



*Think Automation and beyond...*



***IDEC HG1G 4.3" Touchscreen***  
*Bright displays. Enhanced functions.*

# Bright Display, Long Lifespan, Enhanced Functions!

## All the capabilities of a larger screen!

With a 4.3" LCD screen size first popularized by gamers, the new HG1G TFT color LCD display delivers technologically-advanced features including the industry's leading brightness and a best-in-class LED backlight lifespan all at an amazing value. With remote monitoring and control, an FTP function and support for multiple communications, HG1G is flexible and small enough to fit a tight space, and priced to fit a tight budget!

## At 800cd/m<sup>2</sup> the HG1G is the brightest on the market

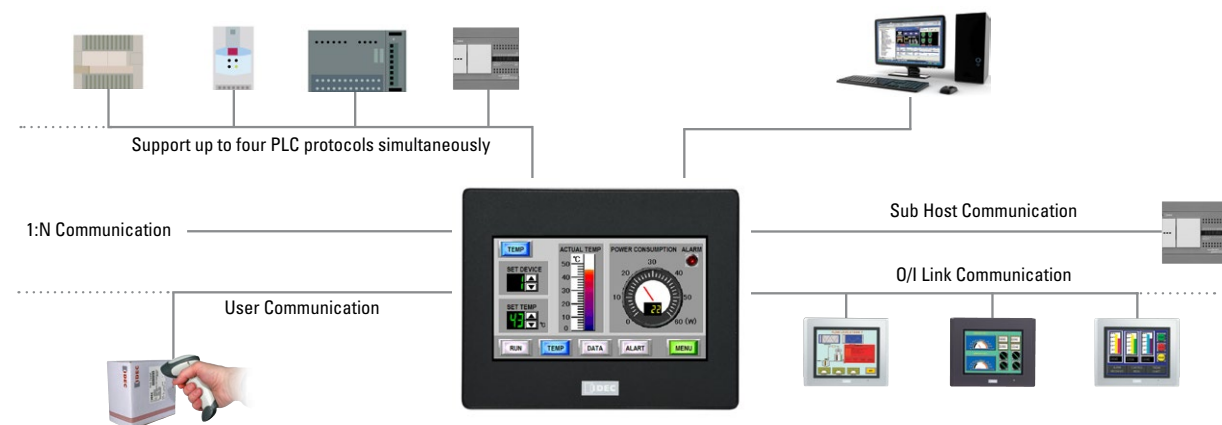


A 65,536-color TFT LCD display offers a high resolution of 480 x 272 pixels, providing realistic image quality. When it comes to pixel resolution, more is better!  
A super-bright LCD display provides a brightness of 800cd/m<sup>2</sup>.

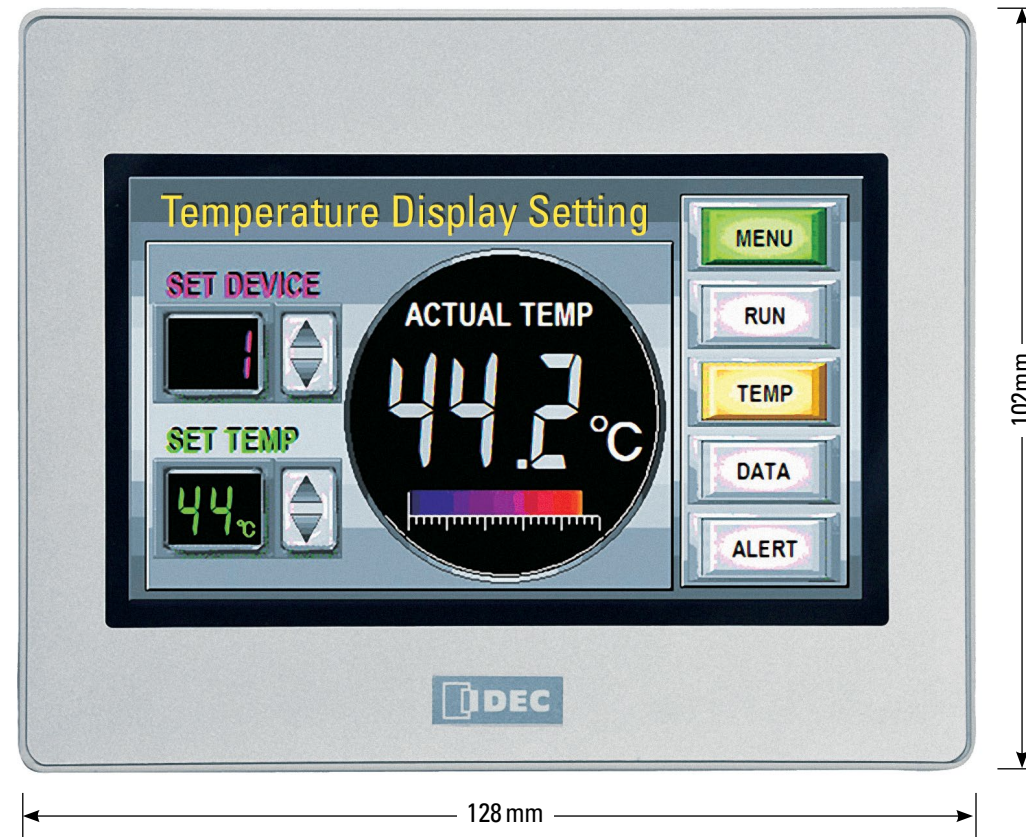
Readable even in direct sunlight, HG1G ensures excellent visibility whether your application is located indoors or outdoors.

## Flexible connectivity (multiple protocols)

Designed to meet all your communication requirements, the compact 4.3" HG1G series supports multiple protocols—up to four PLC protocols simultaneously. Using one HMI to communicate with different brands (or manufacturers) of PLCs in a system saves time and money. The HG1G acts as a communication gateway between multiple devices allowing data to easily pass between devices. IDEC supports over 100 Serial and Networking drivers, including Modbus RTU Master/Slave and Modbus TCP/IP.



Actual Size



HG1F



HG1G

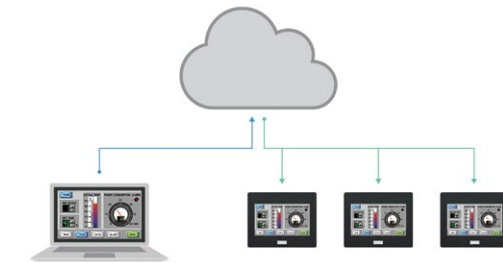
## Remote access monitoring and control

With this function, you can remotely control and monitor your IDEC HG1G anytime, anywhere using a PC, PDA or smartphone. No additional software tools or modules are needed to use the Remote Monitor and Control function.



## FTP communication

Support for industry-standard FTP communications allows users to transfer projects, data log, picture, sound and movie files between the HG1G HMI and a PC without having to load the IDEC software on the PC. This greatly simplifies HMI and PLC program updates as it's no longer necessary to have the IDEC software installed on multiple PCs throughout a facility or a company.



## Long LED backlight life

An LED backlight life of over 70,000 hours provides many years of operation, extended by the fact the backlight can be automatically switched off when the HMI is not in use.

## Easy data transfer

Project files can be transferred between a USB memory stick and the HMI. It is a quick and convenient way for an OEM to program multiple units and for users to quickly update both ladder and HMI programs. Data Logging, Alarm Log, Recipe and Screen Capture data can be stored in the USB flash drive as well.



# Application and Programming



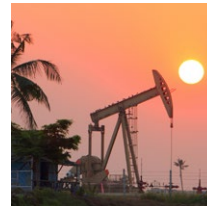
Harsh wet environments

## Excellent Environmental Resistance

The HG1G 4.3" screen is built with outstanding environmental tolerance and a wide range of operating temperatures from -20 to 55 degrees C. This HMI also comes with new approval ratings, including the addition of UL 508, IP66F/IP67F ratings, Type 4X and Type 13 approvals (on the front panel) to allow for installation outdoors or indoors in wash-down areas. This makes HG1G unit suitable for installation in Class 1, Division 2 hazardous locations and for applications in harsher environmental conditions (see images).



Waste water treatment plants



Oil and Gas



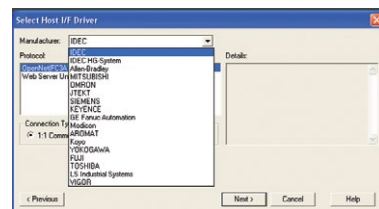
Packaging and bottling plants

## Software

It's as easy as 1, 2, 3!

### 1 Create

Creating a project is simple! Just name a project file and select your parameters (OI Type and model, protocol type, and optional settings).

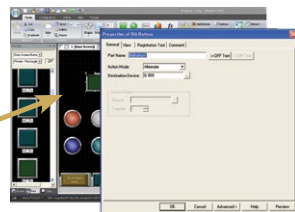


### 2 Configure

Select a functional part and assign a device address. The other tabs allow you to change image, color, or add more parameters.

Drag and Drop Screen Design

Easy step-by-step configuration



### 3 Download

Once your project is ready to be downloaded to the touchscreen, select "Online" and then "Download." You can now debug or monitor your program as needed. It's as simple as that!



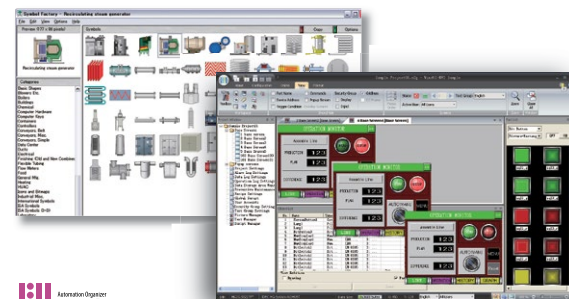
## Easy-to-use programming software

Automation Organizer (AO), the IDEC software suite combining the latest versions of our PLC programming software (WindLDR) and HMI programming software (WindO/I-NV2), (WindO/O-NV3) and (WindO/I-NV4) with system configuration software (WindCFG), enables users to see the layout of the system design and basic configuration of devices. AO software gives users a powerful and easy-to-use tool to design, debug and document control systems, saving valuable time and money.

WindO/I-NV4 is the only software needed to program IDEC HMIs. Users can easily display alarm screens, trend and bar graphs, scrolling texts and meters. With a built-in symbol library containing thousands of industry-standard bitmap images, creating a professional interface is just a click away.

## Extensive Image Library

A built-in symbol library provides over 7,000 bitmaps to help you create cutting-edge graphical screens. Image data from BMP and JPG files can also be imported.



WindO/I-NV4

WindO/I-NV4 is included in IDEC's software package "Automation Organizer"

## 4.3-inch Operator Interface HG1G Series



### OPERATOR INTERFACE PART NUMBERS

Display screen	Operation Style	Communication	Bezel color	Part Number
4.3-inch TFT color LCD 65,536 colors	Touchscreen (analog resistive)	COM LAN USB 1 USB 2	Black	HG1G-4VT22TF-B
			Silver	HG1G-4VT22TF-S

### SPECIFICATIONS

#### General Specifications

Category	Parameter	Value
Electrical Specifications	Rated Power Voltage	12-24V 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
Environmental Specifications	Dielectric Strength	1,000V AC, 10mA, 1 minute between power and FG terminals
	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 8.4Hz amplitude 3.5 mm, 8.4 to 150Hz, acceleration 9.8m/s <sup>2</sup> 10 cycles (100 minutes) on each of three mutually perpendicular axes
	Shock Resistance	147m/s <sup>2</sup> , 11ms 5 shocks on each of three mutually perpendicular axes
	Noise Immunity	Fast transient/burst test, Power terminals: ±2kV, Communication line: ±1kV (IEC/EN 61131-2, IEC/EN 61000-4-4)
	Electrostatic Discharge	Contact ±6kV, air ±8kV (IEC/EN 61131-2, IEC/EN 61000-4-2)
Structure	Corrosion Immunity	Free from corrosive gases
	Mounting	Panel mounting (panel thickness: 1.0 to 5.0mm) IP66F/IP67F (IEC 60529, JIS C0920) (see JIS C 0920 Annex 1 for "F") (front part when mounted)
	Degree of Protection	*1 IP65F/IP67F when panel thickness is below 1.5mm TYPE 4X TYPE 13 *2, Class I Div 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.

### PRODUCT DESCRIPTION

The super-bright, compact 4.3-inch HG1G has most of the features and functionalities found in a larger screen, including monitoring and control via PC, tablet or smartphone. It supports multiple protocols simultaneously, FTP Server function and best-in-class LED backlight life of 70,000 hours. HG1G can be mounted in portrait or landscape to fit your needs. It also supports a wide range of operating temperatures from -20 to 55 degrees C, and is rated IP66F/IP67, Type 4X & Type 13, and Class 1 Div 2. It's flexible and small enough to fit in a tight space, and priced to fit a tight budget.

### KEY FEATURES

- Supports up to four protocols simultaneously
- Remote monitor and control
- FTP Server Function
- Operating temperatures: -20°C to 55°C
- 65,536 colors with 800cd/m<sup>2</sup>
- 480 x 272 Pixel Resolution
- LED backlight lifespan: >70,000 hours
- Portrait and landscape mounting
- Rated power voltage: 12-24V DC
- Two Serial ports, 2 USB ports and an Ethernet port
- IP66F/IP67F, Type 4X, Type 13, Class 1 Div 2

# Compact HG1G Specifications

## 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	800cd/m <sup>2</sup> *2
Brightness Adjustment	32 levels
Backlight Replacement	N/A

\*1 Backlight life refers to 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	12MB (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)

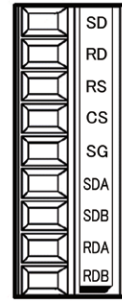
## Interface Specifications

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

\*1: RS232C and RS 422/485 can be used simultaneously. \*2: 187,500bps 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	RS232C, RS422/485
SG	—	Signal Ground	
SDA	OUT	Send Data (+)	
SDB	OUT	Send Data (-)	RS422/485
RDA	IN	Receive Data (+)	
RDB	IN	Receive Data (-)	



## ACCESSORIES

### Software and Cable Part Numbers

Name	Part No. (Ordering No.)	Package Quantity	Description
Application Software	SW1A-W1C	1	Automation Organizer Software Suite (includes WindO/I-INV4)
USB Maintenance Cable	HG9Z-XCM2A	1	2m USB Programming Cable USB-miniB
PLC Connection Cable *1	FC6A-KC1C	1	Communication cable between IDEC HMIs and FC6A (RS232/RS485)

\*1: For the applicable connection cable to connect with the PLC of other than IDEC, refer to WindO/I-INV4 External Device Setup Manual included in the system configuration software Automation Organizer. The manual is also available on IDEC's website.

### Maintenance Part Numbers

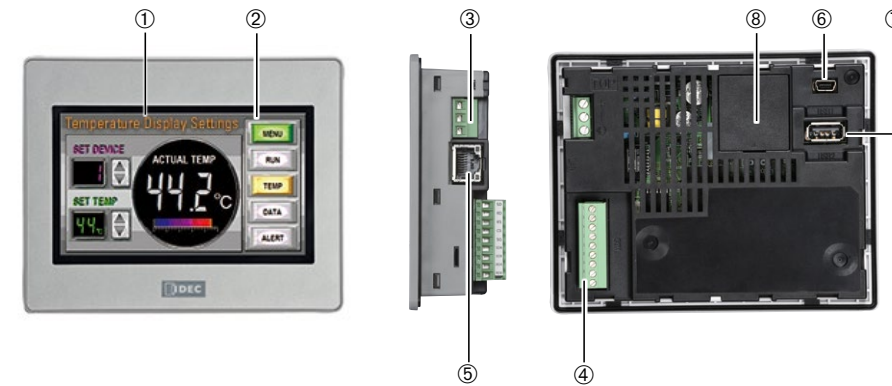
Name	Part No. (Ordering No.)	Package Quantity	Description
Mounting Clip	HG9Z-4K2PN04	4	Two clips are supplied with HG1G.
Serial Interface Connector (detachable 9-pin terminal block)	HG9Z-XT09V	1	One plug (terminal block type) is supplied.
Replacement Battery	HG9Z-XR1	1	Lithium battery CR2032 (one battery is supplied)
USB Cable Lock Pin	HG9Z-XU1PN05	5	Used to lock USB cable (for USB1, USB2). Two pins are supplied with HG1G.
Protective Sheet *2	HG9Z-1D4PN05	5	For 4.3 inch (5 pcs/pack) (used to protect the LCD)

\*2: The protective sheet is UV resistant, however, resistance against direct sunlight in outdoor usage is not guaranteed. Used to protect the display screen.

## STARTER KITS

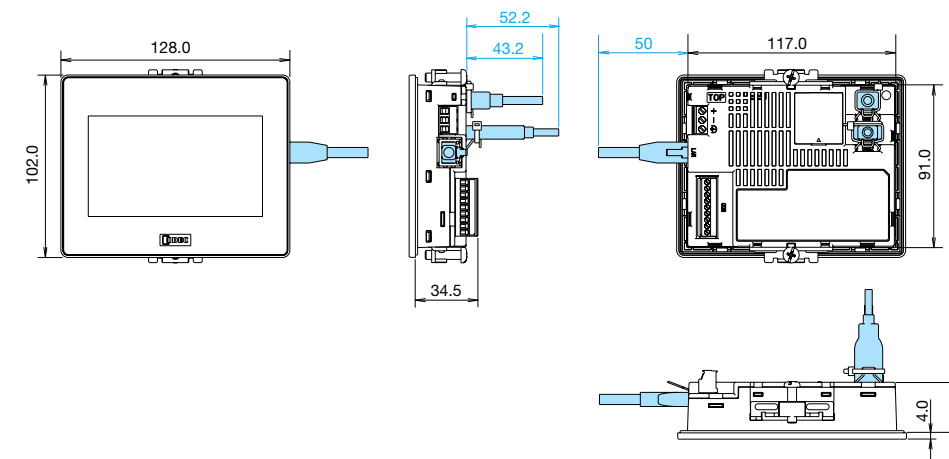
Part Numbers	Description
SMARTTOUCH-1G-B	HMI Kit - HG1G TFT 65K COLOR BLK Bezel, Power Supply, Software, and Programming Cable
KIT-FC6A-16-RA-HG1G	PLC/HMI Kit - FC6A 16IO 100-240V AC Relay Output, and HG1G TFT LCD Black bezel, Power Supply, Software and cables
KIT-FC6A-16-RC-HG1G	PLC/HMI Kit - FC6A 16IO 24V DC Relay Output, and HG1G TFT LCD black bezel, Power Supply, Software and cables
KIT-FC6A-24-RA-HG1G	PLC/HMI Kit - FC6A 24IO 100-240V AC Relay Output, and HG1G TFT LCD black bezel, Power Supply, Software and cables
KIT-FC6A-24-RC-HG1G	PLC/HMI Kit - FC6A 24IO 24V DC Relay Output, and HG1G TFT LCD black bezel, Power Supply, Software and cables

## HARDWARE

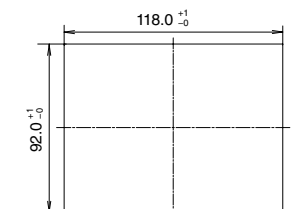


No.	Name	No.	Name
①	Display	⑤	Ethernet Interface (LAN)
②	Touchscreen	⑥	USB Interface (USB1)
③	Power Supply Terminal	⑦	USB Interface (USB2)
④	Serial Interface (COM)	⑧	Battery Cover

## DIMENSIONS



### Panel Cut-out



All dimensions in mm.  
Panel thickness: 1.0 to 5.0mm

- 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.

## 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 (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
	Modbus RTU Master
Modicon	Modbus RTU Slave
	Modbus ASCII Master
	Modbus TCP Client
	Modbus TCP Server
Panasonic	FP Series
Yaskawa Electric	MP
	MP (Ethernet)
Koyo	DirectLOGIC 05
	DirectLOGIC 06
	DirectLOGIC 205
	KOSTAC SZ
	KOSTAC SU (Ethernet)
Fanuc	Power Mate Series
	FA-M3
Yokogawa Electric	FA-M3 (Ethernet)
	FREX-PC
Fuji Electric	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)

