

Aeropulse Modbus-RTU Protocol

Data Type

- Data length = 8
- Stop bits = 1
- Parity = none
- Baud Rate = 9600 (default)

Commands

1. Read holding register

Addr	Fun	Data start addr hi	Data start addr lo	Data #of regs hi	Data #of regs lo	CRC16 hi	CRC16 lo
01H	03H	00H	00H	00H	03H	XXH	XXH

2. Read input register

Addr	Fun	DO addr hi	DO addr lo	Data #of regs hi	Data #of regs lo	CRC16 hi	CRC16 lo
01H	04H	00H	08H	00H	01H	XXH	XXH

3. Write single register

Addr	Fun	Data start reg hi	Data start reg lo	Value hi	Value lo	CRC hi	CRC lo
01H	06H	00H	40H	0AH	9DH	XXH	XXH

- Read Input Register (0x04) command 01 04 0038 0022 F1DE to read all input register
- Write single Register (0x06) command 01 06 0004 07E8 CA75 to set the Modbus holding register address to 0x06(set device data 2024 year)
- Read holding Register (0x03) command 01 03 0002 0007 A5C8 to read all holding register

Input Register Address

Address < Hex >	Content	R/W Property	Comment	Data Format on Modbus Poll	Value length
0x01	AQI	R	AQI US	Signed	U16
0x02	CO2	R	ppm	Signed	U16
0x03	Temperature	R	℃	Signed	Tx100
0x05	Humidity	R	%	Signed	U16
0x06	Noise	R	dBm	Signed	U16
0x07	Light	R	Lux	Signed	U16
0x08	Air pressure	R	hPa	Signed	U16
0x09	TVOC	R	Index	Signed	U16
0x0A	PM2.5	R	µg/m3	Signed	U16
0x0B	PM10	R	µg/m3	Signed	U16
0x0C	PC0.3	R	Particle Count	Signed	U16
0x0D	PC2.5	R	Particle Count	Signed	U16
0x0E	PC10	R	IndexIndex	Signed	U16
0x0F	NOx	R	Index	Signed	U16
0x10	Ozone	R	ppb	Signed	U16
0x11	NO2	R	ppb	Signed	U16
0x12	CO	R	ppm	Signed	U16

0x13	HCHO	R	ppb	Signed	U16
0x14	H2	R	%Vol	Signed	U16
0x15	SO2	R	ppb	Signed	U16
0x16	NH3	R	ppb	Signed	U16
0x17	H2S	R	ppb	Signed	U16
0x18	SMELL	R	ppb	Signed	U16
0x19	C2H4O	R	ppb	Signed	U16

PS: When the value is 65535, it indicates that the value is invalid

Example

Read Temperature:

Send:

01 04 00 03 00 02 34 0B

Receive:

01 04 04 41 B7 85 1F 7C C6

Temperature is : 22.94

Holding Register Address

Address < Hex >	Content	R/W Property	Comment	Data Format on Modbus Poll	Value length
0x01	Date(UTC)	R/ W	07E8 09 04H 07E8H --> 2024 year 09H --> 9月, 04H --> 4日	Signed	U32
0x03	Time(UTC)	R/ W	000C 0A 01H 000CH --> 12 hour, 0CH --> 10 minute, 0CH --> 01second	Signed	U32