iSN-713-MRTU-IP68 Quick Start

v2.0, April 2024

Packing List

In addition to this guide, the package includes the following items:

iSN-713-MRTU-IP68

## Technical Support

service@icpdas.com

www.icpdas.com

Resources

How to search for drivers, manuals and spec information on ICP DAS website.

• For Mobile Web
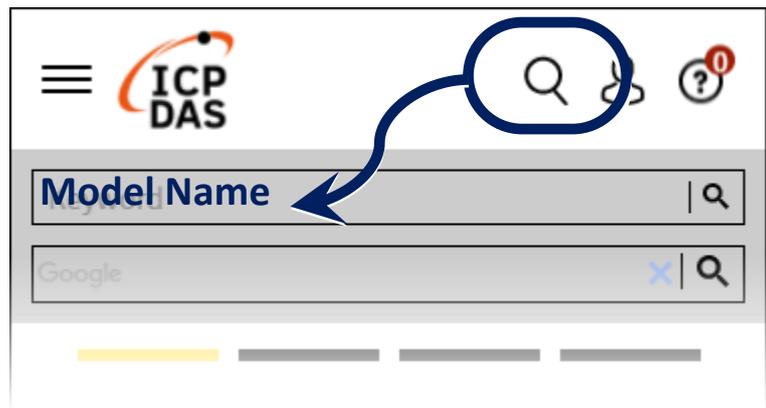
• For Desktop Web

1 Appearance & Pin Assignment
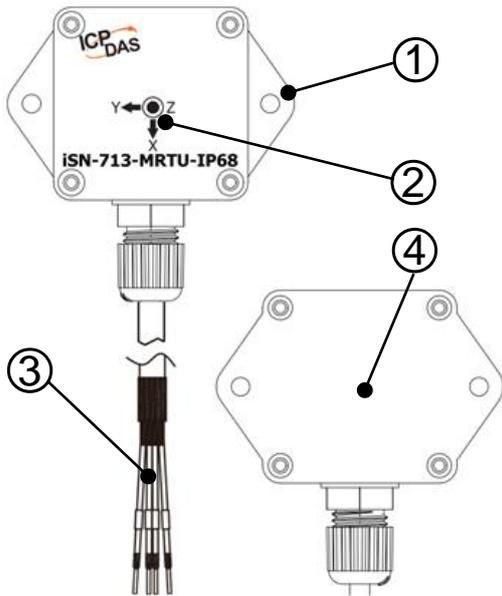
Number	Instructions
1	Wall mount
2	Vibration sensor
3	Power and RS-485 Cable
4	Magnetic mount

| CONN.	Color	Pin Assignment
1	White	D-
2	Red	VCC
3	Black	GND
4	Green	D+

2 Connecting the Power and Host PC

Prepare for device

☑ **RS-232 to RS-485 Converter: tM-7520U (optional)**

☑ **Exterior power supply device: MDR-20-24 (optional)**

Wiring

❶ **Connect both the iSN-713-MRTU-IP68 module and the Host PC via the tM-7520U.**

Power Supply
+10 ~ +30 V$_{DC}$
(e.g., MDR-20-24)
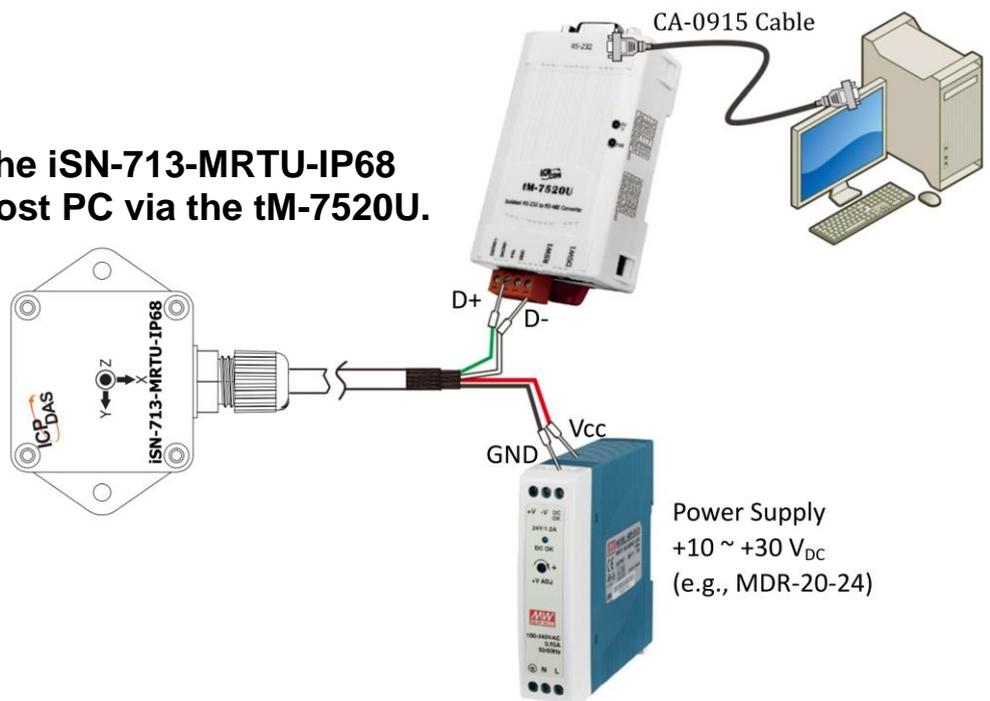
❷ **Connect the VCC pin to the positive terminal on a 10 ~ 30 V DC power supply, and connect the GND pin to the negative terminal.**

Factory Default Settings

The following is an overview of the factory default settings:

Item	Default
Device ID	1
Baud Rate	9600 bps
Data Format	Parity: NONE Data length: 8 (Fixed) Stop Bits: 1
Protocol	Modbus RTU

3 Modbus Register Table

FW version v2.00 or later supports the following functions

Device Parameters (R/W)

PLC Address (Base1)	Protocol Address (Base0, Hex)	Function code	Data type	Description	Remarks
40001	0x0000	03 16	Uint16	Reboot or Reset to factory default settings	0: Idle 1: Reboot 2: Reset
40002	0x0001	03 16	Uint16	Parameter setting ❶	0: Idle 1: Set
40003	0x0002	03 16	Uint16	Modbus ID	1~247 (Default: 1)
40004	0x0003	03 16	Uint16	COM port settings Baud Rate	0: 9600 (Default) 1: 19200 2: 38400 3: 57600 4: 115200
40005	0x0004	03 16	Uint16	COM port settings Parity	0: NONE (Default) 1: ODD 2: EVEN
40006	0x0005	03 16	Uint16	COM port settings Stop Bits	0: 1 (Default) 1: 2
40009	0x0008	03 16	Uint16	High pass filter	Filtering of frequencies lower than the value Range: 5~100 Hz (Default: 5)

PLC Address (Base1)	Protocol Address (Base0, Hex)	Function code	Data type	Description	Remarks
40010	0x0009	03 16	Uint16	Low pass filter	Filtering of frequencies higher than the value Range: 0~2 0: 6K Hz 1: 3K Hz 2: 1K Hz (Default)
40027	0x001A	03 16	Uint16	Clear abnormal alarms ❷	Clear abnormal alarms of eigenvalue 0: Idle 1: Clear
40028	0x001B	03 16	Uint16	Fault Tolerance of eigenvalue	Send an abnormal alarm if it happens n times in a row Range: 1~255 (Default: 3)
40029	0x001C	03 16	Uint16	X-Axis eigenvalues type	0:Disable (Default) 1:Acceleration(mg, RMS) 2:Acceleration(mg, MAX) 3:Acceleration(mg, P-P) 4:Velocity(μm/s, RMS) 5:Displacement(μm, P-P)
40030	0x001D	03 16	Uint16	X-Axis eigenvalues threshold	Range: 1~32767 (Default: 1)
40031	0x001E	03 16	Uint16	Y-Axis eigenvalues type	0:Disable (Default) 1:Acceleration(mg, RMS) 2:Acceleration(mg, MAX) 3:Acceleration(mg, P-P) 4:Velocity(μm/s, RMS) 5:Displacement(μm, P-P)
40032	0x001F	03 16	Uint16	Y-Axis eigenvalues threshold	Range: 1~32767 (Default: 1)
40033	0x0020	03 16	Uint16	Z-Axis eigenvalues type	0:Disable (Default) 1:Acceleration(mg, RMS) 2:Acceleration(mg, MAX) 3:Acceleration(mg, P-P) 4:Velocity(μm/s, RMS) 5:Displacement(μm, P-P)
40034	0x0021	03 16	Uint16	Z-Axis eigenvalues threshold	Range: 1~32767 (Default: 1)

Device Status (Read Only)

PLC Address (Base1)	Protocol Address (Base0, Hex)	Function code	Data type	Description	Remarks
30002	0x0001	04	Uint16	FW version	3 digits e.g. 100/101/102
30003	0x0002	04	Uint16	Device code	iSN-711-MRTU(IP68):0x02C7 iSN-713-MRTU(IP68):0x02C9
X-Axis Eigenvalues					
30021	0x0014	04	Uint16	X-axis Alarm status	0:Normal 1:Abnormal
30022	0x0015	04	Uint16	X-axis Alarm value	Eigenvalues when an alarm occurs 1~65535
30023	0x0016	04	Uint16	X-axis Acceleration (RMS)	Unit: mg
30024	0x0017	04	Uint16	X-axis Acceleration (MAX)	Unit: mg
30025	0x0018	04	Uint16	X-axis Acceleration (P-P)	Unit: mg
30026	0x0019	04	Uint16	X-axis Acceleration(Crest Factor)	Unit: 0.01 CF
30027	0x001A	04	Uint16	X-axis Velocity (RMS)	Unit: um/s
30028	0x001B	04	Uint16	X-axis Displacement (P-P)	Unit: um
X-Axis Spectrum					
30031 ~ 30050	0x001E ~ 0x0031	04	Uint16	X-axis Acceleration spectrum Frequency	Unit: 0.1Hz (Top 20 groups, ordered from largest to smallest)
30051 ~ 30070	0x0032 ~ 0x0045	04	Uint16	X-axis Acceleration spectrum Magnitude	Unit: mg, RMS (Top 20 groups, ordered from largest to smallest)
30071 ~ 30090	0x0046 ~ 0x0059	04	Uint16	X-axis Velocity spectrum Frequency	Unit: 0.1Hz (Top 20 groups, ordered from largest to smallest)
30091 ~ 30110	0x005A ~ 0x006D	04	Uint16	X-axis Velocity spectrum Magnitude	Unit: um/s, RMS (Top 20 groups, ordered from largest to smallest)
30111 ~ 30130	0x006E ~ 0x0081	04	Uint16	X-axis Displacement spectrum Frequency	Unit: 0.1Hz (Top 20 groups, ordered from largest to smallest)

PLC Address (Base1)	Protocol Address (Base0, Hex)	Function code	Data type	Description	Remarks
30131 ~ 30150	0x0082 ~ 0x0095	04	Uint16	X-axis Displacement spectrum Magnitude	Unit: um, P-P (Top 20 groups, ordered from largest to smallest)
Y-Axis Eigenvalues					
30161	0x00A0	04	Uint16	Y-axis Alarm status	0:Normal 1:Abnormal
30162	0x00A1	04	Uint16	Y-axis Alarm value	Eigenvalues when an alarm occurs 1~65535
30163	0x00A2	04	Uint16	Y-axis Acceleration (RMS)	Unit: mg
30164	0x00A3	04	Uint16	Y-axis Acceleration (MAX)	Unit: mg
30165	0x00A4	04	Uint16	Y-axis Acceleration (P-P)	Unit: mg
30166	0x00A5	04	Uint16	Y-axis Acceleration(Crest Factor)	Unit: 0.01 CF
30167	0x00A6	04	Uint16	Y-axis Velocity (RMS)	Unit: um/s
30168	0x00A7	04	Uint16	Y-axis Displacement (P-P)	Unit: um
Y-Axis Spectrum					
30171 ~ 30190	0x00AA ~ 0x00BD	04	Uint16	Y-axis Acceleration spectrum Frequency	Unit: 0.1Hz (Top 20 groups, ordered from largest to smallest)
30191 ~ 30210	0x00BE ~ 0x00D1	04	Uint16	Y-axis Acceleration spectrum Magnitude	Unit: mg, RMS (Top 20 groups, ordered from largest to smallest)
30211 ~ 30230	0x00D2 ~ 0x00E5	04	Uint16	Y-axis Velocity spectrum Frequency	Unit: 0.1Hz (Top 20 groups, ordered from largest to smallest)
30231 ~ 30250	0x00E6 ~ 0x00F9	04	Uint16	Y-axis Velocity spectrum Magnitude	Unit: um/s, RMS (Top 20 groups, ordered from largest to smallest)
30251 ~ 30270	0x00FA ~ 0x010D	04	Uint16	Y-axis Displacement spectrum Frequency	Unit: 0.1Hz (Top 20 groups, ordered from largest to smallest)
30271 ~ 30290	0x010E ~ 0x0121	04	Uint16	Y-axis Displacement spectrum Magnitude	Unit: um, P-P (Top 20 groups, ordered from largest to smallest)

PLC Address (Base1)	Protocol Address (Base0, Hex)	Function code	Data type	Description	Remarks
Z-Axis Eigenvalues					
30301	0x012C	04	Uint16	Z-axis Alarm status	0:Normal 1:Abnormal
30302	0x012D	04	Uint16	Z-axis Alarm value	Eigenvalues when an alarm occurs 1~65535
30303	0x012E	04	Uint16	Z-axis Acceleration (RMS)	Unit: mg
30304	0x012F	04	Uint16	Z-axis Acceleration (MAX)	Unit: mg
30305	0x0130	04	Uint16	Z-axis Acceleration (P-P)	Unit: mg
30306	0x0131	04	Uint16	Z-axis Acceleration(Crest Factor)	Unit: 0.01 CF
30307	0x0132	04	Uint16	Z-axis Velocity (RMS)	Unit: um/s
30308	0x0133)	04	Uint16	Z-axis Displacement (P-P)	Unit: um
Z-Axis Spectrum					
30311 ~ 30330	0x0136 ~ 0x0149	04	Uint16	Z-axis Acceleration spectrum Frequency	Unit: 0.1Hz (Top 20 groups, ordered from largest to smallest)
30331 ~ 30350	0x014A ~ 0x015D	04	Uint16	Z-axis Acceleration spectrum Magnitude	Unit: mg, RMS (Top 20 groups, ordered from largest to smallest)
30351 ~ 30370	0x015E ~ 0x0171	04	Uint16	Z-axis Velocity spectrum Frequency	Unit: 0.1Hz (Top 20 groups, ordered from largest to smallest)
30371 ~ 30390	0x0172 ~ 0x0185	04	Uint16	Z-axis Velocity spectrum Magnitude	Unit: um/s, RMS (Top 20 groups, ordered from largest to smallest)
30391 ~ 30410	0x0186 ~ 0x0199	04	Uint16	Z-axis Displacement spectrum Frequency	Unit: 0.1Hz (Top 20 groups, ordered from largest to smallest)
30411 ~ 30430	0x019A ~ 0x01AD	04	Uint16	Z-axis Displacement spectrum Magnitude	Unit: um, P-P (Top 20 groups, ordered from largest to smallest)

❶After the device parameter configuration is completed, [40002 Parameter Setting] needs to be set to 1. The module will save the parameters and automatically restart to take effect.

❷Set [40027 Clear abnormal alarms] to 1 will take effect immediately.