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**7315-485
WIRELESS RECEIVER
OPERATION MANUAL**

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Introduction

7315-485 Multichannel Receiver:

Based on RS485 communication standard, it supports Modbus RTU protocol, and can transmit the gauge measurement data to PLC or computer.

Communication Standard: RS485

Baud: 9600bps

Data Bits: 8

Stop Bits: 1

Parity:None

Communication Protocols: Modbus-RTU
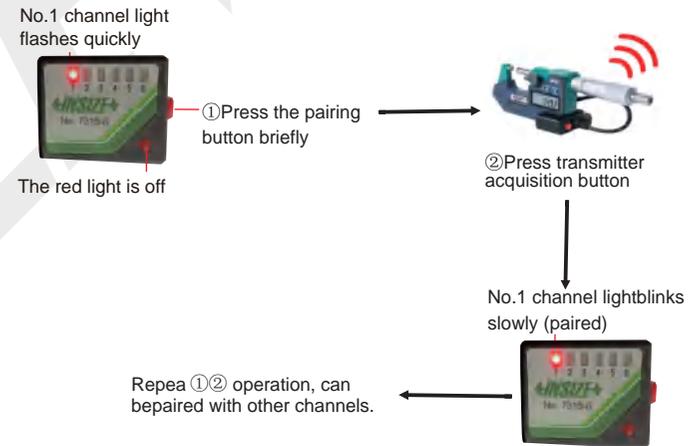
Parity: None

Output Code: Hex

Four-core wire
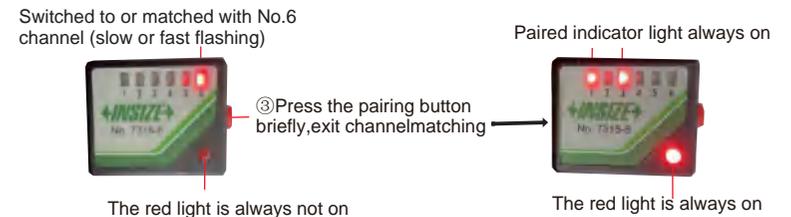
Signal light

Pin Definition:

Pin Color	Notation	Functional
Red	**VCC**	Power(+8~28V)
White	**A+**	Data
Green	**B-**	Data
Black	**GND**	GND

Operating Instructions

1️⃣ Plug the receiver into the PLC or use an external power supply to power it.

2️⃣ Press the receiver pairing button to switch to the channel for matching (there are 6 channels, which can be used by 6 receivers). At this time, the red light turns off. Press the pairing button once to switch to the No.1 channel, and then press the pairing button once to switch to the No.2 channel. And so on. When switching to each channel, the corresponding channel light flashes quickly. Press the transmitter acquisition button, and the channel indicator light changes from fast flashing to slow flashing to complete the pairing with the receiver.(If the transmitter acquisition button is not pressed, the channel light flashes rapidly all the time)

No.1 channel light flashes quickly

①Press the pairing button briefly

The red light is off

②Press transmitter acquisition button

No.1 channel lightblinks slowly (paired)

Repea ①② operation, can bepaired with other channels.

3️⃣ After all channel matching is completed or when the pairing button is pressed to channel 6 continuously, the pairing button can be pressed again to exit channel matching, and the red lightis always on and the matched channel lightis always on.

Switched to or matched with No.6 channel (slow or fast flashing)

Paired indicator light always on

③Press the pairing button briefly,exit channelmatching

The red light is always not on

The red light is always on

4️⃣ Data transmission

Gauge measurements can be transmitted to the receiver by lightly pressing the transmitter capture button.

⑤ The receiver has three data transmission modes, which are switched by long pressing the red button for 15 seconds while the receiver is powered up.

No.	Mode	Setting method	Instruction
1	Slave mode (Default)	Long press button for 15 seconds, channel No.1 light flashes 3 times	Host sends command to get data
2	Proactive data reporting	Long press button for 15 seconds, channel No.2 light flashes 3 times	Wireless data received, proactively reported
3	Proactive reporting of data and serial numbers	Long press button for 15 seconds, channel No.3 light flashes 3 times	

1. In slave mode, when there is wireless data transmission to the receiver, the data is stored to the receiver, and up to 10 groups of data can be stored. The data stored in the receiver can be acquired after the host sends a command.
2. In active reporting mode, when there is wireless data transmission to the receiver, the receiver reports the data to the host actively.
3. When the receiver is powered on, the operating mode can be judged by the flashing of the channel light, such as the No. 1 channel light flashing 3 times for the slave mode.
4. The reported data format and definitions are described in the following communication protocol details.

⑥ Modbus Communication Protocol

When there is wireless data transmission to the receiver, the data is stored to the receiver, and the receiver can store up to 10 groups of data in the slave mode. 485 Once the communication is made, the red indicator of the receiver blinks once. The device communicates in accordance with Modbus-RTU format, and the communication protocol is shown below.

1、 Data downlink format (8 bytes)

Dat[0]	[1]	[2]	[3]	[4]	[5]	[6]	[7]
1 byte	1 byte	2 bytes		2 bytes		2 bytes	
Device address	Function code	Hight address	Low address	High number of data	Low number of data	CRC Hight	CRC Low

Notes:
1) Device address: communication address, default address is 0x01, can be set to 01~0x07;
2) Function code: 0x03=read device data;
3) All data MSB (high bit first);
4) CRC: CRC 16-bit checksum, compliant with RTU standard.

2、 Read data uplink format（0x03）

RET[0]	[1]	[2]	[3]	[4]	[5]	[6]	[7]
Device address	Function code	Data item	Data No.1	Data No.2	Data No.n	CRC High	CRC Low

3、 Address Description

Address (2bytes) hex	Lengths	Typology	Instruction	Note
3020	6 bytes		Device data (int)	Read
3026	4 bytes	Uint32	Device Serial Number	Read

1）Device data

Channel number	Decimal fraction		Data			
DAT[0]	[1]		[2]	[3]	[4]	[5]
01	03		00	00	2F	12
Channel number	3 decimal places		00002F12=12050，xxx12.050			
01	03=3 decimal places 05=5 decimal places		Int representation, signed integer type			

Note:
a)Channel number: 1~7, which indicates the channel of wireless module pairing, when the channel number is 00, it means that no wireless data has been received or the wireless data has been read out, and a total of 10 groups of data can be stored in the storage area.
b) Decimal digits: 03 means 3 decimal digits.
c) Data: signed integer, 4-byte representation (high bit comes first). For example, 0xFFFFD0AD=-12115.

7 Communications Routine

Example: The communication when the device address is 01 is as follows

No.	Name	Sent	Return	xxx
1	Read Data	01 03 30 20 00 03 0B 01	01 03 06 01 03 00 00 69 1E CA FC	01: The channel number is 1 03: 3 decimal places 0x0000691E=26910 The data for channel number 1 is 26.910
			01 03 06 00 03 00 00 69 1E CA FC	The channel number is 0 No new data received
2	Read Serial Number	01 03 30 26 00 02 2A C0	01 03 04 78 96 1A 17 49 D1	0x78961A17=2023102999 Serial Number：2023102999
3	Read Data + Serial Number	01 03 30 20 00 05 8B 03	01 03 0A 01 03 00 00 69 1E 78 96 1A 17 73 5A	01:The channel number is 01 03: 3 decimal places 0x0000691E=26910 0x78961A17=2023102999 The data for channel number 1 is 26.910 Serial Number：2023102999

Note: The data is of signed integer type, e.g.0xFFFFD0AD=-12115

8 Address code setting:

1)Press the red button at the end of the receiver, and then power on the receiver, keep the button pressed;

2) 6 channel indicator lights flashing rapidly to stop flashing, release the key, 6 channel indicator lights cycle flashing.

3) Short press the button, select the channel indicator (6 channel indicators correspond to the address code 1-6, indicator 1, 2 lit at the same time for the address code 7).

4) Press and hold the button to save and exit, the address code is switched successfully.

9 The receiver has a memory function, after matching, no matter plugging and unplugging the transmitter, replacing the transmitter connected to the instrument, plugging and unplugging the receiver, replacing the receiver connected to the computer can be used directly, no need to re-match.