MELIPC Industrial PCs

MELIPC Data Solutions

Model Number	Stocked Item	Description
MI2000-MCWEG-75	-	MI2000 with preinstalled MC Works64 Edge Dev 75 Tags
MI2000-MCWEG-150	-	MI2000 with preinstalled MC Works64 Edge Dev 150 Tags
MI2000-MCWEG-500	-	MI2000 with preinstalled MC Works64 Edge Dev 500 Tags
MI2000-MCWEG-1500	-	MI2000 with preinstalled MC Works64 Edge Dev 1500 Tags
MI2000-MCWEG-5K	-	MI2000 with preinstalled MC Works64 Edge Dev 5K Tags
MI1000-DWE	-	MESUS 2.0 - DeviceWISE Ent Pre-installed on MI1002-W
MI1000-DWEA	-	MESUS 2.0 - DeviceWISE Ent Advanced Pre-installed on MI1002-W

MELIPC

Model Number	Stocked Item	Description
MI5122-VW	-	MELIPC MI5000, i7 12G Win10 IoT, Edgecross Basic Software, CC-Link IE Field Network Data Collector (MELIPC MI5122-VW), SLMP Data Collector, MI Configurator pre-installed
MI3321G-W	S	MELIPC MI3000, TFT color LCD, 21.5 widescreen, Full HD, Panel color black Edgecross Basic Software, SLMP Data Collector, GT SoftGOT2000 pre-installed
MI3315G-W	S	MELIPC MI3000, TFT color LCD, 15" XGA, Panel color Black, Edgecross Basic Software, SLMP Data Collector, GT SoftGOT2000 pre-installed
MI2012-W	S	MELIPC MI2000, i3 8G Win10 IoT, Edgecross Basic Software, SLMP Data Collector pre-installed
MI1002-W	S	MELIPC MI1000, ATOM 4G Win10 IoT, Edgecross Basic Software, SLMP Data Collector pre-installed

Options

Model Number	Stocked Item	Description
MI5A1P	-	Replacement module for MI5000
MI5FAN	-	Replacement module for MI5000
FX3U-32BL	S	For MI5000, for preserving clock data (*1)
NZ1MEM-16GBCFT	S	For MI2000/MI5000 expansion storage 16GB
NZ1MEM-32GBCFT	-	For MI2000/MI5000 expansion storage 32GB
NZ1MEM-64GBCFT	-	For MI2000/MI5000 expansion storage 64GB

Software

Model Number	Stocked Item	Description
SW1DND-CWW4-E	-	For MI5000, C/C++ development environment (product with license)
SW1DND-CWW4-EZ	-	For MI5000, C/C++ development environment (additional license product)
SW1DND-CWW4-EVZ	-	For MI5000, C/C++ development environment (update license product)

iQ-Edgecross

Model Number	Stocked Item	Description
SW1DND-RDA-MQ12	-	RDA Software, one year DVD
SW1DND-RDA-MV	-	RDA Software, upgrade
SW1DND-RDA-M	-	RDA Software, unlimited

MELIPC MI5000

Item	MI5000					
Stocked Item	-					
Operating Ambient Temperature (°C)	0-55					
Storage Ambient Temperature (°C)	-25-75					
Operating Ambient Humidity	5-95% RH, non-condensing					
Storage Ambient Humidity (*1)						
Vibration Resistance	Compliant with JIS B 3502 and IEC 61131-2	-	Frequency	Constant Acceleration	Half Amptitude	Sweep Count
		Under intermittent vibration	5-8.4 Hz	-	3.5mm	10 times each in directions X, Y, Z
			8.4-150 Hz	9.8 m/s^2	-	
		Under continuous vibration	5-8.4 Hz	-	1.75mm	-
			8.4-150Hz	4.9 m/s^2	-	
Shock Resistance	Compliant with JIS B 3502 and IEC 61131-2 (147 m/s^2, 3 times each in directions X, Y, Z)					
Operating Atmosphere	No corrosive gases, no flammable gases, no excessive conductive dust					
Operating Altitude (m) (*2, *3)	0-2000					
Installation Location	Inside the control panel (*4)					
Overvoltage Category (*5)	≤ II					
Pollution Degree M (*6)	≤ 2					
Equipment Class	Class I					

Notes:
1. Do not use nor store the product under pressure higher than the atmospheric pressure of altitude 0 m. Doing so may cause malfunction.
2. When used at an altitude higher than 2000 m, the upper limits of the permissible voltage and the operating ambient temperature become lower.
3. When installing a ventilation fan in the control panel, situate in order that this does not interfere with the exhaust flow from the product fan.
4. This indicates the section of the power supply to which the equipment is assumed to be connected between the public electrical power distribution network and the machinery within premises. Category 2 applies to equipment for which electrical power is supplied from fixed facilities. The surge voltage withstand level for up to the rated voltage of 300 V is 2500 V.
5. This index indicates the degree to which conductive material is generated in terms of the environment in which the equipment is used. Pollution level 2 is when only non-conductive pollution occurs. A temporary conductivity caused by condensing must be expected occasionally.
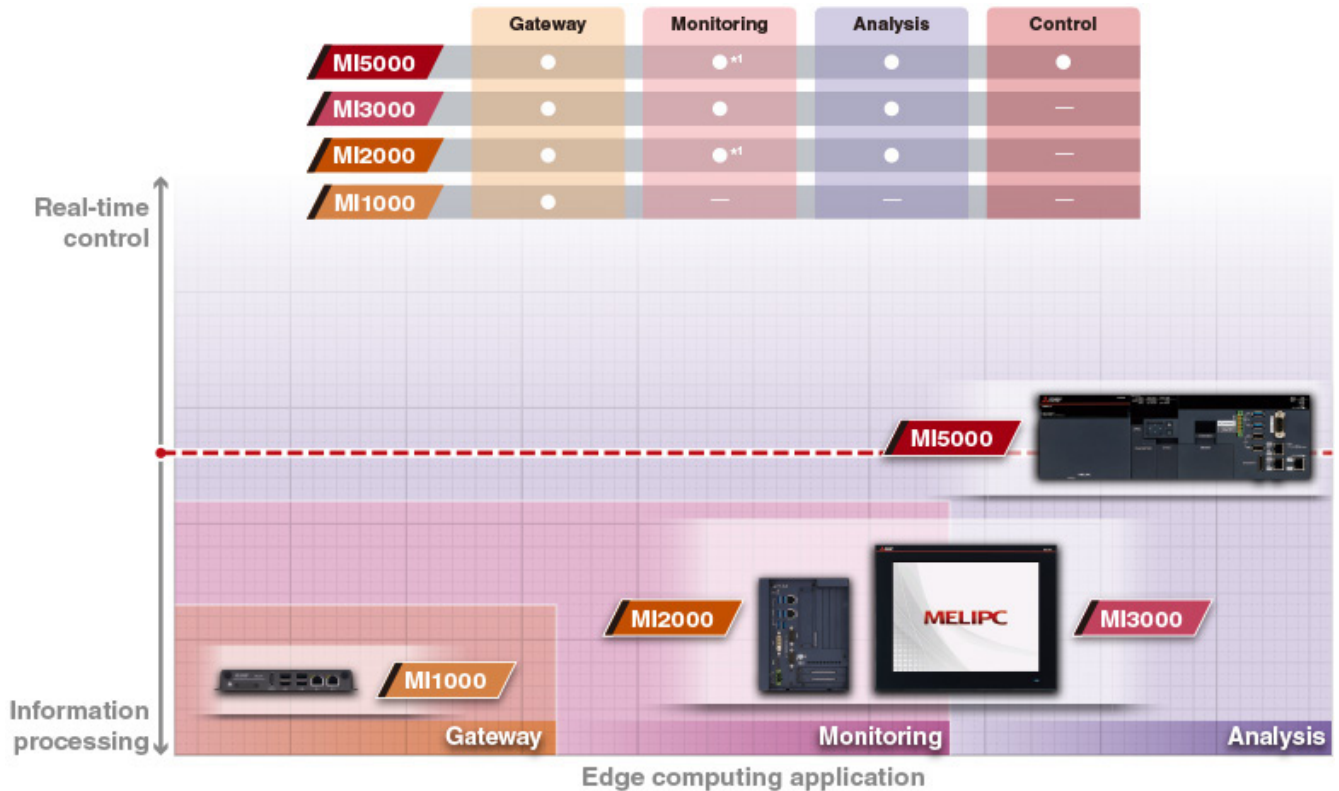
System Configuration MELIPC 5000
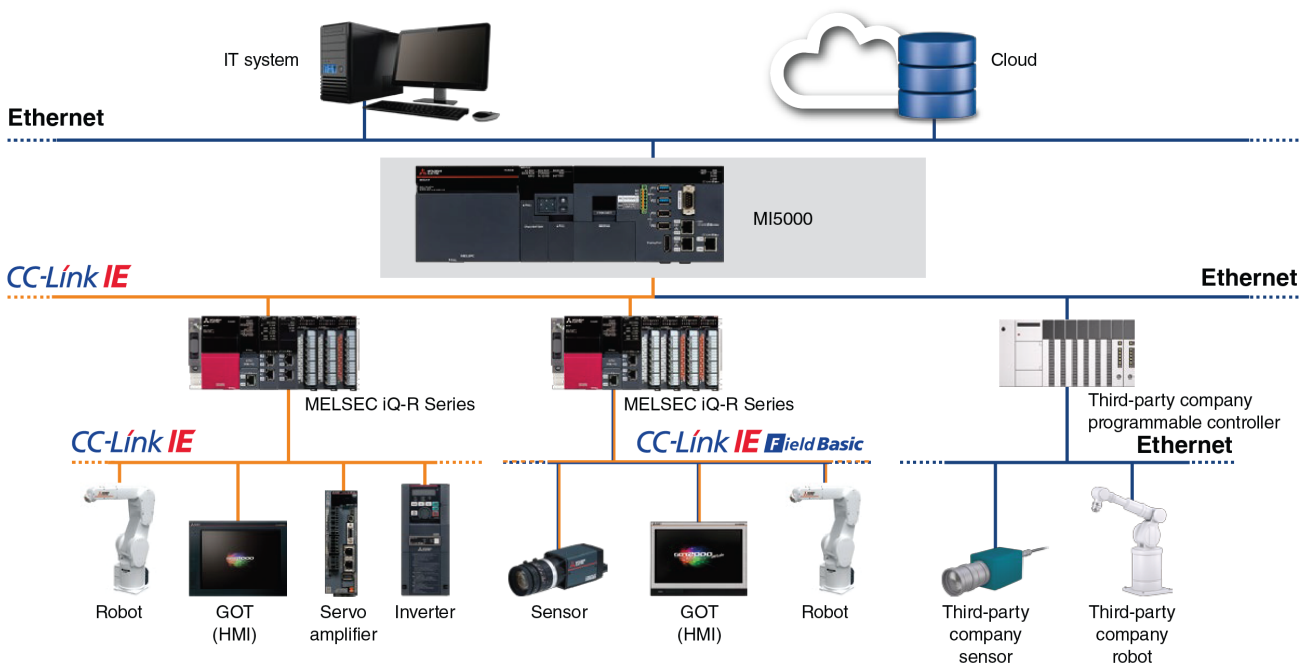
MELIPC MI5000 Performance Specifications

Model Number		MI5122-VW	
		Windows® Section	VxWorks® Section
Hardware	MPU	Intel® Core™ i7-5700EQ 2.60G Hz(Quad Core)	
	Main Memory (byte)	12G (*1)	1G*1
	Internal Storage Capacity (byte)	45G	4G
	Extended Storage Interface	CFastcard x 1 (*2)	-
Software	OS	Windows® 10 IoT Enterprise 2016 LTSB (64bit)	VxWorks®7.0
	Programming Language	Language supporting above OS	C/C++
	Format of Dedicated APIs	Standard DLL	C/C++ format
Display Interface	Interface	DisplayPort x 1	-
	Resolution*3	Max. 3840 x 2160	-
Extended Slot	PCI Express®	-	
	Mini PCI Express®	-	
	PCI	-	
RS-232	Number of Channels	1 (*4)	
	Transmission Rate (bps)	9600-115200	
RS-422	Number of Channels	-	
	Transmission Rate (bps)	-	
RS-485	Number of Channels	-	
	Transmission Rate (bps)	-	
USB	USB3.0	2	
	USB2.0	2	
I/O Terminal	OS Shutdown Request Input	Yes	
	OS Shutdown Completed Notification Output	Yes	
Power Supply (AC Input)	Rated Input Voltage	100-240 V AC	
	Input Voltage Variable Range (VAC)	85-264	
	Input Frequency (Hz)	47-63	
	Maximum Input Apparent Power (VA)	≤ 139	
External Dimensions (H x W x D) mm		106 x 362 x 119	
Weight (kg)		2.7	

Notes:
1. Shared memory is 0.25 GB.
2. Maximum capacity of option product is 64 GB.
3. Maximum resolution at 60 Hz.
4. Can be allocated to the Windows® section or VxWorks® section through parameter settings.
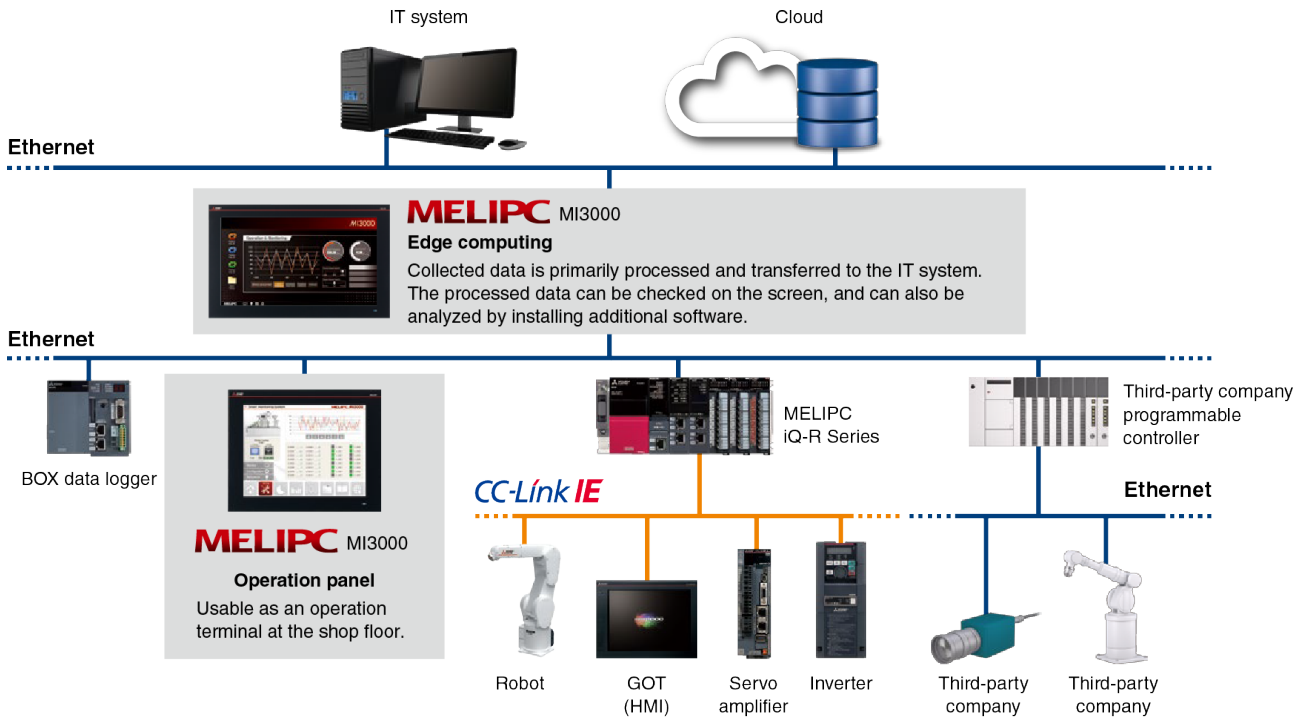
MELIPC MI3000

Item	MI3000
Stocked Item	S
Operating Ambient Temperature (°C)	0-55
Storage Ambient Temperature (°C)	-20-60
Operating Ambient Humidity	10-90% RH, non-condensing
Storage Ambient Humidity	
Vibration Resistance	Random vibration — Compliant with IEC60068-2-64, 5-500Hz, one hour in direction X, Y, Z each / 3 Grms
Shock Resistance	Compliant with IEC-60068-2-27, 10 G, half sine wave, 11 msec
Operation Atmosphere	No corrosive gases, no flammable gases, no excessive conductive dust, no direct sunlight (as well as at storage)
Operating Altitude (m) (*1, *4)	-
Installation Location	Inside the control panel
Overvoltage Category (*2)	≤ 2
Pollution Degree (*3)	≤ 2

Notes:
1. Do not use nor store the product under pressure higher than the atmospheric pressure of altitude 0 m. Doing so may cause malfunction.
2. This indicates the section of the power supply to which the equipment is assumed to be connected between the public electrical power distribution network and the machinery within premises. Category 2 applies to equipment for which electrical power is supplied from fixed facilities. The surge voltage withstand level for up to the rated voltage of 300 V is 2500 V.
3. This index indicates the degree to which conductive material is generated in terms of the environment in which the equipment is used. Pollution level 2 is when only non-conductive pollution occurs. A temporary conductivity caused by condensing must be expected occasionally.
4. No limitations to altitude. When used at a high altitude, the upper limits of the permissible voltage and the operating ambient temperature become lower. Please check performance before use at the customer side.

System Configuration MELIPC3000

IT system

Cloud

Ethernet

MELIPC MI3000
Edge computing
Collected data is primarily processed and transferred to the IT system. The processed data can be checked on the screen, and can also be analyzed by installing additional software.

Ethernet

BOX data logger

MELIPC MI3000
Operation panel
Usable as an operation terminal at the shop floor.

MELIPC iQ-R Series

Third-party company programmable controller

Ethernet

CC-Link IE

Robot

GOT (HMI)

Servo amplifier

Inverter

Third-party company

Third-party company

MELIPC MI3000 Performance Specifications

| Model Number		MI3321G-W	MI3315G-W
Hardware	MPU	Intel® Core™ i3-6100U 2.30GHz (Dual Core)	
	Main Memory (byte)	8G	
	Internal Storage Capacity (byte)	64G	
	Extended Storage Interface	M.2 (2280) SATA SSD x 1	
Software	OS	Windows® 10 IoT Enterprise 2016 LTSB (64 bit)	
	Programming Language	Language supporting above OS	
	Format of Dedicated APIs	-	
Display Specifications	Display Device (*1, *2)	TFT color LCD	
	Screen Size	21.5" widescreen	15"
	Resolution (dot)	Full HD: 1920 x 1080	XGA: 1024 x 768
	Display Colors	16.77 million	
	Contrast Ratio	5000:1	700:1
	Backlight Specification	LED backlight (not replaceable)	
	Life	50,000 hours	
Touch Panel	Type	PCAP (Projected Capacitive)	
	Simultaneous Press	Max. 10 keys (*3)	
	Transmittance	90%±3%	
Display Interface (For External Monitor Output)	Interface	DisplayPort x 1	
	Resolution*4	Max. 3840 x 2160	
Extended Slot	PCI Express®	x1 slot (half size) x 1	
	Mini PCI Express®	Full size x 2	
	PCI	-	
RS-232	Number of Channels	2 (RS-422/485 can also be used for one of the two channels)	
	Transmission Rate (bps)	300-115200	
RS-422	Number of Channels	1 (RS-232/485 can also be used)	
	Transmission Rate (bps)	300-115200	
RS-485	Number of Channels	1 (RS-232/422 can also be used)	
	Transmission Rate (bps)	300-115200	
USB	USB3.0	2	
	USB2.0	2	
Sound Output (ø3.5 Mini-jack (3-prong))	Interface	Audio Line-Out	
	Number of Ports	1	
I/O Terminal	OS Shutdown Request Input	-	
	OS Shutdown Completed Notification Output	-	
Power Supply (DC Input)	Rated Input Voltage	24 VDC	
	Input Voltage Variable Range (VDC)	19.2-28.8	
	Input Frequency (Hz)	-	
	Maximum Input Apparent Power (VA)	-	
POWER LED		2 colors (blue and orange)	
Environmental Protective Structure		IP66 (front face)	
External Dimensions (H x W x D) mm		349.8 x 558.4 x 88.8	307.3 x 383.2 x 86
Panel Cutting Dimensions (H x W) mm		341.8 x 550.3	298.5 x 374.5
Weight (kg)		9.8	7.0

Notes:

1. As a characteristic of liquid crystal display panels, bright dots (always lit) and dark dots (never lit) may appear on the panel. Since liquid crystal display panels comprise a great number of display elements, the appearance of bright and dark dots cannot be reduced to zero. Individual differences in liquid crystal display panels may cause differences in color, uneven brightness and flickering. Note that these phenomena are characteristics of liquid crystal display panels and it does not mean the products are defective or damaged.
2. Flickering may occur due to vibration, shock, or the display colors.
3. Multiple touch keys cannot be pressed simultaneously while GT SoftGOT2000 is used.
4. Maximum resolution at 60 Hz.

MELIPC MI2000/MI1000

Item	MI2000	MI1000
Stocked Item	S	
Operating Ambient Temperature (°C)	0-55	
Storage Ambient Temperature (°C)	-40-75	-20-75
Operating Ambient Humidity	10-90% RH, non-condensing	10-85% RH, non-condensing
Storage Ambient Humidity		
Vibration Resistance	Sine wave vibration	Compliant with IEC60068-2-6, 5-500 Hz, 1 oct/min, one hour in direction X, Y, Z each
		-	2 Grms (wall installation)
	Random vibration	Compliant with IEC60068-2-64, 5-500 Hz, 1 oct/min, one hour in direction X, Y, Z each
		4 Grms (1.5 Grms when HDD is used)	2 Grms (wall installation)
Shock Resistance	Compliant with IEC-60068-2-27, 50 G, half sine wave, 11 msec	
Operation Atmosphere	No corrosive gases, no flammable gases, no excessive conductive dust	
Operating Altitude (m) (*2, *7)	-	
Installation Location	Stable location where product is less affected by electric field and magnetic field	
Overvoltage Category (*5)	≤ II	
Pollution Degree (*6)	≤ 2	

Notes:
1. Do not use nor store the product under pressure higher than the atmospheric pressure of altitude 0 m. Doing so may cause malfunction.
2. This indicates the section of the power supply to which the equipment is assumed to be connected between the public electrical power distribution network and the machinery within premises. Category 2 applies to equipment for which electrical power is supplied from fixed facilities. The surge voltage withstand level for up to the rated voltage of 300 V is 2500 V.
3. This index indicates the degree to which conductive material is generated in terms of the environment in which the equipment is used. Pollution level 2 is when only non-conductive pollution occurs. A temporary conductivity caused by condensing must be expected occasionally.
4. No limitations to altitude. When used at a high altitude, the upper limits of the permissible voltage and the operating ambient temperature become lower. Please check performance before use at the customer side.

System Configuration MI2000/MI1000
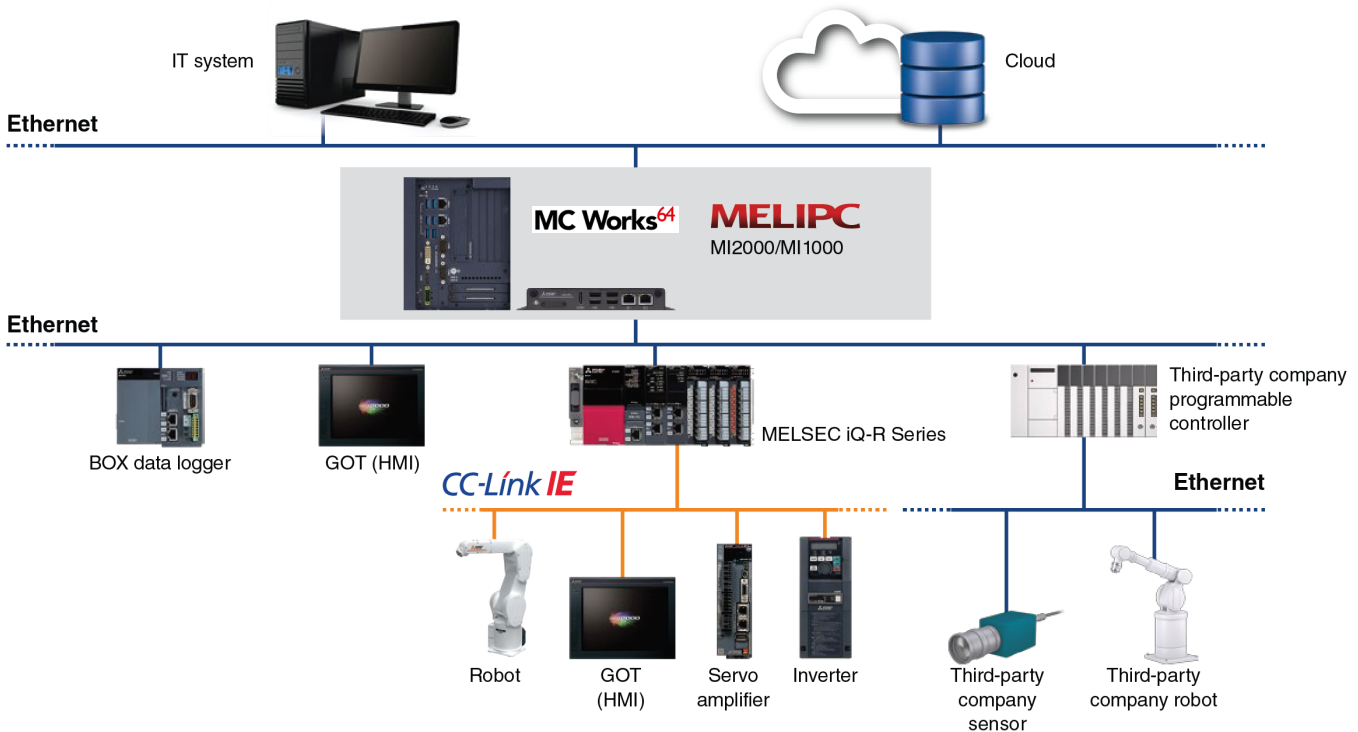
MELIPC MI2000/ MI1000 Performance Specifications

Model Number		MI2012-W	MI1002-W
Hardware	MPU	Intel® Core™ i3-6102E 1.90G Hz (Dual Core)	Intel® Atom™ E3826 1.46G Hz (Dual Core)
	Main Memory (byte)	8G	4G
	Internal Storage Capacity (byte)	64G	60G
	Extended Storage Interface	2.5" SATA SSD/HDD x 2 CFast card x 1 (*1)	-
Software	OS	Windows® 10 IoT Enterprise 2016 LTSB (64bit)	
	Programming Language	Language supporting above OS	
	Format of Dedicated APIs	-	
Display Interface	Interface	HDMI v1.4 x 1, DVI-I x 1	HDMI v1.4a x 1
	Resolution (*2)	Max. 1920 x 1080	Max. 1920 x 1080
Extended Slot	PCI Express®	x1, x2, x4, x8, x16 (half-size) x 1	-
	Mini PCI Express®	Full-size x 2	-
	PCI	Half-size x 1	-
RS-232	Number of Channels	2 (RS-422/485 can also be used)	2
	Transmission Rate (bps)	9600-115200	9600-115200
RS-422	Number of Channels	2 (RS-232/485 can also be used)	-
	Transmission Rate (bps)	50-115200	-
RS-485	Number of Channels	2 (RS-232/422 can also be used)	1
	Transmission Rate (bps)	50-115200	50-115200
USB	USB3.0	6	-
	USB2.0	-	4
I/O Terminal	OS Shutdown Request Input	-	-
	OS Shutdown Completed Notification Output	-	-
Power Supply (AC input)	Rated Input Voltage	AC adapter (input voltage: 100-240 VAC, output voltage: 24 VDC) (*3)	AC adapter (input voltage: 100-264 V AC, output voltage: 12 V DC) (*3)
	Input Voltage Variable Range (V AC)	85-264	85-264
	Input Frequency (Hz)	47-63	47-63
	Maximum Input Apparent Power (VA)	≤ 170	≤ 140
External Dimensions (H x W x D) mm		177 x 142 x 238	26 x 180 x 150
Weight (kg)		3.9 (excluding AC adapter)	0.90 (excluding AC adapter)

Notes:
1. Maximum capacity of option product is 64 GB.
2. Maximum resolution at 60 Hz.
3. A power supply cable included with MI_-W is exclusively for 100 VAC in Japan. When using with other than 100 V AC or abroad, please purchase MI_-W-CL and use an appropriate cable complying with the power supply used and the safety standard of the area.

MELIPC Field Network Specifications

Item		MI5000		MI3000	MI2000	MI1000
		Windows® Section	VxWorks® Section			
Ethernet	Interface	10BASE-T/100BASE-TX/1000BASE-T				
	Number of Channels	1 (CH2)	1 (CH1)	3	2	2
CC-Link IE Field Network	Station Type	Master/local station		-	-	-
	Transmission Speed (Mbps)	1000		-	-	-
	Max. Number of Connectable Stations	120 (*1)		-	-	-
	Number of Ports	1		-	-	-
	Communications Cable	Ethernet cable (Category 5e or higher, double shielded/STP) straight cable		-	-	-
	Network Topology	Line type and star type (*2)		-	-	-
	Overall Cable Distance (m)	Line type: 12,000 Star type: Depends on the system configuration		-	-	-
	Max. Station-to-Station Distance (m)	100		-	-	-
CC-Link IE Field Network Basic	Station Type	Master station		-	-	-
	Number of Slave Stations on 1 Network (*3)	64 (16 x 4 groups)		-	-	-
	Number of Ports	1		-	-	-
	Network Topology	Star type		-	-	-

Notes:

1. 120 (up to a maximum of 120 slave stations can be connected)
2. For star type connections, use a switching hub that supports CC-Link IE Field Network synchronized communications.
3. Maximum number of slave stations managed by the master station. Changes depending on numbers of occupied slave stations. However, configure so the total number of occupied slave stations does not exceed the total number of connected devices.

Pre-installed Software List

Model Number		MI5000	MI3000	MI2000	MI1000
Edge application	GT SoftGOT2000	-	Yes	-	-
Edgecross	Edgecross Basic Software	Yes	Yes	Yes	Yes
Data collector	CC-Link IE Field Network Data Collector(MELIPC MI5122-VW)	Yes	-	-	-
	SLMP Data Collector	Yes	Yes	Yes	Yes
Engineering tool	MELSOFT MI Configurator	Yes	-	-	-

iQ Edgecross Compatible with MELIPC

Model Number		MI5000	MI3000	MI2000	MI1000
Edge Application	Real-time Data Analyzer	Yes	Yes (*1)	Yes	-
	GT SoftGOT2000	Yes	Yes	Yes	-
	MC Works64 Edge Computing Edition	Yes	Yes	Yes	-
Data Collector	CC-Link IE Field Network Data Collector MELIPC MI5122-VW)	Yes	-	-	-
	CC-Link IE Field Network Data Collector (*2) Supported Soon	-	Yes	Yes	-
	CC-Link IE Controller Network Data Collector (*2) Supported Soon	-	Yes	Yes	-
	SLMP Data Collector	Yes	Yes	Yes	Yes
	OPC UA Data Collector	Yes	Yes	Yes	Yes
	MTConnect Data Collector	Yes	Yes	Yes	-

Notes:

1. Since MI3315G-W does not support the resolution that is recommended by Real-time Data Analyzer, some parts of the screen are not shown on the display.
2. The network interface board by Mitsubishi Electric is required separately.

Real-time Data Analyzer

Display Functions	**Read Data Display**	To display data of a CSV file as a waveform. Analysis by overlapping or connecting data can be performed.
	Read Data Statistics Display	To calculate and display the statistics of CSV file data. The changes of statistics and correlation of data can be analyzed.
	Read Data Frequency Display	To perform STFT conversion and display the spectrogram, or perform Wavelet conversion and display the scalogram on data in a CSV file. Facility failure can be analyzed by visualizing the frequencies.
Simplified Analysis/ Diagnosis Function	**SPC**	To calculate the statistics for each unit of collected data and diagnose it according to the SPC rule. A sign of failure can be detected based on the changes of statistics.
	Multivariate Analysis	To detect an event to be a trigger based on the model of the multivariate analysis result.
	Guard Band Diagnostic	To diagnose data by using a guard band created based on the normal waveform data. The upper and lower limit values can be specified without using the reference waveform.
Advanced Analysis Function	**Correlation Matrix Creating**	To create a correlation matrix for correlation analysis.
	Multiple Regression Analysis (LMR)	To perform multiple regression calculation by selecting one objective variable and multiple explanatory variables to obtain the correlation between multiple variables.
	Mahalanobis-Taguchi System (MT)	To collect the sample of multiple variables to be referenced and calculate the Mahalanobis distance for the standard section and the changes in variation based on the correlation of multiple variables.
Analysis/Diagnosis Logic Operation Function	**Logic Editing**	To edit the analysis and data diagnosis logics.
	Logic Variable Setting	To edit variables used in the analysis and data diagnosis logics.
Diagnostic Result Display Function	**Simplified Diagnostic Result Display**	To display the result of simplified diagnostic (SPC, multivariate analysis, or guard band).
	Diagnostic Logic Result Display	To display the result of diagnostic logic (expansion trace GB, SPC diagnostic, log writing, and error notification).
Similar Waveform Recognition Function	**Waveform Learning Function**	To create the reference waveform learning data used for similar waveform recognition. It extracts unit waveforms from a reference waveform for diagnosing the similarity.
	Data Diagnostic Function	To monitor an inspection waveform that was input from Real-time Flow Manager and notify Real-time Flow Manager of a waveform determined to be different, that is the similarity score is lower than a threshold value, if found.
	GX LogViewer Interaction Function	To display the diagnostic status of a similar waveform recognition in GX LogViewer.

Operating Environment

Industrial Computer	**CPU**	Intel® Core™ i3 2 cores or more
	Required Memory	8 GB or more
OS	**Supported OS*1**	Microsoft® Windows® 10 (Pro, Enterprise, IoT Enterprise)
	Language	Japanese, English, Chinese (simplified)
Display	**Resolution**	1280 x 800 dot or more