M2I Corporation
Man · Machine · Interface

SMART DEVICE

SMART DEVICE

Product Catalog

V 1.0C 251225

m2i.co.kr/chn

M2I Corporation 基于 HMI/SCADA 的开发与制造，
拥有扩展至机器人控制与物流自动化领域的技术能力，
是一家基于 AX·DX 的智能工厂全方位解决方案平台企业。

SMART DEVICE

CONTENTS

SMART DEVICE LINE-UP

防爆无线条码扫描器
（支持 IrDA 和蓝牙）

标准有线/无线条码扫描器
（支持 IrDA 和 USB）

MSR Ex

兼具安全性与使用便利性的高可靠性工业条码扫描器

防爆型 / 非防爆型条码扫描器

耦合器模块

I/O模块、扩展模块

MIO REMOTE I/O

紧凑型远程 I/O 设备, 增强系统灵活性和效率

工业远程I/O

网关　　　　终端节点

MIO LoRA

**基于 LoRa 的安全设备, 提供多种 I/O,
支持最长 2 公里远程无线通信**

工业无线通信设备

蓝牙与 IrDA 双用适配器

蓝牙专用适配器

MWD Ex

用于轻松扩展与不支持 IrDA 或蓝牙设备连接的适配器

（条码扫描器专用）防爆及非防爆无线通信适配器

MGW

支持 400 多种工业通信协议的数据集成转换器

连接工业设备的物联网网关

MSR SERIES

防爆型 / 非防爆型条码扫描器

Ex　　🄺🄲 C E 🅄🄻 | 🄺🄲s IECEx 🄴🅇 (进行中)

Non-Ex　🄺🄲 C E

防爆无线条码扫描器
（支持 IrDA 和蓝牙）

标准有线/无线条码扫描器
（支持 IrDA 和 USB）

MSR

FEATURES

防爆无线条码扫描器 ｜ **MSR-B2MWA-Ex**

本质安全型防爆结构

UL/cUL：Class 1, Division 2 组别 A、B、C、D, T6
IECEx、ATEX、KCs：Ex ic ec IIC T6（进行中）

现场首选的手枪型设计

耐冲击聚氨酯外壳
IP66等级防水防尘性能
握感极佳的小型设计

支持IrDA / Bluetooth无线通信

支持本公司HMI的IrDA多重发送(Multi SEND)
通过MWD加密狗实现与第三方HMI、PC的IrDA兼容通信
支持本公司HMI、PC与MWD加密狗的Bluetooth配对

条码数据安全管理

可临时存储最近20条条码
通过LED指示灯确认传输状态

标准有线/无线条码扫描器 ｜ **MSR-B2MWB**

兼具耐用性与便携性的紧凑设计

耐冲击聚氨酯外壳设计
IP67等级防水防尘性能
握感出色的小型设计

支持有线和无线 USB 通信

通过 USB 加密狗实现便捷的 2.4GHz 射频无线通信
通过 USB 数据线实现稳定的有线通信

广泛兼容 IrDA 红外通信

完全支持自家 HMI 及多重传输(Multi SEND)功能
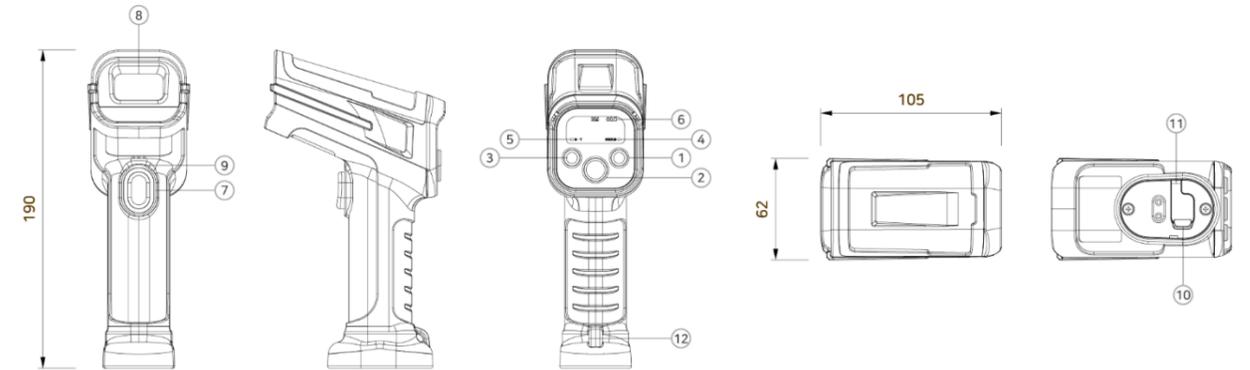通过 MWD 加密狗实现与第三方 HMI、
PC 等多种设备的兼容通信

安全的条码数据管理

内置存储器, 可存储最多 25,000 条条码
使用上下（UP/DOWN）按钮可选择性传输所需数据

MSR SPECIFICATIONS

	Functional	MSR-B2MWA-Ex	MSR-B2MWB	MSR-B2MWA-DONGLE
Display	Display Type	LED	1.3" OLED	-
	Color	-	Gray	Gray
	Display Area(㎜)	-	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 M2I 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 M2I 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)	-
Memory	Storage Memory	-	512KB	-
Battery	Rechargable Battery	Single Li-ion 3.6Vdc, 2500mAh Operating Time: 6+ Hours (18000+,1 Second 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	-
Environment	Operation Temperature(℃)	-10 ~ +50	+10 ~ +45	-10 ~ +50
	Storage Temperature(℃)	-20 ~ +60		
	Protection Classification	IP54	Product Body IP67	-
	Operation Humidity(%RH)	0 ~ 90(No Dew)		
	Atmosphere	No Corrosive Gas		
	Vibration Endurance	Amplitude: 10≤F < 25㎐(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, IECEx, ATEX(On Progress)	KC, CE	
Structure	External Dimension(㎜)	188.9 x 100.1 x 60.3	143.5 x 54 x 36	28.8 x 18 x 8
	Weight(kg)	0.416	0.18	0.03
	Case Material	PC, Urethane		PC

DRAWING

MSR-B2MWA-Ex

①	Power Switch	⑤	Bluetooth Status LED	⑨	Buzzer Hall
②	Send Switch	⑥	Battery Level	⑩	Bottom Cover
③	Bluetooth Switch	⑦	Scan Switch	⑪	USB-C Port for Charging
④	Status LED	⑧	Scanner Window and IrDA Trasnmit / Receive	⑫	Strap Holding Hole

MSR-B2MWB
MSR-B2MWA-DONGLE
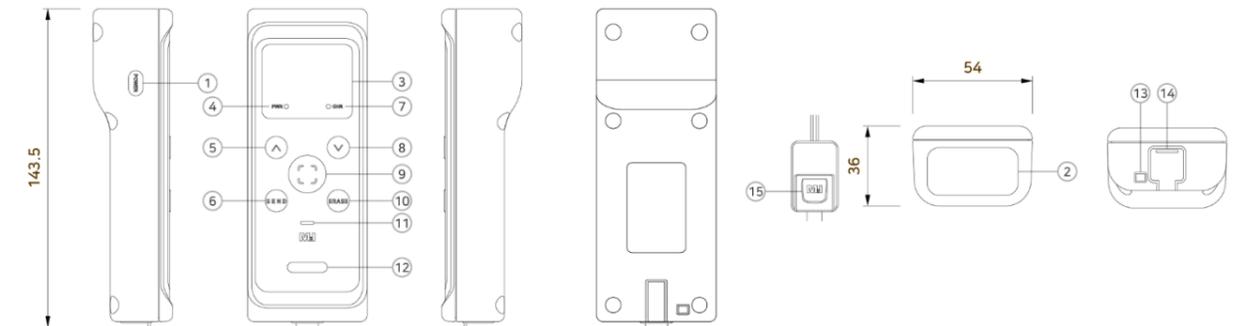
①	Power Switch	⑤	Up Switch	⑨	Scan Switch	⑬	Strap Holding Hole
②	Scanner Window and IrDA Trasnmit / Receive	⑥	Send Switch	⑩	Erase Switch	⑭	Rear Case
③	OLED	⑦	Charging Indicator	⑪	Buzzer Hall	⑮	USB Dongle (Included in Strap)
④	Power Indicator	⑧	Down Switch	⑫	Status LED		

MWD SERIES

(条码扫描器专用)防爆及非防爆无线通信适配器

Ex [KC] [CE] [KCs] (进行中)

Non-Ex [KC] [CE] [cULus LISTED] (进行中)

蓝牙与 IrDA 双用适配器

蓝牙专用适配器

mWD

FEATURES

通过 USB HID 模式提供广泛兼容性

基于 USB HID 的操作,可与自家 HMI、第三方 HMI、PC 等多种设备完全兼容

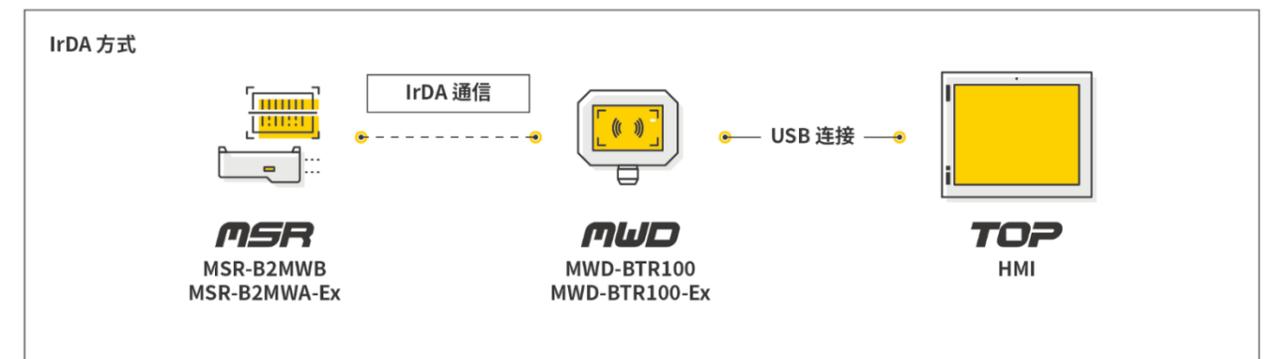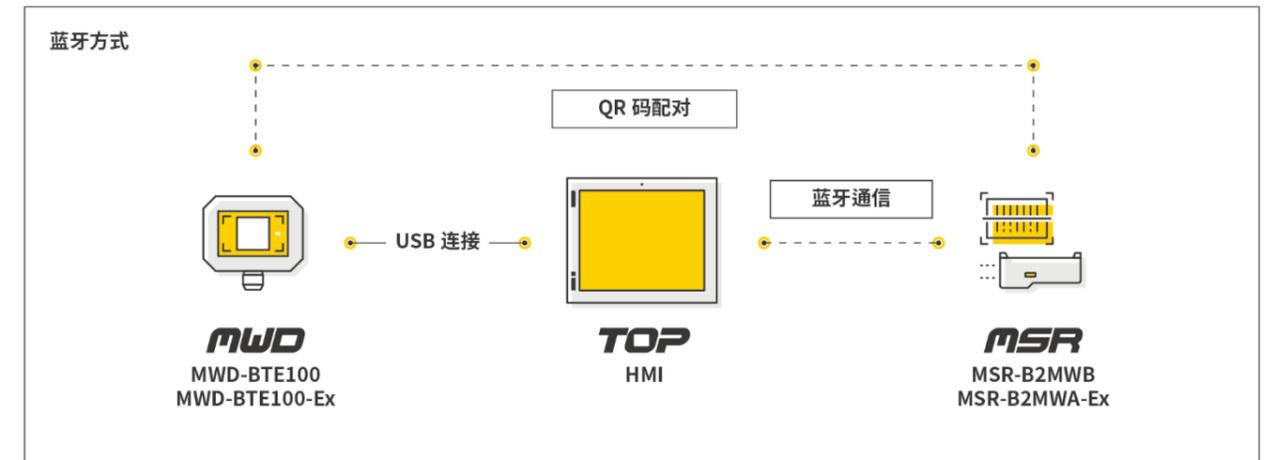**USB 串行模式下实现稳定数据传输**

使用 USB 串行模式时,通过自家 HMI 专用协议确保数据可靠性

支持远距离蓝牙通信

· MWD-BTE100(-Ex):传输距离约 8 米
· MWD-BTR100(-Ex):传输距离约 5 米

通过 QR 码 / IrDA 更加便捷

在多条码阅读器环境下提供简易 QR 界面无需配对,即可通过 IrDA 传感器即时传输数据

MWD连接方式

蓝牙方式

QR 码配对

蓝牙通信

USB 连接

mWD
MWD-BTE100
MWD-BTE100-Ex

TOP
HMI

MSR
MSR-B2MWB
MSR-B2MWA-Ex

IrDA 方式

IrDA 通信

USB 连接

MSR
MSR-B2MWB
MSR-B2MWA-Ex

mWD
MWD-BTR100
MWD-BTR100-Ex

TOP
HMI

* 有关详细使用方法,请参阅硬件手册。

MWD SPECIFICATIONS

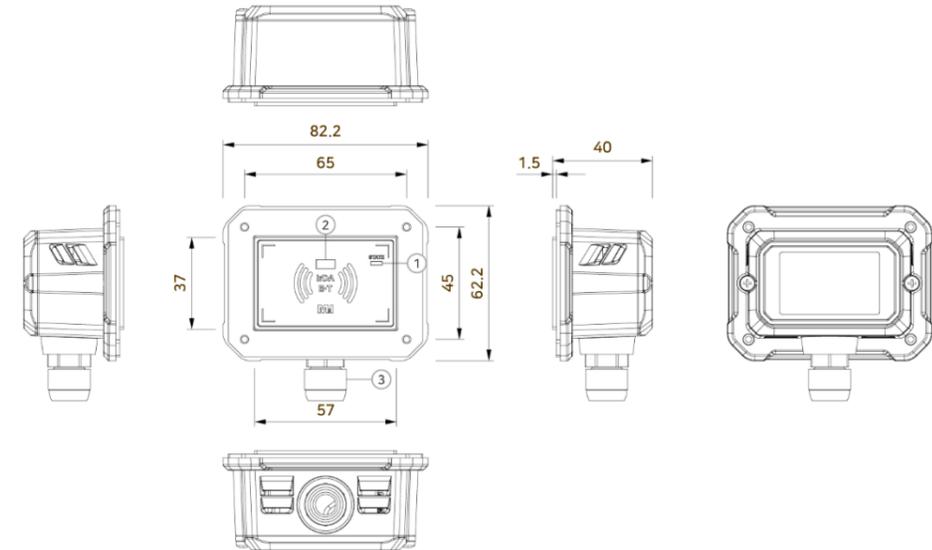|	Non-Ex Model Ex Model	MWD-BTE100 MWD-BTE100-Ex	MWD-BTR100 MWD-BTR100-Ex
Display	E-Paper	1.54" Pairing QR	-
Status LED	RED	Power ON & Pairing Wait	HID Interface
	GREEN	Pairing OK	Serial Interface
Wireless / Bluetooth	Frequency	2400 ~ 2483.5Mhz	2402 ~ 2480Mhz
	Spec.	Bluetooth® 5.1 Low Energy(BLE)	Bluetooth® 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, M2I HMI dedicated communication
Power	USB	USB Type-A, for data communication and power supply, 1-meter cable length	
Environment	Operation Temperature(℃)	-20 ~ +50	
	Storage Temperature(℃)	-20 ~ +60	
	Operation Humidity(%RH)	0 ~ 90(No dew)	
	Atmosphere	No corrosive gas	
	Vibration Endurance	Amplitude: 10≤F < 25㎐(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	
	Certification(On Progress)	General Model: KC, CE, UL/cUL Explosion Proof Model: KC, CE, KCs	
Structure	External Dimension(㎜)	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
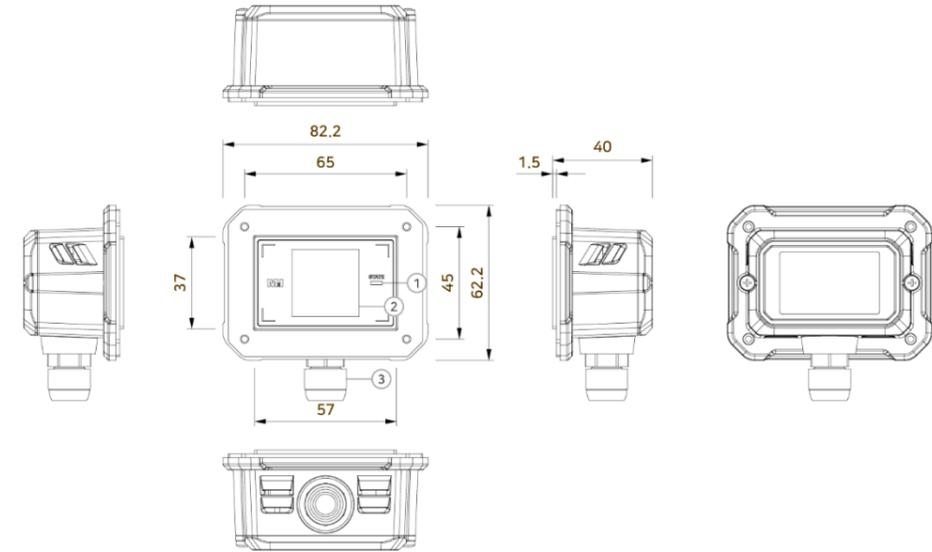
① Status LED   ② E-Paper   ③ USB 2.0

MWD-BTR100
MWD-BTR100-Ex

① Status LED   ② IrDA Sensor   ③ USB 2.0

Dongle

MIO Remote I/O SERIES

工业远程I/O

基座

模块本体

DIN16
0 1 2 3
4 5 6 7
8 9 A B
C D E F

CMR0A
I/O   S.PWR
DIAG   F.PWR

TX
RX

接线端子

耦合器模块

I/O模块、扩展模块

FEATURES

Communication

支持 Modbus TCP、Modbus RTU、
EtherCAT 等工业网络协议

Durability

坚固设计,可在噪声、振动、
温度变化等多种工业环境下正常运行

Compact

超小型设计,最大化安装空间利用率并简化布线

Module
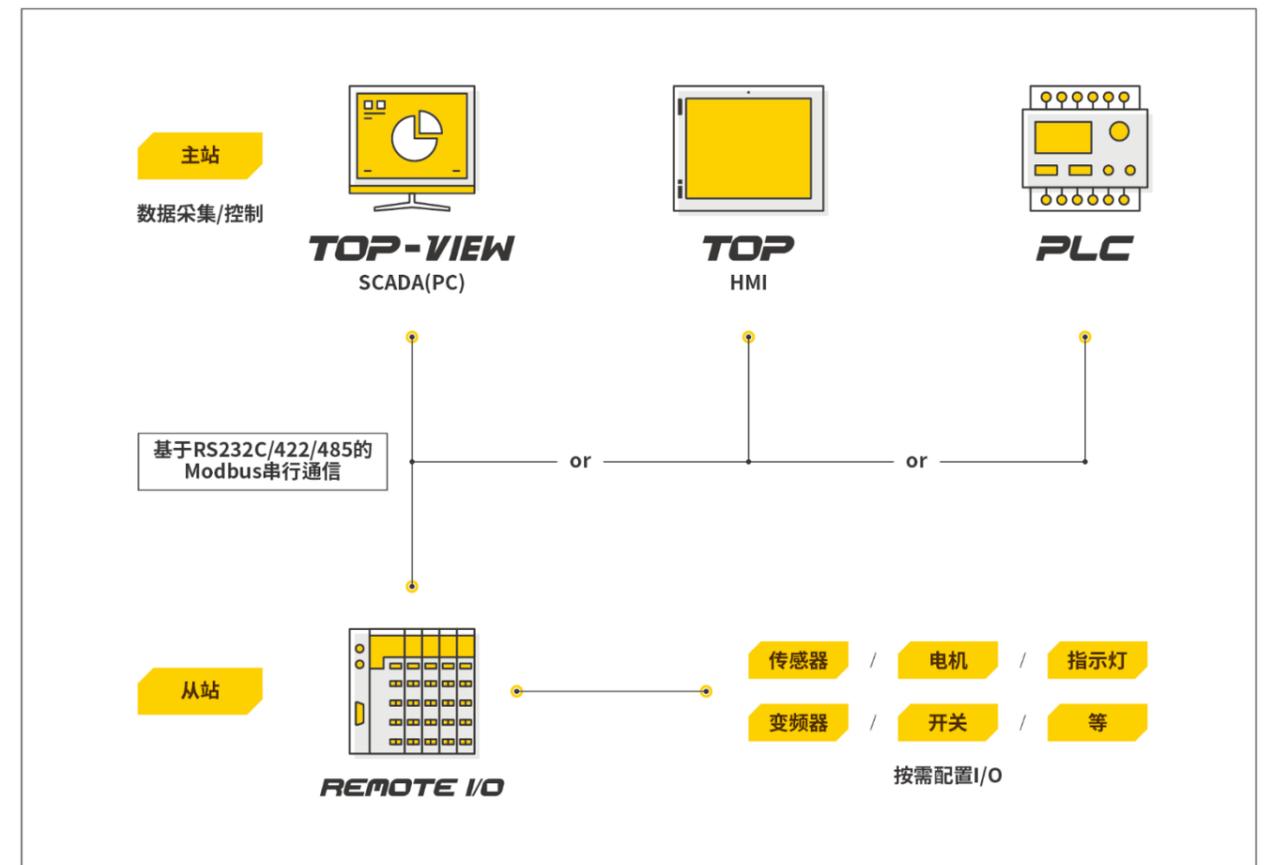
可组合各种 I/O 模块和扩展模块,
根据现场条件优化配置(最多 32 个槽位)

Hot Swap

无需断电即可在运行中更换模块,
最大限度减少停机时间并提高维护效率

MIO Master

提供易于设置的专用软件(MIO Master)
直观的界面,实现快速初始设置及实时控制/监控

远程I/O连接方式

主站

数据采集/控制

TOP-VIEW
SCADA(PC)

TOP
HMI

PLC

基于RS232C/422/485的
Modbus串行通信

or   or

从站

REMOTE I/O

传感器 / 电机 / 指示灯
变频器 / 开关 / 等

按需配置I/O

MIO-CMR0A 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	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			-
Memory	Max. Input Size	Input + Output Max. 256 Byte			-
	Max. Output Size	Input + Output Max. 256 Byte			-
Other	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			-
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(㎜)	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
	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
Interface	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(㎜)	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			
Other	Wiring	AWG 26 to 20			
	Pin No.	Removable Terminal Block 16P			
	Indicator	17 LED 16 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 < 25㎐(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: ±4㎸			
	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(㎜)	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

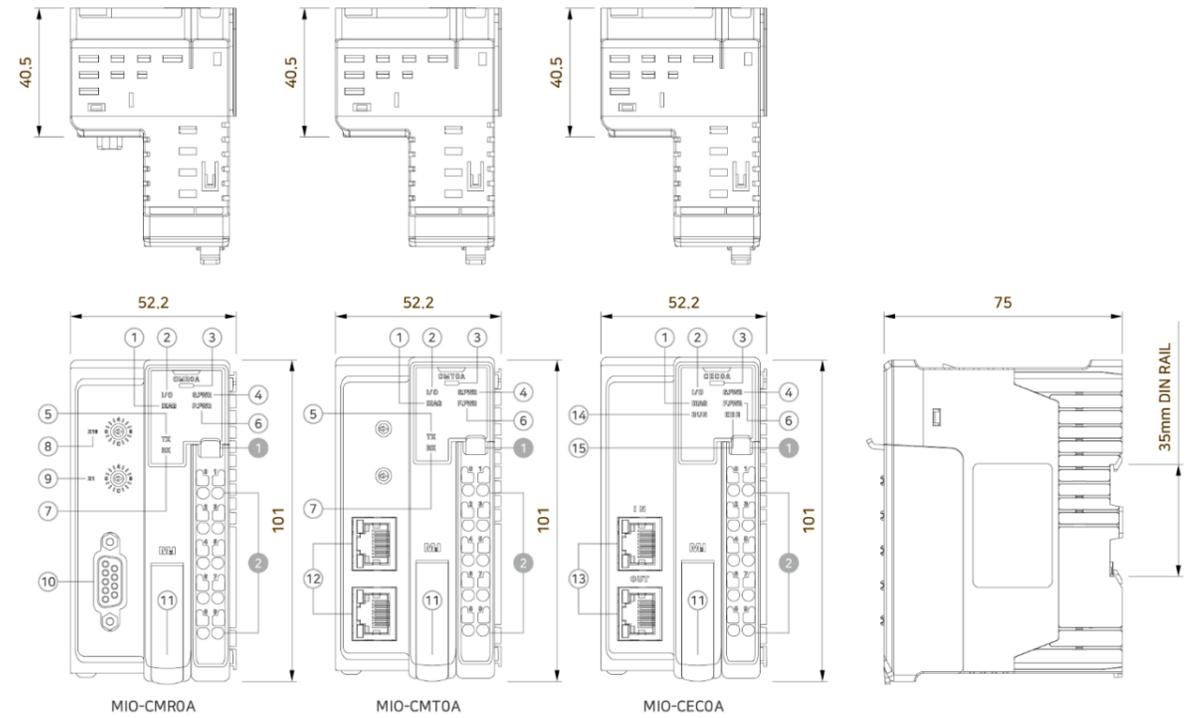|	Functional	MIO-AIR02-01	MIO-AIV04-01	MIO-AIC04-01	MIO-AOV04-01	MIO-AOC04-01
Type	Input/Output Type	2 Channels Analog RTD Type	4 Channels Analog Voltage Type	4 Channels Analog Current Type	4 Channels Analog Voltage Type	4 Channels Analog Current Type
	Sensor Type and Input/ Output Range	PT100 * -200.0 to +850.0℃	0 ~ 5 Vdc	0 ~ 20mA	0 ~ 5 Vdc	0 ~ 20mA
Power	Power Dissipation	Max. 70mA@5.0Vdc		Max. 200mA@5.0Vdc		
	Field Power		Max. 60mA@24Vdc			
	Typ. Input Impedance	-	Min. 500KΩ	Max. 250Ω	-	
	Load	-	-	-	Min. 1KΩ	Max. 500Ω
	Data Format	16bits Integer				
Characteristic	Resolution	0.0312℃/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℃, ±0.3% Full Scale@-10℃, +50℃				
	Isolation	I/O to Logic: Capacitive Isolation, External Power : Transformer Isolation				
	Common Type	2COM (1Common/1Channel)	4COM (Single Common)			
Other	Wiring	AWG 26 to 20				
	Pin No.	Removable Terminal Block 10P				
	Indicator	3 LED 2 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 < 25㎐(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: ±4㎸				
	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(㎜)	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		
	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
Other	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 < 25㎐(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: ±4㎸		
	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(㎜)			12 x 101 x 75		
Structure	Weight(kg)			0.06		
	Cooling System			Natural Air Circulation		
	Case Material			PC(Resistance to Flame)		

DRAWING

COUPLER MODULE

40.5   40.5   40.5

52.2   52.2   52.2   75

101   101   101   35mm DIN RAIL

MIO-CMR0A   MIO-CMT0A   MIO-CEC0A

① Diagnostic LED	⑥ Field Power Status LED	⑪ USB Connector Cover
② Extension I/O Module Status LED	⑦ RX Status LED	⑫ Ethernet
③ Remote I/O Coupler Status LED	⑧ Node Number Setting Switch 16x	⑬ EthernetCAT I/O
④ System Power LED	⑨ Node Number Setting Switch 1x	⑭ Run Status LED
⑤ TX Status LED	⑩ MODBUS Communication Port	⑮ Error Status LED

❶ Detachment Hook
❷ Channel Terminal

I/O MODULE

12   12   12   12   75

101   101   101   101   35mm DIN RAIL

8 접점   16 접점   PWR   COM
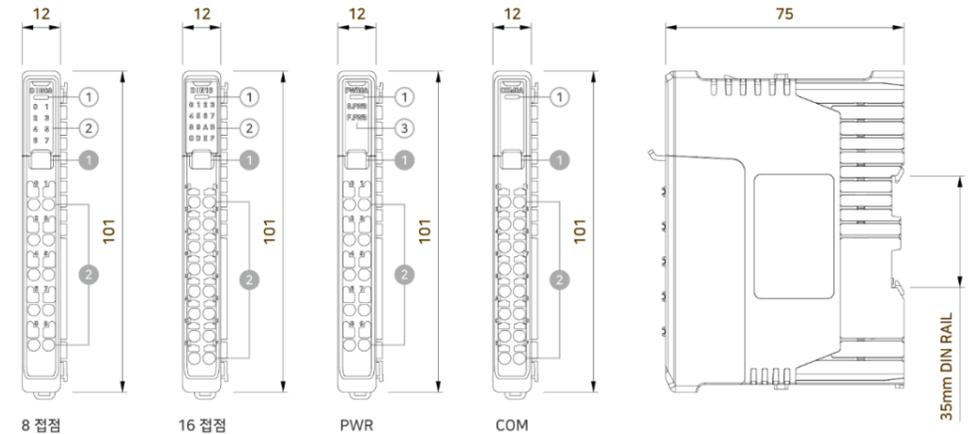
① Status LED   ② Terminal Input Status LED   ③ System/Field Power Status LED   ❶ Detachment Hook   ❷ Channel Terminal

MIO LoRa SERIES

工业无线通信设备

FEATURES
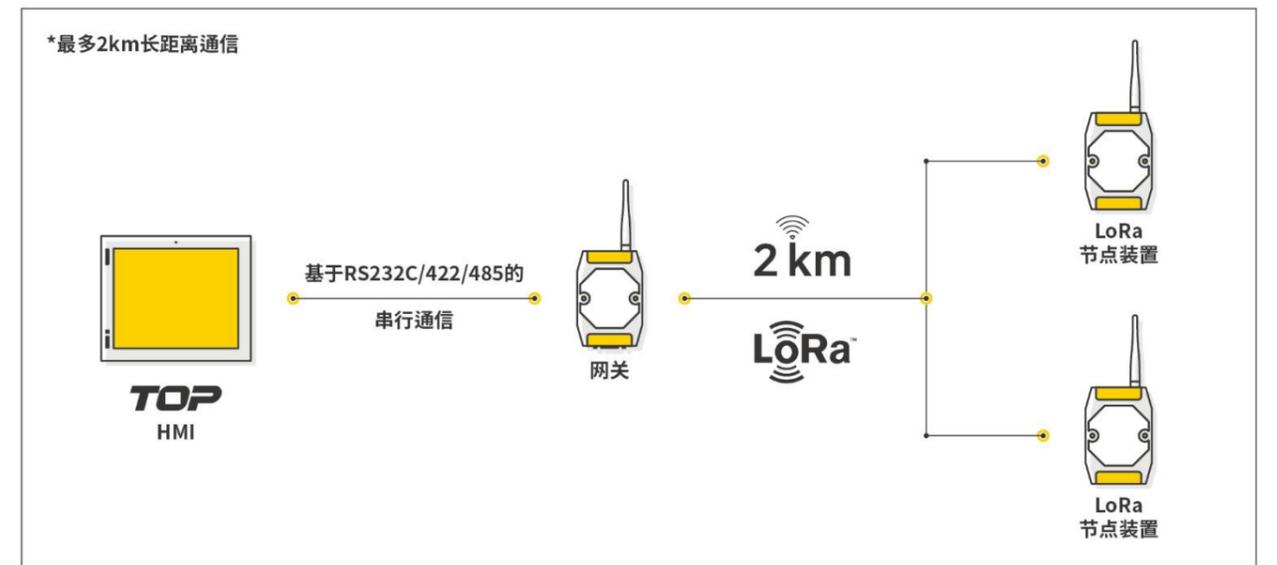
▌**通过LoRa通信技术可构成自己的网络与协议**

无需要额外的通信费即可使用

▌**一个终端节点提供多样的输入与输出**

数字输入与输出,继电器节点,模拟电流与电压

▌**通过各种测试的工业用产品
强力的性能**

通过冲击、噪音、静电、温度测试

▌**提供简便的设定方式**

使用模式按钮LoRa网关与终端节点之间可以自动设
置使用旋转开关可以变更频率与SF设置

LoRa使用方法

*详细的使用方法请参阅产品使用手册。

01 用USB电缆从[**M2I LoRa 设置工具**]下载LoRa网关与终端节点的设置内容

02 使用**串行通信(RS-232C/422/485)**连接TOP与LoRa网关

03 在**TOP Design Studio**软件的串行端口添加LoRa网关,在通讯设置页面按照LoRa终端阶段的数添加Device ID

⚠ 在TOP上可监督与控制LoRa网关的数据
而且,LoRa网关使用LoRa通信可接收LoRa终端节点的数据,或者向终端节点发送

网关

终端节点

M2I Corporation
MODEL : MIO-LPG00

M2I Corporation
MODEL : MIO-LPE00

LoRa连接图

*最多2km长距离通信

基于RS232C/422/485的
串行通信

2 km

LoRa

网关

TOP
HMI

LoRa
节点装置

LoRa
节点装置

MIO LoRA

LoRa SPECIFICATIONS GATEWAY

| Functional		MIO-LPG00
Power	Input Voltage	24Vdc(20 ~ 28Vdc)
	Power Dissipation	3W
	Voltage Sag	24Vdc, Within 10ms
	Insulation Resistance	500Vdc, 10㏁
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: 10≤F < 25㎐(2G) X, Y, Z each Direction(for 30 Minutes)
	Noise Immunity	1000Vp-p(Pulse Width 1㎲)
	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
Structure	External Dimension(㎜)	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

LoRa

| Functional			MIO-LPE00
Power	Input Voltage		24Vdc(20 ~ 28Vdc)
	Power Dissipation		3W
	Voltage Sag		24Vdc, Within 10ms
	Insulation Resistance		500Vdc, 10㏁
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
	Serial Comm.		-
	USB		Connector: USB Mini - B x 1
I/O Interface	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: 10≤F < 25㎐(2G) X, Y, Z each Direction(for 30 Minutes)
	Noise Immunity		1000Vp-p(Pulse Width 1㎲)
	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
Structure	External Dimension(㎜)		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
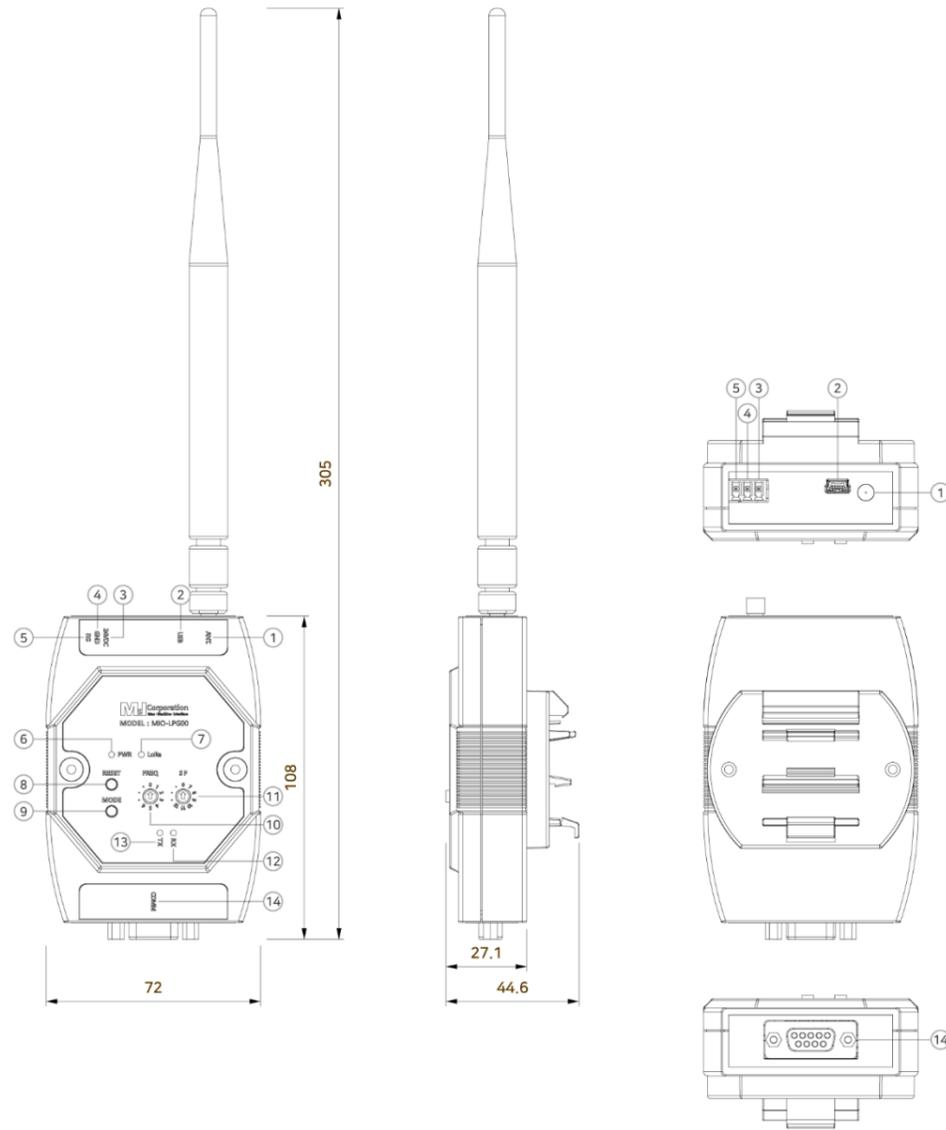
①	LoRa Antena Joint		⑧	System RESET Switch
②	USB Setting Connector		⑨	MODE Switch
③	System Power Input(DC24V)		⑩	Frequency Channel Switch [0 ~ 6]
④	System Power GND		⑪	SF Setting Switch [0], [7 ~ 12]
⑤	F.G		⑫	Communication Receive Indicator COMM
⑥	System Power Indicator		⑬	Communication Transmit Indicator COMM
⑦	LoRa Communication Indicator		⑭	Serial Communication Connector

DRAWING

MIO-LPE00 EndNode
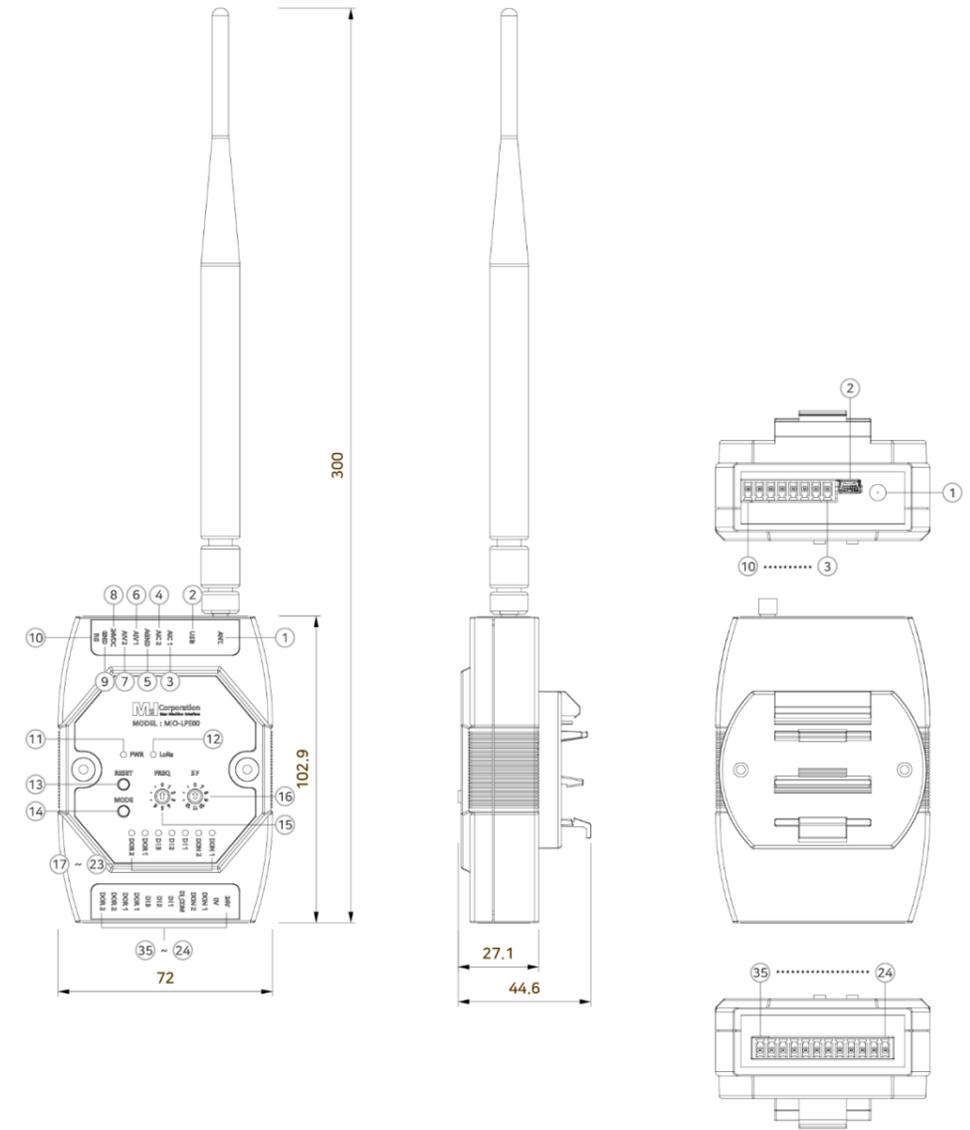
①	LoRa Antena Joint	⑥	Analog Voltage Input Terminal for Channel 1	⑬	System RESET Switch
②	USB Setting Connector	⑦	Analog Voltage Input Terminal for Channel 2	⑭	MODE Switch
③	Analog Current Input Terminal for Channel 1	⑧	System Power Input(DC24V)	⑮	Frequency Channel Switch [0 ~ 6]
④	Analog Current Input Terminal for Channel 2	⑨	System Power GND	⑯	SF Setting Switch [0], [7 ~ 12]
⑤	AIC 1, 2/AIV 1, 2 Common Terminal	⑩	F.G	⑰ ~ ㉓	Operation Status LED
	* Field Power(0V) Connection Terminal	⑪	System Power Indicator	㉔ ~ ㉟	I/O Terminal
	** Use when it is connected as Source Type	⑫	LoRa Communication Indicator		

MGW SERIES

连接工业设备的物联网网关

FEATURES

提供通信协议转换器功能
(提供多个通讯驱动器)

提供跟HMI相同的专用通讯协议库
(基于地址的PLC)

提供标准导轨与vesa孔

用标准导轨 (DIN Rail) 在任何场所容易安装
用标准VESA挂架 (* 选项) 跟显示器简单结合

使用TOP Design Studio软件可执行
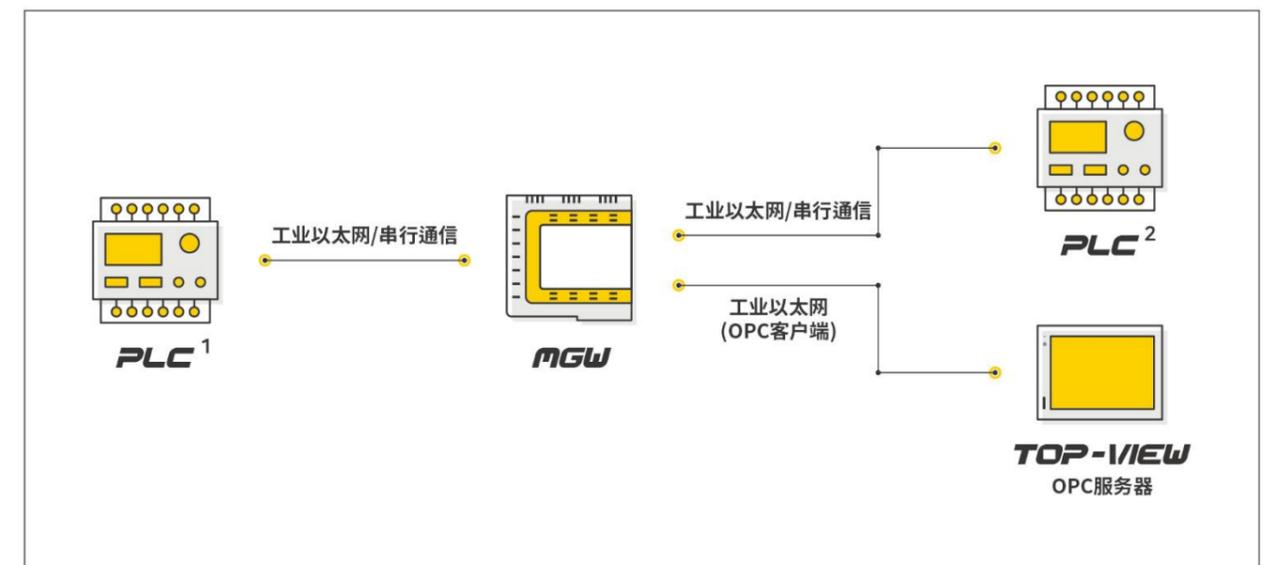
使用M2I的HMI和SCADA的用户
使用同软件容易执行

提供以太网和串行端口2个

支持不同IP的异构网络接口
提供COM1/2 DSUB 9针(RS-232C, RS-422/485)

HDMI输出

与各种显示器容易连接
* M2I触摸显示器即将上市

MGW连接图

工业以太网/串行通信

工业以太网/串行通信

工业以太网
(OPC客户端)

PLC[1]

MGW

PLC[2]

TOP-VIEW
OPC服务器

MGW

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(℃)	-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)
	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
	Certification	KC, CE, UL/cUL
Structure	External Dimension(㎜)	128.9x131.2x29.2
	Weight(kg)	0.23
	Installation Method	Standard DIN Rail(35㎜), VESA
	Cooling System	Natural air circulation
	Case Material	Plastic

DRAWING

MGW-BH1000D
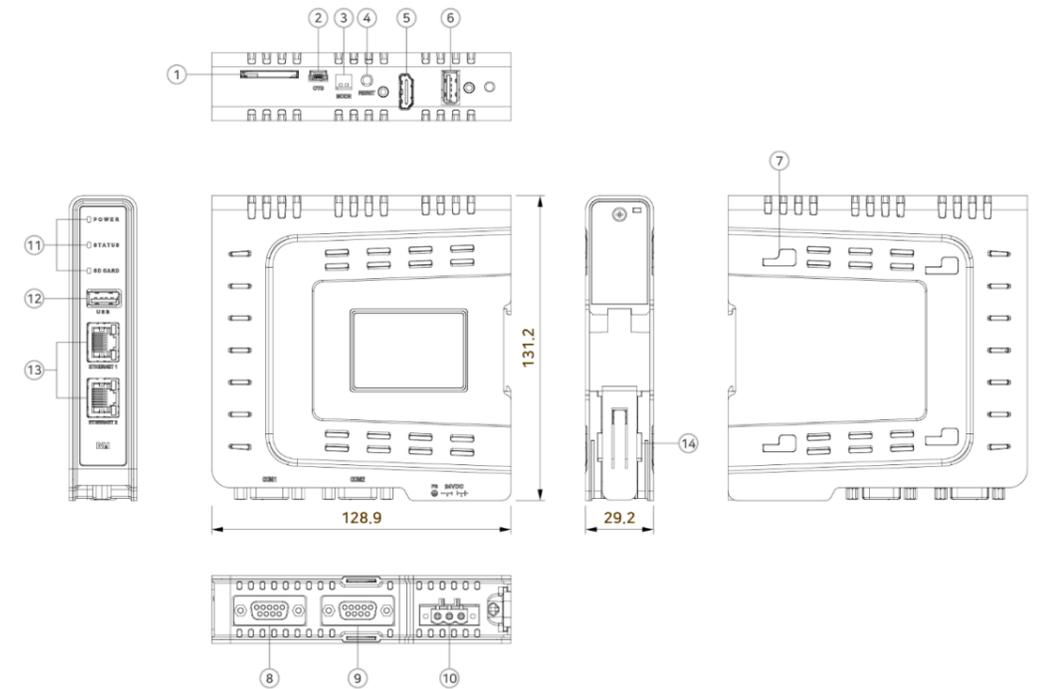
①	SD Card Socket	④	Reset Switch	⑦	Vesa Bracket	⑩	Power Input	⑬	Ethernet Port
②	USB OTG	⑤	HDMI	⑧	Serial COM1	⑪	Status LED	⑭	DIN Rail
③	Mode Switch	⑥	USB Host #1	⑨	Serial COM2	⑫	USB Host #2		

VESA Braket(*Option)

全球业务网络与服务

中国代理商
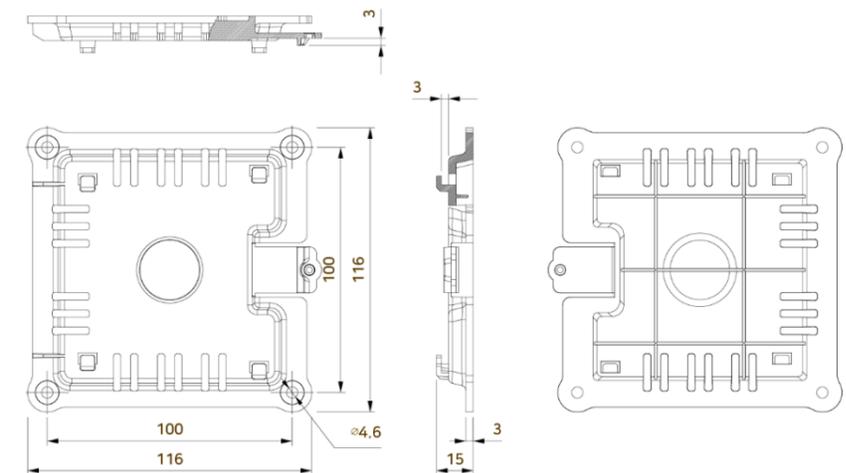
20多家的海外代理商

中国、日本、新加坡、印度、土耳其、越南、以色列
马拉西亚、泰国、希腊、法国、伊朗、约旦、其他

安养总公司

大邱分公司

40多家的韩国国内代理商

首尔、京畿道、大田、大邱、光州、蔚山、唱原、釜山

M2I 官方 YouTube 频道

最快获取 M2I 的各类教育内容和有价值的最新资讯。

KakaoTalk 技术咨询

即使在嘈杂的工业现场，也可通过实时照片和视频快速高效地解决技术问题。

现场检查服务（B/S, 出差服务）

从老旧产品检查到新型替换咨询，一次性在贵公司现场直接体验。

对客户的承诺

与客户对话 - 以客户为先，共创价值。
持续成长 - 通过不断研发实现可靠性与生产力。
迎接新变革 - 基于 AX·DX 的智能工厂整体解决方案平台企业。