Operator Interface

HG Series

Excellent visibility by super-bright LED backlight even in well-lit surroundings.

Withstands harsh environments.

• See website for details on approvals and standards.

Vertical OK

HG4G
(12.1 inch)

Page L-095

HG3G
(10.4 inch)

Page L-097

HG3G
(8.4 inch)

Page L-099

HG2G
(5.7 inch)

Page L-101

HG1G
(4.3 inch)

Page L-108

For more information, visit http://eu.idec.com

APEM
Switches & Pilot Lights
Control Boxes
Emergency Stop Switches
Enabling Switches
Safety Products
Explosion Proof
Terminal Blocks
Relays & Sockets
Circuit Protectors
Power Supplies
LED Illumination
Controllers
Operator Interfaces
Sensors
AUTO-ID
Programmable Operator Interfaces
Periphery Equipment
HG4G
HG3G
HG2G
HG1G

HG4G / 3G / 2G series

Designed to perform

LED Backlight

True-to-life color. Brightest in its class.

A bright LED backlight provides a vivid display in well-lit surroundings.
The brightness of the backlight can be adjusted.

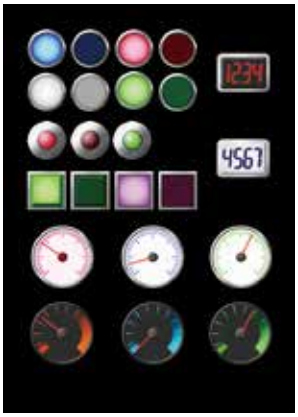
HG4G	HG3G	HG2G	HG2G
(12.1 inch)	(10.4 inch)	(5.7 inch)	(5.7 inch)
		(High Performance)	(Basic / Color)
550cd/m²	700cd/m²	800cd/m²	500cd/m²
	(8.4 inch)		(Basic / Monochrome)
	600cd/m²		1100cd/m²

48-level Brightness Adjustment LED backlight dimming control

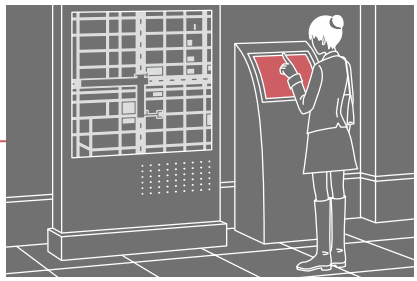
The brightness of the backlight can be adjusted according to surrounding conditions (day/night).

Graphics More than 7,000 graphic images

1,000 graphic images have been added. Realistic images of switches, pilot lights, and other parts allow you to easily create your own custom screens.



Application Example

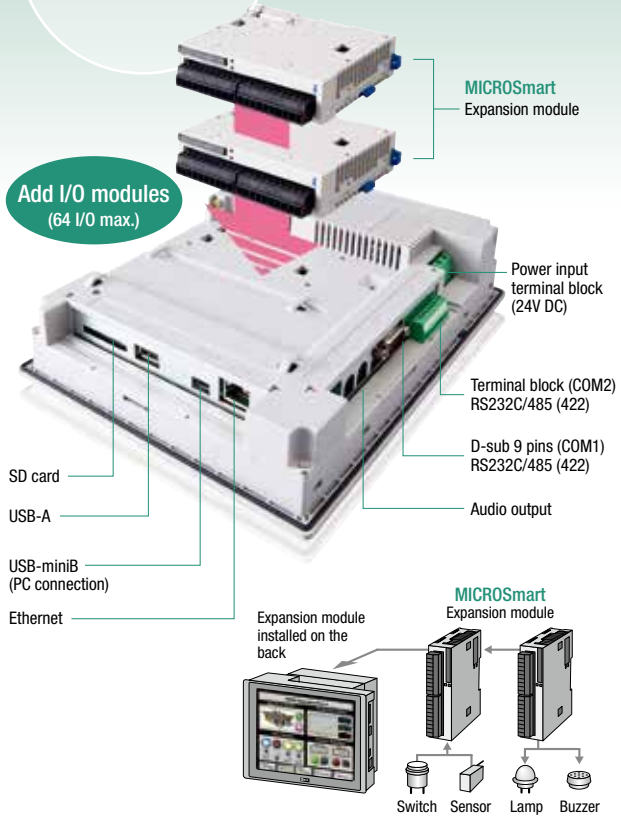


HG4G / 3G / 2G series

Control

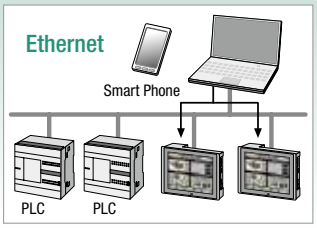
Simple I/O Control

Simple control



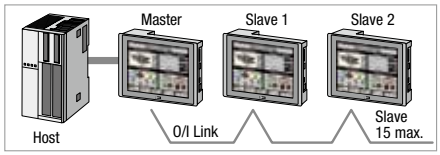
Ethernet Remote data maintenance

Project data can be downloaded and uploaded remotely via Ethernet. One Users can check and operate screens using a PC or smartphone in a remote location.



O/I Link IDEC high-speed 115.2 kbps O/I Link communication

A maximum of 16 HGs can be connected to a PLC using RS485 (2-wire), easily creating a high-speed network reducing cost.



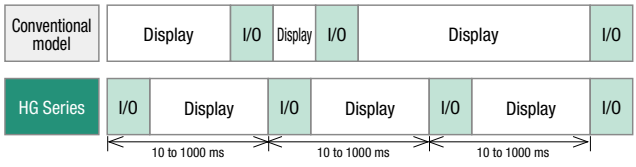
I/O Module Display and I/O control in one package

A maximum of four MicroSmart expansion modules can be connected, allowing equipment control using a small number of I/O points. (Input, output, I/O modules can be used.)

* HG4G/3G can connect up to 4, HG2G (high performance model only) can connect up to 2 expansion modules.
* For compatible expansion modules, see "Expansion Modules" on L-106.

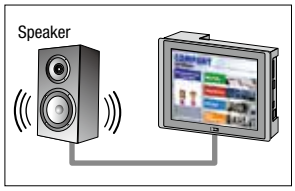
Cyclic Script Cyclic I/O control

Cyclic script enables parallel processing of I/O control.
Real time I/O processing for high performance.



Audio Output Sound file (30 sec max.)

Audio error messages can be sent to an operator, providing faster system recovery. Audio ouput can also be used as a voice guidance system.



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Controllers
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Sensors
AUTO-ID
Programmable Operator Interfaces
Periphery Equipment
HG4G
HG3G
HG2G
HG1G

Fast & Easy

Stress-Free 3-sec startup

High Speed CPU

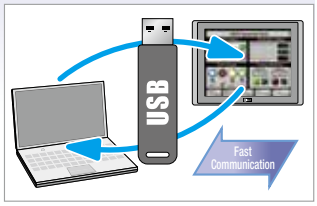
Fast start-up

High-speed 400 MHz CPU and unique software technology shorten startup time. Fast start-up allows for easy debugging.

High Speed CPU

Fast USB2.0 communication

USB 2.0, high-speed 480 Mbps.
Project data can be downloaded and uploaded easily using a PC and USB flash drive.



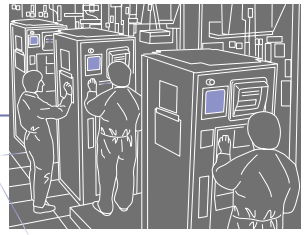
Easy Maintenance Simple operation

SD Card

Convenient SD card slot

Data can be saved or transferred by using an SD card (32 GB max.) By saving user data on an SD card, user memory can be reduced.

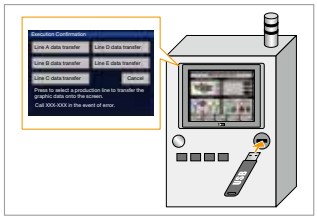
Application Example



USB Flash Drive

USB flash drive enables easy data transfer.

Inserting a USB flash drive into the HG will automatically bring up the USB transfer menu. Operator can work on errors without the use of a PC.

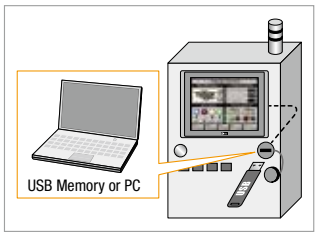


Front Panel Maintenance

Easy data maintenance, without opening the control cabinet.

Using a USB panel-mount cable, data can be transferred without opening the panel. The pass-through function enables debugging of ladder programs in the PLC, connected to the HG, inside the cabinet.

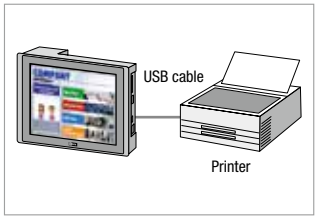
* See the users's manual for compatible PLCs.



Pict Bridge

USB printer compatible

HG screen information and alarm history can be printed out from Pict Bridge compatible printers.



HG4G / 3G / 2G series

Environment

Withstands Harsh Environments

Excellent environmental resistance

Wide Temp. Range — Operates in a wide temperature range from −20 to +60°C*

Suitable for use in a wide temperature range from cold to hot environment.
(*HG2G basic model only)

Long Life — Long-life LED back light

Long 100,000-hour service reduces maintenance work.

Water proof — IP66 rating (protection against poweful jets) suitable for washdown applications

Touchscreens can be used on machines washed down by water such as food machines.

UV Resistant — Protected against UV

An UV resistant case is used to prevent degradation. An optional protective sheet can be used to prevent the display from becoming cloudy.

Oil Resistant — IP66f rating prevents ingress of oil.*

Suitable for use on food machines subject to oil spills.
(*HG2G basic model only.)

Damage Resistant — Strong Coating

Strong coating protects the touchscreen from scratches.

Degree of Protection

I P 6 6 F
① ② ③

① **[First characteristic numeral]**
Degree of protection against excess to hazardous parts and protection against external solid objects.
6 Dust-tight

② **[Second characteristic numeral]** Degree of protection against water penetration
5 Protected against water jets
6 Protected against powerful water jets
Water projected in powerful jets against the enclosure from any direction shall have no harmful effects.
7 Protected against the effects of temporary immersion in water
Ingress of water shall not be possible when the enclosure is immersed in water up to 1 m for 30 minutes.

③ **[Additional letter]**
F Oil resistant* (Operation is not guaranteed when used with certain types of oils.)

For more information, visit http://eu.idec.com

Multimedia

Multimedia Functions

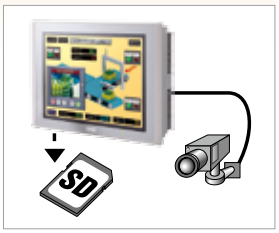
Records and plays back high quality images

Multimedia models with video and audio input terminals.
The screen records images on an SD card through a connected video camera and images recorded on an SD card can be played back on the screen or PC.

* HG4G-CJT22MF, HG3G-AJT22MF, HG3G-8JTMF models only.

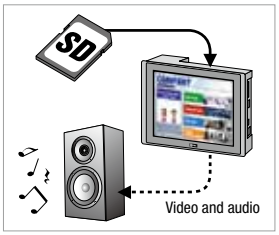
Display — Displays images on the screen from the camera.

Save Image — Records and plays back images on the screen from the camera and saves the data on the SD card.



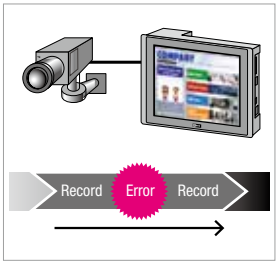
Video Play — Replays video images and audio from an SD card.

MPEG4 video files can be played back on the screen. Work procedures can be shown on the screen, and when trouble occurs, it can be used as a video manual for troubleshooting on-site.



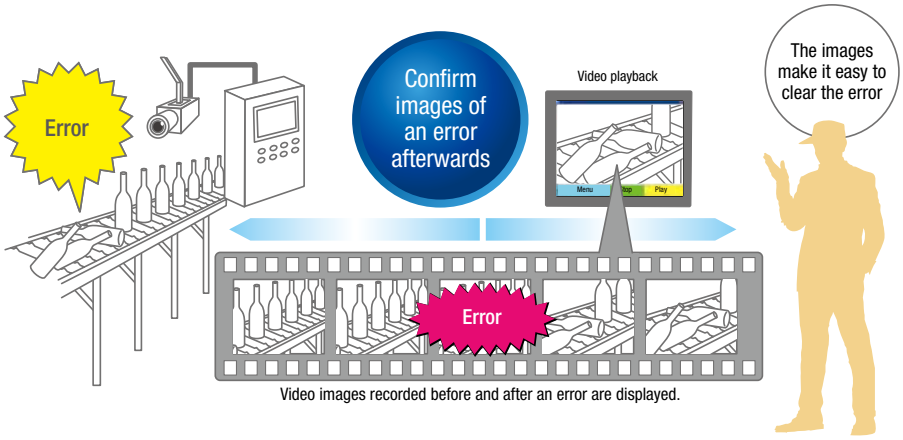
Video Recording — Records video images of an error

When an alarm is set off, video images before and after the start of the alarm can be recorded on an SD card. This enables on-site analysis of the trouble.
Smooth and refined images can be recorded.



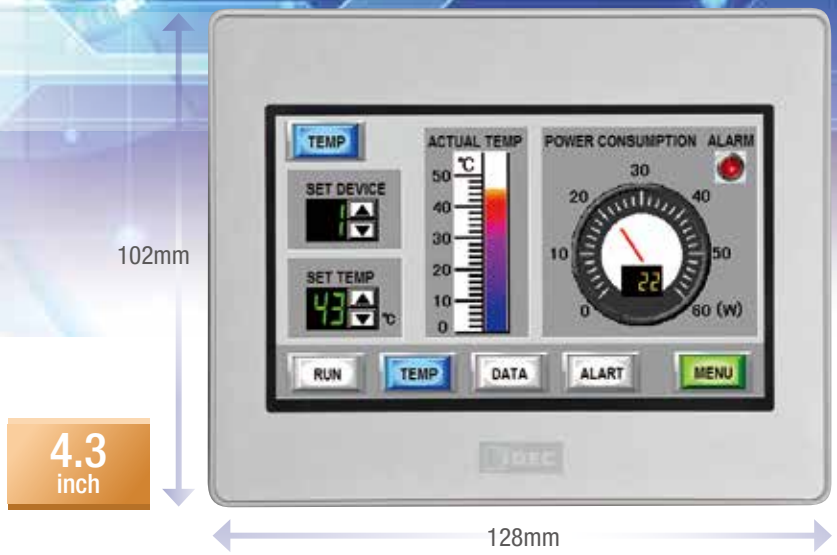
Application Examples

Find out the cause of an error



Video images recorded before and after an error are displayed.

HG1G series



* The screen images on this brochure are simulated pictures.

Accumulate, analyze, update, and share your data anywhere.
Use HG1G to create a safe and reliable work environment, and monitor daily operation status and/or control emergency situation.

Easy and reliable remote maintenance

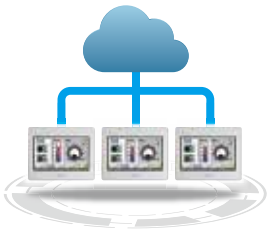
FTP Server Function

Share/manage data and info anywhere

Data in the HG1G uploaded using the FTP server function can be shared by people who need access to the data.

Refresh project data and utilize data log easily

FTP server function enables transfer of project data. Data log can also be read from the HG1G.



Email Function

Get notified via e-mail

The site status can be monitored remotely by getting daily status reports of operation and system errors via email.

Remote monitoring and data analysis from PC

The HG1G status on the site can be monitored and controlled remotely by a PC. Accumulated data on the HG1G can be reviewed in tabular format, to make analyzing the data easier.

On-time status monitoring with mobile terminals

With Web Server Function, you can monitor and control the HG1G remotely from a tablet or smartphone. Because starting a PC is not necessary, errors can be corrected immediately. Also suitable for applications in a large factory where HG1Gs installed on multiple machines need to be monitored and controlled from a remote location.

No special application necessary—easy connection

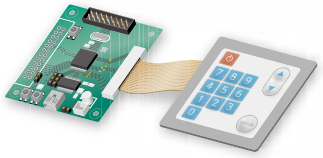
Because universal web browsers can be used, no special application is necessary. (recommended: Internet Explorer 8.0 and later, Firefox 3.0 and later)

For more information, visit http://eu.idec.com

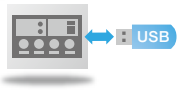
Small and functional

Display and control in one

Ideal to replace membrane switches or 7-segment displays.

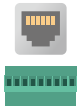


USB flash drive



Use USB flash drive to update project data and collect data log.

Easily connects to the host PLC



Connects to RS232C, RS422/485, and Ethernet.

Multiprotocol

Multiple machines using PLCs made by different manufacturers can be controlled, configured, and monitored by one HG1G.

Downsizing of control panels

Compact size reduces space inside the control board. Also eliminates wiring of switches.

Excellent visibility and operatability

Bright and true-to-life display

High resolution, highly bright, and true-to-life color displays are easy to see and operate.

- TFT color LCD 65K colors
- 800cd/m^2 brightness*1
- 70,000 hours average backlight life*2
- 65536 colors
- High resolution 480 x 272 dot

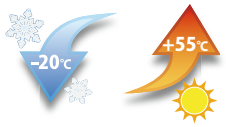
*1: Operating temperature at 25°C.
*2: Refers to the time until the brightness reduces by half. It is an expected value after use at 25°C and not guaranteed. Actual backlight life depends on the operating environment and conditions.

Quick 1.5-sec startup

Startup/end time due to debugging can be shortened.

Withstands harsh environments

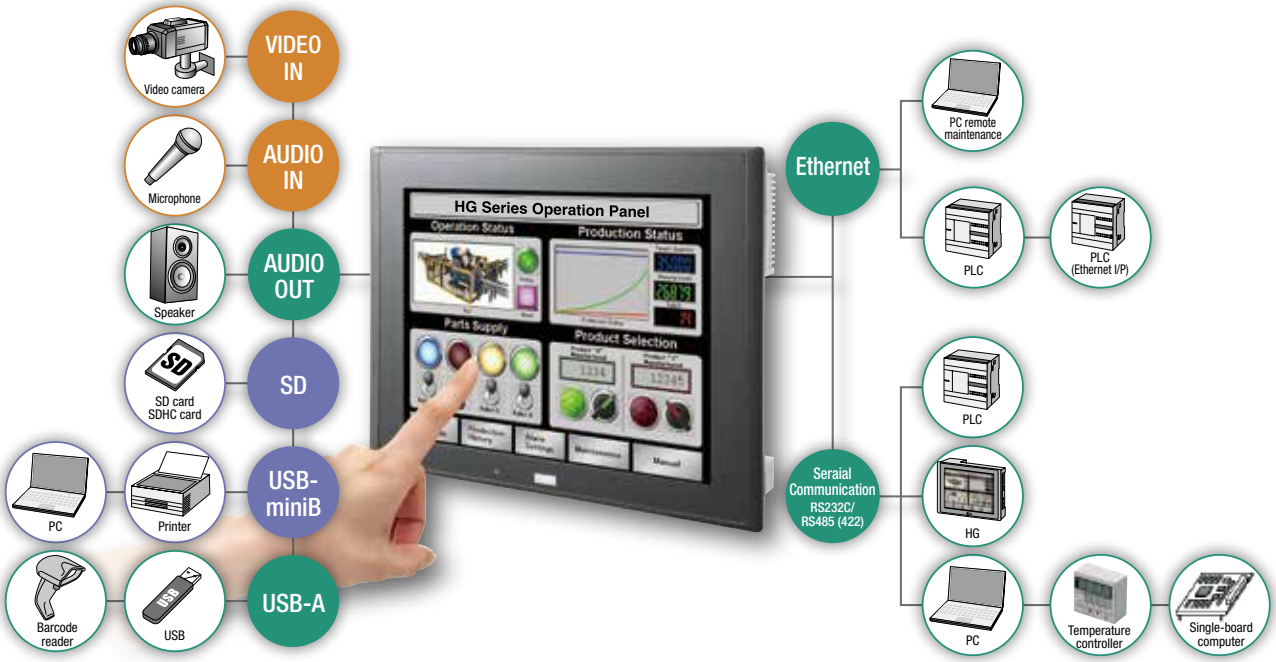
Suitable for use in environments with wide temperature range, and also powerful water jets or temporary submersion in water.



Operating temperature: –20 to +55°C
Operating humidity: 10 to 90% RH
Degree of protection*: IP66F, IP67F

* When panel thickness is 1.5mm minimum.

Human-machine interface expands



Lineup

HG series Operator Interface

High Performance

HG4G

12.1 inch

314 × 240 × 54.1 mm
SVGA (800 × 600)
TFT65,536 colors

Bright 550 cd/m² · LED 100,000 Hours · 48-level Brightness Adjustment · Graphics · Stroke Fonts · Serial Interface · Ethernet · USB mini-B · USB A · 4 Expansion Modules · Audio Output · O/I Link · Cyclic Script · SD Card · USB Flash Drive · High Speed CPU · High Speed Data · User Memory 12MB · Pict Bridge · Front Panel Maintenance · Audio Input · Video Input · Video Play · Video Recording · Voltage 24V DC · Vertical OK · Bezel Color: Dark gray

HG3G

10.4 inch

Bright 700 cd/m² · 270 × 212 × 52.7 mm · SVGA (800 × 600) · TFT65,536 colors

8.4 inch

Bright 600 cd/m² · 231 × 176 × 54.4 mm · SVGA (800 × 600) · TFT65,536 colors

LED 100,000 Hours · 48-level Brightness Adjustment · Graphics · Stroke Fonts · Serial Interface · Ethernet · USB mini-B · USB A · 4 Expansion Modules · Audio Output · O/I Link · Cyclic Script · SD Card · USB Flash Drive · High Speed CPU · High Speed Data · User Memory 12MB · Pict Bridge · Front Panel Maintenance · Audio Input · Video Input · Video Play · Video Recording · Voltage 24V DC · Vertical OK · Bezel Color: Light gray, Dark gray

HG2G-5F

5.7 inch

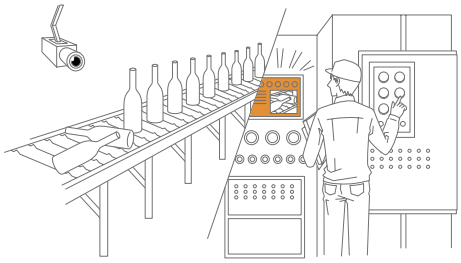
167.2 × 134.7 × 54.4 mm
VGA (640 × 480)
TFT65,536 colors

Bright 800 cd/m² · LED 50,000 Hours · 48-level Brightness Adjustment · Graphics · Stroke Fonts · Serial Interface · Ethernet · USB mini-B · USB A · 2 Expansion Modules · O/I Link · Cyclic Script · SD Card · USB Flash Drive · High Speed CPU · High Speed Data · User Memory 12MB · Pict Bridge · Front Panel Maintenance · Voltage 24V DC · Vertical OK · Bezel Color: Light gray, Dark gray, Silver

For more information, visit http://eu.idec.com

IDEC network control

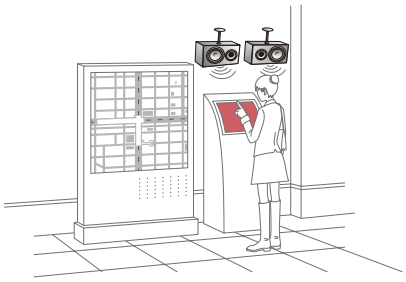
Easy troubleshooting using video images



Remote control from a distance

Complicated maintenance can be carried out

Combine networks for multiple uses



Basic

HG2G-5TT

5.7 inch

167.2 × 134.7 × 40.9 mm
QVGA (320 × 240)
TFT 65,536 colors

Bright 500 cd/m² | LED 100,000 Hours | 32-level Brightness Adjustment | Graphics | Stroke Fonts
Serial Interface | Ethernet | USB mini-B | USB A | USB Flash Drive
User Memory 5MB | Front Panel Maintenance | Voltage 12/24V DC | Temp. -20 to +60°C | Vertical OK
Bezel Color: Light gray | Dark gray | Silver

HG2G-5TN

5.7 inch

167.2 × 134.7 × 40.9 mm
QVGA (320 × 240)
TFT monochrome (16 shades)

Bright 1100 cd/m² | LED 100,000 Hours | 32-level Brightness Adjustment | Stroke Fonts | Serial Interface
Ethernet | USB mini-B | USB A | USB Flash Drive | User Memory 5MB
Front Panel Maintenance | Voltage 12/24V DC | Temp. -20 to +60°C | Vertical OK
Bezel Color: Light gray | Dark gray | Silver

Compact

HG1G

4.3 inch

128 × 102.0 mm
WQVGA (480 × 272)

Bright 800 cd/m² | TFT 65,536 colors | LED 70,000 Hours | 32-level Brightness Adjustment | Graphics
Stroke Fonts | WQVGA 480×272 | Serial Interface | Ethernet | USB mini-B
USB A | USB Flash Drive | User Memory 12MB | Front Panel Maintenance | Voltage 12/24V DC
Temp. -20 to +55°C | Vertical OK | Bezel Color: Black | Silver

Sharp & Vivid: Bright | LED | Brightness Adjustment | Graphics | Stroke Fonts >>L-086

Simple Control: Serial Interface | Ethernet | USB mini-B | USB A | Expansion Module | Audio Output | O/I Link | Cyclic Script >>L-087

Fast & Easy: SD Card | USB Flash Drive | High Speed CPU | High Speed Data | User Memory | Pict Bridge | Front Panel Maintenance >>L-088

Environmental: Wide Temp. Range | Long Life | Water proof | UV Resistant | Oil Resistant | Damage Resistant >>L-089

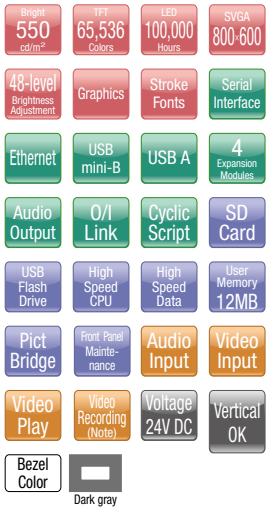
Multimedia: Audio Input | Video Input | Video Play | Video Recording >>L-090

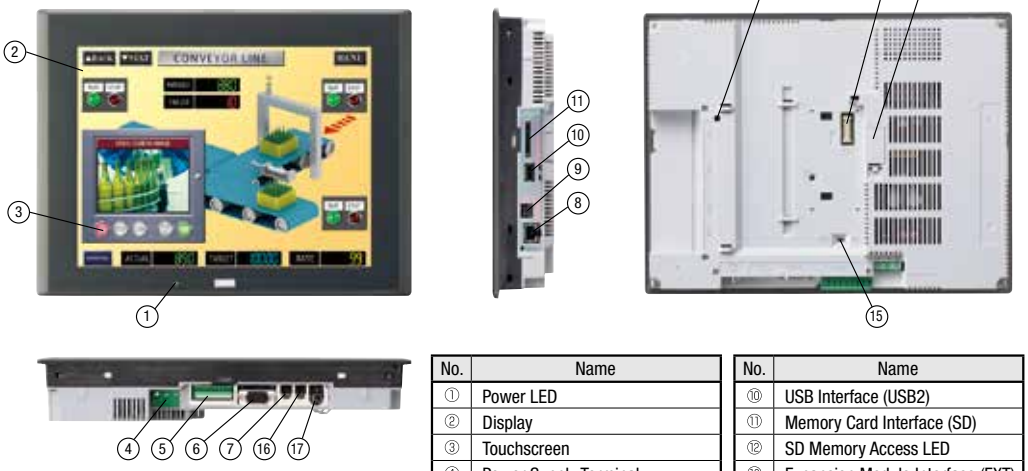
OI Touchscreen Programming Software >>L-003

Download catalogs and CAD from http://eu.idec.com/downloads

HG4G 12.1 inch Operator Interface

Compact housing with a versatile interface.
High performance operator interface with multimedia functions.





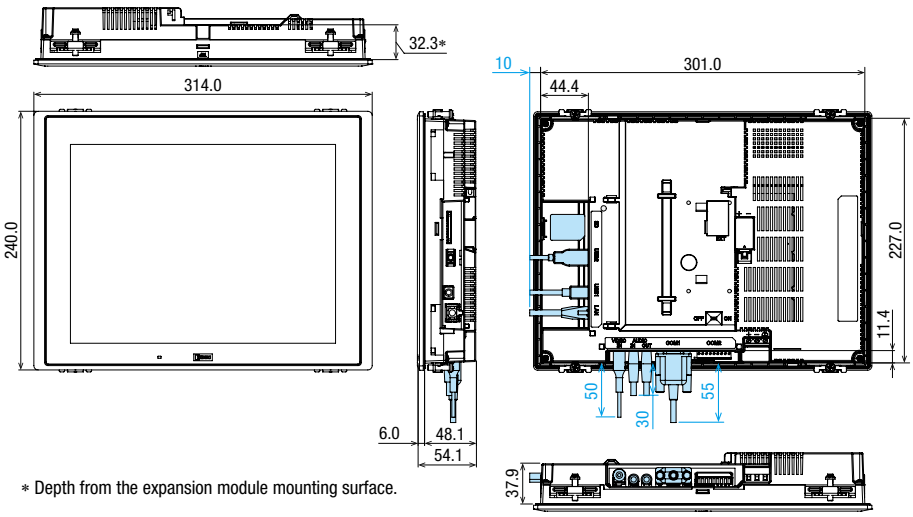
No.	Name
①	Power LED
②	Display
③	Touchscreen
④	Power Supply Terminal
⑤	Serial Interface (COM2)
⑥	Serial Interface (COM1)
⑦	Audio Interface (AUDIO OUT)
⑧	Ethernet Interface (LAN)
⑨	USB Interface (USB1)

No.	Name
⑩	USB Interface (USB2)
⑪	Memory Card Interface (SD)
⑫	SD Memory Access LED
⑬	Expansion Module Interface (EXT)
⑭	Battery Cover
⑮	Terminal Resistor Switch
⑯	Audio Interface (AUDIO IN)
⑰	Video Interface (VIDEO IN)

HG4G Operator Interface

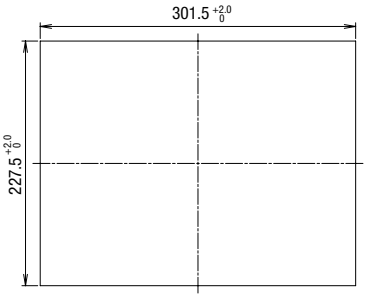
Display Screen	Operation Style	Communication/Memory Interface	Video/Audio Interface	Housing/Bezel Color	Part No. (Ordering No.)	Approvals
12.1-inch TFT color LCD 65,536 colors	Touch Switch (analog resistive)	COM1 COM2 LAN USB1 USB2 SD Memory Card	VIDEO IN AUDIO IN AUDIO OUT	Dark gray	HG4G-CJT22MF-B	Safety Standards: UL508 CSA C22.2 No.142 CSA C22.2 No.213 ANSI/ISA-12.12.01 Ship Classification Standards: ABS, LR, NK, DNV
			AUDIO OUT	Dark gray	HG4G-CJT22TF-B	

Dimensions



* Depth from the expansion module mounting surface.

Panel Cut-out



Panel Thickness: 2.0 to 5.0 mm

All dimensions in mm.

Note 1: Dimensions in blue show the mounting dimensions of the cable.
Note 2: Dimensions in the figure may vary depending on the type of cable connected.
Note 3: Install the HG4G into a panel cut-out by tightening the four mounting clips (supplied with the HG4G) to a torque of 0.5 to 0.6 N·m.
Do not tighten with excessive force, otherwise the HG4G and screen may become distorted. Also waterproof characteristics may be lost.

For more information, visit http://eu.idec.com

General Specifications

Rated Power Voltage	24V DC
Power Voltage Range	20.4 to 28.8V DC
Power Consumption	27W maximum 18W maximum when not using USB interface (USB2) or expansion module interface (EXT)
Allowable Momentary Power Interruption	10 ms maximum
Inrush Current	30A maximum
Dielectric Strength	1,000V AC, 10 mA, 1 minute between power and FG terminals
Operating Temperature	0 to +50°C
Operating Humidity	10 to 90% RH (no condensation)
Storage Temperature	–20 to +60°C
Storage Humidity	10 to 90% RH (no condensation)
Pollution Degree	2
Vibration Resistance	5 to 8.4 Hz amplitude 3.5 mm, 8.4 to 150 Hz, acceleration 9.8 m/s^2 10 cycles (100 minutes) on each of three mutually perpendicular axes
Shock Resistance	147 m/s^2, 11 ms 5 shocks on each of three mutually perpendicular axes
Noise Immunity	Fast transient/burst test, Power terminals: ±2 kV, Communication line: ±1 kV (IEC/EN61131-2: 2007)
Electrostatic Discharge	Contact ±6 kV, air ±8 kV (IEC/EN61131-2: 2007)
Corrosion Immunity	Free from corrosive gases
Mounting	Panel mounting (Panel Thickness: 2.0 to 5.0 mm)
Degree of Protection	IP66 (IEC 60529) (front part when mounted) *1 TYPE 4X TYPE 13 *2
Dimensions	314.0W × 240.0H × 54.1D mm
Weight (approx.)	2.1 kg

- Do not use the HG4G in an environment subject to strong ultraviolet rays, otherwise the LCD quality will deteriorate.

*1 Protection degree of the front surface after mounting. Operation not guaranteed under certain environments.
*2 Operation not guaranteed when used with certain types of oils.

Display Specifications

Display		TFT Color LCD
Color/Shade		65,536 colors
Effective Display Area		246.0W × 184.5H mm
Display Resolution		800W × 600H pixels
View Angle		Right and left 80°, up 80°, down 60°
Backlight		LED
Backlight Life		100,000 hours minimum *1
Brightness		550 cd/m² *2
Brightness Adjustment		48 levels
Backlight Replacement		Not possible
Display Character Size	1/4 size	8 × 8 pixels (Western European language: ISO 8859-1, Central European language: ANSI 1250, Baltic: ANSI 1257, Cyrillic: ANSI1251, Japanese katakana and symbols: JIS 8-bit code)
	1/2 size	8 × 16 pixels (Western European language ISO 8859-1, Central European language: ANSI 1250, Baltic: ANSI 1257, Cyrillic: ANSI1251, Japanese katakana and symbols: JIS 8-bit code)
		16 × 32 pixels, 24 × 48 pixels, 32 × 64 pixels (Western European language: ISO 8859-1)
	Full size	16 × 16 pixels (Japanese JIS first and second level characters, simplified Chinese, traditional Chinese, Korean)
	Double size	32 × 32 pixels (Japanese JIS first level characters, Mincho font)
	Scalable	Width 8 to 128 dots (1/2 size fixed) (ISO 8859-1 western language, 7-segment)
Quantity of Characters	1/4 size	100 characters × 75 lines
	1/2 size	100 characters × 37 lines
	Full size	50 characters × 37 lines
	Double size	25 characters × 18 lines (Mincho font)
Character Magnification		0.5, 1 to 8 vertically and horizontally (except for scalable fonts)
Character Attribute		Blink (1 or 0.5 sec period), reverse, bold, shadowed
Graphics		Straight line, polyline, rectangle, circle, ellipse, arc, pie, equilateral polygons (3, 4, 5, 6, 8), paint, bitmap image
Window Display		3 popup screens + 1 system screen

*1 The backlight life is not guaranteed and refers to the time until the brightness reduces by half after use at 25°C. The actual life depends on operating environments and conditions.
*2 Brightness of the LCD only.

Operation Specifications

Switching Element	Analog resistive membrane
Operating Force	3N maximum
Mechanical Life	1,000,000 operations
Acknowledgement Sound	Electronic buzzer or speaker output

Function Specifications

Screen Types	Base screen, popup screen, system screen
No. of Screens	Base screen: 3,000 max. Popup screen: 3,015 max.
User Memory	12 MB (including expansion fonts)
Parts	Bit Button, Word Button, Goto Screen, Print Button, Key Button, Multi 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, Print Command, Timer, Screen Script Command, Multi Command, Video Display
Calendar	Year, Month, Day, Hour, Min., Sec., Day of Week ±60 sec per month (at 25°C)
Power Failure Backup Data	Calendar, log data, keep internal relay, keep internal register
Battery	Recommended replacement span: every 5 years (at 25°C)

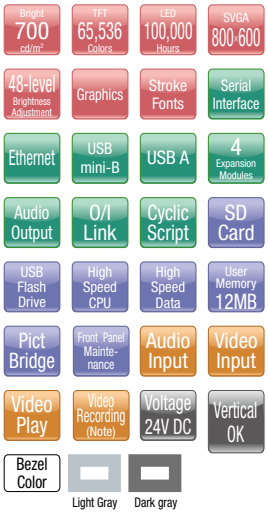
Interface Specifications

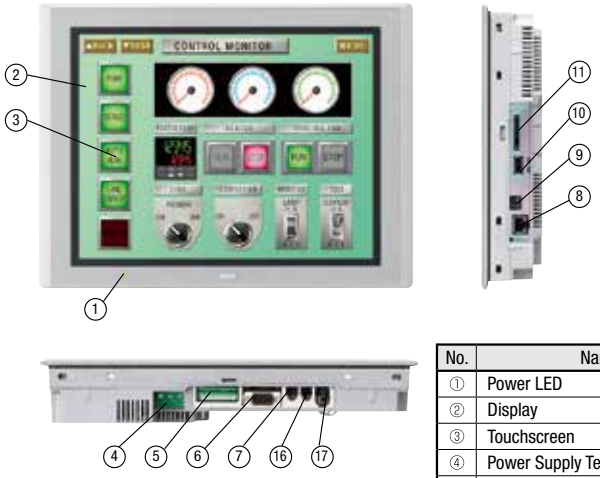
Serial Interface (COM1)	Electrical Characteristics	EIA RS232C, RS422/485 compliant
	Transmission Speed	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 187500 bps (Note)
	Synchronization	Asynchronous
	Communication Method	Half or full duplex
	Control System	Hardware control or none
	Connector	D-sub 9-pin connector
Serial Interface (COM2)	Electrical Characteristics	EIA RS232C, RS422/485 compliant
	Transmission Speed	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 187500 bps (Note)
	Synchronization	Asynchronous
	Communication Method	Half or full duplex
	Control System	Hardware control or none
	Connector	Detachable 9-pin terminal block
Ethernet Interface (LAN)	Interface	IEEE802.3u (10/100BASE-T) compliant
	Connector	Modular connector (RJ-45)
Video Interface (VIDEO IN)	Interface	NTSC/PAL
	Connector	Pin jack
Audio Interface (AUDIO IN)	Interface	LINE IN (stereo)
	Connector	Mini jack connector (ø3.5 mm)
Audio Interface (AUDIO OUT)	Interface	LINE OUT (stereo)
	Connector	Mini jack connector (ø3.5 mm)
USB Interface (USB2)	Interface	USB 2.0 high speed (480 Mbps)
	Connector	USB Type A connector
USB Interface (USB1)	Interface	USB 2.0 high speed (480 Mbps)
	Connector	USB Type Mini-B connector
Memory Card Interface (SD)	Interface	SD memory card, SDHC memory card
	Connector	SD memory card socket
Expansion Module Interface (EXT)	Interface	MicroSmart I/O module interface
	Ouput current	5V 130 mA 24V 150 mA
	Max. no. of units	4 units

Note: 187,500 bps is available only with SIEMENS SIMATIC S7-300/400 series (MPI port direct connection).

HG3G 10.4 inch Operator Interface

Excellent visibility by super-bright LED backlight. 700 cd/m² (10.4-inch)





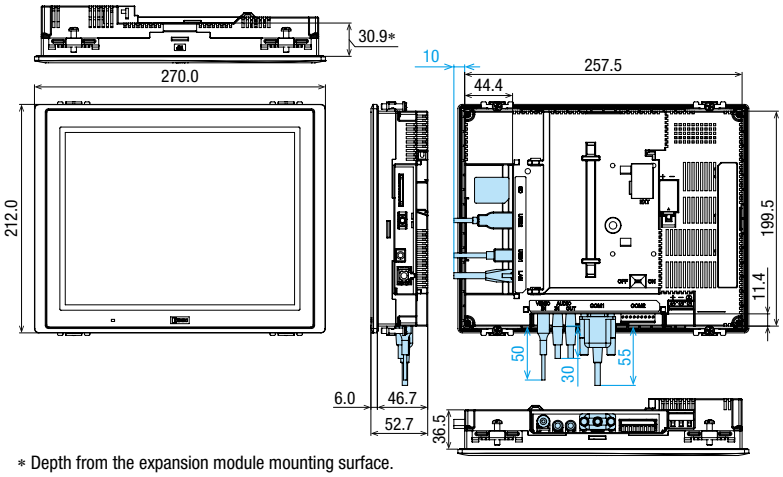
No.	Name
①	Power LED
②	Display
③	Touchscreen
④	Power Supply Terminal
⑤	Serial Interface (COM2)
⑥	Serial Interface (COM1)
⑦	Audio Interface (AUDIO OUT)
⑧	Ethernet Interface (LAN)
⑨	USB Interface (USB1)

No.	Name
⑩	USB Interface (USB2)
⑪	Memory Card Interface (SD)
⑫	SD Memory Access LED
⑬	Expansion Module Interface (EXT)
⑭	Battery Cover
⑮	Terminal Resistor Switch
⑯	Audio Interface (AUDIO IN)
⑰	Video Interface (VIDEO IN)

HG3G Operator Interface

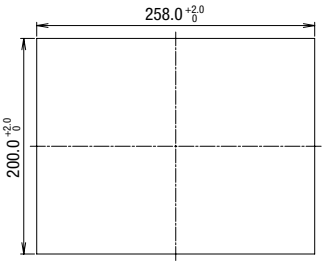
Display Screen	Operation Style	Communication/Memory Interface	Video/Audio Interface	Housing/Bezel Color	Part No. (Ordering No.)	Approvals
10.4-inch TFT color LCD 65,536 colors	Touch Switch (analog resistive)	COM1 COM2 LAN USB1 USB2 SD Memory Card	VIDEO IN AUDIO IN AUDIO OUT	Light gray	HG3G-AJT22MF-W	Safety Standards: UL508 CSA C22.2 No.142 CSA C22.2 No.213 ANSI/ISA-12.12.01 Ship Classification Standards: ABS, LR, NK, DNV
				Dark gray	HG3G-AJT22MF-B	
			AUDIO OUT	Light gray	HG3G-AJT22TF-W	
				Dark gray	HG3G-AJT22TF-B	

Dimensions



* Depth from the expansion module mounting surface.

Panel Cut-out



Panel Thickness: 2.0 to 5.0 mm

All dimensions in mm.

Note 1: Dimensions in blue show the mounting dimensions of the cable.
Note 2: Dimensions in the figure vary depending on the type of cable connected.
Note 3: nstall the HG3G into a panel cut-out by tightening the four mounting clips (supplied) to a torque of 0.5 to 0.6 N·m.
Do not tighten with excessive force, otherwise the HG3G and screen may be distorted. Also waterproof characteristics may be lost.

General Specifications

Model	HG3G-A (10.4 inch)
Rated Power Voltage	24V DC
Power Voltage Range	20.4 to 28.8V DC
Power Consumption	25W maximum 15W maximum when not using USB interface (USB2) or expansion module interface (EXT)
Allowable Momentary Power Interruption	10 ms maximum
Inrush Current	30A maximum
Dielectric Strength	1,000V AC, 10 mA, 1 minute between power and FG terminals
Operating Temperature	0 to +50°C
Operating Humidity	10 to 90% RH (no condensation)
Storage Temperature	–20 to +60°C
Storage Humidity	10 to 90% RH (no condensation)
Pollution Degree	2
Vibration Resistance	5 to 8.4 Hz amplitude 3.5 mm, 8.4 to 150 Hz, acceleration 9.8 m/s^2 10 cycles (100 minutes) on each of three mutually perpendicular axes
Shock Resistance	147 m/s^2, 11 ms 5 shocks on each of three mutually perpendicular axes
Noise Immunity	Fast transient/burst test, Power terminals: ±2 kV, Communication line: ±1 kV (IEC/EN 61131-2: 2007)
Electrostatic Discharge	Contact ±6 kV, air ±8 kV (IEC/EN 61131-2: 2007)
Corrosion Immunity	Free from corrosive gases
Mounting	Panel mounting (Panel Thickness: 2.0 to 5.0 mm)
Degree of Protection	IP66 (IEC 60529) (front part when mounted) *1 TYPE 4X TYPE 13 *2
Dimensions	270.0W × 212.0H × 52.7D mm
Weight (approx.)	1.65 kg

- Do not use the HG3G in an environment subject to strong ultraviolet rays, otherwise the LCD quality will deteriorate.

*1 Protection degree of the front surface after mounting. Operation not guaranteed under certain environments.
*2 Operation not guaranteed when used with certain types of oils.

Display Specifications

Model		HG3G-A (10.4 inch)
Display Color		TFT Color LCD
Color/Shade		65,536 colors
Effective Display Area		211.2 W ×158.4 H mm
Display Resolution		800 W × 600 H pixels
View Angle		Right and left 80°, up 80°, down 60°
Backlight		LED
Backlight Life		100,000 hours minimum *1
Brightness		700 cd/m^2 *2
Brightness Adjustment		48 levels
Backlight Replacement		Not possible
Display Character Size	1/4 size	8 × 8 pixels (Western European language: ISO 8859-1, Central European language: ANSI 1250, Baltic: ANSI 1257, Cyrillic: ANSI1251, Japanese katakana and symbols: JIS 8-bit code)
	1/2 size	8 × 16 pixels (Western European language ISO 8859-1, Central European language: ANSI 1250, Baltic: ANSI 1257, Cyrillic: ANSI1251, Japanese katakana and symbols: JIS 8-bit code)
		16 × 32 pixels, 24 × 48 pixels, 32 × 64 pixels (Western European language: ISO 8859-1)
	Full size	16 × 16 pixels (Japanese JIS first and second level characters, simplified Chinese, traditional Chinese, Korean)
	Double size	32 × 32 pixels (Japanese JIS first level characters, Mincho font)
	Scalable	Width 8 to 128 dots (1/2 size fixed) (ISO 8859-1 western language, 7-segment)
Quantity of Characters	1/4 size	100 characters × 75 lines
	1/2 size	100 characters × 37 lines
	Full size	50 characters × 37 lines
	Double size	25 characters × 18 lines (Mincho font)
Character Magnification		0.5, 1 to 8 vertically and horizontally (except for scalable fonts)
Character Attribute		Blink (1 or 0.5 sec period), reverse, bold, shadowed
Graphics		Straight line, polyline, rectangle, circle, ellipse, arc, pie, equilateral polygons (3, 4, 5, 6, 8), paint, bitmap image
Window Display		3 popup screens + 1 system screen

*1 The backlight life is not guaranteed and refers to the time until the brightness reduces by half after use at 25°C. The actual life depends on operating environments and conditions.
*2 Brightness of the LCD only.

Operation Specifications

Switching Element	Analog resistive membrane
Operating Force	0.55 to 2.3N
Mechanical Life	1,000,000 operations
Acknowledgement Sound	Electronic buzzer or speaker output

Function Specifications

Screen Types	Base screen, popup screen, system screen
No. of Screens	Base screen: 3,000 max. Popup screen: 3,015 max.
User Memory	12 MB (including expansion fonts)
Parts	Bit Button, Word Button, Goto Screen, Print Button, Key Button, Multi 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, Print Command, Timer, Screen Script Command, Multi Command, Video Display
Calendar	Year, Month, Day, Hour, Min., Sec., Day of Week ±60 sec per month (at 25°C)
Power Failure Backup Data	Calendar, log data, keep internal relay, keep internal register
Battery	Recommended replacement span: every 5 years (at 25°C)

Interface Specifications

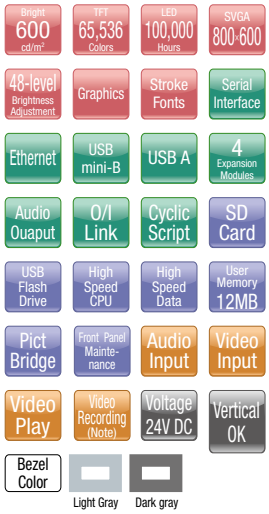
Serial Interface (COM1)	Electrical Characteristics	EIA RS232C, RS422/485 compliant
	Transmission Speed	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 187500 bps (Note)
	Synchronization	Asynchronous
	Communication Method	Half or full duplex
	Control System	Hardware control or none
	Connector	D-sub 9-pin connector
Serial Interface (COM2)	Electrical Characteristics	EIA RS232C, RS422/485 compliant
	Transmission Speed	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 187500 bps (Note)
	Synchronization	Asynchronous
	Communication Method	Half or full duplex
	Control System	Hardware control or none
	Connector	Detachable 9-pin terminal block
Ethernet Interface (LAN)	Interface	IEEE802.3 (10/100BASE-T) compliant
	Connector	Modular connector (RJ-45)
Video Interface (VIDEO IN)	Interface	NTSC/PAL
	Connector	Pin jack
Audio Interface (AUDIO IN)	Interface	LINE IN (stereo)
	Connector	Mini jack connector (ø3.5 mm)
Audio Interface (AUDIO OUT)	Interface	LINE OUT (stereo)
	Connector	Mini jack connector (ø3.5 mm)
USB Interface (USB2)	Interface	USB 2.0 high speed (480 Mbps)
	Connector	USB Type A connector
USB Interface (USB1)	Interface	USB 2.0 high speed (480 Mbps)
	Connector	USB Type Mini-B connector
Memory Card Interface (SD)	Interface	SD memory card, SDHC memory card
	Connector	SD memory card socket
Expansion Module Interface (EXT)	Interface	MicroSmart I/O module interface
	Ouput current	5V 130 mA 24V 150 mA
	Max. no. of units	4 units

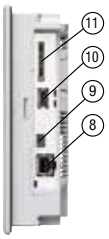
Note: 187,500 bps is available only with SIEMENS SIMATIC S7-300/400 series (MPI port direct connection).

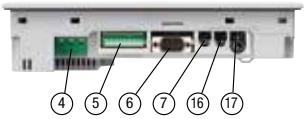
APEM
Switches & Pilot Lights
Control Boxes
Emergency Stop Switches
Enabling Switches
Safety Products
Explosion Proof
Terminal Blocks
Relays & Sockets
Circuit Protectors
Power Supplies
LED Illumination
Controllers
Operator Interfaces
Sensors
AUTO-ID
Programmable Operator Interfaces
Periphery Equipment
HG4G
HG3G
HG2G
HG1G

HG3G 8.4 inch Operator Interface

Excellent visibility by super-bright LED backlight. 600 cd/m2 (8.4-inch)







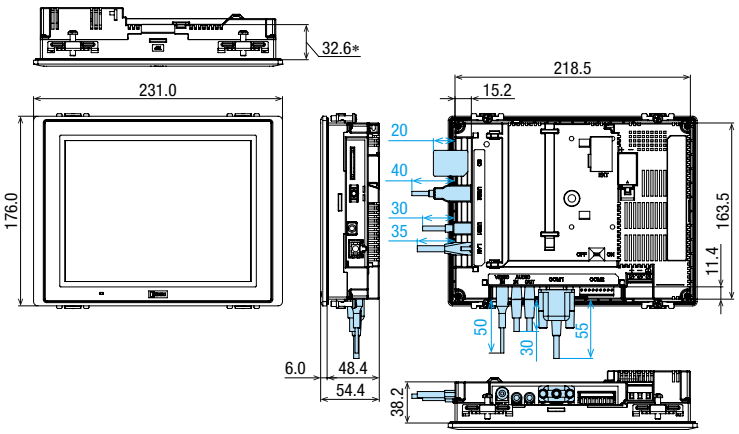
No.	Name
①	Power LED
②	Display
③	Touchscreen
④	Power Supply Terminal
⑤	Serial Interface (COM2)
⑥	Serial Interface (COM1)
⑦	Audio Interface (AUDIO OUT)
⑧	Ethernet Interface (LAN)
⑨	USB Interface (USB1)

No.	Name
⑩	USB Interface (USB2)
⑪	Memory Card Interface (SD)
⑫	SD Memory Access LED
⑬	Expansion Module Interface (EXT)
⑭	Battery Cover
⑮	Terminal Resistor Switch
⑯	Audio Interface (AUDIO IN)
⑰	Video Interface (VIDEO IN)

HG3G Operator Interface

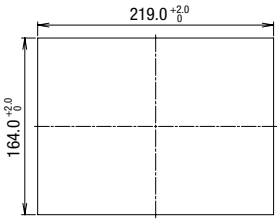
Display Screen	Operation Style	Communication/Memory Interface	Video/Audio Interface	Housing/Bezel Color	Part No. (Ordering No.)	Approvals
8.4-inch TFT color LCD 65,536 colors	Touch Switch (analog resistive)	COM1 COM2 LAN USB1 USB2 SD Memory Card	VIDEO IN AUDIO IN AUDIO OUT	Light gray	HG3G-8JT22MF-W	Safety Standards: UL508 CSA C22.2 No.142 CSA C22.2 No.213 ANSI/ISA-12.12.01-2007 Ship Classification Standards: ABS, LR, NR, DNV
				Dark gray	HG3G-8JT22MF-B	
			AUDIO OUT	Light gray	HG3G-8JT22TF-W	
				Dark gray	HG3G-8JT22TF-B	

Dimensions



* Depth from the expansion module mounting surface.

Panel Cut-out



Panel Thickness: 2.0 to 5.0 mm

All dimensions in mm.

Note 1: Dimensions in blue show the mounting dimensions of the cable.
Note 2: Dimensions in the figure vary depending on the type of cable connected.
Note 3: Install the HG3G into a panel cut-out by tightening the four mounting clips (supplied) to a torque of 0.5 to 0.6 N·m.
Do not tighten with excessive force, otherwise the HG3G and screen may be distorted. Also waterproof characteristics may be lost.

For more information, visit http://eu.idec.com

General Specifications

Model	HG3G-8 (8.4 inch)
Rated Power Voltage	24V DC
Power Voltage Range	20.4 to 28.8V DC
Power Consumption	25W maximum 15W maximum when not using USB interface (USB2) or expansion module interface (EXT)
Allowable Momentary Power Interruption	10 ms maximum
Inrush Current	30A maximum
Dielectric Strength	1,000V AC, 10 mA, 1 minute between power and FG terminals
Operating Temperature	0 to +50°C
Operating Humidity	10 to 90% RH (no condensation)
Storage Temperature	–20 to +60°C
Storage Humidity	10 to 90% RH (no condensation)
Pollution Degree	2
Vibration Resistance	5 to 8.4 Hz amplitude 3.5 mm, 8.4 to 150 Hz, acceleration 9.8 m/s^2 10 cycles (100 minutes) on each of three mutually perpendicular axes
Shock Resistance	147 m/s^2, 11 ms 5 shocks on each of three mutually perpendicular axes
Noise Immunity	Fast transient/burst test, Power terminals: ±2 kV, Communication line: ±1 kV (IEC/EN 61131-2: 2007)
Electrostatic Discharge	Contact ±6 kV, air ±8 kV (IEC/EN 61131-2: 2007)
Corrosion Immunity	Free from corrosive gases
Mounting	Panel mounting (Panel Thickness: 2.0 to 5.0 mm)
Degree of Protection	IP66 (IEC 60529) (front part when mounted) *1 TYPE 4X TYPE 13 *2
Dimensions	231.0W × 176.0H × 54.4D mm
Weight (approx.)	1.25 kg

- Do not use the HG3G in an environment subject to strong ultraviolet rays, otherwise the LCD quality will deteriorate.

*1 Protection degree of the front surface after mounting. Operation not guaranteed under certain environments.

*2 Operation not guaranteed when used with certain types of oils.

Display Specifications

Model		HG3G-8 (8.4 inch)
Display		TFT Color LCD
Color/Shade		65,536 colors
Effective Display Area		170.4W × 127.8H mm
Display Resolution		800W × 600H pixels
View Angle		Right and left 80°, up 80°, down 60°
Backlight		LED
Backlight Life		100,000 hours minimum *1
Brightness		600 cd/m² *2
Brightness Adjustment		48 levels
Backlight Replacement		Not possible
Display Character Size	1/4 size	8 × 8 pixels (Western European language: ISO 8859-1, Central European language: ANSI 1250, Baltic: ANSI 1257, Cyrillic: ANSI1251, Japanese katakana and symbols: JIS 8-bit code)
	1/2 size	8 × 16 pixels (Western Ezuropean language ISO 8859-1, Central European language: ANSI 1250, Baltic: ANSI 1257, Cyrillic: ANSI1251, Japanese katakana and symbols: JIS 8-bit code)
		16 × 32 pixels, 24 × 48 pixels, 32 × 64 pixels (Western European language: ISO 8859-1)
	Full size	16 × 16 pixels (Japanese JIS first and second level characters, simplified Chinese, traditional Chinese, Korean)
	Double size	32 × 32 pixels (Japanese JIS first level characters, Mincho font)
	Scalable	Width 8 to 128 dots (1/2 size fixed) (ISO 8859-1 western language, 7-segment)
Quantity of Characters	1/4 size	100 characters × 75 lines
	1/2 size	100 characters × 37 lines
	Full size	50 characters × 37 lines
	Double size	25 characters × 18 lines (Mincho font)
Character Magnification		0.5, 1 to 8 vertically and horizontally (except for scalable fonts)
Character Attribute		Blink (1 or 0.5 sec period), reverse, bold, shadowed
Graphics		Straight line, polyline, rectangle, circle, ellipse, arc, pie, equilateral polygons (3, 4, 5, 6, 8), paint, bitmap image
Window Display		3 popup screens + 1 system screen

*1 The backlight life is not guaranteed and refers to the time until the brightness reduces by half after use at 25°C. The actual life depends on operating environments and conditions.

*2 Brightness of the LCD only.

Operation Specifications

Switching Element	Analog resistive membrane
Operating Force	0.55 to 2.3N
Mechanical Life	1,000,000 operations
Acknowledgement Sound	Electronic buzzer or speaker output

Function Specifications

Screen Types	Base screen, popup screen, system screen
No. of Screens	Base screen: 3,000 max. Popup screen: 3,015 max.
User Memory	12 MB (including expansion fonts)
Parts	Bit Button, Word Button, Goto Screen, Print Button, Key Button, Multi 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, Print Command, Timer, Screen Script Command, Multi Command, Video Display
Calendar	Year, Month, Day, Hour, Min., Sec., Day of Week ±60 sec per month (at 25°C)
Power Failure Backup Data	Calendar, log data, keep internal relay, keep internal register
Battery	Recommended replacement span: every 5 years (at 25°C)

Interface Specifications

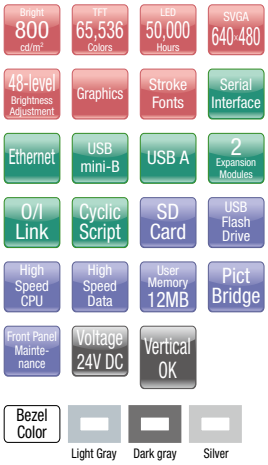
Serial Interface (COM1)	Electrical Characteristics	EIA RS232C, RS422/485 compliant
	Transmission Speed	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 187500 bps (Note)
	Synchronization	Asynchronous
	Communication Method	Half or full duplex
	Control System	Hardware control or none
	Connector	D-sub 9-pin connector
Serial Interface (COM2)	Electrical Characteristics	EIA RS232C, RS422/485 compliant
	Transmission Speed	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 187500 bps (Note)
	Synchronization	Asynchronous
	Communication Method	Half or full duplex
	Control System	Hardware control or none
	Connector	Detachable 9-pin terminal block
Ethernet Interface (LAN)	Interface	IEEE802.3u (10/100BASE-T) compliant
	Connector	Modular connector (RJ-45)
Video Interface (VIDEO IN)	Interface	NTSC/PAL
	Connector	Pin jack
Audio Interface (AUDIO IN)	Interface	LINE IN (stereo)
	Connector	Mini jack connector (ø3.5 mm)
Audio Interface (AUDIO OUT)	Interface	LINE OUT (stereo)
	Connector	Mini jack connector (ø3.5 mm)
USB Interface (USB2)	Interface	USB 2.0 high speed (480 Mbps)
	Connector	USB Type A connector
USB Interface (USB1)	Interface	USB 2.0 high speed (480 Mbps)
	Connector	USB Type Mini-B connector
Memory Card Interface (SD)	Interface	SD memory card, SDHC memory card
	Connector	SD memory card socket
Expansion Module Interface (EXT)	Interface	MicroSmart I/O module interface
	Ouput current	5V 130 mA 24V 150 mA
	Max. no. of units	4 units

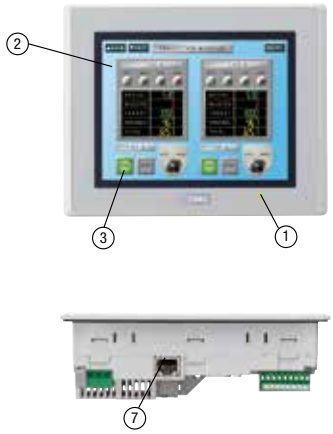
Note: 187,500 bps is available only with SIEMENS SIMATIC S7-300/400 series (MPI port direct connection).

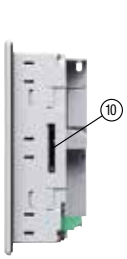
APEM
Switches & Pilot Lights
Control Boxes
Emergency Stop Switches
Enabling Switches
Safety Products
Explosion Proof
Terminal Blocks
Relays & Sockets
Circuit Protectors
Power Supplies
LED Illumination
Controllers
Operator Interfaces
Sensors
AUTO-ID
Programmable Operator Interfaces
Periphery Equipment
HG4G
HG3G
HG2G
HG1G

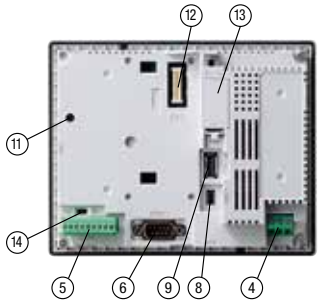
HG2G 5.7 inch Operator Interface (High Performance)

Excellent visibility by super-bright LED backlight. 800 cd/m2 (5.7-inch)









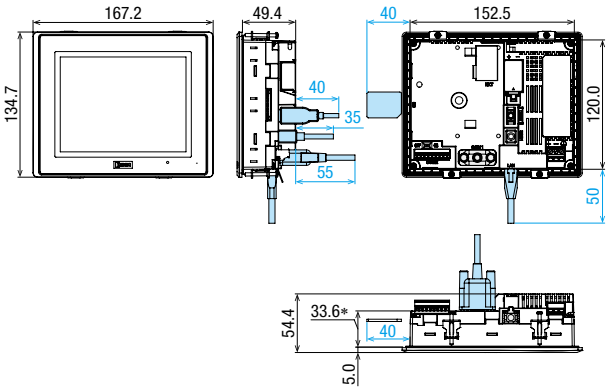
No.	Name
①	Power LED
②	Display
③	Touchscreen
④	Power Supply Terminal
⑤	Serial Interface (COM2)
⑥	Serial Interface (COM1)
⑦	Ethernet Interface (LAN)

No.	Name
⑧	USB Interface (USB1)
⑨	USB Interface (USB2)
⑩	Memory Card Interface (SD)
⑪	SD Memory Access LED
⑫	Expansion Module Interface (EXT)
⑬	Battery Cover
⑭	Terminal Resistor Switch

HG2G Operator Interface

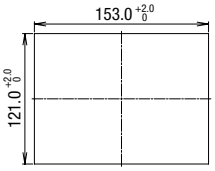
Display Screen	Operation Style	Communication/Memory Interface	Housing/Bezel Color	Part No. (Ordering No.)	Approvals
5.7-inch TFT color LCD 65,536 colors	Touch Switch (analog resistive)	COM1 COM2 LAN USB 1 USB 2 SD Memory Card	Light gray	HG2G-5FT22TF-W	Safety Standards: UL508 CSA C22.2 No.142 CSA C22.2 No.213 ANSI/ISA-12.12.01 Ship Classification Standards: ABS, LR, NK, DNV
			Dark gray	HG2G-5FT22TF-B	
			Silver	HG2G-5FT22TF-S	

Dimensions



* Depth from the expansion module mounting surface.

Panel Cut-out



Panel Thickness: 1.6 to 5.0 mm

All dimensions in mm.

Note 1: Dimensions in blue show the mounting dimensions of the cable.

Note 2: Dimensions in the figure vary depending on the type of cable connected.

Note 3: Install the HG2G into a panel cut-out by tightening the four mounting clips (supplied) to a torque of 0.2 to 0.3 N·m.
Do not tighten with excessive force, otherwise the HG2G and screen may be distorted. Also waterproof characteristics may be lost.

For more information, visit http://eu.idec.com

General Specifications

Rated Power Voltage	24V DC
Power Voltage Range	20.4 to 28.8V DC
Power Consumption	19W maximum 10W maximum when not using USB interface (USB2) or expansion module interface (EXT)
Allowable Momentary Power Interruption	10 ms maximum
Inrush Current	30A maximum
Dielectric Strength	1,000V AC, 10 mA, 1 minute between power and FG terminals
Operating Temperature	0 to +50°C
Operating Humidity	10 to 90% RH (no condensation)
Storage Temperature	–20 to +60°C
Storage Humidity	10 to 90% RH (no condensation)
Pollution Degree	2
Vibration Resistance	5 to 8.4 Hz amplitude 3.5 mm, 8.4 to 150 Hz, acceleration 9.8 m/s^2 10 cycles (100 minutes) on each of three mutually perpendicular axes
Shock Resistance	147 m/s^2, 11 ms 5 shocks on each of three mutually perpendicular axes
Noise Immunity	Fast transient/burst test, Power terminals: ±1 kV, Communication line: ±0.5 kV (IEC/EN 61131-2: 2007)
Electrostatic Discharge	Contact ±6 kV, air ±8 kV (IEC/EN 61131-2: 2007)
Corrosion Immunity	Free from corrosive gases
Mounting	Panel mounting (Panel Thickness: 1.0 to 5.0 mm)
Degree of Protection	IP66 (IEC 60529) (front part when mounted) *1 TYPE 4X TYPE 13 *2
Dimensions	167.2W × 134.7H × 54.4D mm
Weight (approx.)	0.65 kg

- Do not use the HG2G in an environment subject to strong ultraviolet rays, otherwise the LCD quality will deteriorate.

*1 Protection degree of the front surface after mounting. Operation not guaranteed under certain environments.

*2 Operation not guaranteed when used with certain types of oils.

Display Specifications

Display		TFT Color LCD
Color/Shade		65,536 colors
Effective Display Area		115.2W × 86.4H mm
Display Resolution		640W × 480H pixels
View Angle		Right and left 80°, up 80°, down 80°
Backlight		LED
Backlight Life		50,000 hours *1
Brightness		800 cd/m² *2
Brightness Adjustment		48 levels
Backlight Replacement		Not possible
Display Character Size	1/4 size	8 × 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 × 16 pixels (Western European language ISO 8859-1, Central European language: ANSI 1250, Japanese katakana and symbols: JIS 8-bit code)
		16 × 32 pixels, 24 × 48 pixels, 32 × 64 pixels (Western European language: ISO 8859-1)
	Full size	16 × 16 pixels (Japanese JIS first and second level characters, simplified Chinese, traditional Chinese, Korean)
	Double size	32 × 32 pixels (Japanese JIS first level characters, Mincho font)
	Scalable	Width 8 to 128 dots (1/2 size fixed) (ISO 8859-1 western language, 7-segment)
Quantity of Characters	1/4 size	80 characters × 60 lines
	1/2 size	80 characters × 30 lines
	Full size	40 characters × 30 lines
	Double size	20 characters × 15 lines (Mincho font)
Character Magnification		0.5, 1 to 8 vertically and horizontally (except for scalable fonts)
Character Attribute		Blink (1 or 0.5 sec period), reverse, bold, shadowed
Graphics		Straight line, polyline, rectangle, circle, ellipse, arc, pie, equilateral polygons (3, 4, 5, 6, 8), paint, bitmap image
Window Display		3 popup screens + 1 system screen

*1 The backlight life is not guaranteed and refers to the time until the brightness reduces by half after use at 25°C. The actual life depends on operating environments and conditions.

*2 Brightness of the LCD only.

Operation Specifications

Switching Element	Analog resistive membrane
Operating Force	3N maximum
Mechanical Life	1,000,000 operations
Acknowledgement Sound	Electronic buzzer

Function Specifications

Screen Types	Base screen, popup screen, system screen
No. of Screens	Base screen: 3,000 max. Popup screen: 3,015 max.
User Memory	12 MB (including expansion fonts)
Parts	Bit Button, Word Button, Goto Screen, Print Button, Key Button, Multi 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, Print Command, Timer, Screen Script Command, Multi Command
Calendar	Year, Month, Day, Hour, Min., Sec., Day of Week ±60 sec per month (at 25°C)
Power Failure Backup Data	Calendar, log data, keep internal relay, keep internal register
Battery	Recommended replacement span: every 5 years (at 25°C)

Interface Specifications

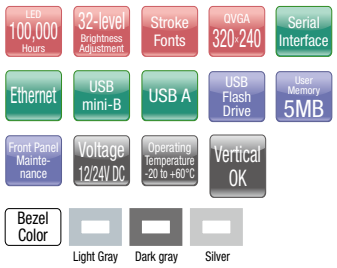
Serial Interface (COM1)	Electrical Characteristics	EIA RS232C, RS422/485 compliant
	Transmission Speed	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 187500 bps (Note)
	Synchronization	Asynchronous
	Communication Method	Half or full duplex
	Control System	Hardware control or none
	Connector	D-sub 9-pin connector
Serial Interface (COM2)	Electrical Characteristics	EIA RS232C, RS422/485 compliant
	Transmission Speed	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 187500 bps (Note)
	Synchronization	Asynchronous
	Communication Method	Half or full duplex
	Control System	Hardware control or none
	Connector	Detachable 9-pin terminal block
Ethernet Interface (LAN)	Interface	IEEE802.3u (10/100BASE-T) compliant
	Connector	Modular connector (RJ-45)
USB Interface (USB2)	Interface	USB 2.0 high speed (480 Mbps)
	Connector	USB Type A connector
USB Interface (USB1)	Interface	USB 2.0 high speed (480 Mbps)
	Connector	USB Type Mini-B connector
Memory Card Interface (SD)	Interface	SD memory card, SDHC memory card
	Connector	SD memory card socket
Expansion Module Interface (EXT)	Interface	MicroSmart I/O module interface
	Ouput current	5V 130 mA 24V 150 mA
	Max. no. of units	2 units

Note: 187,500 bps is available only with SIEMENS SIMATIC S7-300/400 series (MPI port direct connection).

HG2G 5.7 inch Operator Interface (Basic)

Enhanced visibility and user-friendly
Supports a wide range of operating temperatures achieving high environmental resistance.

HG2G-5TT (Color) / HG2G-5TN (Monochrome)

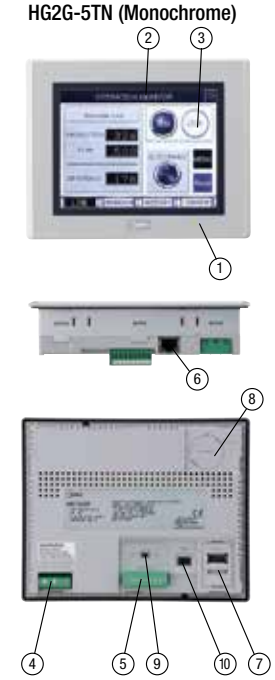


HG2G-5TT (Color)

HG2G-5TN (Monochrome)

HG2G-5TT (Color)

HG2G-5TN (Monochrome)



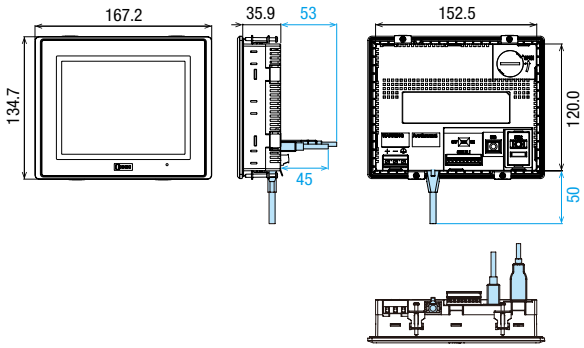
No.	Name
①	Power LED
②	Display
③	Touchscreen
④	Power Supply Terminal
⑤	Serial Interface 1 (COM1)
⑥	Ethernet Interface (LAN)
⑦	USB Interface (USB2)
⑧	Battery Cover
⑨	Terminal Resistor Switch
⑩	USB Interface (USB)

HG2G Operator Interface

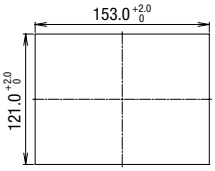
Display Screen	Operation Style	Communication/Memory Interface	Housing/Bezel Color	Part No. (Ordering No.)	Approvals
5.7-inch TFT color LCD 65,536 colors	Touch Switch (analog resistive)	COM1 LAN USB USB 2	Light gray	HG2G-5TT22TF-W	UL508 CSA C22.2 No.142 CSA C22.2 No.213 ANSI/ISA-12.12.01
			Dark gray	HG2G-5TT22TF-B	
			Silver	HG2G-5TT22TF-S	
5.7-inch TFT Monochrome LCD 16 shades			Light gray	HG2G-5TN22TF-W	
			Dark gray	HG2G-5TN22TF-B	
			Silver	HG2G-5TN22TF-S	

• Models with a coated board that can be used even in harsh environments and bright color (1000 cd/m²) models are also available.

Dimensions



Panel Cut-out



Panel Thickness: 1.0 to 5.0 mm

All dimensions in mm.

Note 1: Dimensions in blue show the mounting dimensions of the cable.
Note 2: Dimensions in the figure vary depending on the type of cable connected.
Note 3: Install the HG2G into a panel cut-out by tightening the four mounting clips (supplied) to a torque of 0.2 to 0.3 N·m.
Do not tighten with excessive force, otherwise the HG2G and screen may be distorted. Also waterproof characteristics may be lost.

APEM
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Operator Interfaces
Sensors
AUTO-ID
Programmable Operator Interfaces
Periphery Equipment
HG4G
HG3G
HG2G
HG1G

For more information, visit http://eu.idec.com

General Specifications

Model	HG2G-5TT (Color) / HG2G-5TN (Monochrome)
Rated Power Voltage	12V DC/24 V DC
Power Voltage Range	10.2 to 28.8V DC
Power Consumption	8W maximum 4W maximum when not using USB interface (USB2)
Allowable Momentary Power Interruption	10ms maximum (Voltage 20.4 to 28.8V DC) 1ms maximum (Voltage 10.2 to 20.4V DC)
Inrush Current	40A maximum
Dielectric Strength	1000V AC, 10 mA, 1 minute between power and FG terminals
Operating Temperature	–20 to +60°C
Operating Humidity	10 to 90% RH (no condensation)
Storage Temperature	–20 to +70°C
Storage Humidity	10 to 90% RH (no condensation)
Pollution Degree	2
Vibration Resistance	5 to 8.4 Hz amplitude 3.5 mm, 8.4 to 150 Hz, acceleration 9.8 m/s^2 10 cycles (100 minutes) on each of three mutually perpendicular axes
Shock Resistance	147 m/s^2, 11 ms 5 shocks on each of three mutually perpendicular axes
Noise Immunity	Fast transient/burst test, Power terminals: ±2 kV, Communication line: ±1 kV (IEC/EN 61131-2, IEC/EN 61000-4-4)
Electrostatic Discharge	Contact ±6 kV, air ±8 kV (IEC/EN 61131-2, IEC/EN 61000-4-2)
Corrosion Immunity	Free from corrosive gases
Mounting	Panel mounting (Panel Thickness: 1.0 to 5.0 mm)
Degree of Protection	IP66F (IEC 60529) (front part when mounted) ∗1 TYPE 4X TYPE 13 ∗2
Dimensions	167.2 W ×134.7 H × 40.9 D mm
Weight (approx.)	0.5 kg

- Do not use the HG2G in an environment subject to strong ultraviolet rays, otherwise the LCD quality will deteriorate.

∗1 Protection degree of the front surface after mounting. Operation not guaranteed

∗2 Operation not guaranteed when used with certain types of oils under certain environments.

Display Specifications

Model		HG2G-5TT	HG2G-5TN
Display		TFT color LCD	TFT Monochrome LCD
Color/Shade		65,536	16 shades
Effective Display Area		115.2W × 86.4H mm	
Display Resolution		320W × 240H pixels	
View Angle		Right and left 80°, up 80°, down 80°	Right and left 65°, up 80°, down 60°
Backlight		LED	
Backlight Life		100,000 hours minimum ∗1	
Brightness		500 cd/m² ∗2	1100 cd/m² ∗2
Brightness Adjustment		32 levels	
Backlight Replacement		Not possible	
Display Character Size	1/4 size	8 × 8 pixels (Western European language: ISO 8859-1, Central European language: ANSI 1250, Baltic: ANSI 1257, Cyrillic: ANSI1251, Japanese katakana and symbols: JIS 8-bit code)	
	1/2 size	8 × 16 pixels (Western European language ISO 8859-1, Central European language: ANSI 1250, Baltic: ANSI 1257, Cyrillic: ANSI1251, Japanese katakana and symbols: JIS 8-bit code)	
		16 × 32 pixels, 24 × 48 pixels, 32 × 64 pixels (Western European language: ISO 8859-1)	
	Full size	16 × 16 pixels (Japanese JIS first and second level characters, simplified Chinese, traditional Chinese, Korean)	
	Double size	32 × 32 pixels (Japanese JIS first level characters, Mincho font)	
Quantity of Characters	1/4 size	40 characters × 30 lines	
	1/2 size	40 characters × 15 lines	
	Full size	20 characters × 15 lines	
	Double size	10 characters × 7 liness	
Character Magnification		0.5, 1 to 8 vertically and horizontally (except for scalable fonts)	
Character Attribute		Blink (1 or 0.5 sec period), reverse, bold, shadowed	
Graphics		Straight line, polyline, rectangle, circle, ellipse, arc, pie, equilateral polygons (3, 4, 5, 6, 8), paint, bitmap image	
Window Display		3 popup screens + 1 system screen	

∗1 The backlight life is not guaranteed and refers to the time until the brightness reduces by half after use at 25°C. The actual life depends on operating environments and conditions.

∗2 Brightness of the LCD only.

Operation Specifications

Switching Element	Analog resistive membrane
Operating Force	3N maximum
Mechanical Life	1,000,000 operations
Acknowledgement Sound	Electronic buzzer

Function Specifications

Screen Types	Base screen, popup screen, system screen
No. of Screens	Base screen: 3,000 max. Popup screen: 3,015 max.
User Memory	5 MB (including expansion fonts)
Parts	Bit Button, Word Button, Goto Screen,Print Button Key Button, Multi 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,Print Command Screen Script Command, Multi Command,Timer
Calendar	Year, Month, Day, Hour, Min., Sec., Day of Week ±60 sec per month (at 25 °C)
Power Failure Backup Data	Calendar, log data, keep internal relay, keep internal register
Battery	Recommended replacement span: every 5 years (at 25°C)

Interface Specifications

Serial Interface 1 (COM1) ∗	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
	EIA RS422/485	Electrical Characteristics	EIA RS422/485 compliant
		Transmission Speed	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 187500 bps (Note)
		Synchronization	Asynchronous
		Communication Method	Half or full duplex
		Control System	None
		Connector	Detachable 9-pin terminal block
Ethernet Interface (LAN)		Interface	IEEE802.3u (10BASE-T/100BASE-TX) compliant
		Connector	Connector (RJ-45)
USB Interface (USB2)		Interface	USB 2.0 full speed (12 Mbps)
		Connector	USB Type Mini-A connector
USB Interface (USB1)		Interface	USB 2.0 high speed (480 Mbps)
		Connector	USB Type Mini-B connector

∗RS232C and RS 422/485 can be used simultaneously.

Note: 187,500 bps is available only with SIEMENS SIMATIC S7-300/400 series (MPI port direct connection).

Options

Name	Part No. (Ordering No.)	Package Quantity	Description	Applicable Model				
				HG4G	HG3G	HG2G -5F	HG2G -5TT	HG2G -5TN
Application Software	SW1A-W1C	1	Automation Organizer (includes WindO/I-NV2,NV4)	√	√	√	√	√
USB Maintenance Cable (2m)	HG9Z-XCM42	1	USB Cable USB-miniB	√	√	√	√	√
PLC Connection Cable For IDEC MicroSmart (5m)	HG9Z-XC295	1	Mini DIN 8-pin (Dsub 9-pin)	√	√	√	—	—
PLC Connection Cable For Mitsubishi FX series (5m)	HG9Z-XC305	1	Mini DIN 8-pin (Dsub 9-pin)	√	√	√	—	—
PLC Connection Cable For Mitsubishi Q series (5m)	HG9Z-XC315	1	Mini DIN 6-pin (Dsub 9-pin)	√	√	√	—	—
PLC Connection Cable For IDEC MicroSmart (5m)	HG9Z-XC275	1	Mini DIN 8-pin (loose wire)	√	√	√	√	√
PLC Connection Cable For IDEC MicroSmart (2.4m)	FC2A-KP1C	1	Mini DIN 8-pin (loose wire)	√	√	√	√	√
USB panel-mount extension cable (1m)	HG9Z-XCE11	1	For USB-A port	√	√	√	—	—
	HG9Z-XCE21	1	For USB-mini B port	√	√	√	√	—
Connector Conversion Cable (16 cm)	HG9Z-XCT11	1	To convert from D-sub 25-pin to 9-pin (used when replacing from HG3F/4F to HG4G/3G/2G-F)	√	√	√	—	—
Memory Card	HG9Z-XMS2	1	SD Memory Card (2GB)	√	√	√	—	—
Protective Cover	HG9Z-2E2PN03	3	For 5.7 inch (3 pcs/pack) (used to cover the front side of the operator interface)	—	—	√	√	√
Protective Sheet ∗1	HG9Z-2D5PN05	5	For 5.7 inch (5 pcs/pack) (used to protect the LCD)	—	—	√	√	√
	HG9Z-3D8PN02	2	For 8.4-inch (2 pcs/pack)	—	√	—	—	—
	HG9Z-3DA2PN02	2	For 10.4-inch (2 pcs/pack)	—	√	—	—	—
	HG9Z-4DCPN02	2	For 12.1 inch (2 pcs/pack)	√	—	—	—	—
Expansion Module Clamp ∗2	HG9Z-XJ3PN05	5	For installing the expansion modules on the back of the operator interface (short). For total width 17.6 to 41.1 mm.	√	√	√	—	—
	HG9Z-XJ4PN05	5	For installing the expansion modules on the back of the operator interface (long). For total width 47.0 to 68.8 mm.	√	√	√	—	—
	HG9Z-XJ5PN05	5	For installing the expansion modules on the back of the operator interface (XL). For total width 70.5 to 92.3 mm.	√	√	√	—	—
L-shaped Terminal Block Connector for I/O Module ∗3	HG9Z-PMT10LPN02	2	For MicroSmart I/O Module (10-pole) (2 pcs/pack)	√	√	√	—	—
	HG9Z-PMT11LPN02	2	For MicroSmart I/O Module (11-pole) (2 pcs/pack)	√	√	√	—	—
Panel Mount Adaptor	HG9Z-2A1	1	Adaptor for mounting HG2G to the panel cut-out of HG2F.	—	—	√	√	√
	HG9Z-2A2	1	Adaptor for mounting HG2G to 156 x 123.5 mm panel cut-out.	—	—	√	√	√
User's Manual	HG9Y-B1119	1	English	√	√	√	—	—

∗1 The protective sheet is UV resistant, however, resistance against direct sunlight in outdoor usage is not guaranteed. Used to protect the display screen.
∗2 Use the expansion module clamp when using expansion modules. Order the module clamp by referring to the width of the module shown in the dimensions of each module.
∗3 See Catalog or instruction manual (http://www.idec.com/language/) for details on MicroSmart expansion modules.

Maintenance Parts

Name	Part No. (Ordering No.)	Package Quantity	Description	Applicable Model				
				HG4G	HG3G	HG2G -5F	HG2G -5TT	HG2G -5TN
Mounting Clip	SLD-K02PN10	10	Four clips are supplied.	—	—	√	√	√
	HG9Z-4K2PN04	4	Four clips are supplied.	√	√	—	—	—
Serial Interface Connector (Detachable 9-pin terminal block)	HG9Z-XT09V	1	One plug (terminal block type) is supplied.	—	—	√	√	√
	HG9Z-XT09	1	One plug (terminal block type) is supplied.	√	√	—	—	—
Replacement Battery	HG9Z-XR1	1	Lithium battery CR2032 (one battery is supplied)	√	√	√	√	√
USB Cable Lock Pin	HG9Z-XU1PN05	5	Used to lock USB cable (for USB2).	√	√	√	√	√

For more information, visit http://eu.idec.com

MICROSmart Expansion Modules

Input Modules

Input	Part No. (Ordering No.)	Connector	Dimensions (L × W × H mm)	Consumption Current (mA)	
				5V	24V
8 points/AC Input	FC4A-N08A11	Removable Terminal Block	90.0 × 23.5 × 70.0	25	0
8 points/DC Input	FC4A-N08B1		90.0 × 23.5 × 70.0	25	0
16 points/DC Input	FC4A-N16B1		90.0 × 23.5 × 70.0	40	0
16 points/DC Input	FC4A-N16B3	MIL Connector	90.0 × 17.6 × 70.0	35	0
32 points/DC Input	FC4A-N32B3		90.0 × 29.7 × 70.0	65	0

Output Modules

Output	Part No. (Ordering No.)	Connector	Dimensions (L × W × H mm)	Consumption Current (mA)	
				5V	24V
8 points/Relay Output	FC4A-R081	Removable Terminal Block	90.0 × 23.5 × 70.0	30	40
16 points/Relay Output	FC4A-R161		90.0 × 23.5 × 70.0	45	75
8 points/Transistor Sink Output	FC4A-T08K1		90.0 × 23.5 × 70.0	10	20
8 points/Transistor Source Output	FC4A-T08S1		90.0 × 23.5 × 70.0	10	20
16 points/Transistor Sink Output	FC4A-T16K3	MIL Connector	90.0 × 17.6 × 70.0	10	40
16 points/Transistor Source Output	FC4A-T16S3		90.0 × 17.6 × 70.0	10	40
32 points/Transistor Sink Output	FC4A-T32K3		90.0 × 29.7 × 70.0	20	70
32 points/Transistor Source Output	FC4A-T32S3		90.0 × 29.7 × 70.0	20	70

Combination I/O Modules

Input/Output	Part No. (Ordering No.)	Connector	Dimensions (L × W × H mm)	Consumption Current (mA)	
				5V	24V
4 points/DC Input 4 points/Relay Output	FC4A-M08BR1	Removable Terminal Block	90.0 × 23.5 × 70.0	25	20
16 points/DC Input 8 points/Relay Output	FC4A-M24BR2	Non-removable Terminal Block	90.0 × 39.1 × 70.0	65	45

- IDEC PLC MicroSmart expansion I/O modules can be used.
  <Maximum number of expansion I/O modules>
  - HG4G/3G: Up to 4 modules (Note)
  - HG2G-5F: Up to 2 modules
- Only one FC6A-M24BR1 module can connect to one main unit.
- Use the expansion module clamp when using expansion modules.
  Order the module clamp by referring to the width of the module shown in the dimensions of each module.
  Note: When connecting more than 3 expansion modules to the HG4G/3G, note the limits shown below:
  <Limits>
  Current flow rate at 5V: 130 mA max. Total width: 92.3 mm max.
  Current flow rate at 24V: 150 mA max.
- See catalog or instruction manual (http://www.idec.com/language/) for details on MicroSmart expansion modules.
- To use the FC6A expansion module, update the version of the WindO/I-NV4 to Ver. 1.4.0 or higher. (WindO/I-NV2 does not support FC6A)
- FC6A expansion module cannot be used with FC4A expansion modules.

Compatible PLCs

Manufacturer	Series
IDEC	MICROSmart
	SmartAXIS Pro/Lite
	MICROSmart (Ethernet)
	SmartAXIS Pro/Lite (Ethernet)
Mitsubishi	MELSEC-A (link unit)
	MELSEC-QnA (link unit)
	MELSEC-Q (link unit)
	MELSEC-Q (Ethernet)
	MELSEC-FX
	MELSEC-FX (Ethernet)
OMRON	SYSMAC-C
	SYSMAC-CS
	SYSMAC-CJ1
	SYSMAC-CJ2
	SYSMAC-CP1
	SYSMAC (Ethernet)
Allen-Bradley (Note)	PLC-5 (Half Duplex)
	SLC-500 (Half Duplex)
	MicroLogix (Full Duplex)
	ControlLogix (Full Duplex)
	CompactLogix (Full Duplex)
	FlexLogix (Full Duplex)
	ControlLogix (Ethernet/IP, Ethernet/IP (Logix Native Tag))
	CompactLogix (Ethernet/IP, Ethernet/IP (Logix Native Tag))
	PLC-5 (Ethernet/IP)
	SLC 500 (Ethernet/IP)
	MicroLogix (Ethernet/IP)
SIEMENS	S7-200
	S7-300 (connects to CPU)
	S7-300 (link unit)
	S7-400
	S7-1200 (Ethernet)
Keyence	KV-700/1000/3000/5000
	KV Nano
	KZ
	KV
	KV (Ethernet)
Hitachi	S10mini
	S10V
JTEKT	TOYOPUC-PC2J
	TOYOPUC-PC3J
Toshiba Machine Works	TC200
	TCmini
GE Fanuc Automation	Series90-30
	VersaMax
Schneider	Twido
Modicon	Modbus RTU Master (*1)
	Modbus RTU Slave (*2)
	Modbus ASCII Master (*1)
	Modbus TCP Client (*1)
	Modbus TCP Server (*2)
Panasonic	FP Series
Yaskawa Electric	MP
	MP (Ethernet)
Koyo	DirectLOGIC 05
	DirectLOGIC 06
	DirectLOGIC 205
	KOSTAC SZ
	KOSTAC SU
	KOSTAC SU (Ethernet)
Fanuc	Power Mate
	Series
Yokogawa Electric	FA-M3
	FA-M3 (Ethernet)
Fuji Electric	FREX-PC
	MICREX-F
	MICREX-SX
	MICREX-SX (Ethernet)
Toshiba	PROSEC T Series
	V Series
LS Industrial Systems	MASTER-K
VIGOR	VB
	VH
Emerson	FloBoss
Hitachi Industrial Equipment Systems	EH (Ethernet)

Note: HG2G-5TT and HG2G-5TN cannot communicate using Ethernet/IP (Logix Native Tag)

- The compatible PLC information is for reference only (except for IDEC PLCs), and IDEC does not guarantee the operation of any other manufacturers' PLC. When using other manufacturers' PLCs, read their specifications and instruction manual carefully. The PLC must be operated correctly under the user's responsibility.
- The company names and product names are registered trademarks or brand names.

*1 HG4G/3G/2G is connected as a master.
*2 HG4G/3G/2G is connected as a slave.

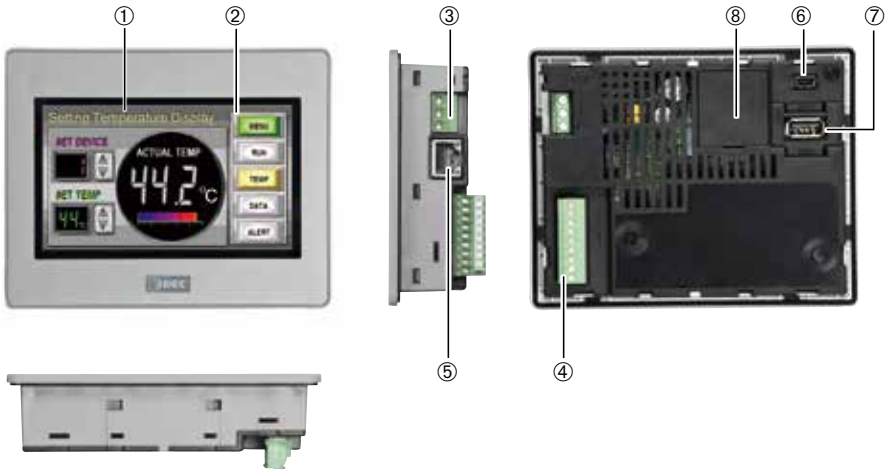
An updated listing of compatible PLCs can be found at the following website.
http://www.idec.com/oi/drivers

HG1G 4.3 inch Operator Interface

Maintenance time reduced by IoT monitoring.
Enhanced visibility and user-friendly.

Bright 800 cd/m² | TFT 65,536 Colors | LED 70,000 Hours | 32-level Brightness Adjustment | Graphics
Stroke Fonts | QVGA 480×272 | Serial Interface | Ethernet | USB mini-B
USB A | USB Flash Drive | User Memory 12MB | Front Panel Maintenance | Voltage 12/24V DC
Operating Temperature -20 to +55°C | Vertical OK

Bezel Color: Black, Silver



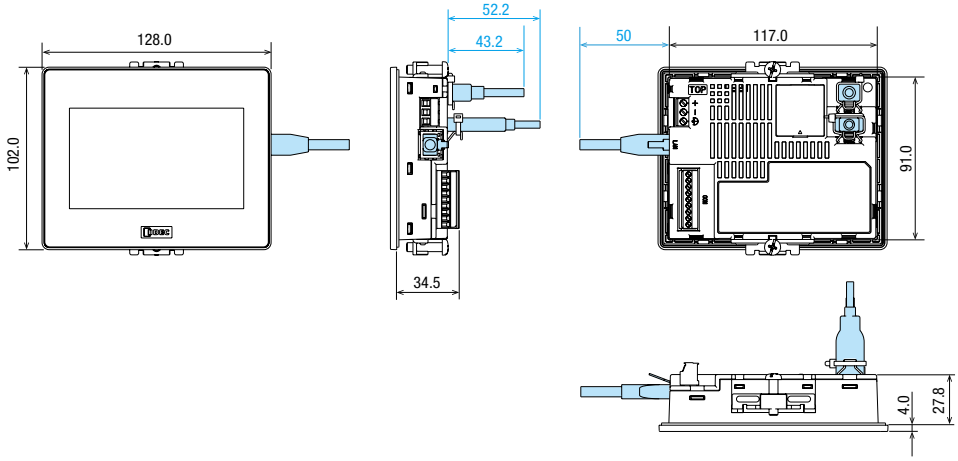
No.	Name
①	Display
②	Touchscreen
③	Power Supply Terminal
④	Serial Interface (COM)

No.	Name
⑤	Ethernet Interface (LAN)
⑥	USB Interface (USB1)
⑦	USB Interface (USB2)
⑧	Battery Cover

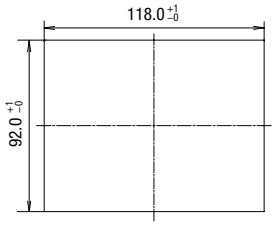
HG1G Operator Interface

Display Screen	Operation Style	Communication/ Memory Interface	Bezel Color	Part No. (Ordering No.)	Approvals
4.3-inch TFT color LCD 65,536 colors	Touch Switch (analog resistive)	COM LAN USB 1 USB 2	Black	HG1G-4VT22TF-B	UL508 CSA C22.2 No.142 CSA C22.2 No.213 ANSI/ISA-12·12.01
			Silver	HG1G-4VT22TF-S	

Dimensions



Panel Cut-out



Panel thickness: 1.0 to 5.0mm

All dimensions in mm.

- Dimensions in blue show the mounting dimensions of the cable.
  Dimensions in the figure vary depending on the type of cable connected.
- Install the HG1G into a panel cut-out by tightening the two mounting clips (supplied) to a torque of 0.2 to 0.3 N·m.
- Do not use excessive force to tighten, otherwise the HG1G may be distorted. Also waterproof characteristics may be lost.

General Specifications

Electrical Specifications	Rated Power Voltage	12/24 V DC
	Power Voltage Range	10.2 to 28.8V DC
	Power Consumption	8W maximum 4W maximum when not using USB interface (USB2)
	Allowable Momentary Power Interruption	10ms maximum (voltage 20.4 to 28.8V DC) 1ms maximum (voltage 10.2 to 20.4V DC)
	Inrush Current	40A maximum
	Dielectric Strength	1,000V AC, 10 mA, 1 minute between power and FG terminals
Environmental Specifications	Operating Temperature	–20 to +55°C (no freezing)
	Operating Humidity	10 to 90% RH (no condensation)
	Storage Temperature	–20 to +70°C (no freezing)
	Storage Humidity	10 to 90% RH (no condensation)
	Pollution Degree	2
	Vibration Resistance	5 to 8.4 Hz amplitude 3.5 mm, 8.4 to 150 Hz, acceleration 9.8 m/s^2 10 cycles (100 minutes) on each of three mutually perpendicular axes
	Shock Resistance	147 m/s^2, 11 ms 5 shocks on each of three mutually perpendicular axes
	Noise Immunity	Fast transient/burst test, Power terminals: ±2 kV, Communication line: ±1 kV (IEC/EN 61131-2, IEC/EN 61000-4-4)
	Electrostatic Discharge	Contact ±6 kV, air ±8 kV (IEC/EN 61131-2, IEC/EN 61000-4-2)
	Corrosion Immunity	Free from corrosive gases
Structure	Mounting	Panel mounting (panel thickness: 1.0 to 5.0 mm)
	Degree of Protection	IP66F/IP67F (IEC 60529, JIS C0920) (see JIS C 0920 Annex 1 for "F") (front part when mounted) *1 IP65F/IP67F when panel thickness is below 1.5mm TYPE 4X TYPE 13 *2
	Dimensions	128 W ×102 H × 31.8 D mm
	Weight (approx.)	300g

- Do not use the HG1G in an environment subject to strong ultraviolet rays, otherwise the LCD quality will deteriorate.

*1: Protection degree of the front surface after mounting. Operation not guaranteed.
*2: Operation not guaranteed under environments using certain types of oils.

Display Specifications

Display		TFT color LCD
Color/Shade		65,536
Effective Display Area		95.04 W × 53.836 H mm
Display Resolution		480 W × 272 H pixels
View Angle		Right and left 70°, up 60°, down 65°
Backlight		White LED
Backlight Life		70,000 hours *1
Brightness		800 cd/m^2 *2
Brightness Adjustment		32 levels
Backlight Replacement		N/A
Display Character Size	1/4 size	8 × 8 pixels (Western European language: ISO 8859-1, Central European language: ANSI 1250, Baltic: ANSI 1257, Cyrillic: ANSI1251, Japanese katakana and symbols: JIS 8-bit code)
	1/2 size	8 × 16 pixels (Western European language ISO 8859-1, Central European language: ANSI 1250, Baltic: ANSI 1257, Cyrillic: ANSI1251, Japanese katakana and symbols: JIS 8-bit code)
		16 × 32 pixels, 24 × 48 pixels, 32 × 64 pixels (Western European language: ISO 8859-1)
	Full size	16 × 16 pixels (Japanese JIS first and second level characters, simplified Chinese, traditional Chinese, Korean)
	Double size	32 × 32 pixels (Japanese JIS first level characters, Mincho font)
Quantity of Characters	1/4 size	60 characters × 34 lines
	1/2 size	60 characters × 17 lines
	Full size	60 characters × 17 lines
	Double size	15 characters × 8 lines (Mincho font)
Character Magnification		0.5, 1 to 8 vertically and horizontally (except for scalable fonts)
Character Attribute		Blink (1 or 0.5 sec period), reverse, bold, shadowed
Graphics		Straight line, polyline, rectangle, circle, ellipse, arc, pie, equilateral polygons (3, 4, 5, 6, 8), paint, bitmap image
Window Display		3 popup screens + 1 system screen

*1 The backlight life refers to the time until the brightness reduces by half. It is an expected value after use at 25°C and not guaranteed. Actual backlight life depends on the operating environment and conditions.
*2 Brightness of LCD when operating condition is 25°C.

Operation Specifications

Switching Element	Analog resistive membrane
Operating Force	3N maximum
Mechanical Life	1,000,000 operations
Acknowledgement Sound	Electronic buzzer

Function Specifications

Screen Types	Base screen, popup screen, system screen
No. of Screens	Base screen: 3,000 max. Popup screen: 3,015 max.
User Memory	12 MB (including expansion fonts)
Parts	Bit Button, Word Button, Goto Screen,Print Button Key Button, Multi 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,Print Command Screen Script Command, Multi Command,Timer
Calendar	Year, Month, Day, Hour, Min., Sec., Day of Week ±90 sec per month (at +25°C)
Power Failure Backup Data	Calendar, log data, keep internal relay, keep internal register
Battery	Recommended replacement time: every 5 years (at +25°C)

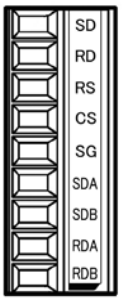
Interface Specifications

Serial Interface 1 (COM1) *1	RS232C	Electrical Characteristics	EIA RS232C compliant
		Transmission Speed	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 187500 bps *2
		Synchronization	Asynchronous
		Communication Method	Half or full duplex
		Control System	Hardware control or none
	RS422/485	Electrical Characteristics	EIA RS422/485 compliant
		Transmission Speed	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200, 187500 bps *2
		Synchronization	Asynchronous
		Communication Method	Half or full duplex
		Control System	None
	Connector		Detachable 9-pin terminal block
Ethernet Interface (LAN)		Interface	IEEE802.3u (10BASE-T/100BASE-TX) compliant
		Connector	Modular connector (RJ45)
USB Interface (USB1)		Interface	USB 2.0 high speed (480 Mbps)
		Connector	USB Type Mini-B connector
USB Interface (USB2)		Interface	USB 2.0 Full speed (12 Mbps)
		Connector	USB Type Mini-A connector

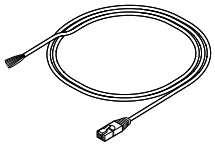
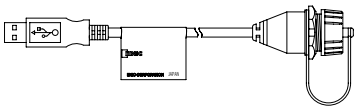
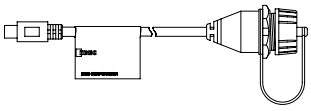
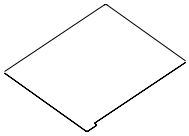
*1: RS232C and RS 422/485 can be used simultaneously.
*2: 187,500 bps is available only with SIEMENS SIMATIC S7-300/400 series (MPI port direct connection).

Serial Interface Terminal Arrangement

Name	I/O	Function	Communication Type
SD	OUT	Send Data	RS232C
RD	IN	Receive Data	
RS	OUT	Request to Send	
CS	IN	Clear to Send	
SG	—	Signal Ground	RS232C, RS422/485
SDA	OUT	Send Data (+)	RS422/485
SDB	OUT	Send Data (–)	
RDA	IN	Receive Data (+)	
RDB	IN	Receive Data (–)	

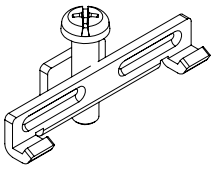
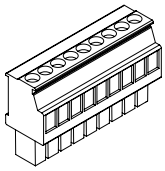
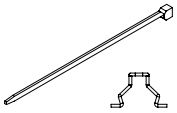


Options

Name	Part No. (Ordering No.)	Package Quantity	Description	
Application Software	SW1A-W1C	1	Automation Organizer (includes WindO/I-NV4)	
USB Maintenance Cable	HG9Z-XCM42	1	2m	USB Cable USB-miniB
PLC Connection Cable *1 	HG9Z-KC1C	1	5m	For IDEC MicroSmart (FC6A) RJ45 connector (loose wire)
	HG9Z-XC275	1	5m	For IDEC MicroSmart (FC5A, FC4A) For SmartAXIS (Pro/Lite) Mini DIN 8-pin (loose wire)
	FC2A-KP1C	1	2.4m	
USB Panel-mount Extension Cable — For USB-A port 	HG9Z-XCE11	1	1m	For USB-A port
USB Panel-mount Extension Cable — For USB-mini B port 	HG9Z-XCE21	1	1m	For USB-mini B port
Protective Sheet *2  (Size: 121.6 × 95.6mm, thickness: 0.188mm)	HG9Z-1D4PN05	5	For 4.3 inch (5 pcs/pack) (used to protect the LCD)	
User's Manual	HG9Y-B1701	1	English	

*1: For the applicable connection cable to connect with the PLC of other than IDEC, refer to WindO/I -NV4 External Device Setup Manual included in the system configuration software Automation Organizer. The manual is also available on IDEC's website.
*2: The protective sheet is UV resistant, however, resistance against direct sunlight in outdoor usage is not guaranteed. Used to protect the display screen.

Maintenance Parts

Name	Part No. (Ordering No.)	Package Quantity	Description
Mounting Clip 	HG9Z-4K2PN04	4	Two clips are supplied with HG1G.
Serial Interface Connector (detachable 9-pin terminal block) 	HG9Z-XT09V	1	One plug (terminal block type) is supplied.
Replacement Battery	HG9Z-XR1	1	Lithium battery CR2032 (one battery is supplied)
USB Cable Lock Pin 	HG9Z-XU1PN05	5	Used to lock USB cable (for USB1, USB2). Two pins are supplied with HG1G.

Compatible PLCs

Manufacturer	Series
IDEC	MICROSmart
	SmartAXIS Pro/Lite
	MICROSmart (Ethernet)
	SmartAXIS Pro/Lite (Ethernet)
Mitsubishi	MELSEC-A (link unit)
	MELSEC-QnA (link unit)
	MELSEC-Q (link unit)
	MELSEC-Q (Ethernet)
	MELSEC-FX
	MELSEC-FX (Ethernet)
OMRON	SYSMAC-C
	SYSMAC-CS
	SYSMAC-CJ1
	SYSMAC-CJ2
	SYSMAC-CP1
	SYSMAC (Ethernet)
Allen-Bradley	PLC-5 (Half Duplex)
	SLC-500 (Half Duplex)
	MicroLogix (Full Duplex)
	ControlLogix (Full Duplex)
	CompactLogix (Full Duplex)
	FlexLogix (Full Duplex)
	ControlLogix (Ethernet/IP, Ethernet/IP [Logix Native Tag])
	CompactLogix (Ethernet/IP, Ethernet/IP [Logix Native Tag])
	PLC-5 (Ethernet/IP)
	SLC 500 (Ethernet/IP)
	MicroLogix (Ethernet/IP)
SIEMENS	S7-200
	S7-300 (connects to CPU)
	S7-300 (link unit)
	S7-400
	S7-1200 (Ethernet)
Keyence	KV-700/1000/3000/5000
	KV Nano
	KZ
	KV
	KV (Ethernet)
Hitachi	S10mini
	S10V
JTEKT	TOYOPUC-PC2J
	TOYOPUC-PC3J
Toshiba Machine Works	TC200
	TCmini
GE Fanuc Automation	Series90-30
	VersaMax

Manufacturer	Series
Schneider Electric	Twido
Modicon	Modbus RTU Master *1
	Modbus RTU Slave *2
	Modbus ASCII Master *1
	Modbus TCP Client *1
	Modbus TCP Server *2
Panasonic	FP Series
Yaskawa Electric	MP
	MP (Ethernet)
Koyo	DirectLOGIC 05
	DirectLOGIC 06
	DirectLOGIC 205
	KOSTAC SZ
	KOSTAC SU
	KOSTAC SU (Ethernet)
Fanuc	Power Mate
	Series
Yokogawa Electric	FA-M3
	FA-M3 (Ethernet)
Fuji Electric	FREX-PC
	MICREX-F
	MICREX-SX
	MICREX-SX (Ethernet)
Toshiba	PROSEC T Series
	V Series
LS Industrial Systems	MASTER-K
VIGOR	VB
	VH
Emerson	FloBoss
Equipment Systems	EH (Ethernet)

- The compatible PLC information is for reference only (except for IDEC PLCs), and IDEC does not guarantee the operation of any other manufacturers' PLC. When using other manufacturers' PLCs, read their specifications and instruction manual carefully. The PLC must be operated correctly under the user's responsibility.
- The company names and product names are registered trademarks or brand names.

*1: Can be connected to slave devices from HG1G.
*2: Can connect to HG1G from a master device.

An updated listing of compatible PLCs can be found at the following website.
http://www.idec.com/oi/drivers

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