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SMART DEVICE



SMART DEVICE

Product Catalog

MX On Corporation

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MX On Corporation Is an AX·DX-Based Smart Factory Total Solution Platform Company with Technical Expertise Extending from HMI/SCADA Development and Manufacturing to Robot Control and Logistics Automation.

SMART DEVICE

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SMART DEVICE LINE-UP



MSR Ex
High-Reliability Industrial Barcode Scanner Combining Safety and Ease of Use
Ex / Non-Ex Barcode Scanner



MWD Ex
Dongle for Easy Connectivity with Devices Without IrDA or Bluetooth
(Exclusive for Barcode Scanners) Explosion-Proof and Non-Explosion-Proof Wireless Communication Dongle



MIO REMOTE I/O
Remote I/O Device with a Compact Form Factor, Enhancing System Flexibility and Efficiency
Industrial Remote I/O Device



MIO LoRa
Secure Device Offering Diverse I/O with Long-Range Wireless Communication up to 2 km Based on LoRa
Industrial Wireless Communication Device



MGW
Data Integration and Conversion Device Supporting Over 400 Industrial Communication Protocols
IoT Gateway Connecting Industrial Equipment

MSR SERIES

Ex / Non-Ex Barcode Scanner

Ex    |    (On Progress)

Non-Ex  



FEATURES

Explosion-Proof Wireless Barcode Scanner | MSR-B2MWA-Ex

- Intrinsically Safe Explosion-Proof Structure**

UL/cUL: Class 1, Division 2 Groups A, B, C, D, T6
IECEX, ATEX, KCs: Ex ic ec IIC T6 (In Progress)
- Field-Preferred Gun-Type Design**

Shock-Resistant Urethane Exterior
IP54-Rated Waterproof and Dustproof Performance
Compact Design with Excellent Grip
- Supports IrDA / Bluetooth Wireless Communication**

Supports Multi SEND with Our HMI IrDA Compatible
IrDA Communication with Third-Party HMI, PC via
MWD Dongle
Bluetooth Pairing Supported with Our HMI, PC and
MWD Dongle
- Secure Management of Barcode Data**

Can Temporarily Store up to 20 Recent Barcodes
Transmission Status Confirmed via LED Indicator

Standard Wired / Wireless Barcode Scanner | MSR-B2MWB

- Compact Design Combining Durability and Portability**

Shock-Resistant Urethane Exterior
IP67-Rated Waterproof and Dustproof Performance
Compact Design with Excellent Grip
- Supports Wired and Wireless USB Communication**

Easy 2.4GHz RF Wireless Communication Using a
USB Dongle
Stable Wired Communication via USB Cable
- Wide IrDA Infrared Communication Compatibility**

Full Support for Proprietary HMI and Multi SEND
Functionality
Compatible Communication with Various Devices
Such as Third-Party HMI and PCs via MWD Dongle
- Secure Barcode Data Management**

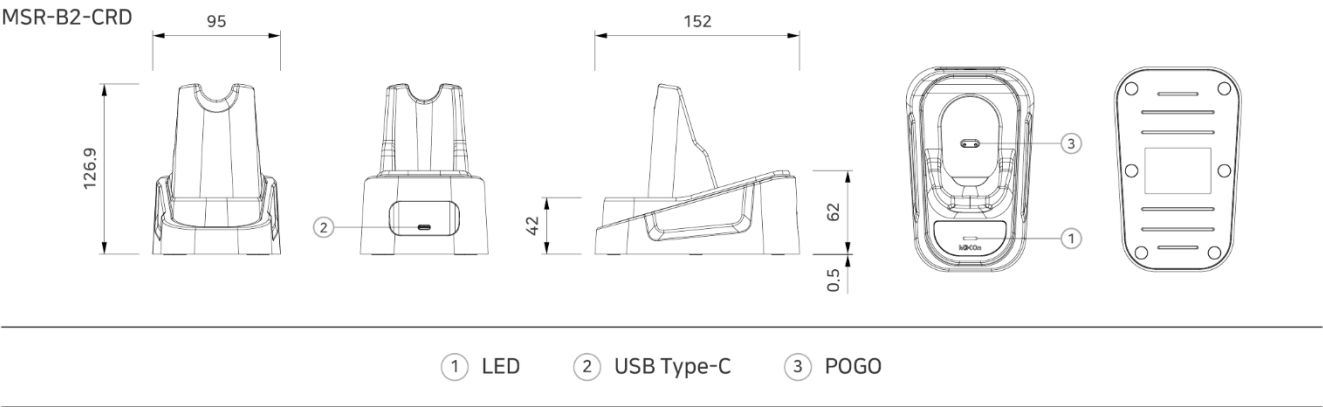
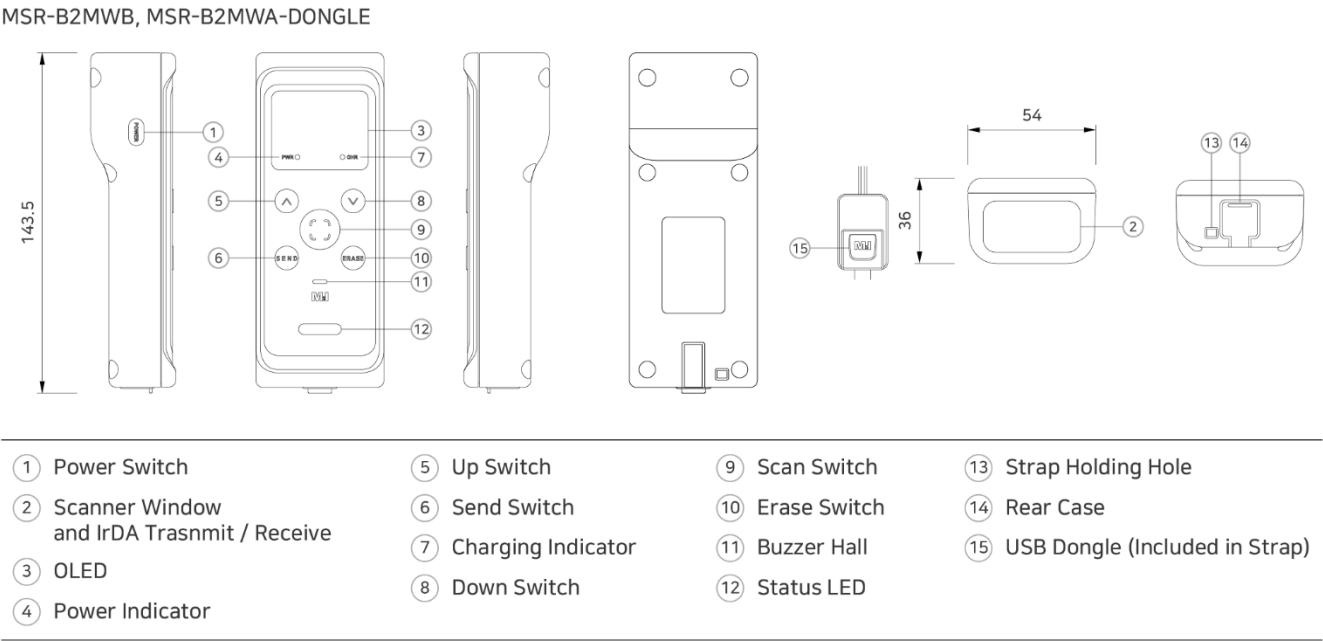
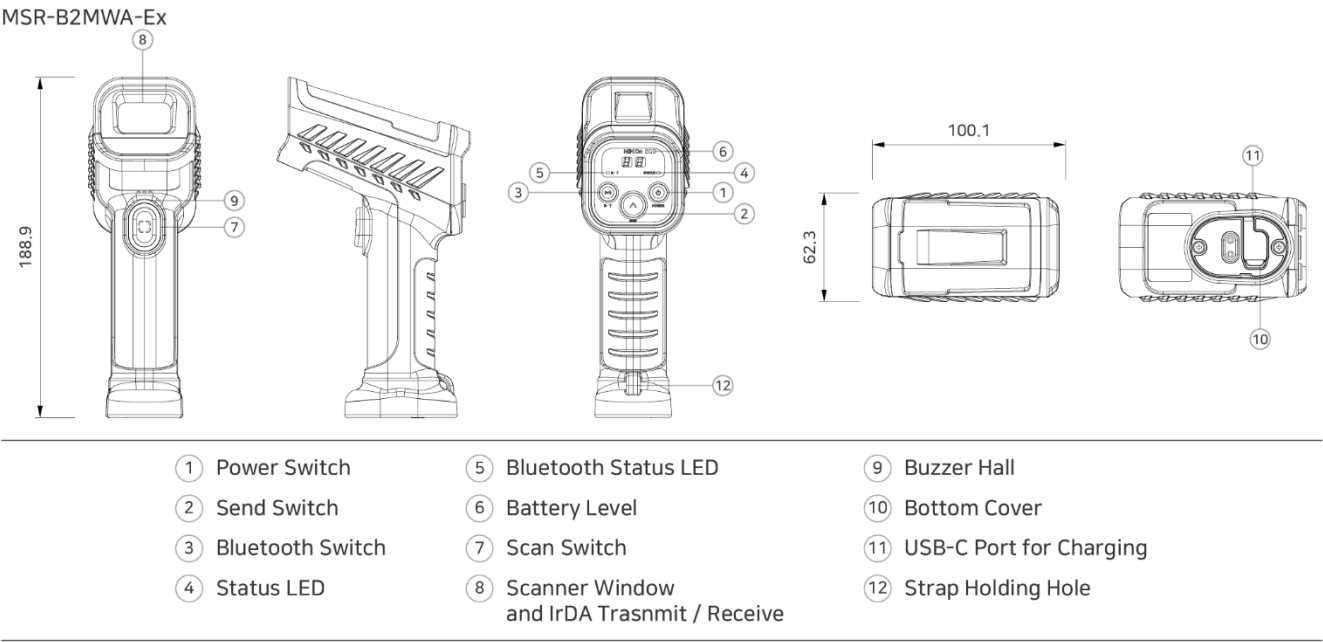
Built-In Memory Capable of Storing up to 25,000
Barcodes
Select and Transmit Only the Required Data Using
UP/DOWN Buttons

MSR SPECIFICATIONS

Functional		MSR-B2MWA-Ex	MSR-B2MWB	MSR-B2MWA-DONGLE
Display	Display Type	LED	1.3" OLED	-
	Color	-	Gray	Gray
	Display Area(mm)	-	31.42 x 16.7	-
	Resolution(dot)	-	128 x 64	-
	Display Life	-	50,000 Hours	-
Barcode	Indicators	Bluetooth, Status, Battery Gauge		-
	Type	640 x 400 1D/2D CMOS Barcode	1280 x 960, 1D/2D Barcode	-
	Symbologies	Code 39, Code 128, PDF417, UPC, Data Matrix, QR Code		-
Interface	USB	USB Type C, Charge Only	USB Type C, V1.1 Compatible 1 Channel	USB A Type, V1.1 Compatible 1 Channel
	IrDA	Compliant to IrDA Physical Layer Standard Up to 115.2 kbit/s(SIR), More than 0.5M in Open Space Connection with MX On HMI Equipment	Compliant to IrDA Physical Layer Standard Up to 115.2 kbit/s(SIR), Range Up to 1.0M in Open Space Connection with MX On HMI Equipment	-
	2.4GHz RF	2402MHz to 2480MHz, Bluetooth 5.2 LE, Range Up to 5M in Open Space	2322MHz to 2527MHz, IEEE 802.15.4, Range Up to 15M in Open Space	-
	Function Key	Unlock Type Push Switch 4EA (Power/Bluetooth/Send/Scan)	Unlock Type Push Switch 6EA (Power/Scan/Send/Erase/Up/Down)	-
	Storage Memory	-	512KB	-
Battery	Rechargeable Battery	Single Li-ion 3.6Vdc, 2500mAh Operating Time: 6+ Hours (18000+, 1Second interval) Charging Time: 5 Hours(Non-Operating) Standby On: 29+ Hours	Single Li-ion 3.7Vdc 1800mAh Operating Time: 13 Hours Charging Time: 5.5 Hours(Non-Operating)	-
Power	Consumption	3W	3W	1W
Other	Status LED	-	2 LEDs(Power, Charge) Built in	-
	Operation Temperature(°C)	-10 ~ +50	+10 ~ +45	-10 ~ +50
Environment	Storage Temperature(°C)	-	-20 ~ +60	-
	Protection Classification	IP54	Product Body IP67	-
	Operation Humidity(%RH)	-	0 ~ 90(No Dew)	-
	Atmosphere	-	No Corrosive Gas	-
	Vibration Endurance	-	Amplitude: 10≤F < 25Hz(2G) X, Y, Z each Direction(for 30 Minutes)	-
	Static Electricity Discharge	-	Connective Discharge from EN61000-4-2: ±4kV	-
	Shock Endurance	-	10G X, Y, Z each Direction(for 3 Times)	-
	Certification	KC, CE, UL/cUL in Hazloc KCs, IECEEx, ATEX(On Progress)		KC, CE
Structure	External Dimension(mm)	188.9 x 100.1 x 62.3	143.5 x 54 x 36	28.8 x 18 x 8
	Weight(kg)	4.1	1.8	0.3
	Case Material	PC, Urethane		PC

Functional		MSR-B2-CRD
Power	Input Voltage	5Vdc Via USB Type C
	Output Voltage	5Vdc
	Power Consumption	3W (with Main Body + Extra battery Pack)
	Voltage Sag	5Vdc, Within 10ms
	Status LED	1 LEDs(Charging status) Built in
Environment	Operation Temperature(°C)	-10 ~ +50
	Storage Temperature(°C)	-20 ~ +60
	Operation Humidity(%RH)	0 ~ 90(No dew)
	Atmosphere	No corrosive gas
	Vibration Endurance	Amplitude: 10≤F < 25Hz(2G) X,Y,Z each direction(for 30 minutes)
	Noise Immunity	1000Vp-p(Pulse width 1µs)
	Static Electricity Discharge	Connective discharge from EN61000-4-2: ±4kV
	Shock Endurance	10G X,Y,Z each direction(for 3 times)
Structure	Certification	KC, CE
	Protection classification	IP65
	External Dimension(mm)	152(Width) x 82.8(Front Depth) x 94.9(Rear Depth) x 126.9(Height)
	Cooling System	Natural air circulation
	Case Material	PC (Flame Retardant)

DRAWING



MWD SERIES

EX / Non-Ex Wireless Communication Dongle

Ex    (On Progress)

Non-Ex    (On Progress)



FEATURES

- Provides Wide Compatibility in USB HID Mode**

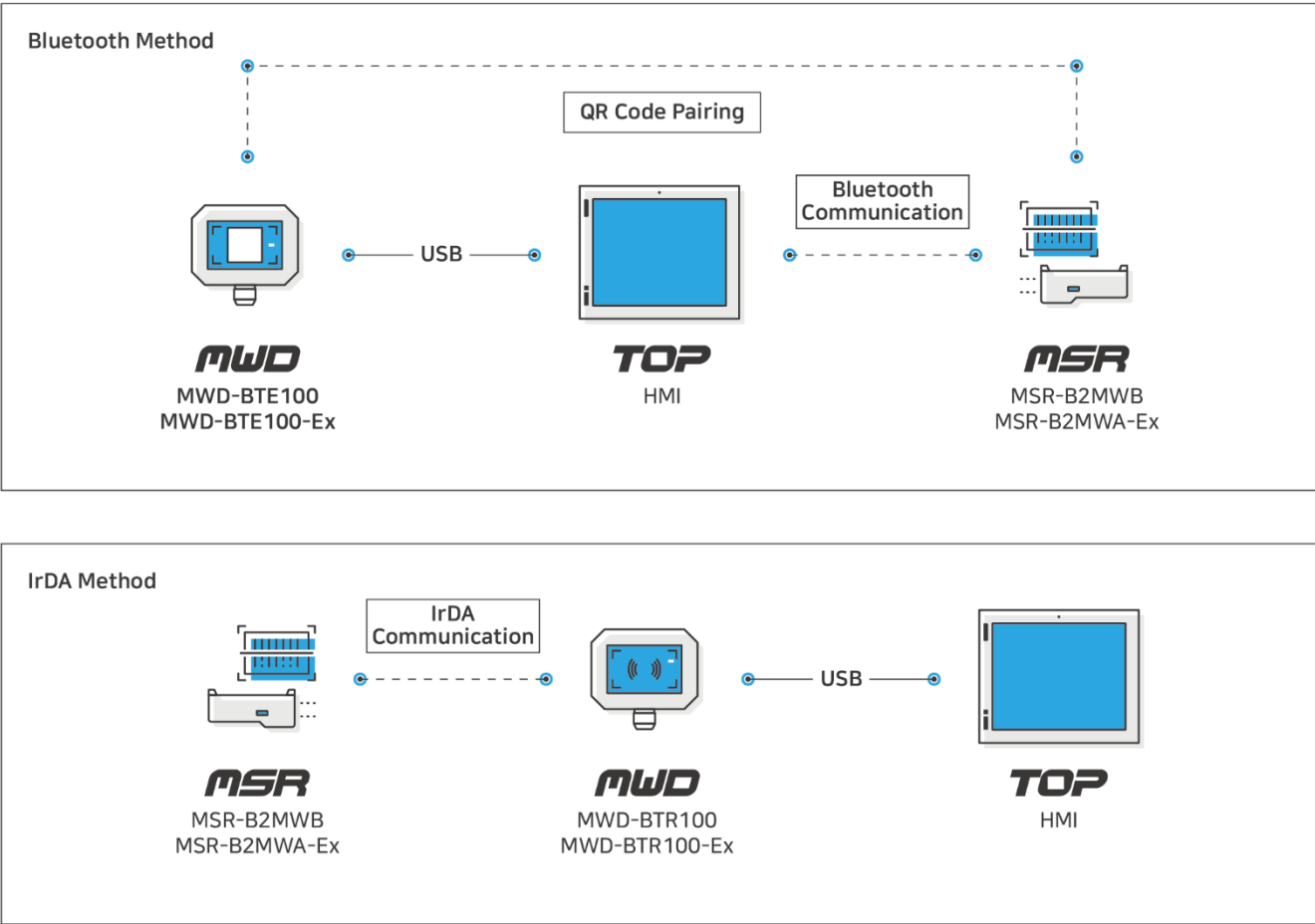
Fully Compatible with Proprietary HMI as Well as Third-Party HMI, PCs, and Other Devices Through USB HID Operation
- Seamless Data Transmission in USB Serial Mode**

Ensures Data Reliability via Proprietary HMI Protocol When Using USB Serial Mode
- Supports Long-Range Bluetooth Communication**

 - MWD-BTE100(-Ex): Up to Approximately 8 m Transmission
 - MWD-BTR100(-Ex): Up to Approximately 5 m Transmission
- More Convenient with QR Code / IrDA**

Provides an Easy QR Interface in Environments with Multiple Barcode Readers
Instantly Transmits Data via IrDA Sensor Without the Pairing Process

MWD CONNECTION METHODS



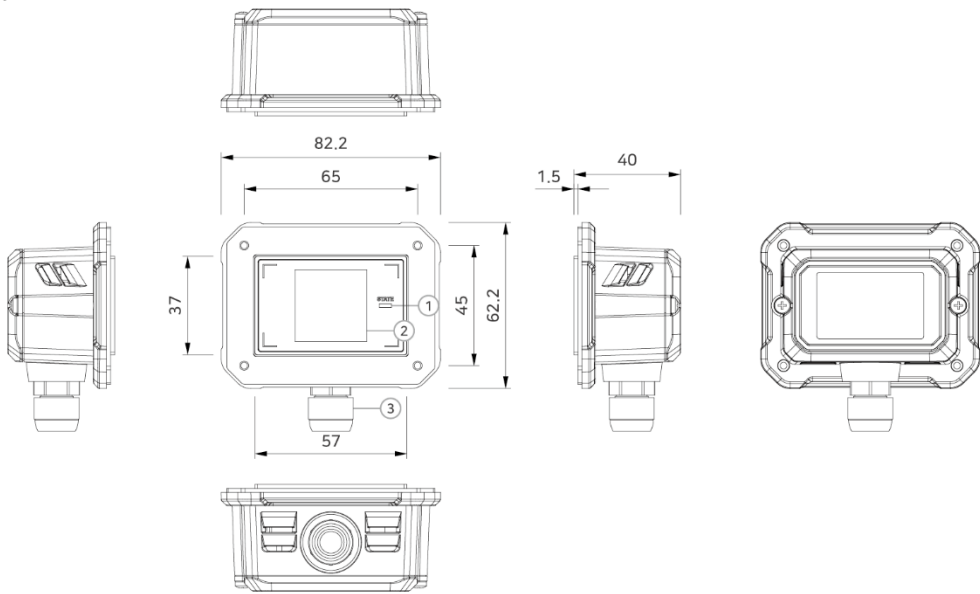
* For Detailed Usage Instructions, Please Refer to the Hardware Manual.

MWD SPECIFICATIONS

Non-Ex Model Ex Model		MWD-BTE100 MWD-BTE100-Ex	MWD-BTR100 MWD-BTR100-Ex
Display	E-Paper	1.54" Pairing QR	-
	RED	Power ON & Pairing Wait	HID Interface
Status LED	GREEN	Pairing OK	Serial Interface
	Frequency	2400 ~ 2483.5Mhz	2402 ~ 2480Mhz
Wireless Bluetooth	Spec.	Bluetooth® 5.1 Low Energy(BLE)	Bluetooth® 5.0 Low Energy(BLE)
	Data Rate	1Mbps@Typ	
	Max Output	+8.5dBm@Typ	+0.55dBm(Including Antenna gain)
	RF Sensitivity	-96dBm@Typ	-
	Operating Range	Up to 8 meters(communication in flat terrain)	Up to 5M in open space
	Security(*AP Setting)	AES-128bit and AES-256bit encryption	WEP(64/128), WPA-PSK+(TKIP, AES), WPA2-PSK+(TKIP, AES) *AES Recommend
IrDA	IrDA	-	Compliant to IrDA physical layer standard up to 115.2 kbit /s(SIR), 0.7M@ Open space communication, MX On HMI dedicated communication
Power	USB	USB Type-A, for data communication and power supply, 1-meter cable length	
	Operation Temperature(℃)	-20 ~ +50	
Environment	Storage Temperature(℃)	-20 ~ +60	
	Operation Humidity(%RH)	0 ~ 90(No dew)	
	Atmosphere	No corrosive gas	
	Vibration Endurance	Amplitude: 10sF < 25Hz(2G) X,Y,Z each direction(for 30 minutes)	
	Static Electricity Discharge	Connective discharge from EN61000-4-2: ±4kV	
	Shock Endurance	10G X,Y,Z each direction(for 3 times)	
	Protection Classification	IP54	
Structure	Certification(On Progress)	General Model: KC, CE, UL/cUL Explosion Proof Model: KC, CE, KCs	
	External Dimension(mm)	82.2 x 40 x 62.2	
	Weight(kg)	0.1	
	Cooling System	Natural air circulation	
	Case Material	Plastic	

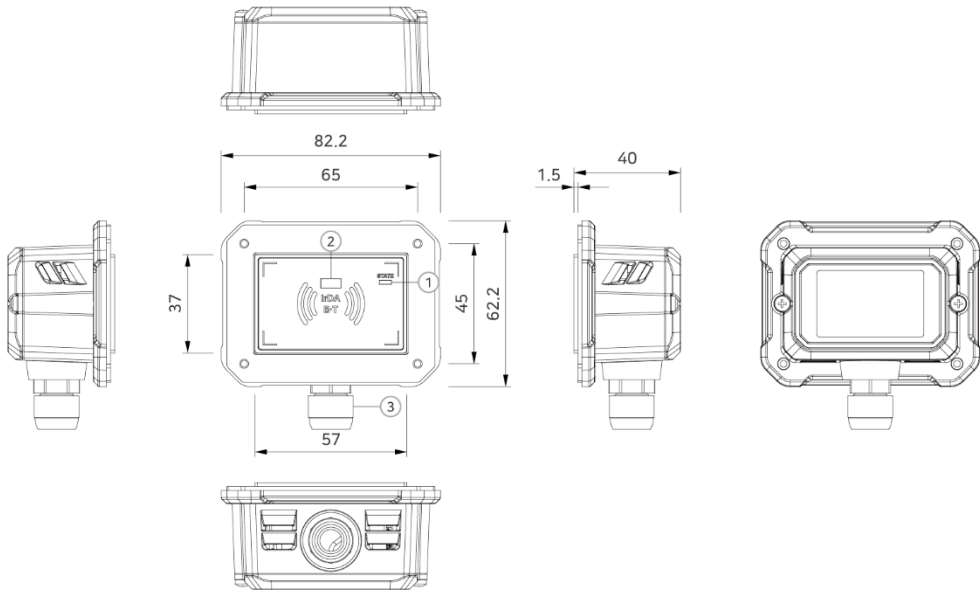
DRAWING

MWD-BTE100
MWD-BTE100-Ex



① Status LED ② E-Paper ③ USB 2.0

MWD-BTR100
MWD-BTR100-Ex



① Status LED ② IrDA Sensor ③ USB 2.0

MIO Remote I/O SERIES

Industrial Remote I/O Device

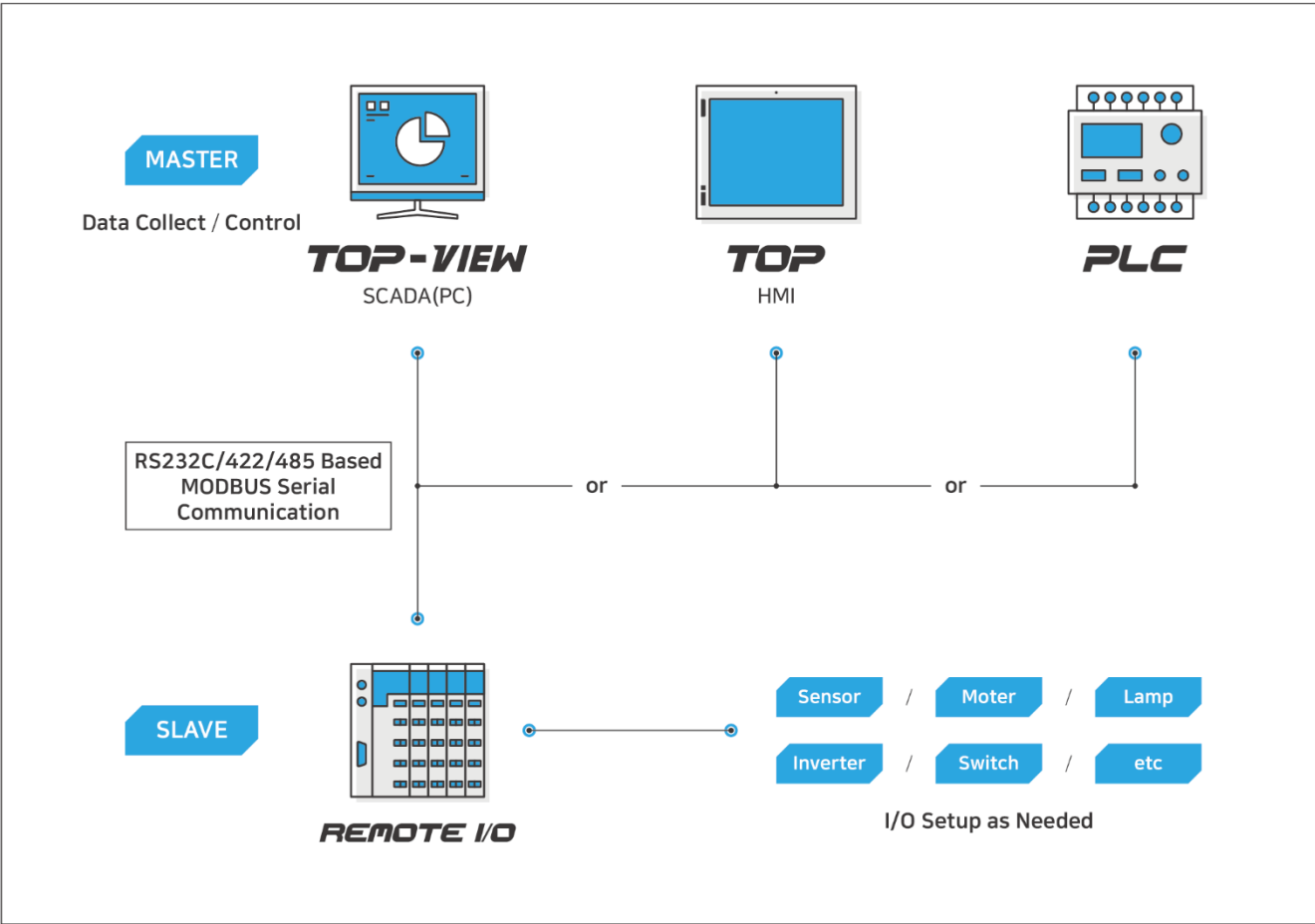


MIO REMOTE I/O

FEATURES

- Communication**
Supports Industrial Network Protocols Such as Modbus TCP, Modbus RTU, and EtherCAT
- Durability**
Robust Design Built to Operate in Various Industrial Environments Including Noise, Vibration, and Temperature Fluctuations
- Compact**
Ultra-Compact Size Maximizes Installation Space Efficiency and Simplifies Wiring
- Module**
Flexible Configuration with Various I/O and Expansion Modules, Optimized for Field Conditions (Up to 32 Slots)
- Hot Swap**
Minimize Downtime and Improve Maintenance Efficiency by Replacing Modules During Operation Without Powering Off
- MIO Master**
Provides Dedicated, Easy-to-Use Software (MIO Master)
Intuitive UI Enables Fast Initial Setup and Real-Time Control/Monitoring

Remote I/O CONNECTION METHODS



MIO-CMROA SPECIFICATIONS

COUPLER MODULE

Functional		MIO-CMR0A	MIO-CMT0A	MIO-CEC0A	MIO-END-01
Type	Protocol	Modbus RTU/ASCII	Modbus TCP	EtherCAT	-
Power	Input Voltage	24Vdc(19.2 ~ 28.8Vdc)			-
	Power Dissipation	50mA Typical@24Vdc			-
	Voltage Sag	24Vdc, Within 10ms			-
	Insulation Resistance	500Vdc, 10MΩ			-
	Current for I/O Module	1.4A@5Vdc			-
	Isolation	System Power to Internal Logic: Isolation System Power I/O Driver: Isolation			-
	Field Power	Supply Voltage: 24Vdc Typ. Supply Voltage Range: 11 ~ 28.8Vdc			-
	Max. Current Field Power Contact	Max. 7A@24Vdc			-
Interface Connector	Connector: DSUB 9Pin x 1	Connector: RJ-45 x 2		-	
Physical Interface	RS-232C, 485/422 Asynchronous Data Bit: 7/8 Bits, Stop Bit: 1/2 Bits, Parity Bit: None/Odd/Even Baud Rate: 2400 ~ 187.5kbps	IEEE802.3i/IEEE802.3u, 10BASE-T/100BASE-TX 2-Port Ethernet Switch	IEEE802.3u, 100BASE-TX	-	
Max. Length Bus Line	500m@RS-485/422, 10m@RS-232C	Up to 100m		-	
Max. Expansion Module	32 Slots			-	
Max. Nodes	255 Nodes@RS-485/422	Limited by Ethernet Specification		65,535	-
Node Setting	1 ~ 255		1 ~ 65,535		-
Baud Rate	Max. 187.5kbps	10/100Mbps		100Mbps	-
USB	Connector: USB Mini - B x 1			-	
Max. Input Size	Input + Output Max. 256 Byte			-	
Max. Output Size	Input + Output Max. 256 Byte			-	
Indicator	7 LED Modbus Status, I/O Module Status, Coupler Status, System Power Status, RX/TX Status, Field Power Status		7 LED EtherCAT Status, EtherCAT RUN/ERR Status, I/O Module Status, Coupler Status, System Power Status, Field Power Status		-
Wiring	AWG 26 to 20			-	
Operation Temperature(℃)	-10 ~ +50				
Storage Temperature(℃)	-20 ~ +60				
Operation Humidity(%RH)	0 ~ 90(No Dew)				
Atmosphere	No Corrosive Gas				
Vibration Endurance	Amplitude: 10sF < 25Hz(2G) X, Y, Z each Direction(for 30 Minutes)				
Noise Immunity	1000Vp-p(Pulse Width 1μs)				
Static Electricity Discharge	Connective Discharge from EN61000-4-2: ±4kV				
Shock Endurance	10G X, Y, Z each Direction(for 3 Times)				
Ground Connection	Class 3(100Ω Under)				
Protection Classification	IP20				
Certification	KC, CE, UL/cUL			-	
External Dimension(mm)	52.2 x 101 x 75			95.8 x 21.5 x 6.4	
Weight(kg)	0.16			0.01	
Cooling System	Natural Air Circulation				
Case Material	PC(Resistance to Flame)				

MIO-DI, DO SPECIFICATIONS

I/O MODULE

Functional		MIO-DIN08-01	MIO-DIP08-01	MIO-DON08-01	MIO-DOP08-01	MIO-DOR04-01
Type	Input/Output Type	8 Channels Sink Type, Input	8 Channels Source Type, Input	8 Channels Sink Type, Output	8 Channels Source Type, Output	4 Channels Relay Type, Output
Power	Input/Output Voltage	24Vdc Typ. On-State Min. 10.2Vdc ~ Max. 28.8Vdc, Off-State Max. 5Vdc		24Vdc Typ. Min. 11.0Vdc ~ Max. 28.8Vdc, On-State Voltage Drop: Max. 0.3Vdc@25℃ Off-State Leakage Current: Max. 50uA		A Contact, 24Vdc
	Power Dissipation	Max. 70mA@5.0Vdc		Max. 90mA@5.0Vdc		Max. 200mA@5.0Vdc
	Input/Output Current in On State	Max. 6mA/ Channel@28.8Vdc		Max. 0.5A/ Channel@28.8Vdc		2A/Channel@24Vdc
Interface	Max. On-State Voltage Drop	-		Max. 0.3Vdc@25℃		0.5V@2.0A, Resistive Load, 24Vdc
	Off-State Leakage Current	-		Max. 50uA		Max. 1.5mA
	Typ. Input Impedance	Typ. 4.7KΩ		-		
	Input/Output Signal Delay	Off to On: Max. 0.1ms On to Off: Max. 0.5ms		Off to On: Max. 0.3ms On to Off: Max. 0.5ms		Off to On: Max. 3ms On to Off: Max. 3ms
	Input Filter(Digital)	0.5ms		-		
	Isolation	Photocoupler				Relay Coil/ Contact Isolation
	Common Type	2COM(Single Common), 24Vdc	2COM(Single Common), 0Vdc	2COM(Single Common), 24Vdc	2COM(Single Common), 0Vdc	4COM(1COM/1Channel)
	Field Power	Supply Voltage: 24Vdc Typ. Supply Voltage Range: 11 ~ 28.8Vdc				-
	Other	Wiring	AWG 26 to 20			
Pin No.		Removable Terminal Block 10P				
Indicator		9 LED 8 Channel States, 1 Operating State				5 LED 4 Channel States, 1 Operating State
Environment	Operation Temperature(℃)	-10 ~ +50				
	Storage Temperature(℃)	-20 ~ +60				
	Operation Humidity(%RH)	0 ~ 90(No dew)				
	Atmosphere	No Corrosive Gas				
	Vibration Endurance	Amplitude: 10≤F<25Hz(2G) X, Y, Z each Direction(for 30 Minutes)				
	Noise Immunity	1000Vp-p(Pulse Width 1μs)				
	Static Electricity Discharge	Connective Discharge from EN61000-4-2: ±4kV				
	Shock Endurance	10G X, Y, Z each Direction(for 3 Times)				
	Ground Connection	Class 3(100Ω Under)				
	Protection Classification	IP20				
	Certification	KC, CE, UL/cUL				
Structure	External Dimension(mm)	12 x 101 x 75				
	Weight(kg)	0.06				
	Cooling System	Natural Air Circulation				
	Case Material	PC(Resistance to Flame)				

MIO-DI, DO SPECIFICATIONS

I/O MODULE

Functional		MIO-DIN16-01	MIO-DIP16-01	MIO-DON16-01	MIO-DOP16-01
Type	Input/Output Type	16 Channels Sink Type, Input	16 Channels Source Type, Input	16 Channels Sink Type, Output	16 Channels Source Type, Output
Power	Input/Output Voltage	24Vdc Typ. On-State Min. 10.2Vdc ~ Max. 28.8Vdc, Off-State Max. 5Vdc		24Vdc Typ. Min. 11.0Vdc ~ Max. 28.8Vdc, On-State Voltage Drop: Max. 0.3Vdc@25℃ Off-State Leakage Current: Max. 50uA	
	Power Dissipation	Max. 70mA@5.0Vdc		Max. 120mA@5.0Vdc	
	Input/Output Current in On State	Max. 6mA/ Channel@28.8Vdc		Max. 0.5A/ Channel@28.8Vdc	
Interface	Max. On-State Voltage Drop	-		Max. 0.3Vdc@25℃	
	Off-State Leakage Current	-		Max. 50uA	
	Typ. Input Impedance	Typ. 4.7KΩ		-	
	Input/Output Signal Delay	Off to On: Max. 0.1ms On to Off: Max. 0.5ms		Off to On: Max. 0.3ms On to Off: Max. 0.5ms	
	Input Filter(Digital)	0.5ms		-	
	Isolation	Photocoupler			
	Common Type	Not Support			
	Field Power	Supply Voltage: 24Vdc Typ. Supply Voltage Range: 11 ~ 28.8Vdc			
	Wiring	AWG 26 to 20			
	Pin No.	Removable Terminal Block 16P			
Other	Indicator	17 LED 16 Channel States, 1 Operating State			
	Operation Temperature(℃)	-10 ~ +50			
Environment	Storage Temperature(℃)	-20 ~ +60			
	Operation Humidity(%RH)	0 ~ 90(No dew)			
	Atmosphere	No Corrosive Gas			
	Vibration Endurance	Amplitude: 10≤F <25Hz(2G) X, Y, Z each Direction(for 30 Minutes)			
	Noise Immunity	1000Vp-p(Pulse Width 1μs)			
	Static Electricity Discharge	Connective Discharge from EN61000-4-2: ±4kV			
	Shock Endurance	10G X, Y, Z each Direction(for 3 Times)			
	Ground Connection	Class 3(100Ω Under)			
	Protection Classification	IP20			
	Certification	KC, CE, UL/cUL			
Structure	External Dimension(mm)	12 x 101 x 75			
	Weight(kg)	0.06			
	Cooling System	Natural Air Circulation			
	Case Material	PC(Resistance to Flame)			

MIO-AI, AO SPECIFICATIONS

I/O MODULE

Functional		MIO-AIR02-01	MIO-AIV04-01	MIO-AIC04-01	MIO-AOV04-01	MIO-AOC04-01
Type	Input/Output Type	2 Channels Analog RTD Type	4 Channels Analog Voltage Type	4 Channels Analog Current Type	4 Channels Analog Voltage Type	4 Channels Analog Current Type
Power	Sensor Type and Input/ Output Range	PT100 * -200.0 to +850.0°C	0 ~ 5 Vdc	0 ~ 20mA	0 ~ 5 Vdc	0 ~ 20mA
	Power Dissipation	Max. 70mA@5.0Vdc		Max. 200mA@5.0Vdc		
	Field Power			Max. 60mA@24Vdc		
Characteristic	Typ. Input Impedance	-	Min. 500KΩ	Max. 250Ω	-	
	Load	-	-	-	Min. 1KΩ	Max. 500Ω
	Data Format			16bits Integer		
	Resolution	0.0312°C/1bit	16bits, 0.076mV/1bit	16bits, 0.3uA/bit	16bits, 0.076mV/1bit	16bits, 0.3uA/bit
	Conversion Time	Approx. 70ms, All Channel@50Hz		4ms/All Channel		
	Module Error			±0.1% Full Scale@+25°C, ±0.3% Full Scale@-10°C, +50°C		
	Isolation			I/O to Logic: Capacitive Isolation, External Power : Transformer Isolation		
	Common Type	2COM (1Common/1Channel)		4COM (Single Common)		
	Wiring			AWG 26 to 20		
	Pin No.			Removable Terminal Block 10P		
Environment	Indicator	3 LED 2 Channel States, 1 Operating State		5 LED 4 Channel States, 1 Operating State		
	Operation Temperature(°C)			-10 ~ +50		
	Storage Temperature(°C)			-20 ~ +60		
	Operation Humidity(%RH)			0 ~ 90(No dew)		
	Atmosphere			No Corrosive Gas		
	Vibration Endurance			Amplitude: 10≤F < 25Hz(2G) X, Y, Z each Direction(for 30 Minutes)		
	Noise Immunity			1000Vp-p(Pulse Width 1μs)		
	Static Electricity Discharge			Connective Discharge from EN61000-4-2: ±4kV		
	Shock Endurance			10G X, Y, Z each Direction(for 3 Times)		
	Ground Connection			Class 3(100Ω Under)		
Structure	Protection Classification			IP20		
	Certification			KC, CE, UL/cUL		
	External Dimension(mm)			12 x 101 x 75		
	Weight(kg)			0.06		
	Cooling System			Natural Air Circulation		
	Case Material			PC(Resistance to Flame)		

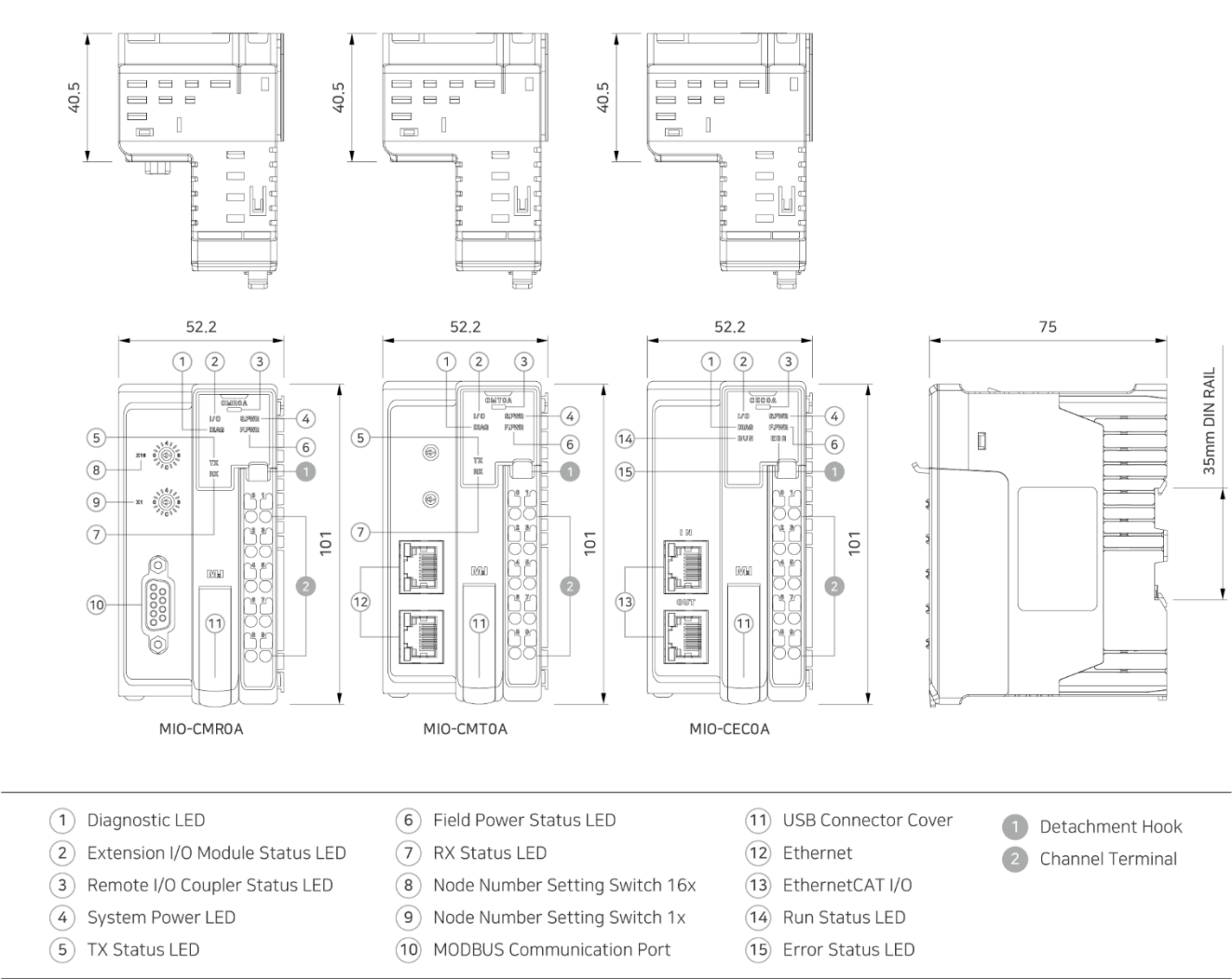
MIO-PWR, COM SPECIFICATIONS

EXPANSION MODULE

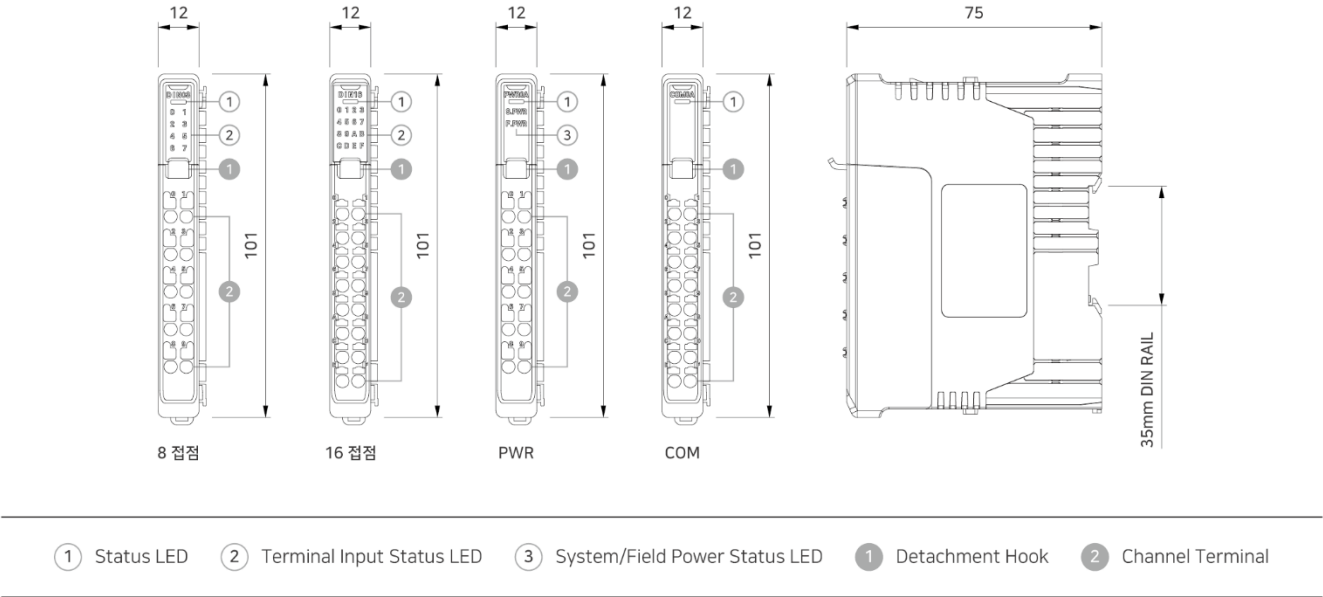
	Functional	MIO-PWR0A	MIO-PWR0B	MIO-COM0A	MIO-COM0B	MIO-COM0C
Power	Input System Voltage	24Vdc Typ.(20V ~ 28V)		-		
	Voltage Sag	24Vdc, Within 10ms		-		
	Insulation Resistance	500Vdc, 10MΩ		-		
	Current for I/O Module	1.4A@5Vdc		-		
	Isolation	System Power to Internal Logic: Isolation System Power I/O Driver: Isolation		-		
Characteristic	Field Power	Supply Voltage: 24Vdc Typ. Supply Voltage Range: 11 ~ 28.8Vdc				
Other	Max. Current Field Power Contact	Max. 7A@24Vdc				
	Common Type	Not Support		16COM(Single Common) 24Vdc	16COM(Single Common) 0Vdc	8COM(Single Common) 24Vdc, 0Vdc
	Wiring	AWG 26 to 20				
	Pin No.	Removable Terminal Block 10P		Removable Terminal Block 16P		
	Indicator	3 LED System Power Status, Module Status, Field Power Status	2 LED Module Status, Field Power Status	1 LED Module Status		
Environment	Operation Temperature(℃)	-10 ~ +50				
	Storage Temperature(℃)	-20 ~ +60				
	Operation Humidity(%RH)	0 ~ 90(No dew)				
	Atmosphere	No Corrosive Gas				
	Vibration Endurance	Amplitude: 10≤F < 25Hz(2G) X, Y, Z each Direction(for 30 Minutes)				
	Noise Immunity	1000Vp-p(Pulse Width 1μs)				
	Static Electricity Discharge	Connective Discharge from EN61000-4-2: ±4kV				
	Shock Endurance	10G X, Y, Z each Direction(for 3 Times)				
	Ground Connection	Class 3(100Ω Under)				
	Protection Classification	IP20				
	Certification	KC, CE, UL/cUL				
Structure	External Dimension(mm)	12 x 101 x 75				
	Weight(kg)	0.06				
	Cooling System	Natural Air Circulation				
	Case Material	PC(Resistance to Flame)				

DRAWING

COUPLER MODULE



I/O MODULE



MIO LoRa SERIES

Industrial Wireless Communication Device



MIO LoRa

FEATURES

- Own Network and Protocols by LoRa Technology**

No Extra Charges for Communication
- Various I/O Supported in One LoRa EndNode**

Digital IN/OUT, Relay Contacts, Analog Current/Voltage
- Industrial Product Passed Multiple Tests, Safe and Powerful Functions**

Pass Multiple Tests (Impact, Noise, Static, Temperature, etc.)
- Convenient Method for Settings**

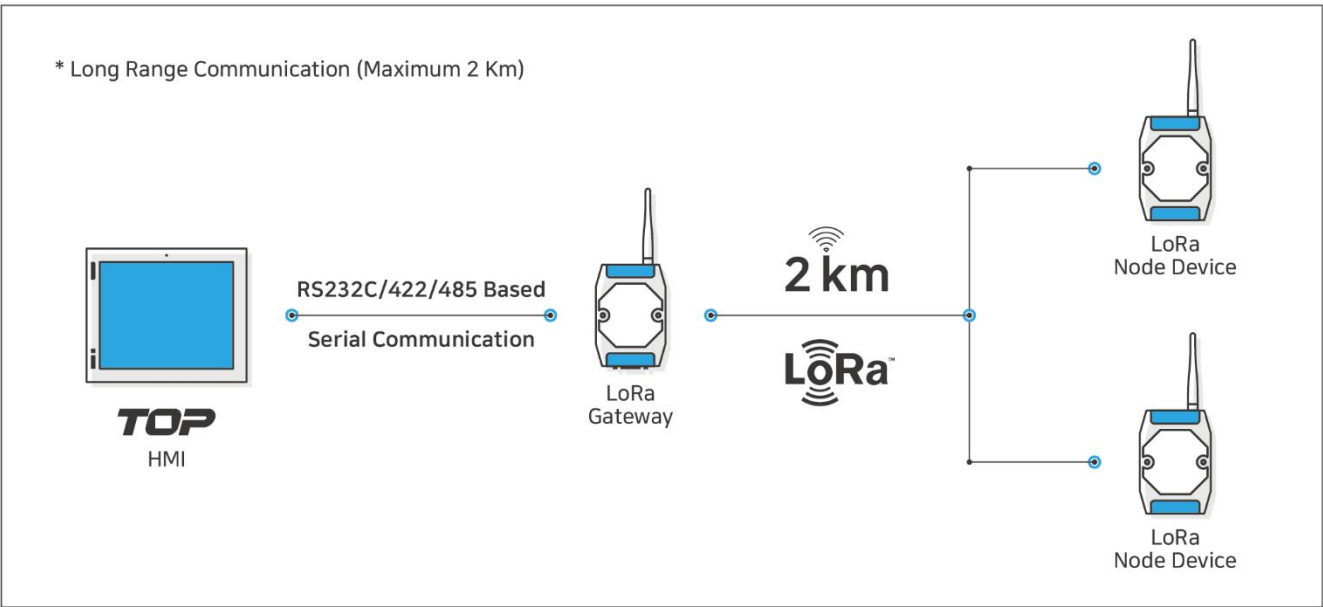
Auto Switching Between LoRa Gateway and EndNode by MODE Button
Immediate Change of Frequency and SF Setting with Top-Side Switch

USER GUIDE

* Please Check Manual for Detailed Guide

- 01 Download the Settings of LoRa Gateway/EndNode with USB Cable in **[MX On LoRa Configurator]** Program
 - 02 Connect TOP and LoRa Gateway by **Serial Communication (RS-232C/422/485)**
 - 03 Add 'LoRa Gateway' to the Serial Port List in **[TOP Design Studio]** Program and Register Device ID in 'Communication Setup' for Each LoRa EndNode
- ! TOP can monitor and control a data of LoRa Gateway, and LoRa Gateway can transmit and receive a data with LoRa EndNode by LoRa Communication

INTERFACE



LoRa SPECIFICATIONS

GATEWAY

Functional		MIO-LPG00
Power	Input Voltage	24Vdc(20 ~ 28Vdc)
	Power Dissipation	3W
	Voltage Sag	24Vdc, Within 10ms
	Insulation Resistance	500Vdc, 10MΩ
LoRa RF	RF Frequency	TX: 922.1 ~ 923.1 MHz, RX: 923.3 MHz
	Output Power	Max. 25mW(+14dBm, With Antenna)
	Communication Distance	Within 2Km
	Antenna	1T1R Dipole, +3.2dBm
	Security Setting	AES-128
Interface	Serial Comm.	RS-232C, 485/422 Asynchronous Data Bit: 7/8 Bits, Stop Bit: 1/2 Bits, Parity Bit: None/Odd/Even, Baud Rate: 2400 ~ 115.2kbps Connector: DSUB 9Pin x 1
	USB	Connector: USB Mini - B x 1
Other	Status LED	4 LEDs(Power, LoRa, Serial TX, RX) Built in
	Frequency Selection	Rotary Switch, Select 1 Out of 6 Channels
	SF Selection	Rotary Switch, Select 7 Out of 12 Setting
	Reset Button	Support
	Mode Button	Support
Environment	Operation Temperature(℃)	-10 ~ +50
	Storage Temperature(℃)	-20 ~ +60
	Operation Humidity(%RH)	0 ~ 90(No Dew)
	Atmosphere	No Corrosive Gas
	Vibration Endurance	Amplitude: 10sF < 25Hz(2G) X, Y, Z each Direction(for 30 Minutes)
	Noise Immunity	1000Vp-p(Pulse Width 1μs)
	Static Electricity Discharge	Connective Discharge from EN61000-4-2: ±4kV
	Shock Endurance	10G X, Y, Z each Direction(for 3 Times)
	Ground Connection	Class 3(100Ω Under)
	Protection Classification	IP20
Structure	Certification	KC
	External Dimension(mm)	72 x 305 x 44.6(*With Antenna)
	Weight(kg)	0.14
	Cooling System	Natural Air Circulation
	Case Material	ABS(Resistance to Flame)

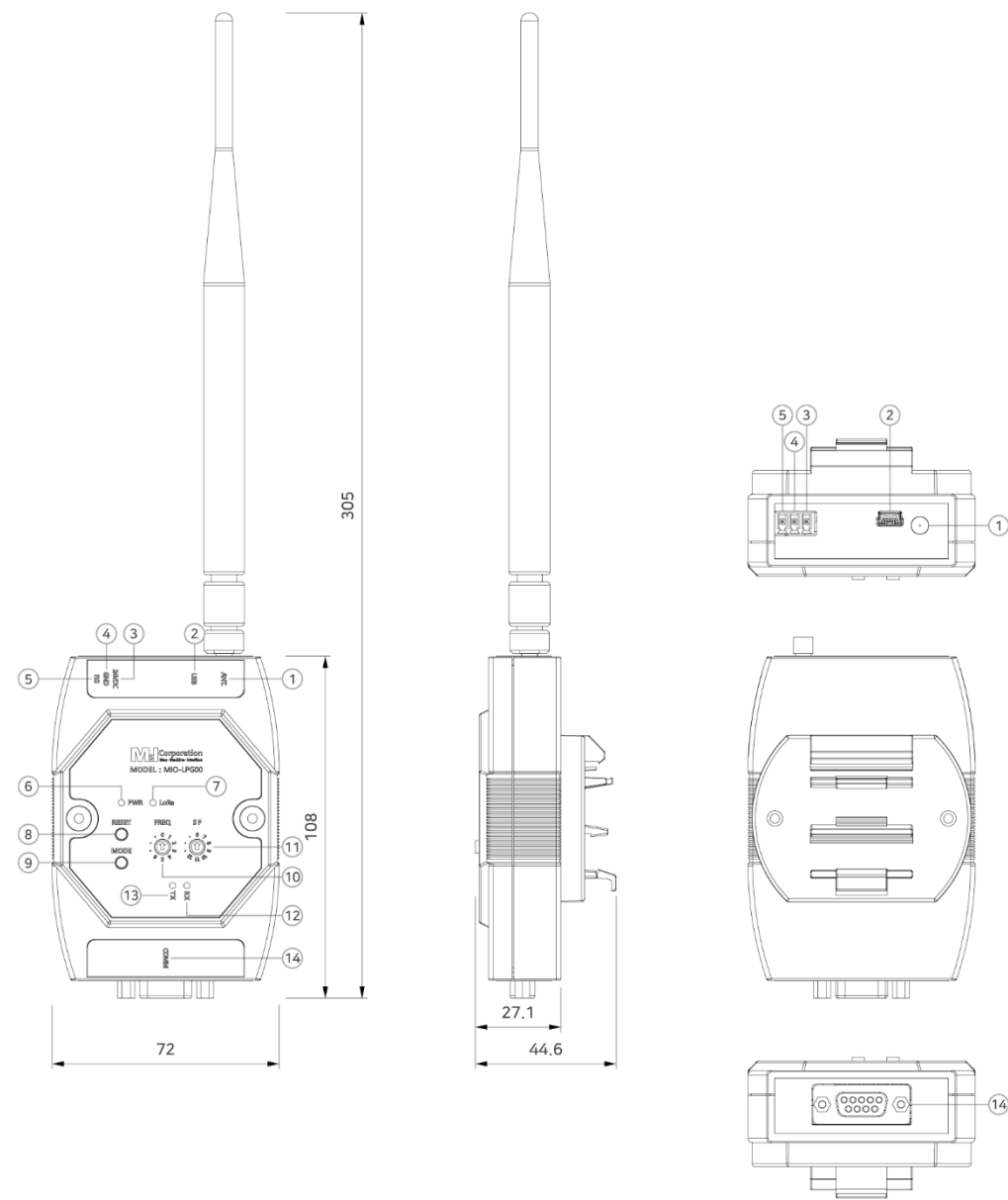
LoRa SPECIFICATIONS

ENDNODE

Functional			MIO-LPE00
Power	Input Voltage		24Vdc(20 ~ 28Vdc)
	Power Dissipation		3W
	Voltage Sag		24Vdc, Within 10ms
	Insulation Resistance		500Vdc, 10MΩ
LoRa RF	RF Frequency		TX: 922.1 ~ 923.1 MHz, RX: 923.3 MHz
	Output Power		Max. 25mW(+14dBm, With Antenna)
	Communication Distance		Within 2Km
	Antenna		1T1R Dipole, +3.2dBm
I/O Interface	Security Setting		AES-128
	Serial Comm.		-
	USB		Connector: USB Mini - B x 1
	Analog Current Input	Connector	3.5mm TB
		Assigned Channel	2 Channel
		Input Range	4 ~ 20 mA
		Resolution and Accuracy	16-bit, ±0.1%@25℃ or better
	Analog Voltage Input	Connector	3.5mm TB
		Assigned Channel	2 Channel
		Input Range	0 ~ 5Vdc
Resolution and Accuracy		16-bit, ±0.1%@25℃ or better	
Digital Input	Connector	3.5mm TB	
	Type	3 Channel Source or Sink	
	Output Current in On State	Max. 4mA/Channel @24Vdc	
	Digital Output	Connector	3.5mm TB
		Type	2 Channel Sink
		Output Current in On State	Max. 0.5A/Channel @24Vdc
Relay Output	Connector	3.5mm TB	
	Type	2 Channel Relay	
	Output Current in On State	1A/30Vdc, 0.3A/125Vac	
Other	Status LED		9 LEDs(Power, LoRa, Each I/O: 7LEDs) Built in
	Frequency Selection		Rotary Switch, Select 1 Out of 6 Channels
	SF Selection		Rotary Switch, Select 7 Out of 12 Setting
	Reset Button		Support
	Mode Button		Support
Environment	Operation Temperature(℃)		-10 ~ +50
	Storage Temperature(℃)		-20 ~ +60
	Operation Humidity(%RH)		0 ~ 90(No Dew)
	Atmosphere		No Corrosive Gas
	Vibration Endurance		Amplitude: 10sF < 25Hz(2G) X, Y, Z each Direction(for 30 Minutes)
	Noise Immunity		1000Vp-p(Pulse Width 1μs)
	Static Electricity Discharge		Connective Discharge from EN61000-4-2: ±4kV
	Shock Endurance		10G X, Y, Z each Direction(for 3 Times)
	Ground Connection		Class 3(100Ω Under)
	Protection Classification		IP20
Structure	Certification		KC
	External Dimension(mm)		72 x 300 x 44.6(*With Antenna)
	Weight(kg)		0.14
	Cooling System		Natural Air Circulation
	Case Material		ABS(Resistance to Flame)

DRAWING

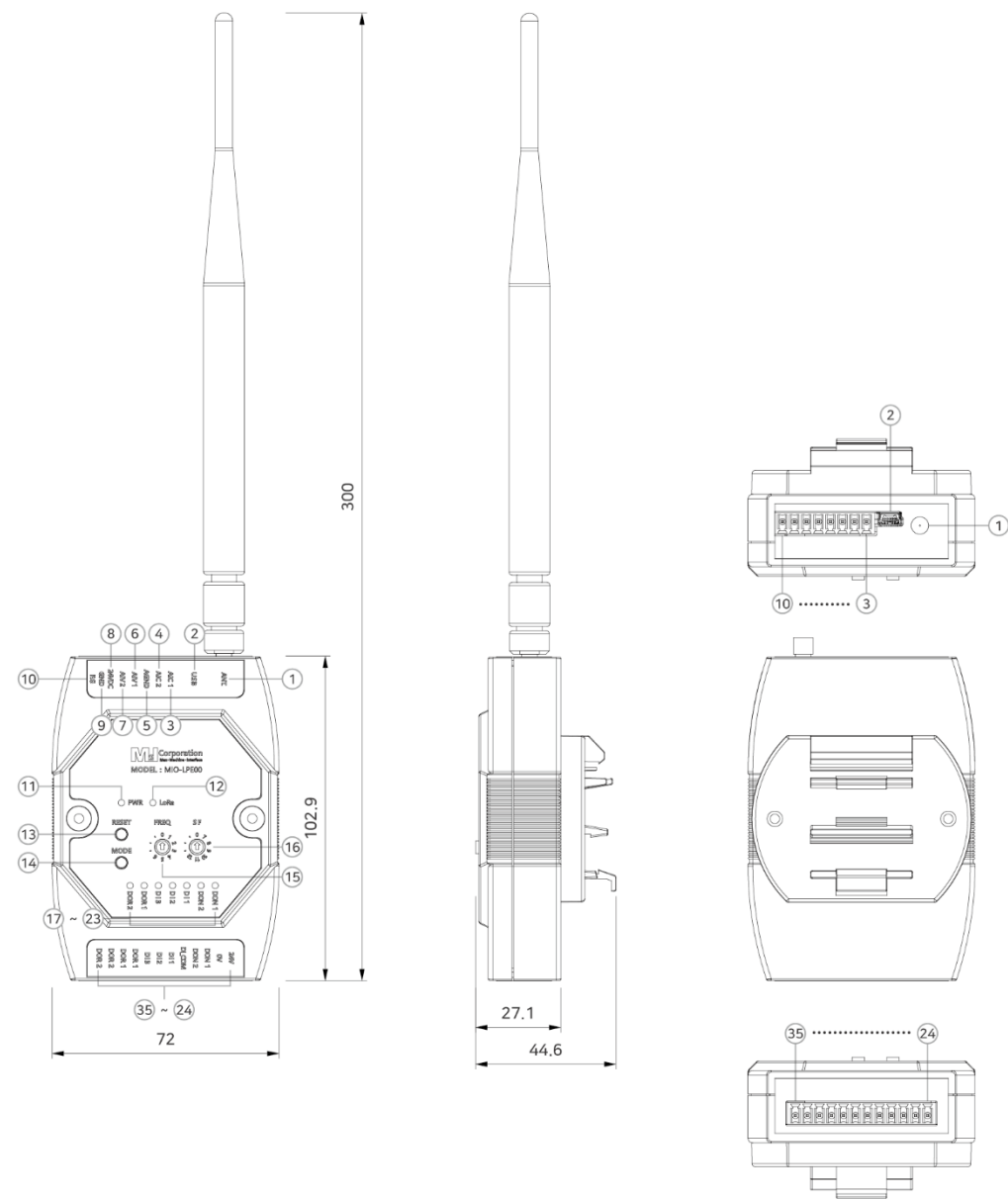
MIO-LPG00 Gateway



- ① LoRa Antena Joint
- ② USB Setting Connector
- ③ System Power Input(DC24V)
- ④ System Power GND
- ⑤ F.G
- ⑥ System Power Indicator
- ⑦ LoRa Communication Indicator
- ⑧ System RESET Switch
- ⑨ MODE Switch
- ⑩ Frequency Channel Switch [0 ~ 6]
- ⑪ SF Setting Switch [0], [7 ~ 12]
- ⑫ Communication Receive Indicator COMM
- ⑬ Communication Transmit Indicator COMM
- ⑭ Serial Communication Connector

DRAWING

MIO-LPE00 EndNode



- ① LoRa Antena Joint
- ② USB Setting Connector
- ③ Analog Current Input Terminal for Channel 1
- ④ Analog Current Input Terminal for Channel 2
- ⑤ AIC 1, 2/AIV 1, 2 Common Terminal
* Field Power(0V) Connection Terminal
** Use when it is connected as Source Type
- ⑥ Analog Voltage Input Terminal for Channel 1
- ⑦ Analog Voltage Input Terminal for Channel 2
- ⑧ System Power Input(DC24V)
- ⑨ System Power GND
- ⑩ F.G
- ⑪ System Power Indicator
- ⑫ LoRa Communication Indicator
- ⑬ System RESET Switch
- ⑭ MODE Switch
- ⑮ Frequency Channel Switch [0 ~ 6]
- ⑯ SF Setting Switch [0], [7 ~ 12]
- ⑰ ~ ⑳ Operation Status LED
- ㉑ ~ ㉓ I/O Terminal

MGW SERIES

IoT Gateway Connecting Industrial Equipment



FEATURES

Communication Protocol Converter (Multiple Communication Driver)

Same Dedicated Communication Protocol as HMI (Address-Based PLC) Communication Library

Standard DIN Rail / VESA Hall Supported

Easy Installation by Standard DIN Rail
Simple Assembly with Monitors by Standard VESA Bracket (* Option)

Operating on TOP Design Studio Software

Easy Design with Same Software for MX On's HMI/SCADA Users

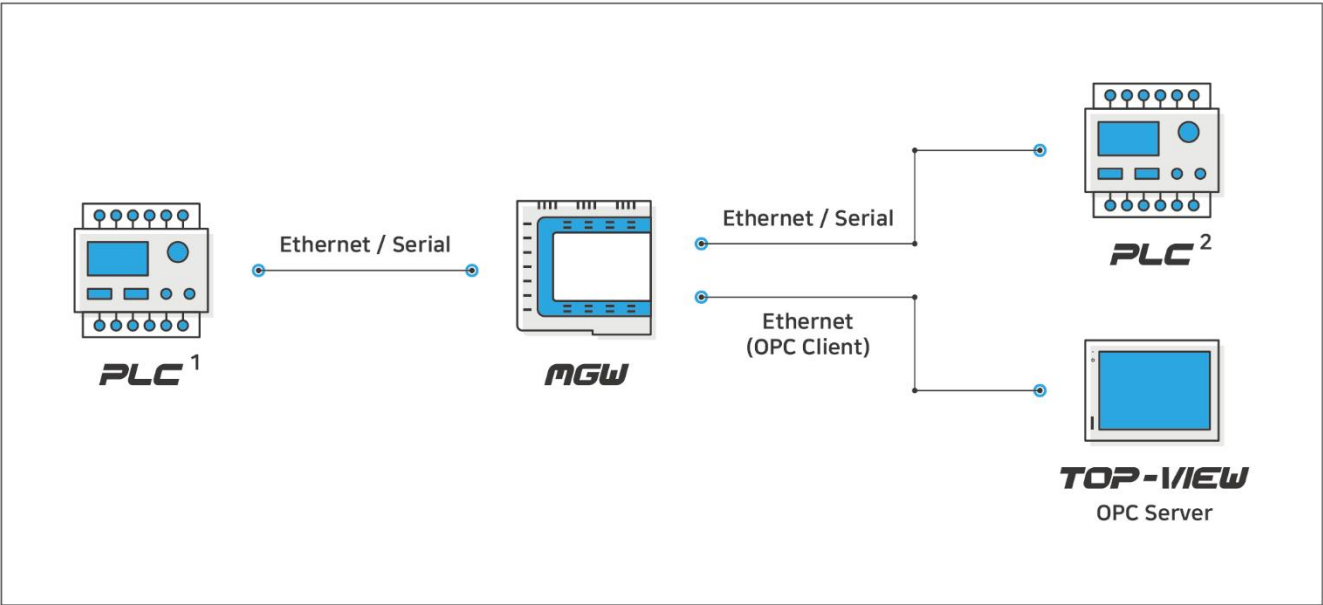
Ethernet 2 Ports / Serial 2 Ports

Ethernet 2 Channels with Independent IP
COM1/2 DSUB 9-Pin (RS-232C, RS-422/485)

HDMI Output

Connection with Various Monitors Through HDMI and DP
Compatible with MX On's Exclusive Touch Monitor (MDP)

MGW CONNECTION METHODS

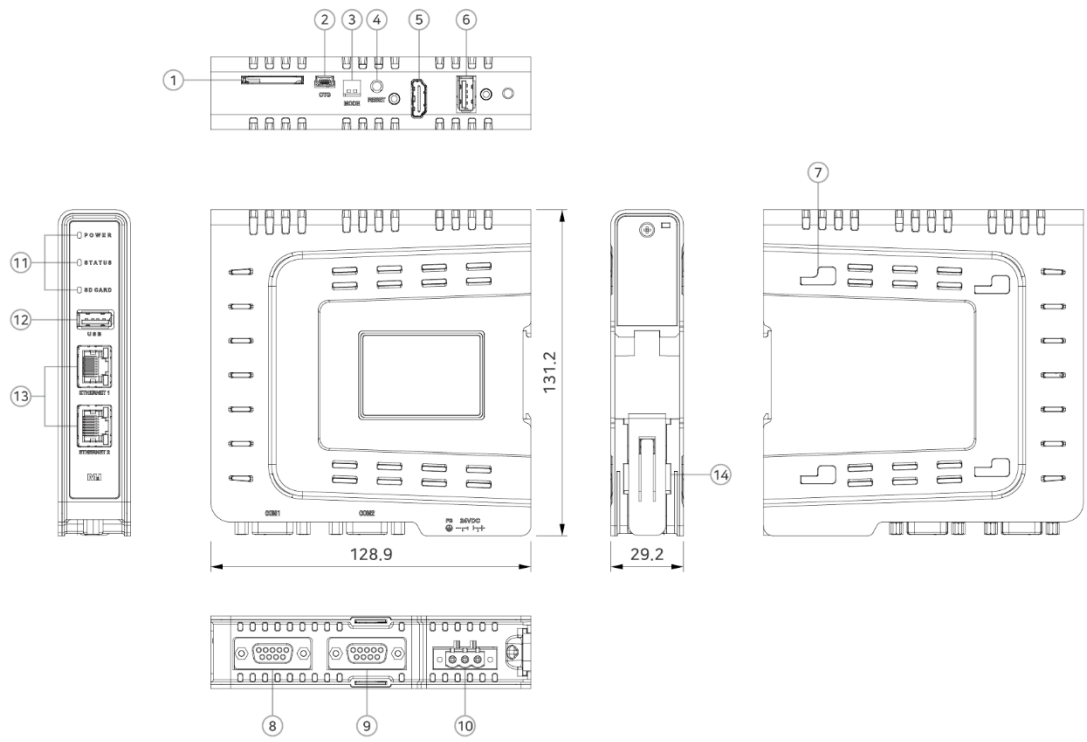


MGW SPECIFICATIONS

Functional		MGW-BH1000D
Interface	Serial COM1	RS-232C, RS-422/485 Asynchronous +5Vdc PWR Data bit: 7/8 bits, Stop bit: 1/2 bits, Parity bit: None/Odd/Even Baud rate: 2400~115.2kbps Connector: DSUB 9pin x 1
	Serial COM2	RS-232C, RS-422/485 Asynchronous Data bit: 7/8 bits, Stop bit: 1/2 bits, Parity bit: None/Odd/Even Baud rate: 2400~115.2kbps Connector: DSUB 9pin x 1
	Ethernet	IEEE802.3i/IEEE802.3u, 10BASE-T/100BASE-TX Connector: RJ-45 x 2
	USB Host	USB 2.0 Compatible, Output 5Vdc/0.5A Support: USB Storage, USB Barcode Scanner(Standard Keyboard Protocol) Connector: USB Type A x 2
	USB OTG	USB 2.0 Compatible, Output 5Vdc/0.5A, Max 3m Support: USB Storage, USB Barcode Scanner(Standard Keyboard Protocol) Connector: USB Mini-B x 1
	SD Card	SD Card Slot x 1, SDHC(MAX 32GB)
	HDMI Output	HDMI v1.4, HDMI Output, Max. Resolution: 1280x720 at 60Hz Connector: HDMI x 1
	Printer	Roll Printer(EPSON protocol)
Memory & Others	Screen Memory	128MB
	Backup Memory	512KB: System buffer(10K Word), Including Alarm/Logging/Recipe
	Backup Period	Permanent
	Real Time Clock	Built in
	Status LED	3 LEDs(Power, Operation, SD Card) Built in
Power	Input Voltage	20~28Vdc
	Power Consumption	10W
	Voltage Sag	24Vdc, Within 10ms
	Insulation Resistance	500Vdc, 10MΩ
Environment	Operation Temperature(°C)	-10 ~ +50
	Storage Temperature(°C)	-20 ~ +60
	Operation Humidity(%RH)	0 ~ 90(No dew)
	Atmosphere	No corrosive gas
	Vibration Endurance	Amplitude: 10≤F<25Hz(2G) X,Y,Z each direction(for 30 minutes)
	Noise Immunity	1000Vp-p(Pulse width 1μs)
	Electrostatic Discharge	Connective discharge from EN61000-4-2: ±4kV
	Shock Endurance	10G X,Y,Z each direction(for 3 times)
	Ground Connection	Class 3(100Ω or less)
	Protection Classification	IP20
Structure	Certification	KC, CE, UL/cUL
	External Dimension(mm)	128.9x131.2x29.2
	Weight(kg)	0.23
	Installation Method	Standard DIN Rail(35mm), VESA
	Cooling System	Natural air circulation
	Case Material	Plastic

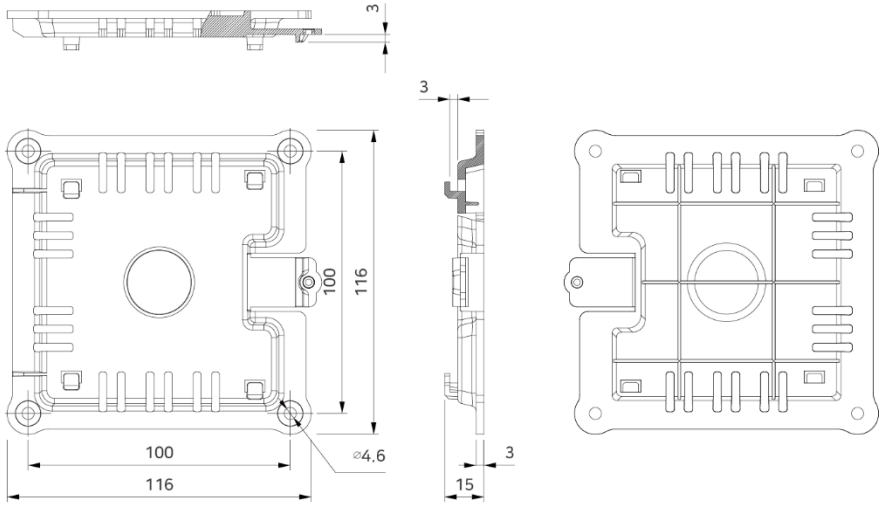
DRAWING

MGW-BH1000D



- ① SD Card Socket
- ② USB OTG
- ③ Mode Switch
- ④ Reset Switch
- ⑤ HDMI
- ⑥ USB Host #1
- ⑦ Vesa Bracket
- ⑧ Serial COM1
- ⑨ Serial COM2
- ⑩ Power Input
- ⑪ Status LED
- ⑫ USB Host #2
- ⑬ Ethernet Port
- ⑭ DIN Rail

VESA Braket(*Option)



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