

Programmable Operator Interface

MONITOUCH

Consolidating Essential Functionality
while Enhancing Operability and Visibility



TECHNOSHOT

TS1000 Smart Series

TECHNOSHOT TS1000 Smart Series

- Supports remote operation via VNC server
- Complies with several global standards (CE/KC/UL/cUL)
- Expands FROM capacity 220%*(26 MB) *Compared to TS1000 series



Specifications

 						
Item		TS1070S	TS1070Si	TS1100Si		
	Scre	en size	7.0" wide	escreen	10.2" widescreen	
	Displa	y device	TFT color			
	Res	olution	800 × 480 dots			
Main unit	C	olors	65,536 colors			
	Backlight		LED			
	Touch	n screen	Analog resistive			
	Certifications		CE/KC/UL/cUL			
User memory	FROM		26MB			
	SI	RAM	128KB			
	COM1 D-Sub9 pin (female)		RS-422/RS-485 (4-wire/2-wire) Data length: 7, 8 bits Parity: Even, odd, none Stop bits: 1, 2 dots Baud rate: 4,800, 9,600, 19,200, 38,400. 57,600, 76,800, 115,200, 187,500*1bps			
External interface	COM2/COM3 D-Sub9 pin (male)		COM2: RS-232C COM3: RS-422/RS-485 (2-wire) Data length: 7, 8 bits Parity: Even, odd, none Stop bits: 1, 2 bits Baud rate: 4,800. 9,600, 19,200, 38,400. 57,600, 76,800, 115,200 bps			
	Ethernet		- 1 ch			
	USB-A		1 ch			
	USB mini-B		1 ch			
Power supply	Permissible r	ange of voltage	DC24V±10%			
Fower supply	Power consumption (max. rating)		11 W or less 12 W or less			
	Ambient temperature		0 to 50°C*2			
	Ambient humidity		85% RH or less (without dew condensation)*2			
	Contamination level		2			
Physical environment	Operation altitude		2,000 m or less			
	Atmosphere		No exposure to corrosive gas or conductive dust			
	Ambient storage temperature		-10 to 60°C*2			
	Ambient storage humidity		85% RH or less (without dew condensation)*2			
Installation conditions	Protective	Panel front	IP65 equivalent (when using waterproof gasket*3)/IP40 equivalent (when not using a waterproof gasket*3)			
	structure Rear case		IP20 equivalent			
	Dimensions W×H×D		198.8 × 141.	3 × 38.0 mm	266.8 × 206.8 × 38.0 mm	
	Panel cutout		189.0 × 134.0	(+0.5/-0) mm	257.0 × 199.0 (+0.5/-0) mm	
Case color			Black			

^{*1 187,500} bps is only for Siemens MPI/PPI communications. *2 Use at a wet-bulb temperature of 39°C or less because higher temperatures may cause failure. *3 This is an optional accessory.

Lineup of Usability Enhancing Features

01 8-Way Communication

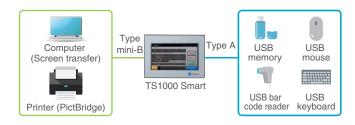
Connect up to eight types of PLC or other devices of various models from multiple manufactures at the same time via both an Ethernet and serial connection.



^{*} With TS1070S, up to 3 models can be connected.

02 Expanded Connectivity

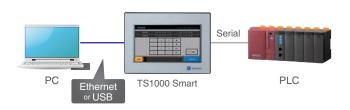
USB port (USB Ver. 2.0 compatible)
 USB port is built-in standard. Use the Type A and Type mini-B to connect to a wide range of devices.



Ladder transfer

Monitor, read and write in the ladder program by computer via TS1000 Smart.

Choose from either Ethernet or USB to connect between the computer and TS1000 Smart.



Monitor, read and write in the ladder program

03 Trend Sampling

TS1000 Smart series chronologically records a broad-range of data that changes over time to display as trend graphs.

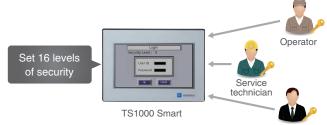
Enlarged Display Support

Enlarge the display for a particular area of the screen to verify changing waveforms of trend graphs in even more detail.



04 Security Features

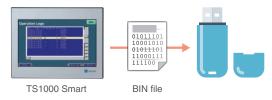
Restrict functions according to the user to configure a high-level security environment.



Administrator

05 Operation Log

Record chronological on-screen input, from switch operations to numerical inputs. Combine the operation log with security features and review attribution information to assist in identifying the cause of errors as well as aid in other diagnostics.



Save history logs as binary files to eliminate any concerns about data manipulation.

06 Multilanguage

Easily toggle between up to 16 on-screen languages from a single screen to eliminate the need to sort and manage files for each language.



TS1000 Smar

Compatible fonts:

Japanese, English/Western Europe, Chinese (Traditional), Chinese (Simplified), Korean, central European alphabets, Cyrillic alphabets, Greek, Turkish, and Baltic alphabets

01 VNC Server

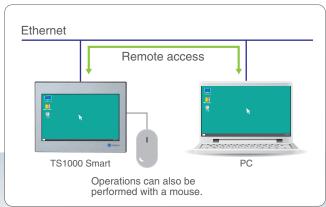
Easily setup the VNC viewer tool on a computer to monitor and operate TS1000 Smart screens on the factory floor via the same computer over Ethernet connection. In addition, monitoring and operations can be easily conducted from a tablet device over wireless router.



A Wealth of Network Featu

02 Remote Desktop*

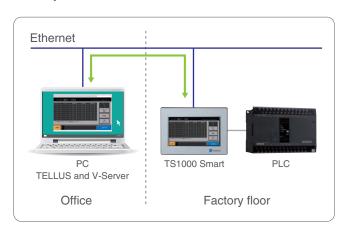
Connect via Ethernet to display and operate the server directly using TS1000 Smart.



^{*}A license for V-RemoteDT (usage license) is required.

03 Remote Maintenance

Use the TELLUS application software to easily monitor and operate TS1000 Smart screen and PLC information remotely at low cost.





Application software to connect offices and factory floors at minimal cost

TELLUS and V-Server

The VNC server feature is a remote monitoring and management system able to collect real-time information about factory floors, including data aggregation and data management, via the Internet whether at the office or from overseas.



Catalog No. 9022NE2

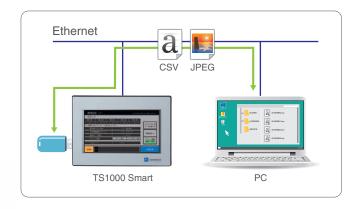
res to Connect via Ethernet

*None of the features on this page are included with TS1070S.

TS1100Si

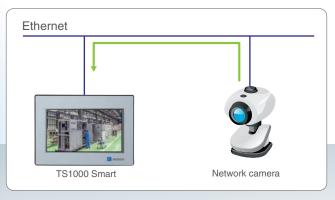
04 FTP Server

Use FTP client tools on a computer to read and write to USB memory mounted on TS1000 Smart.



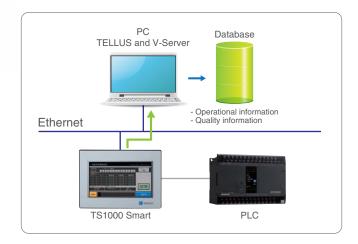
05 Network Camera

Display video from a network camera connected via Ethernet with TS1000 Smart. TS1000 Smart can also monitor factory floors.



06 MES (Manufacturing Execution System)

Collect broad information to store in the server database from production performance to defects and the causes of stoppages with TS1000 Smart through the V-Server.



Achieve Sleeker Screens with Easy-to-Understand Operations



Computer	PC/AT compatible computer running Windows		
Operating system*	Windows XP/XP 64Edition/Windows Vista (32bit, 64bit)/Windows 7 (32bit, 64bit)/Windows 8 (32bit, 64bit)/Windows 8.1 (32bit, 64bit)/Windows 10 (32bit, 64bit)		
CPU	Pentium 4 2.0 GHz or higher is recommended		
Memory	2.0 GB or higher		
Hard disc	When installed: 2.0 GB or higher		
Disc device	DVD-ROM drive		
Display	1,024 × 768 (XGA) resolution or higher		
Display colors	High color (16 bits) or higher		
Other	Microsoft .NET Framework 4.0 or 4.5 (Microsoft .NET Framework 4.0 is installed automatically on computers that do not have either Microsoft .NET Framework 4.0 or 4.5 installed.)		

^{*}Administrator privileges are required for installation.

01 Sophisticated Line-up of Icons

V-SFT Ver. 6 offers a combination of real sign and plain icons that allow users to easily create more sophisticated screens than ever before.



Plain Icons

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



Real Icons

V-SFT expands conventional real icons even further.



02 Expands Interlock Settings

Set the interlock via the ladder diagram display. The condition settings are easy to understand and convenient even when setting multiple conditions.



03 Supports Configuration with Tool Hints

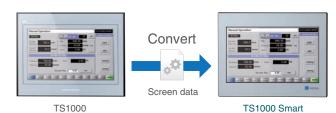
Comprehensive tool hints throughout the software support the programming of applications.

Easily configure settings without a manual by simply moving the mouse close to a setting to automatically display a supplementary description.



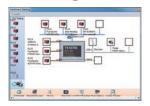
04 Supports Conversion from TS1000 Series

Screen data from previous models created in older versions of V-SFT can be converted in its present form to data for the current model. This allows users to leverage their screen data assets from previous models.



05 Intuitively Capture the Connection Device Configuration

The visual representation of the hardware settings make clear which devices are connected to TS1000 Smart.



Motion System Driving the Best Performance Together with TS1000 Smart Series

Programmable Controller MICREX-SX Series

Achieves excellent cost performance Flexibly supports machine based systems

- ◆ High-speed, high-functioning computing performance
- ◆ Variety of options for flexible applications
- ◆ 200kHz, compatible with up to 4-axis servo systems



Catalog No. 22B1-E-0019



MICREX-SX SPF Plus provides advanced motion control, such as synchronous and circular interpolation controls.



Servo System with Enhanced Ease-of-Use

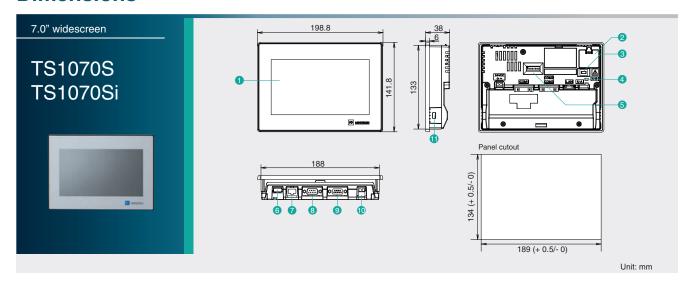
- High-speed, high precision positioning
- Frequency response 1500Hz
- Max motor speed 6000r/min
- High resolation encoder 18bit ABS/INC 262.144 pulse 20bit INC 1,048,576 pulse
- Higher cost performance with original main feature
- New servo operator offers improved usability

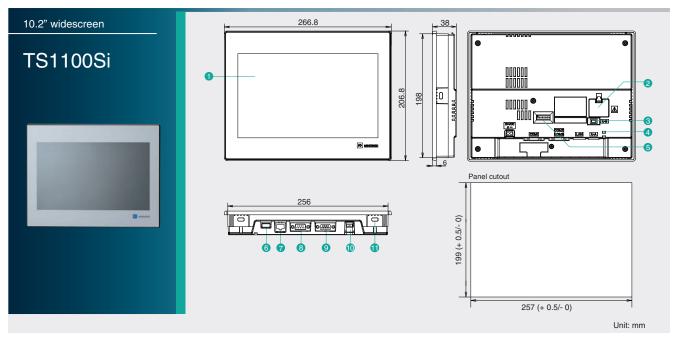


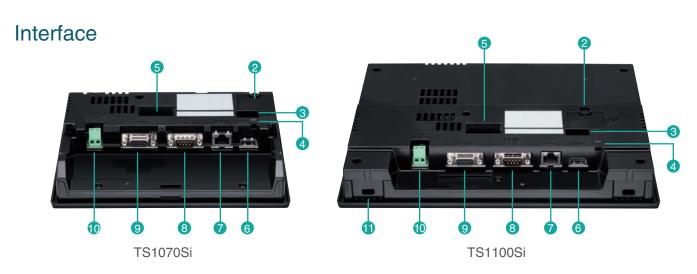




Dimensions

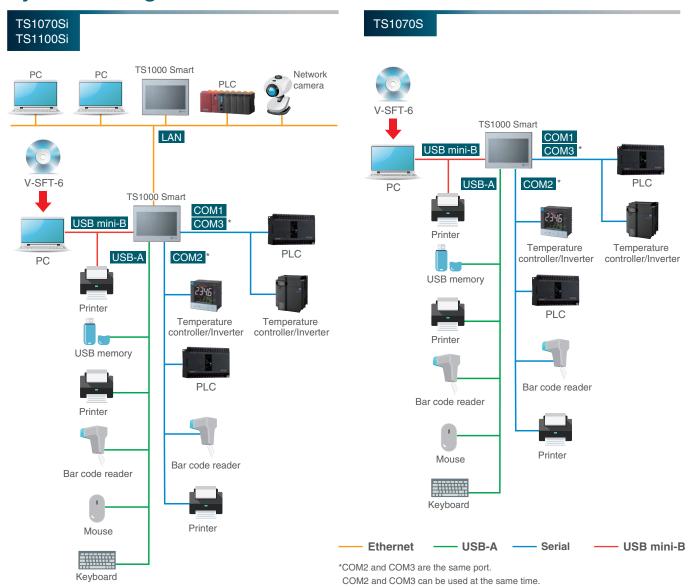






- 1 Display
- 2 Battery compartment
- 3 USB mini-B (U-B)
- 4 USB cable retention
- 5 DIP switch
- 6 USB-A (U-A)
- 100BASE-TX/10BASE-T connector (LAN) *Only TS1070Si/TS1100Si
- 8 RS-232C/RS-422/RS-485 connector (COM2/COM3)
- 9 RS-422/RS-485 connector (COM1)
- n Power input terminal block
- 1 Mounting point

System Configuration



Optional Accessories

Terminal Converter TC-D9

Use the terminal converter if the communication device is connected with TS1000 Smart series via the RS-422/485 block. (COM1)



Cable for USB-A Port UA-FR

The cable is used when connecting the USB-A (sleeve) port via the board. (Cable length: 1 m)



Waterproof Gasket TS1070S-WP/TS1100S-WP

Use the waterproof gasket if an IP65 protective structure is necessary.

This gasket can be used regardless of the Ethernet connection.



Connection Device List (PLC)

	Models MICREX-F series
	MICREX-F series V4-compatible
Euii Electric	SPB (N mode) & FLEX-PC series SPB (N mode) & FLEX-PC CPU
Fuji Electric	MICREX-SX SPH/SPB/SPM/SPE/SPF series
	MICREX-SX SPH/SPB/SPM/SPE/SPF CPU
	MICREX-SX (Ethernet) PLC-5
	PLC-5 (Ethernet)
	SLC500 SLC500 (Ethernet TCP/IP)
	NET-ENI (SLC500 Ethernet TCP/IP)
Allen-Bradley	NET-ENI (MicroLogix Ethernet TCP/IP)
Auth Diadicy	MicroLogix MicroLogix (Ethernet TCP/IP)
	ControlLogix / CompactLogix
	ControlLogix (Ethernet)
	Micro800 Controllers Micro800 Controllers (Ethernet TCP/IP)
	Direct LOGIC (K-Sequence)
Automationdirect	Direct LOGIC (Ethernet UDP/IP) Direct LOGIC (MODBUS RTU)
Azbil	MX series
Baumuller	BMx-x-PLC
BECKHOFF	ADS protocol (Ethernet) BP series
CIMON	CP series
CIMON	S series
	S series (Ethernet) DVP series
DELTA	DVP series (MODBUS ASCII)
EATON Cuttor Hammer	DVP series (MODBUS TCP/IP)
EATON Cutler-Hammer EMERSON	ELC EC10/20/20H (MODBUS RTU)
FANUC	Power Mate
Fatek Automation	FACON FB series
FUFENG	FEC APC series Controller
	90 series
CE Fanue	90 series (SNP-X)
GE Fanuc	90 series (SNP) 90 series (Ethernet TCP/IP)
	RX3i (Ethernet TCP/IP)
	HIDIC-S10/2a,S10mini
Hitachi	HIDIC-S10/2a,S10mini (Ethernet) HIDIC-S10/4a
· macin	HIDIC-S10V
	HIDIC-S10V (Ethernet)
Hitachi Industrial	HIDIC-H HIDIC-H (Ethernet)
Equipment Systems	HIDIC-EHV
	HIDIC-EHV (Ethernet)
HYUNDAI	Hi5 Robot (MODBUS RTU) Hi4 Robot (MODBUS RTU)
	MICRO 3
IDEC	MICRO Smart
Jetter	MICRO Smart pentra JetControl series2/3 (Ethernet UDP/IP)
jettei	TOYOPUC
	TOYOPUC (Ethernet)
JTEKT	TOYOPUC (Ethernet PC10 mode) TOYOPUC-Plus
	TOYOPUC-Plus (Ethernet)
	TOYOPUC-Nano (Ethernet)
	KZ series Link KZ-A500 CPU
	KZ/KV series CPU
	KZ24/300 CPU
VEVENCE	KV10/24 CPU KV-700
KEYENCE	KV-700 (Ethernet TCP/IP)
	KV-1000
	KV-1000 (Ethernet TCP/IP) KV-3000/5000
	KV-3000/5000 (Ethernet TCP/IP)
	KV-7000 (Ethernet TCP/IP) SU/SG
KOVO ELECTRONICO	SR-T (K protocol)
KOYO ELECTRONICS	SU/SG (K-Sequence)
	SU/SG (MODBUS RTU) MASTER-KxxxS
	MASTER-KXXXS MASTER-KXXXS CNET
	MASTER-K series (Ethernet)
	GLOFA CNET
	GLOFA GM7 CNET GLOFA GM series CPU
LS	GLOFA GM series (Ethernet UDP/IP)
	XGT/XGK series CNET XGT/XGK series CPU
	XGT/XGK series CPU XGT/XGK series (Ethernet)
	XGT/XGI series CNET
	XGT/XGI series CPU XGT/XGI series (Ethernet)
	A series link
	QnA series link
	QnA series (Ethernet)
	QnH (Q) series link
	QnH (Q) series link QnH (Q) series CPU QnU series CPU
	QnH (Q) series link QnH (Q) series CPU QnU series CPU Q00J/00/01 CPU
	QnH (Q) series link QnH (Q) series CPU QnU series CPU Q00J/00/01 CPU QnH (Q) series (Ethernet)
MITCUDICHI EL FOTRIC	QnH (Q) series link QnH (Q) series CPU QnU series CPU Q00J/00/01 CPU
MITSUBISHI ELECTRIC	QnH (Q) series link QnH (Q) series CPU QnU series CPU Q00J/00/01 CPU QnH (Q) series (Ethernet) QnH (Q) series (ink (multi CPU) QnH (Q) series (multi CPU) (Ethernet) QnH (Q) series CPU (multi CPU)
MITSUBISHI ELECTRIC	QnH (Q) series link QnH (Q) series CPU QnU series CPU Q00J/00/01 CPU QnH (Q) series (Ethernet) QnH (Q) series link (multi CPU) QnH (Q) series (multi CPU) (Ethernet) QnH (Q) series CPU (multi CPU) QnH (Q) series (Ethernet ASCII)
MITSUBISHI ELECTRIC	QnH (Q) series link QnH (Q) series CPU QnU series CPU Q00J/00/01 CPU QnH (Q) series link (multi CPU) QnH (Q) series link (multi CPU) QnH (Q) series (multi CPU) (Ethernet) QnH (Q) series (Fthernet) QnH (Q) series (PU (multi CPU) QnH (Q) series (Ethernet ASCII) QnH (Q) series (multi CPU) (Ethernet ASCII)
MITSUBISHI ELECTRIC	OnH (Q) series link QnH (Q) series CPU QnU series CPU Q00J/00/01 CPU QnH (Q) series (Ethernet) QnH (Q) series link (multi CPU) QnH (Q) series (multi CPU) (Ethernet) QnH (Q) series CPU (multi CPU) QnH (Q) series (Ethernet ASCII) QnH (Q) series (multi CPU) (Ethernet ASCII) QnH (Q) series (multi CPU) (Ethernet ASCII) QnU series (built-in Ethernet) L series link
MITSUBISHI ELECTRIC	QnH (Q) series link QnH (Q) series CPU QnU series CPU Q00J/00/01 CPU QnH (Q) series (Ethernet) QnH (Q) series link (multi CPU) QnH (Q) series link (multi CPU) QnH (Q) series (multi CPU) (Ethernet) QnH (Q) series CPU (multi CPU) QnH (Q) series (Ethernet ASCII) QnH (Q) series (Ethernet ASCII) QnH (Q) series (Ethernet ASCII) L series (built-in Ethernet) L series (built-in Ethernet)
MITSUBISHI ELECTRIC	OnH (Q) series link QnH (Q) series CPU QnU series CPU Q00J/00/01 CPU QnH (Q) series (Ethernet) QnH (Q) series link (multi CPU) QnH (Q) series (multi CPU) (Ethernet) QnH (Q) series CPU (multi CPU) QnH (Q) series (Ethernet ASCII) QnH (Q) series (multi CPU) (Ethernet ASCII) QnH (Q) series (multi CPU) (Ethernet ASCII) QnU series (built-in Ethernet) L series link

	As of April 2018
Manufacturer	Models
	FX-3U/3UC/3G series CPU FX-3U/3GE series (Ethernet) FX-3U/3UC/3UG series link (A protocol)
MITSUBISHI ELECTRIC	FX-5U/5UC series FX-5U/5UC series (Ethernet) A-link + Net10
	Q170MCPU (multi CPU)
	Q170 series (multi CPU) (Ethernet) iQ-R series (Built-in Ethernet)
	iQ-R series link iQ-R series (Ethernet)
MODICON	MODBUS RTU
MOELLER	PS4 SYSMAC C
	SYSMAC CV
OMRON	SYSMAC CS1/CJ1 SYSMAC CS1/CJ1 DNA
OWNOW	SYSMAC CS1/CJ1 (Ethernet) SYSMAC CS1/CJ1 (Ethernet Auto)
	SYSMAC CS1/CJ1 DNA (Ethernet)
	NJ Series (EtherNet/IP) FP series (RS232C/422)
	FP series (TCP/IP) FP series (UDP/IP)
Panasonic	FP-X (TCP/IP)
	FP7 series (RS232C/422) FP7 series (Ethernet)
	NX7/NX Plus series (70P/700P/CCU+)
RS Automation	N7/NX series (70/700/750/CCU) NX700 series (Ethernet)
	X8 series X8 series (Ethernet)
SAIA	PCD
	PCD S-BUS (Ethernet) SPC series
SAMSUNG	N_plus SECNET
	JW series
	JW100/70H COM port JW20 COM port
SHARP	JW series (Ethernet)
	JW300 series JW311/312/321/322 series (Ethernet)
	JW331/332/341/342/352/362 series (Ethernet) S5 PG port
	S7
	S7-200 PPI S7-200 (Ethernet ISOTCP)
Siemens	S7-300/400 MPI S7-300/400 (Ethernet ISOTCP)
	S7-300/400 (Ethernet TCP/IP protocol)
	S7-1200/1500 (Ethernet ISOTCP) TI500/505
SINFONIA TECHNOLOGY	TI500/505 V4 Compatible SELMART
TECO	TP-03 (MODBUS RTU)
Telemecanique	TSX Micro T series /V series (T compatible)
TOSHIBA	T series /V series (T compatible) (Ethernet UDP/IP) EX series
	nv series (Ethernet UDP/IP)
TOSHIBA MACHINE	TC200 μ GPCsx series
TOYO DENKI	μ GPCsx CPU
Turck	μ GPCsx series (Ethernet) BL series Distributed I/O (MODBUS TCP/IP)
Ultra Instruments	UIC CPU (MODBUS ASCII) M90/M91/Vision series (ASCII)
UNITRONICS	Vision series (ASCII Ethernet TCP/IP)
VIGOR WAGO	M series 750 series (MODBUS RTU)
XINJE	750 series (MODBUS Ethernet) XC series (MODBUS RTU)
,2	Memobus
	CP9200SH/MP900 MP2300 (MODBUS TCP/IP)
Yaskawa Electric	CP/MP expansion memobus (UDP/IP) MP2000 series
Taskawa Electric	MP2000 series (UDP/IP)
	MP3000 series MP3000 series (Ethernet UDP/IP)
	MP3000 series expansion memobus (Ethernet) FA-M3
	FA-M3R
	FA-M3/FA-M3R (Ethernet UDP/IP) FA-M3/FA-M3R (Ethernet UDP/IP ASCII)
Yokogawa Electric	FA-M3/FA-M3R (Ethernet TCP/IP)
	FA-M3/FA-M3R (Ethernet TCP/IP ASCII) FA-M3V
	FA-M3V (Ethernet)
	FA-M3V(Ethernet ASCII) Universal serial
	Without PLC Connection MODBUS RTU
None	MODBUS RTU EXT Format
	MODBUS TCP/IP (Ethernet) MODBUS TCP/IP (Ethernet) Sub Station
	MODBUS TCP/IP (Ethernet) EXT Format MODBUS ASCII

Connection Device List (Temperature Controller/Servo/Inverter)

Manufacturer	Models PYX (MODBUS RTU)
	PXR (MODBUS RTU)
	PXF (MODBUS RTU) PXG (MODBUS RTU)
	PXH (MODBUS RTU)
	PUM (MODBUS RTU)
	F-MPC04P (loader) F-MPC series/FePSU
	FVR-E11S
	FVR-E11S (MODBUS RTU) FVR-C11S (MODBUS RTU)
	FRENIC5000 G11S/P11S
	FRENIC5000 G11S/P11S (MODBUS RTU)
	FRENIC5000 VG7S (MODBUS RTU) FRENIC-Ace (MODBUS RTU)
	FRENIC-Eco (MODBUS RTU)
	FRENIC-HVAC/AQUA (MODBUS RTU) FRENIC-MEGA (MODBUS RTU)
	FRENIC-MEGA SERVO (MODBUS RTU)
Fuji Electric	FRENIC-Mini (MODBUS RTU)
	FRENIC-Multi (MODBUS RTU) FRENIC-VG1 (MODBUS RTU)
	FRENIC series (loader)
	HFR-C9K HFR-C11K
	HFR-K1K
	PPMC (MODBUS RTU)
	FALDIC- α series FALDIC-W series
	PH series
	PHR (MODBUS RTU)
	WA5000 APR-N (MODBUS RTU)
	ALPHA5 (MODBUS RTU)
	ALPHA5 Smart (MODBUS RTU) WE1MA (Ver. A) (MODBUS RTU)
	WE1MA (Ver. B) (MODBUS RTU)
	WSZ series
Agilent	WSZ series (Ethernet) 4263 series
ASAHI ENGINEERING	Stepping Motor
	SDC10 SDC15
	SDC20
	SDC21
	SDC25/26 SDC30/31
	SDC35/36
	SDC45/46 SDC40A
Azbil	SDC40G
	DMC10
	DMC50 (COM) AHC2001
	AHC2001+DCP31/32
	DCP31/32
	NX (CPL) NX (MODBUS RTU)
	NX (MODBUS TCP/IP)
A&D	AD4402 (MODBUS RTU) AD4404 (MODBUS RTU)
Banner	Presence PLUS (Ethernet/IP (TCP/IP))
Bosh Rexroth	Indra Drive LT400 series (MODBUS RTU)
	DP1000
sum o	DB1000B (MODBUS RTU)
CHINO	KR2000 (MODBUS RTU) LT230 (MODBUS RTU)
	LT300 (MODBUS RTU)
	LT830 (MODBUS RTU) PMAC
DELTA TAU DATA SYSTEMS	PMAC (Ethernet TCP/IP)
Gammaflux	TTC2100
High-Pressure Gas Industry	R-BLT SJ300 series
Hitachi Industrial Equipment Systems	SJ700 series
	X-SEL controller ROBO CYLINDER (RCP2/ERC)
IAI	ROBO CYLINDER (RCS/E-CON)
KOCANEL	PCON/ACON/SCON (MODBUS RTU)
KOGANEI Lenze	IBFL-TC Servo Drive 9400 (Ethernet TCP/IP)
	FR-*500
	FR-V500 MR-J2S-*A
	MR-J2S-*A MR-J2S-*CL
MITSUBISHI ELECTRIC	MR-J3-*A
	MR-J3-*T MR-J4-*A
	FR-E700
MOOG M_SYSTEM	J124-04x series R1M series (MODBUS RTU)
M-SYSTEM	E5AK
	E5AK-T
	E5AN/E5EN/E5CN/E5GN E5AR/E5ER
	E5CK
	E5CK-T
OMRON	E5CN-HT E5EK
	E5ZD
	E5ZE E57N
	E5ZE E5ZN V600/620/680
	E5ZN V600/620/680 KM20
	E5ZN V600/620/680 KM20 KM100
Oriental Meter	E5ZN V600/620/680 KM20 KM100 V680S (Ethernet TCP/IP) High-efficiency AR series (MODBUS RTU)
Oriental Motor	E5ZN V600/620/680 KM20 KM100 V680S (Ethernet TCP/IP)

Manufacturer	Models
Panasonic	MINAS A4 series
anasome	SR-Mini (MODBUS RTU)
	CB100/CB400/CB500/CB700/CB900 (MODBUS RTU
	SR-Mini (Standard Protocol)
	REX-F400/F700/F900 (Standard Protocol)
RKC	REX-F9000 (Standard Protocol)
KKC	SRV (MODBUS RTU)
	MA900/MA901 (MODBUS RTU)
	SRZ (MODBUS RTU)
	FB100/FB400/FB900 (MODBUS RTU)
RS Automation	CSD5 (MODBUS RTU)
	Moscon-F50 (MODBUS RTU)
SANMEI	Cuty Axis
SanRex	DC AUTO (HKD type)
SHARP	DS-30D
	DS-32D
SHIMADEN	SHIMADEN standard protocol
	C series
	FC series
	GC series
	DCL-33A
	JCx-300 series
SHINKO TECHNOS	PC-900
	PCD-33A
	ACS-13A
	ACD/ACR series
	WCL-13A
Siemens	S120 (Ethernet ISOTCP)
SUS	XA-A*
	TTM-000
ТОНО	TTM-00BT
	TTM-200 (MODBUS RTU)
Tokyo Chokoku Marking Products	MB3315/1010
· ·	VF-S7
	VF-S9
	VF-S11
	VF-S15
	VF-A7
	VF-AS1
TOSHIBA	VF-P7
	VF-PS1
	VF-FS1
	VF-MB1
	VF-nC1
	VF-nC3
TOSHIBA MACHINE	VELCONIC series
ULVAC	G-TRAN series
	F340A
	F371
UNIPULSE	F800
	F720A
	F805A
YAMAHA	RCX142
Yaskawa Electric	
raskawa Electric	DX200 (High-Speed Ethernet)
	UT100
	UT750
	UT550
	UT520
	UT350
Volkogawa Floctric	UT320
Yokogawa Electric	UT2400/2800
	UT450
	UT32A/35A (MODBUS RTU)
	UT52A/55A (MODBUS RTU)
	UT75A (MODBUS RTU)
	μR10000/20000 (Ethernet TCP/IP)
	MODBUS RTU
None	
	MODBUS TCP/IP (Ethernet)

^{*}The names of the companies and products included in this document are the trademarks or registered trademarks of their respective companies.
*TS1070S does not support an Ethernet connection.



Safety Considerations

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

Notes to consider before purchasing

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

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