAT 5 Ethernet Crossover cable |
| | SLC-5/03, SLC-5/04, SLC5/05 | 1747-L53, 1747-L54, 1747-L55 | RS232 | Built-in Port | HG9Z-XC100 | HG9Z-2C125A |
| | | | DH485 | Built-in Port | please purchase IDEC converter: HG9Z-GWDF1DH485-4 (DF1-DH485 converter) | please purchase IDEC converter: HG9Z-GWDF1DH485-3 (DF1-DH485 converter) |
| | | | Ethernet | 1761-NET-ENI | Not Supported | CAT 5 Ethernet Crossover cable |
| | SLC5/05 | 1747-L55 | Ethernet | Buit-in Port | Not Supported | CAT 5 Ethernet Crossover cable |
| | MicroLogix 1000, 1100, 1200, 1500 | 1761, 1762, 1763, 1764 | RS232 | Built-in Port | HG9Z-XC500 | HG9Z-2C135A |
| | | | Ethernet | 1761-NET-ENI | Not Supported | CAT 5 Ethernet Crossover cable |
| | MicroLogix 1100 | 1763 | Ethernet | Built-in Port | Not Supported | CAT 5 Ethernet Crossover cable |
| | ControlLogix | 1756 | RS232 | Built-in Port | Contact IDEC* | Contact IDEC* |
| | | | Ethernet | 1756-ENBT | Not Supported | CAT 5 Ethernet Crossover cable |
| | CompactLogix | 1768, 1769 | RS232 | Built-in Port | Contact IDEC* | Contact IDEC* |
| | | | Ethernet | Buit-in Port | Not Supported | CAT 5 Ethernet Crossover cable |
| | FlexLogix | 1794-L33, 1794-L34 | RS232 | Built-in Port | Contact IDEC* | Contact IDEC* |

1. * Consult IDEC for wiring schematic and cable.
2. Visit www.idec.com/oi for the most up-to-date list of cables.

## Cables

| Manufacturer | Series | Applicable CPU | Communication Type | Communication Module Required | HG1F Comm. Cable P/N | HG2F/3F/4F Comm. Cable P/N |
|---|---|---|---|---|---|---|
| Automation Direct (Koyo) | Direct Logc 05 | DL05 | Ethernet | D0-ECOM/D0-ECOM100 | Not Supported | CAT 5 Ethernet Crossover cable |
| | Direct Logc 06 | DL06 | Ethernet | D0-ECOM/D0-ECOM100 | Not Supported | CAT 5 Ethernet Crossover cable |
| | Direct Logic 205 | D2-240 | RS232 | Built-in Port | HG9Z-XC400 | Contact IDEC* |
| | | D2-240, D2-250, D2-250-1, D2-260 | Ethernet | D2-ECOM | Not Supported | CAT 5 Ethernet Crossover cable |
| | | | | D2-ECOM-F | | |
| | | | | D2-ECOM100 | | |
| | Direct Logic 405 | D4-430, D4-440 | RS232 | Built-in Port | Contact IDEC* | Contact IDEC* |
| | | | | D4-DCM | | |
| | | | RS422 | Built-in Port | | |
| | | D4-430, D4-440,D4-450 | Ethernet | D4-ECOM | Not Supported | CAT 5 Ethernet Crossover cable |
| | | | | D4-ECOM-F | | |
| | | | | D4-ECOM100 | | |
| Siemens | S7-200 | CPU 212, 214, 215, 216, 221, 222, 224, 224XP, 226, 226XM | RS485 | Built-in Port | Contact IDEC* | HG9Z-2C155A |
| | S7-300 | CPU 313, 314, 315, 315-2DP, 316, 318 | RS232 | CP-340-RS232C or CP-341-RS232C | Contact IDEC* | Contact IDEC* |
| | | | RS485 | CP-340-RS 422/485 or CP-341-RS 422/485 | | |
| | S7-400 | CPU 412, 414, 416, 416F-2, 417 | | CP-440-RS 422/485 or CP-441-RS 422/485 | | |
| | | | RS232 | CP-440-RS232C or CP-441-RS232C | | |
| Schneider (Telemecanique, SquareD) | Twido | TWDLCA10DRF | RS485 | Built-in Port | HG9Z-1C121A | HG9Z-3C115A |
| | | TWDLCA*DRF ( *16,24,40 CPUs) | RS485 | Built-in Port | HG9Z-1C121A | HG9Z-3C115A |
| | | | RS232 | TWD NAC 232D | HG9Z-XC183 | HG9Z-3C125A |
| | | | RS485 | TWDNAC485D | HG9Z-1C121A | HG9Z-3C115A |
| | | | RS485 | TWDNAC485T | HG9Z-1C131A | HG9Z-2C145A |
| | | TWDLMDA*DTK/DUK/DRT (* 20 & 40 CPUs) | RS485 | Built-in Port | HG9Z-1C121A | HG9Z-3C115A |
| | | | RS232 | TWDNOZ232D | HG9Z-XC183 | HG9Z-3C125A |
| | | | RS485 | TWDNOZ485D | HG9Z-1C121A | HG9Z-3C115A |
| | | | RS485 | TWDNOZ485T or TWDX-CPODM+ TWDNAC485T | HG9Z-1C131A | HG9Z-2C145A |
| | | | RS485 | TWDXCPODM + TWD-NAC485D | HG9Z-XC183 | HG9Z-3C125A |
| | | | RS232 | TWDXCPODM + TWD-NAC232D | HG9Z-1C121A | HG9Z-3C115A |
| | Momentum | 171CCC96020 | RJ-45 Ethernet Port | Built-in RJ-45 Port | Not Supported | CAT 5 Ethernet Crossover cable |
| Others | Others | Any PLCs that support MODBUS/TCP protocol | RJ-45 Ethernet Port | Built-in RJ-45 Port | Not Supported | CAT 5 Ethernet Crossover cable |
| Panasonic (Aromat) | FP | FP0 | RS232 | Built-in-Port | HG9Z-XC300 | HG9Z-2C165A |
| | | FP1 | RS232 | Built-in-Port | Contact IDEC* | Contact IDEC* |
| | | | | AFP8550 | | |
| | | | RS422 | Built-in-Port | | |

1. * Consult IDEC for wiring schematic and cable.
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## Cables

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| Manufacturer | Series | Applicable CPU | Communication Type | Communication Module Required | HG1F Comm. Cable P/N | HG2F/3F/4F Comm. Cable P/N |
|---|---|---|---|---|---|---|
| Panasonic (Aromat) con't | FP | FP Sigma | RS232 | Built-in-Port | Contact IDEC* | HG9Z-2C165A |
| | | | | FPG-COM1 (AFPG801) | | Contact IDEC* |
| | | | | FPG-COM2 (AFPG802) | | |
| | | | RS485 | FPG-COM3 (AFPG803) | | |
| | | FP10, FP10SH | RS232 | Built-in-Port | | |
| | | | | AFP3462 | | |
| | | FP2, FP2SH | | Built-in-Port | | |
| | | | | AFP3462 | | |
| Mitsubishi | MELSEC-A | A1N, A2N, A3N | RS232 | AJ71C24-S3/S6/S8 or AJ71UC24 | HG9Z-XC145 | HG9Z-3C135A |
| | | | RS485 | AJ71C24-S3/S6/S8 or AJ71UC24 | Contact IDEC* | Contact IDEC* |
| | | A1SH | RS485 | A1SJ71C24-R2/R4 or A1SJ71UC24-R2/R4 | | |
| | | | RS232 | A1SJ71C24-R2/R4 or A1SJ71UC24-R2/R4 | HG9Z-XC203 | HG9Z-3C145A |
| | | A2CCPUC24 | RS232 | Built-in-Port | HG9Z-XC203 | |
| | | A0J2, A0J2H | RS232 | A0J2-C214-S1 | HG9Z-XC145 | HG9Z-3C135A |
| | | | RS485 | A0J2-C214-S1 | Contact IDEC* | Contact IDEC* |
| | | A2A, A3A, A2U, A3U, A4U | RS485 | AJ71C24-S6/S8 or AJ71UC24 | | |
| | | | RS232 | AJ71C24-S6/S8 or AJ71UC24 | HG9Z-XC145 | HG9Z-3C135A |
| | | A2US, A2USH-S1 | RS232 | A1SJ71C24-R2/R4 or A1SJ71UC24-R2/R4 | HG9Z-XC203 | HG9Z-3C145A |
| | | | RS485 | A1SJ71C24-R2/R4 or A1SJ71UC24-R2/R4 | Contact IDEC* | Contact IDEC* |
| | | A2N | RS422 | Built-in-Port | HG9Z-XC255 | HG9Z-3C165A |
| | | A1SJH, A1SH, A2SH, A2C, A0J2H | | | | |
| | | A2A, A3A, A2US, A2USH | | | | |
| | | A2U, A2USH-S1 | | | | |
| | MELSEC-Q | Q00CPU, Q01CPU | RS232 | Built-in-Port | HG9Z-XC265 | Contact IDEC* |
| | | Q02CPU | | | | |
| | | Q02CPU-A | | | | |
| | | Q02CPU, Q02HCPU, Q06HCPU, Q12PHCPU, Q25HCPU | RS232 | QJ71C24, QJ71C24N QJ71C24N-R2 | HG9Z-XC203 | HG9Z-3C145A |
| | | | RS485 | QJ71C24 , QJ71C24N QJ71C24N-R2 | Contact IDEC* | Contact IDEC* |
| | | Q00JCPU,Q00CPU,Q01CPU,Q02CPU,Q02HCPU,Q06HCPU,Q12HCPU,Q25HCPU | Ethernet | QJ71E71-100 QJ71E71-B5 QJ71E71-B2" | Not Supported | CAT 5 Ethernet Crossover cable |
| | MELSEC-QnA | Q4ACPU, Q4ARCPU, Q3ACPU, Q2ACPU-S1, Q2ACPU | RS232 | AJ71QC24-R2 | HG9Z-XC145 | HG9Z-3C135A |
| | | | RS485 | AJ71QC24N, AJ71QC24N-R4 | Contact IDEC* | Contact IDEC* |
| | | | Ethernet | AJ71QE71N3-T | Not Supported | CAT 5 Ethernet Cross-over cable |
| | | | Ethernet | AJ71QE71N-B2 | Not Supported | CAT 5 Ethernet Cross-over cable |
| | | | Ethernet | AJ71QE71N-B5 | Not Supported | CAT 5 Ethernet Cross-over cable |

1. * Consult IDEC for wiring schematic and cable.
2. Visit www.idec.com/oi for the most up-to-date list of cables.

## Cables

| Manufacturer | Series | Applicable CPU | Communication Type | Communication Module Required | HG1F Comm. Cable P/N | HG2F/3F/4F Comm. Cable P/N |
|---|---|---|---|---|---|---|
| Mitsubishi, continued | MELSEC-FX | Q2ASH CPU-S1, Q2ASHCPU, Q2ASCPU-S1, Q2ASCPU | RS232 | A1SJ71QC24N-R2 | HG9Z-XC203 | HG9Z-3C145 |
| | | | RS485 | A1SJ71QC24N | Contact IDEC* | Contact IDEC* |
| | | | Ethernet | A1SJ71QE71N3-T | Not Supported | CAT 5 Ethernet Cross-over cable |
| | | | Ethernet | A1SJ71QE71N-B2 | Not Supported | CAT 5 Ethernet Cross-over cable |
| | | | Ethernet | A1SJ71QE71N-B5 | Not Supported | CAT 5 Ethernet Cross-over cable |
| | | FX1,FX2,FX2C | RS422 | Built-in Port | HG9Z-XC255 | HG9Z-3C165A |
| | | FX0,FX0N,FX2N,FX2NC,FX3UC,FX3U | RS422 | Built-in Port w/ cable FX-20P-CADP | HG9Z-XC255 | HG9Z-3C165A |
| | | FX0,FX0N,FX2N,FX2NC,FX3UC,FX3U | RS422 | Built-in Port | HG9Z-XC245 | Contact IDEC* |
| | | FX2N | RS232 | FX2N-232-BD | Contact IDEC* | Contact IDEC* |
| | | | RS422 | FX2N-422-BD and FX-20P-CADP | HG9Z-XC255 | HG9Z-3C165A |
| | | | | FX2N-422-BD | HG9Z-XC245 | Contact IDEC* |
| | | FX1N | RS232 | FX1N-232-BD | Contact IDEC* | Contact IDEC* |
| | | | RS422 | FX1N-422-BD and FX-20P-CADP | HG9Z-XC255 | HG9Z-3C165A |
| | | | | FX1N-422-BD | HG9Z-XC245 | Contact IDEC* |
| | | FX3UC, FX3U | RS422 | Built-in Port | HG9Z-XC255 | HG9Z-3C165A |
| | | | RS232 | FX3U-232ADP | Contact IDEC* | Contact IDEC* |
| | | | | FX3U-232-BD | Contact IDEC* | Contact IDEC* |
| Omron | SYSMAC-C | CPM1, CPM1A | RS232 | CPM1-CIF01 | HG9Z-XC213 | HG9Z-3C155A |
| | | | RS422 | CPM1-CIF11 | Contact IDEC* | Contact IDEC* |
| | | CPM2A | RS232 | Built-in-Port | HG9Z-XC213 | HG9Z-3C155A |
| | | | | CPM1-CIF01 | | |
| | | C500, C500F, C1000H, C2000, C2000H | RS232 | C120-LK201-V1 | HG9Z-XC155 | HG9Z-3C135A |
| | | | | C500-LK201-V1 | | |
| | | | | C500-LK203 | | |
| | | | RS422 | C120-LK202-V1 | Contact IDEC* | Contact IDEC* |
| | | | | C500-LK201-V1 | | |
| | | C1000HF | RS422 | C500-LK203 | | |
| | | | RS232 | C500-LK203 | HG9Z-XC155 | HG9Z-3C135A |
| | | C200HS | RS232 | C200H-LK201 | HG9Z-XC155 | |
| | | | RS422 | C200H-LK202 | Contact IDEC* | Contact IDEC* |
| | | C200HE, C200HG, C200HX | RS422 | C200HW-COM03/06 | | |
| | | | RS232 | C200H-LK201 | HG9Z-XC155 | HG9Z-3C135A |
| | | | | C200HW-COM02/040/5/06 | HG9Z-XC213 | HG9Z-3C155A |
| | | C120, C120F | RS232 | C120-LK201-V1 | HG9Z-XC155 | HG9Z-3C135A |
| | | | RS422 | C120-LK202-V1 | Contact IDEC* | Contact IDEC* |
| | | CQM1H, C200HS-CPU21/23/31/33 | RS232 | Built-in-Port | HG9Z-XC213 | HG9Z-3C155A |

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## Cables

| Manufacturer | Series | Applicable CPU | Communication Type | Communication Module Required | HG1F Comm. Cable P/N | HG2F/3F/4F Comm. Cable P/N |
|---|---|---|---|---|---|---|
| Omron con't | SYSMAC-C | C200HE-CPU42, C200HG-CPU43/63, C200HX-CPU44/64 | RS232 | Built-in-Port | HG9Z-XC213 | HG9Z-3C155A |
| | CS1 | CS1G, CS1H | RS232 | Built-in-Port | | |
| | | | | CS1W-SCB41 (port1) | | |
| | | | RS422 | CS1W-SCB41 (port2) | Contact IDEC* | Contact IDEC* |
| | CJ1 | CJ1M, CJ1H, CJ1G | RS232 | Built-in-Port | HG9Z-XC213 | HG9Z-3C155A |
| Keyence | Conventional KV | KV 10, 16, 24, 40, 80 | RS232 | Built-in-Port | Contact IDEC* | |
| | Visual KV | KV-10,16,24,40 | | | | |
| | KV-700/1000 | KV-700, KV-1000 | RS232/485/422 | KV-L-20R | | |
| GE Fanuc | VersaMax Nano/Micro | 10 I/Os, 14 I/Os | RS232 | Built-in-Port | | |
| | | 23 I/Os, 28 I/Os | RS485 | Built-in-Port | HG9Z-XC273A | |
| | Series 90-30 | CPU 311, 313, 323, 331, 341, 350, 351, 352, 360, 363, 364, 374 | RS485 | Built-in-Port | | |
| | | CPU 331, 341, 350, 351, 352, 360, 363, 364, 374 | RS232 | IC693CMM311 | | |
| | | | RS485 | | | |
| SHARP | New Satellite JW | JW-21CU, JW-22CU, JW-31CUH/H1, JW-32CUH/H1, JW-33CUH/H1/H2/H3 | RS485 | JW-21CM | | |
| | | JW-50CU/CUH, JW-70CU/CUH, JW-100CU/CUH | RS485 | JW-10CM | | |
| | | JW-22CU, JW-70CU/CUH, JW-100CU/CUH | RS232 | Built-in Port | | |
| | | JW-32CUH/H1, JW-33CUH/H1/H2/H3 | RS232 | Built-in Port | | |
| | | | RS485 | | | |
| Hitachi | S10mini | S10mini | RS485 | Buit-in Port | Contact IDEC* | Contact IDEC* |
| | | | RS232 | LQE160 | | |
| | | | RS485 | LQE165 | | |
| | | | RS232 | LQE560 | | |
| | | | RS485 | LQE565 | | |
| | S10V | LQP510 | RS232 | Buit-in Port | | |
| | | | RS485 | | | |
| | | | RS232 | LQE560 | | |
| | | | RS485 | LQE565 | | |
| JTEKT(TOYODA) | TOYOPUC-PC2J | PC2J | RS485 | Built-in Port | | |
| | TOYOPUC-PC3J | PC3J | RS485 | Built-in Port | | |
| | | PC3JD, PC3JG | RS485 | Built-in Port | | |
| Toshiba Machine Works | TC200 | TC3-13B1 | RS232 | Built-in Port | | |
| | TCmini | TC03-01, TC03-02 | RS232 | Built-in Port | | |
| YASKAWA ELECTRIC CORPORATION | Machine Controller | MP920, MP930, MP2300 | RS232 | Built-in Port | | |
| | | | RS232 | 217IF | | |
| FANUC | Power Mate | Power Mate-MODEL D | RS422 | Built-in Port | | |
| | | 16i, 160i | RS232 | Built-in Port | | |

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## Cables

| Manufacturer | Series | Applicable CPU | Communication Type | Communication Module Required | HG1F Comm. Cable P/N | HG2F/3F/4F Comm. Cable P/N |
|---|---|---|---|---|---|---|
| YOKOGAWA | FA-M3 | FA-M3(F3SP05, F3SP20, F3SP21, F3SP25, F3SP30, F3SP35, F3SP38, F3SP53, F3SP58, F3FP36, F3BP20, F3BP30) | RS232 | F3LC11-1N | Contact IDEC* | Contact IDEC* |
| | | | RS485 | F3LC11-2N | | |
| | | FA-M3(F3SP05, F3SP21, F3SP25, F3SP28, F3SP35, F3SP38, F3SP53, F3SP58) | RS232 | Buit-in Port | | |
| FUJI | FLEX-PC | NB1, NB2, NB3, NJ-CPU-E4, NJ-CPU-A8, NJ-CPU-B16, NS | RS232 | Buit-in Port | | |
| | | | RS485 | | | |
| | | | RS232 | NB-RS1-AC/DC | | |
| | | | RS485 | | | |
| | | | RS232 | NJ-RS2 | | |
| | | | RS485 | NJ-RS4 | | |
| | | | RS232 | NS-RS1 | | |
| | | | RS485 | | | |
| | MICREX-F | F55 | RS232 | NV1L-RS2 | | |
| | | F70 | RS232 | NC1L-RS2 | | |
| | | | RS485 | NC1L-RS4 | | |
| | | F80H, F120H, F120S, F140S, F150S | RS232 | FFU120B | | |
| | | | RS485 | | | |
| | | F30, F50, F50H, F55, F60, F70, F70S, F80H, F81, F120H, F120S, F140S, F150S, F250 | RS232 | FFK120A-C10 | | |
| | | | RS485 | | | |
| Toshiba | PROSEC T Series | T1: T1-16,T1-28,T1-40 | RS232 | Buit-in Port | | |
| | | | RS485 | CU111 | | |
| | | T1S: T1-40S | RS232 | Buit-in Port | | |
| | | | RS485 | | | |
| | | | RS485 | CU111 | | |
| | | T2: PU224 | RS485 | Buit-in Port | | |
| | | T2E: PU234E | RS232 | Buit-in Port | | |
| | | | RS485 | CM231E | | |
| | | | RS232 | CM232E | | |
| | | T2N: PU215N,PU235N, PU245N | RS232 | Buit-in Port | | |
| | | | RS485 | | | |
| | | T3/T3H: PU315, PU325, PU325H, PU326H | RS485 | Buit-in Port | | |
| | V Series | S2I/ S2E/L1/S2/S3: PU672T, PU662T, PU612E, L1PU11H,L1PU12H, S2PU82, S2PU72, S2PU32, S2PU22, S3PU65, S3PU55, S3PU45, S3PU21 | RS485 | Buit-in Port | | |
| LS Industrial Systems | MASTER-K | K10S1 | RS232 | Buit-in Port | | |
| | | K80S, K120S, K200S | RS232 | Buit-in Port | | |
| | | K80S | RS232 | G7L-CUEB | | |
| | | | RS232 | G7L-CUEC | | |
| | | K200S | RS232 | G6L-CUEB | | |
| | | | RS232 | G6L-CUEC | | |
| | | K300S | RS232 | G4L-CUEA | | |

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## Specifications

### General Specifications

| Model | HG1F | HG2F | HG3F | HG4F |
|---|---|---|---|---|
| Voltage | 24V DC | | | |
| Voltage Range | 20.4 to 28.8V DC | | 19.2 to 28.8V DC | |
| Power Consumption | 10W maximum | | 25W maximum | |
| Inrush Current | 20A maximum | | 15A maximum (cold start) | |
| Allowable Momentary Power Interruption | 10 ms minimum | | | |
| Dielectric Strength | 1,000V AC, 10 mA, 1 minute between power and FG terminals | | 1,500V AC, 10 mA, 1 minute between power and FG terminals | |
| Insulation Resistance | 50 MΩ minimum between power and FG terminals (500V DC megger) | | 10 MΩ minimum between power and FG terminals (500V DC megger) | |
| Backup Battery | CR2032 lithium batteryy Life approx. 4 years (25°C) | — | | |
| Operating Temperature | 0 to 50°C (no freezing) | | | 0 to 45°C (no freezing) |
| Operating Humidity | 10 to 90% RH (no condensation) | 10 to 95% RH (no condensation) | 20 to 85% RH (no condensation) | |
| Storage Temperature | −20 to +60°C (no freezing) | | | |
| Storage Humidity | 10 to 90% RH (no condensation) | 10 to 95% RH (no condensation) | 20 to 85% RH (no condensation) | |
| Pollution Degree | 2 (IEC 60664-1) | | | |
| Corrosion Immunity | Atmosphere free from corrosive gases | | | |
| Vibration Resistance (damage limits) | 10 to 20Hz amplitude 0.625 mm, 20 to 55Hz acceleration 9.8 m/s$^2$ (1G), 2 hours per axis on each of three mutually perpendicular axes | | | |
| Shock Resistance (damage limits) | 147 m/s$^2$ (15G), 11 ms, 5 shocks on each of three mutually perpendicular axes | | | |
| Noise Immunity | Fast transient/burst test, common mode: Level 3, power terminals: ±2 kV, communication line: ±1 kV (IEC/EN 61000-4-4) | | | |
| Electrostatic Discharge | ESD-3 (RH-1), Level 3, (contact ±6 kV, aerial ±8 kV) (IEC/EN 61000-4-2) | | | |
| Mounting | Panel mounting | | | |
| Degree of Protection | IP65 NEMA TYPE 13 | | IP66 NEMA TYPE 4, 4X, 13 | |
| Dimensions (mm) | 147W x 47H x 39.3D | 172W x 136H x 56D | 324W x 240H x 56D | 348W x 270H x 58D |
| Weight (approx.) | 280g | 800g | 2800g | 3400g |

### Operation Specifications

| Model | HG1F | HG2F Standard | HG2F CC Switch Option | HG3F | HG4F |
|---|---|---|---|---|---|
| Switching Element | Resistive membrane | | | | |
| Touch Region Resolution | 1 x 1 | 16 x 12 | 16 x 8 | 32 x 24 | 40 x 30 |
| CC Switch Quantity | | — | 4 x 1 row (bottom only) | — | — |
| Operating Force | 0.2 to 0.8N | | 2.5 to 5.0N | 0.2 to 0.8N | 0.2 to 0.8N |
| Mechanical Life | 1,000,000 operations | | | | |
| Acknowledge Sound | Electronic buzzer | | | | |
| Screen Types | Base screen, popup screen, system screen | | | | |
| Number of Screens | Base screen: 3000 max., popup screen: 3015 max. | Base screen: 3000 max., popup screen: 3000 max. | | | |
| User Memory | 1MB (including expansion fonts) | 2MB | | 8MB* | |
| Parts | Bit Button, Word Button, Goto Screen Button, Print Button, Key Button, Keypad, Selector Switch, Potentiometer, Numerical Input, Character Input, Pilot Lamp, Multi-state Lamp, Picture Display, Message Display, Message Switching Display, Alarm List Display, Alarm Log Display, Numerical Display, Bar Graph, Trend Chart, Pie Chart, Meter, Calendar, Bit Write Command, Word Write Command, Goto Screen Command, Timer, Print Command, Screen Script Command | | | | |
| Calendar | Year, Month, Day, Hour, Min., Sec., Day of Week | | | | |
| Print Function (support) | ESC/P, PC-PR: Epson VP-700 SII: DPU414 | | | ESC/P, PC-PR, PCL, EPSON LP2500/VP-700/PX-V600/ Stylus C83, C84, C87, C88, D88, HP Deskjet 3820 | |
| Power Failure Backup | Backup data: Calendar, log data, keep internal relay, keep internal register | | | | |
| Backup Duration | 1 month (at 25°C) after full charging for two days | | | | |
| Battery Life | 4 years (at 25°C) | — | | | |

*2MB for OS

# Operator Interfaces

OI Touchscreen Family

## Display Specifications

| Model | HG1F | HG2F | | HG3F | HG4F |
|---|---|---|---|---|---|
| | | **Color** | **Monochrome** | **Color** | **Color** |
| **LCD** | Monochrome STN | Color STN | Monochrome STN | Color TFT | |
| **Effective Display Area (mm)** | 115W x 39W | 118.2W x 89.4H | | 211.2W x 158.4H | 246W x 184.5H |
| **Display Resolution** | 300W x 100H | 320W x 240H pixels | | 640W x 480H pixels | 800W x 600H pixels |
| **LCD Life** | 50,000 hours minimum | | | 100,000 hours minimum | 60,000 hours minimum |
| **Contrast Adjustment** | Possible in steps using the front touch screen | | | | |
| **Backlight** | Cold-cathode tube | | | Cold-cathode tube (2 tubes) | |
| **Backlight Life** | 50,000 hours nominal (Note) | 40,000 hours nominal (Note) | | 50,000 hours nominal (Note) | |
| **Backlight Control** | Automatic OFF | | | | |
| **Backlight Replacement** | Possible | | | | |
| **Display Character Size** — 1/4 size | 8 x 8 pixels (Western European language: ISO 8859-1, Central European language: ANSI 1250, Japanese katakana and symbols: JIS 8-bit code) | | | | |
| 1/2 size | 8 x 16 pixels (Western European language ISO 8859-1, Central European language: ANSI 1250, Japanese katakana and symbols: JIS 8-bit code) 16 x 32 pixels, 24 x 48 pixels, 32 x 64 pixels (Western European language: ISO 8859-1) | | | | |
| Full size | 16 x 16 pixels (Japanese JIS first and second level characters, simplified Chinese, traditional Chinese, Korean) | | | | |
| Double size | 32 x 32 pixels (Japanese JIS first level characters, Mincho font) | | | | |
| **Quantity of Characters** — 1/4 size | 37 characters x 12 lines | 40 characters x 30 lines (40 x 20, cc click type) | 80 characters x 60 lines | 100 characters x 75 lines | |
| 1/2 size | 37 characters x 6 lines | 40 characters x 15 lines (40 x 10, cc click type) | | 80 characters x 30 lines | 100 characters x 37 lines |
| Full size | 18 characters x 6 lines | 20 characters x 15 lines (20 x 10, cc click type) | | 40 characters x 30 lines | 50 characters x 37 lines |
| Double size | 9 characters x 3 lines | 10 characters x 7 lines (10 x 5, cc click type) | | 20 characters x 15 lines | 25 characters x 18 lines |
| **Character Magnification** | 0.5, 1, 2, 3, 4, and 8 vertically and horizontally | | | | |
| **Character Attribute** | Blink (1 or 0.5 sec period), reverse, bold, shadowed | | | | |
| **Graphics Type** | Straight line, polyline, polygon, rectangle, circle, ellipse, arc, pie, equilateral polygons (3, 4, 5, 6, 8), paint, bitmap image | | | | |
| **Window Display** | 3 popup screens + 1 system screen | | | | |

Note: The backlight life refers to the time until the surface brightness reduces to a half after using continuously at room temperatures.

PLCs

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## Interface Specifications

| | CF Card Interface Specifications | Parallel Interface Specifications (HG3F/4F) | Ethernet Specifications (HG3F/4F) |
|---|---|---|---|
| Interface Specifications | Compact Flash Type I standard compliant* | — | IEEE 802.3 standard compliant, 10Base-T |
| Electrical Characteristics | — | Centronics interface compliant | — |
| Connector | 50-pin compact flash card connector | D-sub 25-pin female connector | — |

*Memory size supports up to 512MB.

## Interface Specifications

| RS232C | |
|---|---|
| Electrical Characteristics | EIA RS232C compliant |
| Transmission Speed | 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bps |
| Synchronization | Asynchronous |
| Communication Method | Half or full duplex |
| Control System | Hardware control or none |
| Connector | D-sub 25-pin female connector |

| Maintenance Communication | |
|---|---|
| Electrical Characteristics | EIA RS232C compliant |
| Transmission Speed | 9600, 19200, 38400, 57600, 115200 bps |
| Synchronization | Asynchronous |
| Communication Method | Half duplex, proprietary protocol |
| Connector | Mini DIN 8-pin connector |

| RS485 (422) | |
|---|---|
| Electrical Characteristics | EIA RS485 (422) compliant |
| Transmission Speed | 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bps |
| Synchronization | Asynchronous |
| Communication Method | Half or full duplex |
| Control System | Hardware control or none |
| Connector | D-sub 25-pin female connector |

| OI Link Communication | |
|---|---|
| Electrical Characteristics | EIA RS485 compliant |
| Transmission Speed | 38400, 57600, 115200 bps |
| Synchronization | Asynchronous |
| Communication Method | Half duplex, proprietary protocol |
| Connector | Special connector |

| Expansion Unit (Digital I/O Unit) | | |
|---|---|---|
| Applicable Quantity | | 1 |
| Mounting Style | | Mounted on the rear of the HG unit |
| Input | Input Points | 16 |
| | Voltage | 12 to 24V DC (allowable range 10 to 28V DC) |
| | Isolation Method | Photocoupler |
| Output | Output Points | 16 |
| | Load Voltage | 12 to 24V DC (allowable range 10 to 28V DC) |
| | Isolation Method | Photocoupler |
| | Output Signal | NPN open collector |
| | Output ON Voltage | 1.6V maximum |
| | Output Current | 30 mA max. per point, 200 mA total |
| Connector | | 24-pin connector (Fujitsu FCN-365P024-AG) 2 connectors for inputs and outputs |

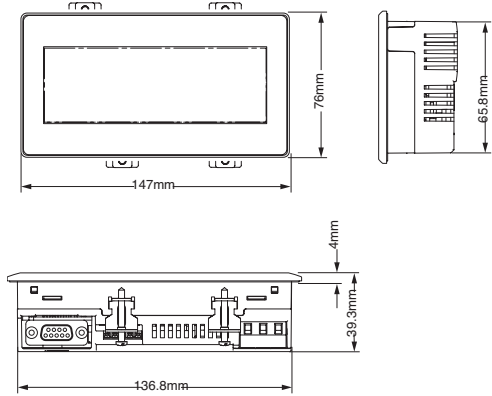Side tabs: PLCs | Operator Interfaces | Automation Software | Power Supplies | Sensors | Communication & Networking
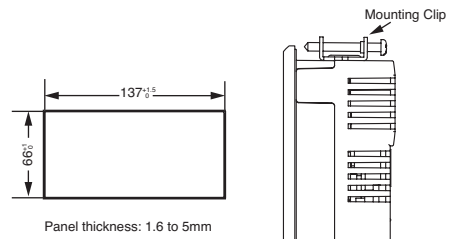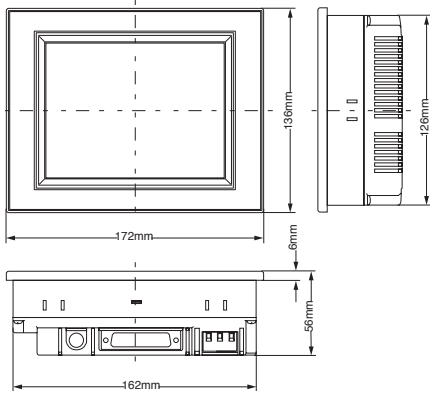
# Dimensions & Panel Cutouts

## HG1F Dimensions
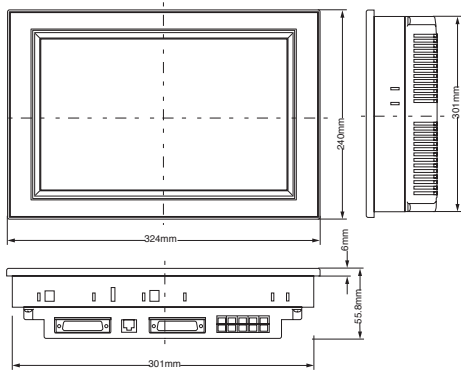


## HG1F Installation Panel Layout



Panel thickness: 1.6 to 5mm

## HG2F Dimensions



## HG2F Installation Panel Layout



Panel thickness: 1.6 to 5mm
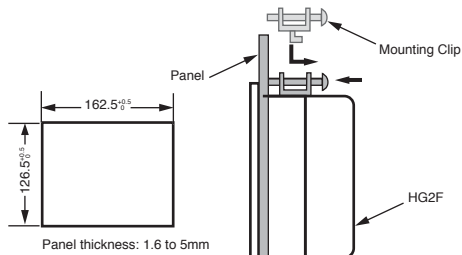
## HG3F Dimensions



## HG3F Installation Panel Layout



Panel thickness: 2 to 5mm
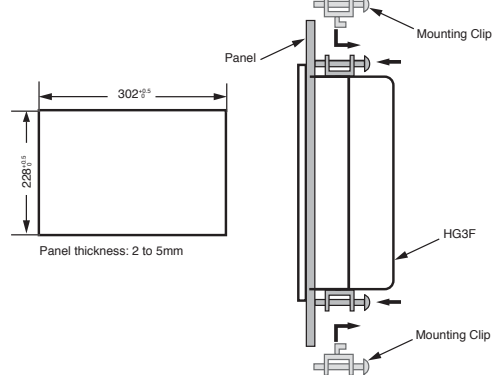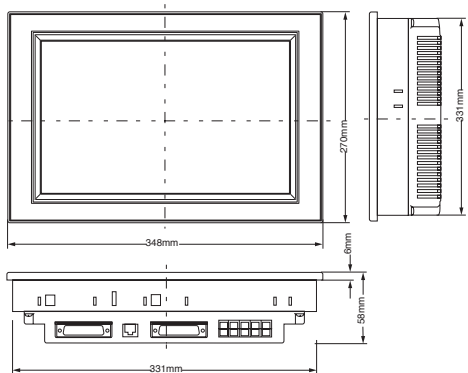
## HG4F Dimensions



## HG4F Installation Panel Layout



Panel thickness: 2 to 5mm
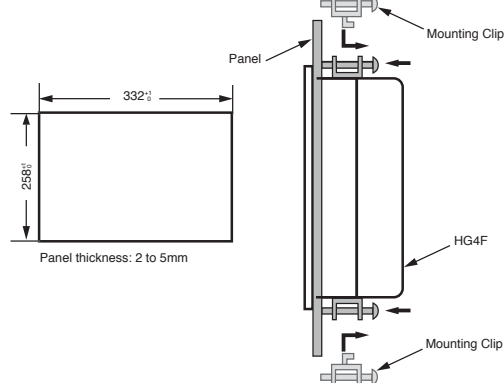
All dimensions in mm.

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