iKAN Wired Series

Modbus LED Display

User Manual

V1.1.3, August 2026



Technical Support: service@icpdas.com

Author: Tony Lee

Editor: Anna Huang

Warranty

All products manufactured by ICP DAS are under warranty regarding defective materials for a period of one year, beginning from the date of delivery to the original purchaser.

Warning

ICP DAS assumes no liability for any damage resulting from the use of this product. ICP DAS reserves the right to change this manual at any time without notice. The information furnished by ICP DAS is believed to be accurate and reliable. However, no responsibility is assumed by ICP DAS for its use, nor for any infringements of patents or other rights of third parties resulting from its use.

Copyright

Copyright @ 2026 by ICP DAS Co., Ltd. All rights are reserved.

Trademark

Names are used for identification only and may be registered trademarks of their respective companies.

Contact US

If you have any problem, please feel free to contact us by email at: Service@icpdas.com. You can count on us for quick response.

Contencts

Contencts **3**

1. Introduction **7**

1.1. Features **8**

1.2. Specification **11**

1.2.1. iKAN-116(S), iKAN-124(S) 11

1.2.2. iKAN-208, iKAN-216, iKAN-224 13

1.2.3. iKAN-116A, iKAN-124A 15

1.2.4. iKAN-208A, iKAN-216A, iKAN-224A 17

1.2.5. iKAN-116(S)-IP65, iKAN-124(S)-IP65 19

1.2.6. iKAN-208-IP65, iKAN-216-IP65, iKAN-224-IP65 21

1.2.7. iKAN-116A-IP65, iKAN-124A-IP65 23

1.2.8. iKAN-208A-IP65, iKAN-216A-IP65, iKAN-224A-IP65 25

1.3. Appearance **27**

1.3.1. iKAN-116(S), iKAN-124(S), iKAN-208, iKAN-216, iKAN-224 27

1.3.2. iKAN-116A, iKAN-124A, iKAN-208A, iKAN-216A, iKAN-224A 30

1.3.3. iKAN-116(A)(S)-IP65, IKAN-124(A)(S)-IP65, iKAN-208-IP65, iKAN-216-IP65, iKAN-224-IP65 32

1.3.4. iKAN-216A-IP65, iKAN-224A-IP65 34

1.4. Wiring Connection **36**

1.5. Dimension **38**

1.5.1. iKAN-116S 38

1.5.2. iKAN-124S 39

1.5.3. iKAN-116(A) 40

1.5.4. iKAN-124(A) 41

1.5.5. iKAN-208(A) 42

1.5.6. iKAN-216(A) 43

1.5.7. iKAN-224(A) 44

1.5.8. iKAN-116S-IP65 45

1.5.9. iKAN-124S-IP65 46

1.5.10. iKAN-116(A)-IP65 47
1.5.11. iKAN-124(A)-IP65 48
1.5.12. iKAN-208(A)-IP65 49
1.5.13. iKAN-216(A)-IP65 50
1.5.14. iKAN-224(A)-IP65 51
2. Getting Started 52
2.1. Checking the Package 52
2.1.1. iKAN-116S, iKAN-124S, iKAN-208 53
2.1.2. iKAN-116(A), iKAN-124(A), iKAN-216(A), iKAN-224(A) 54
2.1.3. iKAN-116(S)-IP65, iKAN-124(S)-IP65, iKAN-208-IP65 55
2.1.4. iKAN-116A-IP65, iKAN-124A-IP65, iKAN-208A-IP65 56
2.1.5. iKAN-216A-IP65, iKAN-224A-IP65 57
2.2. Assembling the iKAN Display 58
2.3. Installing the Wall mounting brackets 60
2.4. Installing the Angle Bracket (For iKAN-216(A), iKAN-224(A)) 61
2.5. Assembling the Waterproof Assembly (For IP65 Series) 62
2.6. Connecting the Power, Ehternet, and PC 65
2.6.1. iKAN-116(S), iKAN-124(S), iKAN-208, iKAN-216, iKAN-224 65
2.6.2. iKAN-116A, iKAN-124A, iKAN-208A, iKAN-216A, iKAN-224A 66
2.6.3. iKAN-116(S)-IP65, iKAN-124(S)-IP65, iKAN-208-IP65, iKAN-216-IP65, iKAN-224-IP65 67
2.6.4. iKAN-116A-IP65, iKAN-124A-IP65, iKAN-208A-IP65 68
2.6.5. iKAN-216A-IP65 and iKAN-224A-IP65 69
2.7. Configuring the Network 70
2.8. Accessing the iKAN Web Interface 73
2.9. Creating Your First Message 74
3. iKAN Web Interface 76
3.1. Message Pool 77
3.2. Data Pool 78
3.2.1. INTEGER 79
3.2.2. FLOAT 80
3.2.3. COIL 81

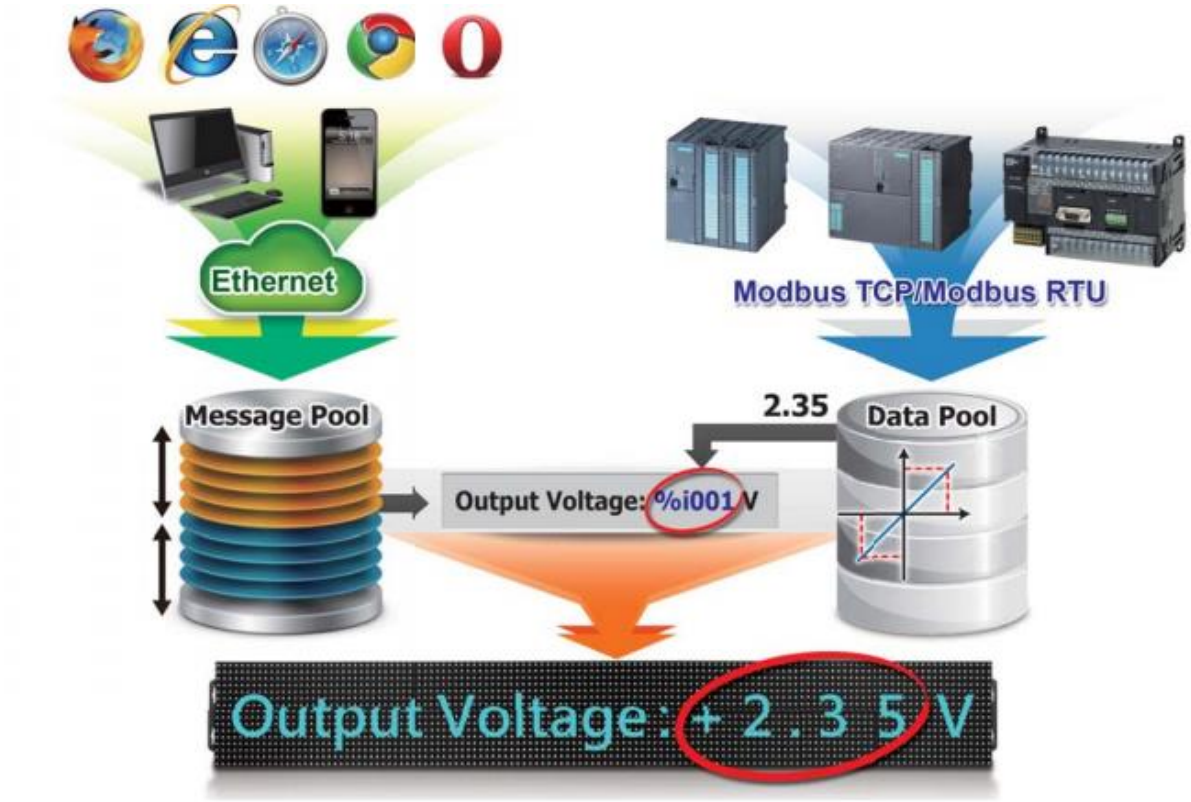
3.3. DIO 82
3.4. DL Status 83
3.5. System 84
3.5.1. Import/Export 85
3.5.1.1. Exporting Settings File 86
3.5.1.2. Importing Settings File 87
3.5.2. Ethernet 88
3.5.2.1. Configuring IP Address 89
3.5.2.2. Configuring Modbus TCP Port and Station ID (NetID) 90
3.5.2.3. Enabling Modbus TCP Master to Connect DL/CL Modules 91
3.5.3. Serial Port 92
3.5.3.1. Configuring COM Port Communication Parameters 93
3.5.3.2. Enabling Modbus RTU Master to Connect DL/CL Modules 94
3.5.4. Misc 95
3.5.4.1. LED Brightness 96
3.5.4.2. Message Moving Speed 96
3.5.4.3. Delay Between Message Switch (Second) 97
3.5.4.4. Delay Between Message Moving (Second) Display 97
3.5.4.5. Message Display Orientation 98
3.5.4.6. Message Flash Time (Millisconds) 98
3.5.4.7. DI Trigger Message 99
3.5.4.8. Adjusting the System Date and Time 100
3.5.4.9. Restore the Default Settings 104
3.5.4.10. Software Reset 104
3.5.4.11. Module Name 105
3.5.4.12. Firmware Version 105
4. Message Management 106
4.1. Managing Messages 106
4.1.1. Adding a Message 107
4.1.2. Editing and Interrupting a Messages 107
4.1.3. Deleting a Message 109

4.2. Embedded Variable in Messages 110
4.2.1. System Variables 111
4.2.2. Integer Variables 114
4.2.3. Floating-point Variables 116
4.2.4. Boolean Variables 118
4.2.5. ASCII String 120
4.2.6. Unicode String 122
4.2.7. DL/CL Real-time Variables 125
5. Variable Format Management 128
5.1. Mapping Integer Values to Engineering Units 129
5.2. Setting Decimal Places for Float Variables 132
5.3. Mapping Boolean (Coil) Values to Custom Text 135
6. DL/CL Modules Management 138
6.1. Connecting to DL/CL Modules 138
6.1.1. Connecting via Ethernet 139
6.1.2. Connecting via COM Port 142
6.2. Monitoring Real-Time DL/CL Data 145
6.3. Accessing DL/CL Modbus Addresses and Variables 146
Appendix A. Modbus Register Address Map 147
Appendix B. Revision History 151

1. Introduction

The iKAN series is a family of industrial Modbus LED display devices that deliver industrial-grade anti-noise capabilities, as well as reliability and stability. ASCII characters and Unicode characters, which can be used to display multiple languages like Thai, Arabic, Hebrew, Hindi or Japanese, are supported for presenting formatted messages. Support for the popular Modbus industrial protocol is provided meaning that the iKAN display can be easily integrated into existing PLC and SCADA environments.

Messages can be edited using a standard web browser, such as Google Chrome, Firefox, or IE on a PC, mobile device, or smartphone without any limitations related to specific control tools or programs. Each iKAN LED display provides storage space for up to 128 messages with user-defined priority. In addition, 168/600 variables allow data on a PC, PLC or other controller to be automatically integrated into a message and then displayed. With an open user interface and the ability to display real-time data from other devices, the iKAN series LED displays can be applied in shopping malls, railway stations, industrial areas, or in situations where visual display is the easiest way of delivering your message.

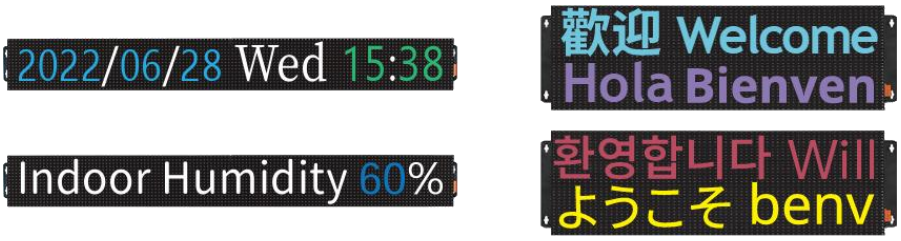


1.1. Features

This section lists the core features of the iKAN series, including display control, data handling, communication options, and user interface accessibility.

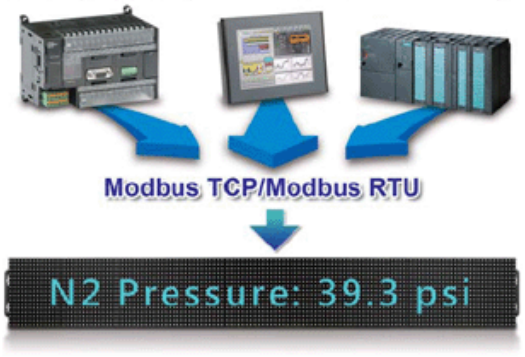
Industrial-Grade Large Display Interface

Real-time data from PLCs can be visualized on high-brightness LED panels in seven text colors, improving field visibility and operational clarity.



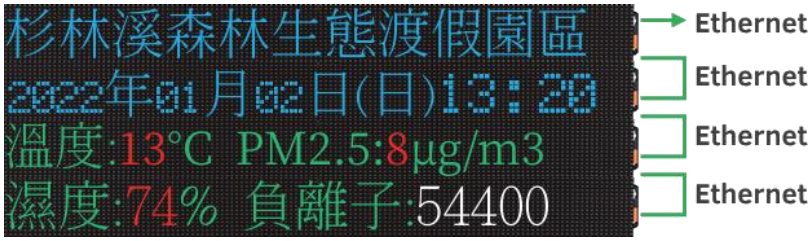
Modbus TCP/Modbus RTU protocol

Supports the Modbus TCP/Modbus RTU protocol, which reduces the learning curve required when first using the iKAN display, and ensures easy integration of the display into either a new or an existing system.



Multi-Node Ethernet Switch

A dual-port Ethernet switch simplifies wiring and supports daisy-chaining of multiple units.



High-Capacity Message and Variable Storage

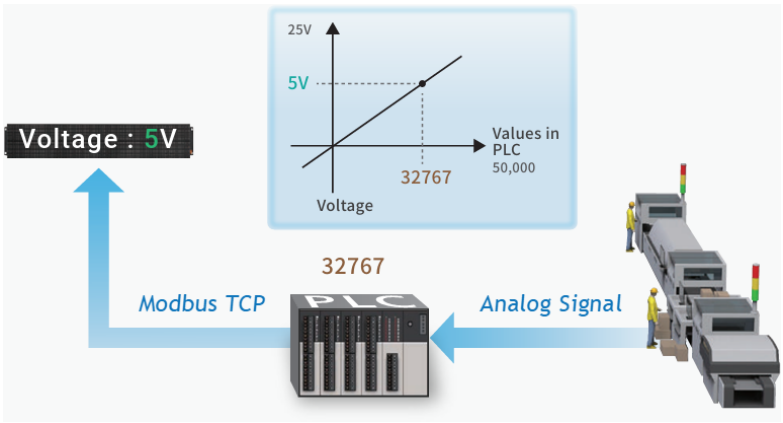
Stores up to 128 messages and 168 variables with priority settings, supporting efficient preset management.

Emergency Message Interrupt

Urgent messages can override normal content to deliver critical alerts instantly.

Auto Data Conversion to Physical Units

Transforms raw Modbus integer values into readable units such as temperature and voltage via configurable formulas.

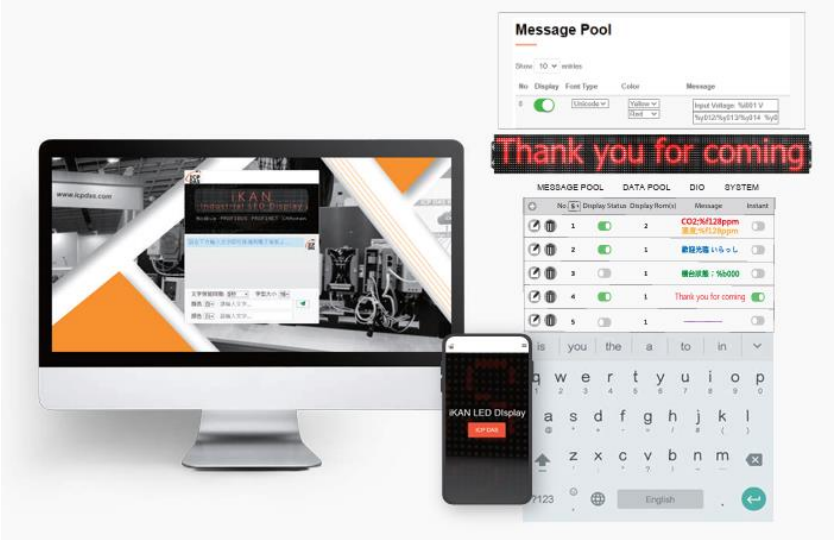


Configuration Export & Multi-Device Deployment

Export/import settings to rapidly configure and replicate setups across multiple devices.

Mobile-Friendly Web Control Interface

Manage messages via browser-based interface on mobile devices—no additional software required.



IP65 Waterproof and Dustproof (iKAN IP65 Series Only)

IP65-rated design ensures reliable operation in harsh or outdoor environments.



1.2. Specification

This section describes the hardware specifications of iKAN models, including display size, communication ports, memory capacity, and environmental conditions.

1.2.1. iKAN-116(S), iKAN-124(S)

The "S" suffix denotes a compact version, suitable for limited-space applications.

Model		iKAN-116	iKAN-116S	iKAN-124	iKAN-124S
Display					
Color		Red, Blue, Yellow, Green, Light Blue, Purple or White			
Character Sets		16 x 16 Unicode or 8 x 16 ASCII			
Display Size	Row	1			
	ASCII	16 characters		24 characters	
	Unicode	8 characters		12 characters	
Message Pool		128 common messages with user-defined priority levels Up to 20 Unicode characters or 50 ASCII characters each			
Data Pool		40 Coil values, 64 Float values, and 64 Integer values			
RTC (Real-time Clock)		Date and time, 24 hour format, including hours, minutes, seconds, day of the week, date, month, year			
Ethernet					
Port		2 x RJ-45, 10/100 Base-TX			
Protocol		Modbus TCP Master/Slave, Max. 8/8 connections			
Configuration		Web-based User Interface			
COM Port					
Interface		2 x RS-485			
Baud rate (bps)		1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200			
Data Format		N81, E81, O81			
Protocol		Modbus RTU Master/Slave			

Model	iKAN-116	iKAN-116S	iKAN-124	iKAN-124S
Mechanical				
Dimensions (W x H x D, unit: mm)	1347 x 160 x 73	834 x 130 x 54	1987 x 160 x 73	1218 x 130 x 54
Weight	4.0 Kg	2.0 Kg	4.6 Kg	2.5 Kg
Installation	Wall mounting			
Casing	Aluminum			
Power				
Input Range	100 to 240 VAC			
Consumption	0.3A @ AC 120V		0.35A @ AC 120V	
Environment				
Operating Temperature	0 to 60°C			
Storage Temperature	-10 to 75°C			
Humidity	10 to 90% RH, Non-condensing			

1.2.2. iKAN-208, iKAN-216, iKAN-224

Model		iKAN-208	iKAN-216	iKAN-224
Display				
Color		Red, Blue, Yellow, Green, Light Blue, Purple or White		
Character Sets		16 x 16 Unicode or 8 x 16 ASCII		
Display Size	Line	2		
	ASCII	16 characters	32 characters	48 characters
	Unicode	8 characters	16 characters	24 characters
Message Pool		600 common messages with user-defined priority Up to 20 Unicode characters or 50 ASCII characters each		
Data Pool		100 Coil variables, 128 Float variables, 128 Integer variables and 64 Double variables		
RTC (Real-time Clock)		Date and time, 24 hour format, including hours, minutes, seconds, day of the week, date, month, year		
Ethernet				
Port		2 x RJ-45, 10/100 Base-TX		
Protocol		Modbus TCP Master/Slave, Max. 8/8 connections		
Configuration		Web-based User Interface		
COM Port				
Interface		2 x RS-485		
Baud rate (bps)		1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200		
Data Format		N81, E81, O81		
Protocol		Modbus RTU Master/Slave		
Mechanical				
Dimensions (W x H x D, unit: mm)		707 x 320 x 53	1347 x 320 x 53	1987 x 320 x 53
Weight		4 Kg	8 Kg	12 Kg
Installation		Wall mounting		
Housing Material		Aluminum		
Power				
Input Range		100 to 240 VAC		
Consumption		0.5A @ AC 120V	0.6A @ AC 120V	0.7A @ AC 120V

Model	iKAN-208	iKAN-216	iKAN-224
Environment			
Operating Temperature	0 to 60°C		
Storage Temperature	-10 to 75°C		
Humidity	10 to 90% RH, Non-condensing		

1.2.3. iKAN-116A, iKAN-124A

The "A" suffix denotes a Non-RoHS version, suitable for specific industry applications.

Model		iKAN-116A	iKAN-124A
Display			
Color		Red, Blue, Yellow, Green, Light Blue, Purple or White	
Character Sets		16 x 16 Unicode or 8 x 16 ASCII	
Display Size	Row	1	
	ASCII	16 characters	24 characters
	Unicode	8 characters	12 characters
Message Pool		128 common messages with user-defined priority levels Up to 20 Unicode characters or 50 ASCII characters each	
Data Pool		40 Coil values, 64 Float values, and 64 Integer values	
RTC (Real-time Clock)		Date and time, 24 hour format, including hours, minutes, seconds, day of the week, date, month, year	
Ethernet			
Port		2 x RJ-45, 10/100 Base-TX	
Protocol		Modbus TCP Master/Slave, Max. 8/8 connections	
Configuration		Web-based User Interface	
COM Port			
Interface		2 x RS-485	
Baud rate (bps)		1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200	
Data Format		N81, E81, O81	
Protocol		Modbus RTU Master/Slave	
Mechanical			
Dimensions (W x H x D)		1347 mm x 160 mm x 73 mm	1987 mm x 160 mm x 73 mm
Weight		4.0 Kg	4.6 Kg
Installation		Wall mounting	
Casing		Aluminum	

Model	iKAN-116A	iKAN-124A
Power		
Input Range	DC 5V	
Consumption	20A @ DC 5V (100W)	30A @ DC 5V (150W)
Environment		
Operating Temperature	0 to 60°C	
Storage Temperature	-10 to 75°C	
Humidity	10 to 90% RH, Non-condensing	

1.2.4. iKAN-208A, iKAN-216A, iKAN-224A

The "A" suffix denotes a Non-RoHS version, suitable for specific industry applications.

Model		iKAN-208A	iKAN-216A	iKAN-224A
Display				
Color		Red, Blue, Yellow, Green, Light Blue, Purple or White		
Character Sets		16 x 16 Unicode or 8 x 16 ASCII		
Display Size	Line	2		
	ASCII	16 characters	32 characters	48 characters
	Unicode	8 characters	16 characters	24 characters
Message Pool		600 common messages with user-defined priority Up to 20 Unicode characters or 50 ASCII characters each		
Data Pool		100 Coil variables, 128 Float variables, 128 Integer variables and 64 Double variables		
RTC (Real-time Clock)		Date and time, 24 hour format, including hours, minutes, seconds, day of the week, date, month, year		
Ethernet				
Port		2 x RJ-45, 10/100 Base-TX		
Protocol		Modbus TCP Master/Slave, Max. 8/8 connections		
Configuration		Web-based User Interface		
COM Port				
Interface		2 x RS-485		
Baud rate (bps)		1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200		
Data Format		N81, E81, O81		
Protocol		Modbus RTU Master/Slave		
Mechanical				
Dimensions (W x H x D, unit: mm)		707 x 320 x 53	1347 x 320 x 53	1987 x 320 x 53
Weight		4 Kg	8 Kg	12 Kg
Installation		Wall mounting		
Housing Material		Aluminum		

Model	iKAN-208A	iKAN-216A	iKAN-224A
Power			
Input Range	DC 5V		
Consumption	20A @ DC 5V (100W)	40A @ DC 5V (200W)	60A @ DC 5V (300W)
Environment			
Operating Temperature	0 to 60°C		
Storage Temperature	-10 to 75°C		
Humidity	10 to 90% RH, Non-condensing		

1.2.5. iKAN-116(S)-IP65, iKAN-124(S)-IP65

The "S" suffix denotes a compact version, suitable for limited-space applications.

IP65-rated protection ensures reliable operation in harsh environments, making it ideal for outdoor and industrial applications.

Model		iKAN-116-IP65	iKAN-116S-IP65	iKAN-124-IP65	iKAN-124S-IP65
Display					
Color		Red, Blue, Yellow, Green, Light Blue, Purple or White			
Character Sets		16 x 16 Unicode or 8 x 16 ASCII			
Display Size	Row	1			
	ASCII	16 characters		24 characters	
	Unicode	8 characters		12 characters	
Message Pool		128 common messages with user-defined priority levels Up to 20 Unicode characters or 50 ASCII characters each			
Data Pool		40 Coil values, 64 Float values, and 64 Integer values			
RTC (Real-time Clock)		Date and time, 24 hour format, including hours, minutes, seconds, day of the week, date, month, year			
Ethernet					
Port		2 x RJ-45, 10/100 Base-TX			
Protocol		Modbus TCP Master/Slave, Max. 8/8 connections			
Configuration		Web-based User Interface			
COM Port					
Interface		2 x RS-485			
Baud rate (bps)		1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200			
Data Format		N81, E81, O81			
Protocol		Modbus RTU Master/Slave			
Mechanical					
Dimensions (W x H x D, unit: mm)		1347 x 160 x 81	834 x 130 x 54	1987 x 160 x 73	1218 x 130 x 54
Weight		4.6 Kg	2.0 Kg	5.4 Kg	2.5 Kg
Installation		Wall mounting			
Casing		Aluminum			

Model	iKAN-116-IP65	iKAN-116S-IP65	iKAN-124-IP65	iKAN-124S-IP65
Power				
Input Range	100 to 240 VAC			
Consumption	0.3A @ AC 120V		0.35A @ AC 120V	
Environment				
Operating Temperature	0 to 60°C			
Storage Temperature	-10 to 75°C			
Humidity	10 to 90% RH, Non-condensing			

1.2.6. iKAN-208-IP65, iKAN-216-IP65, iKAN-224-IP65

IP65-rated protection ensures reliable operation in harsh environments, making it ideal for outdoor and industrial applications.

Model		iKAN-208-IP65	iKAN-216-IP65	iKAN-224-IP65
Display				
Color		Red, Blue, Yellow, Green, Light Blue, Purple or White		
Character Sets		16 x 16 Unicode or 8 x 16 ASCII		
Display Size	Line	2		
	ASCII	16 characters	32 characters	48 characters
	Unicode	8 characters	16 characters	24 characters
Message Pool		600 common messages with user-defined priority Up to 20 Unicode characters or 50 ASCII characters each		
Data Pool		100 Coil variables, 128 Float variables, 128 Integer variables and 64 Double variables		
RTC (Real-time Clock)		Date and time, 24 hour format, including hours, minutes, seconds, day of the week, date, month, year		
Ethernet				
Port		2 x RJ-45, 10/100 Base-TX		
Protocol		Modbus TCP Master/Slave, Max. 8/8 connections		
Configuration		Web-based User Interface		
COM Port				
Interface		2 x RS-485		
Baud rate (bps)		1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200		
Data Format		N81, E81, O81		
Protocol		Modbus RTU Master/Slave		
Mechanical				
Dimensions (W x H x D, unit: mm)		708 x 320 x 91	1348 x 320 x 91	1988 x 320 x 91
Weight		4 Kg	8 Kg	12 Kg
Installation		Wall mounting		
Housing Material		Aluminum		

Model	iKAN-208-IP65	iKAN-216-IP65	iKAN-224-IP65
Power			
Input Range	100 to 240 VAC		
Consumption	0.5A @ AC 120V	0.6A @ AC 120V	0.7A @ AC 120V
Environment			
Operating Temperature	0 to 60°C		
Storage Temperature	-10 to 75°C		
Humidity	10 to 90% RH, Non-condensing		

1.2.7. iKAN-116A-IP65, iKAN-124A-IP65

The "A" suffix denotes a Non-RoHS version, suitable for specific industry applications.

IP65-rated protection ensures reliable operation in harsh environments, making it ideal for outdoor and industrial applications.

Model		iKAN-116A-IP65	iKAN-124A-IP65
Display			
Color		Red, Blue, Yellow, Green, Light Blue, Purple or White	
Character Sets		16 x 16 Unicode or 8 x 16 ASCII	
Display Size	Row	1	
	ASCII	16 characters	24 characters
	Unicode	8 characters	12 characters
Message Pool		128 common messages with user-defined priority levels Up to 20 Unicode characters or 50 ASCII characters each	
Data Pool		40 Coil values, 64 Float values, and 64 Integer values	
RTC (Real-time Clock)		Date and time, 24 hour format, including hours, minutes, seconds, day of the week, date, month, year	
Ethernet			
Port		2 x RJ-45, 10/100 Base-TX	
Protocol		Modbus TCP Master/Slave, Max. 8/8 connections	
Configuration		Web-based User Interface	
COM Port			
Interface		2 x RS-485	
Baud rate (bps)		1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200	
Data Format		N81, E81, O81	
Protocol		Modbus RTU Master/Slave	
Mechanical			
Dimensions (W x H x D)		1347 mm x 160 mm x 73 mm	1987 mm x 160 mm x 73 mm
Weight		4.6 Kg	5.4 Kg
Installation		Wall mounting	
Casing		Aluminum	

Model	iKAN-116A-IP65	iKAN-124A-IP65
Power		
Input Range	DC 5V	
Consumption	20A @ DC 5V (100W)	30A @ DC 5V (150W)
Environment		
Operating Temperature	0 to 60°C	
Storage Temperature	-10 to 75°C	
Humidity	10 to 90% RH, Non-condensing	

1.2.8. iKAN-208A-IP65, iKAN-216A-IP65, iKAN-224A-IP65

The "A" suffix denotes a Non-RoHS version, suitable for specific industry applications.

IP65-rated protection ensures reliable operation in harsh environments, making it ideal for outdoor and industrial applications.

Model		iKAN-208A-IP65	iKAN-216A-IP65	iKAN-224A-IP65
Display				
Color		Red, Blue, Yellow, Green, Light Blue, Purple or White		
Character Sets		16 x 16 Unicode or 8 x 16 ASCII		
Display Size	Line	2		
	ASCII	16 characters	32 characters	48 characters
	Unicode	8 characters	16 characters	24 characters
Message Pool		600 common messages with user-defined priority Up to 20 Unicode characters or 50 ASCII characters each		
Data Pool		100 Coil variables, 128 Float variables, 128 Integer variables and 64 Double variables		
RTC (Real-time Clock)		Date and time, 24 hour format, including hours, minutes, seconds, day of the week, date, month, year		
Ethernet				
Port		2 x RJ-45, 10/100 Base-TX		
Protocol		Modbus TCP Master/Slave, Max. 8/8 connections		
Configuration		Web-based User Interface		
COM Port				
Interface		2 x RS-485		
Baud rate (bps)		1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200		
Data Format		N81, E81, O81		
Protocol		Modbus RTU Master/Slave		

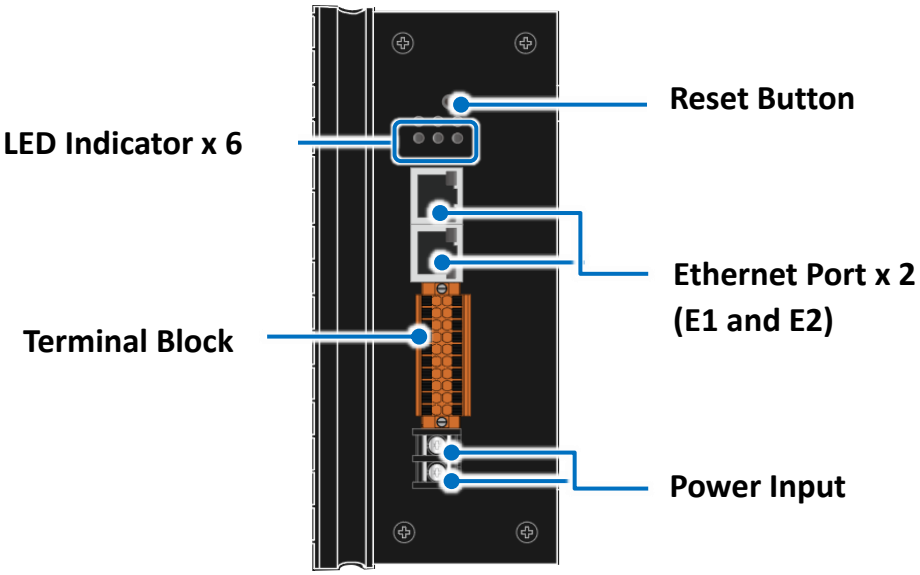
Model	iKAN-208A-IP65	iKAN-216A-IP65	iKAN-224A-IP65
Mechanical			
Dimensions (W x H x D, unit: mm)	708 x 320 x 91	1348 x 320 x 91	1988 x 320 x 91
Weight	4 Kg	8 Kg	12 Kg
Installation	Wall mounting		
Housing Material	Aluminum		
Power			
Input Range	DC 5V		
Consumption	20A @ DC 5V (100W)	40A @ DC 5V (200W)	60A @ DC 5V (300W)
Environment			
Operating Temperature	0 to 60°C		
Storage Temperature	-10 to 75°C		
Humidity	10 to 90% RH, Non-condensing		

1.3. Appearance

This section introduces the physical interfaces of the iKAN, including power terminals, communication ports, and LED indicators, helping users install and troubleshoot the unit effectively.

1.3.1. iKAN-116(S), iKAN-124(S), iKAN-208, iKAN-216, iKAN-224

The section provides a brief introduction to the components of the iKAN-xxx(S) series display.



Reset Button

The reset button is used to check the IP address and restore all settings to the factory default.

- Press and hold for 5 seconds: Display IP address (useful when IP is forgotten).
- Press and hold for 8 seconds: Restore factory settings.

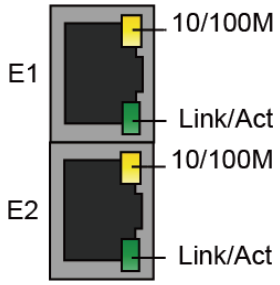
LED Indicator

The iKAN series display contains six LED indicators that display the status of the iKAN series display.

LED Indicator	State	Description
PWR	Red	Power is ON.
	Red-Blinking	OS is functioning.
Reset	Red	Reset button is activated.
DI1, DO1	Orange	Digital I/O Status.
DI0, DO0	Green	Digital I/O Status.

Ethernet Port (E1 and E2)

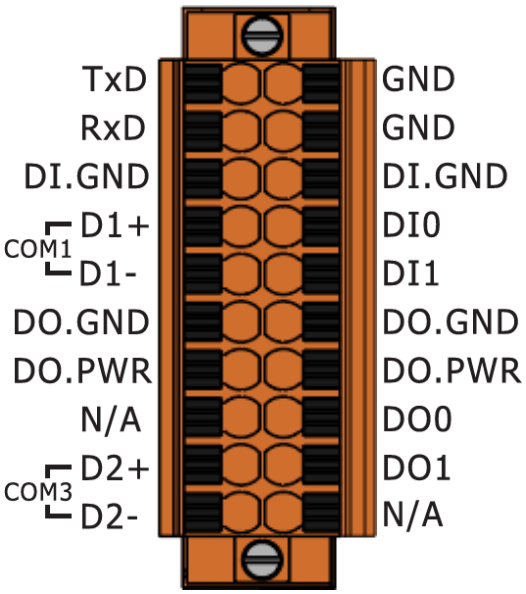
The Ethernet ports can be used to connect a router to the Internet, or to other devices. Each Ethernet port provides two LED indicators that display the connection status.



Label	State	Description
10/100M	Orange	A 10/100 Mbps device is connected.
	-	No device is connected.
Link/Act	Green	Link is active.
	-	Link is inactive.
	Green-Blinking	Network activity.

Terminal Block

The iKAN series display contains a terminal block with 20 poles, as illustrated below. For more information related to the identification of the wiring connections, refer to Section 1.4. Wire Connection.



COM Ports	
COM1: RS-485	D1+ and D1-
COM2: RS-232	TxD, RxD and GND
COM3: RS-485	D2+ and D2-

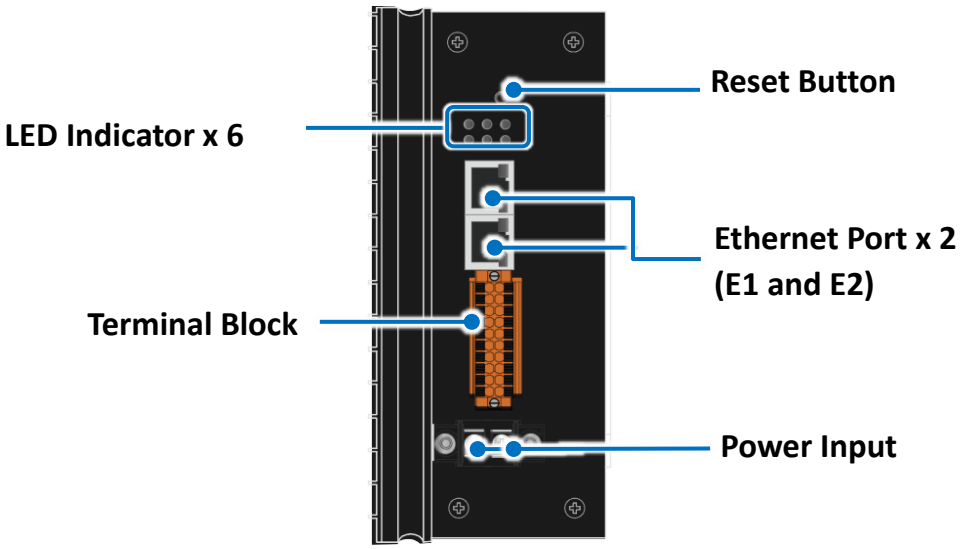
Digital Input/Digital Output	
Digital Input 1	DI0 and DI.GND
Digital Input 2	DI1 and DI. GND
Digital Output 1	DO.PWR, DO0 and DO.GND
Digital Output 2	DO.PWR, DO1 and DO.GND

Power Input

The power input terminal provides two points, N and L, which accept a wide input voltage range of 100 to 240 VAC.

1.3.2. iKAN-116A, iKAN-124A, iKAN-208A, iKAN-216A, iKAN-224A

The diagram below shows the components of the iKAN-xxxA series display.



Reset Button

The reset button is used to check the IP address and restore all settings to the factory default.

- Press and hold for 5 seconds: Display IP address (useful when IP is forgotten).
- Press and hold for 8 seconds: Restore factory settings.

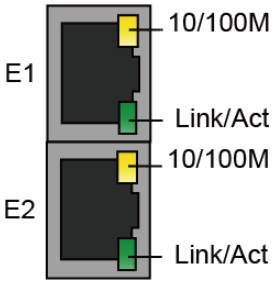
LED Indicator

The iKAN series display contains six LED indicators that display the status of the iKAN series display.

LED Indicator	State	Description
PWR	Red	Power is ON.
	Red-Blinking	OS is functioning.
Reset	Red	Reset button is activated.
DI1, DO1	Orange	Digital I/O Status.
DI0, DO0	Green	Digital I/O Status.

Ethernet Port (E1 and E2)

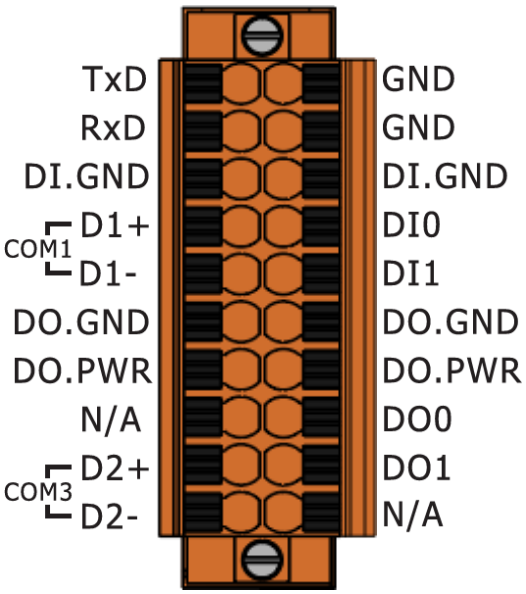
The Ethernet ports can be used to connect a router to the Internet, or to other devices. Each Ethernet port provides two LED indicators that display the connection status.



Label	State	Description
10/100M	Orange	A 10/100 Mbps device is connected.
	-	No device is connected.
Link/Act	Green	Link is active.
	-	Link is inactive.
	Green-Blinking	Network activity.

Terminal Block

The iKAN series display contains a terminal block with 20 poles, as illustrated below. For more information related to the identification of the wiring connections, refer to Section 1.4. Wire Connection.



COM Ports	
COM1: RS-485	D1+ and D1-
COM2: RS-232	TxD, RxD and GND
COM3: RS-485	D2+ and D2-

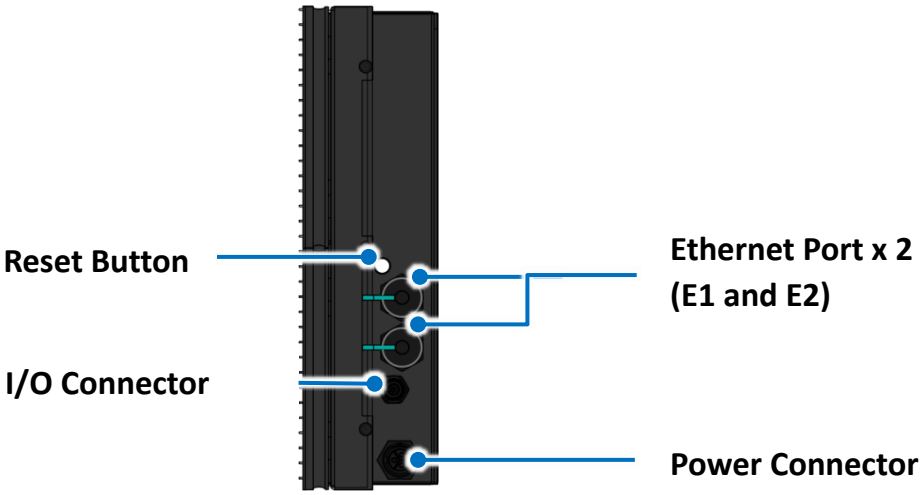
Digital Input/Digital Output	
Digital Input 1	DI0 and DI.GND
Digital Input 2	DI1 and DI. GND
Digital Output 1	DO.PWR, DO0 and DO.GND
Digital Output 2	DO.PWR, DO1 and DO.GND

Power Input

The power input terminal provides two points, DC+5V and GND, that require a stable 5V power supply.

1.3.3. iKAN-116(A)(S)-IP65, IKAN-124(A)(S)-IP65, iKAN-208-IP65, iKAN-216-IP65, iKAN-224-IP65

The section provides a brief introduction to the components of the iKAN-xxx(S)-IP65 series display.



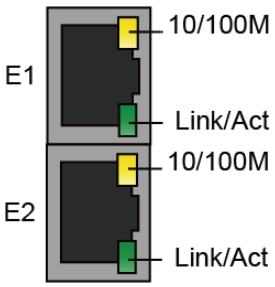
Reset Button

The reset button is used to check the IP address and restore all settings to the factory default.

- Press and hold for 5 seconds: Display IP address (useful when IP is forgotten).
- Press and hold for 8 seconds: Restore factory settings.

Ethernet Port (E1 and E2)

The Ethernet ports can be used to connect a router to the Internet, or to other devices. Each Ethernet port provides two LED indicators that display the connection status.

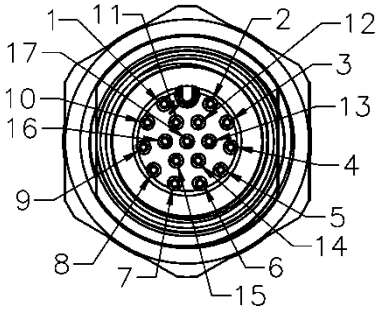


Label	State	Description
10/100M	Orange	A 10/100 Mbps device is connected.
	-	No device is connected.
Link/Act	Green	Link is active.
	-	Link is inactive.
	Green-Blinking	Network activity.

I/O Connector

The I/O connector is a 17-pins connector. The pin for the I/O connector is outlined in the table below.

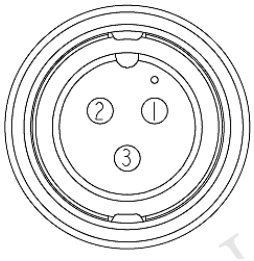
No.	Pin-out
1	TxD
2	DI1
3	N/A
4	D2-
5	D2+
6	DO.PWR
7	DO.GND
8	D1-
9	D1+



No.	Pin-out
10	RxD
11	DI.GND
12	DO0
13	DO1
14	DI0
15	GND
16	RxD
17	N/A

Power Connector

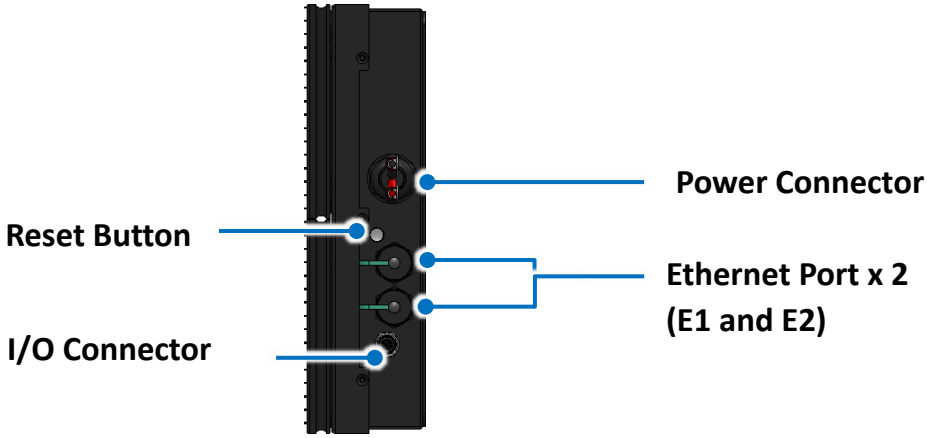
The power connector is a 3-pins connector. The pin for the power connector is outlined in the table below.



No.	Pin-out
1	AC
2	AC
3	-

1.3.4. iKAN-216A-IP65, iKAN-224A-IP65

The section provides a brief introduction to the components of the iKAN-xxxA-IP65 series display.



Power Connector

The power connector is a 2-wires connector. The pin for the power connector is outlined in the table below.

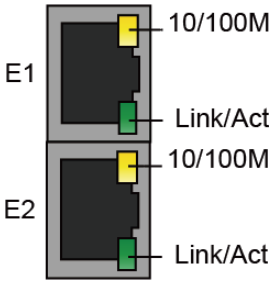
Reset Button

The reset button is used to check the IP address and restore all settings to the factory default.

- Press and hold for 5 seconds: Display IP address (useful when IP is forgotten).
- Press and hold for 8 seconds: Restore factory settings.

Ethernet Port (E1 and E2)

The Ethernet ports can be used to connect a router to the Internet, or to other devices. Each Ethernet port provides two LED indicators that display the connection status.

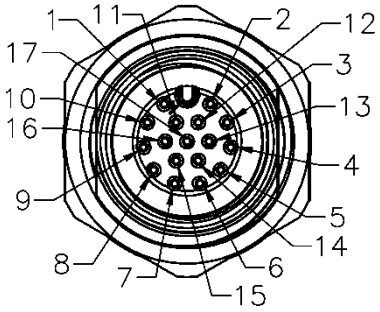


Label	State	Description
10/100M	Orange	A 10/100 Mbps device is connected.
	-	No device is connected.
Link/Act	Green	Link is active.
	-	Link is inactive.
	Green-Blinking	Network activity.

I/O Connector

The I/O connector is a 17-pins connector. The pin for the I/O connector is outlined in the table below.

No.	Pin-out
1	TxD
2	DI1
3	N/A
4	D2-
5	D2+
6	DO.PWR
7	DO.GND
8	D1-
9	D1+

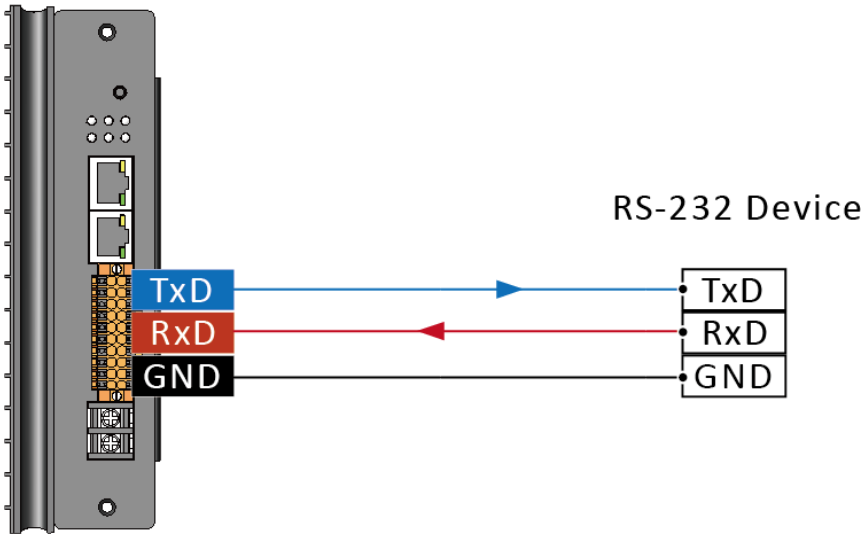


No.	Pin-out
10	RxD
11	DI.GND
12	DO0
13	DO1
14	DI0
15	GND
16	RxD
17	N/A

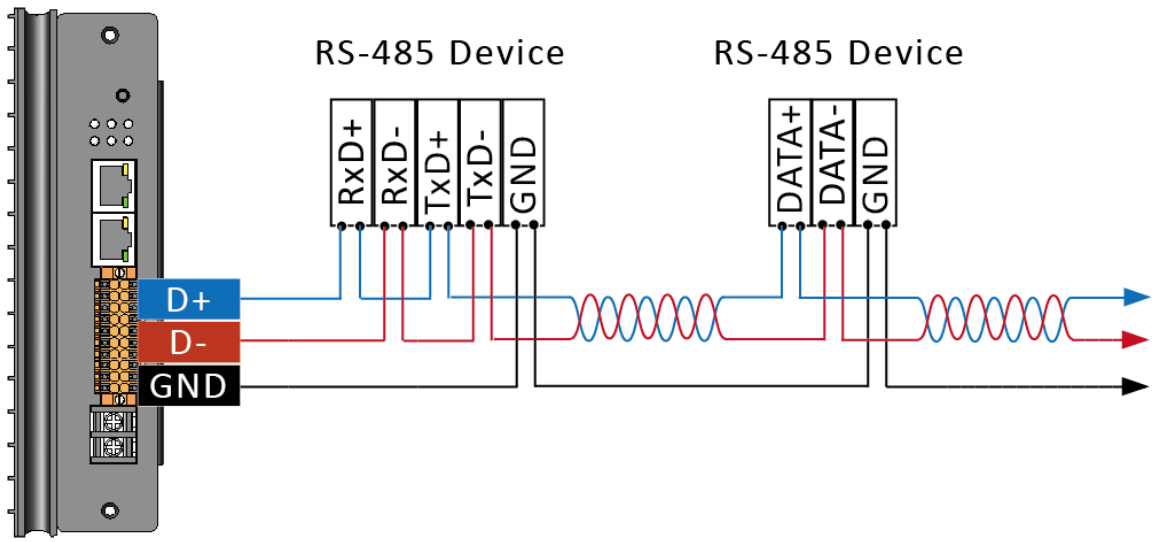
1.4. Wiring Connection

The iKAN contains a terminal block which provides access to a number of communication formats. The following illustrates the wiring information for the terminal block.

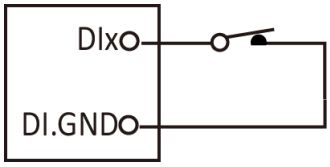
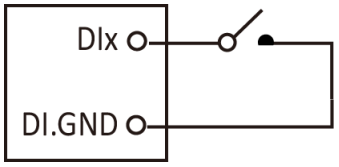
RS-232 Wiring



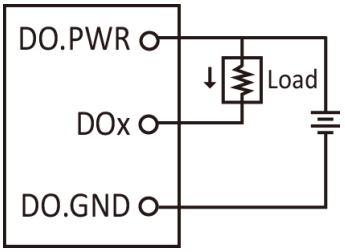
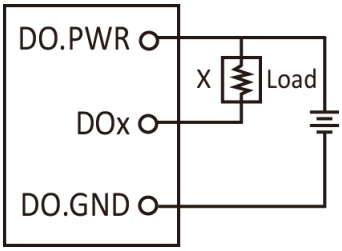
RS- 485 Wiring



DI Wiring

Type	ON (Readbackas 0)	OFF (Readbackas 1)
Dry Contact	Close to GND	Open
		

DO Wiring

Type	ON (Readbackas 1)	OFF (Readbackas 0)
DO (Sink, NPN)	+5 to +24 VDC	Open
		

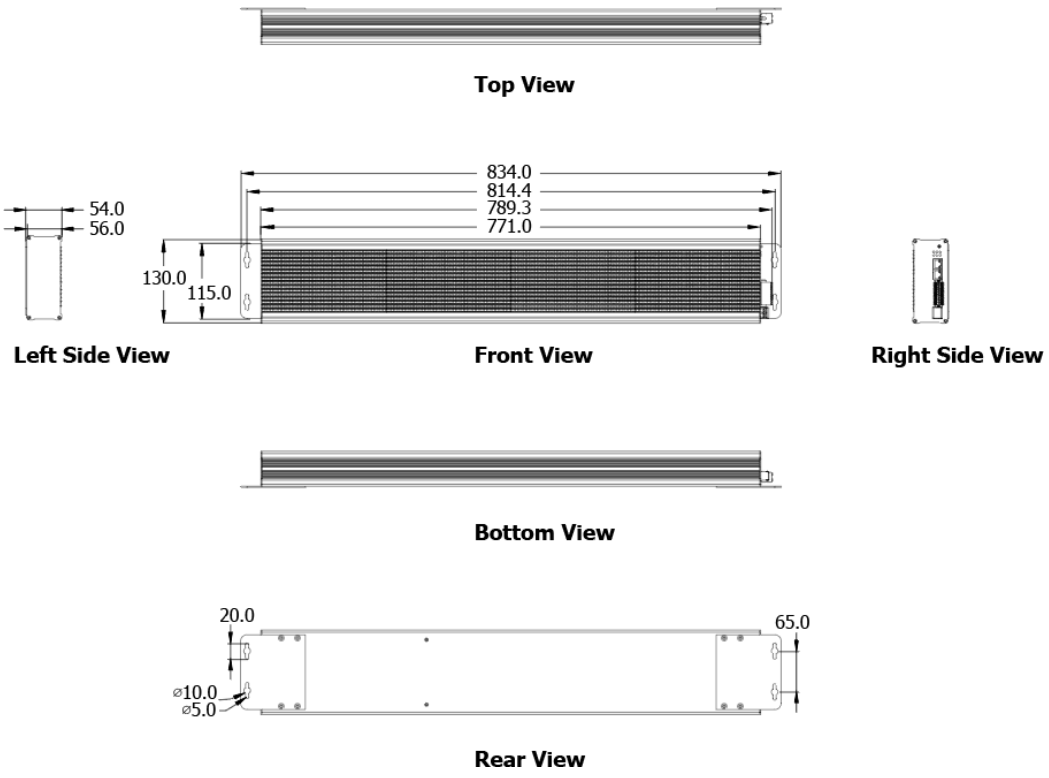
1.5. Dimension

This section provides details of the dimensions for the iKAN series LED displays that can be used when defining the specifications for any enclosures to be installed.

1.5.1. iKAN-116S

This section provides the dimensions of the iKAN-116S.

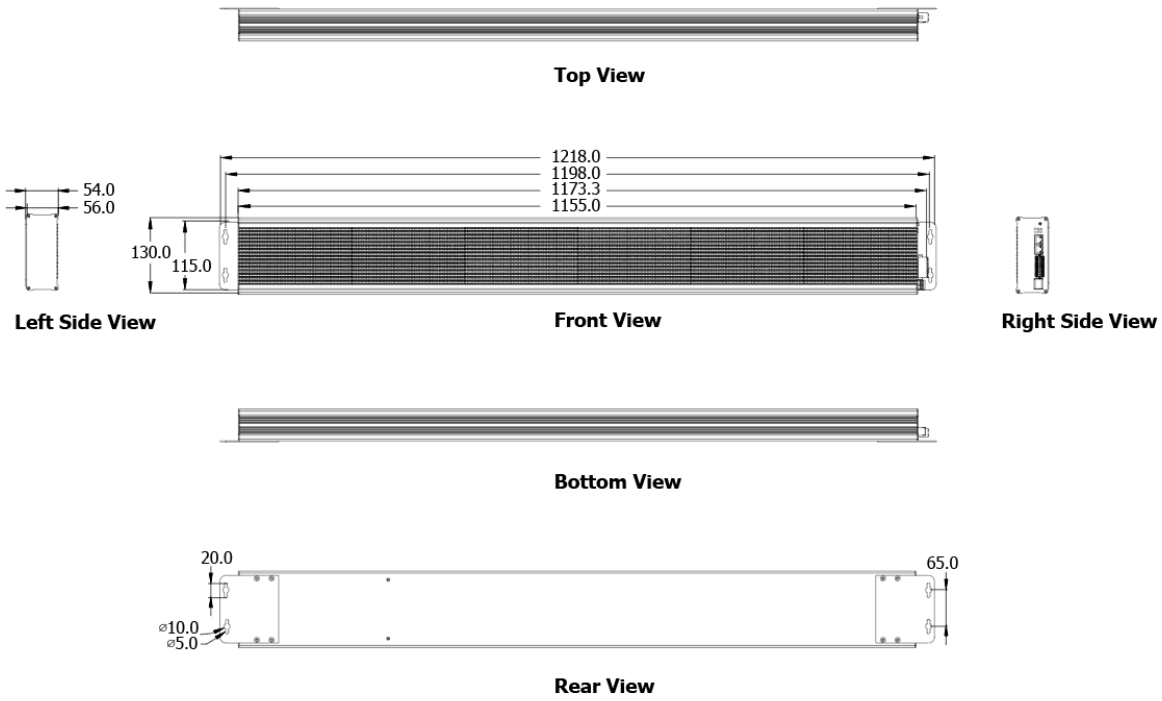
All dimensions are in millimeters.



1.5.2. iKAN-124S

This section provides the dimensions of the iKAN-124S.

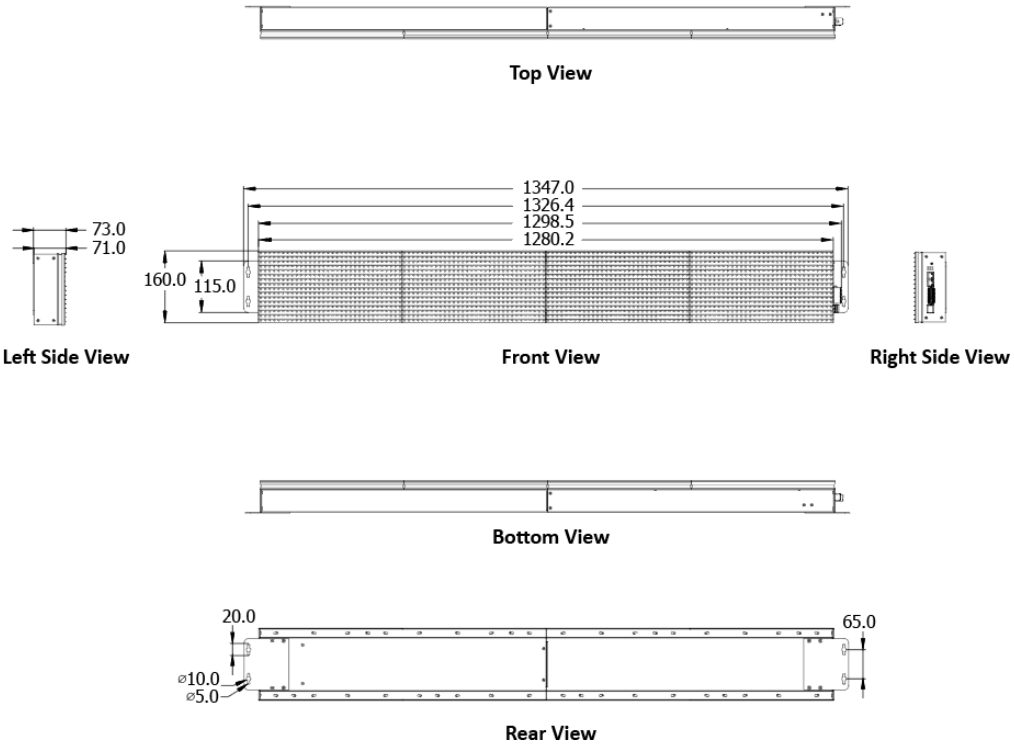
All dimensions are in millimeters.



1.5.3. iKAN-116(A)

This section provides the dimensions of the iKAN-116(A).

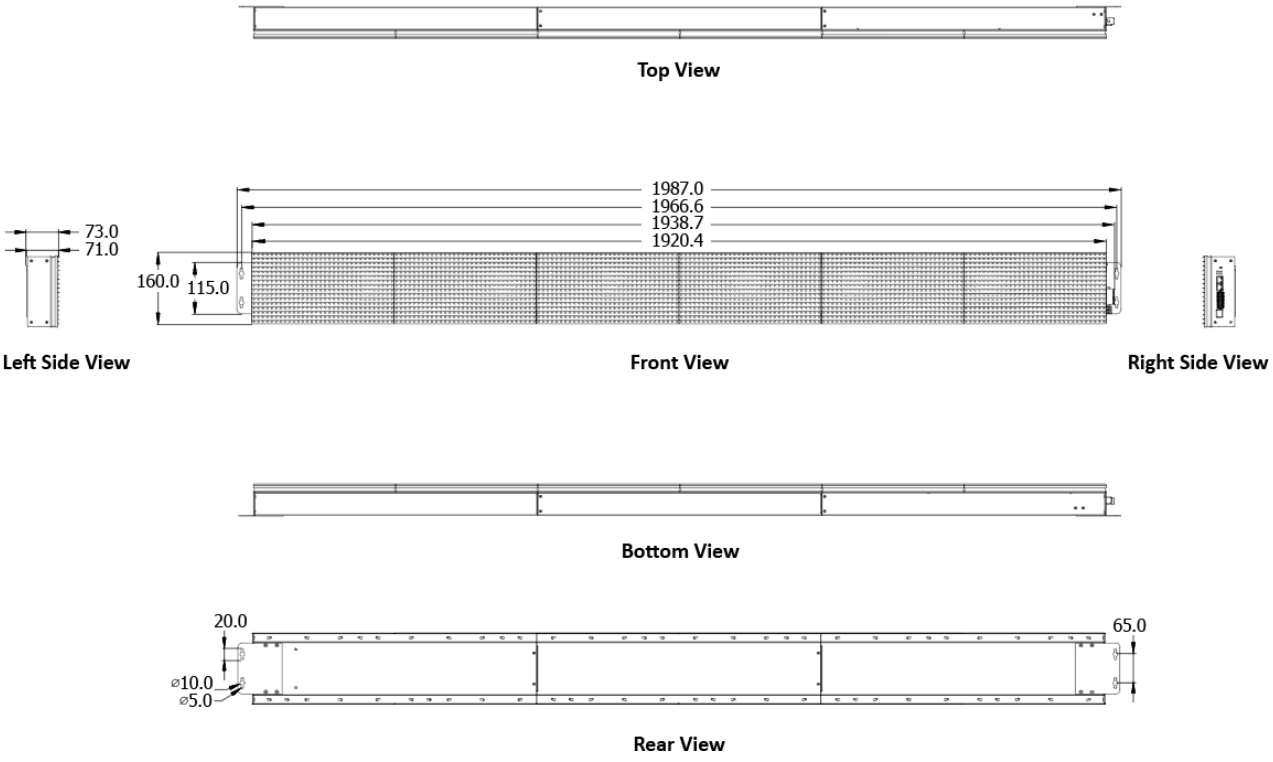
All dimensions are in millimeters.



1.5.4. iKAN-124(A)

This section provides the dimensions of the iKAN-124(A).

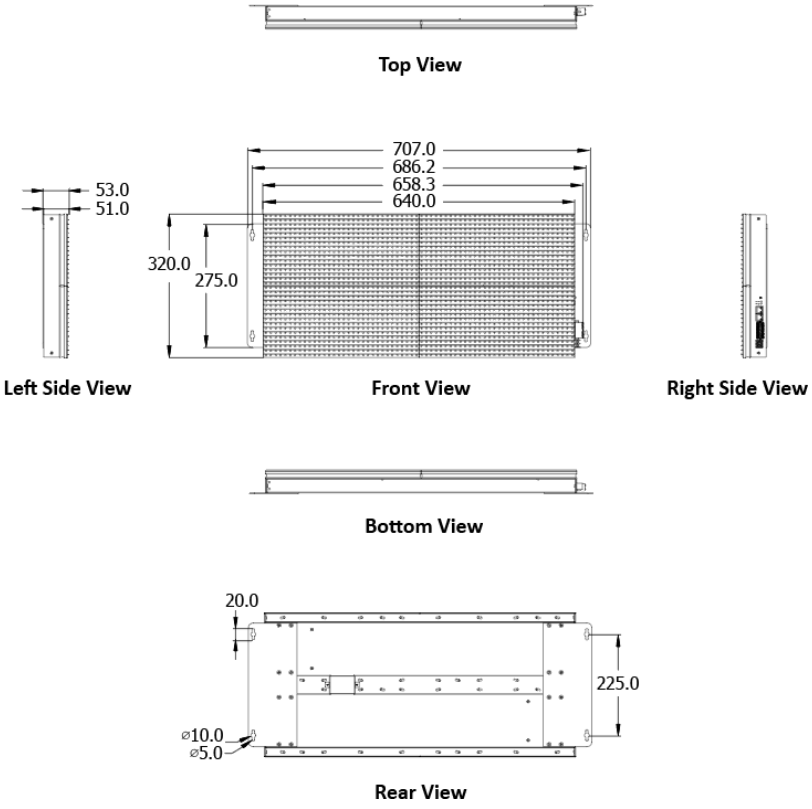
All dimensions are in millimeters.



1.5.5. iKAN-208(A)

This section provides the dimensions of the iKAN-208(A).

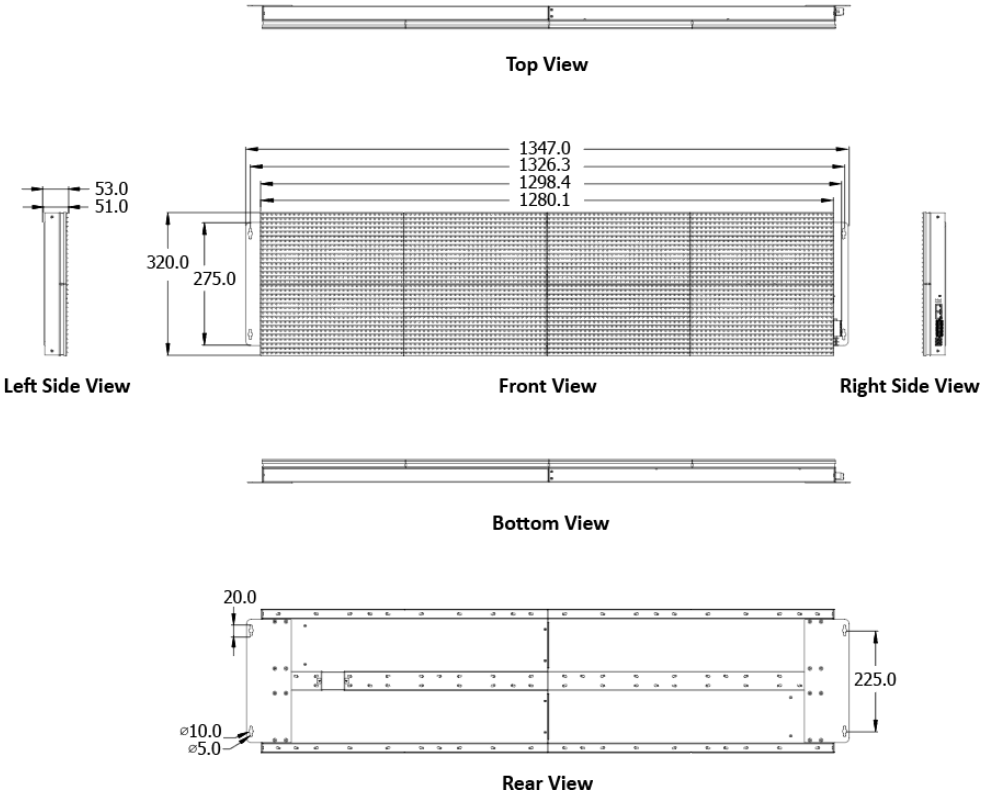
All dimensions are in millimeters.



1.5.6. iKAN-216(A)

This section provides the dimensions of the iKAN-216(A).

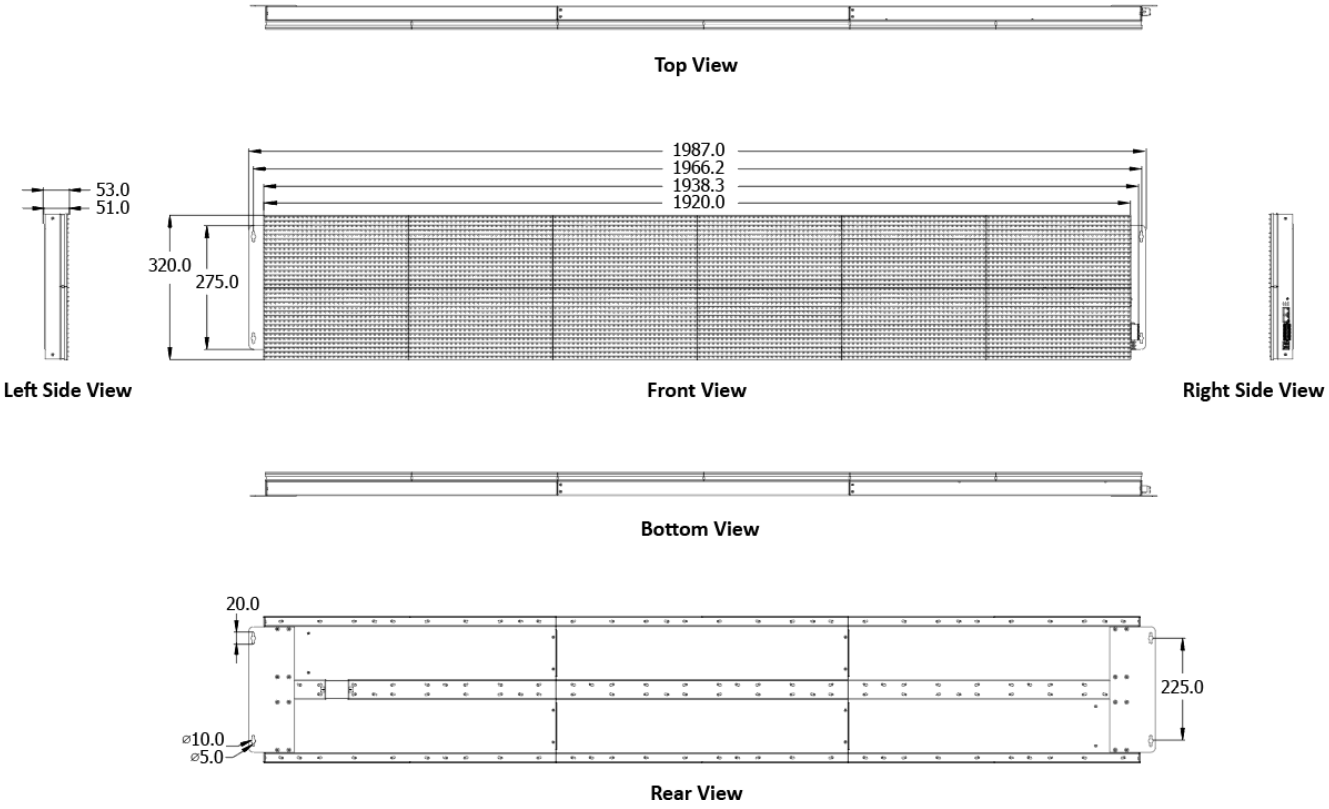
All dimensions are in millimeters.



1.5.7. iKAN-224(A)

This section provides the dimensions of the iKAN-224(A).

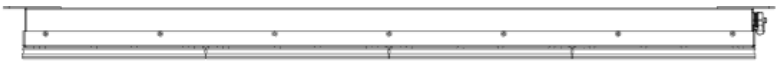
All dimensions are in millimeters.



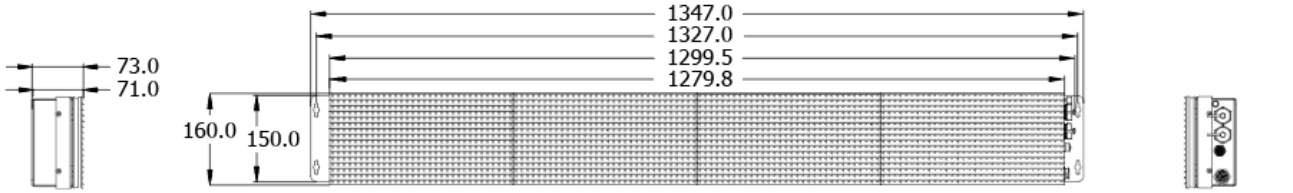
1.5.8. iKAN-116S-IP65

This section provides the dimensions of the iKAN-116S-IP65

All dimensions are in millimeters.



Top View



Left Side View　　Front View　　Right Side View



Bottom View

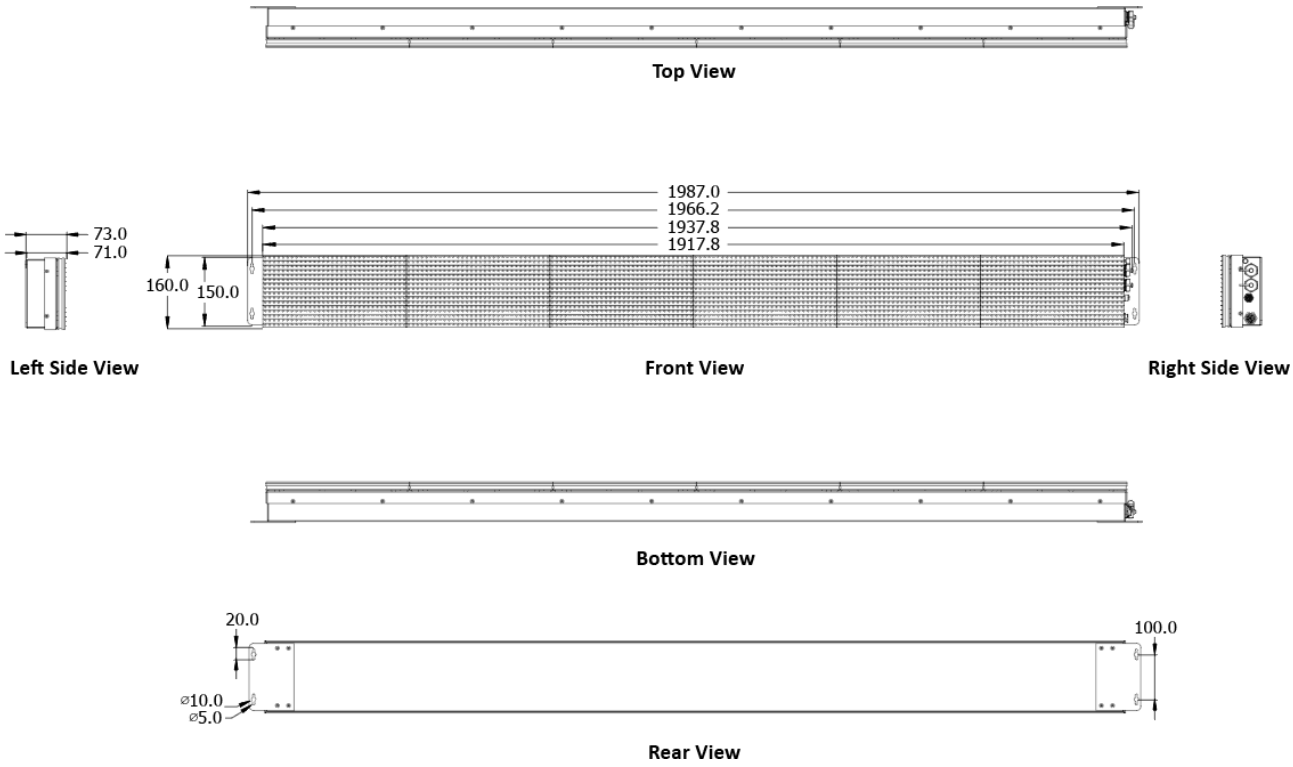


Rear View

1.5.9. iKAN-124S-IP65

This section provides the dimensions of the iKAN-124S-IP65

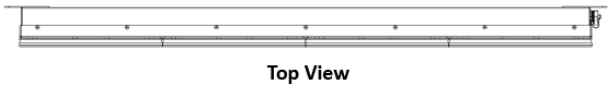
All dimensions are in millimeters.



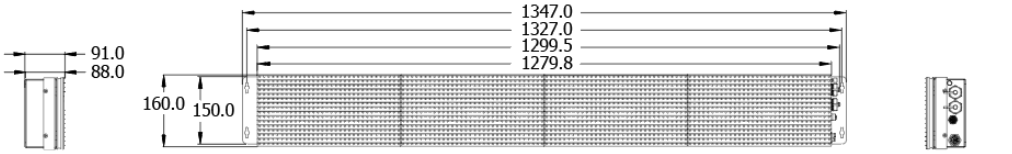
1.5.10. iKAN-116(A)-IP65

This section provides the dimensions of the iKAN-116(A)-IP65.
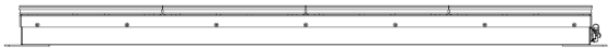
All dimensions are in millimeters.



Top View



Left Side View　　Front View　　Right Side View



Bottom View



Rear View

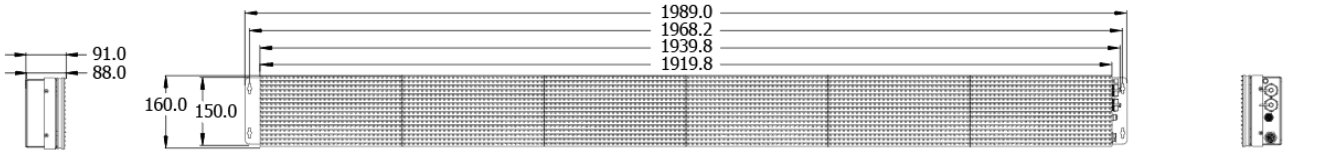
1.5.11. iKAN-124(A)-IP65

This section provides the dimensions of the iKAN-124(A)-IP65.

All dimensions are in millimeters.



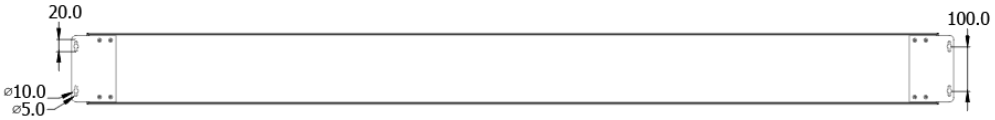
Top View



Left Side View　　Front View　　Right Side View



Bottom View

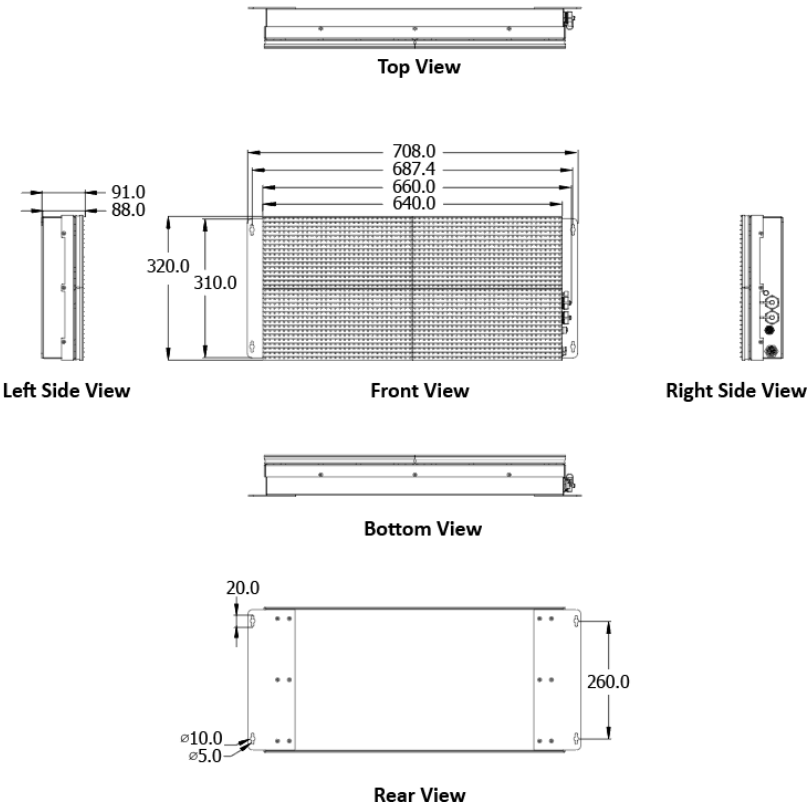


Rear View

1.5.12. iKAN-208(A)-IP65

This section provides the dimensions of the iKAN-208(A)-IP65.

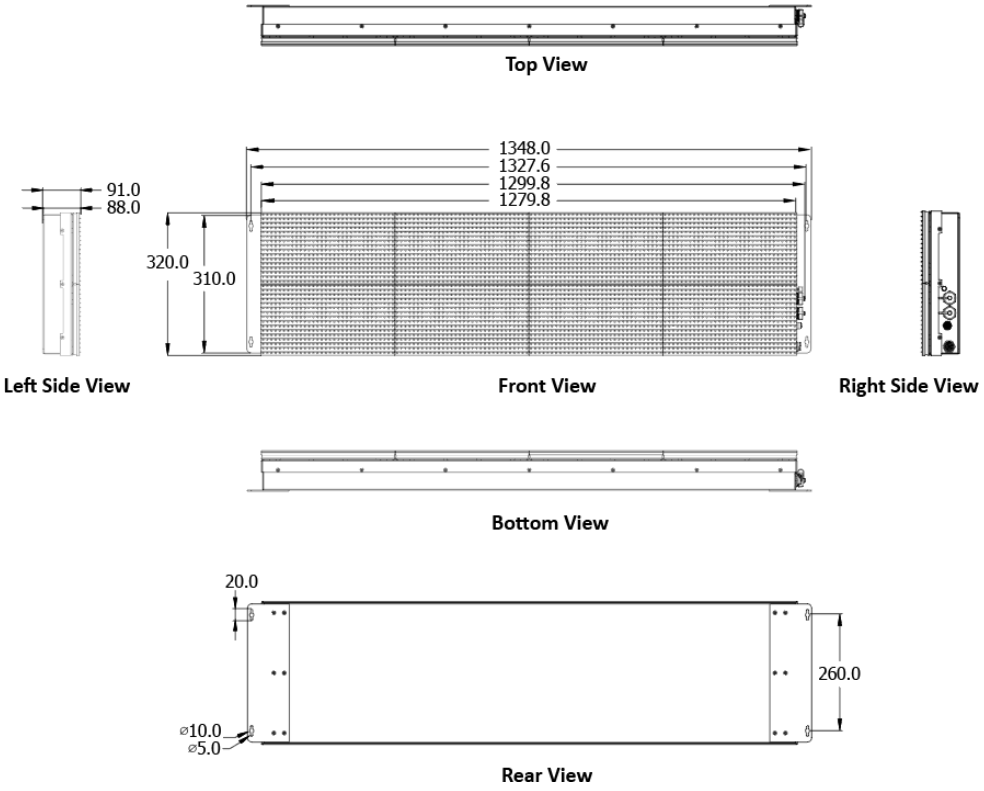
All dimensions are in millimeters.



1.5.13. iKAN-216(A)-IP65

This section provides the dimensions of the iKAN-216(A)-IP65.

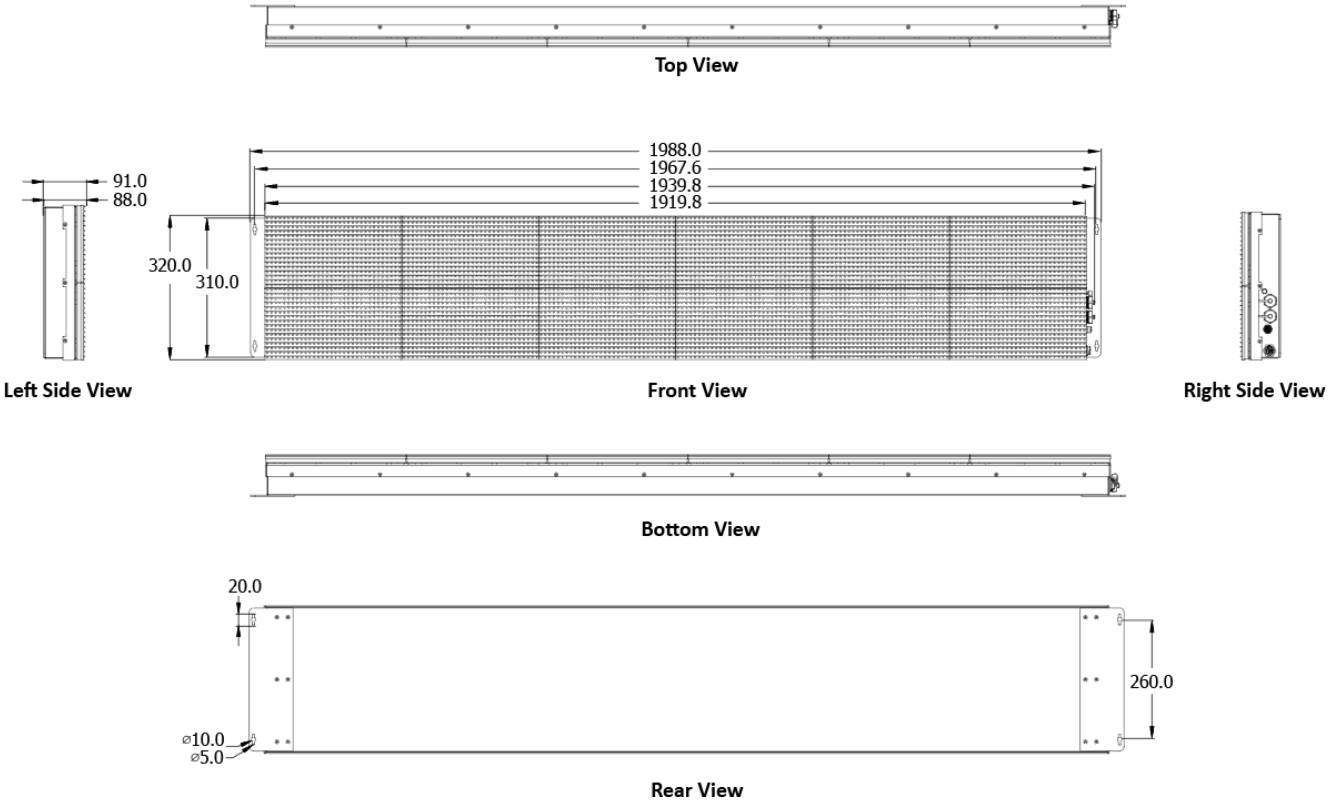
All dimensions are in millimeters.



1.5.14. iKAN-224(A)-IP65

This section provides the dimensions of the iKAN-224(A)-IP65.

All dimensions are in millimeters.



2. Getting Started

This chapter guides you through the basic procedures for installing and configuring the iKAN for initial operation. Follow the sections in sequence to complete the hardware installation, network configuration, and initial message setup.

Before using the iKAN for the first time, follow the procedures in this chapter to verify the package contents, assemble and mount the display, connect the required power and communication interfaces, configure the network settings, and access the iKAN Web interface.

After completing these procedures, you can create and display your first message on the iKAN.

Tips & Warnings



Installation procedures and supplied accessories vary depending on the iKAN model. Before installation, verify the model number and follow the instructions applicable to your device.

2.1. Checking the Package

Before installing the iKAN display, verify that all required components are included in the package and are free from visible damage.

Package contents vary depending on the model. Refer to the applicable subsection below for your iKAN model.

If any item is missing or damaged, contact your local distributor for assistance before proceeding with installation.

2.1.1. iKAN-116S, iKAN-124S, iKAN-208

This section lists the package contents supplied with the iKAN-116S, iKAN-124S, and iKAN-208.



Display Panel



Quick Start Guide



Wall Mounting Bracket * 2



Wall Mounting Screw (M4 x 6L)

iKAN-116S, iKAN-124S: 8 pcs

iKAN-208: 16 pcs



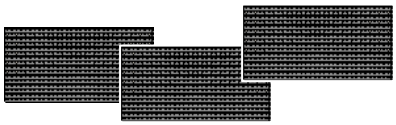
RS-232 Cable (CA-0910-1)



Screw Driver

2.1.2. iKAN-116(A), iKAN-124(A), iKAN-216(A), iKAN-224(A)

This section lists the package contents supplied with the iKAN-116(A), iKAN-124(A), iKAN-216(A), and iKAN-224(A).



Display Panel

iKAN-116(A): 1 pcs

iKAN-124(A): 1 pcs

iKAN-216(A): 2 pcs

iKAN-224(A): 2 pcs



Quick Start Guide



Angle Bracket

iKAN-116(A): N/A

iKAN-124(A): N/A

iKAN-216(A): 4 pcs

iKAN-224(A): 8pcs



Wall Mounting Bracket * 2



RS-232 Cable (CA-0910-1



Screw Driver



Wall Mounting Screw (M4 x 6L)

iKAN-116(A): 8 pcs

iKAN-124(A): 8 pcs

iKAN-216(A): 12 pcs

iKAN-224(A): 12 pcs



Panel Mounting Screw (M3 x 6L)

iKAN-116(A): 6pcs

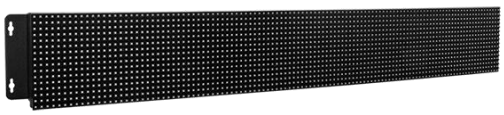
iKAN-124(A): 12 pcs

iKAN-216(A): 8 pcs

iKAN-224(A): 16 pcs

2.1.3. iKAN-116(S)-IP65, iKAN-124(S)-IP65, iKAN-208-IP65

This section lists the package contents supplied with the iKAN-116(S)-IP65, iKAN-124(S)-IP65, and iKAN-208-IP65.



Display Panel



Quick Start Guide



RJ-45 Connector x 2
Waterproof Assembly



Wall Mounting Bracket * 2



CA-M12-02 Power Cable



CA-039 I/O Cable



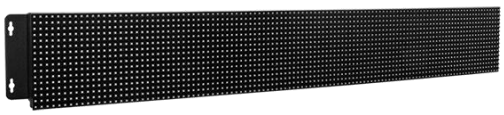
Wall Mounting Screw (M4 x 6L)
iKAN-116(S)-IP65: 8 pcs
iKAN-124(S)-IP65: 8 pcs
iKAN-208-IP65: 12 pcs



Screw Driver

2.1.4. iKAN-116A-IP65, iKAN-124A-IP65, iKAN-208A-IP65

This section lists the package contents supplied with the iKAN-116A-IP65, iKAN-124A-IP65, and iKAN-208A-IP65.



Display Panel



Quick Start Guide



RJ-45 Connector x 2 Waterproof Assembly



Wall Mounting Bracket * 2



CA-M12-02-A Power Cable



CA-039 I/O Cable



Wall Mounting Screw (M4 x 6L)

iKAN-116A-IP65: 8 pcs

iKAN-124A-IP65: 8 pcs

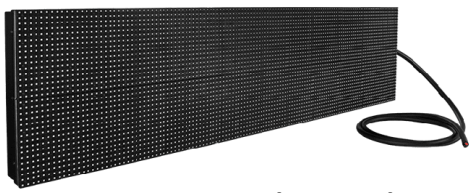
iKAN-208A-IP65: 12 pcs



Screw Driver

2.1.5. iKAN-216A-IP65, iKAN-224A-IP65

This section lists the package contents supplied with the iKAN-216A-IP65 and iKAN-224A-IP65.



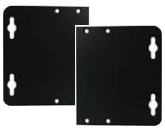
Display Panel



Quick Start Guide



RJ-45 Connector x 2 Waterproof Assembly



Wall Mounting Bracket * 2



CA-039 I/O Cable



Wall Mounting Screw (M4 x 6L) * 12



Screw Driver

2.2. Assembling the iKAN Display

Multi-panel iKAN models must be assembled before installation. This section describes how to connect and secure the display panels to form a complete display.

Before installation, ensure that the mounting surface is structurally capable of supporting the total weight of the display.

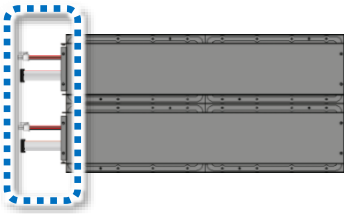
Tips & Warnings

Do not install the display on an unsuitable or structurally weak surface, such as polystyrene foam, mineral wool, plasterboard, or wood panels less than 30 mm thick.

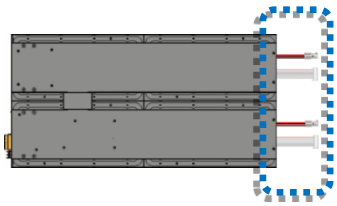
Installation Procedure

1) Route the cables

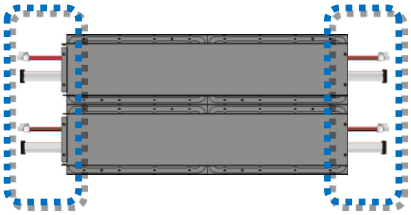
Pull the power and communication cables through the side opening of each display panel.



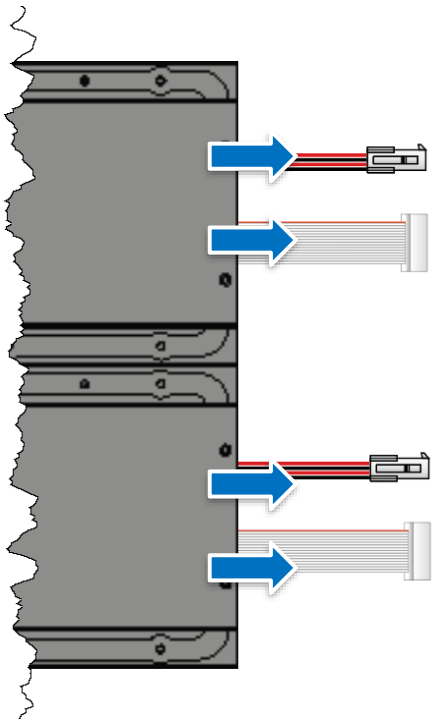
Left Panel (Rear View)



Right Panel (Rear View)

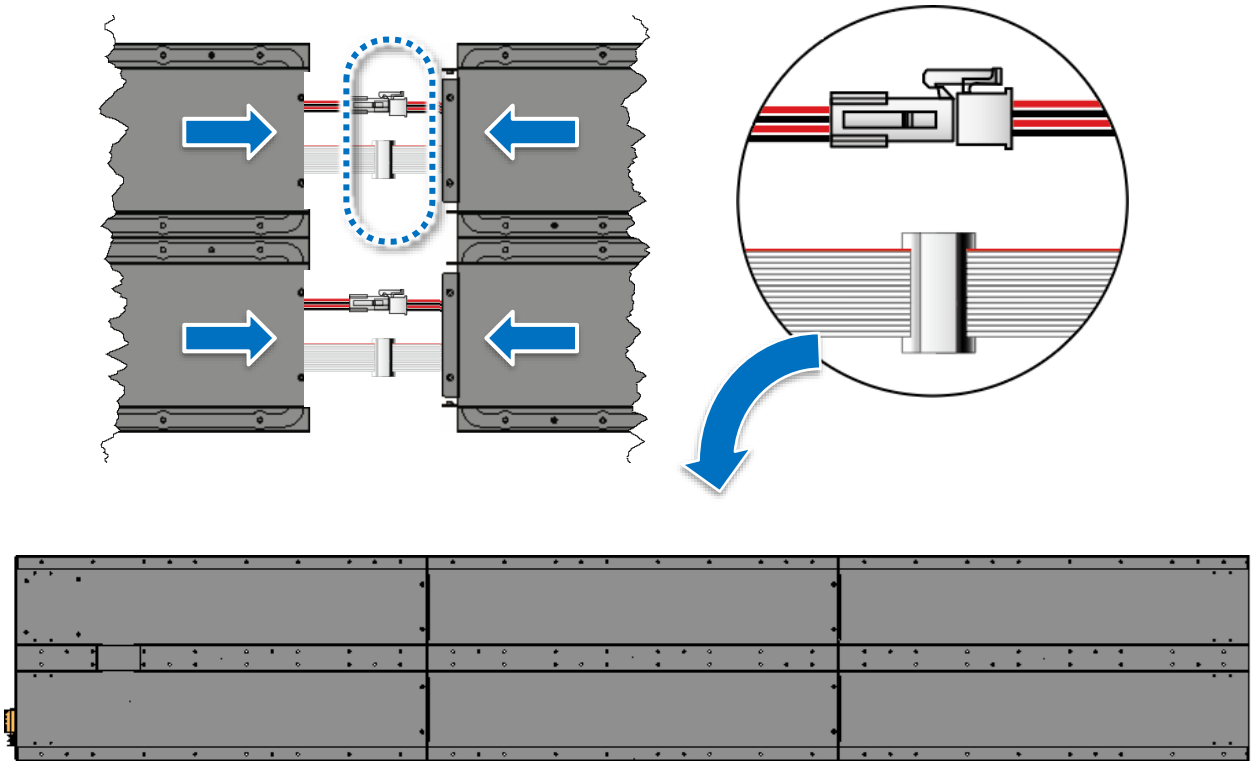


Middle Panel for Triple-Panel iKAN Display only (Rear View)



2) Connect the panels

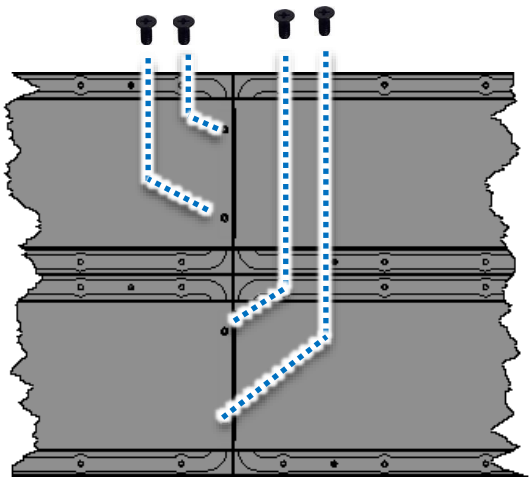
Connect the power and communication cables between adjacent display panels. For triple-panel models, connect the left, center, and right panels in sequence.



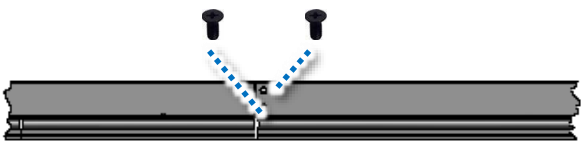
3) Secure the panels

Align the display panels and secure them using the supplied M3 × 6L panel mounting screws.

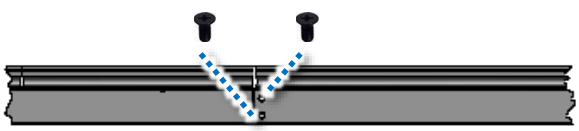
Rear View



Top View



Rear View



2.3. Installing the Wall mounting brackets

This section describes how to attach the brackets to the display.

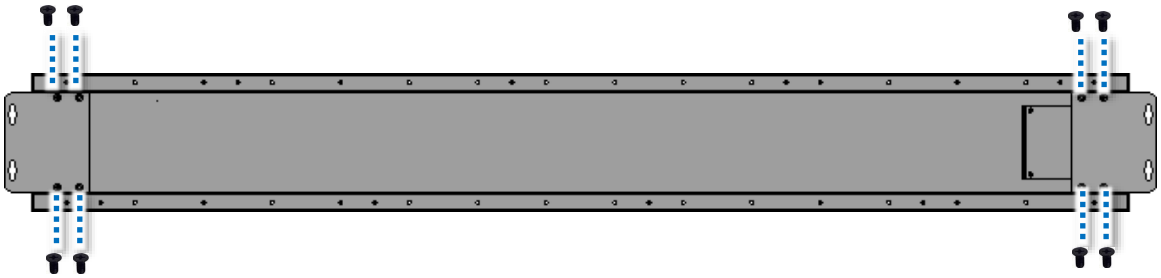
Align each bracket with the corresponding mounting holes, and then secure the brackets using the supplied screws.

The mounting configuration varies depending on whether the iKAN uses a single-row or double-row display configuration.

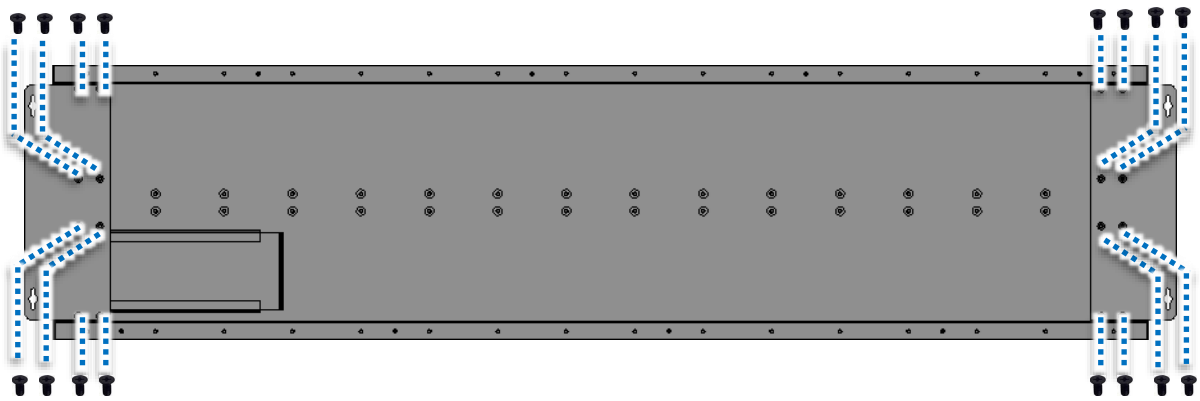
Installation Procedure

Attach the wall-mount brackets to both sides of the iKAN, and then secure the brackets using the included screws.

Single-Row iKAN Display



Double-Row iKAN Display



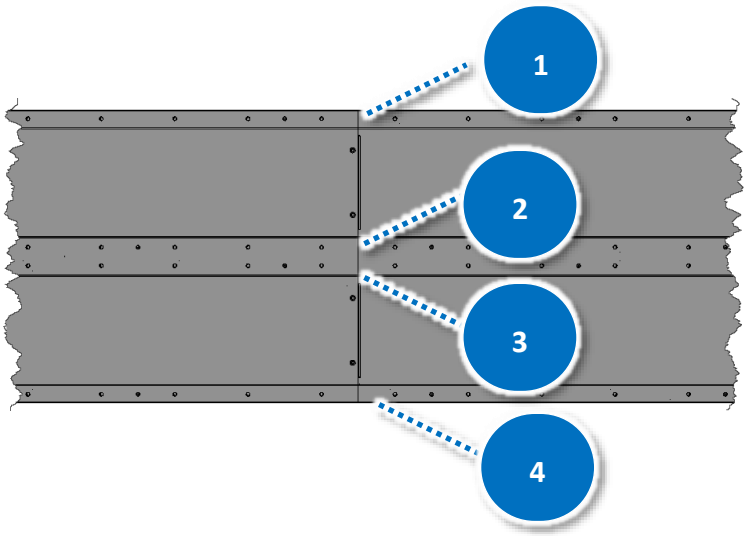
2.4. Installing the Angle Bracket (For iKAN-216(A), iKAN-224(A))

This section describes how to install the brackets on the display.

The angle brackets provide additional structural reinforcement for the iKAN-216(A) and iKAN-224(A), particularly when the display is installed in a suspended configuration.

Installation Procedure

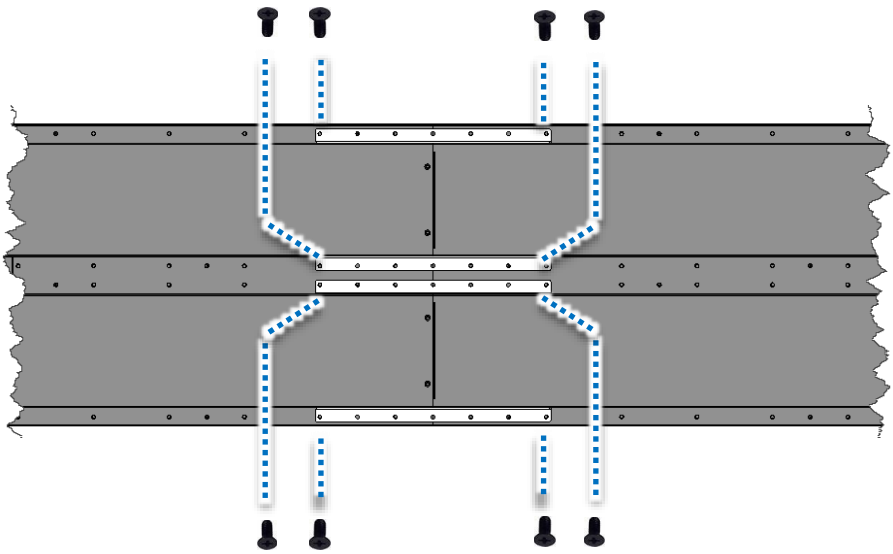
1) Identify the specified angle-bracket mounting locations.



2) Remove the existing screws from the mounting locations.

3) Position the angle brackets over the mounting holes.

4) Reinstall and securely tighten the screws.



2.5. Assembling the Waterproof Assembly (For IP65 Series)

This section describes how to install the waterproof components on an Ethernet cable.

iKAN IP65 series models are supplied with RJ-45 waterproof assemblies to help protect the Ethernet connections from dust and moisture.

Install the waterproof assembly on each Ethernet cable before connecting the cable to the iKAN Ethernet port.

The waterproof assembly consists of the following components:



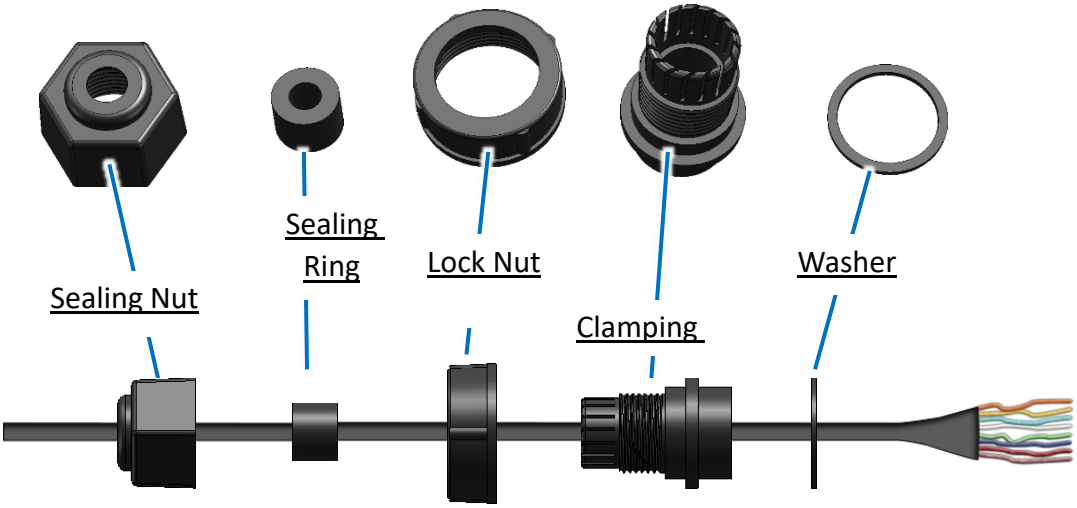
Sealing Nut Sealing Ring Sealing Ring Clamping Ring Washer

Installation Procedure

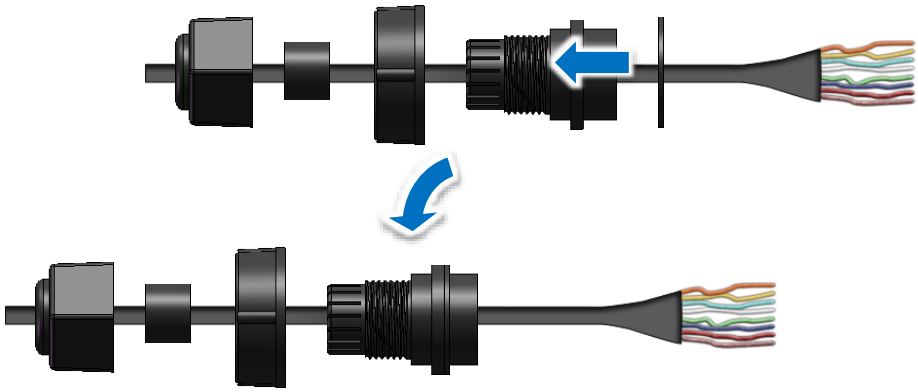
1) Remove the RJ-45 plug from the Ethernet cable before installing the waterproof components.



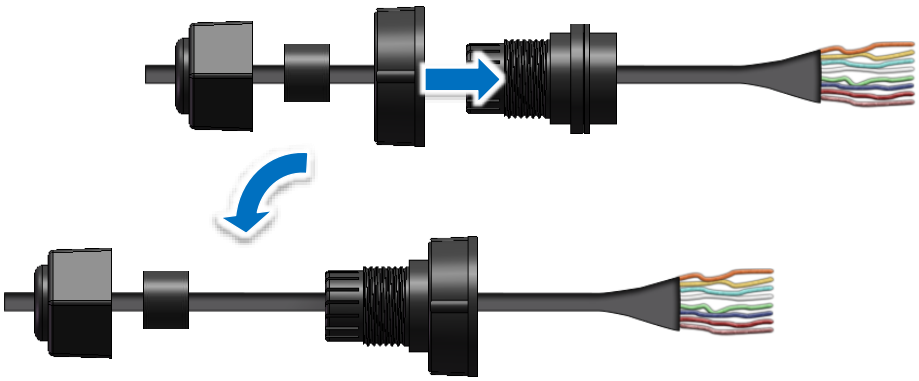
2) Slide the sealing nut, sealing ring, lock nut, clamping ring, and washer onto the Ethernet cable in the order shown in the figure.



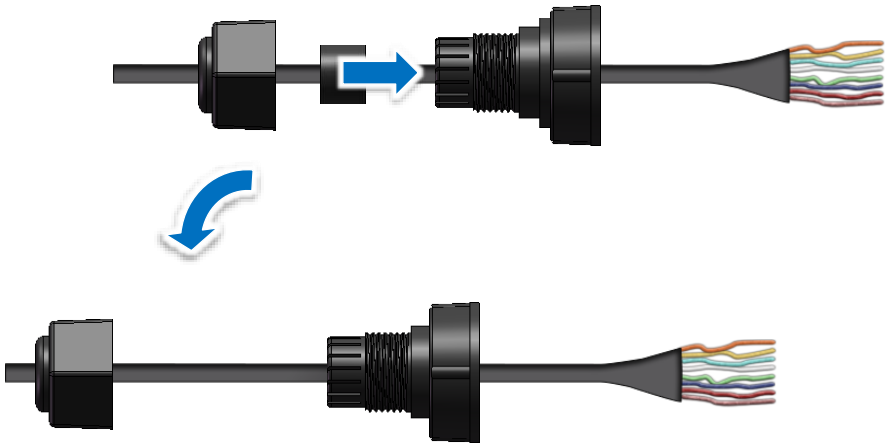
3) Wrap the washer around the clamp ring.



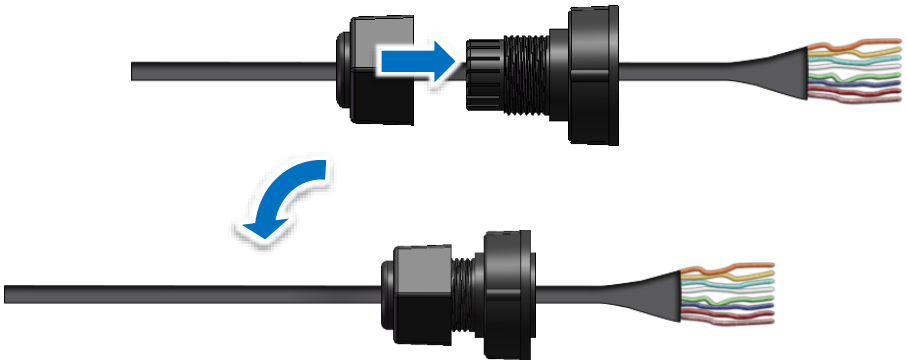
4) Screw the lock nut around the clamp ring.



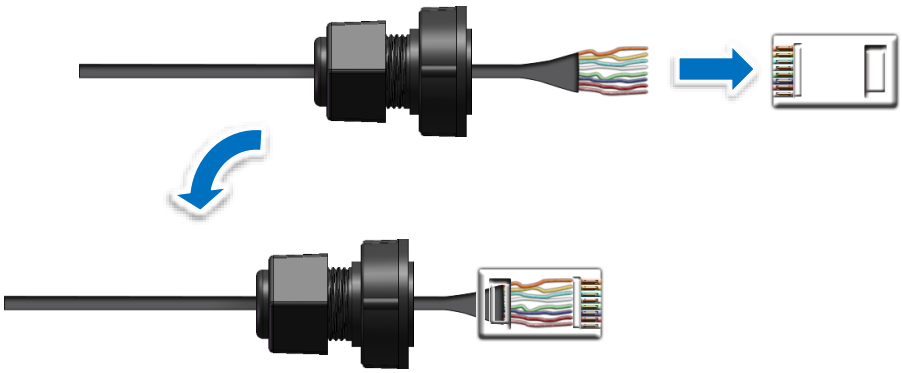
5) Insert the sealing ring into the clamp ring.



6) Push the sealing nut forward and screw the entire assembly tightly to ensure waterproof.



7) Insert the RJ-45 cable into the RJ-45 connector housing.



2.6. Connecting the Power, Ehternet, and PC

This section describes how to connect the power supply, Ethernet network, and I/O interfaces to the iKAN. Connection methods vary depending on the model and power configuration.

2.6.1. iKAN-116(S), iKAN-124(S), iKAN-208, iKAN-216, iKAN-224

This section describes the power, Ethernet, and I/O connections for the AC-powered iKAN-116(S), iKAN-124(S), and iKAN-208 models.

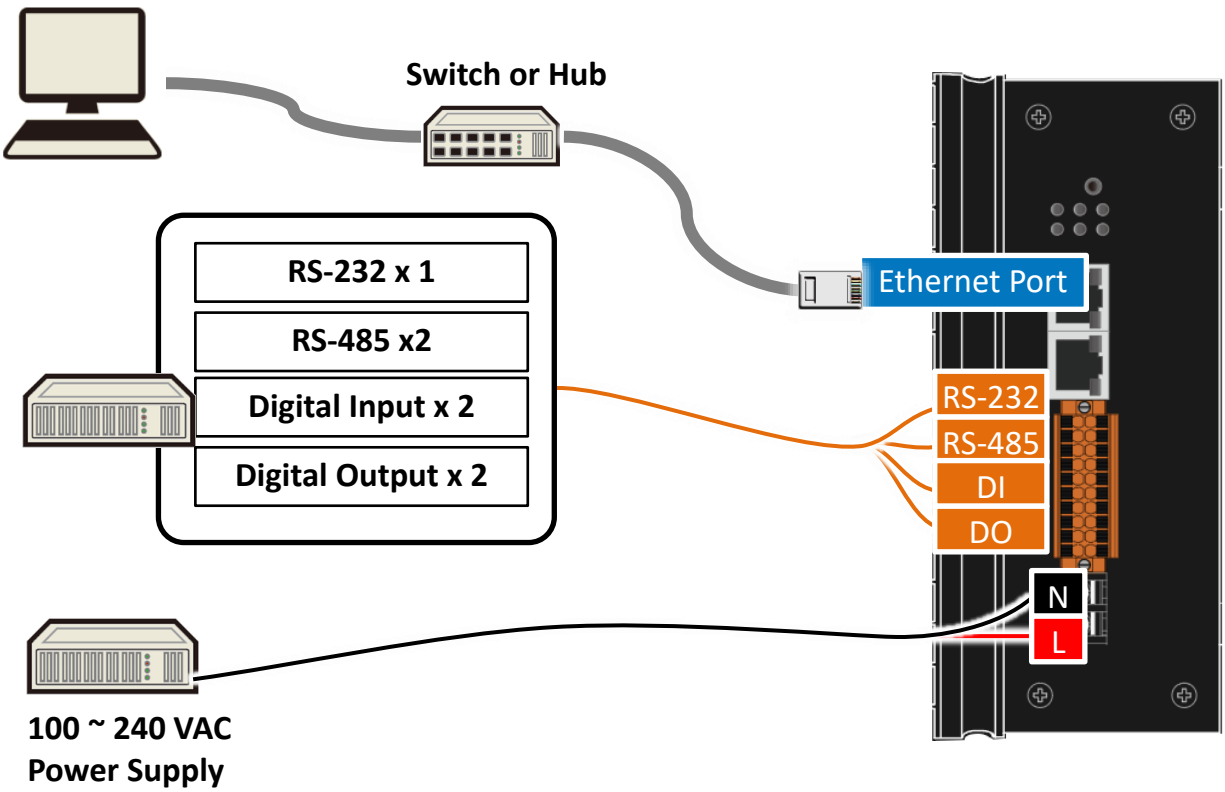
These models use a 100–240 VAC power supply.

Steps

1) Connect the power connector to 100–240V AC.

2) Connect the Ethernet port to a network switch or hub using an RJ-45 Ethernet cable.

3) Connect the required RS-232, RS-485, DI, or DO devices to the corresponding I/O terminals.



2.6.2. iKAN-116A, iKAN-124A, iKAN-208A, iKAN-216A, iKAN-224A

This section describes the power, Ethernet, and I/O connections for the 5 VDC-powered iKAN-116A, iKAN-124A, iKAN-208A, iKAN-216A, and iKAN-224A models.

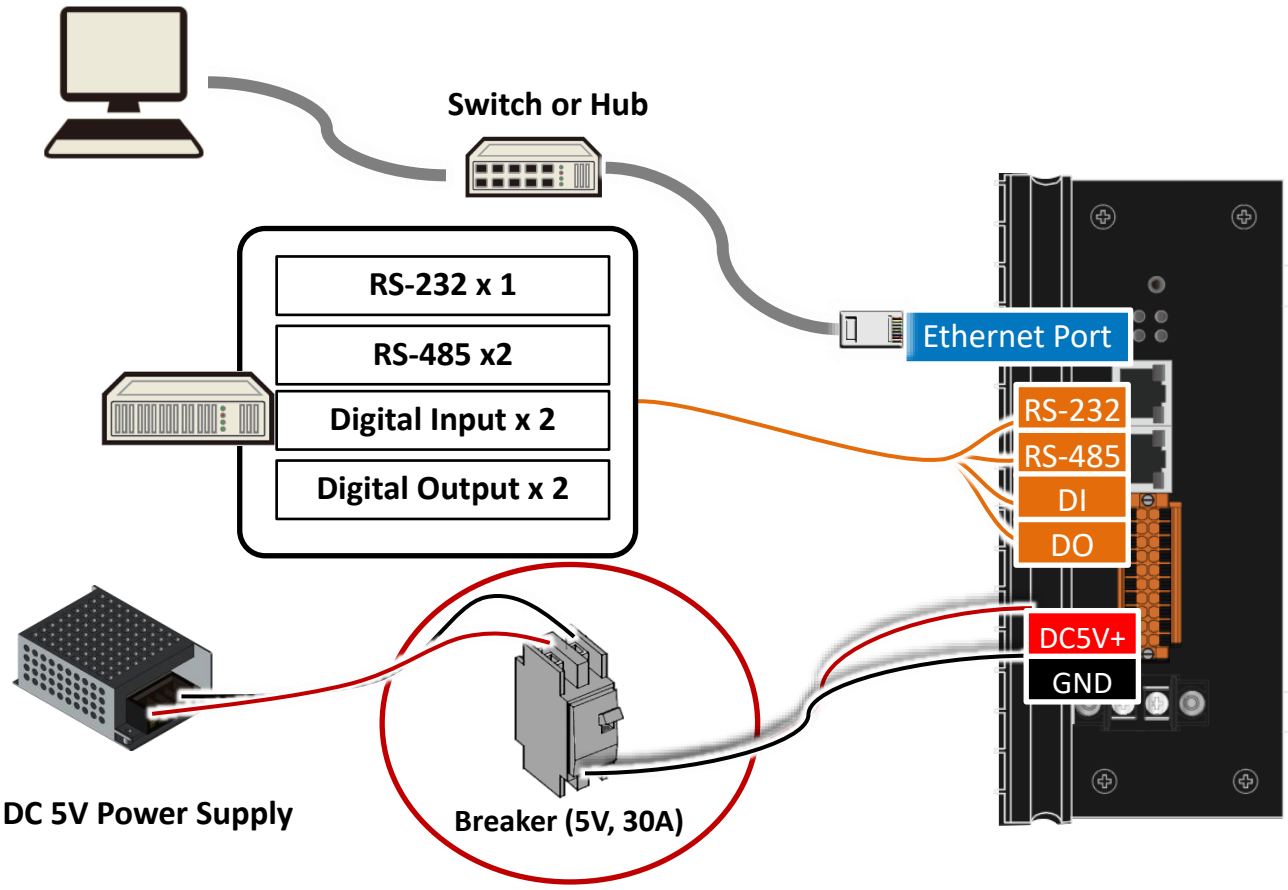
These models use a **5 VDC power supply**.

Steps

1) Connect a DC 5V power source to a circuit breaker (5V, 30A), then to the iKAN's DC5V+ and GND.

2) Use an RJ-45 cable to connect the iKAN to a switch or hub.

3) Wire the I/O terminals to external controllers or devices that support RS-232, RS-485, DI, or DO.



Tips & Warnings

To prevent overcurrent damage, it is recommended to install a 5V/30A breaker between power and iKAN.

2.6.3. iKAN-116(S)-IP65, iKAN-124(S)-IP65, iKAN-208-IP65, iKAN-216-IP65, iKAN-224-IP65

This section describes the power, Ethernet, and I/O connections for the AC-powered iKAN-116(S)-IP65, iKAN-124(S)-IP65, iKAN-208-IP65, iKAN-216-IP65, and iKAN-224-IP65 models .

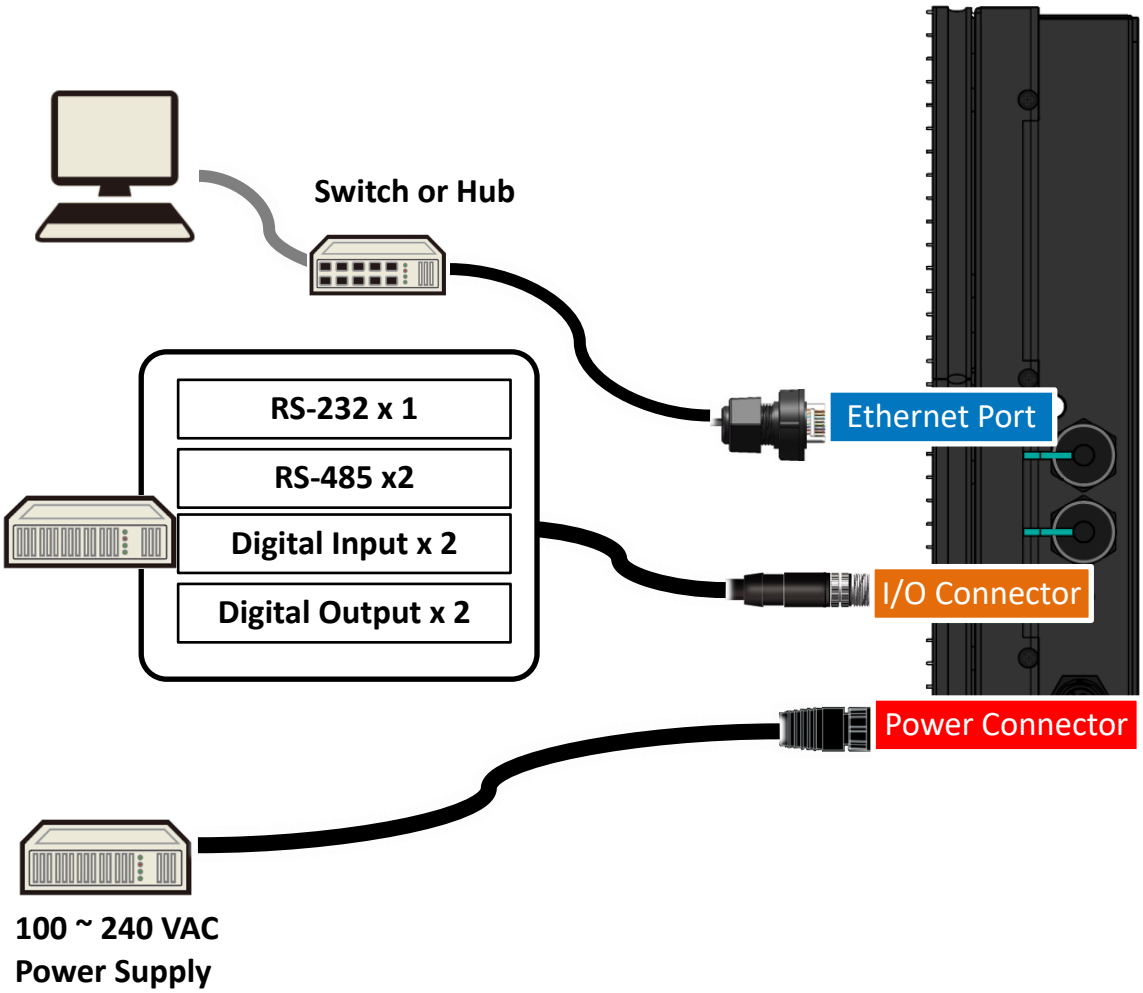
These models use a 100–240 VAC power supply.

Steps

1) Connect the power connector to 100–240V AC.

2) Install the waterproof RJ-45 kit and connect the iKAN to a switch or hub.

3) Use the included I/O cable to connect to RS-232, RS-485, DI, or DO controllers or devices.



2.6.4. iKAN-116A-IP65, iKAN-124A-IP65, iKAN-208A-IP65

This section describes the power, Ethernet, and I/O connections for the 5 VDC-powered iKAN-116A-IP65, iKAN-124A-IP65, iKAN-208A-IP65, and iKAN-208A-IP65, models.

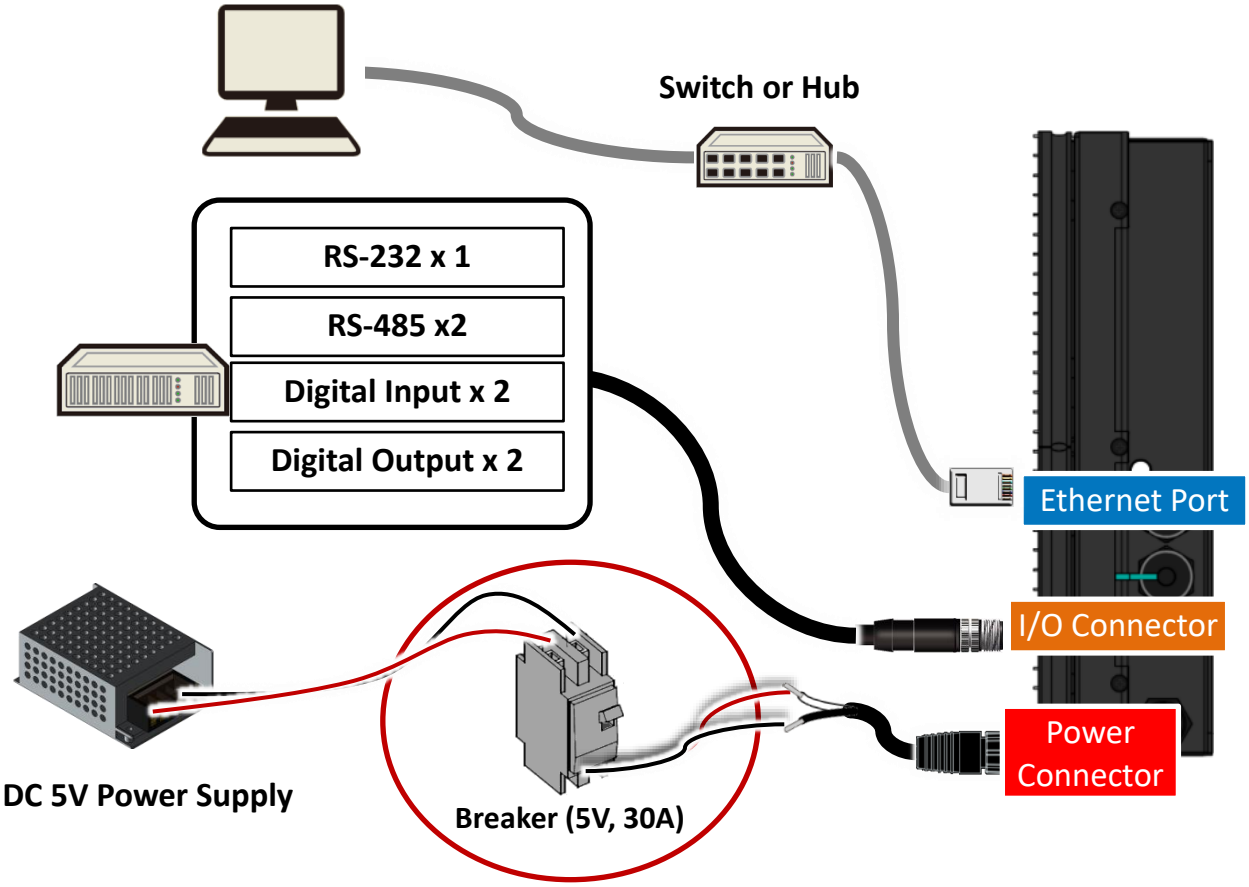
These models use a **5 VDC power supply**.

Steps

1) Connect a DC 5V power source to a circuit breaker (5V, 30A), then to the iKAN's DC5V+ and GND.

2) Install the waterproof RJ-45 kit and connect the iKAN to a switch or hub.

3) Wire the I/O terminals to external controllers or devices that support RS-232, RS-485, DI, or DO.



Tips & Warnings

To prevent overcurrent damage, it is recommended to install a 5V/30A breaker between power and iKAN.

2.6.5. iKAN-216A-IP65 and iKAN-224A-IP65

This section describes the power, Ethernet, and I/O connections for the 5 VDC-powered iKAN-216A-IP65 and iKAN-224A-IP65 models.

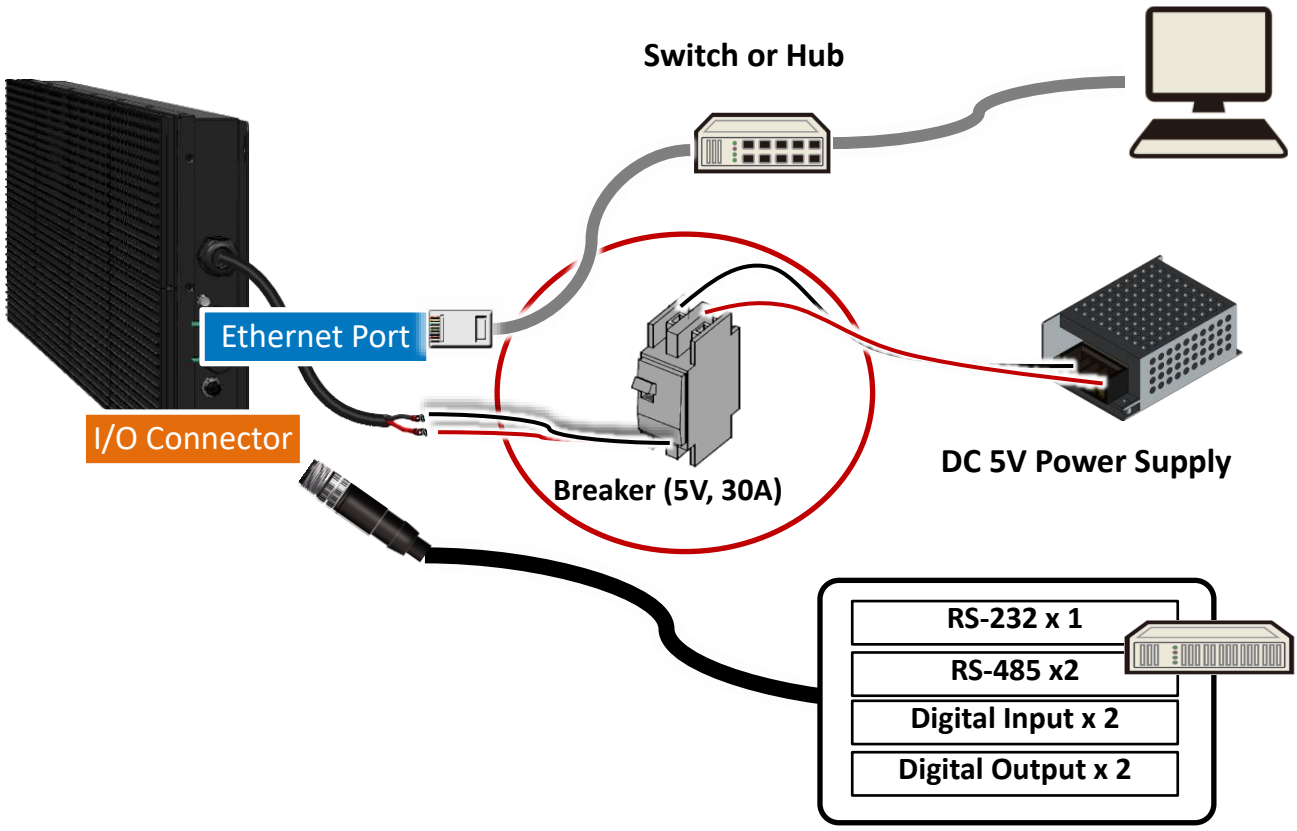
These models use a **5 VDC power supply**.

Steps

1) Connect a DC 5V power source to a circuit breaker (5V, 30A), then to the iKAN's DC5V+ and GND.

2) Install the waterproof RJ-45 kit and connect the iKAN to a switch or hub.

3) Wire the I/O terminals to external controllers or devices that support RS-232, RS-485, DI, or DO.



Tips & Warnings

To prevent overcurrent damage, it is recommended to install a 5V/30A breaker between power and iKAN.

2.7. Configuring the Network

The factory-default IP address of the iKAN is:

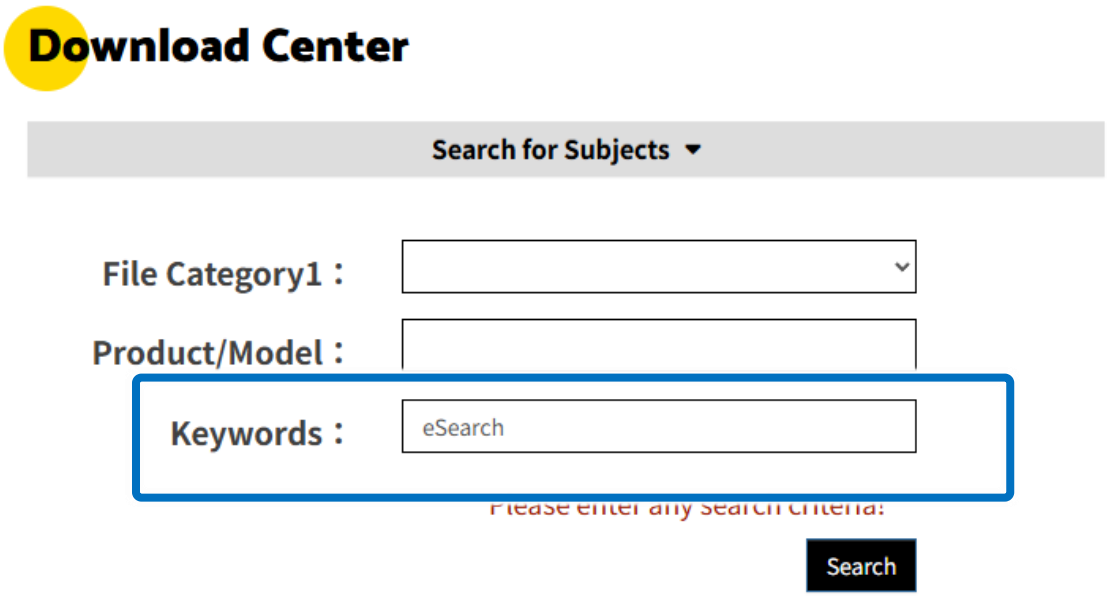
192.168.255.1

Before accessing the iKAN Web interface, configure the network settings according to your network environment. This section describes how to discover the iKAN and configure its IP settings using the eSearch Utility.

Steps

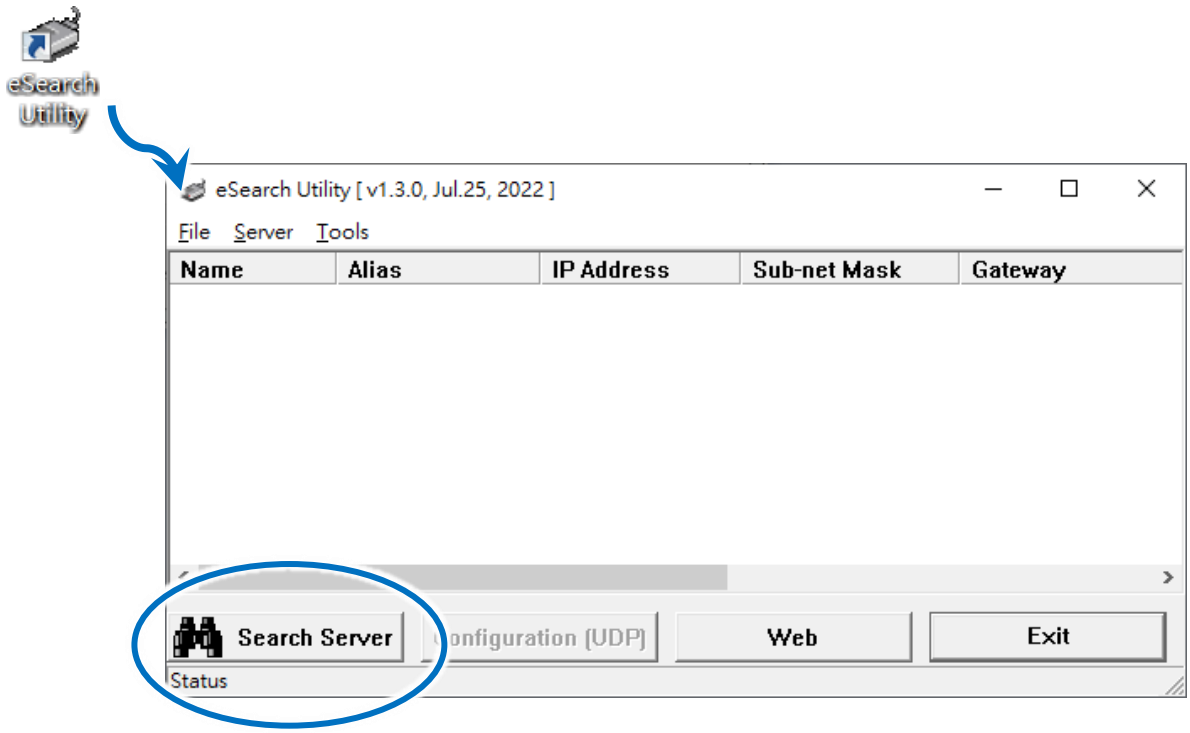
1) Download and install the latest version of the eSearch Utility from the ICP DAS Download Center.

Visit the ICP DAS - Download Center https://www.icpdas.com/en/download/index.php and search for eSearch to download the latest version. Follow the installation wizard to complete setup.

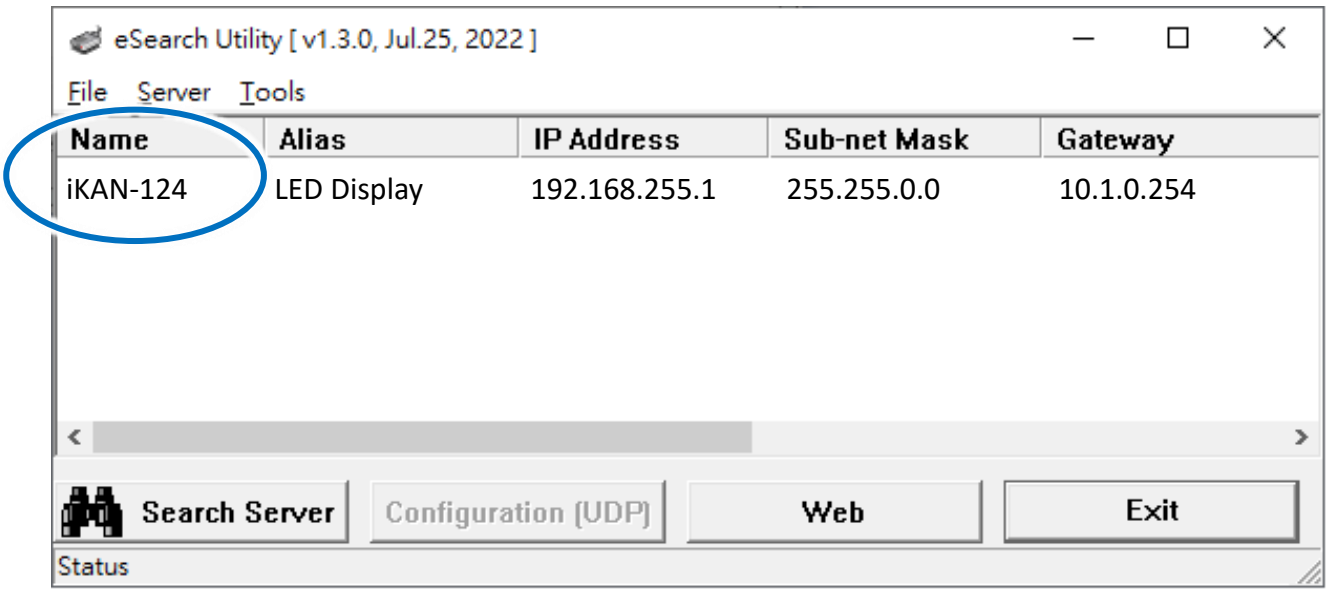


2) Run eSearch.exe (default path: C:\ICPDAS\eSearch)

3) Click「Search Server」to discover available devices.

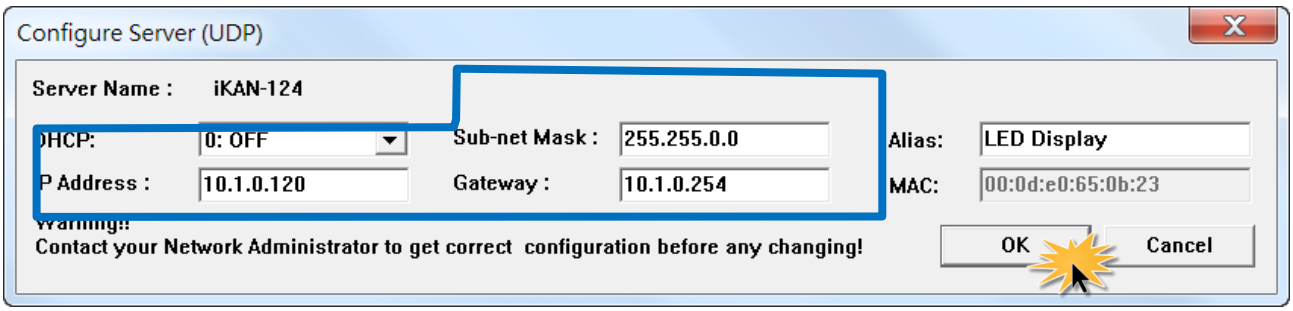


4) Locate the iKAN display in the device list and double-click it.



5) Enter a valid IP address, sub-net mask, and gateway

6) Click「OK」to apply the settings



7) The iKAN automatically restarts and applies the new network configuration.

2.8. Accessing the iKAN Web Interface

This section describes the basic procedure for opening the Web interface.

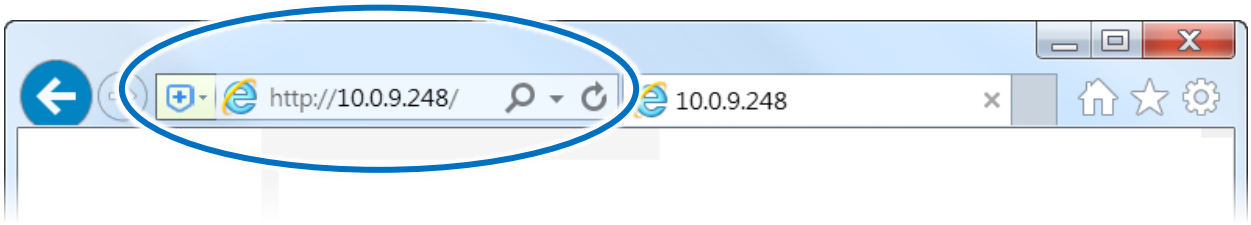
After the network settings are configured, the iKAN Web interface can be accessed through a web browser.

Steps

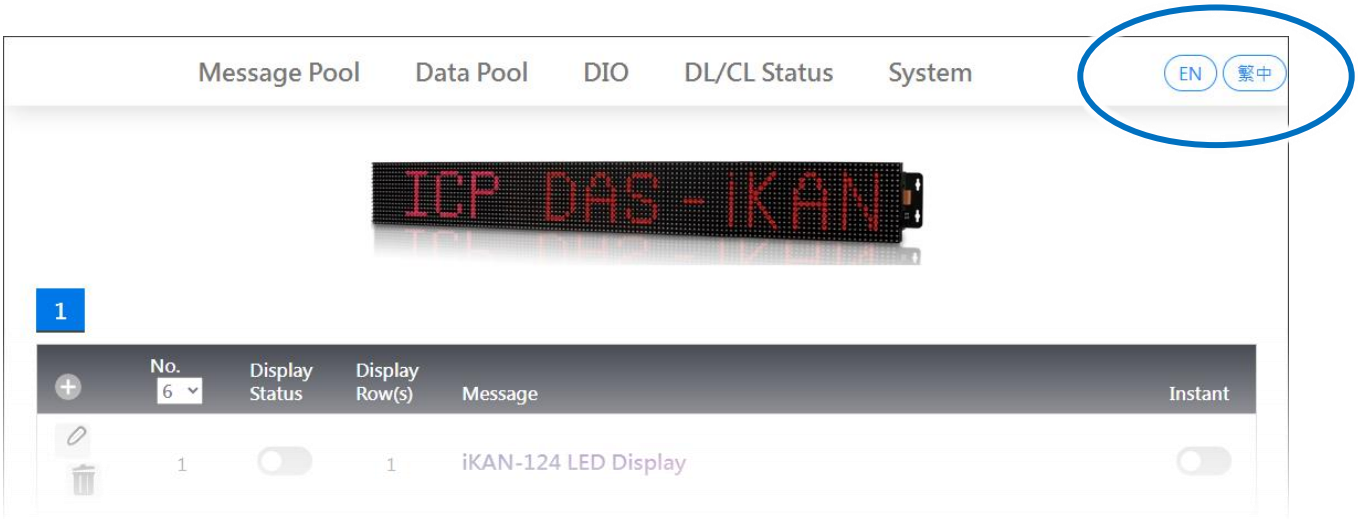
1) Open a supported web browser such as Google Chrome, Firefox or IE, etc.

2) Enter the IP address of the iKAN in the browser address bar.

3) Press Enter to open the iKAN Web interface.



4) Select the desired interface language from the language menu in the upper-right corner.



For detailed information about the Web interface and system configuration, refer to chapter 3. iKAN Web Interface.

2.9. Creating Your First Message

After accessing the iKAN Web interface, follow the steps below to create and display a simple test message.

In this example, the message “Hello World!” is used to verify that the iKAN has been installed and configured successfully.

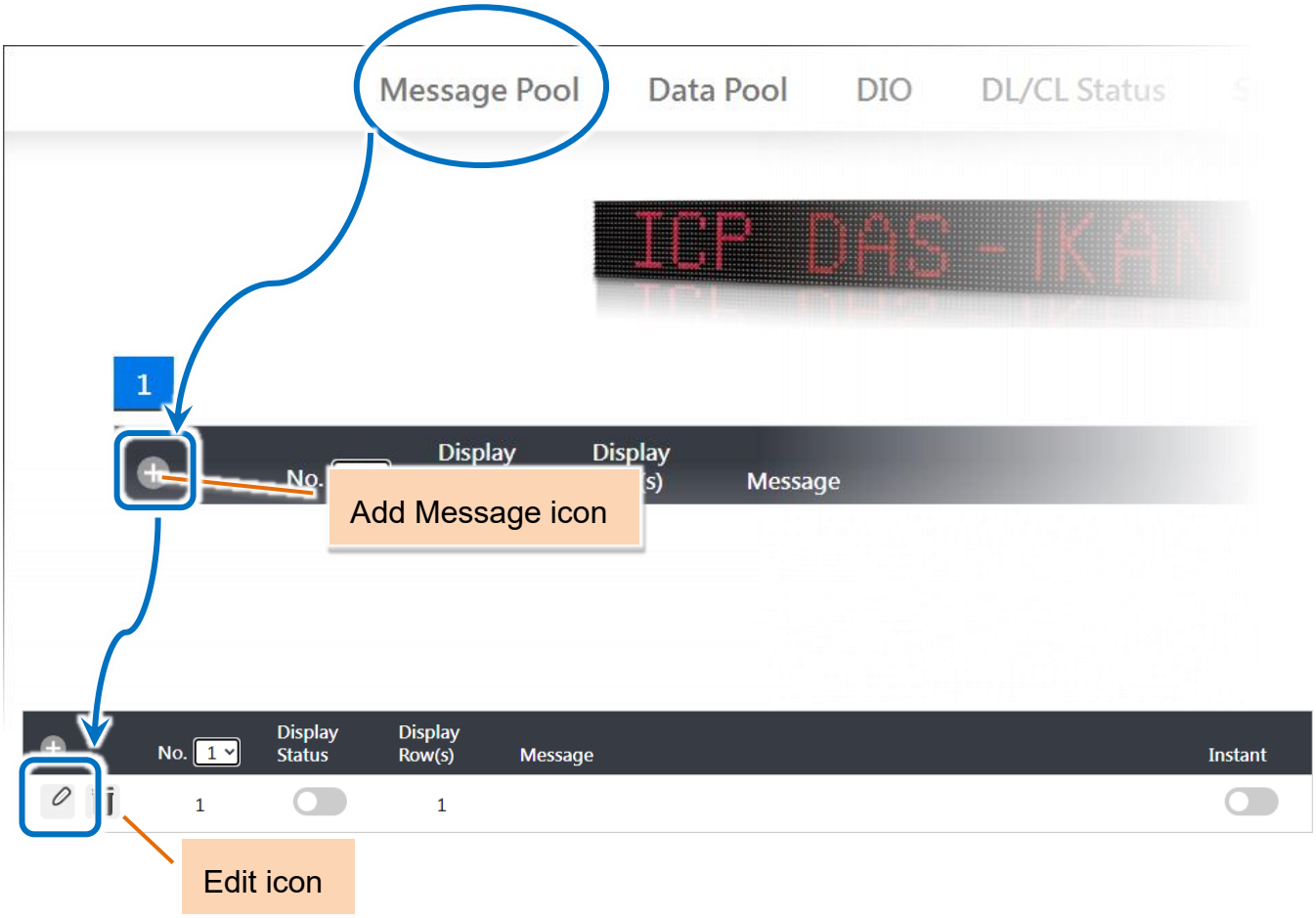
Steps

1) Log in to the iKAN interface and click “Message Pool” from the top menu.

2) Click the「Add Message icon (⊕)」

3) A new blank message is added to the message list.

4) Click the「Edit icon (✎) 」next for the new message.



5) In the form for message No . 1, specify the following message parameters:

i. Check the 「Display」 checkbox to enable the message.

ii. Select the desired color from the 「Color」 drop-down menu

iii. Enter the following string in the 「Message」 text field:

Hello World!

iv. Click the 「Update」 button to save.



6) The message “Hello World!” is displayed on the iKAN immediately.



For detailed information about creating, editing, and managing messages, refer to chapter 4. Message Management.

3. iKAN Web Interface

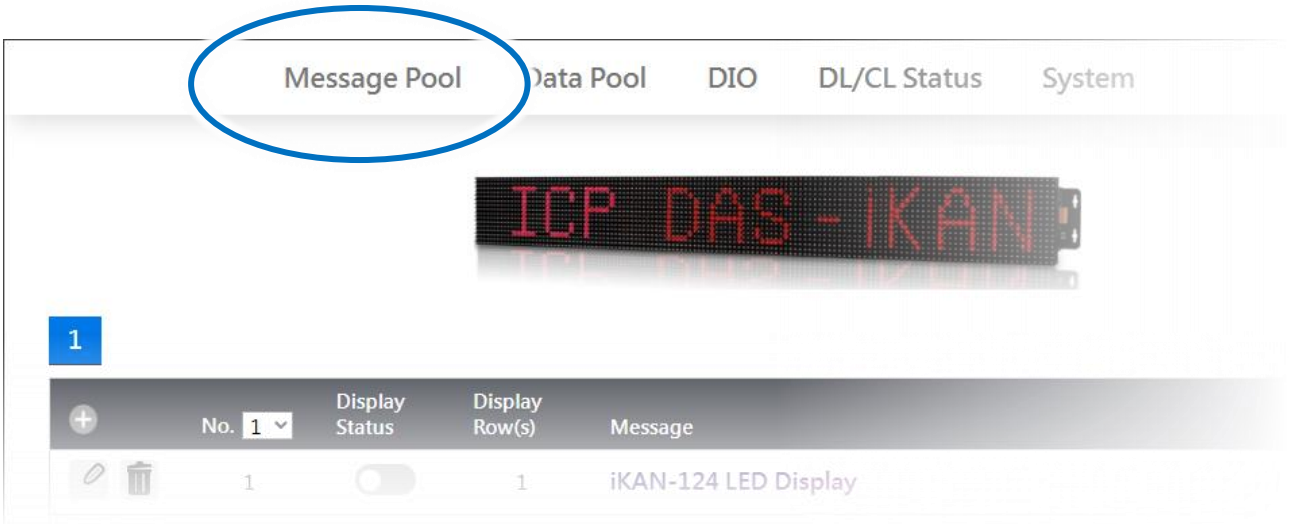
The iKAN series LED display can be accessed and configured through any standard web browser (such as Chrome, Firefox, IE, or Safari) or via network-capable mobile devices. The web-based interface is organized into five major functional areas: Message Pool, Data Pool, DIO, DL Real-time Info, and System Parameters. These pages enable quick deployment of display content, real-time variable monitoring, integration of DL/CL sensors, and full customization of system parameters and backup functions.

Menu	Sub-Menu	Functions	Refer to
MESSAGE POOL	-	Edit and manage messages.	3
DATA POOL	INTEGER	Map integer variables to engineering units.	5.1
	FLOAT	Set decimal places for flat variables.	5.2
	COIL	Map coil variables to custom text.	5.3
DIO	-	Control the DO and read the status of DI/DO channels	3.3
DL Status	-	Get the information regarding connection status, real-time data and Modbus address for measured substance on the DL/CL series module.	3.4 6
SYSTEM	IMPORT/ EXPORT	Import/export pre-configured messages and variables.	3.5.1
	ETHERNET	Set the network address and add DL/CL series modules connected via Ethernet.	3.5.2
	COM1/ COM3	Set the communication parameters for the serial port and add DL/CL series modules connected via RS-485.	3.5.3
	MISC.	Adjust the brightness, moving speed, or check the modulemodel.	3.5.4

The following sub-sections provide detailed guidance for each interface.

3.1. Message Pool

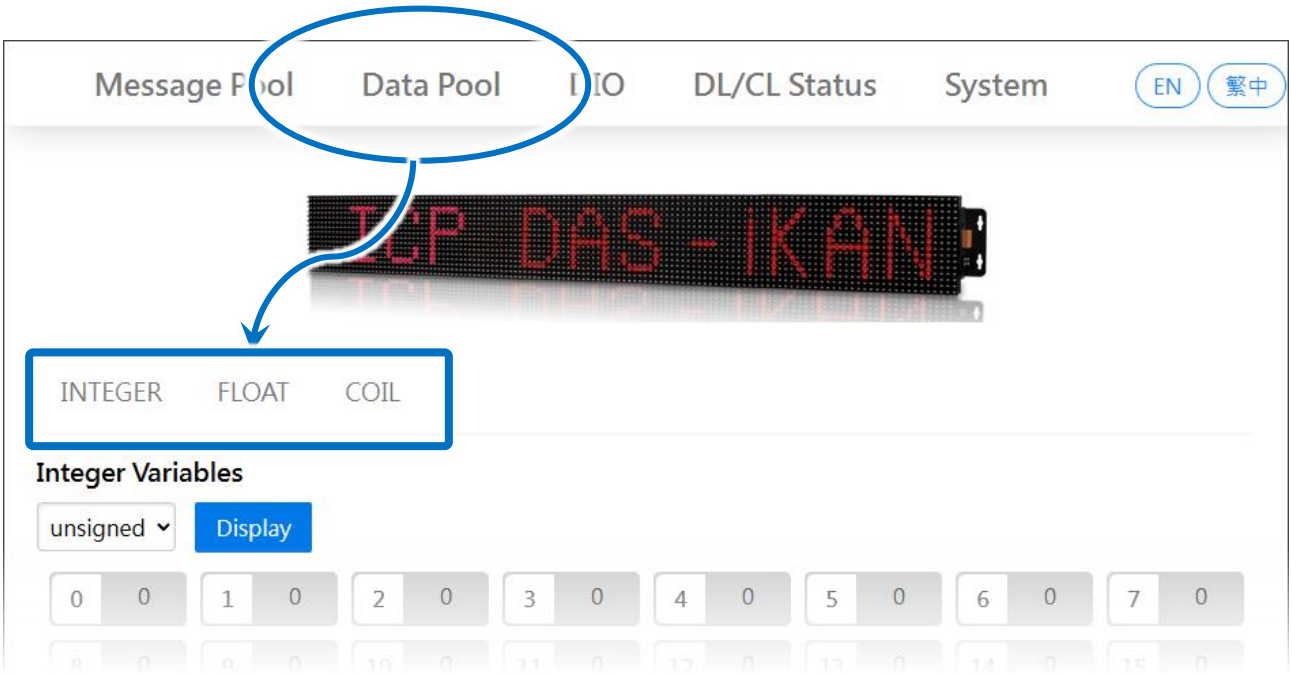
The「Message Pool」page is used to create, edit, and manage up to 128 stored messages. Messages can be prioritized and combined with variables to display real-time alerts or device status.



For more detailed information on how to edit and manage the messages displayed, please refer to chapter 4. Message Management.

3.2. Data Pool

The「Data Pool」page enables users to map data from external sources (e.g., sensors or PLCs) to internal variables, and define how these variables are represented in display messages.

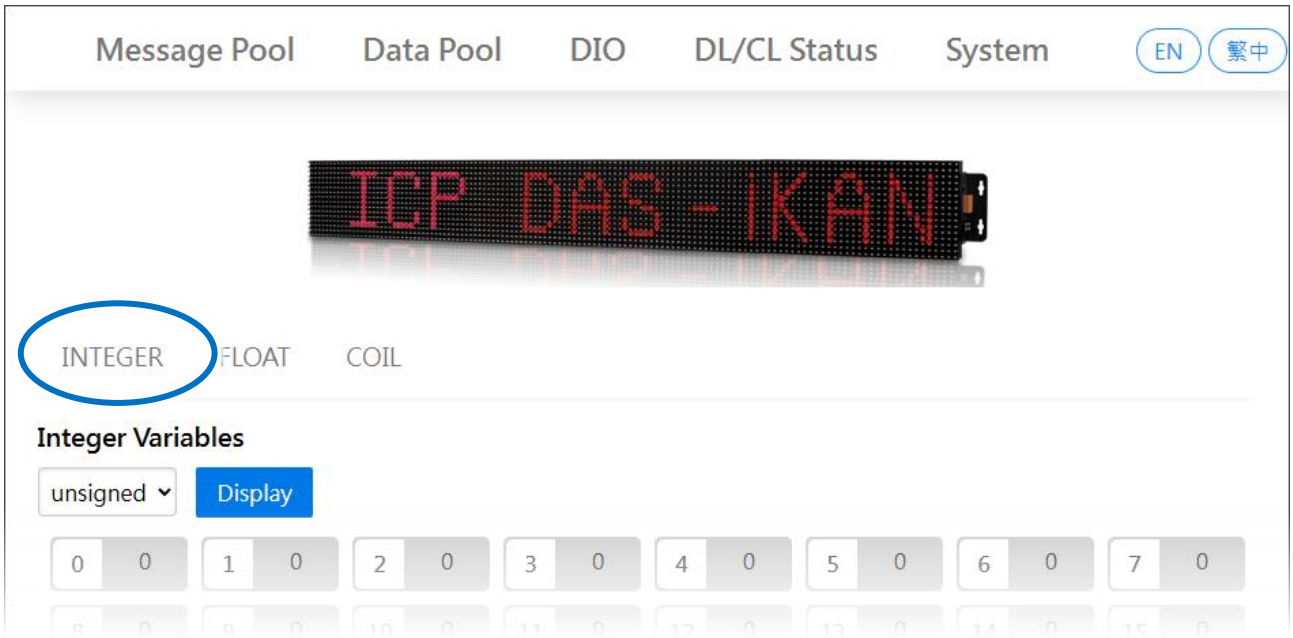


Supported variable types include **Integer**, **Float**, and **Coil**. Custom formatting and color display options are available to ensure real-time, intuitive, and readable message rendering.

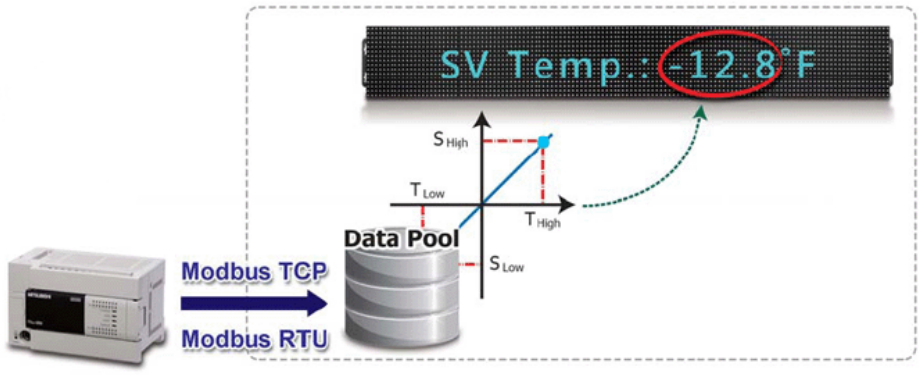
3.2.1. INTEGER

Many devices convert physical measurements (e.g., voltage, temperature, humidity) into 16-bit integer values for storage and transmission.

The「INTEGER」 page offers a value mapping function that enables users to define a correspondence between raw and target values, ensuring intuitive and meaningful engineering data display.



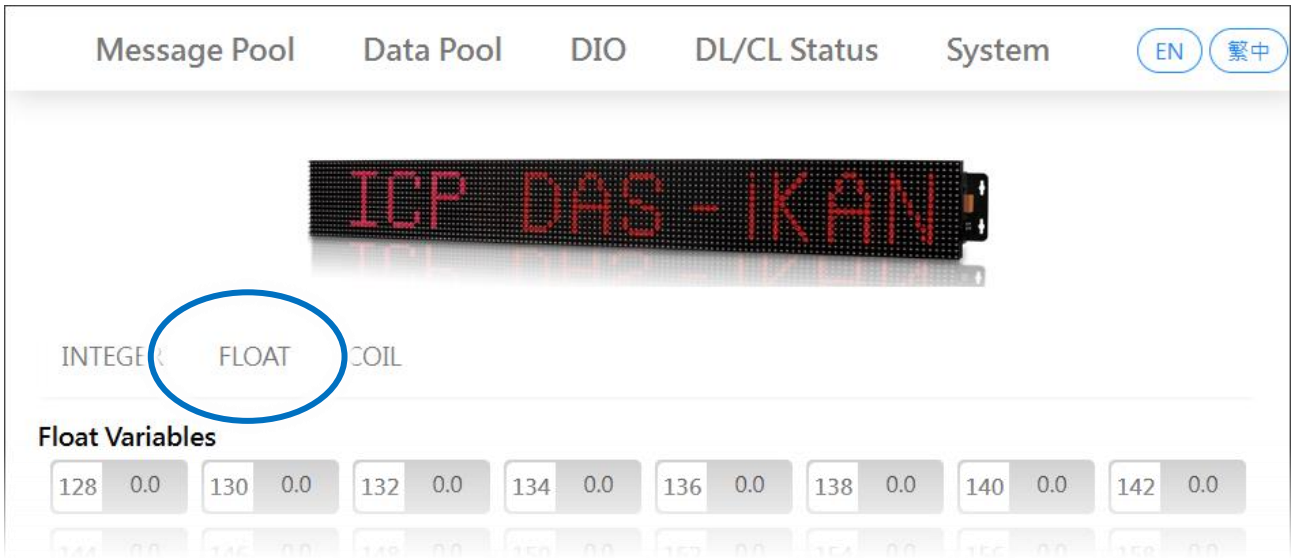
For configuration details, refer to section 5.1.Mapping Integer Values to Engineering Units.



3.2.2. FLOAT

FLOAT variables support up to three decimal places for improved precision in numerical display. Each float variable occupies two consecutive Modbus registers.

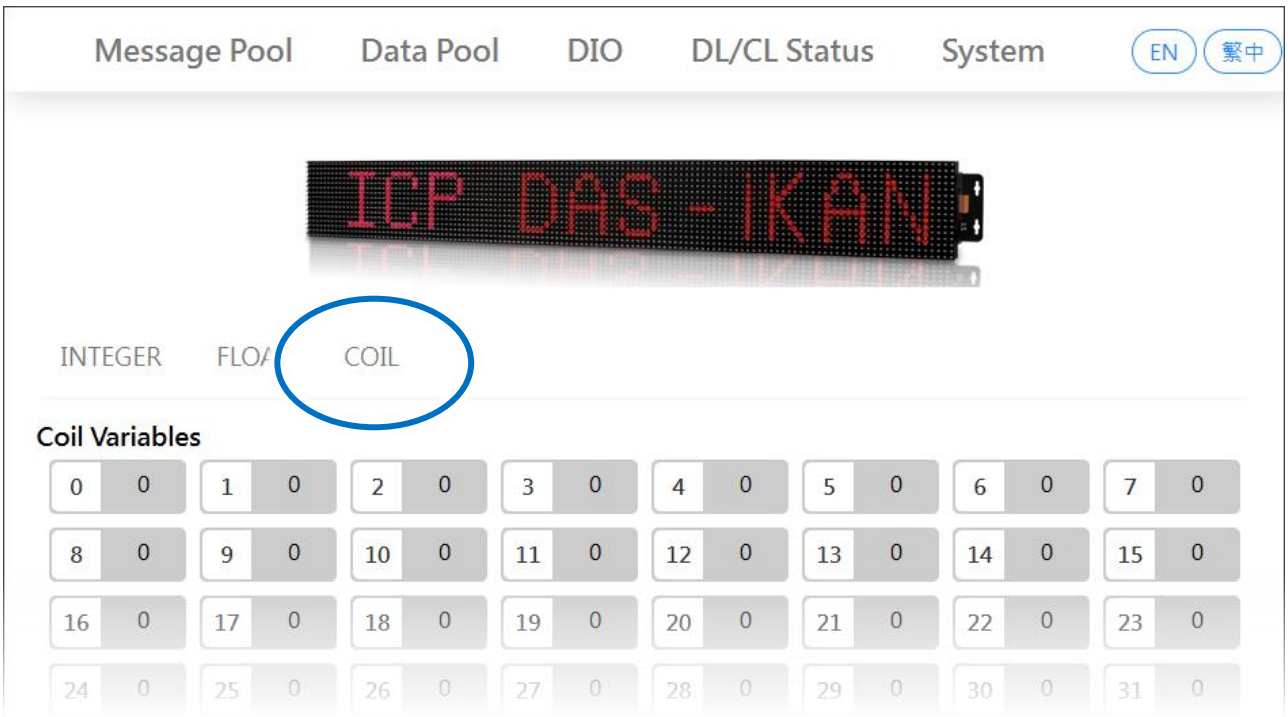
The「FLOAT」page can configure the number of decimal places to meet high-accuracy display requirements.



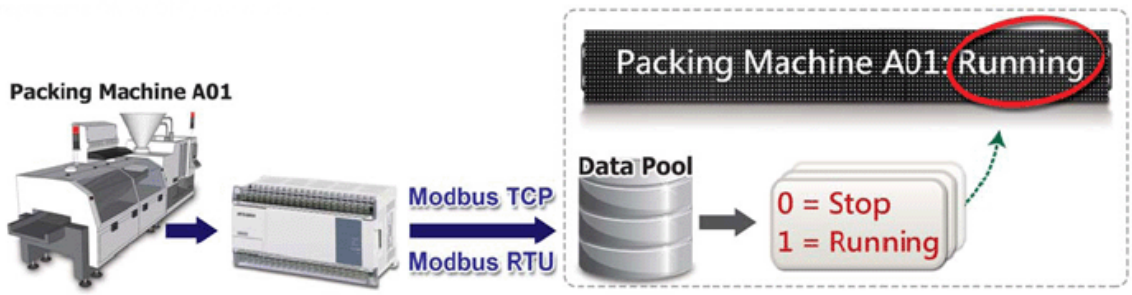
For configuration details, refer to section 5.2. Setting Decimal Places for Float Variables.

3.2.3. COIL

The「COIL」page includes a Substitute Text feature, allowing users to map raw values (0/1) to custom display text (e.g., “ON/OFF”, “START/STOP”), and enhancing message readability.

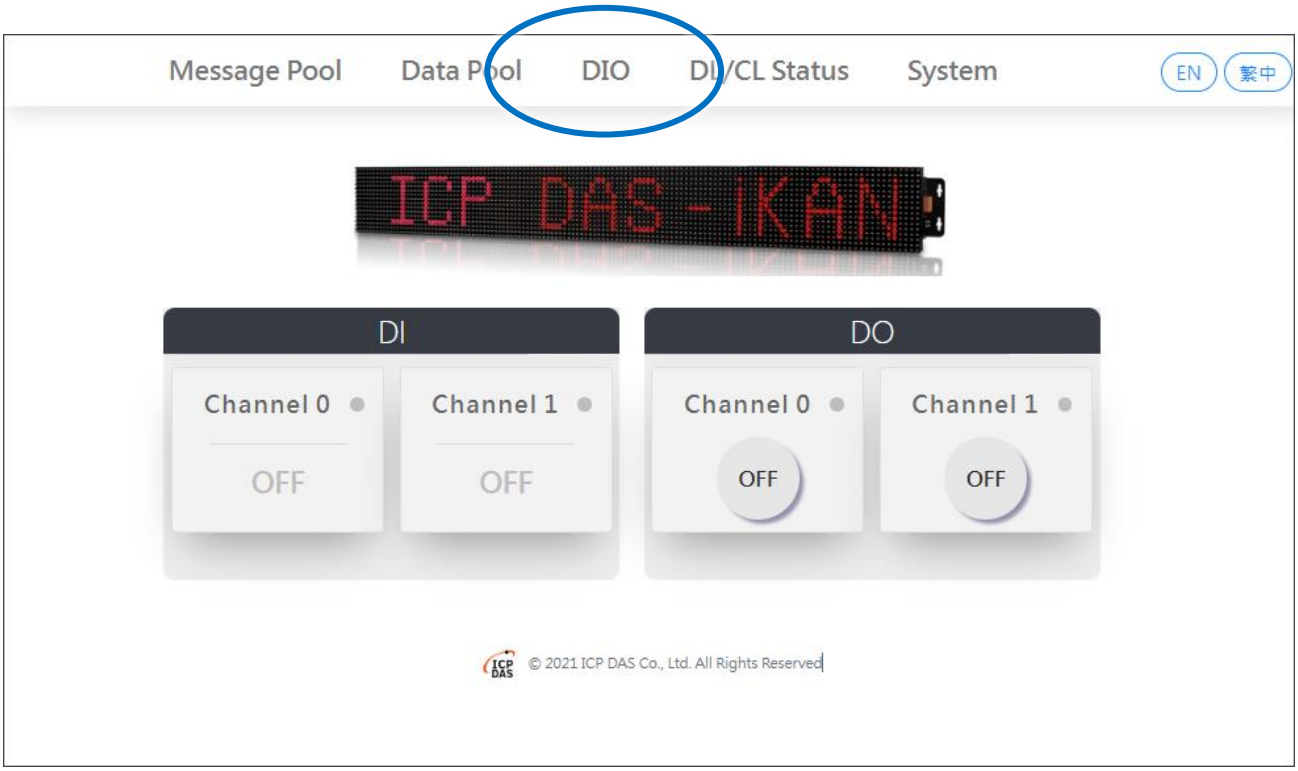


For configuration details, refer to section 5.3. Mapping Boolean (Coil) Values to Custom Text.



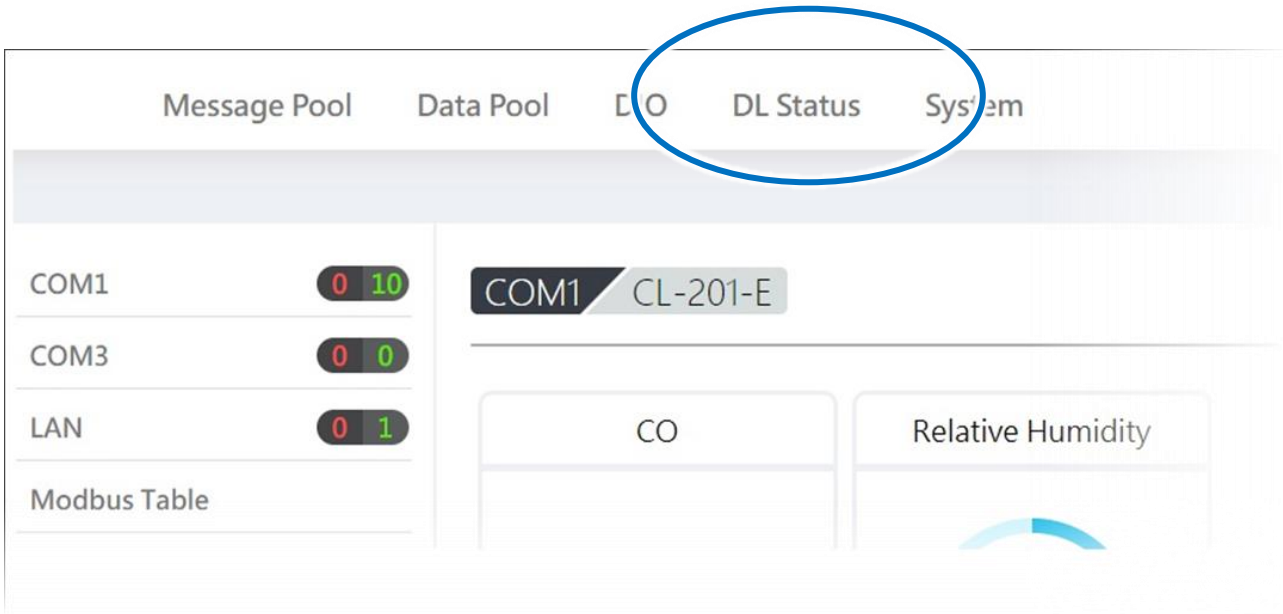
3.3. DIO

The「DIO」page provides real-time monitoring and operation settings for the Digital Inputs (DI) and Digital Outputs (DO) on the iKAN display. DI channels receive signals from field devices like buttons or switches, while DO channels can trigger external devices such as warning lights or buzzers, enabling event response and control.



3.4. DL Status

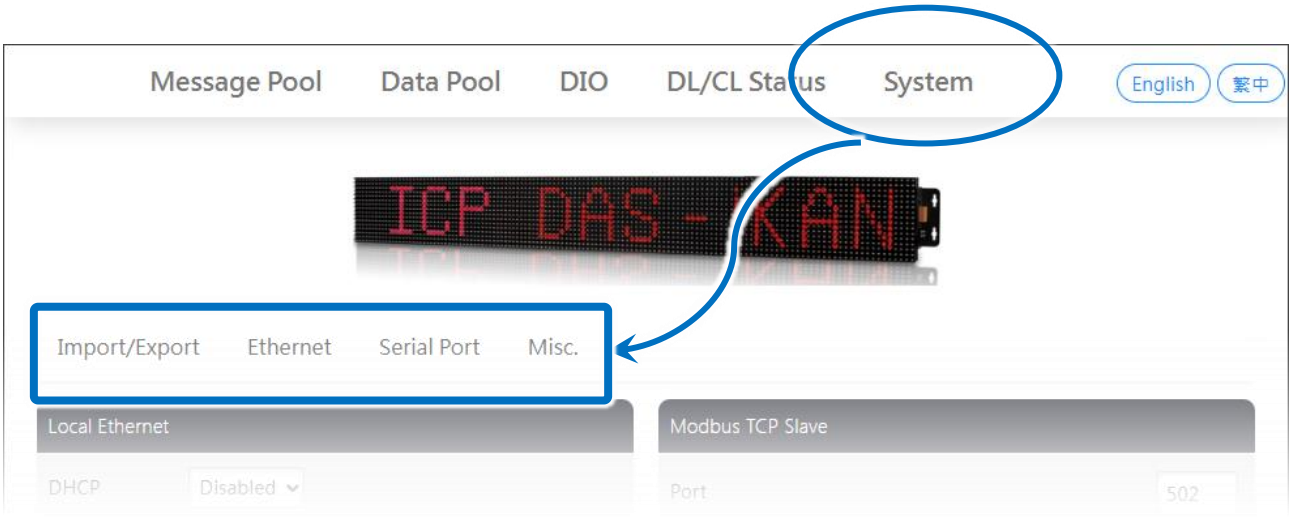
The 「DL Status」page provides a fast monitoring interface showing communication status, real-time measurements, corresponding Modbus addresses, and variable codes from DL/CL modules connected via Ethernet or RS-485.



For more information on how to connect and set DL/CL modules and get the corresponding Modbus addresses and variables, please refer to chapter 6.DL/CL Modules Management.

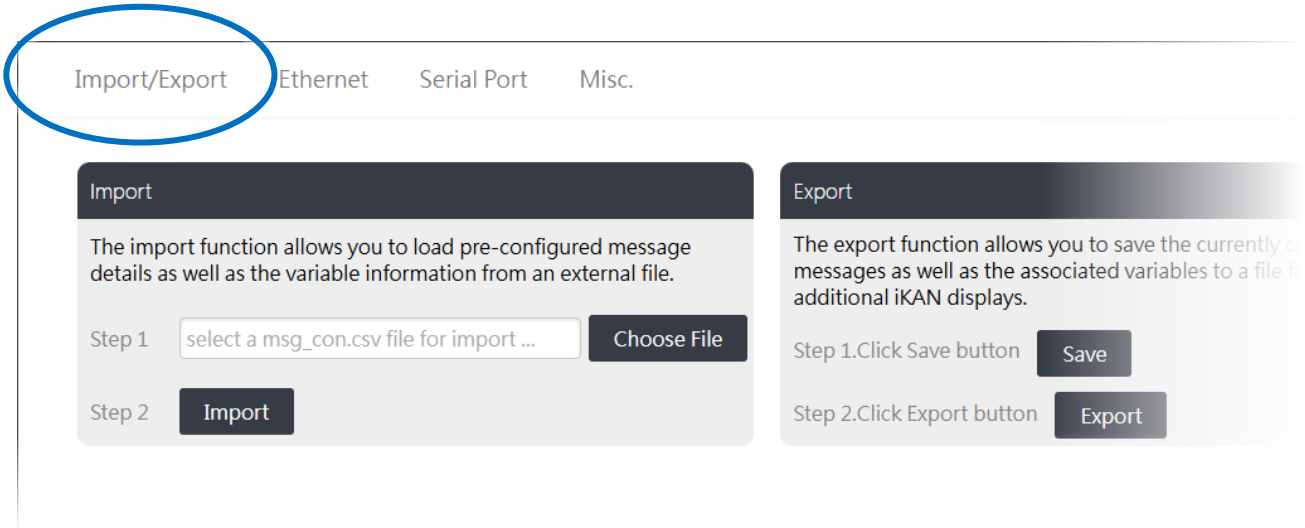
3.5. System

The「System」page provides all essential configurations of the iKAN, including data import/export, network settings, serial communication settings, time synchronization, LED brightness and scroll speed adjustments, system recovery, and device information query.



3.5.1. Import/Export

This function allows users to back up or replicate message pool, variable pool, and DL/CL module settings in .csv format for efficient mass deployment and recovery.

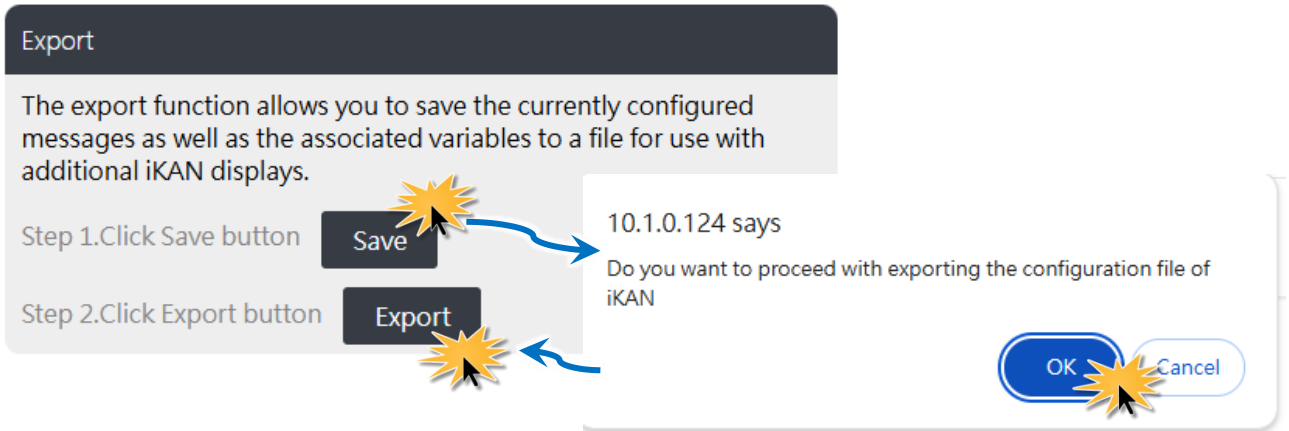


3.5.1.1. Exporting Settings File

This section explains how to export the message pool, variable pool, and DL/CL module configurations as a .csv file. The export function allows users to back up current settings or quickly replicate configurations across other iKAN displays, enabling centralized deployment and management.

Steps

1) In 「Export」 section, click 「Save」 button, and then confirm the action by clicking 「OK」 button in the pop-up window.



2) Click 「Export」 button to download the configuration file.

The .csv file will be saved to the default download folder with the name msg_con.csv (the content is encoded and not directly editable).

	A	B	C	D	E	F	G	H	I	J	K
1	iKAN LED Display Pre-Configuration file										
2	1	1	1	1	1	1	0	0	0	0	0
3	1	1	1	1	1	1	0	0	0	0	0
4	1	1	1	1	1	0	0	0	0	0	0
5	1	1	1	1	1	0	0	0	0	0	0
6	1	1	1	1	1	1	1	1	1	1	1
7	6	6	6	6	6	6	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0
12	0	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0	0

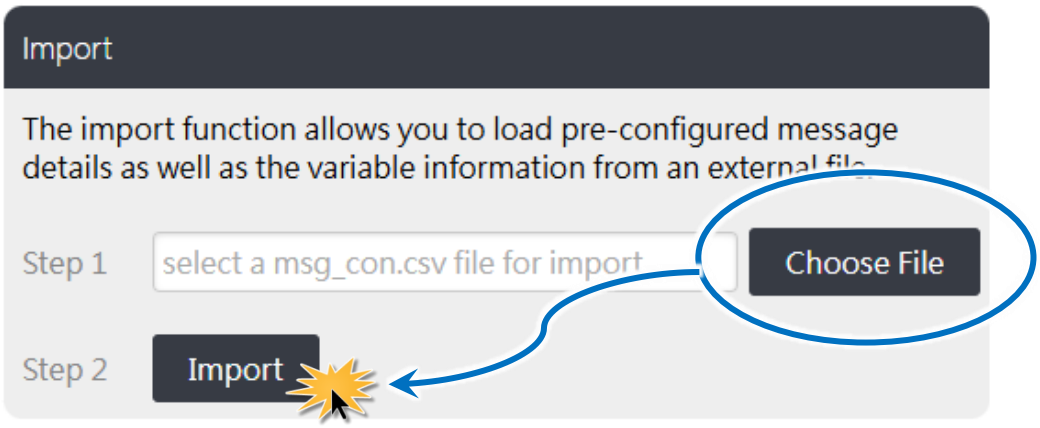
3.5.1.2. Importing Settings File

This section describes how to use a .csv file to import existing iKAN settings into the device. This function is ideal for mass deployment scenarios, significantly reducing manual configuration time and minimizing the risk of errors while improving maintenance efficiency.

Steps

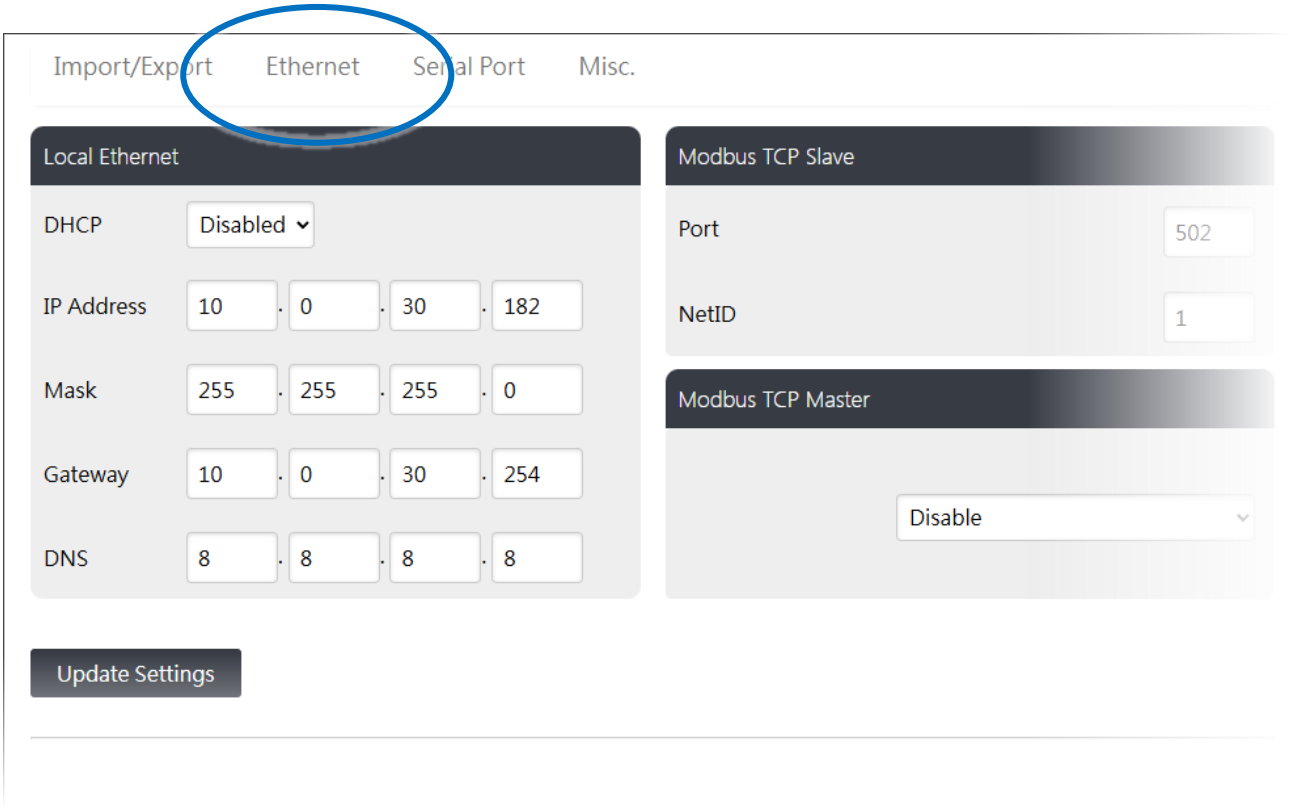
1) In「Import」section, click「Choose File」button to select the imported .csv file.

2) Click「Import」button to import the settings.



3.5.2. Ethernet

The「Ethernet」page allows configuration of IP address, subnet mask, gateway, Modbus TCP port, and NetID. Users may also enable Modbus TCP Master mode. To enable NTP synchronization, a valid DNS address must be configured.



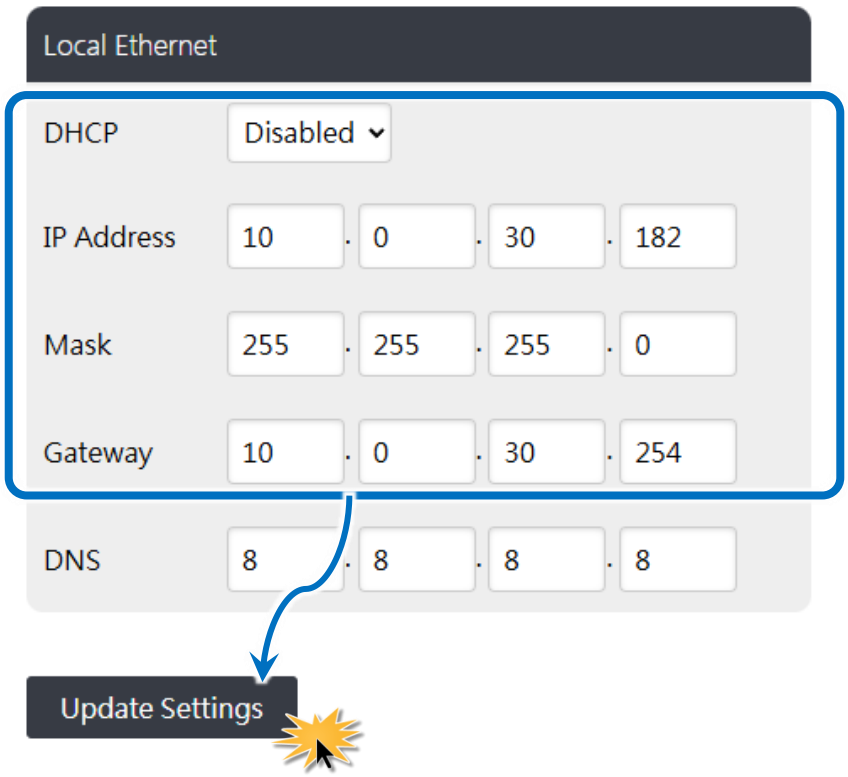
3.5.2.1. Configuring IP Address

In order to ensure proper network connectivity, the iKAN must be configured with an IP address, subnet mask, and default gateway. Users can choose to enable DHCP for automatic configuration or manually assign static values. When using NTP, a valid DNS setting is also required.

Steps

1) In「Local Ethernet」section, enable「DHCP」to obtain IP automatically or disable「DHCP」to manually configure IP address, Subnet Mask, and gateway.

2) Click「Update Settings」button to save and activate the changes.



Tips & Warnings

If enabling NTP time synchronization, ensure a valid DNS server is configured to allow connection to the NTP server.

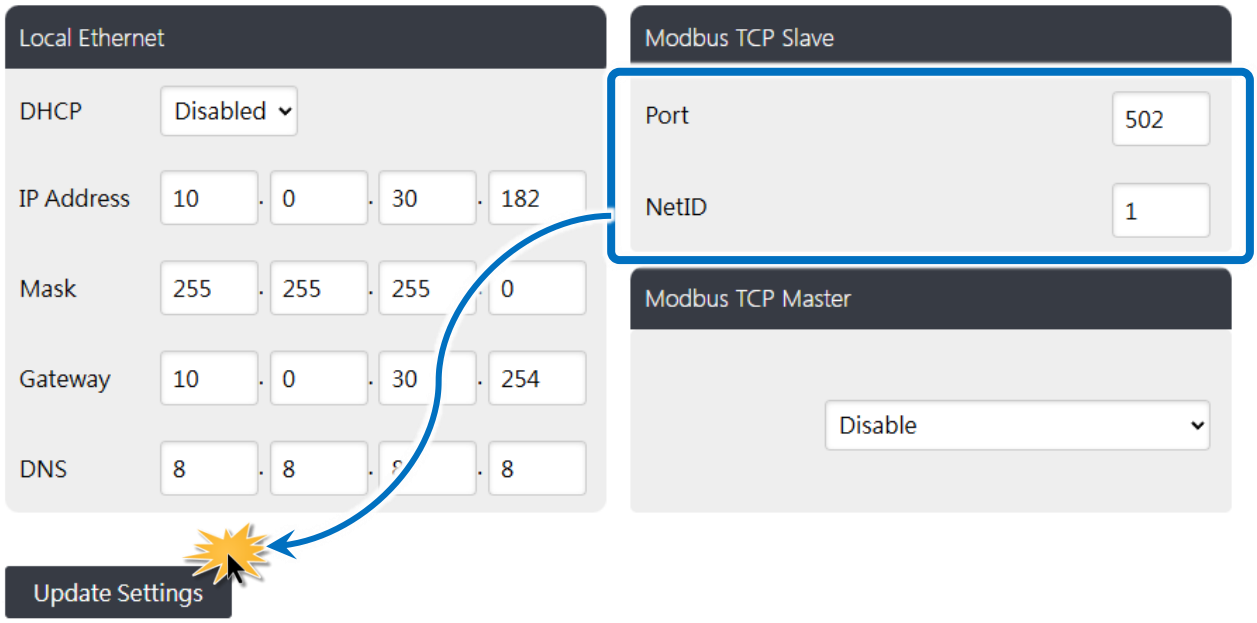
3.5.2.2. Configuring Modbus TCP Port and Station ID (NetID)

This function allows users to define the Modbus TCP port and station ID (NetID) when iKAN is operating as a Modbus TCP Slave. Proper settings ensure the device can be addressed and accessed by SCADA, PLC, or other control systems.

Steps

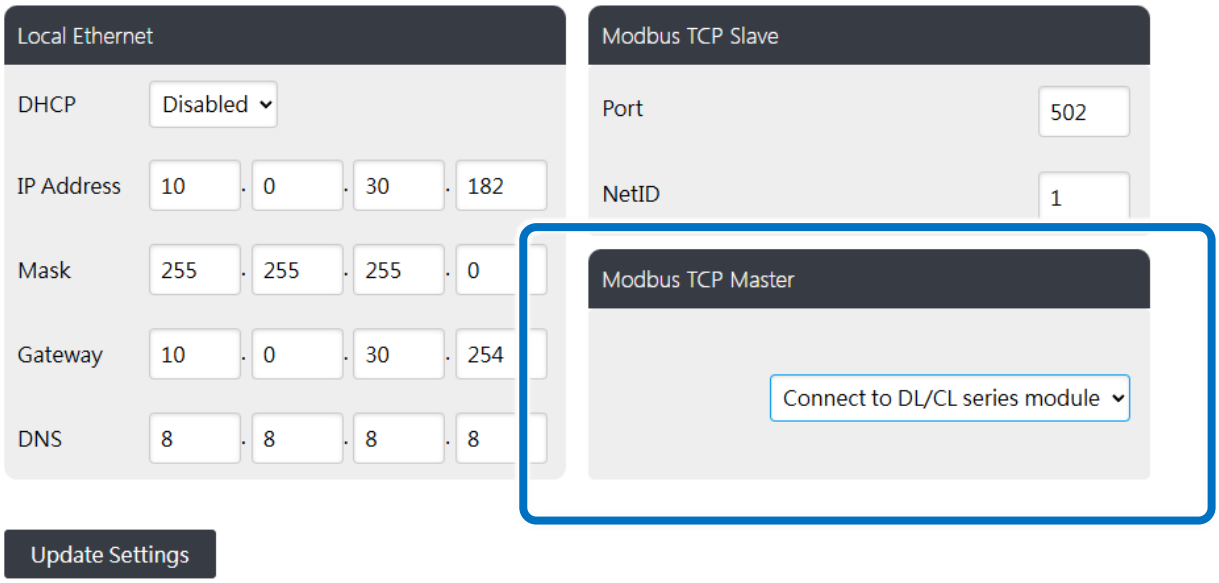
1) In「Modbus TCP Slave」section, enter the Modbus TCP port number (default is 502) and NetID.

2) Click「Update Settings」button to save the configuration.



3.5.2.3. Enabling Modbus TCP Master to Connect DL/CL Modules

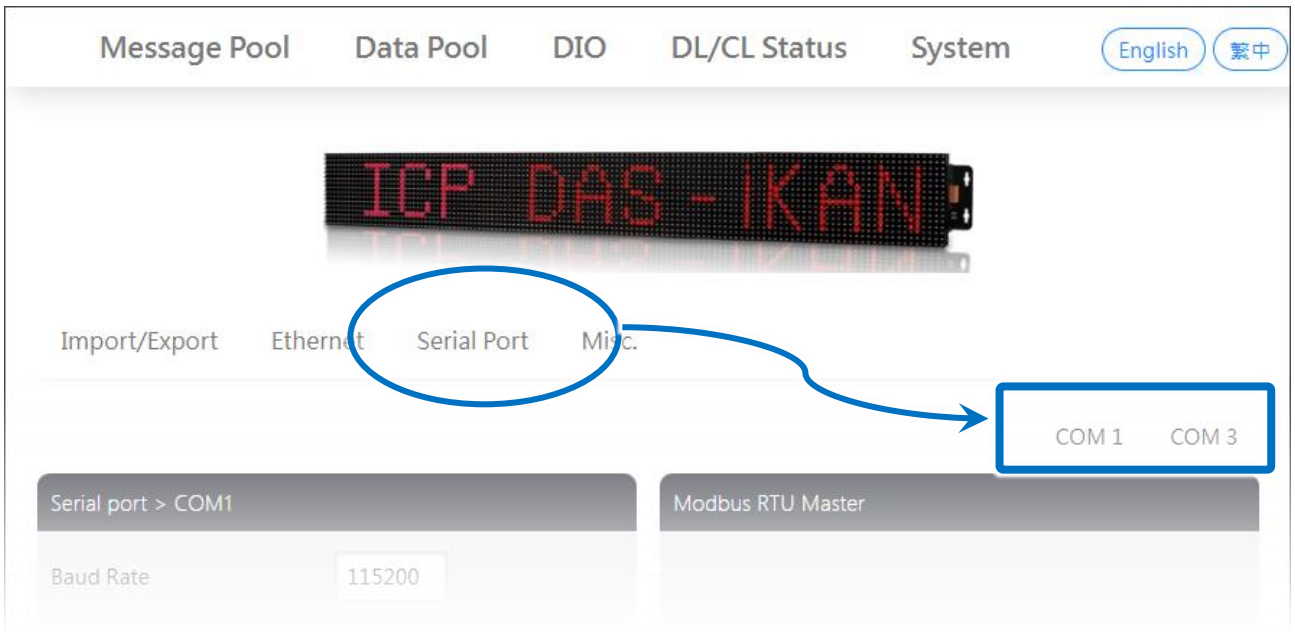
The iKAN can operate as a Modbus TCP Master over the network, connecting to multiple DL/CL sensor modules for real-time data acquisition. After enabling this mode, modules can be added and configured for communication.



For detailed module setup, please refer to section 6.1.1.Connecting via Ethernet.

3.5.3. Serial Port

The「Serial Port」page allows setting communication parameters for COM1 and COM3. The iKAN can communicate with PLCs, PCs, or DL/CL modules via RS-232 or RS-485 using the Modbus RTU protocol, supporting real-time data acquisition and control.



3.5.3.1. Configuring COM Port Communication Parameters

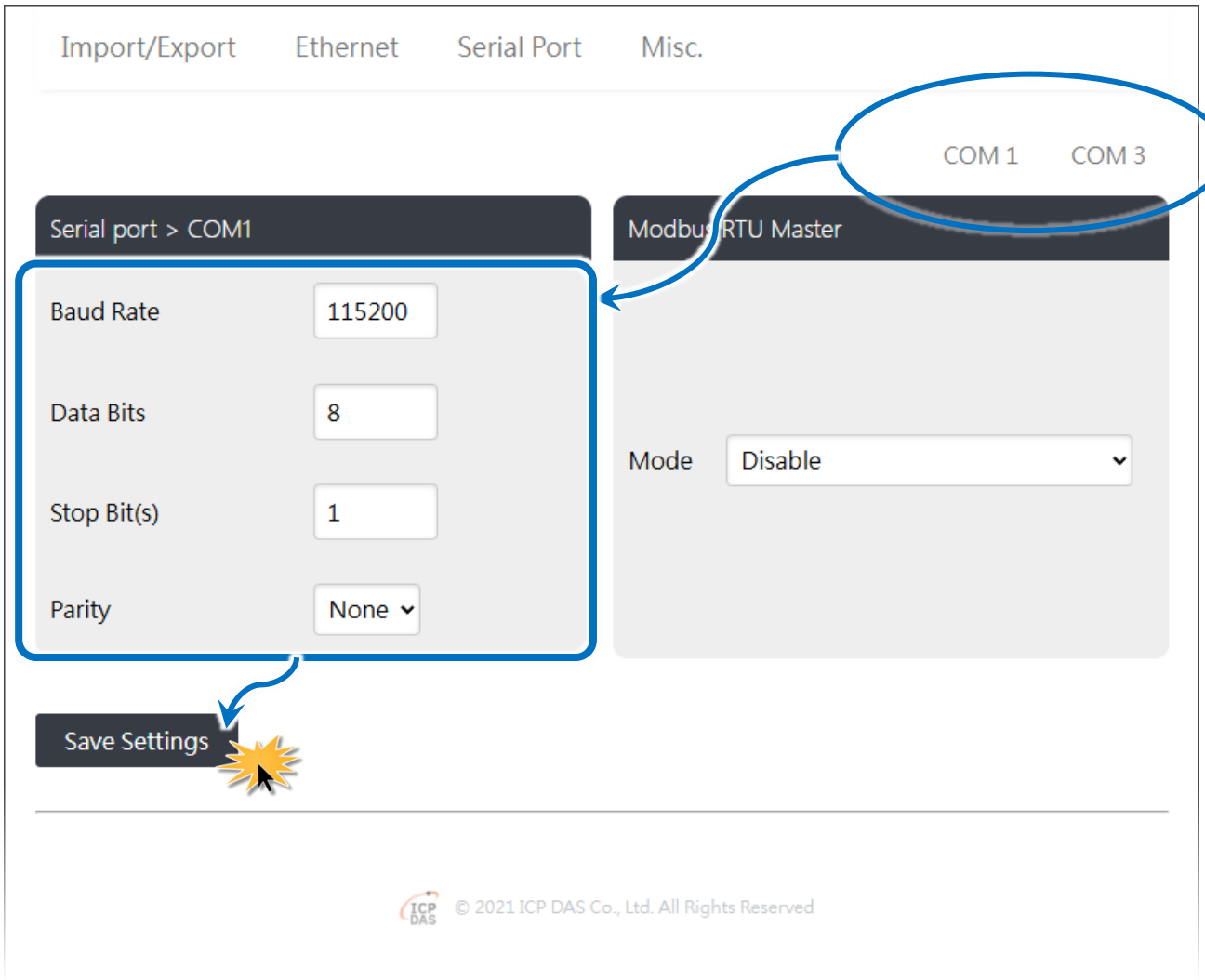
The COM1 and COM3 ports on the iKAN support RS-232/RS-485 communication using the Modbus RTU protocol. Proper configuration of serial parameters such as baud rate, data bits, stop bits, and parity is essential for reliable communication.

Steps

1) Select the desired serial port (**COM1** or **COM3**).

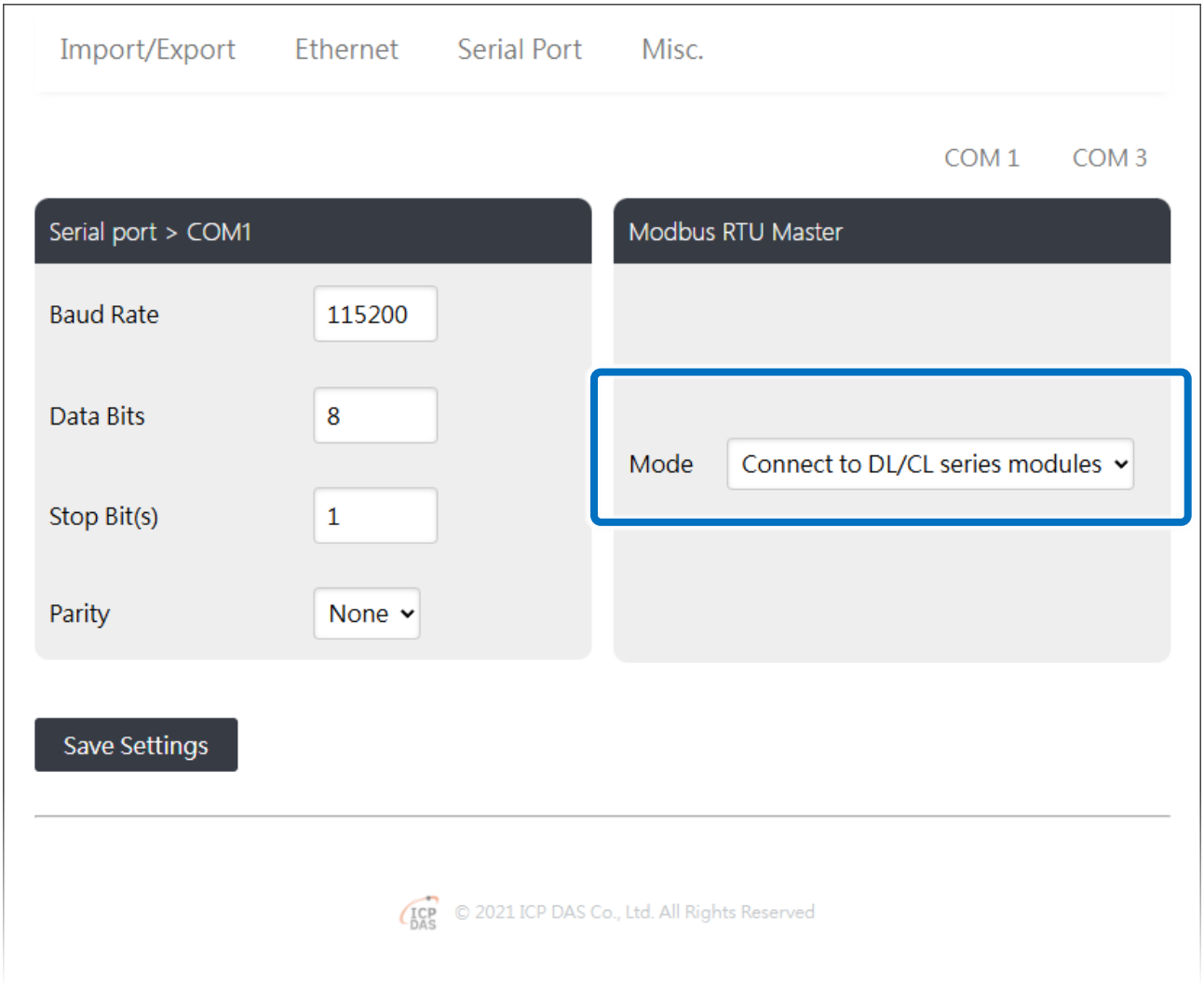
2) In 「Serial port > COMx」section, configure the COM port parameters: Baud Rate, Data Bits, Stop Bits, and Parity.

3) Click 「Update Settings」button to save the settings.



3.5.3.2. Enabling Modbus RTU Master to Connect DL/CL Modules

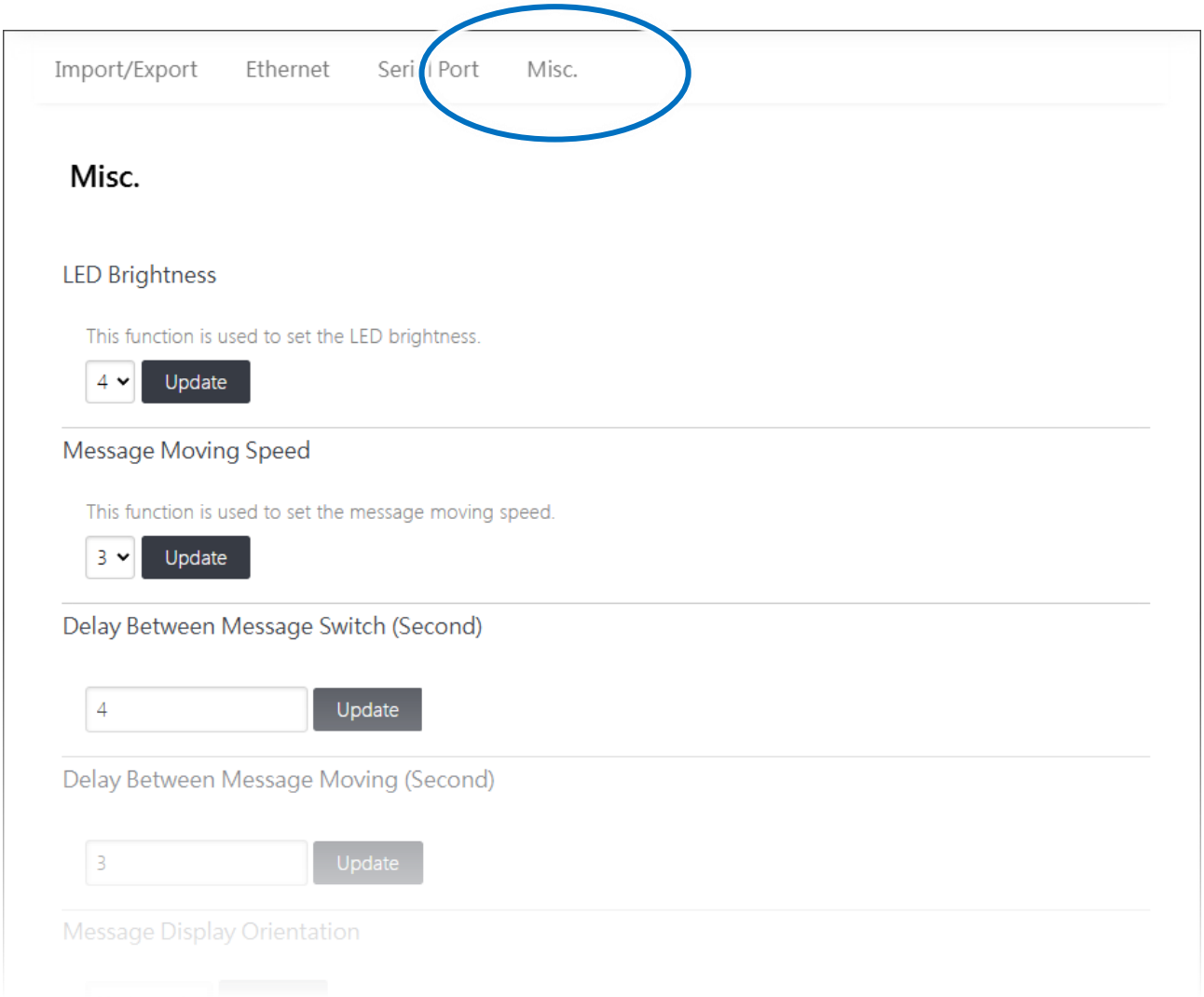
The iKAN can operate as a Modbus RTU Master. When Modbus RTU Master mode is enabled, iKAN can poll multiple DL/CL modules via serial COM ports to collect sensor data. This enables real-time acquisition and display of analog or digital sensor data.



For detailed module setup, please refer to section 6.1.2.Connecting via COM Port.

3.5.4. Misc

The「Misc」page provides functions such as display parameter adjustment, system time settings, network time synchronization, factory reset, device reboot, and querying the module name and firmware version. These settings help optimize the iKAN device's operation and facilitate maintenance.



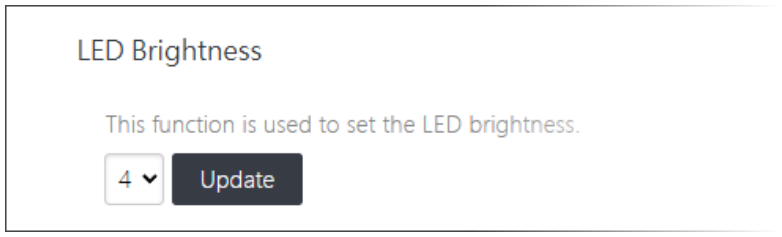
3.5.4.1. LED Brightness

This function allows users to adjust the LED display brightness to match the lighting conditions of the installation environment. Higher brightness is recommended for outdoor or brightly lit areas, while lower levels suit indoor or nighttime use to reduce glare and power consumption.

Steps

1) In「LED Brightness」section, select the desired brightness level from the drop-down menu.

2) Click「Update」button to apply the setting.



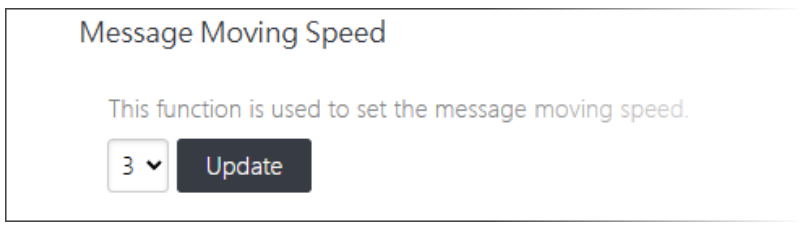
3.5.4.2. Message Moving Speed

This parameter controls the horizontal scrolling speed of messages on the LED display. Selecting an appropriate speed ensures optimal readability depending on the viewer's distance and message length.

Steps

1) In「Message Moving Speed」section, select the desired moving speed level from the drop-down menu.

2) Click「Update」button to apply the setting.



3.5.4.3. Delay Between Message Switch (Second)

Specifies the interval time between consecutive messages. This delay setting helps manage message playback timing to ensure each message is displayed long enough for effective viewing. The valid range is 1 to 32 seconds.

Steps

1) In「Delay Between Message Switch (Second)」section, enter a value between 1 ~ 32.

2) Click「Update」button to apply the setting.



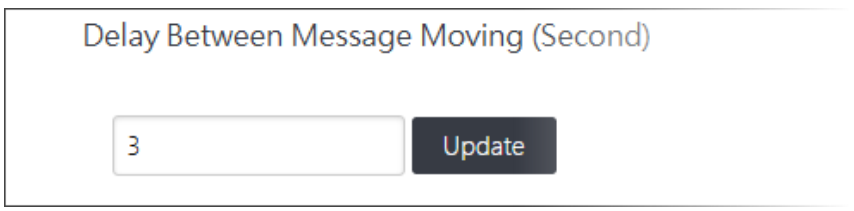
3.5.4.4. Delay Between Message Moving (Second) Display

This setting determines how long a message remains static before starting to scroll, which improves readability for introductory or headline displays.

Steps

1) In「Delay Between Message Moving (Second)」section, enter a value between 1 ~ 32.

2) Click「Update」button to apply the setting.



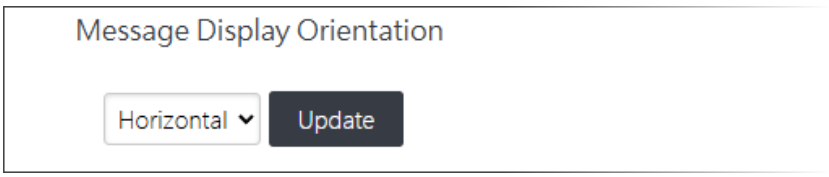
3.5.4.5. Message Display Orientation

This feature allows users to set the display direction (e.g., Horizontal or Vertical) based on language reading habits or visual layout requirements.

Steps

1) In「Message Display Orientation」section, select the desired display direction from the drop-down menu.

2) Click「Update」button to apply the setting.



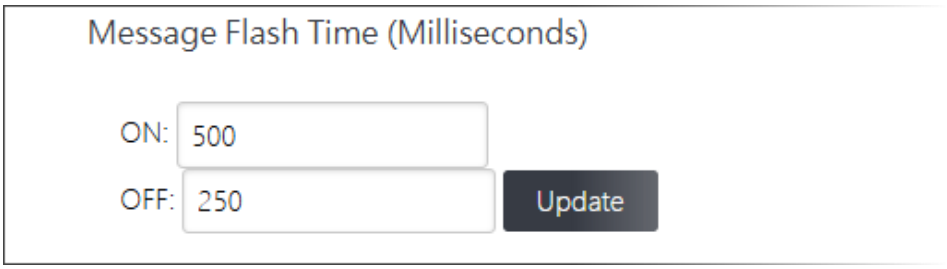
3.5.4.6. Message Flash Time (Millisconds)

This setting enables a blinking effect for messages and defines the duration in milliseconds. It is useful for highlighting warnings or high-priority content.

Steps

1) In「Message Flash Time (Millseconds)」section, Enter the desired message flash time in milliseconds.

2) Click「Update」button to apply the setting.



3.5.4.7. DI Trigger Message

This feature links specific messages to digital input pins (DI0/DI1). When an input signal is detected, the assigned message is immediately displayed, ideal for alarms or equipment status updates.

Steps

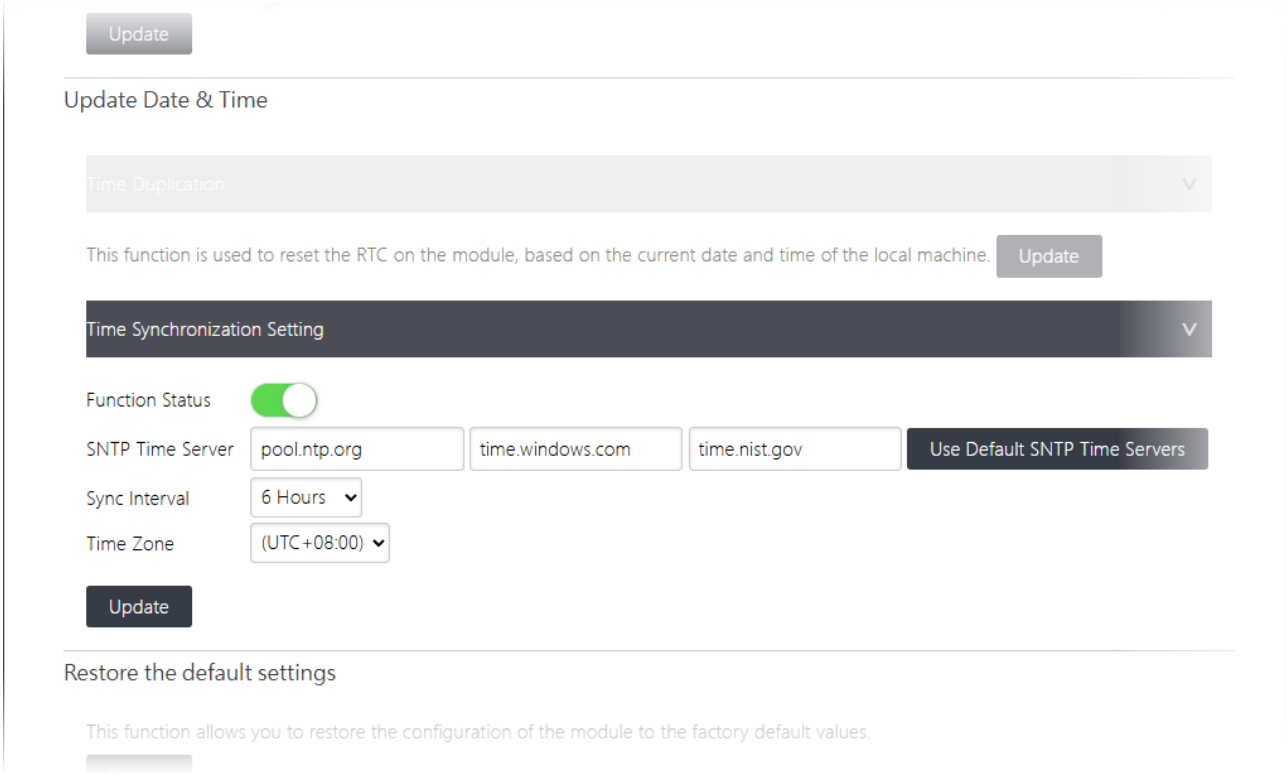
1) In 「DI Trigger Message」section, assign a message number (e.g., Message #101) to be displayed when DI0 and/or DI1 is triggered.

2) Click 「Update」button to apply the setting.



3.5.4.8. Adjusting the System Date and Time

iKAN supports two methods for setting the system time: manual configuration or automatic synchronization using an SNTP server. Accurate system time ensures reliable timestamping and consistent message scheduling.



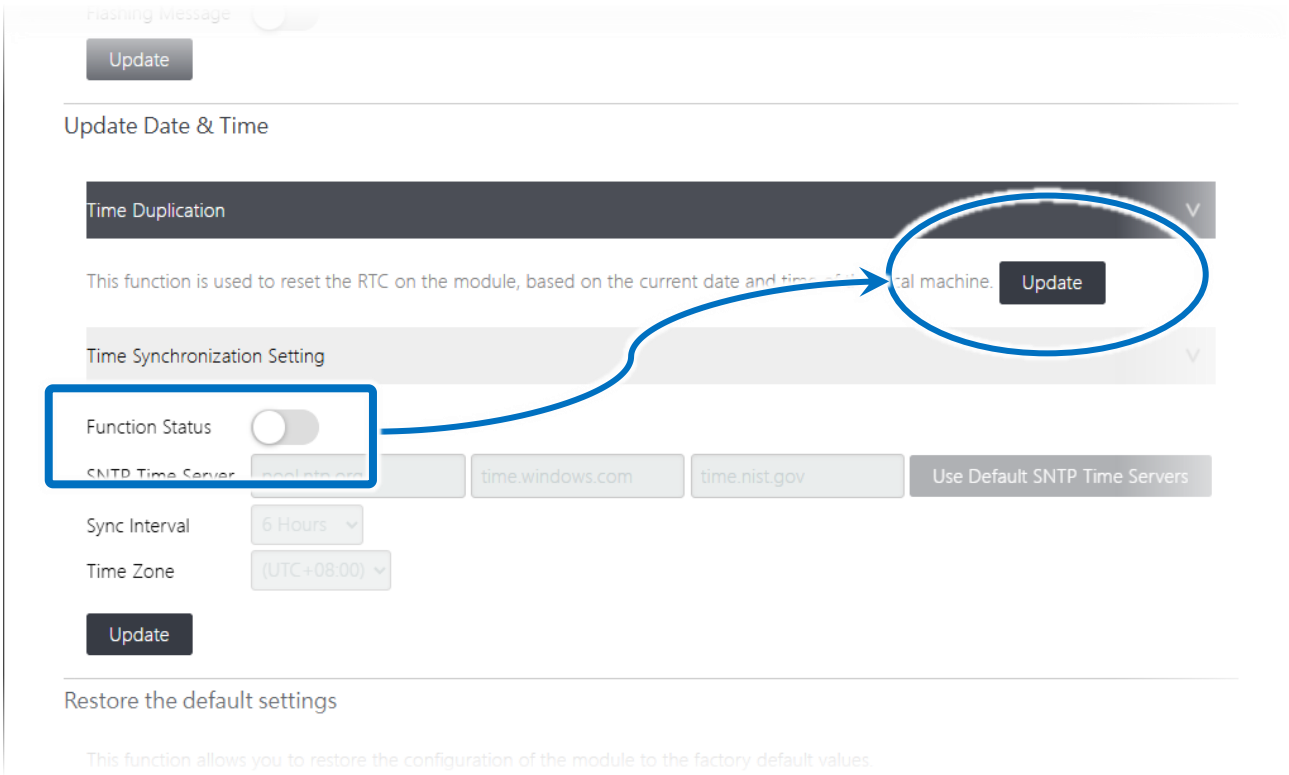
3.5.4.8.1. Manually Input the System Time

If network time synchronization is not available in the operating environment, this section provides a method for manual time correction. Users can directly synchronize the iKAN's time with the host system time. This method is suitable for offline environments or when no NTP server is deployed.

Steps

1) In 「Update Date & Time」 section, disable 「Function Status」 option.

2) In 「Time Duplication」 field, click 「Update」 button to synchronize the host system time to the iKAN.



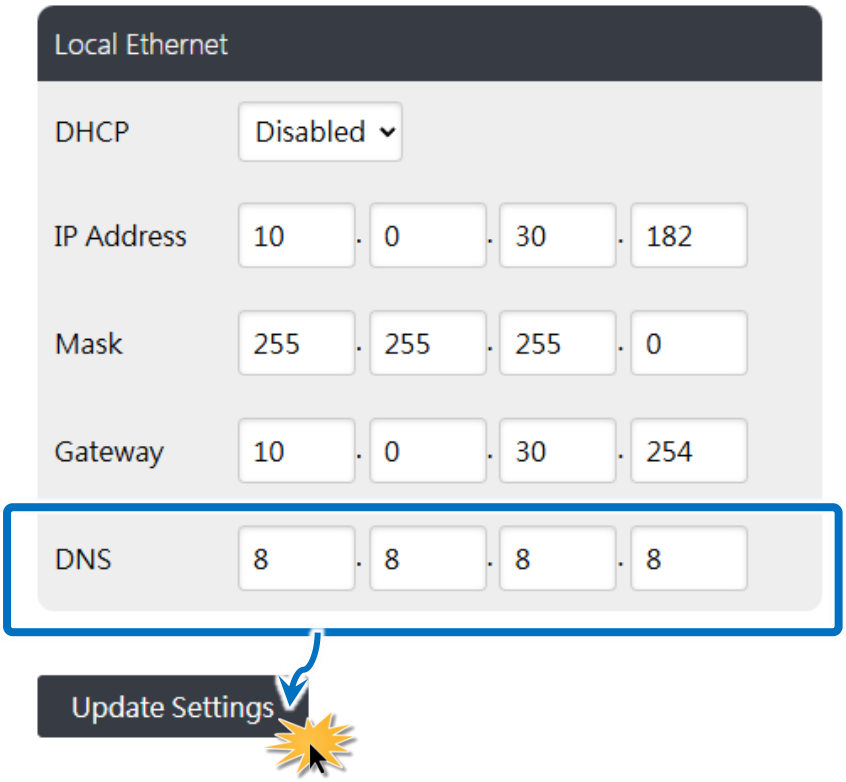
3.5.4.8.2. Configuring Network Time Sychronization

This function allows user to enable SNTP (Simple Network Time Protocol) to automatically synchronize the system time of the iKAN. By configuring the NTP server and time zone settings, the device can maintain accurate time, preventing display or event log discrepancies caused by time drift. Ensure the DNS server is configured before enabling NTP.

Steps

1) Go to「Ethernet」subpage and set the DNS server under「Local Ethernet」section

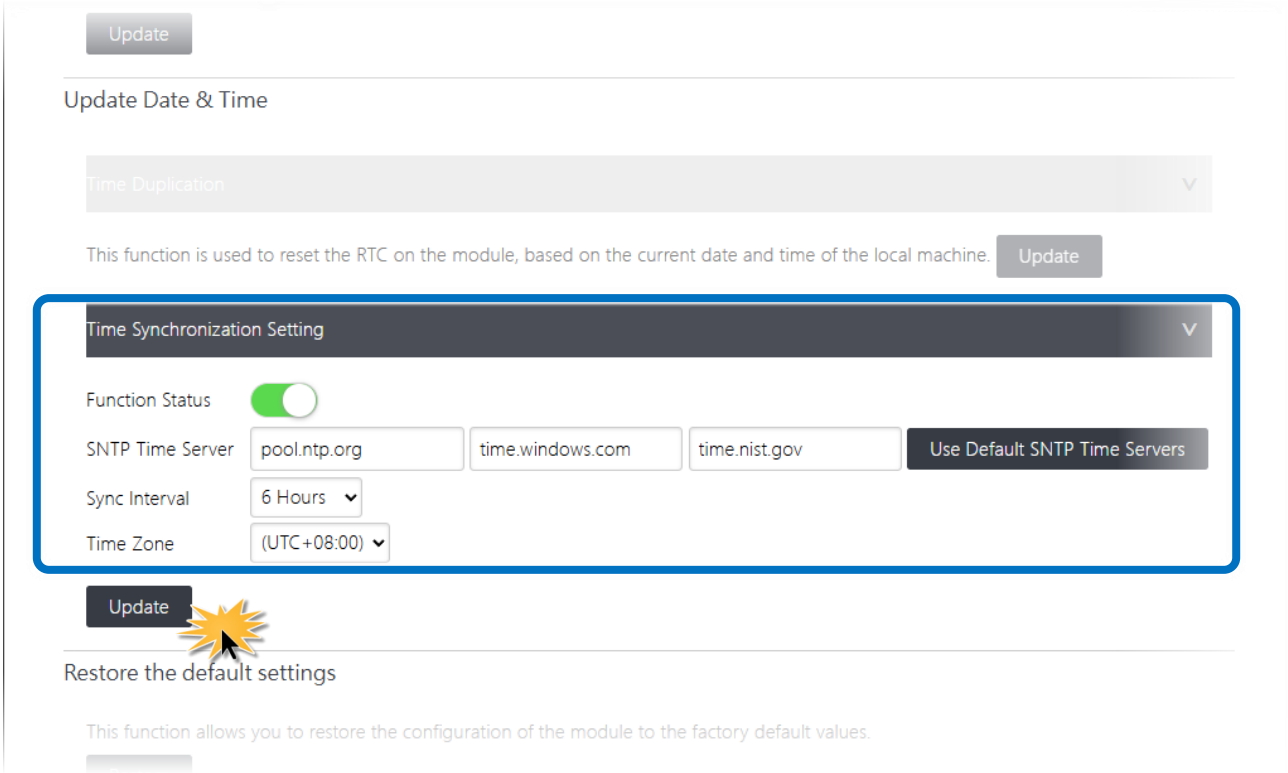
2) Click「Update Settings」button to apply the DNS configuration.



3) Return to「Misc」subpage and enable「Function Status」option under 「Update Date & Time」 section

4) Configure the parameters:「SNTP Time Server」,「Sync Interval」and「Time Zone」

5) Click「Update」button to apply the setting.

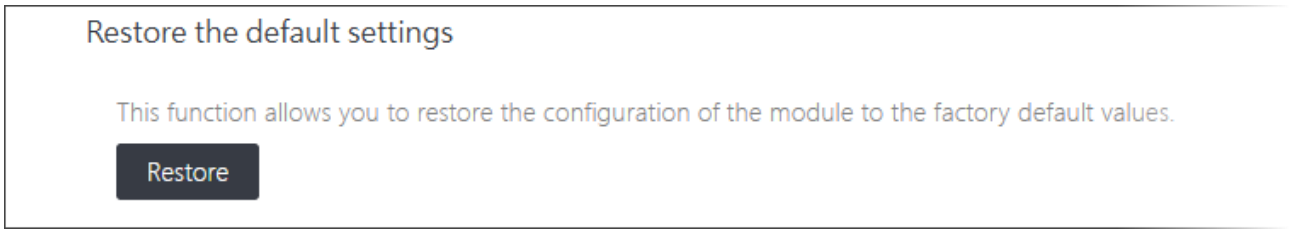


3.5.4.9. Restore the Default Settings

This option resets all message pool, data pool, and DL/CL module settings to factory defaults, useful during redeployment or when troubleshooting configuration errors.

Steps

In「Restore the default settings」section, click「Restore」button to restore the configuration to factory default values.



3.5.4.10. Software Reset

Initiates a software-based system reboot via the web interface without requiring physical power cycling, useful for remote maintenance and updates.

Steps

In「Software Reset」section, click「Reset」button to reset the display.

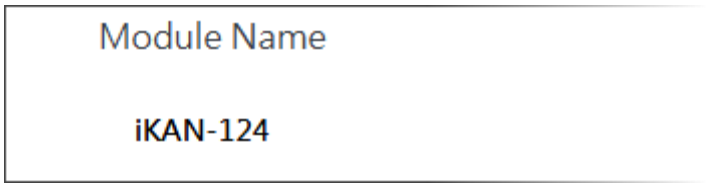


3.5.4.11. Module Name

Allow user to view the module name for module identification and multi-device management.

Steps

Locate the「Module Name」section to view the module name.



3.5.4.12. Firmware Version

Displays the firmware version installed on the iKAN device, useful for version tracking and upgrade planning.

Steps

Locate the「Firmware Version」section to view the current firmware version.

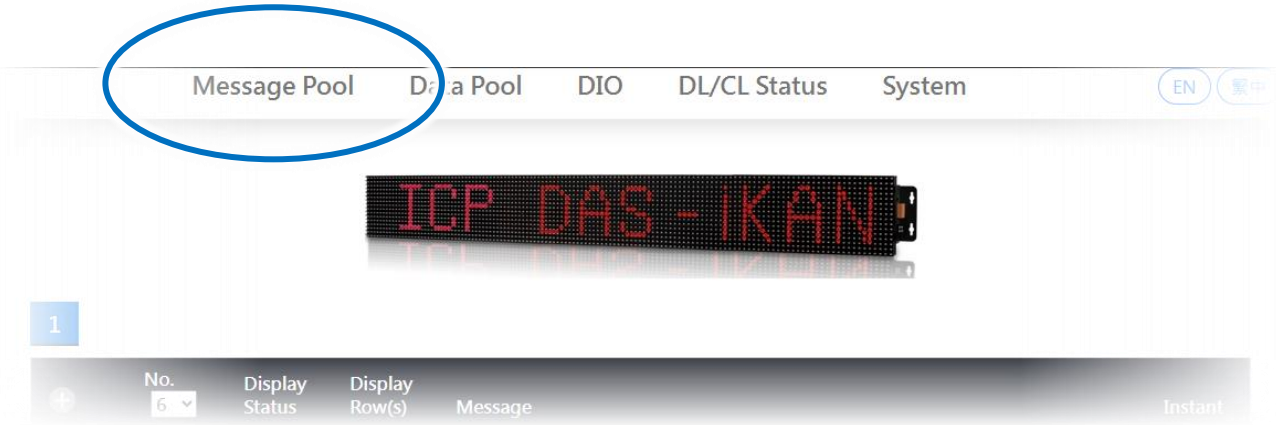


4. Message Management

This chapter describes how to manage display messages on the iKAN series LED displays. Users can add, edit, or delete messages via the web interface, and configure features such as interrupt display, scrolling, color selection, and variable insertion. Each device supports up to 128 messages, making it suitable for a wide range of industrial and public display applications.

4.1. Managing Messages

The「Message Pool」page is the main interface for managing messages. It allows users to configure message content, display format, fonts, and priority, and to enable interrupt messages. All changes will be applied and shown on the iKAN in real time.



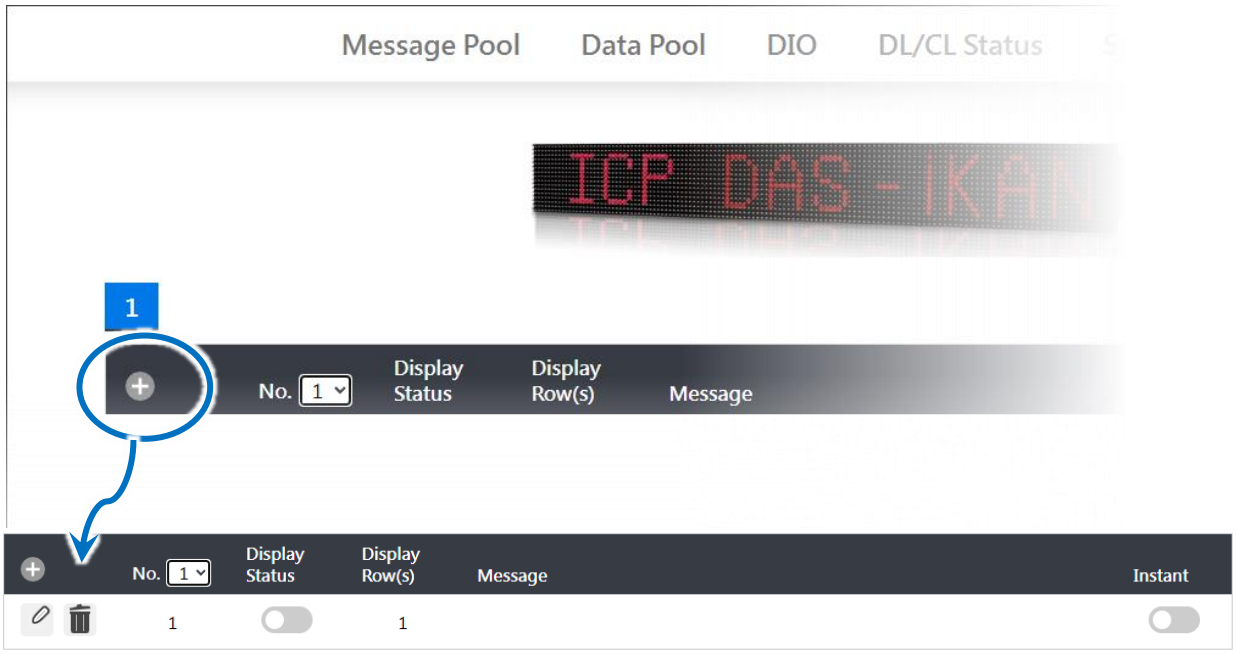
This chapter explains how to manage messages using the「Message Pool」 page, including adding, editing, and deleting messages. It also introduces how to configure interrupt behavior and relevant considerations.

4.1.1. Adding a Message

Users can add a new blank message from the Message Pool interface to later input message content and configure advanced settings.

Steps

Click「Add Message icon (⊕)」, and then a blank message will appear in the list.



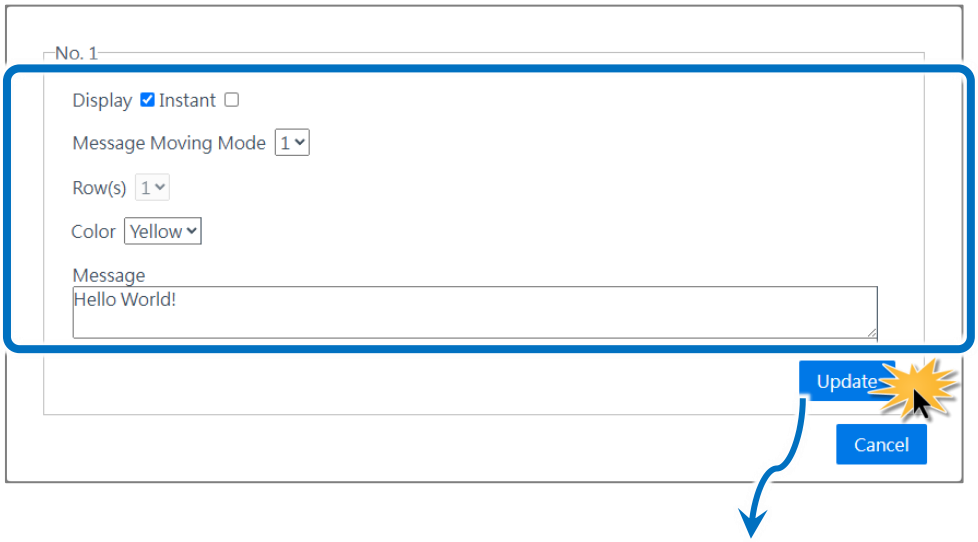
4.1.2. Editing and Interrupting a Messages

Each message can be configured with display status, interrupt property, scrolling mode, number of display lines, and color. Interrupt messages are used for urgent notifications and will override regular messages during display.

Steps

1) Click「Edit Message icon (✎)」next to a message that you want to edit.

2) Set the message parameters. After completing the setup, click「Uptate」button to activate the changes.



The message will be shown immediately on the iKAN display.



Message Parameters

The table below describes the configurable fields for message parameters.

Parameter	Description
Display	Enable interrupt mode. Interrupt messages take display priority.
Instant	Enable interrupt mode. Interrupt messages take display priority.
Message Moving Mode	Message scroll mode, with 4 available settings: 0: Static (no movement). 1: Static if short; scroll left if too long for one line. 2: First row static, second row scrolls (2-row models only). 3: Auto line break into second row if message is too long (2-row models only).
Row(S)	Define whether to use single-line or two-line display.
Color	Message color: Red, Green, Yellow, Blue, Purple, Cyan, White, or Random.
Message	The actual content to display; can be static text or include variables.

Tips & Warnings

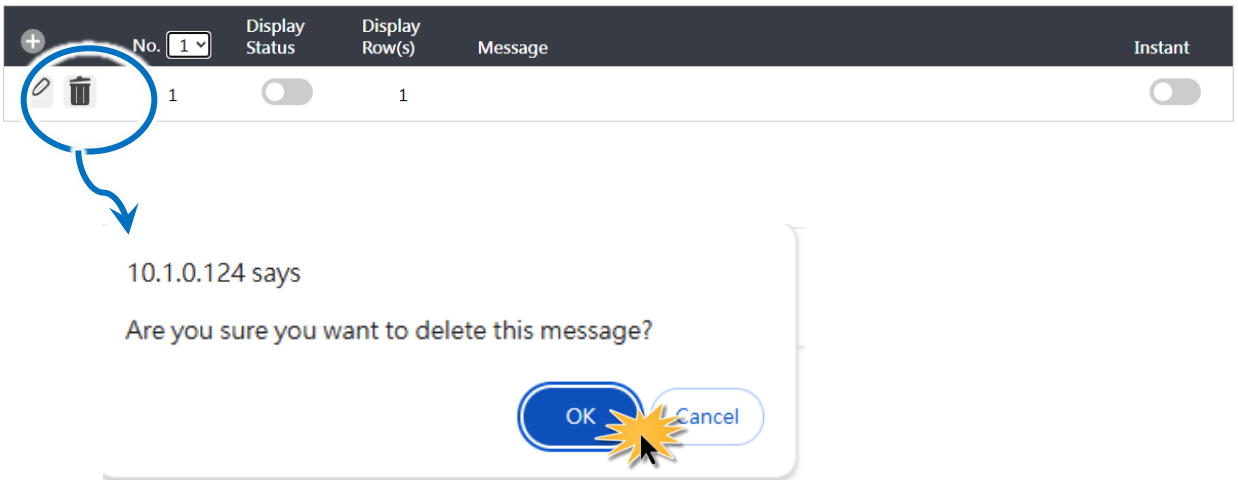
Messages with interrupt mode enabled will override normal messages during their display period. All standard messages will be paused until the interrupt message ends or is disabled.

4.1.3. Deleting a Message

Remove unnecessary messages from the message pool.

Steps

Click「Delete Message icon ( )」next to a message that you want to delete, and then confirm the action by clicking「OK」button in the pop-up window.



4.2. Embedded Variable in Messages

The iKAN series LED displays support a variety of embedded variable formats. Users can insert variables into messages to display real-time status data from PLCs, DL modules, or the system itself. Each variable follows a fixed syntax and maps to a specific Modbus register address. This section outlines the general format and categories of variables. Detailed usage will be covered in subsequent sections.

General Variable Syntax

The iKAN supports multiple variable types for message embedding. Most variables (e.g., signed %iXXX, unsigned %uXXX, float %fXXX, Boolean %bXXX, and system %yXXX) use a fixed 5-character format.

Start Symbol	Variable Type	3-Digit Decimal Number
%	y: System	XXX (3-digit decimal number mapping to Modbus address)
	u: Unsigned Integer (0 ~ 65535)	
	i: Signed Integer (-32768 ~ 32767)	
	f: Floating-point (±3.4E+38)	
	b: Boolean (Coil)	

For a complete list of Modbus addresses, data types, lengths, and descriptions used for all supported variables, please refer to the Appendix A. Modbus Register Address Map.

String Variable Syntax

String variables follow a different pattern using an index rather than a 3-digit address.

Start Symbol	Variable Type	String Number
%	a: ASCII string	0 ~ 7, 8 independent ASCII strings (2 chars per reg.)
	n	0, single group only

DL/CL Monitoring Module Variables

The iKAN series displays support real-time data display from DL/CL environmental monitoring modules. These values can be directly embedded in display messages as variables, without requiring a PLC or external controller. Users can reference the mapping table and embed %yXXX codes into display messages.

4.2.1. System Variables

System variables provide internal device information such as IP address and time. These values are automatically updated by the system without the need for external input.

Syntax Format

```
%yXXX
```

XXX is a 3-digit decimal number mapping to Modbus address 30000–30020.

Common Modbus Address Mapping

The following table lists commonly used Modbus addresses for system variables such as IP address and time, which can be directly embedded in messages.

Modbus Address	Length	Description	Range
30000–30003	4	IP Address	0 ~ 255
30004–30007	4	Subnet Mask	0 ~ 255
30008–30011	4	Gateway Address	0 ~ 255
30012	1	Year	0 ~ 9999
30013	1	Month	1 ~ 12
30014	1	Day	1 ~ 31
30015	1	Day of Week (abbr. ENG, 0 = SUN)	0 ~ 6
30016	1	Day of Week (ENG, 0 = Sunday)	0 ~ 6
30017	1	Day of Week (TW, 0 = 日)	0 ~ 6
30018	1	Hour	0 ~ 23
30019	1	Minute	0 ~ 59
30020	1	Second	0 ~ 59

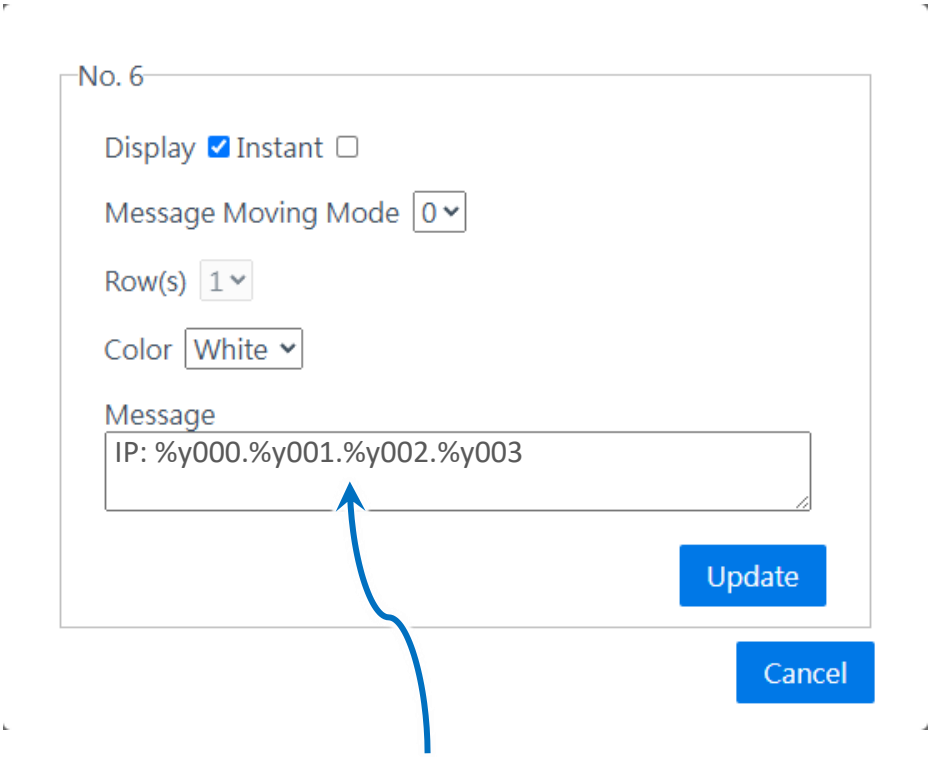
For a complete list of Modbus addresses, data types, lengths, and descriptions used for all supported variables, please refer to the Appendix A. Modbus Register Address Map.

Example 1

Display the IP address.

Message

In 「Message Pool」 page, set the message content in 「Message」 field. The message parameters are set as follows:




```
IP: %y000.%y001.%y002.%y003
```

Display Result

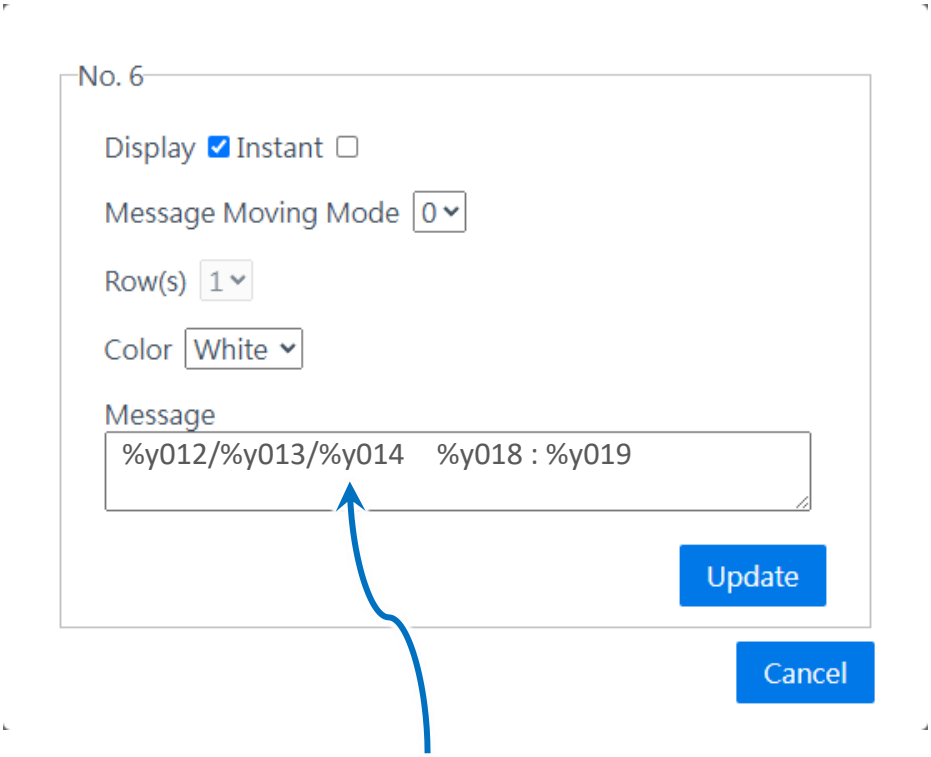


Example 2

Display the date and time.

Message

In 「Message Pool」 page, set the message content in 「Message」 field. The message parameters are set as follows:




```
%y012/%y013/%y014  %y018 : %y019
```

Display Result



4.2.2. Integer Variables

The iKAN supports 64 integer variable registers, available in both signed and unsigned formats. These values can be written by a PLC or PC via Modbus RTU/TCP, and are suitable for displaying live values such as voltage, temperature, or flow.

Syntax Format

Integer variables are categorized into signed and unsigned formats, each with a distinct data range.

- **The range of a signed integer variable is 0 ~ 65535**

```
%iXXX
```

- **The range of an unsigned integer variable is -32768 ~ 32767**

```
%uXXX
```

XXX is a 3-digit decimal number mapping to Modbus address 40000–40063.

Modbus Address Mapping

The table below shows the Modbus register range assigned for integer variables, along with the corresponding syntax identifiers for implementation reference.

Modbus Address	Length	Description	Range
40000–40063	64	Integer Variables	–32768 ~ +32767 (Signed Integer) 0 ~ 65535 (Unsigned Interger)

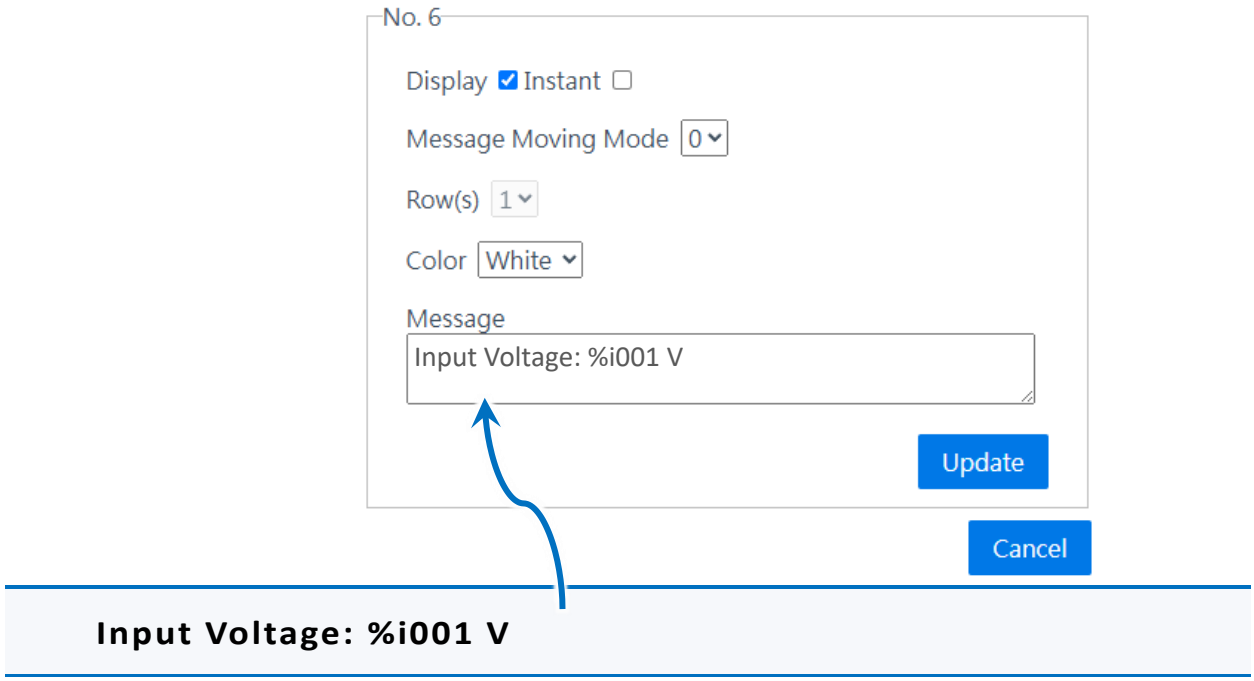
For a complete list of Modbus addresses, data types, lengths, and descriptions used for all supported variables, please refer to the Appendix A. Modbus Register Address Map.

Example

Display an integer value written from the PC/PLC.

Message

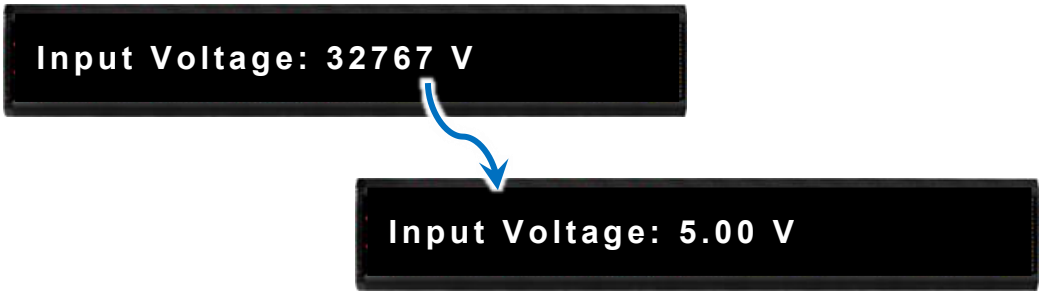
In 「Message Pool」 page, set the message content in 「Message」 field. The message parameters are set as follows:



Display Result



For more information on how to scale or convert this raw value into a physical unit (e.g., “32767” representing “5.00 V”), please refer to section 5.1. Mapping Integer Values to Engineering Units.



4.2.3. Floating-point Variables

iKAN provides 64 floating-point registers for displaying precise values such as pressure, concentration, or humidity. Each variable uses two consecutive Modbus registers.

Syntax Format

Each floating value occupies two registers

```
%fXXX
```

XXX is a 3-digit decimal number mapping to Modbus address 40128–40255.

Modbus Address Mapping

Each floating point variable occupies two consecutive Modbus registers. Therefore, there is a spacing of 2 between variable indices. For example, `%f000` corresponds to registers 40128 and 40129, while `%f001` maps to 40130 and 40131.

The table below shows the Modbus register range assigned for floating-point variables, along with the corresponding syntax identifiers for implementation reference.

Modbus Address	Length	Description	Range
40128–40255	64	Floating-point Variables	-3.4E+38 ~ +3.4E+38

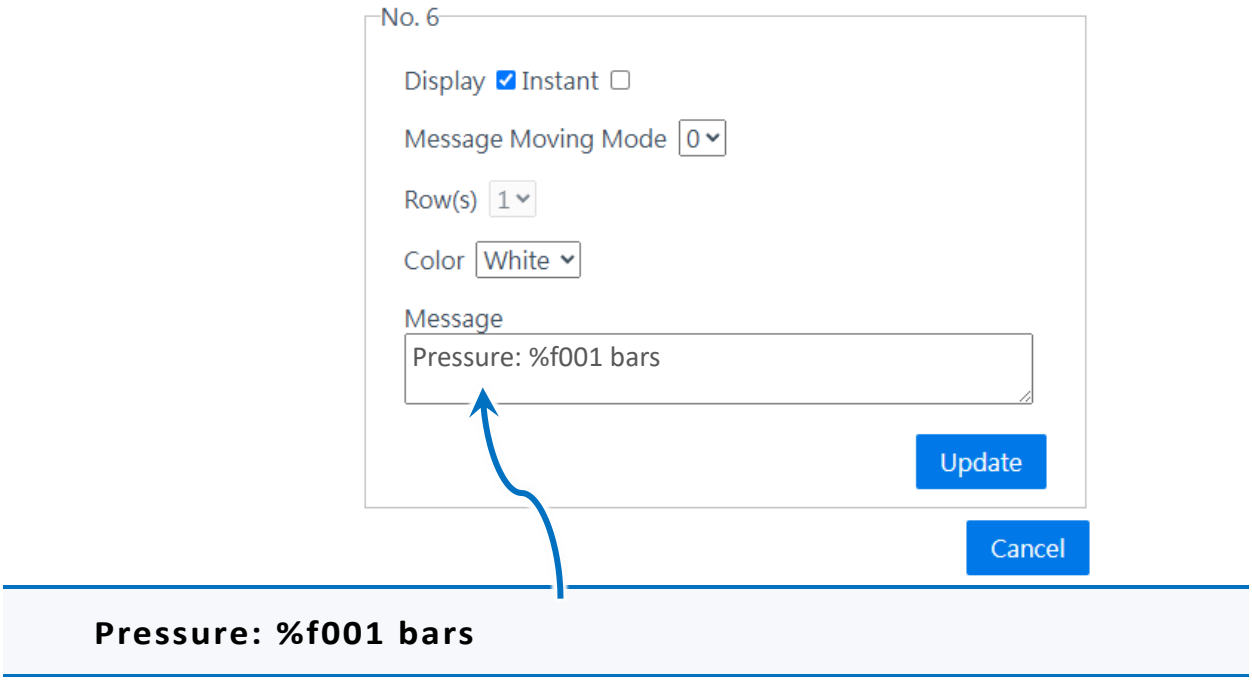
For a complete list of Modbus addresses, data types, lengths, and descriptions used for all supported variables, please refer to the Appendix A. Modbus Register Address Map.

Example

Display a floating-point value written from the PC/PLC.

Message

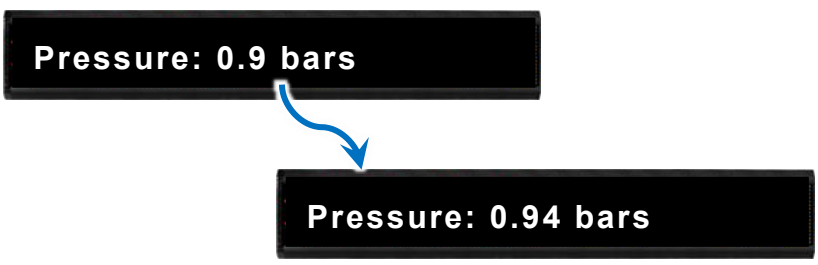
In 「Message Pool」 page, set the message content in 「Message」 field. The message parameters are set as follows:



Display Result



For more information on how to adjust decimal formatting, please refer to section 5.2.Setting Decimal Places for Float Variables.



4.2.4. Boolean Variables

Boolean (Coil) variables are used to display binary device statuses, such as Start/Stop or ON/OFF. These values can be written via Modbus from a PLC or PC and displayed in real-time on the message screen.

Syntax Format

```
%bXXX
```

XXX is a 3-digit decimal number mapping to Modbus address 00000–00039.

Modbus Address Mapping

The table below lists the Modbus register range assigned for Boolean variables for implementation reference.

Modbus Address	Length	Description	Range
00000–00039	40	Coil Variables	0/1

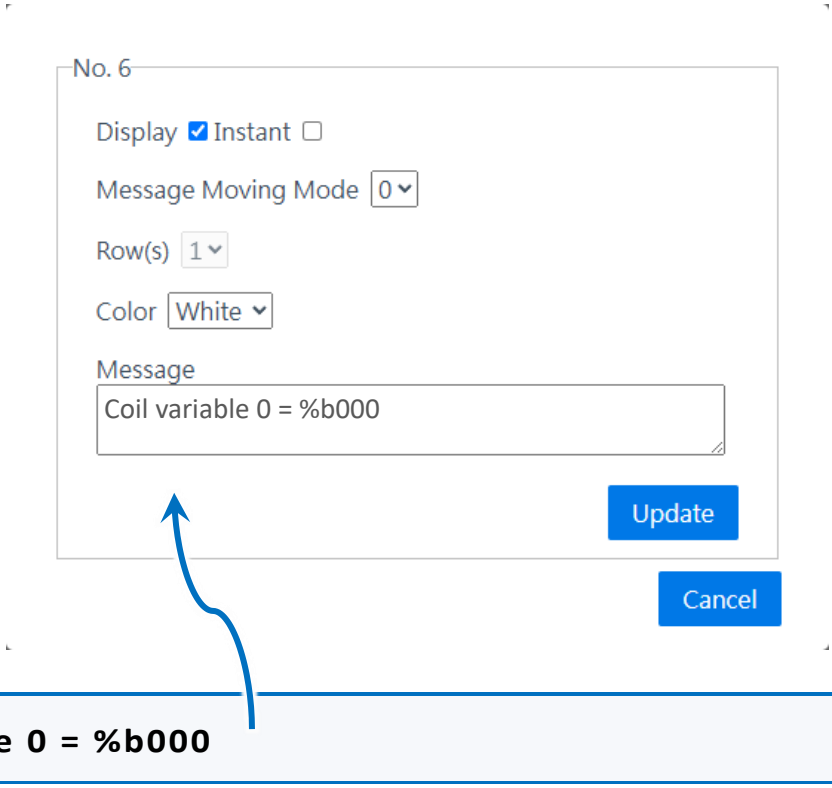
For a complete list of Modbus addresses, data types, lengths, and descriptions used for all supported variables, please refer to the Appendix A. Modbus Register Address Map.

Example

Display a Boolean value written from the PC/PLC.

Message

In 「Message Pool」 page, set the message content in 「Message」 field. The message parameters are set as follows:

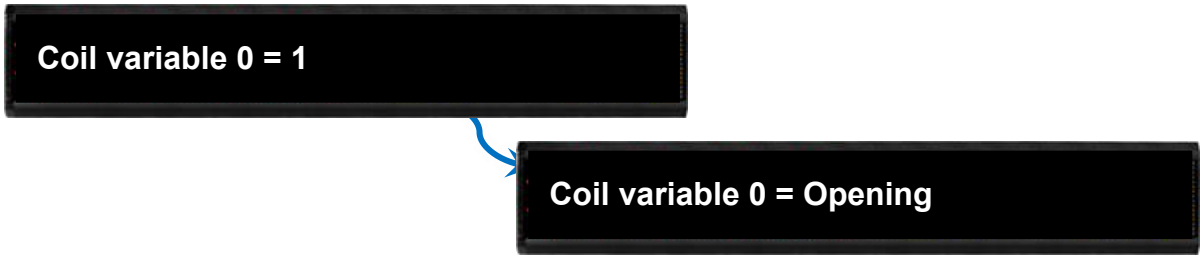


Coil variable 0 = %b000

Display Result



For more information on how to map boolean values to text (e.g., 1 = "Running", 0 = "Stopped"), please refer to section 5.3.Mapping Boolean (Coil) Values to Custom Text.



4.2.5. ASCII String

iKAN offers multiple string buffers that can be updated in real time via Modbus communication. ASCII strings are typically used for displaying station names, status messages, and alerts.

Syntax Format

```
%aX
```

X is the string index from 0 to 7. Each string buffer supports up to 64 characters for display.

Modbus Address Mapping

Each register holds 2 ASCII characters. A full 64-character string occupies 32 Modbus registers. The table below shows the Modbus register range assigned for ASCII string variables, along with the corresponding syntax identifiers for implementation reference.

Modbus Address	Length	Description	Range
41800–41831	32	ASCII string 0	ASCII
41832–41863	32	ASCII string 1	ASCII
41864–41895	32	ASCII string 2	ASCII
41896–41927	32	ASCII string 3	ASCII
41928–41959	32	ASCII string 4	ASCII
41960–41991	32	ASCII string 5	ASCII
41992–42023	32	ASCII string 6	ASCII
42024–42055	32	ASCII string 7	ASCII

For a complete list of Modbus addresses, data types, lengths, and descriptions used for all supported variables, please refer to the Appendix A. Modbus Register Address Map.

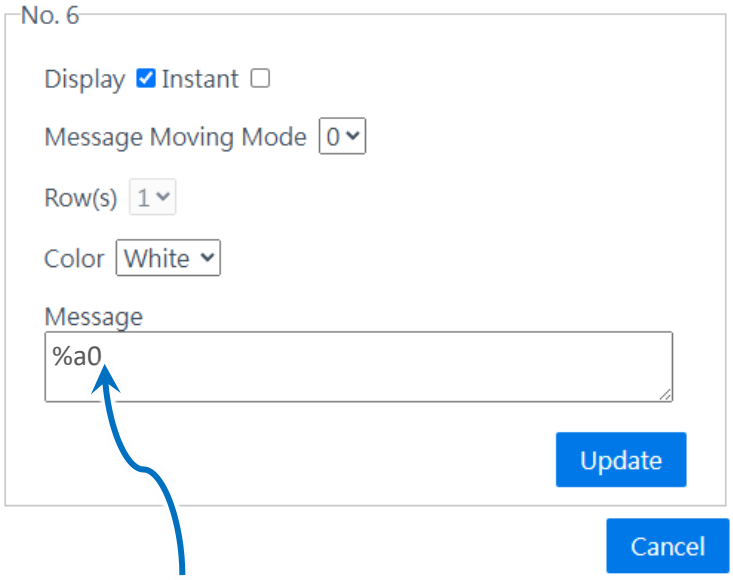
Example

Display an ASCII string written from the PC/PLC. The figure below shows a PC or PLC sending ASCII character values to the ASCII string 0 register via the Modbus RTU/TCP protocol.

	01800	01810	01820	01830
0	1800 = (AS) 0x4153	1810 = (??) 0x0000	1820 = (??) 0x0000	1830 = (??) 0x0000
1	1801 = (CI) 0x4349	1811 = (??) 0x0000	1821 = (??) 0x0000	1831 = (??) 0x0000
2	1802 = (I) 0x4920	1812 = (??) 0x0000	1822 = (??) 0x0000	
3	1803 = (st) 0x7374	1813 = (??) 0x0000	1823 = (??) 0x0000	
4	1804 = (ri) 0x7269	1814 = (??) 0x0000	1824 = (??) 0x0000	
5	1805 = (ng) 0x6E67	1815 = (??) 0x0000	1825 = (??) 0x0000	
6	1806 = (?!) 0x0021	1816 = (??) 0x0000	1826 = (??) 0x0000	
7	1807 = (??) 0x0000	1817 = (??) 0x0000	1827 = (??) 0x0000	
8	1808 = (??) 0x0000	1818 = (??) 0x0000	1828 = (??) 0x0000	
9	1809 = (??) 0x0000	1819 = (??) 0x0000	1829 = (??) 0x0000	

Message

In 「Message Pool」 page, set the message content in 「Message」 field. The message parameters are set as follows:



%a0

Display Result



4.2.6. Unicode String

The Unicode supports one buffer of up to 32 Unicode characters. The string content can be written from a PLC or PC to Modbus addresses 43000 to 43031. Unicode strings support languages such as Traditional Chinese, Japanese, and Korean, and can be updated in real time via Modbus communication.

Syntax Format

```
%n0
```

The Unicode string variable is represented by %n0.

Modbus Address Mapping

The table below shows the Modbus register range assigned for the Unicode string variable. Each 16-bit register stores one Unicode character.

Modbus Address	Length	Description	Range
43000–43031	32	Unicode string 0	00A0 ~ FFFF

For a complete list of Modbus addresses, data types, lengths, and descriptions used for all supported variables, please refer to the Appendix A. Modbus Register Address Map.

Character Encoding

In addition to Unicode character codes, iKAN supports specific control codes for setting text color and marking the end of the string.

<table>
<tr><th>Value Range</th><th>Description</th></tr>
<tr><td>0</td><td>End of string marker.</td></tr>
<tr><td>0x0001~ 0x0007</td><td>Color control codes (device model dependent)
<table>
<tr><th>Value</th><th>Small Model</th><th>General Model</th></tr>
<tr><td>1</td><td>Blue</td><td>Red</td></tr>
<tr><td>2</td><td>Green</td><td>Greeb</td></tr>
<tr><td>3</td><td>Cyan</td><td>Yellow</td></tr>
<tr><td>4</td><td>Red</td><td>Blue</td></tr>
<tr><td>5</td><td>Purple</td><td>Purple</td></tr>
<tr><td>6</td><td>Yellow</td><td>Cyan</td></tr>
<tr><td>7</td><td>White</td><td>White</td></tr>
</table></td></tr>
<tr><td>0x0020 ~ 0x007F</td><td>Standard ASCII characters</td></tr>
<tr><td>0x00A0 ~ 0xFFFF</td><td>Full Unicode character set</td></tr>
</table>

Example

The example below shows how to send Unicode character codes and color control values via Modbus to display the Chinese company name “泓格科技” with color formatting.



Modbus Write Sequence

Value	Description
0003	Yellow Text
6CD3	泓
683C	格
0002	Green Text
79D1	科
6280	技
0	End marker

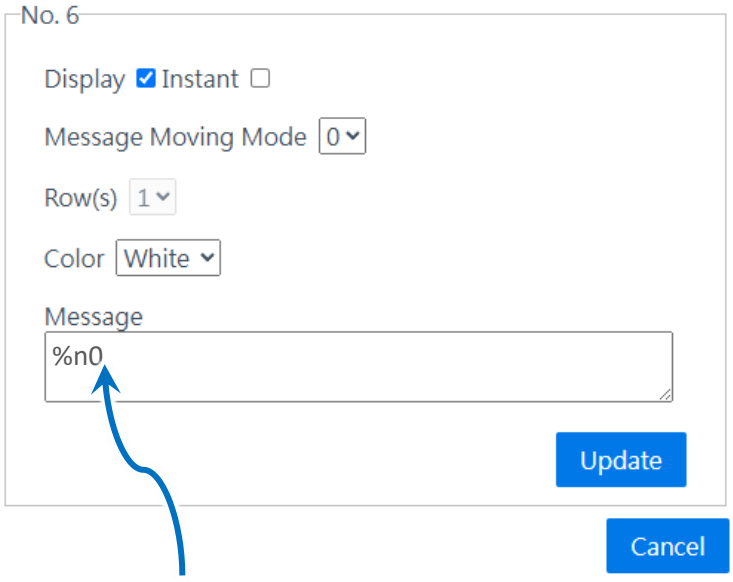
Example

Display a Unicode string written from the PC/PLC. The figure below shows a PC or PLC sending Unicode character values to the Unicode string 0 register via the Modbus RTU/TCP protocol.

	Alias	03000	Alias	03010
0	Set Color	(??) 0x0001	s	(?s) 0x0073
1	U	(?5) 0xFF35	t	(?t) 0x0074
2	n	(?N) 0xFF4E	r	(?r) 0x0072
3	i	(?I) 0xFF49	i	(?i) 0x0069
4	c	(?C) 0xFF43	n	(?n) 0x006E
5	o	(?O) 0xFF4F	g	(?g) 0x0067
6	d	(?D) 0xFF44	Set Color	(??) 0x0004
7	e	(?E) 0xFF45	!	(?!) 0x0021
8		(?) 0x0020	End	(??) 0x0000
9	Set Color	(??) 0x0006		(??) 0x0000

Message

In 「Message Pool」 page, set the message content in 「Message」 field. The message parameters are set as follows:



%n0

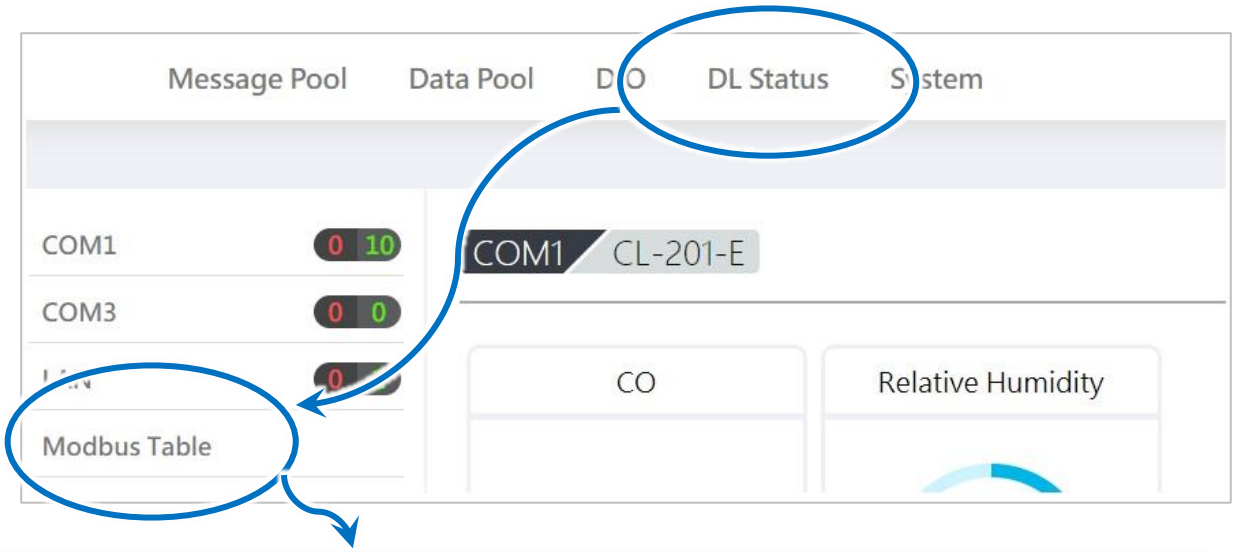
Display Result



4.2.7. DL/CL Real-time Variables

iKAN series LED displays can directly connect to DL/CL environmental sensing modules via Modbus protocol (TCP or RTU), without requiring an intermediary control system.

DL/CL module variables use the %yXXX syntax. The variable codes are automatically mapped by the system to each module parameter's Modbus address. Users simply refer to the mapping table and embed the appropriate code in the message to display real-time values.



Modbus Register Table for DL Value (3xxxx)

Address (Base 0)	Description	Message Pool Symbol
518	CL-202-E(COM1->ID:193)CO2	%y518
519		19
520		20
521	CL-202-E(COM1->ID:193)Temperature (°F)	%y521
	1->ID:193)Dew Point Temp	

Data Description
Module name (Interface -> Modbus ID) Measurement target

Modbus Register Address

Variable Code (%yXXX)

For module connection settings, please refer to chapter 6.DL/CL Modules Management, which provides detailed instructions on supported models, communication interfaces, ID configuration, and connection status verification.

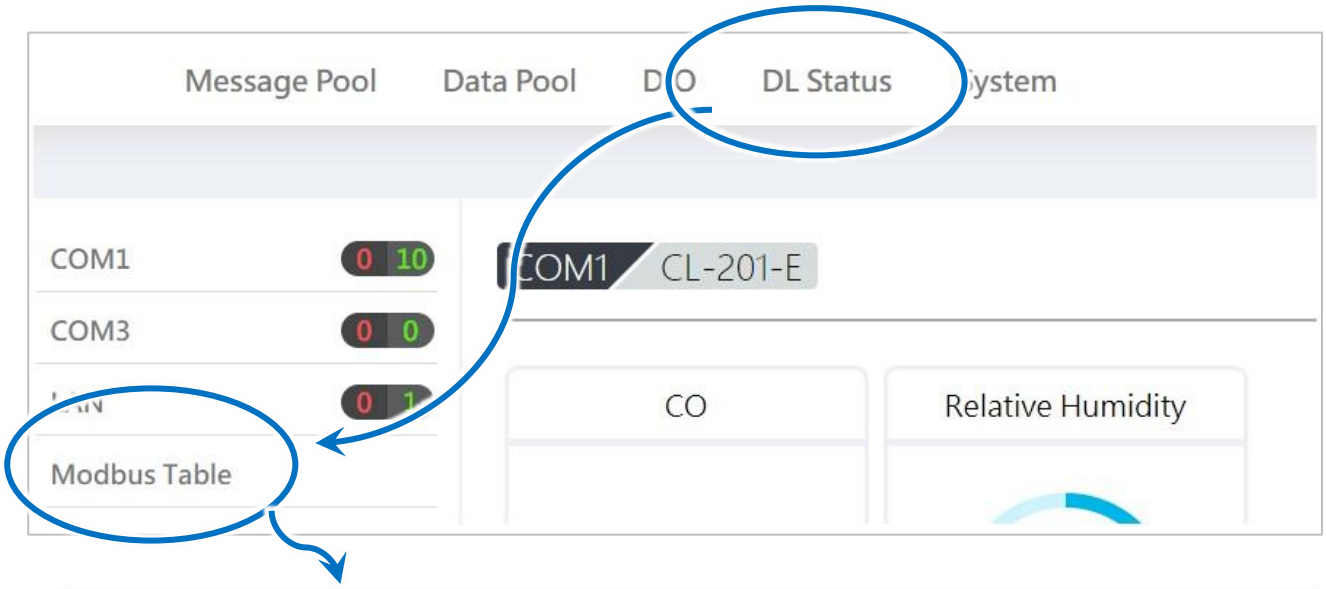
Example

Display the indoor temperature value from a DL-10 module.

Steps

1) Go to 「Modbus Table」 subpage under the 「DL Status」 navigation bar.

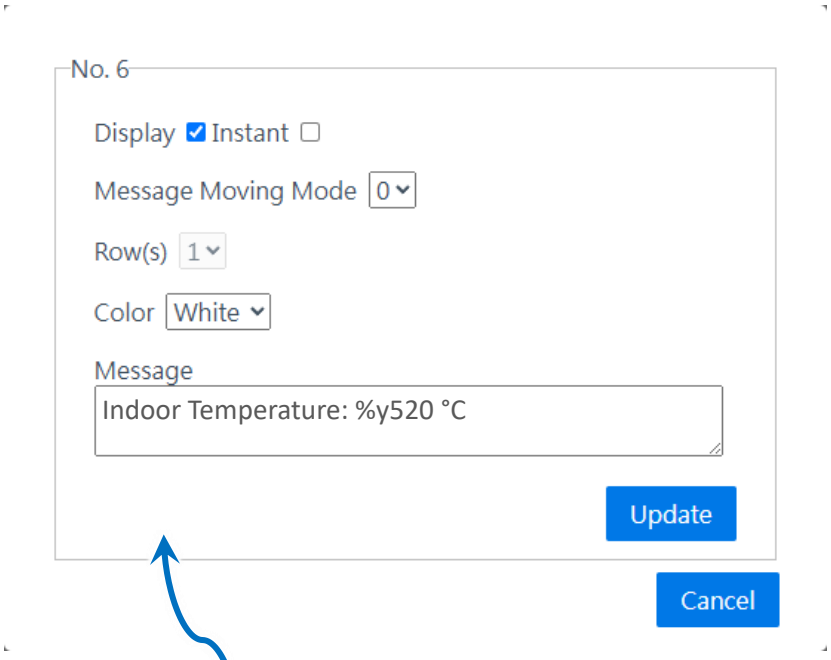
2) Locate the desired temperature value, and note the corresponding variable code

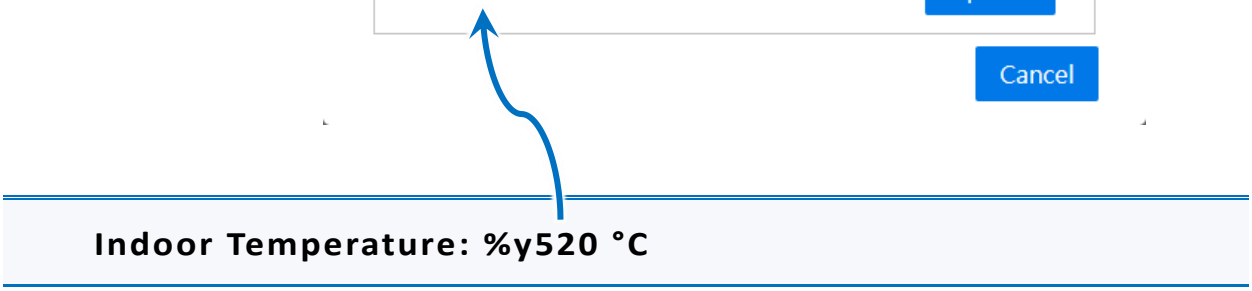


Modbus Register Table for DL Value (3xxxx)

Address (Base 0)	Description	Message Pool Symbol
518	CL-202-E(COM1->ID:193)CO2	%y518
519	CL-202-E(COM1->ID:193)Relative Humidity	%y519
520	CL-202-E(COM1->ID:193)Temperature (°C)	%y520
521	CL-202-E(COM1->ID:193)Temperature (°F)	%y521
522	CL-202-E(COM1->ID:193)Dew Point Temperature	%y522

3)In 「Message Pool」 page, set the message content in 「Message」 field. The message parameters are set as follows:



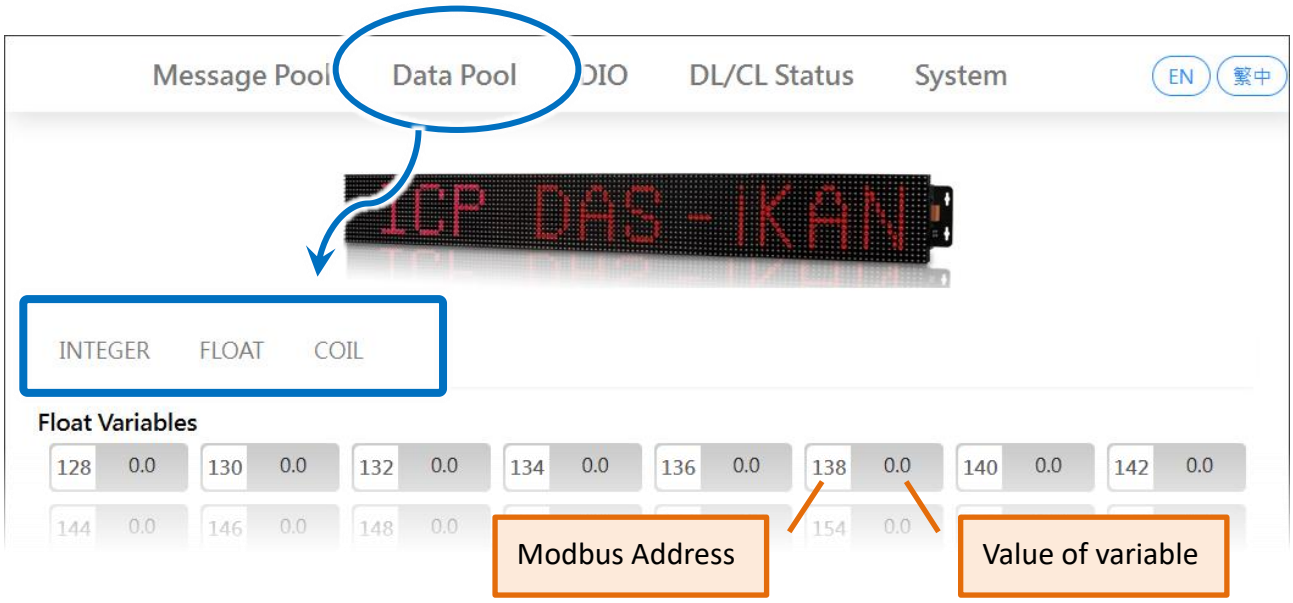


Display Result



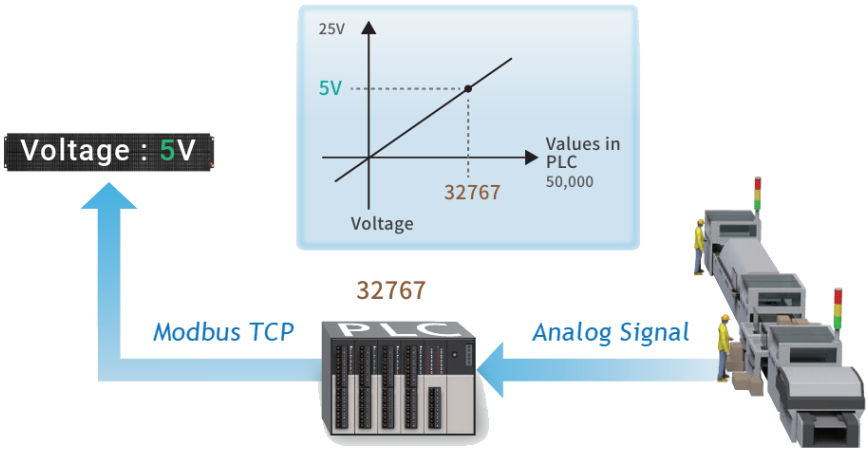
5. Variable Format Management

To enhance readability and flexibility of displayed information, iKAN provides multiple variable formatting functions. Users can configure how integer, float, and coil values appear on screen—such as value scaling, decimal formatting, or custom text replacement. Settings are available on the web-based「Data Pool」 page, with data sourced from PLCs, sensors, or DL/CL modules.

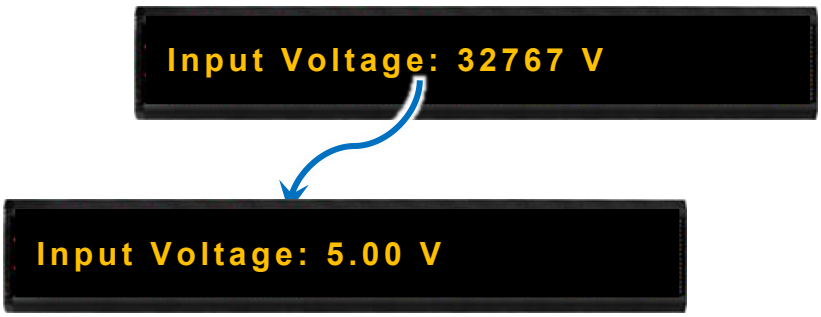


5.1. Mapping Integer Values to Engineering Units

Many devices use 16-bit integers to transmit values like voltage or temperature. iKAN allows conversion of these raw values into meaningful engineering units.



This section is intended to complement the example shown in section 4.2.2 Integer Variables, where the iKAN converts raw integer values into meaningful physical units such as volts (V), temperature (°C), or humidity (%RH).



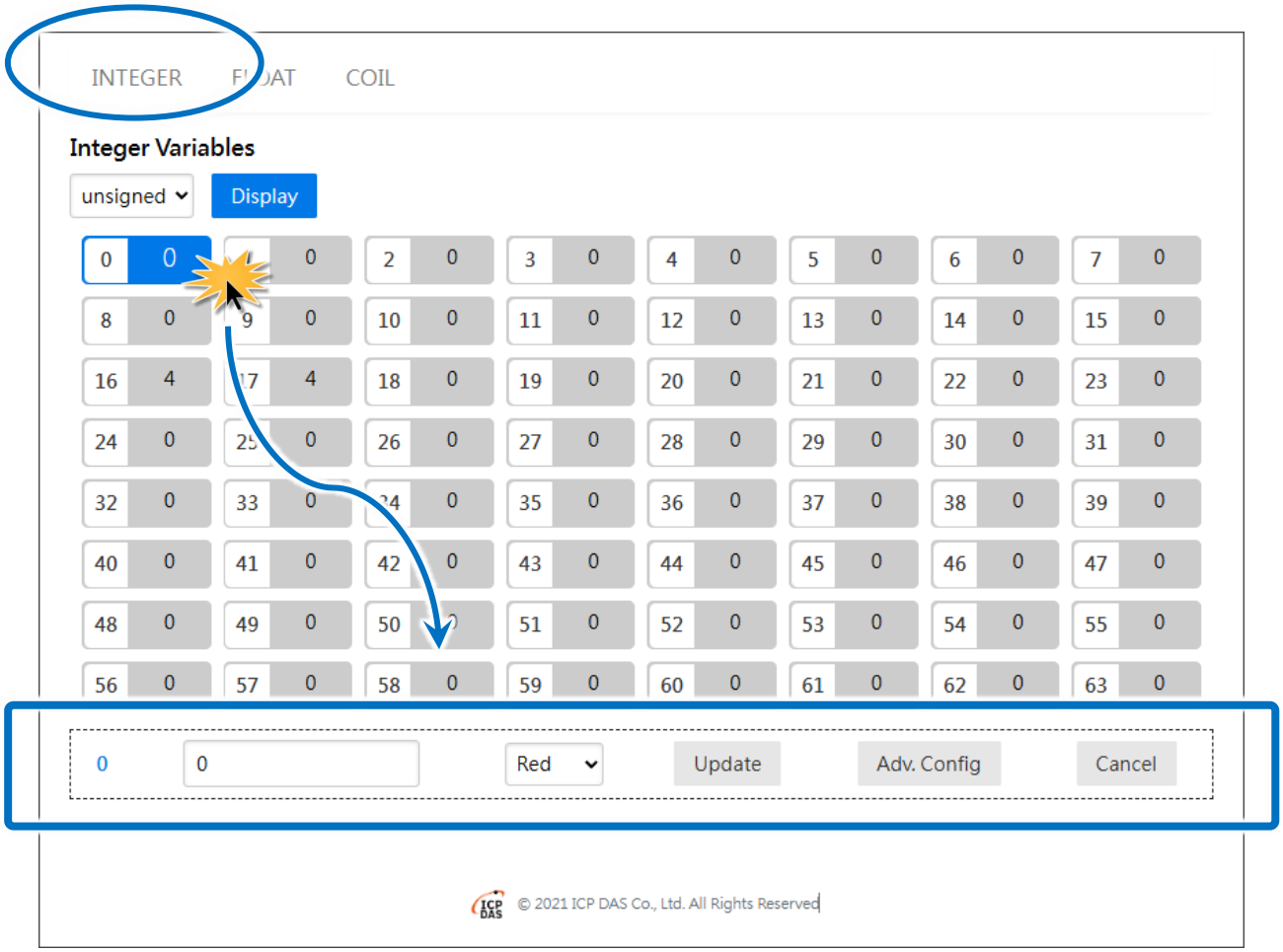
Example

This example, based on Section 4.2.2 Integer Variables, shows how to covert a 16-bit integer value into a physical value.

Steps

1) Click「Integer」subpage, and then select the integer type as needed.

2) Click the「Variable ID」label that you want to edit.



3) A configuration section will appear in the buttom of the interger variable map. Click「Adv. Config」button to enter the advanced settings section.

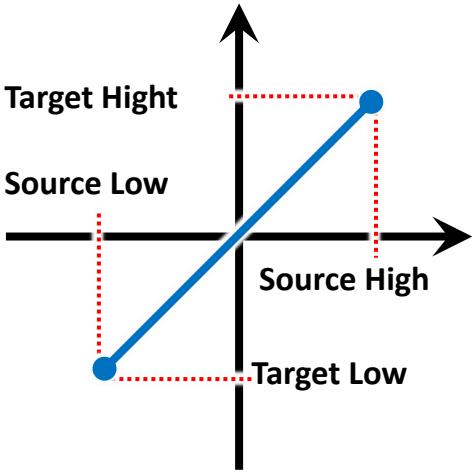


4) In advanced settings section, set the configuration parameters. After completing the setup, click 「Uptate」 button to activate the changes.

The following configuration parameters convert a 16-bit unsigned integer variable with a raw value range from 0 to 65535 into a voltage value range from 0 to 10 V.

No.	Source Low	Source High	Target Low	Target High	Decimal Places	Update	Disable	Cancel
0	0	65535	0	10	2	Update	Disable	Cancel

- Source Low：0
- Source High：65535
- Target Low：0 (e.g., 0 V)
- Target High：10 (e.g., 10 V)
- Decimal Places：2



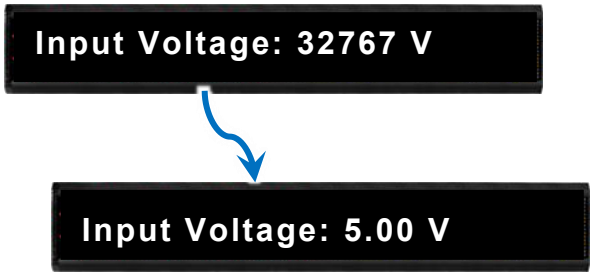
Configuration Parameters

The table below describes the configurable fields for configuration parameters.

Parameters	Description
Source Low	The minimum value of the raw input value (e.g., 0 = 0V).
Source High	The maximum value of the raw input value (e.g., 65535 = 10V).
Target Low	The minimum value of the corresponding physical value (e.g., 0V).
Target High	The corresponding of the corresponding physical value (e.g., 10V).
Decimal Places	The display precision (e.g., 5.00).

Display Result

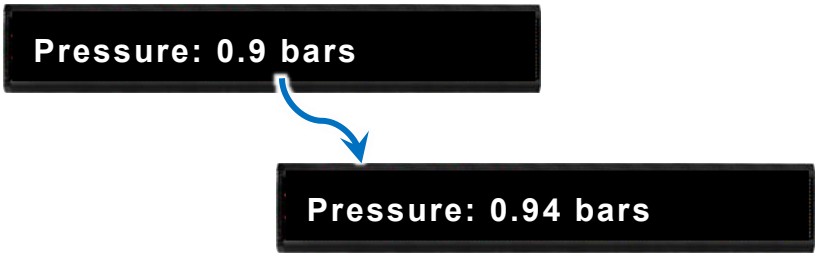
After clicking 「Uptate」 button, the converted physical value will be displayed on iKAN in real time.



5.2. Setting Decimal Places for Float Variables

iKAN supports floating-point variable display with up to **3 decimal places**. Users can set the number of decimals to meet precision requirements.

This section is intended to complement the example shown in section 4.2.3. Floating-point Variables, where the iKAN adjust the display precision of float variables. This is particularly useful for displaying pressure, concentration, or other fine-resolution values.

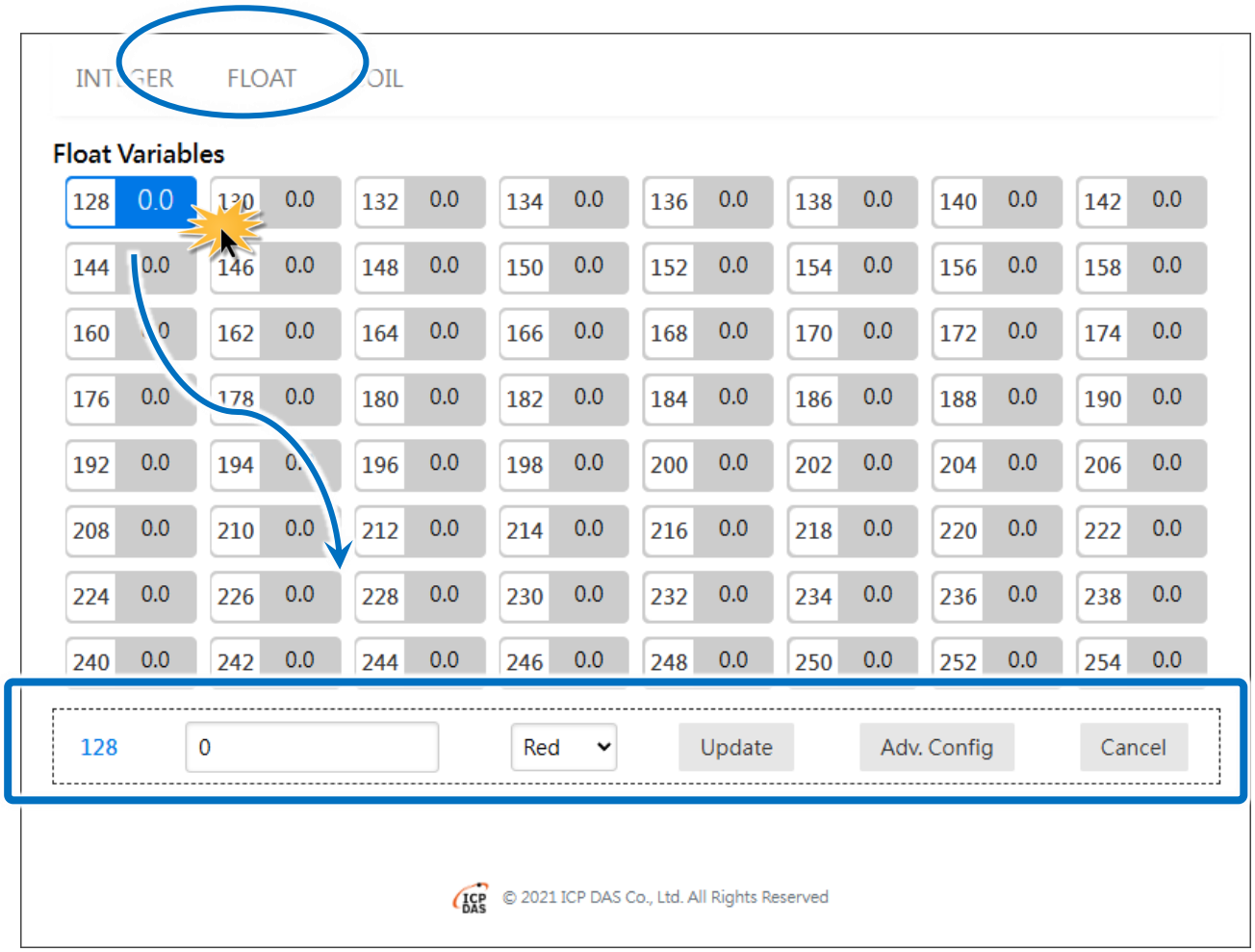


Example

This example, based on Section 4.2.3, shows how to adjust the display precision of float variables from 1 to 2 decimal places.

Steps

1) Click「FLOAT」subpage, and thenlick the「Variable ID」label that you want to edit.



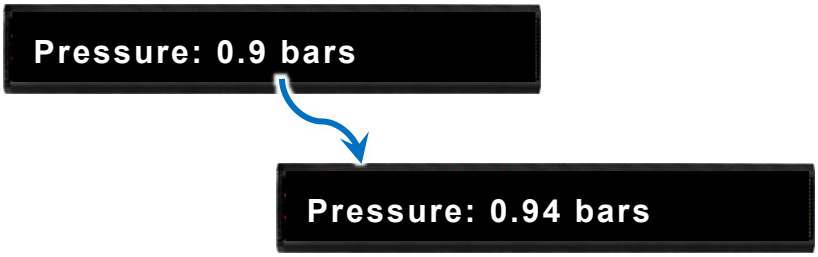
3) A configuration section will appear in the bottom of the interger variable map. Click「Adv. Config」button to enter the advanced settings section.



4) In advanced settings section, select 2 from the「Decimal Places」. After completing the setup, click「Uptate」button to activate the changes.

No.	Decimal Places	Update	Cancel
128	2	Update	Cancel

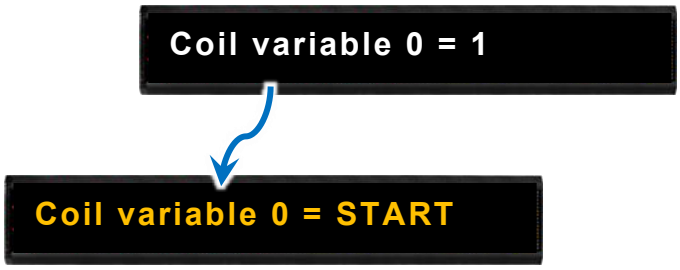
Display Result



5.3. Mapping Boolean (Coil) Values to Custom Text

Boolean variables typically represent binary statuses such as on/off or error states. This function allows users to define custom text for values 0 and 1, such as "STOP/START" or "OFF/ON", enhancing message clarity.

This section is intended to complement the example shown in section 4.2.4. Boolean Variables, where the iKAN map Boolean (Coil) values (0 or 1) to custom text. This is particularly useful for for improved message clarity and user-friendliness..

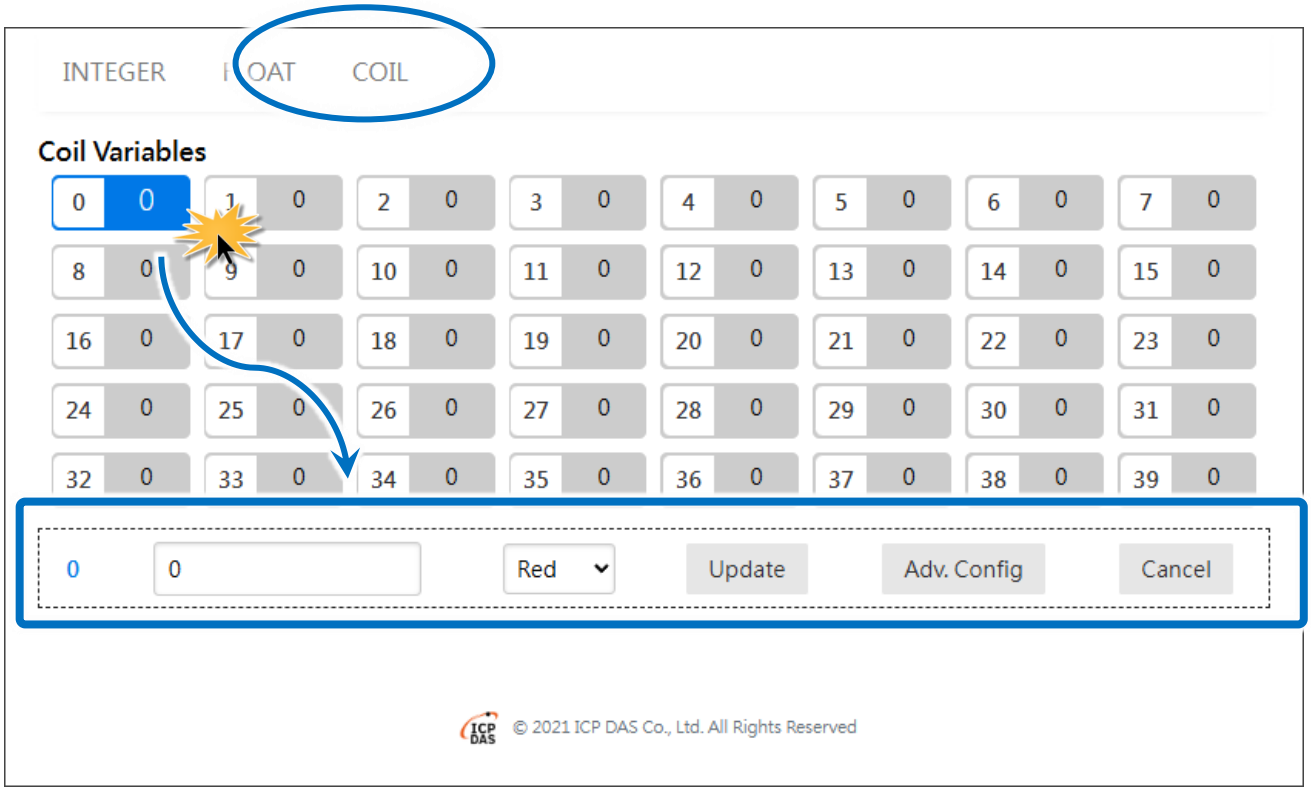


Example

This example, based on Section 4.2.3, shows how to map Boolean (Coil) values (0 or 1) to custom text – START and OFF.

Steps

1) Click「COIL」subpage, and thenlick the「Variable ID」label that you want to edit.



3) A configuration section will appear in the buttom of the interger variable map. Click「Adv. Config」button to enter the advanced settings section.



4) In advanced settings section, set the custom display texts as follows:

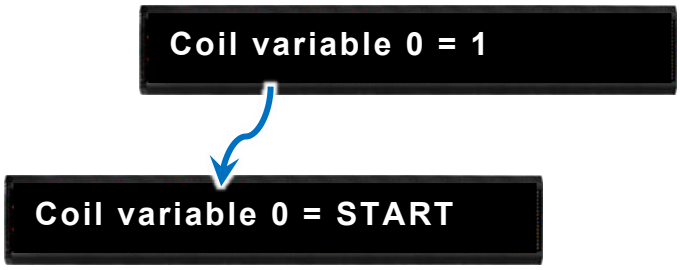
ON Text: START

OFF Text: OFF

No.	ON Text	OFF Text	Update	Cancel
0	START	OFF	Update	Cancel

5) Click「Uptate」button to activate the changes.

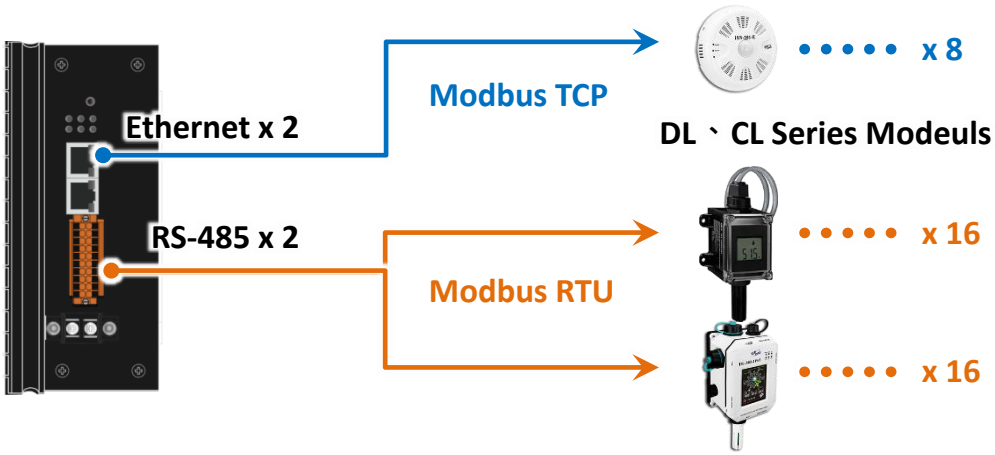
Display Result



6. DL/CL Modules Management

The iKAN series LED displays can directly integrate with ICP DAS DL/CL air quality monitoring modules. These modules communicate via Ethernet or RS-485 for real-time data acquisition and display. This chapter provides guidance on setting up communication modes, adding module information, viewing live sensor data, and referencing Modbus address-variable mapping for message embedding.

Each Ethernet port supports up to 8 modules, each RS-485 port supports up to 16 modules, and each iKAN can manage up to 40 modules.



For detailed product models and application information, please refer to
https://www.icpdas.com/tw/product/guide+IIoT+IO_Sensor+Industrial__Sensor

6.1. Connecting to DL/CL Modules

DL/CL modules can connect to iKAN using either Ethernet or RS-485. This section explains how to connect DL/CL modules to the iKAN via Ethernet or COM port (RS-485), including enabling Modbus master mode and adding module configurations.

6.1.1. Connecting via Ethernet

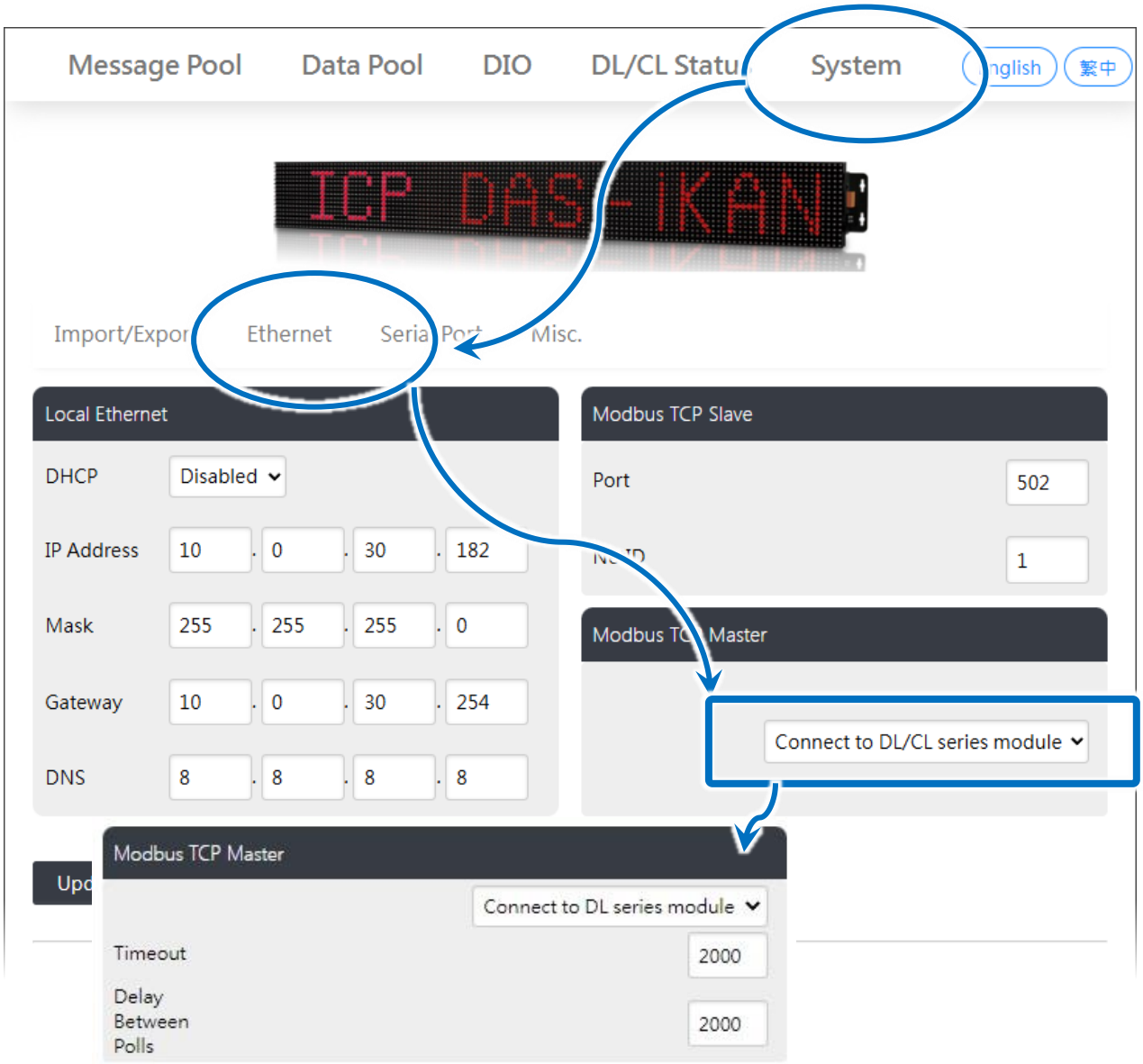
When connecting DL/CL modules via Ethernet, iKAN must be set to Modbus TCP Master mode. Users must register module IP, port, and Modbus ID.

Steps

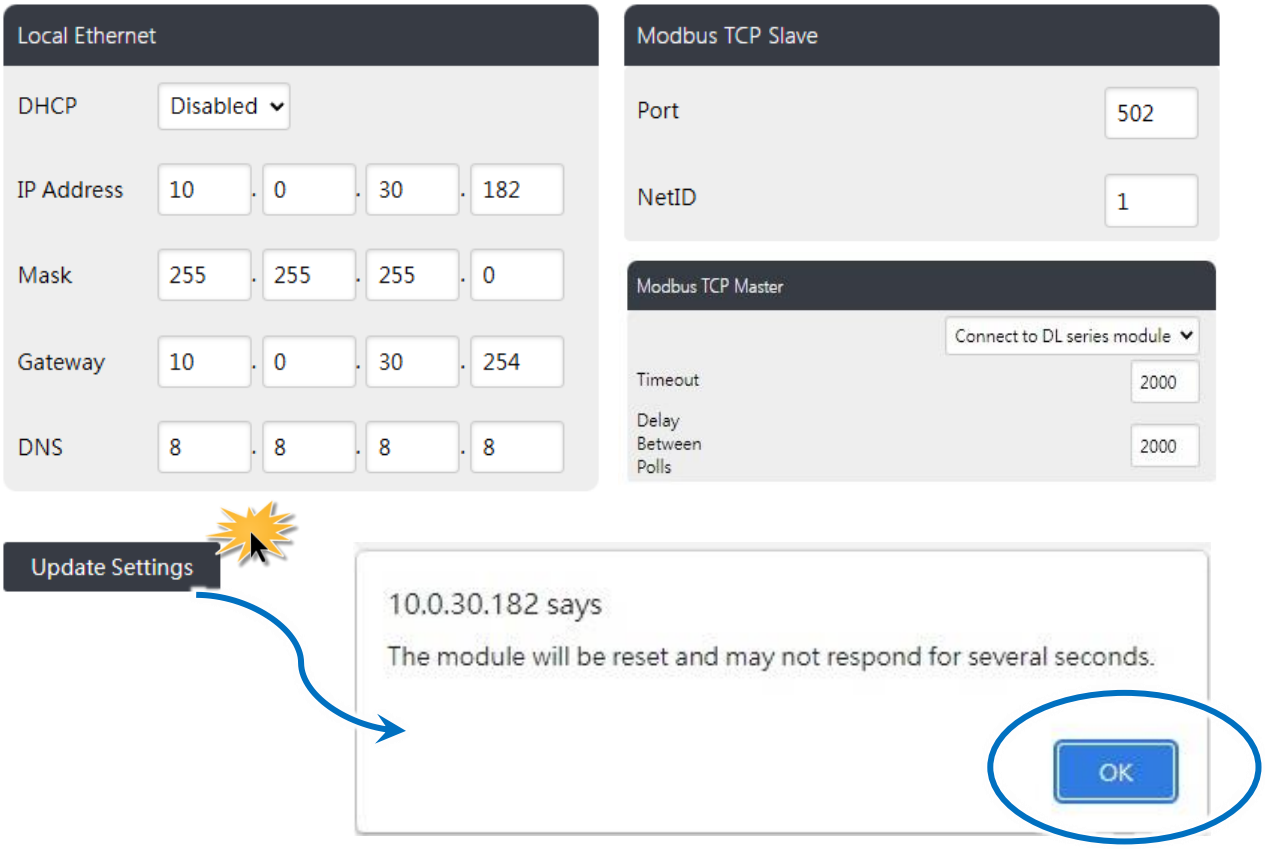
1) Click「System」in the navigation bar, and then click「Ethernet」subpage.

2) Select「Connect to DL/CL series module」from the drop-down mean under the「Modbus TCP Master」section. Set the following parameters as needed:

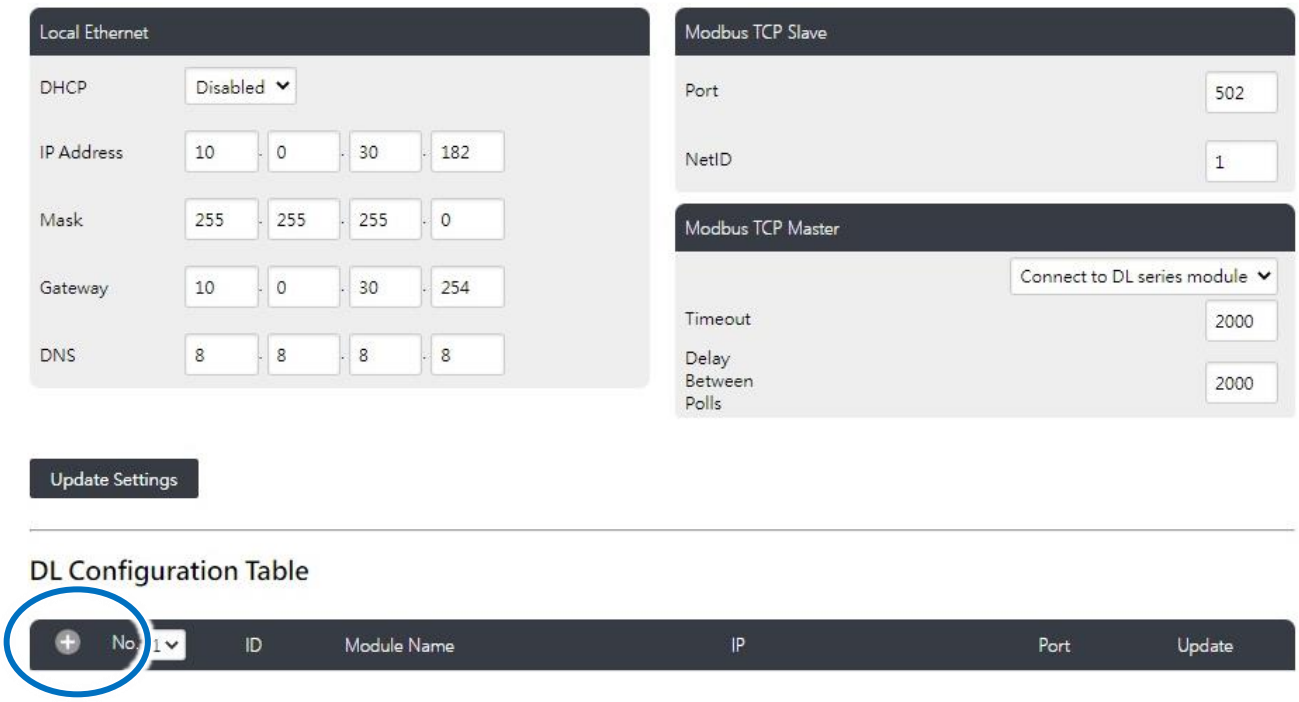
- Timeout：Max module response time (recommended: 500 ms).
- Delay Between Polls：Delay between Modbus commands (recommended: >50 ms).



3) Click the「Update Settings」button to activate the changes, and then confirm the action by clicking「OK」button in the pop-up window.



4) A new section「DL Configuration Table」will appear in the bottom of the page. Click「Add Module icon (⊕)」

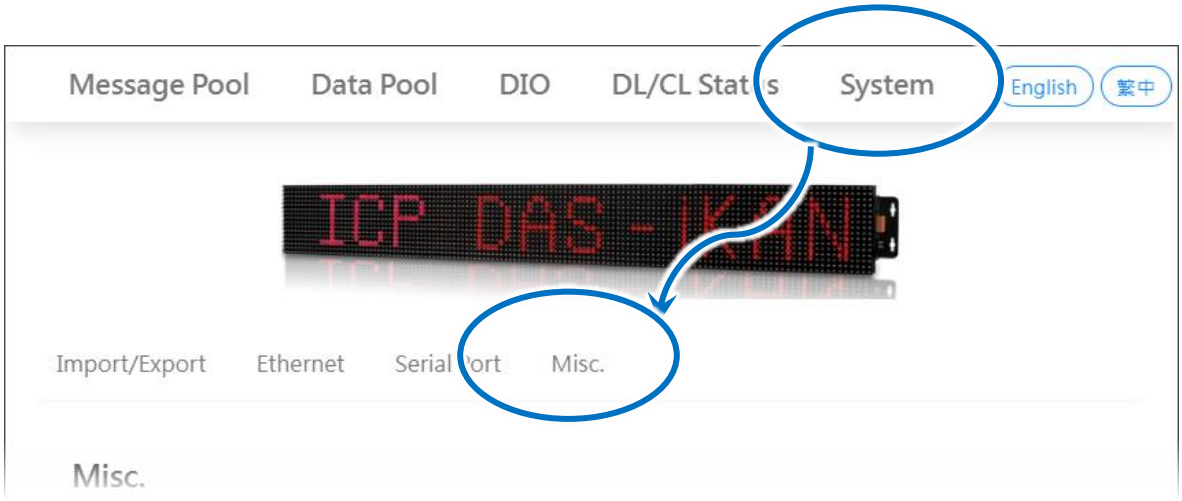


5) Set the message parameters. After completing the setup, click「Save」button to apply the settings.



- **Address**： Modbus address of the module
- **Module**：Select the module model
- **IP**：IP address of the module
- **Port**：Communication port number used by the module

7) Click「System」in the navigation bar, and then click「Misc」subpage.



8) In「Software Reset」section, click「Reset」button to reset and restart the iKAN device to activate the new configuration. (about 8 seconds)



6.1.2. Connecting via COM Port

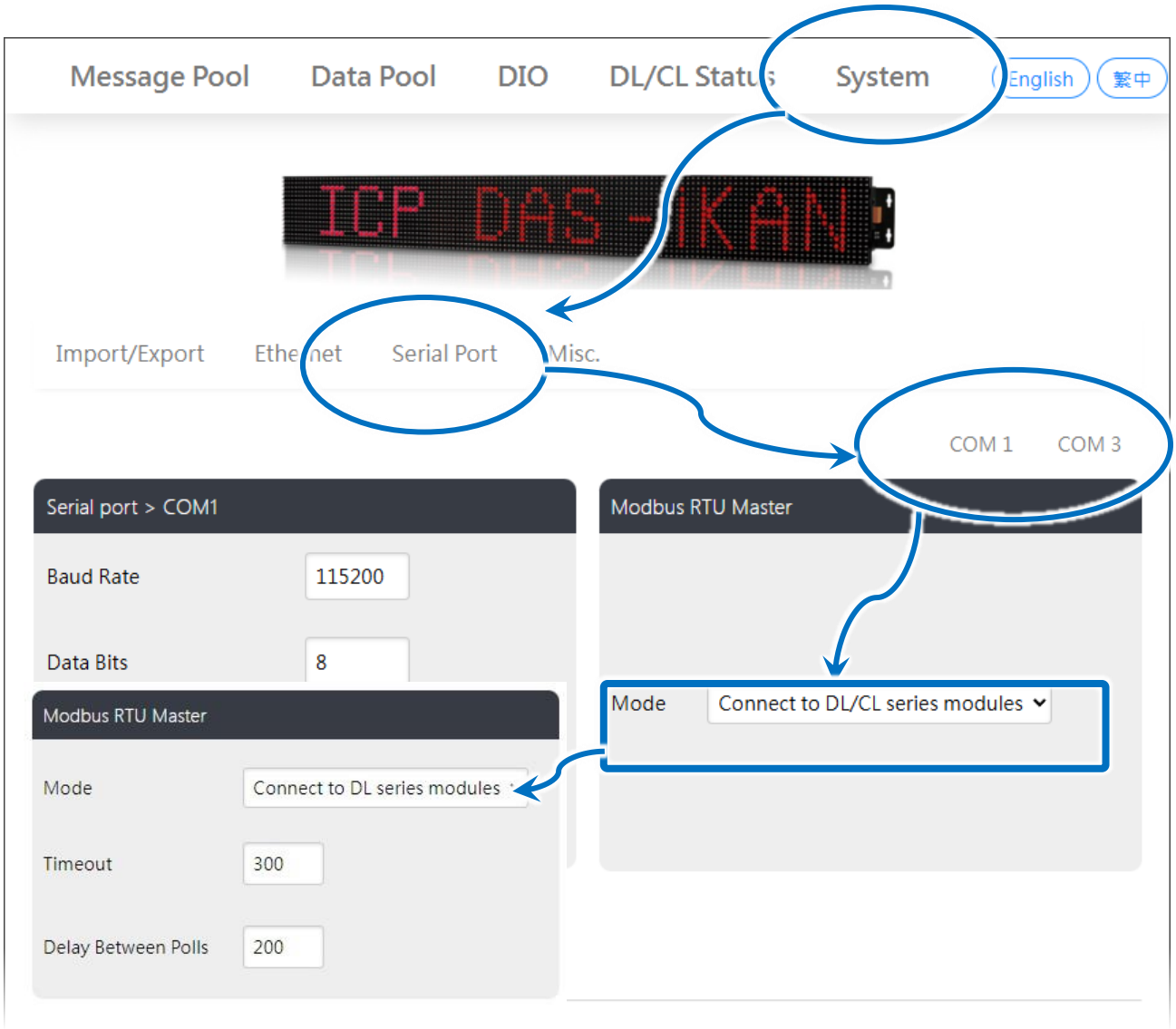
For RS-485 communication, enable Modbus RTU Master mode and configure each module's Modbus ID and type.

Steps

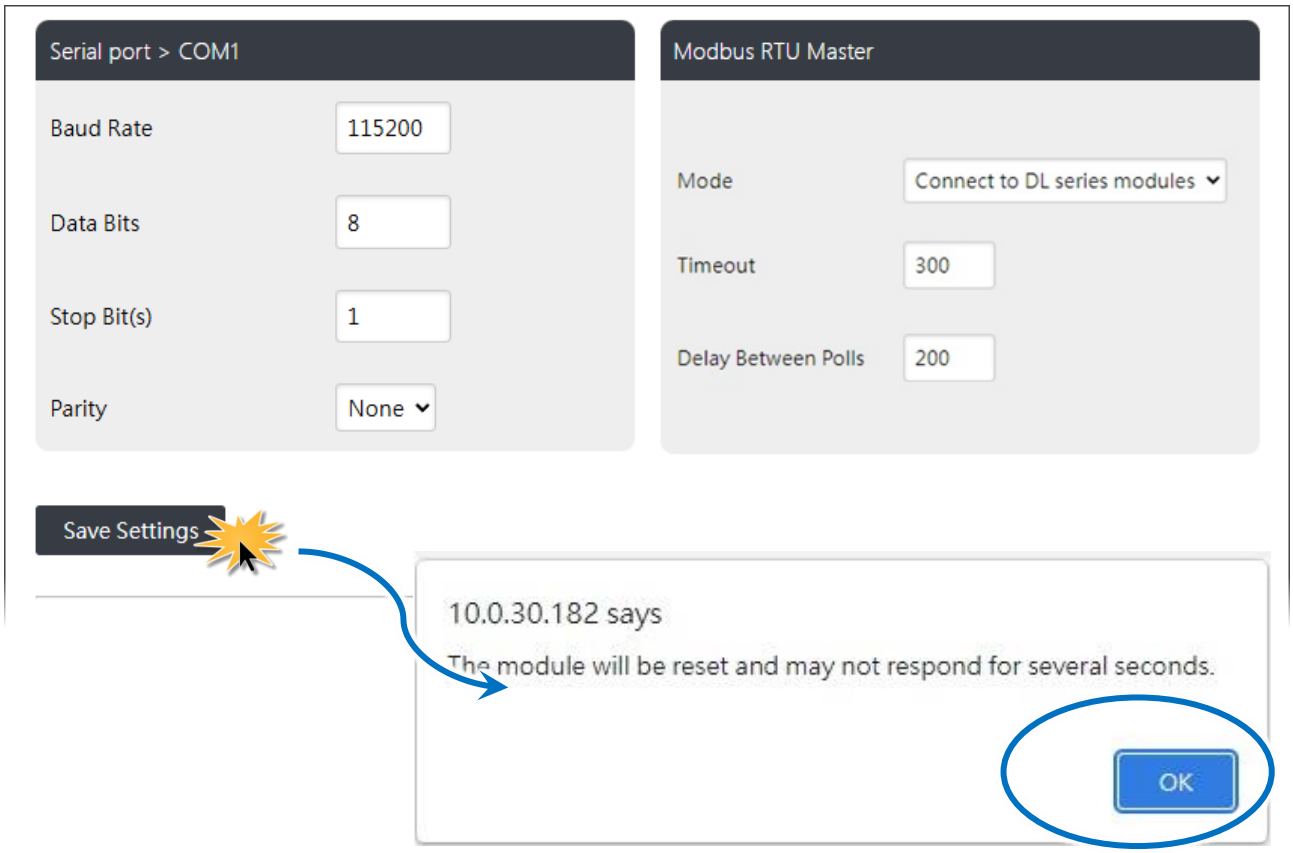
1) Click「System」in the navigation bar, and then click「Ethernet」subpage.

2) Select the desired COM Port, and then select「Connect to DL/CL series module」from the drop-down mean under the「Modbus RTU Master」section. Set the following parameters as needed:

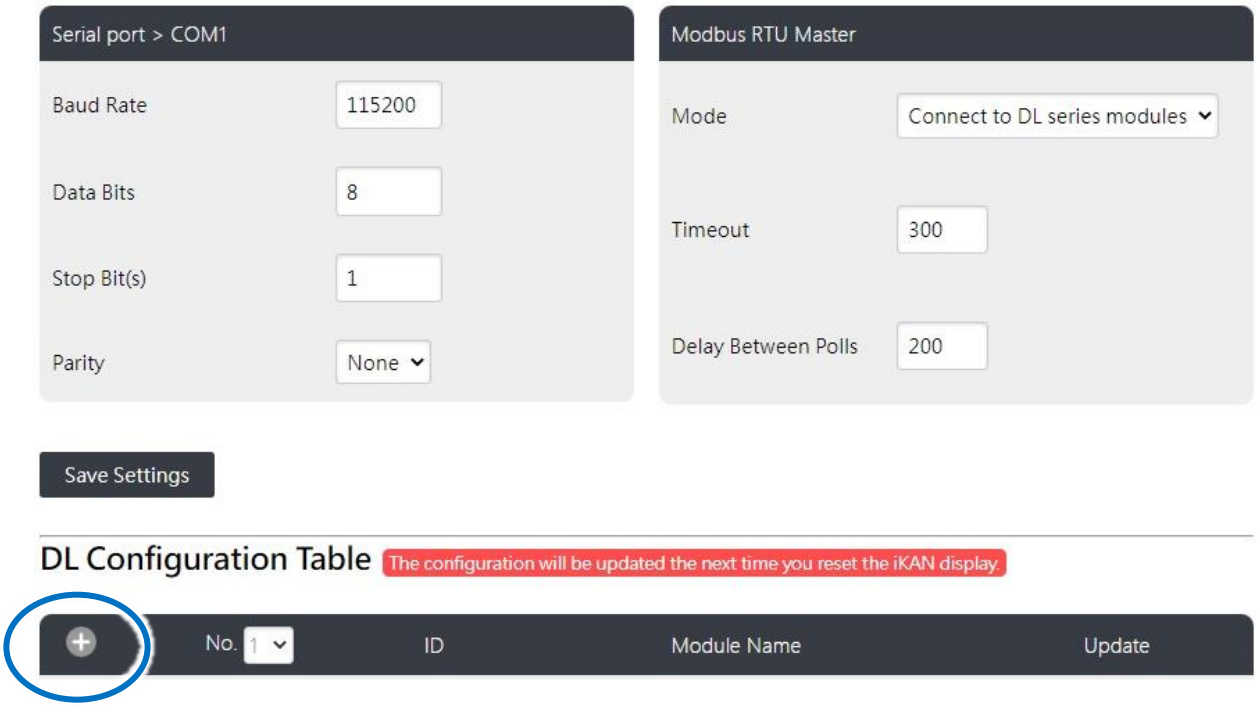
   - Timeout：Max module response time (recommended: 500 ms).
   - Delay Between Polls：Delay between Modbus commands (recommended: >50 ms).



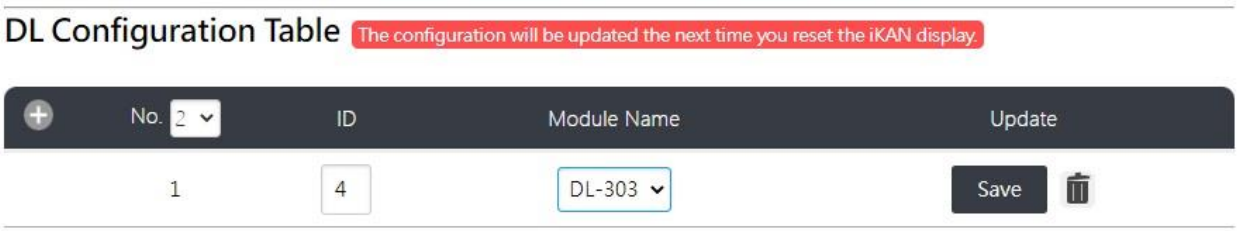
3) Click the「Update Settings」button to activate the changes, and then confirm the action by clicking「OK」button in the pop-up window.



4) A new section「DL Configuration Table」will appear in the bottom of the page. Click「Add Module icon (⊕)」

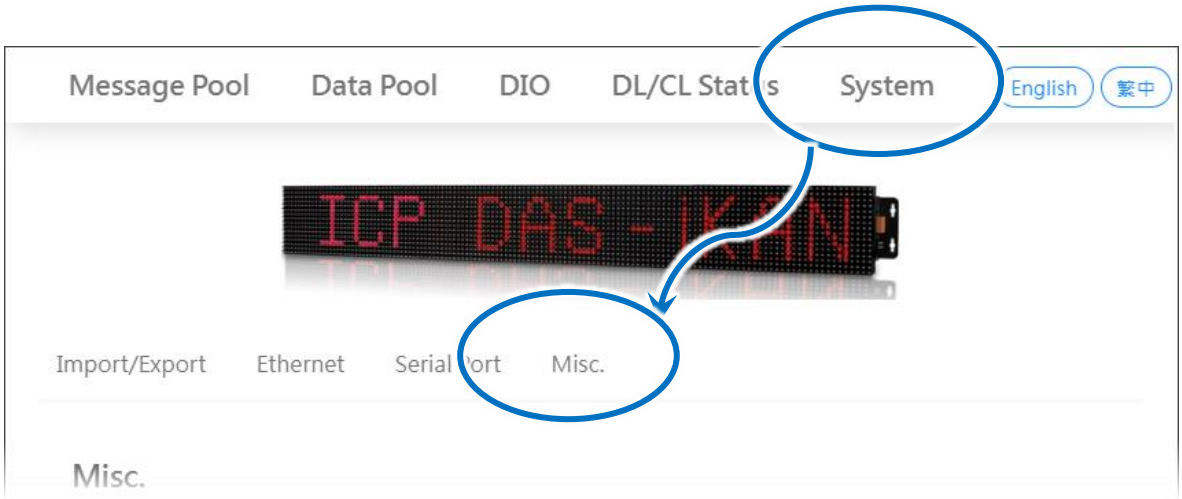


5) Set the message parameters. After completing the setup, click「Save」button to apply the settings.



- **Address**： Modbus address of the module
- **Module**：Select the module model

6) Click「System」in the navigation bar, and then click「Misc」subpage.



7) In「Software Reset」section, click「Reset」button to reset and restart the iKAN device to activate the new configuration. (about 8 seconds)

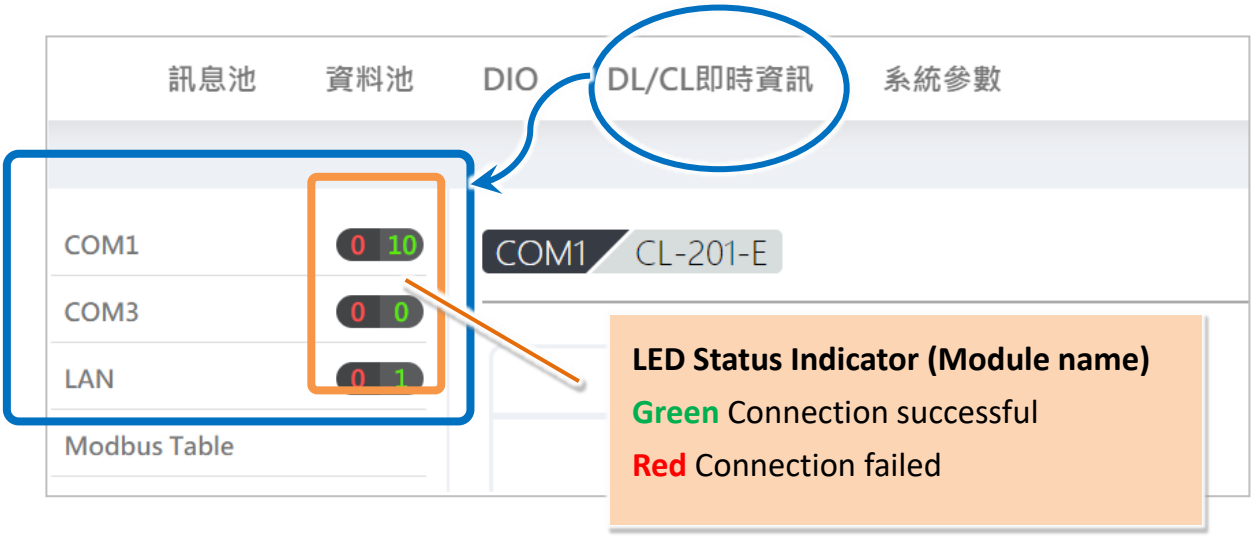


6.2. Monitoring Real-Time DL/CL Data

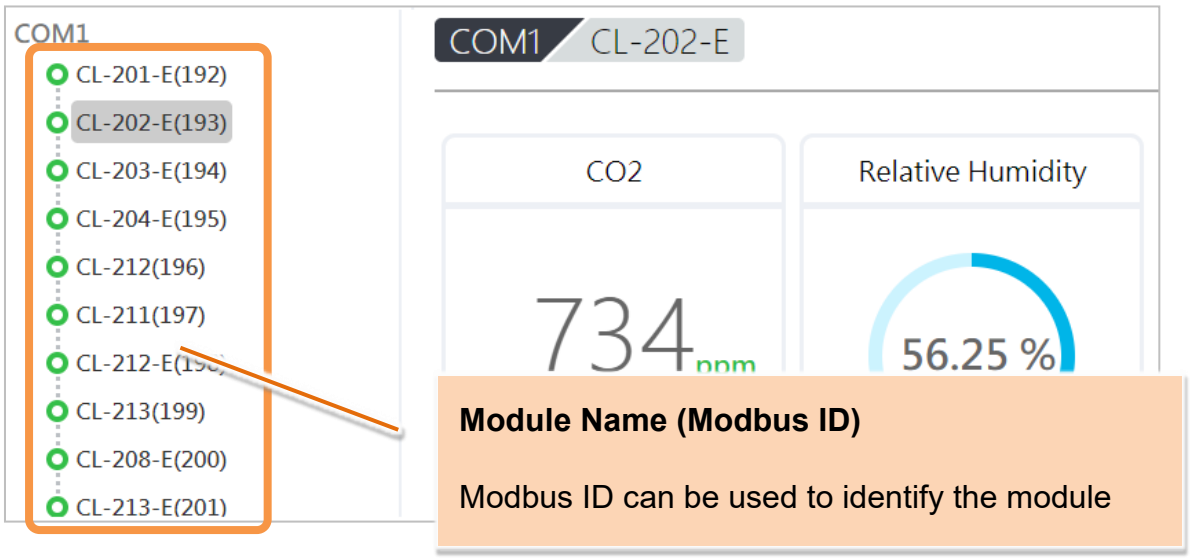
After connecting the modules, you can view the sensor readings and connection status in real-time via the web interface.

Steps

1) Click「 DL Status 」in the navigation bar, and then select the desired communication interface (e.g., COM1, COM3, or LAN).



2) Expand the module list on the left and click a module name to view real-time environmental data on the right.

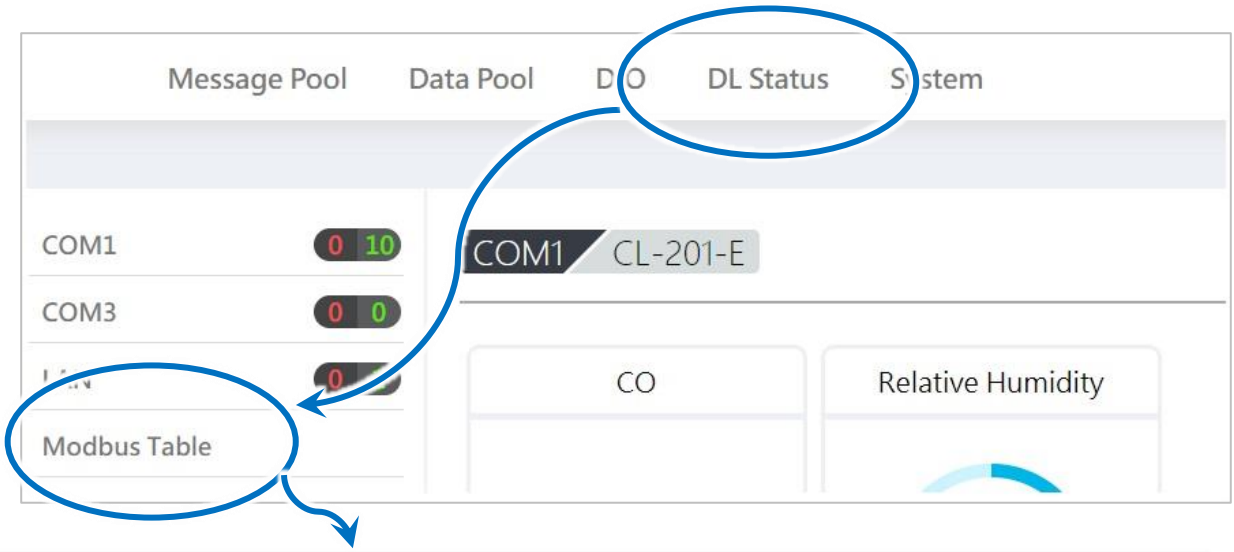


6.3. Accessing DL/CL Modbus Addresses and Variables

iKAN automatically maps measurement items from each module to Modbus registers and assigns variable codes (%yXXX) for use in display messages.

Steps

Click 「DL Status」in the navigation bar, and then click 「Modbus Table」 subpage to open the mapping list.



Modbus Register Table for DL Value (3xxxx)

Address (Base 0)	Description	Message Pool Symbol
518	CL-202-E(COM1->ID:193)CO2	%y518
519		19
520		20
521	CL-202-E(COM1->ID:193)Temperature (°F)	%y521
	1->ID:193)Dew Point Temp	

Data Description
Module name (Interface -> Modbus ID) Measurement target

Modbus Register Address

Variable Code (%yXXX)

Appendix A. Modbus Register Address Map

Coil Variables (0xxxx, 0 based)

Modbus Address		Length	Description	Range	Attribute
Decimal	Hex.				
00000 : 00039	0000 : 0027	40	Coil-type variables	-	R/W
00100 : 00227	0064 : 00E3	128	Enable or disable the display of common messages 0 to 127.	0: Disable 1: Enable	R/W

System Variable (3xxxx, 0 based)

Modbus Address		Length	Description	Range	Attribute
Decimal	Hex.				
30000 : 30003	0000 : 0003	4	IP Address	0 ~ 255	R
30004 : 30007	0004 : 0007	4	Subnet Mask	0 ~ 255	R
30008 : 30011	0008 : 000B	4	Gateway Address	0 ~ 255	R
30012	000C	1	Year	0 ~ 9999	R
30013	000D	1	Month	1 ~ 12	R
30014	000E	1	Day	1 ~ 31	R
30015	000F	1	Day of Week (abbr. ENG, 0 = SUN)	0 ~ 6	R
30016	0010	1	Day of Week (ENG, 0 = Sunday)	0 ~ 6	R
30017	0011	1	Day of Week (TW, 0 = 日)	0 ~ 6	R
30018	0012	1	Hour	0 ~ 23	R
30019	0013	1	Minute	0 ~ 59	R
30020	0014	1	Second	0 ~ 59	R

Integer-type variables/Float-type variables/misc. (4xxxx, 0 based)

Modbus Address		Length	Description	Range	Attribute Decimal
Decimal	Hex.				
40000 : 40063	0000 : 003F	64	Integer-type variables	0 ~ 65535	R/W
40128 : 40255	0080 : 00FF	64	Float-type variables	-3.4E+38 ~ +3.4E+38	R/W
40384 : 40447	0180 : 01BF	64	Data mapping arguments: Source Low	0 ~ 65535	R/W
40512 : 40475	0200 : 023F	64	Data mapping arguments: Source High	0 ~ 65535	R/W
40640 : 40703	0280 : 02BF	64	Data mapping arguments: Target Low	0 ~ 65535	R/W
40768 : 40831	0300 : 033F	64	Data mapping arguments: Target High	0 ~ 65535	R/W
40896 : 40959	0380 : 03BF	64	Data mapping arguments: Decimal Places	0 ~ 2	R/W
41024 : 41087	0400 : 043F	64	Decimal Places for float-type variables	1 ~ 3	R/W
41408 : 41535	0580 : 05FF	128	Color for common messages 0 to 127 in the first row.	1: Blue 2: Green 3: Sky Blue 4: Red 5: Purple 6: Yellow 7: White 8: Rando	R/W

41600	0640	1	Brightness for the display, a smaller number means a brighter screen	0 ~ 4	R/W

Integer-type variables/Float-type variables/misc. (4xxxx, 0 based)

Modbus Address		Length	Description	Range	Attribute
Decimal	Hex.				Decimal
41601	0641	1	Message scrolling speed. A smaller value denotes a greater speed.	0 ~ 9	R/W
41602	0642	1	Modbus Station ID	1 ~ 254	R/W
41604	0644	1	Modbus TCP Slave port	0 ~ 65535	R/W
41612	0652	1	The response timeout value for Modbus TCP communication	0 ~ 65535	R/W
41613	0653	1	The delay between polls for Modbus TCP communication	0 to 65535	R/W
41632 : 41759	0660 : 06DF	128	The priority for messages 0 to 127	0: Common 1: Instant	R/W
41800 : 41831	0708 : 0727	32	The contents of ASCII string 0	ASCII	R/W
41832 : 41863	0728 : 0747	32	The contents of ASCII string 1	ASCII	R/W
41864 : 41895	0748 : 0767	32	The contents of ASCII string 2	ASCII	R/W
41896 : 41927	0768 : 0787	32	The contents of ASCII string 3	ASCII	R/W
41928 : 41959	0788 : 07A7	32	The contents of ASCII string 4	ASCII	R/W
41960 : 41991	07A8 : 07C7	32	The contents of ASCII string 5	ASCII	R/W
41992	07C8	32	The contents of ASCII string 6	ASCII	R/W

: 42023	: 07E7				

Integer-type variables/Float-type variables/misc. (4xxxx, 0 based)

Modbus Address		Length	Description	Range	Attribute
Decimal	Hex.				Decimal
42024 : 42055	07E8 : 0808	32	The contents of ASCII string 7	ASCII	R/W
42100 : 42227	0834 : 08B3	128	The color of messages 0 to 127 on the second row.	1: Blue 2: Green 3: Sky Blue 4: Red 5: Purple 6: Yellow 7: White 8: Random	R/W
42300 : 42427	08FC : 097B	128	The message moving type for messages 0 to 127	0 to 3	R/W
42500 : 42539	08FC : 09EB	40	The color for the coil variables 0 to 39	1: Blue 2: Green 3: Sky Blue 4: Red 5: Purple 6: Yellow 7: White 8: Random	R/W
42700 : 42763	0A8C : 0ACB	64	The color for integer variables 0 to 63		R/W
42700 : 42763	0A8C : 0ACB	64	The color for float variables 0 to 63		R/W

Appendix B. Revision History

This appendix provides a revision history of the iKAN Series LED Display User Manual, summarizing the major documentation changes introduced in each version.

Revision	Date	Description
1.0.1	September 2019	Initial release.
1.0.2	February 2021	Revised the configuration procedures in Chapter 5.
1.1.0	December 2022	Updated the user interface and added descriptions of new features.
1.1.1	June 2024	Revised the valid value ranges for characters in ASCII and Unicode strings.
1.1.2	June 2025	• Added product information for non-RoHS and IP65 iKAN Series models to Sections 1.2–2.5. • Added system parameter configuration descriptions to Sections 3.5.4.4–3.5.4.7. • Added configuration and management instructions for DL/CL monitoring modules to Chapter 6.
1.1.3	August 2026	• Revised section titles to clearly identify the applicable models. • Added dimensional drawings for the iKAN-116S-IP65 and iKAN-124S-IP65 to Sections 1.5.8–1.5.9. • Revised the package contents for the iKAN-116(A), iKAN-124(A), iKAN-216(A), and iKAN-224(A) in Section 2.1.2. • Revised the iKAN display assembly instructions in Section 2.2. • Added wall-mount bracket installation instructions to Section 2.3. • Added angle bracket installation instructions to Section 2.4.