

Programmable Operator Interface

MONITOUCH

**Edge-computing accelerates
the transition to smart production sites**



X1 STANDARD MODEL
Series

The X1 series features the broad connectivity and flexibility to digitize

Integration with IT systems

Microsoft Azure

Microsoft SQL Server

OPC UA

MQTT

In addition to the HMI functions for operating and monitoring production machines, the X1 achieves data linkage between FA and higher level IT or cloud systems via OPC UA and MQTT connections.

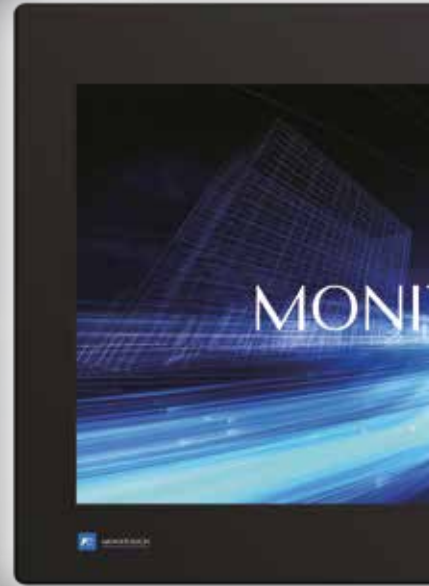
By connecting with MES and ERP systems, data visualization, improvement of productivity and optimization of production management can be conducted.

Visibility and User-friendliness

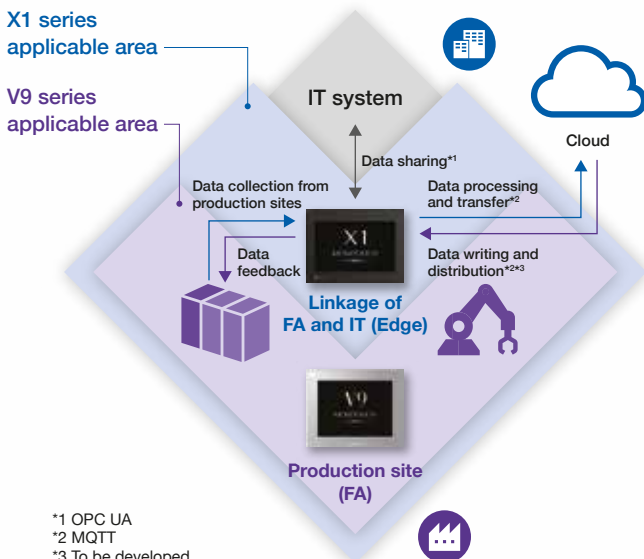


A high speed CPU, high resolution LCD and PCAP touchscreen improve visibility and operability.

A vectorized rendering engine allows for high quality scaling. Beautiful high quality screens can be created regardless of the display resolution.

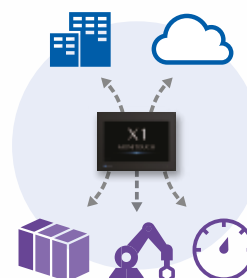


Positioning



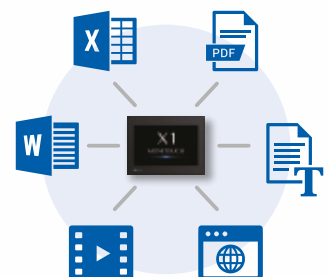
Smart factory realization factors

Seamless connection between production sites and IT systems



- Various communication functions
- Linkage with cloud servers

Utilization of user applications



- Windows installed
- User applications are fully utilized at production sites

FA and IT your factory.



Utilization of User Applications

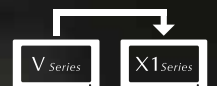


Since Windows is installed, Windows applications and user applications can be used at production sites.

Applications can be run by switches on the HMI display and used freely at production sites.

Data collection, processing and analysis can be conducted between production sites and host systems, contributing to the digitization of your factory.

Inheritance of V-series Screen Assets

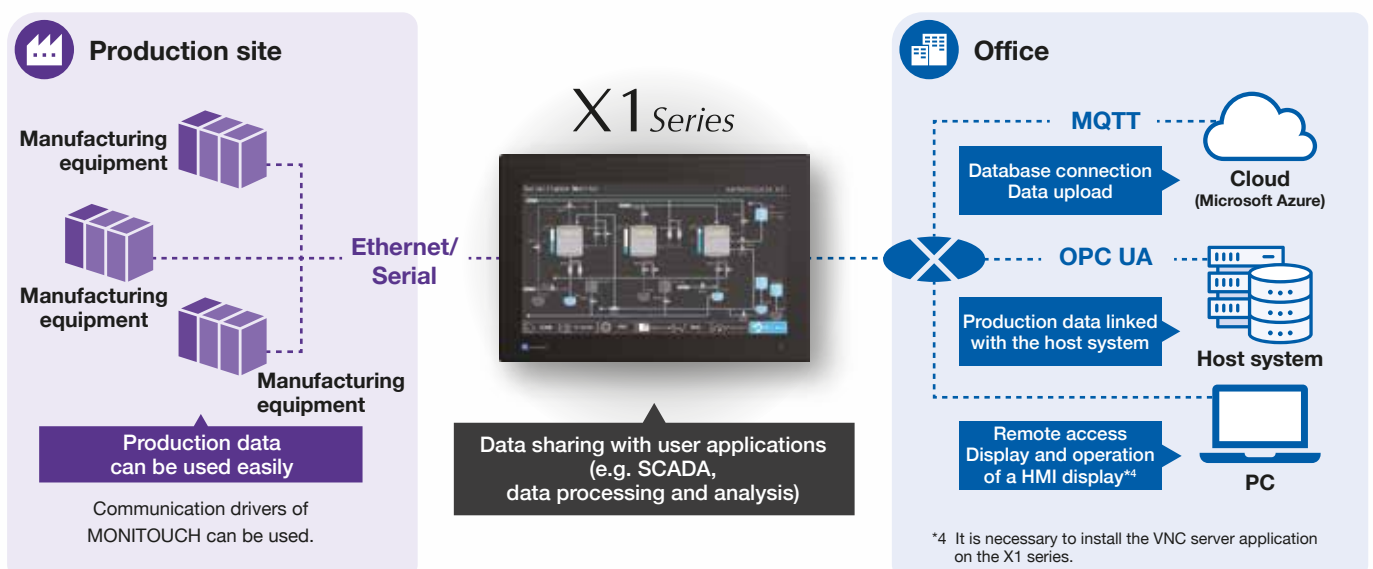


Screen assets created for the V-series can be converted for use in the X1 series. The configuration software V-SFT Ver.6 can be used as well.

MONITOUCH's highly-developed communication drivers can be used for connection with various equipment without programming.

Operation Scheme

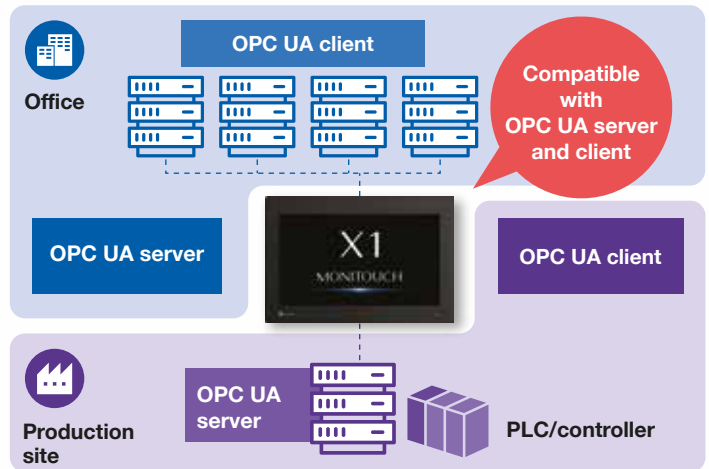
In addition to the communication and display functions of the MONITOUCH HMI, data processing and analysis are available through connecting with user applications and the host system.



The X1 series facilitates the implementation

Compatible with OPC UA Server and Client

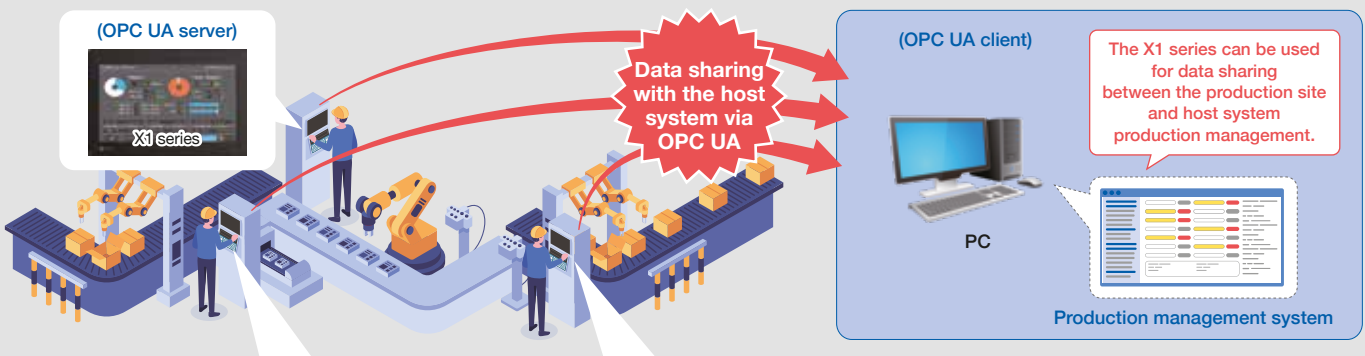
- The X1 series is equipped with OPC UA server and client, so data can be collected by connecting to both offices and production sites.
- Even if devices at the production site are incompatible with OPC UA, the X1 series can fulfil the role of a gateway to OPC UA in order to transfer data to OPC UA clients in the host system.
- OPC UA enables data sharing between production sites and the host system, and facilitates the standardization of equipment.



Application example

Workpiece conveyor

The X1 series collects data from multiple machines at production sites and shares it with the host system via OPC UA. This helps to improve productivity and product quality, and it facilitates the standardization of equipment. Adoption of the X1 series for devices equipped with industrial robots adds further value to the robots that contribute to factory automation.



Engineering tool

If engineering tools of connected devices are installed, it is possible to edit and monitor the programs of robots or PLCs through the X1 series. Bringing a PC into the production site is no longer necessary.

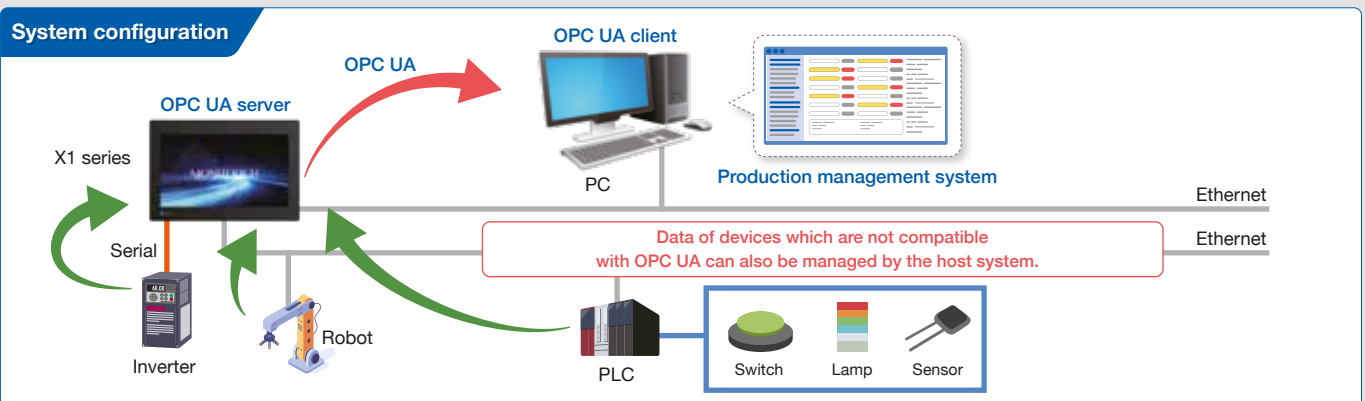


Data collection using Excel

Operation data of transfer robots can be linked to Excel on the X1 via V-Server (our data collection software). Graphs created by Excel can be displayed on the X1 by installing and linking Excel and V-Server.

It is possible to use applications such as Excel on the X1 at the production sites.

System configuration



of smart factories that effectively utilize data.

Cloud (MQTT) Compatible

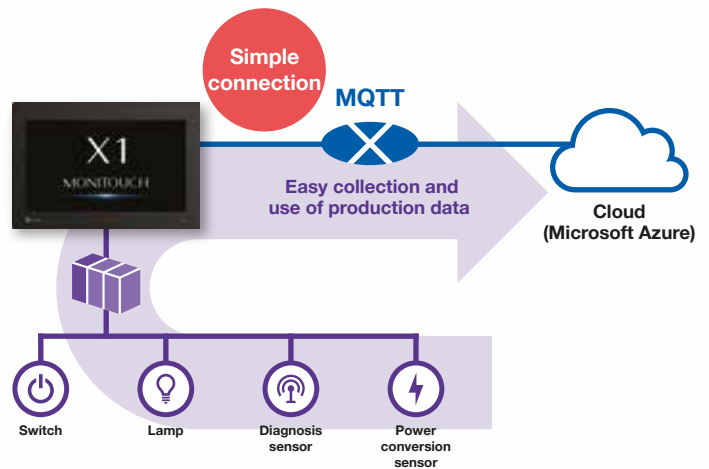
• Operation data, production data, status data, etc. are sent to the cloud system via MQTT for collection and storage. It contributes to the visualization and improvement of the factory.

• Since the system is linked with the Microsoft Azure platform, various tools and frameworks of the cloud service can be used. **Linkage with Microsoft services via Azure IoT Hub is possible**



Visualization, analysis, AI / Machine learning

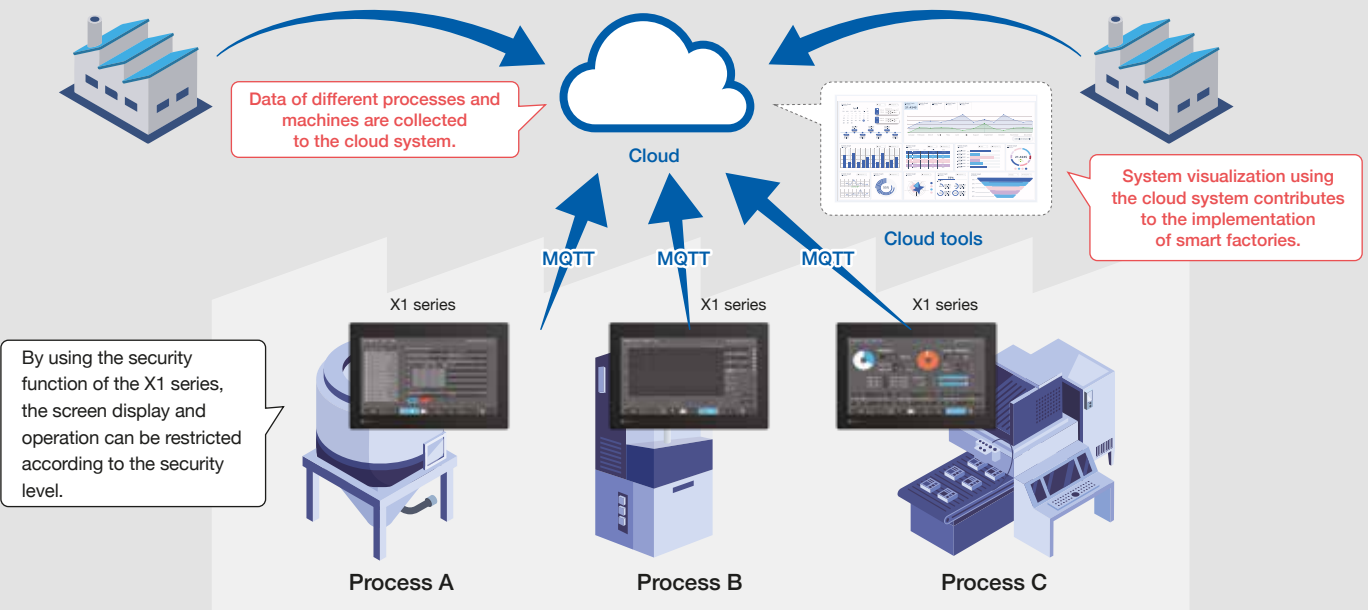
- Visualization
- Progress management
- Diagnosis / Analysis
- Prediction / Status detection
- Cause analysis
- KPI management



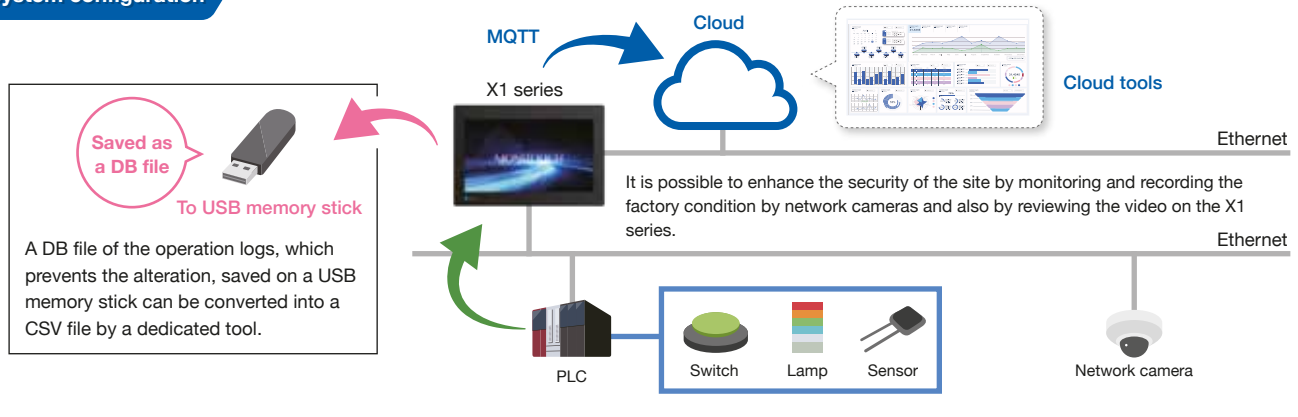
Application example

Pharmaceutical equipment

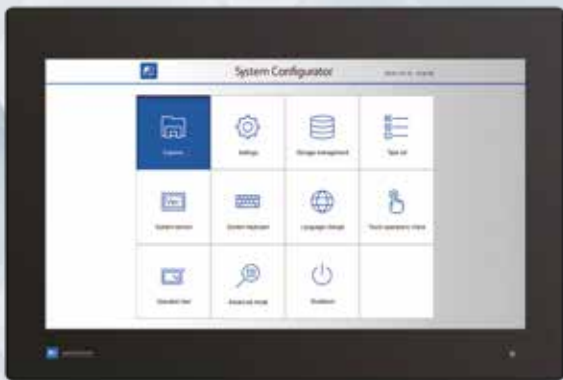
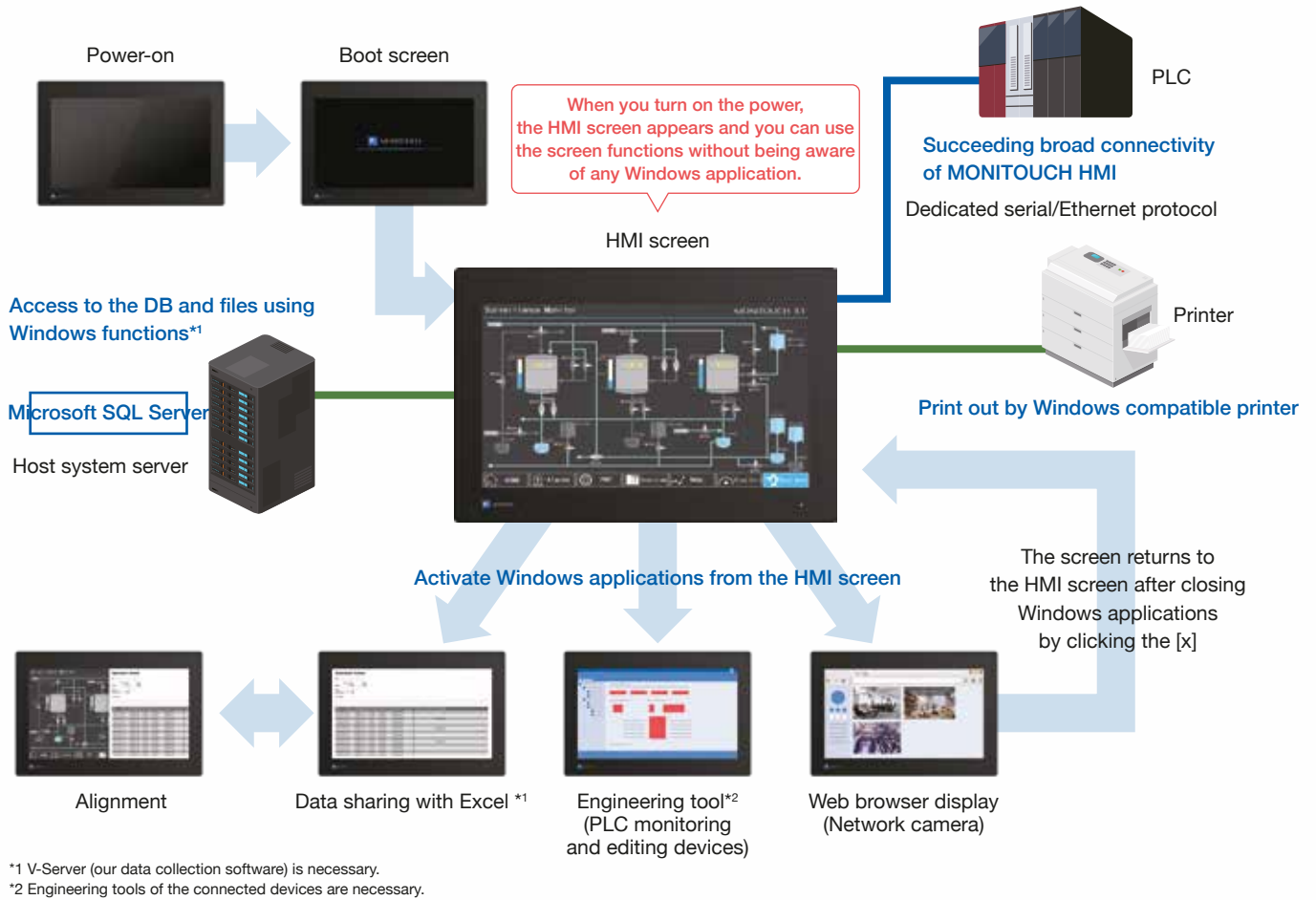
Increased efficiency and improvement of the production system is realized by connecting to the cloud and analyzing, visualizing and identifying trends of the collected data. Besides, it contributes to ensuring the security in pharmaceutical manufacturing by installing the X1 series on pharmaceutical equipment that requires high-level security management.



System configuration



Operation



System Configurator

“System Configurator” in the X1 series is for the installation of applications and Windows configuration.

Thanks to System Configurator, Windows applications can be started and switched between easily by the buttons on the HMI screen without displaying the Windows screen.

The X1 combines the power of a Windows IPC (industrial PC) with the in-depth control of a HMI.

Utilization of User Applications



Windows applications can be freely operated at production sites. Once engineering tools of production machines are installed on the X1 series, it is possible to edit and monitor the program through the X1 series without bringing a PC to the production site.

In addition, it is possible to reduce maintenance tasks and the space required for PCs at the production site by integrating PCs with the X1 series.

The X1 series with Windows applications improve versatility and expandability, as well as functioning of HMIs.

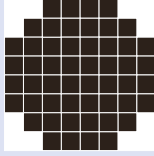
Vector Graphics

Vector graphics enable high quality and tailored screen creation as it allows the enlargement/reduction of parts while maintaining a clear image.

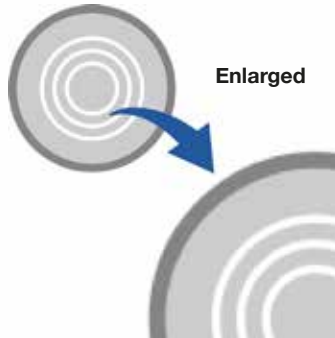
Raster Image (Conventional Method)

Color and density are specified for each pixel

Jagged edges become visible when scaling



Indicate
"white, white, black, black, black,
black, white, white ..."

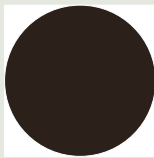


ABC
123

Vector Image (New Method)

Images are defined by mathematical equations

Images remain sharp and smooth in all sizes by changing the parameters



Draw a circle by specifying the reference point and radius

```
<circle cx="150" cy="150" r="150"/>
```

You can create your own customized screen freely!



ABC
123

It is possible to maintain clear edges even after scaling to any size.

Application Alignment

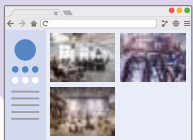
Active applications can be aligned by pressing the button without using the keyboard or the mouse. This function helps you to switch multiple application windows easily and improves operability.



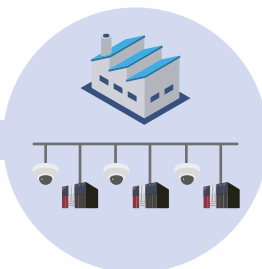
Standardized Web Browser



Web monitoring system



Network camera



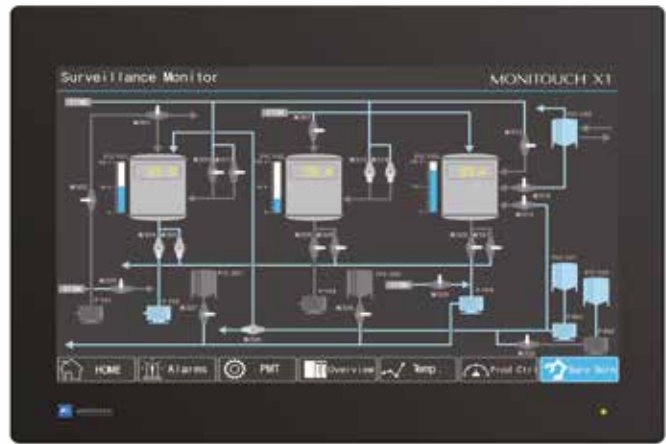
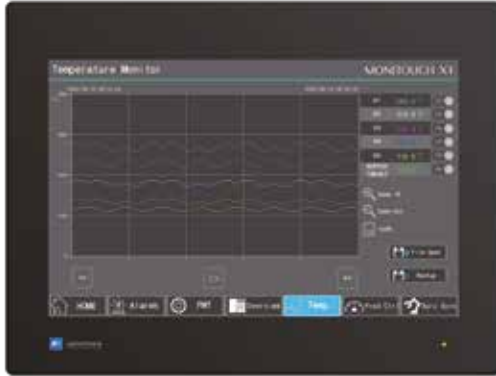
Since the X1 series is equipped with a web browser as standard, it is possible to use the browser function in applications and IT systems.

When combined with a monitoring system or network cameras, it is possible to monitor different machines on the network, and to check each status easily.

The X1 series with Windows performs as a gateway from the production sites to the IT systems.

X1151iSD / X1151iSRD

X1121iSD / X1121iSRD



12.1" wide screen | Resolution: WXGA 1,280 × 800
Dimensions (W×H×D): 320 × 241 × 66.7 mm

15.6" wide screen | Resolution: FHD 1,920 × 1,080
Dimensions (W×H×D): 406 × 271 × 68.2 mm

PCAP (Capacitance)	16.7M colors *1	Ethernet 2ch	Wireless LAN *2	Bluetooth *2	USB-A 3.0×2 2.0×2	HDMI 1ch	Serial 1ch	IP66	Sound output 1ch
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*1 Only pictures and 3D parts available for HMI screens *2 Only R-type available

Model **X1** **1iS** **D**

Display size

12: 12.1" wide screen
15: 15.6" wide screen

Functions

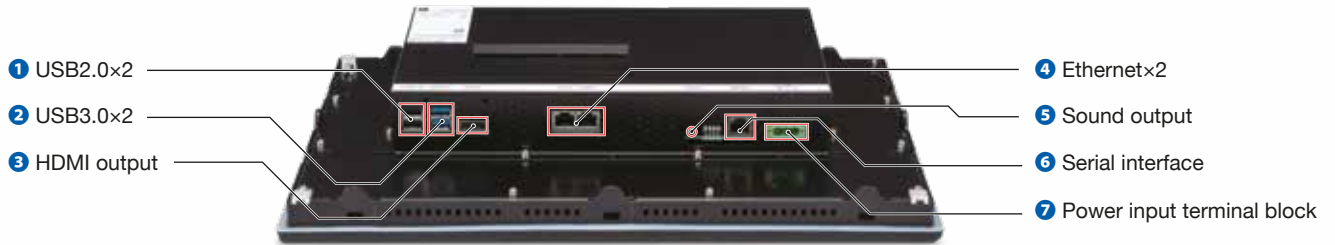
R: with WLAN and Bluetooth
N/A: without WLAN and Bluetooth

General Specifications

Item		X1121iSD	X1121iSRD	X1151iSD	X1151iSRD
Power Supply	Rated Voltage	DC24V			
	Permissible Range of Voltage	±10%			
	Permissible Momentary Power Failure	Within 1ms			
	Power Consumption (Max. Rating)	41W or less		51W or less	
	Rush Current	24A or less, 6ms (Ambient temperature 25°C)			
Insulation Resistance		Between DC external terminal and FG: DC500V 10MΩ or higher			
Physical Environment	Ambient Temperature	0 to 45°C			
	Ambient Humidity	85%RH or less (without dew condensation, max. wet-bulb temperature: 39°C or lower)			
	Operating Altitude	2,000m or less			
	Operating Atmosphere	No exposure to corrosive gas or conductive dust			
	Storage Ambient Temperature	-10 to 60°C			
	Storage Ambient Humidity	85%RH or less (without dew condensation, max. wet-bulb temperature: 39°C or lower)			
Contamination Level		2			
Mechanical Operating Conditions	Resistance to Oscillation	JIS B 3502 (IEC61131-2) compliant Vibration frequency: 5 to 9 Hz, Half amplitude: 3.5 mm, 9 to 150 Hz, Constant acceleration 9.8 m/s ² (1G) X, Y, Z: 3 directions (10 times each)			
	Resistance to Shock	JIS B 3502 (IEC61131-2) compliant Peak acceleration: 147 m/s ² (15G), X,Y,Z: 3 directions, 3 times each (18 times in total)			
Electric Operating Conditions	Resistance to Noise	Noise voltage: 1,000Vp-p, Pulse width: 1μs, Pulse rise time: 1ns (by noise simulator)			
	Resistance to Static Discharge	Complies with IEC61000-4-2, contact: 6kV, air: 8kV			
Installation Conditions	Grounding	D class grounding (3 rd -class grounding) FG/SG is internally connected in the X1 series.			
	Protection Structure	Front case: IP66 (when water-proof gasket is used), Rear case: IP20			
	Cooling System	Natural air cooling			
	Dimensions W×H×D (mm)	320 × 241 × 66.7 mm		406 × 271 × 68.2 mm	
	Panel Cutout (mm)	309 × 230 mm		395 × 260 mm	
Case	Weight	Approx. 3.2 kg		Approx. 3.9 kg	
	Color	Black			
	Material	PBT and GF30 resin (front part)			

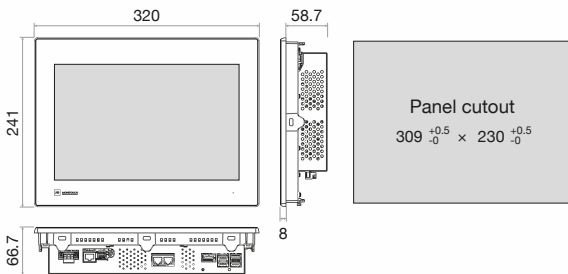
It contributes to efficient communication between the factory and management office or cloud system.

Interface | Various interfaces for achieving edge-computing

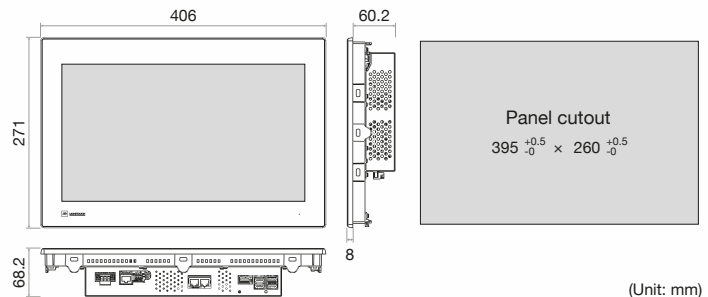


Dimensions and Panel Cutout

/X1121iSD / X1121iSRD



/X1151iSD / X1151iSRD



(Unit: mm)

Performance Specifications

Item		X1121iSD	X1121iSRD	X1151iSD	X1151iSRD
Hardware	Processor	Intel Atom® x5-E3940			
	Number of Cores / Number of Threads	4/4			
	Main Memory	4GB			
	Internal Storage	64GB (free space 30GB)			
Software	OS	Windows 10 IoT Enterprise 2019 LTSC			
Display	Display Device	TFT color			
	Resolution	WXGA: 1,280 × 800		FHD: 1,920 × 1,080	
	Display Size	12.1" widescreen		15.6" widescreen	
	Colors	16.7 million colors (for HMI screens, pictures and 3D parts only)			
	Contrast Ratio	1,000:1			
	Backlight	LED			
	Backlight Life	Approx. 50,000 hours			
Touch Switch		PCAP (Capacitive type)			
External Interface	Ethernet (RJ-45) × 2	10BASE-T/100BASE-TX/1000BASE-T			
	Serial Port (RJ-45) × 1	Asynchronous: RS-232C/RS-422/RS-485 (switchable) Data length: 7, 8 bits Parity: Even, odd, none Stop bit: 1, 2 bits Baud rate: 4800, 9600, 19200, 38400, 57600, 76800, 115200 bps			
	USB-A Ver. 3.0 × 2	Ver.3.0 (Low speed: 1.5Mbps, Full speed: 12Mbps, High speed: 480Mbps, Super speed: 5.0Gbps)			
	USB-A Ver. 2.0 × 2	Ver.2.0 (Low speed: 1.5Mbps, Full speed: 12Mbps, High speed: 480Mbps)			
	Sound Output (AUDIO) × 1	3.5φ stereo mini jack, line output			
	Wireless LAN (WLAN)	-	1 × WLAN IEEE 802.11 ac/a/b/g/n	-	1 × WLAN IEEE 802.11 ac/a/b/g/n
	Bluetooth	-	1 × Bluetooth	-	1 × Bluetooth
	HDMI	1,280 × 800		1,920 × 1,080	
Clock	Backup Period	3 years (Ambient temperature 25°C)			
Standard	CE Marking	Compatible			
	UL / cUL	UL61010-1/UL61010-2-201			
	KC	Compatible			
	Radio Act	Japan: MIC, USA: FCC, Canada: ISED, Europe: RED, South Korea: KC, Taiwan: NCC			

Configuration Software

Achieve Sleeker Screens with Simple, Easy-to-Understand Operations



V-SFT Ver. 6

Computer	PC/AT compatible computer running Windows
OS*	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	1.0 GB or higher (2.0 GB or higher is recommended)
Hard disk	When installed: 4.0 GB or higher
Disc drive	DVD-ROM drive
Display	1024 × 768 (XGA) resolution or higher
Display colors	High color (16 bits) or higher
Others	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.

Vector format SVG parts are installed as standard

Since vector format SVG parts are provided with the unit, image quality is maintained regardless of scaling. Beautiful high quality screens can be created.



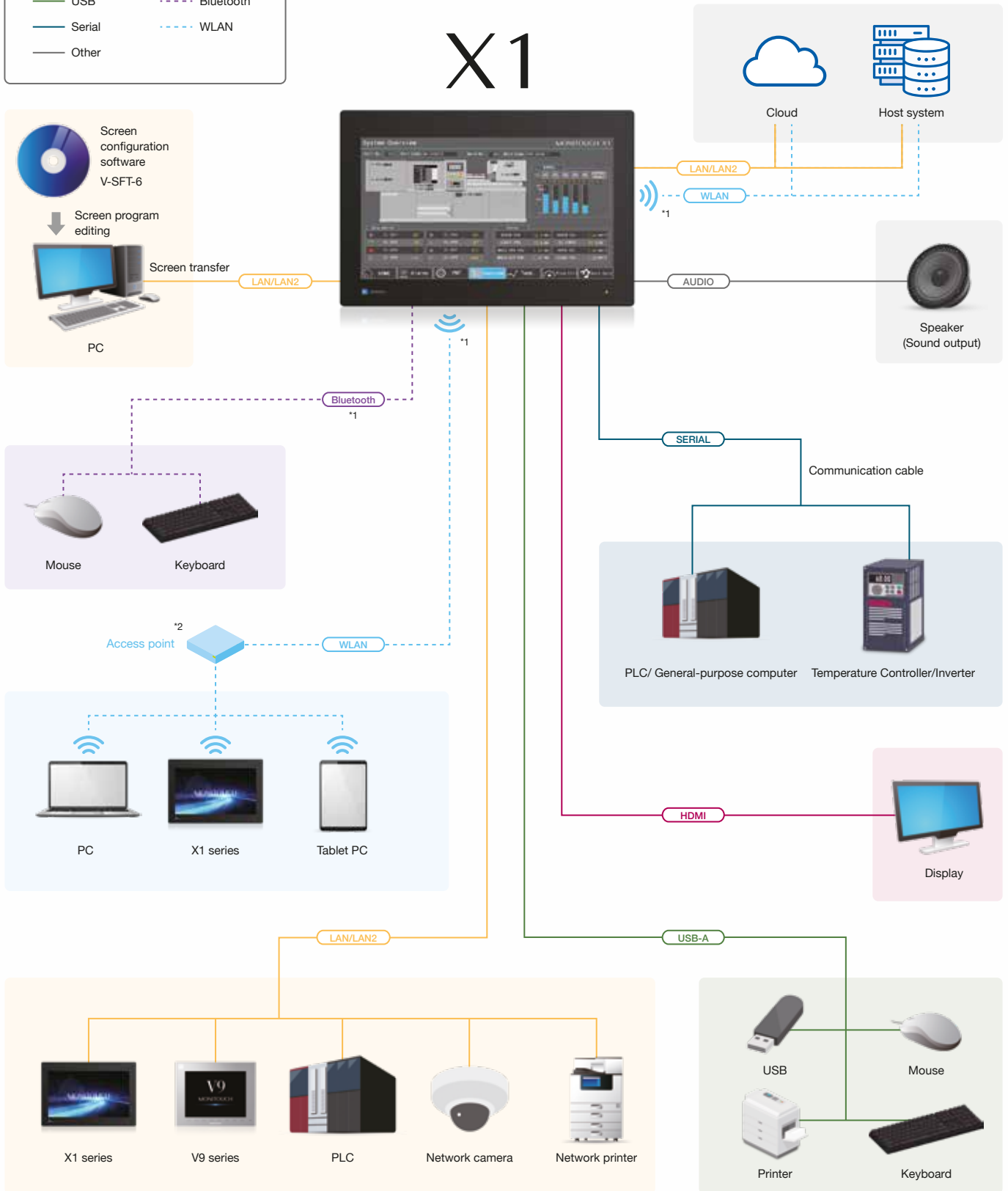
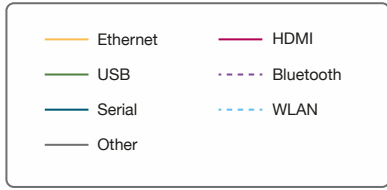
Product List

Model	Display Size	Resolution	Specifications		
			Touch Switch	Wireless LAN	Bluetooth
X1121iSD	12.1" wide screen	1,280 × 800	PCAP (Capacitive type)	-	-
X1121iSRD				✓	✓
X1151iSD	15.6" wide screen	1,920 × 1,080		-	-
X1151iSRD				✓	✓

Optional Accessories List

Model	Description
V-SFT-6	Configuration software for MONITOUCH Ver.6
X1-BT	Replacement lithium battery for X1 series
X1-SS	Security software for X1 series

System Configuration



*1 Models with wireless LAN and Bluetooth only.

*2 An access point is necessary.

Industry-leading number of connectable equipment

* According to our own research

PLC Connection

Manufacturer	Models
Fuji Electric	MICREX-F series
	MICREX-F series V4 Compatible
	SPB(N mode)&FLEX-PC series
	SPB(N mode)&FLEX-PC CPU
	MICREX-SX SPH/SPB/SPM/SPE/SPF series
	MICREX-SX SPH/SPB/SPM/SPE/SPF CPU
Allen-Bradley	MICREX-SX(Ethernet)
	PLC-5
	PLC-5(Ethernet)
	SLC500
	SLC500(Ethernet TCP/IP)
	NET-EN(SLC500 Ethernet TCP/IP)
	NET-EN(MicroLogix Ethernet TCP/IP)
	Micro Logix
	Micro Logix(Ethernet TCP/IP)
	Control Logix/Compact Logix
	Control Logix(Ethernet)
Automationdirect	Micro800 Controllers
	Micro800 Controllers(Ethernet TCP/IP)
	Direct LOGIC(K-Sequence)
Azbil	Direct LOGIC(Ethernet UDP/IP)
	Direct LOGIC(Modbus RTU)
	MX series
Baumuller	BMx-x-PLC
Beckhoff	ADS Protocol(Ethernet)
	Tag ADS Protocol(Ethernet TCP/IP)
CIMON	BP Series
	CP Series
	XP Series
	S Series
	S Series(Ethernet)
DELTA	CP3E
	DVP series
	DVP-SE(MODBUS ASCII)
EATON Cutler-Hammer	DVP-SE(MODBUS TCP/IP)
	ELC
EMERSON	EC10/EC20/EC20H (MODBUS RTU)
FANUC	Power Mate
FATEK AUTOMATION	FACON FB series
	FACON FBs series(Ethernet)
FESTO	FEC
FUFENG	APC Series Controller
GE Fanuc	90 series
	90 series(SNP-X)
	90 series(SNP)
	90 series(Ethernet TCP/IP)
Hitachi	RX3i(Ethernet TCP/IP)
	HIDIC-S10/2alpha,S10mini
	HIDIC-S10/2alpha,S10mini(Ethernet)
	HIDIC-S10/4alpha
	HIDIC-S10V
Hitachi Industrial Equipement Systems	HIDIC-S10V(Ethernet)
	HIDIC-H (Ethernet)
HYUNDAI	HIDIC-EHV(Ethernet)
	Hi5 Robot(MODBUS RTU)
IDEC	Hi4 Robot(MODBUS RTU)
	MICRO3
	MICRO Smart
	MICRO Smart Penra
JTEKT	MICRO Smart(Ethernet TCP/IP)
	TOYOPUC
	TOYOPUC(Ethernet)
	TOYOPUC(Ethernet PC10Mode)
	TOYOPUC-Plus
KEYENCE	TOYOPUC-Plus(Ethernet)
	TOYOPUC-Nano(Ethernet)
	KZ series link
	KZ/KV series CPU
	KZ24/300 CPU
	KV10/24 CPU
KV-700	
KEYENCE	KV-700(Ethernet TCP/IP)
	KV-1000
	KV-1000(Ethernet TCP/IP)
	KV-3000/5000
	KV-3000/5000
	KV-3000/5000

Manufacturer	Models
KEYENCE	KV-3000/5000(Ethernet TCP/IP)
	KV-7000(Ethernet TCP/IP)
	KV Nano
KOYO ELECTRONICS	KV Nano(Ethernet TCP/IP)
	SU/SG
	SR-T(K prt)
	SU/SG(K-Sequence)
	SU/SG(Modbus RTU)
LS	MASTER-KxxxS
	MASTER-KxxxS CNET
	MASTER-K series(Ethernet)
	GLOFA CNET
	GLOFA GM7 CNET
	GLOFA GM series CPU
	GLOFA GM series(Ethernet UDP/IP)
	XGT/XGK series CNET
	XGT/XGK series CPU
	XGT/XGK series(Ethernet)
	XGT/XGI series CNET
	XGT/XGI series CPU
	XGT/XGI series(Ethernet)
MITSUBISHI ELECTRIC	A series link
	QnA series link
	QnA series(Ethernet)
	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)
	QnH(Q) series (Multi CPU) (Ethernet ASCII)
	QnU series(Built-in Ethernet)
	QnU series (Multi CPU) (Built-in Ethernet)
	L series link
	L series(Built-in Ethernet)
	L series CPU
	FX series link(A-prt)
	FX3U/3UC/3G series CPU
FX3U/3GE series (Ethernet)	
FX3U/3UC/3G series link (A-prt)	
FX5U/5UC series	
FX5U/5UC series (Ethernet)	
Alink+Net10	
Q170MCP(U)(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
OMRON	SYSMAC C
	SYSMAC CV
	SYSMAC CS1/CJ1/CJ2
	SYSMAC CS1/CJ1/CJ2 DNA
	SYSMAC CS1/CJ1/CJ2/CP series(Ethernet)
	SYSMAC CS1/CJ1/CJ2/CP series(Ethernet Auto)
	SYSMAC CS1/CJ1/CJ2/CP series DNA(Ethernet)
	NJ Series(EtherNet/IP)
	FP Series(RS232C/422)
	FP Series(TCP/IP)
Panasonic	FP Series(UDP/IP)
	FP-X(TCP/IP)
	FP7 Series(RS232C/422)
	FP7 Series(Ethernet)
	NX7/NX Plus Series(70P/700P/CCU+)
	N7/NX Series(70/700/750/CCU)
RS Automation	NX700 Series(Ethernet)
	X8 Series
	X8 Series(Ethernet)
	PCD S-BUS(Ethernet)
SAIA	SPC series
SAMSUNG	N_plus

As of the product release date

Manufacturer	Models
SAMSUNG	SECNET
SHARP	JW series
	JW100/70H COM port
	JW20 COM port
	JW series(Ethernet)
	JW300 series
	JW311/312/321/322 series(Ethernet)
SINFONIA TECHNOLOGY	JW331/332/341/342/352/362 series(Ethernet)
	SELMART
Siemens	S5 PG port
	S7
	S7-200(Ethernet ISOTCP)
	S7-300/400(Ethernet ISOTCP)
	S7-300/400(Ethernet TCP/IP PG protocol)
	S7-1200/1500(Ethernet ISOTCP)
	S7-1200/1500 Tag(Ethernet ISOTCP)
LOGO!(Ethernet ISOTCP)	
TECO	TI500/505
	TI500/505 V4 Compatible
TOSHIBA	TP03(MODBUS RTU)
TOSHIBA MACHINE	T series/V series(T compatible)
	T series/V series(T compatible)(Ethernet UDP/IP)
	EX series
TOYO DENKI	nv series(Ethernet UDP/IP)
	TC200
TURCK	µGPCsx series
	µGPCsx CPU
	µGPCsx series(Ethernet)
Ultra Instruments	BL Series Distributed I/O(MODBUS TCP/IP)
UNITRONICS	UIC CPU(MODBUS ASCII)
	M90/M91/Vision Series(ASCII)
VIGOR	Vision Series(ASCII Ethernet TCP/IP)
	M series
XINJE	XC Series(MODBUS RTU)
Yaskawa Electric	MEMOBUS
	CP9200SH/MP900
	MP2300(MODBUS TCP/IP)
	CP/MP EXPANSION MEMOBUS (UDP/IP)
	MP2000 series
	MP2000 series(UDP/IP)
	MP3000 series
	MP3000 series (Ethernet UDP/IP)
	MP3000 series EXPANSION MEMOBUS (Ethernet)
	Yokogawa Electric
FA-M3R	
FA-M3/FA-M3R(Ethernet UDP/IP)	
FA-M3/FA-M3R(Ethernet UDP/IP ASCII)	
FA-M3/FA-M3R(Ethernet TCP/IP)	
FA-M3/FA-M3R(Ethernet TCP/IP ASCII)	
FA-M3V	
FA-M3V(Ethernet)	
FA-M3V(Ethernet ASCII)	
WAGO	750 series(MODBUS RTU)
	750 series(MODBUS Ethernet)
3S-Smart Software Solutions	CODESYS V3(Ethernet)
Others	Universal Serial
	Without PLC connection
	MODBUS RTU
	MODBUS RTU EXT Format
	MODBUS TCP/IP(Ethernet)
	MODBUS TCP/IP(Ethernet)Sub Station
	MODBUS TCP/IP(Ethernet) EXT Format
	MODBUS ASCII
	Modbus slave(RTU)
	Modbus slave(TCP/IP)
	Modbus slave(ASCII)
V-Link	
OPC UA TCP/IP(Ethernet)	

Outstanding connectability with multiple devices for simultaneous communication and data transfer

Temperature controller / Servo / Inverter Connection

As of the product release date

Manufacturer	Models	Manufacturer	Models	Manufacturer	Models	
Fuji Electric	PYX(MODBUS RTU)	Hitachi Industrial Equipment Systems	SJ300 series	TOHO	TTM-000	
	PXR(MODBUS RTU)		SJ700 series		TTM-00BT	
	PXF(MODBUS RTU)	SJ Series P1(MODBUS RTU)	TTM-200(MODBUS RTU)			
	PXG(MODBUS RTU)	IAI	X-SEL Controller	TOKYO CHOKOKU PRODUCTS	MB3315/1010	
	PXH(MODBUS RTU)		ROBO CYLINDER(RCP2/ERC)	TOSHIBA	VF-S7	
	PUM(MODBUS RTU)		ROBO CYLINDER(RCS/E-CON)		VF-S9	
	F-MPC04P(Loader)	PCON/ACON/SCON(MODBUS RTU)	VF-S11			
	F-MPC Series /FePSU	KEYENCE	DL-RS1A(SK-1000)		VF-S15	
	FVR-E11S		DL-RS1A(SK-1000)		VF-A7	
	FVR-E11S(MODBUS RTU)	Koatsu Gas Kogyo	R-BLT		VF-AS1	
	FVR-C11S(MODBUS RTU)	Koganei	IBFL-TC		VF-P7	
	FRENIC5000G11S/P11S	Lenze	Servo Drive 9400(Ethernet TCP/IP)	VF-PS1		
	FRENIC5000G11S/P11S(MODBUS RTU)		FR-500	VF-FS1		
	FRENIC5000G7S(MODBUS RTU)	MITSUBISHI ELECTRIC	FR-V500	VF-MB1		
	FRENIC-Ace(MODBUS RTU)		MR-J2S-A	VF-nC1		
	FRENIC-Eco(MODBUS RTU)		MR-J2S-CL	VF-nC3		
	FRENIC-HVAC/AQUA(MODBUS RTU)		MR-J3-A	TOSHIBA MACHINE	VELCONIC Series	
	FRENIC-MEGA(MODBUS RTU)		MR-J3-T		ULVAC	G-TRAN Series
	FRENIC-MEGA SERVO(MODBUS RTU)		MR-J4-A			F340A
	FRENIC-Mini(MODBUS RTU)		MOOG	J124-04x series	UNIPULSE	F371
	FRENIC-Multi(MODBUS RTU)	M-SYSTEM		R1M series (MODBUS RTU)		F800
	FRENIC-VG1(MODBUS RTU)	NITTOKU	ITS-HRW110	F720A		
	FRENIC Series (Loader)	OMRON	E5AK	F805A		
	HFR-C9K		E5AK-T	YAMAHA	RCX142	
	HFR-C11K		E5AN/E5EN/E5CN/E5GN		Yaskawa Electric	DX200(High-Speed Ethernet)
	HFR-K1K		E5AR/E5ER	Yokogawa Electric		UT100
	PPMC(MODBUS RTU)		E5CC/E5EC/E5AC/E5DC/E5GC		UT750	
	FALDIC-alpha series		E5CK		UT550	
	FALDIC-W series		E5CK-T		UT520	
	PH series		E5CN-HT		UT350	
	PHR(MODBUS RTU)		E5EK		UT320	
	WA5000		E5ZD		UT2400/2800	
	APR-N(MODBUS RTU)		E5ZE		UT450	
	ALPHA5 (MODBUS RTU)		E5ZN		UT32A/35A(MODBUS RTU)	
	ALPHA5 Smart (MODBUS RTU)		V600/620/680		UT52A/55A(MODBUS RTU)	
	ALPHA7 (MODBUS RTU)	KM20	UT75A(MODBUS RTU)			
	WE1MA(Ver.A)(MODBUS RTU)	KM100	μR10000/20000(Ethernet TCP/IP)			
	WE1MA(Ver.B)(MODBUS RTU)	V680S(Ethernet TCP/IP)	MODBUS RTU			
	WSZ series	EJ1	MODBUS TCP/IP (Ethernet)			
	WSZ series(Ethernet)	Orientalmotor	High-efficiency AR Series(MODBUS RTU)			
	4263 Series		CRK Series(MODBUS RTU)			
	Agilent					
	Azbil	SDC10	Panasonic	MINAS A4 Series		
		SDC15		LP-400		
		SDC20		LP-RF series		
		SDC21		LP-RF series(Ethernet)		
		SDC25/26	RKC	KW Series		
		SDC30/31		SR-Mini(MODBUS RTU)		
		SDC35/36		CB100/CB400/CB500/CB700/CB900(MODBUS RTU)		
		SDC45/46		SR-Mini(Standard Protocol)		
		SDC40A		REX-F400/F700/F900(Standard Protocol)		
		SDC40G		REX-F9000(Standard Protocol)		
		DMC10		SRV(MODBUS RTU)		
		DMC50(COM)		MA900/MA901(MODBUS RTU)		
		AHC2001		SRZ(MODBUS RTU)		
		AHC2001+DCP31/32		FB100/FB400/FB900(MODBUS RTU)		
		DCP31/32	RS Automation	CSD5(MODBUS RTU)		
NX(CPL)		Moscon-F50(MODBUS RTU)				
NX(Modbus RTU)		SANMEI	Cuty Axis			
NX(Modbus TCP/IP)	SanRex	DC AUTO (HKD type)				
A&D	SHARP	DS-30D				
AD4402(MODBUS RTU)		DS-32D				
AD4404(MODBUS RTU)						
Banner						
Bosch Rexroth						
CHINO	PresencePLUS(Ethernet/IP(TCP/IP))	SHIMADEN	Shimaden Standard Protocol			
	LT400 Series(MODBUS RTU)	SHINKO TECHNOS	C Series			
	DP1000		FC Series			
	DB1000B(MODBUS RTU)		GC Series			
	KR2000(MODBUS RTU)		DCL-33A			
	LT230(MODBUS RTU)		JCx-300 Series			
	LT300(MODBUS RTU)		PC-900			
	LT830(MODBUS RTU)		PCD-33A			
PMAC	ACS-13A					
DELTA TAU DATA SYSTEMS	PMAC(Ethernet TCP/IP)	ACD/ACR Series				
Gammaflux	TTC2100	WCL-13A				
	G24(Ethernet TCP/IP)	Siemens	S120(Ethernet ISOTCP)			
	SUS	XA-A*				

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To the purchasers:

The warranty of this product is as follows, unless there are special instructions that state otherwise in the quote, contract, catalog, or specifications at the time of the quote or order.

The purpose or area of use may be limited, and a routine checkup may be required depending on the product. Please contact the distributor from which you purchased the product, or Fuji Electric/Hakko Electronics for further information.

Please conduct inspection of the product promptly upon purchase or delivery. Also, please give sufficient consideration to management and maintenance of the product prior to accepting it.

1 Period and Coverage of the Warranty

1-1 Period

- (1) The period of the warranty is effective until twenty-four (24) months from the date of manufacture printed on the plate.
- (2) The above period may not be applicable if the particular environment, conditions or frequency of use affects the lifetime of the product.
- (3) The warranty for the parts repaired by our service department is effective for six (6) months from the date of repair.

1-2 Coverage

- (1) If malfunction occurs during the period of warranty due to negligence on the part of Fuji Electric/Hakko Electronics, the malfunctioning parts are exchanged or repaired free of charge at the point of purchase or delivery. However, the warranty does not apply to the following cases:
 - 1) The malfunction occurs due to inappropriate conditions, environment, handling or usage that is not specified in the catalog, instruction book or users' manual.
 - 2) The malfunction is caused by factors that do not originate in the purchased or delivered product.
 - 3) The malfunction is caused by another device or software design that does not originate in a Fuji Electric/Hakko Electronics product.
 - 4) The malfunction occurs due to an alteration or repair that was not performed by Fuji Electric/Hakko Electronics.
 - 5) The malfunction occurs because the expendable parts listed in the instruction book or catalog were not maintained or replaced in an appropriate manner.
 - 6) The malfunction occurs due to factors that were not foreseeable by the practical application of science and technology at the time of purchase or delivery.
 - 7) The malfunction occurs because the product is used for a purpose other than that for which it is intended.
 - 8) The malfunction occurs due to a disaster or natural disaster that Fuji Electric/Hakko Electronics are not responsible for.
- (2) The warranty is only applicable to the single purchased and delivered product.
- (3) The warranty is only valid for the conditions stated in (1) above. Any damage induced by the malfunction of the purchased or delivered product, including damage or loss to a device or machine and passive damage, is not covered by the warranty.

1-3 Malfunction Diagnosis

The initial diagnosis of malfunction is to be made by the purchaser. The diagnosis can be conducted by Fuji Electric/Hakko Electronics or our delegated service provider with due charge upon the request of the purchaser. The charge is to be paid by the purchaser at the rate stipulated in the rate schedule of Fuji Electric/Hakko Electronics.

2 Liability for Opportunity Loss

Regardless of the time of occurrence, Fuji Electric/Hakko Electronics are not liable for damage caused by factors that Fuji Electric/Hakko Electronics are not responsible for, opportunity loss on the part of the purchaser caused by the malfunction of a Fuji Electric/Hakko Electronics product, passive damage, damage due to a special situation regardless of whether it was foreseeable or not, or secondary damage, accident compensation, damage to products that were not manufactured by Fuji Electric/Hakko Electronics, or compensation towards other operations.

3 Period for Repair and Provision of Spare Parts after Production is Discontinued (Maintenance Period)

Discontinued models (products) can be repaired for seven (7) years from the date of discontinuation. Also, most spare parts used for repair are provided for seven (7) years from the date of discontinuation. However, some electric parts may not be available due to their short life cycle. In this case, it may be difficult to repair or provide the parts during the seven-year period. Please contact Fuji Electric/Hakko Electronics or our service providers for further information.

4 Delivery

Standard products that do not entail application setting or adjustment are regarded as received by the purchaser upon delivery. Fuji Electric/Hakko Electronics are not responsible for local adjustments and test runs.

5 Service

The price of the delivered or purchased products does not include the service fee for the technician. Please contact Fuji Electric/Hakko Electronics or our service providers for further information.

6 Scope of Application

The above contents shall be assumed to apply to transactions and product use in the country where a Fuji Electric/Hakko Electronics product is purchased. Please consult your local supplier or Fuji Electric/Hakko Electronics for details.

Operating system and performance guarantee



- The X1 series is equipped with Microsoft's Windows 10 IoT Enterprise 2019 LTSC. Fuji Electric/Hakko Electronics shall not be held responsible for any damages resulting from problems caused by Microsoft products. For problems and specifications of Microsoft products, refer to Microsoft's user manual or contact Microsoft support in your country.
- You can operate your own Windows applications on the X1 series. However, we will not guarantee the performance of applications installed by the customer. Please use them after verifying the performance.

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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