



Kaiterra Square Communication Protocol Modbus RTU

MAY 2021

Data type and format:

Data length=8

Stop bit=1

Transmission rate=9600

Check: even

Data format	Address	Function	Data	Error check
Data length	1	1	N	16 digit CRC code (Cyclic Redundancy Check)

Default modbus address code is 0x01

Commands

1) Read Input Register (0x04) command 01 04 00 00 00 05 30 09 to read all input register

2) Write single Register (0x06) command 01 06 00 00 00 02 08 0B to set the modbus address to 0x02

3) Read holding Register (0x03) command 01 03 00 00 00 02 C4 0B to read all holding register

Register Address

Address	Content	R/W Property	Comments
Input register 0	PM2.5	R	0-999 ug/m3
Input register 1	TVOC	R	0-9999 ppb
Input register 2	Temperature	R	-30.0-50.0°C
Input register 3	Humidity	R	0.0%-100% RH
Input register 4	CO2	R	0-9999 ppm
Input register 5	PM10	R	0-999 ug/m3
Input register 6	HCHO	R	0-2000 ppb
Input register 7	CO	R	0.0-500.0 ppm
Input register 8	O3	R	0.0-100.0 ppm
Input register 9	Reserved	R	
Input register 10	Reserved	R	
Input register 11	Reserved	R	
Input register 12	Reserved	R	
Input register 13	Reserved	R	
Input register 14	AQI	R	0-500
Holding Register 0	Modbus address code	R/W	Min 1, Max 247

- * Other features could be customized upon requests.
 - * Temperature is in absolute temperature $T(k)=273.15+t(\text{celsius})$
 - * Temperature and humidity have resolution of 0.1, the transmitted data is 10 times of the raw data.
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