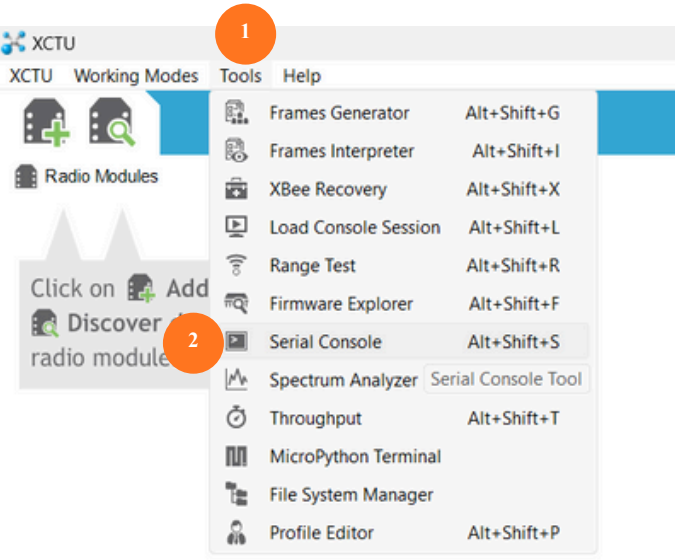
DIGI XCTU

Configuration & Test Utility Software

← Download link

Open it!

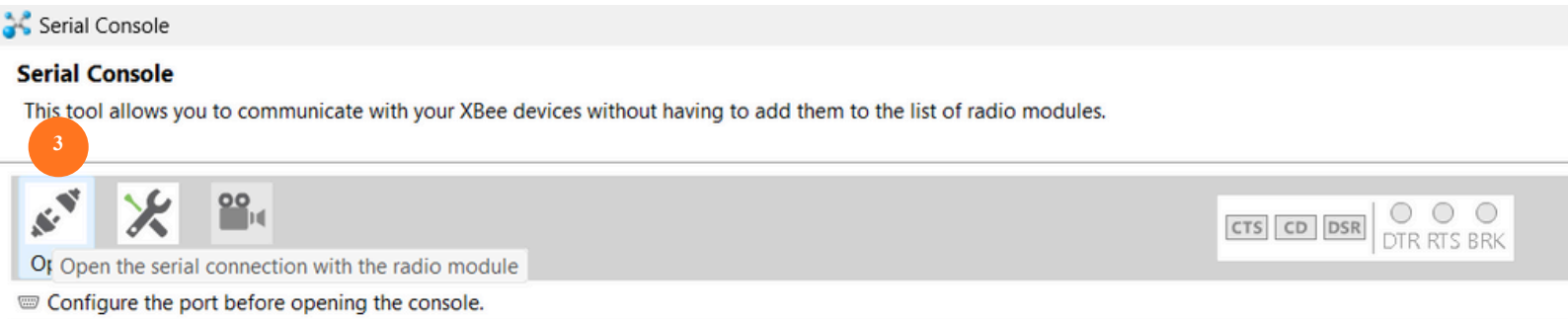


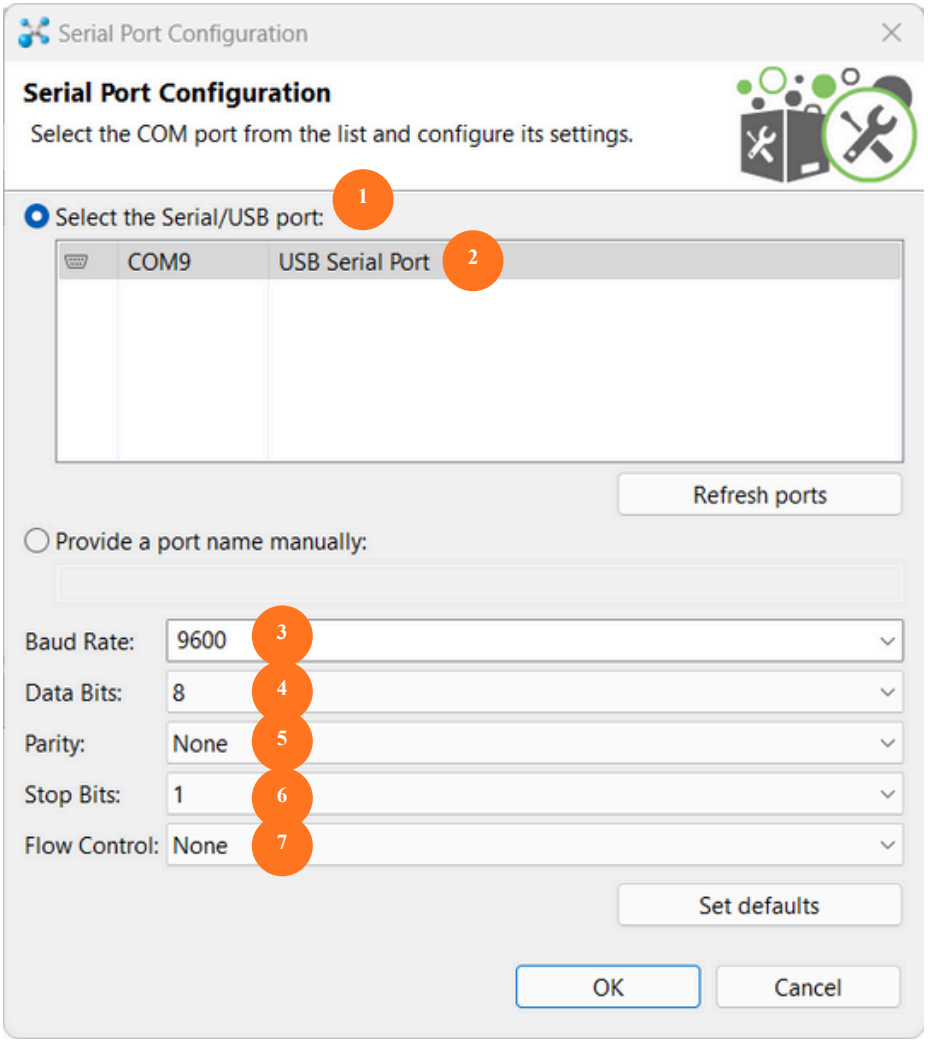
Open the Serial Connection

1. **Tools** (on top bar)
2. Serial Console
3. look for **Open** then Click it!

Short Key (Alternative)

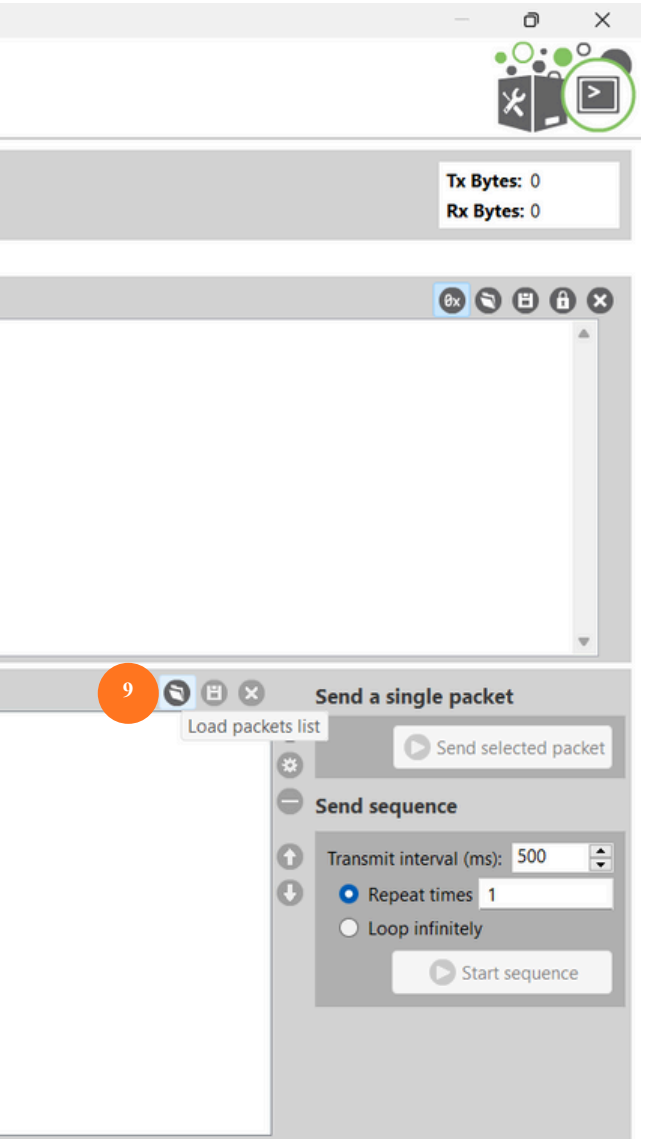
- Alt+Shift+S

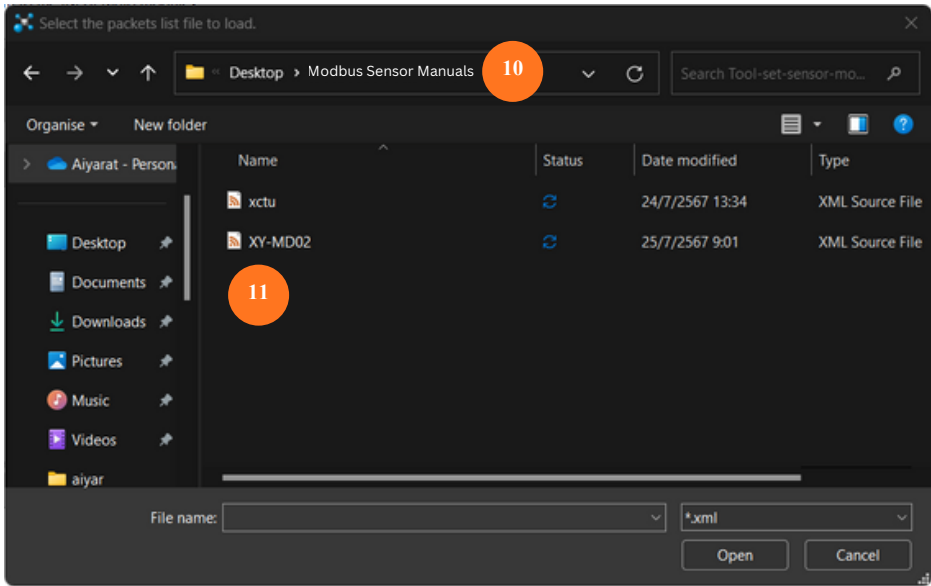




Serial Port Configuration

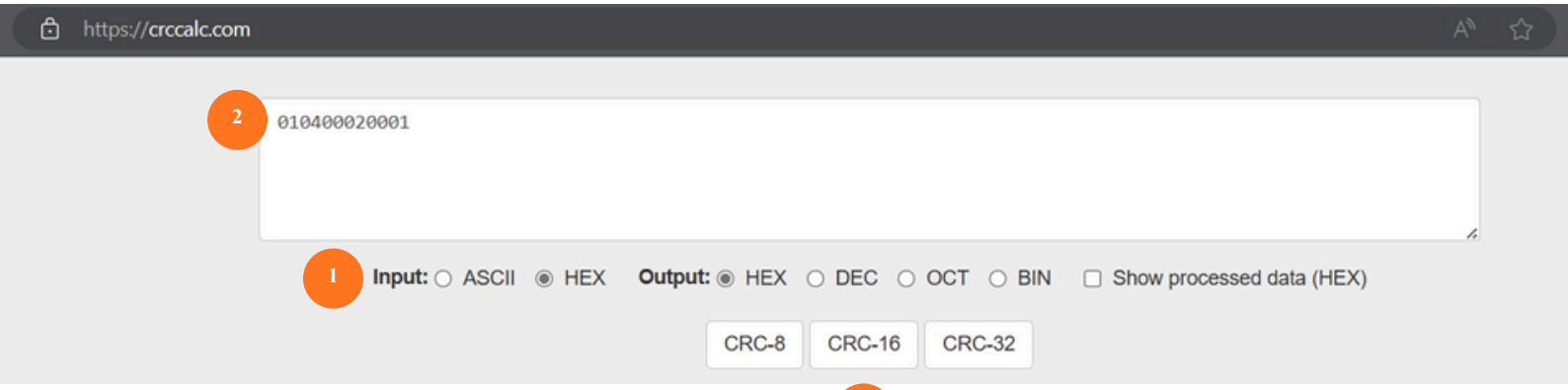
1. find Select the Serial/USB port
2. Select USB Serial Port for example COM9
3. Set Baud Rate: 9600
4. Set Data Bits: 8
5. Set Parity: None
6. Set Stop Bits: 1
7. Set Flow Control: None
8. press OK
9. point mouse at Load packets list (a folder icon) then press it!
10. find a folder name "Modbus Sensor Manuals"
11. Select the file with the same name as the sensor you want to set for example XY-MD02





CRC Calculator

Link



How to calculate CRC

1. find Input and Output then select HEX
2. Enter the hexadecimal number in the square box above to find the CRC.
3. Select CRC-16
4. Scroll down to find CRC-16/MODBUS

Example for XY-MD02

01 04 00 02 00 01 which is (add) 04 00 02 00 01 (crc) (crc)

This function uses a command to read humidity values 04 00 02 00 01 at device address (add) 01, The calculated CRC value is 0x0A90

Algorithm	Result	Check	Poly	Init	RefIn	RefOut	XorOut
CRC-16/ARC	0x1190	0xBB3D	0x8005	0x0000	true	true	0x0000
CRC-16/AUG-CCITT	0x83D9	0xE5CC	0x1021	0x1D0F	false	false	0x0000
CRC-16/BUYPASS	0x79CE	0xFEE8	0x8005	0x0000	false	false	0x0000
CRC-16/CCITT-FALSE	0xBCF7	0x29B1	0x1021	0xFFFF	false	false	0x0000
CRC-16/CDMA2000	0x2B8D	0x4C06	0xC867	0xFFFF	false	false	0x0000
CRC-16/DDS-110	0x7B1E	0x9ECF	0x8005	0x800D	false	false	0x0000
CRC-16/DECT-R	0x80CC	0x007E	0x0589	0x0000	false	false	0x0001
CRC-16/DECT-X	0x80CD	0x007F	0x0589	0x0000	false	false	0x0000
CRC-16/DNP	0xC32E	0xEA82	0x3D65	0x0000	true	true	0xFFFF
CRC-16/EN-13757	0x4F3B	0xC2B7	0x3D65	0x0000	false	false	0xFFFF
CRC-16/GENIBUS	0x4308	0xD64E	0x1021	0xFFFF	false	false	0xFFFF
CRC-16/KERMIT	0x8D0A	0x2189	0x1021	0x0000	true	true	0x0000
CRC-16/MAXIM	0xEE6F	0x44C2	0x8005	0x0000	true	true	0xFFFF
CRC-16/MCRF4XX	0x857A	0x6F91	0x1021	0xFFFF	true	true	0x0000
CRC-16/MODBUS 4	0x0A90	0x4B37	0x8005	0xFFFF	true	true	0x0000
CRC-16/RIELLO	0xE932	0x63D0	0x1021	0xB2AA	true	true	0x0000

CRC-16/MODBUS

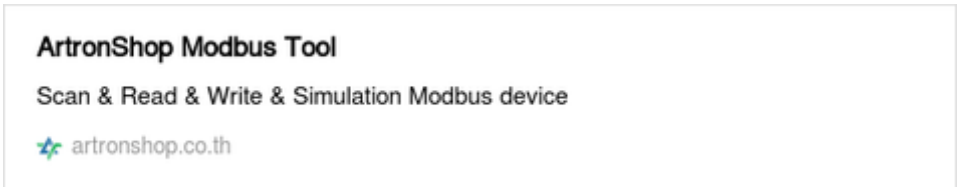
However, 0x0A90 cannot be used directly. We need to swap the bytes from 0x0A90, or 0A 90 to 90 0A, to get the result.

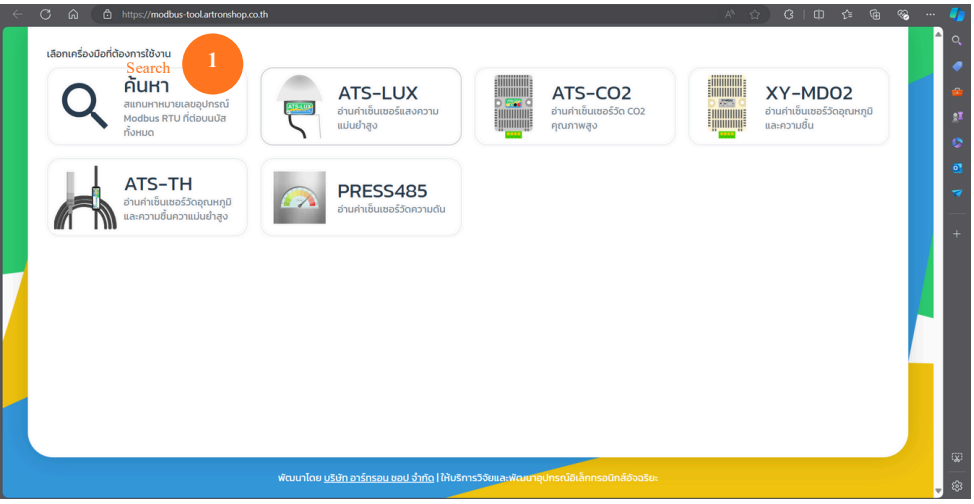
01 04 00 02 00 01 90 0A

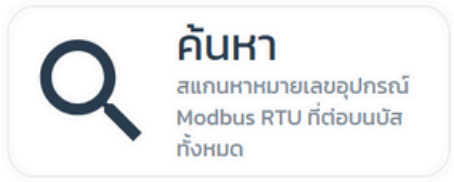
Ready to be use NOW!

Read Holding Register

[Link](#)

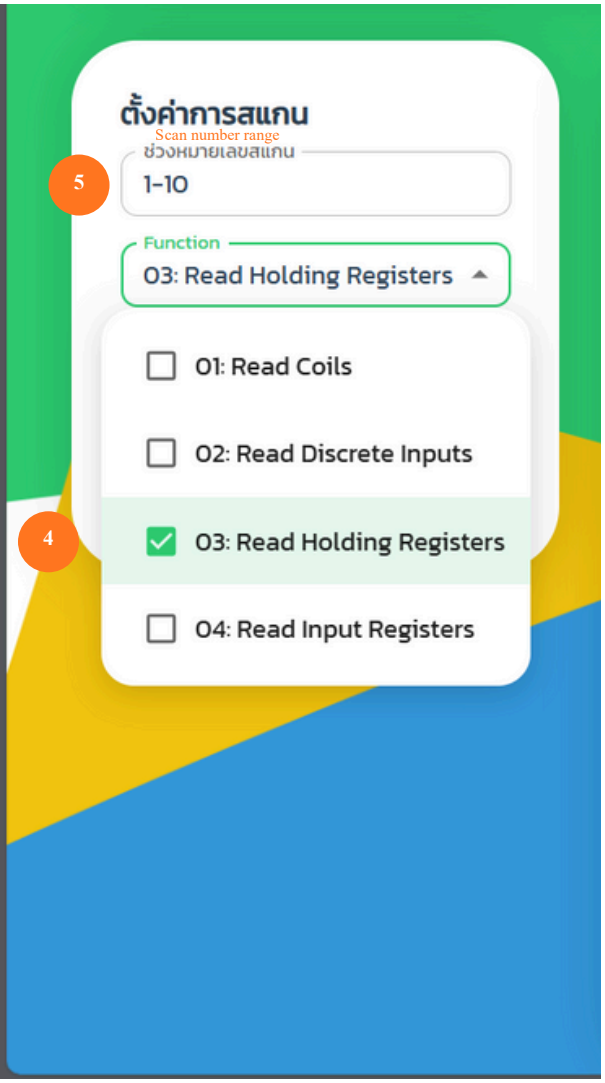


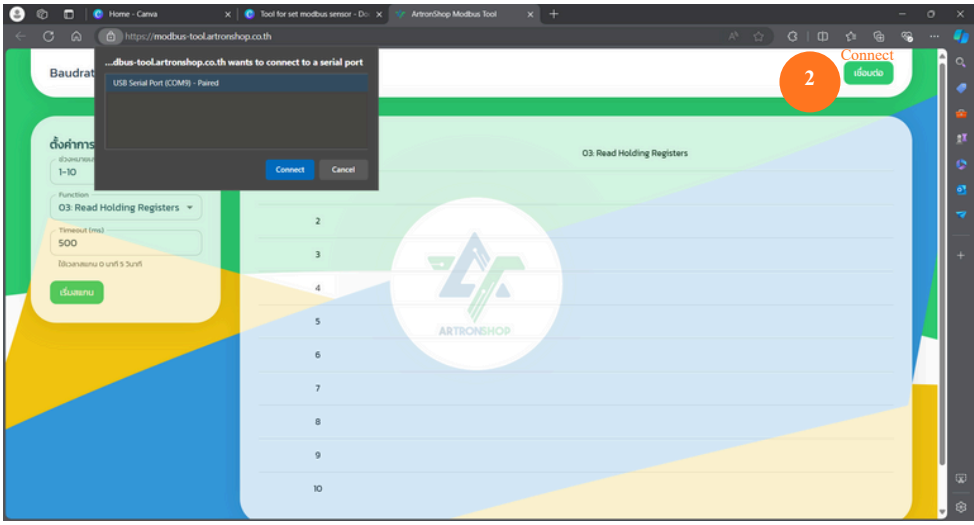


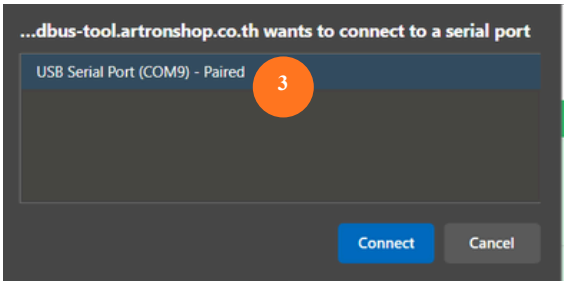


How to use ArtronShop

1. Select Search
2. Press Connect



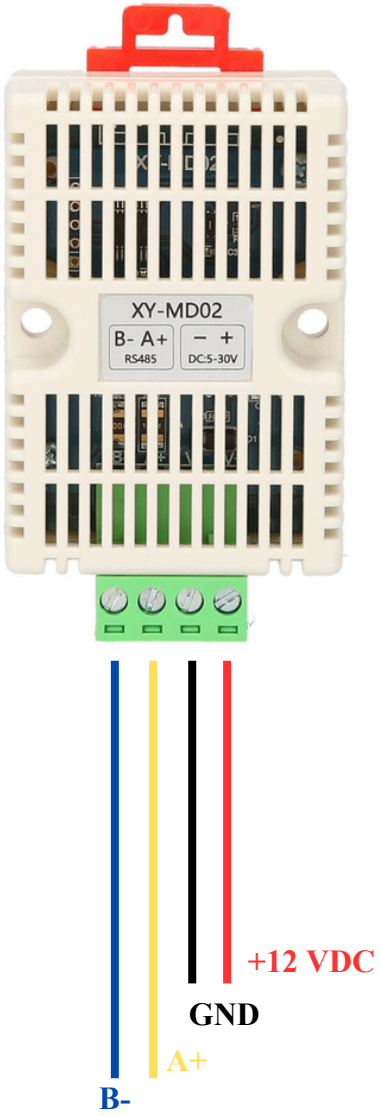




How to use ArtronShop

3. A pop-up window will appear, select the USB Serial Port. In this example is COM9.
4. At Function, select 03: Read Holding Registers.
5. Select the address range from the Scan number range. For example find the address 1 - 10.

XY-MD02



Read Temperature

(reg) **04 00 01 00 01** (crc) (crc)
(reg) **04 02 01** (tem) (crc) (crc)

Read Humidity

(reg) **04 00 02 00 01** (crc) (crc)
(reg) **04 02 02** (hum) (crc) (crc)

Read Temperature and Humidity

(reg) **04 00 01 00 02** (crc) (crc)
(reg) **04 04 01** (tem) **02** (hum) (crc) (crc)

Read Register

(reg) **03 01 01 00 01** (crc) (crc)
(reg) **03 02 00** (reg) (crc) (crc)

Modify Register

(reg) **06 01 01 00** (new) (crc) (crc)
(reg) **06 01 01 00** (new) (crc) (crc)

Modify Register and Baud Rate

(reg) **10 01 01 00 02 04 00** (new)
(bud) (bud) (crc) (crc)
(reg) **10 01 01 00 02** (crc) (crc)

Note

- **Blue** is the command to be sent to the sensor.
- **Red** is a bytes that the sensor responds, when the command is sent.
- **(reg)** is register or address of the sensor
- **(crc)** or Cyclical Redundancy Checking is a 2-byte appended value, it can be calculated via crccalc.com.
- **(tem)** is temperature measured by sensor
- **(hum)** is humidity measured by sensor
- **(new)** is the address you want to change of the device.
- **(bud)** is baud rate (cannot set below 9600, change by convert to Hexa).

RK900-09

Read Value

(add) **03 00 00 00 05** (crc) (crc)

(add) **03 0A** (spd) (spd) (dir) (dir) (tem) (tem) (hum) (hum) (prs) (prs) (crc) (crc)

Modify Register

00 10 (new) (crc) (crc)

00 10 00 7C

Read Address

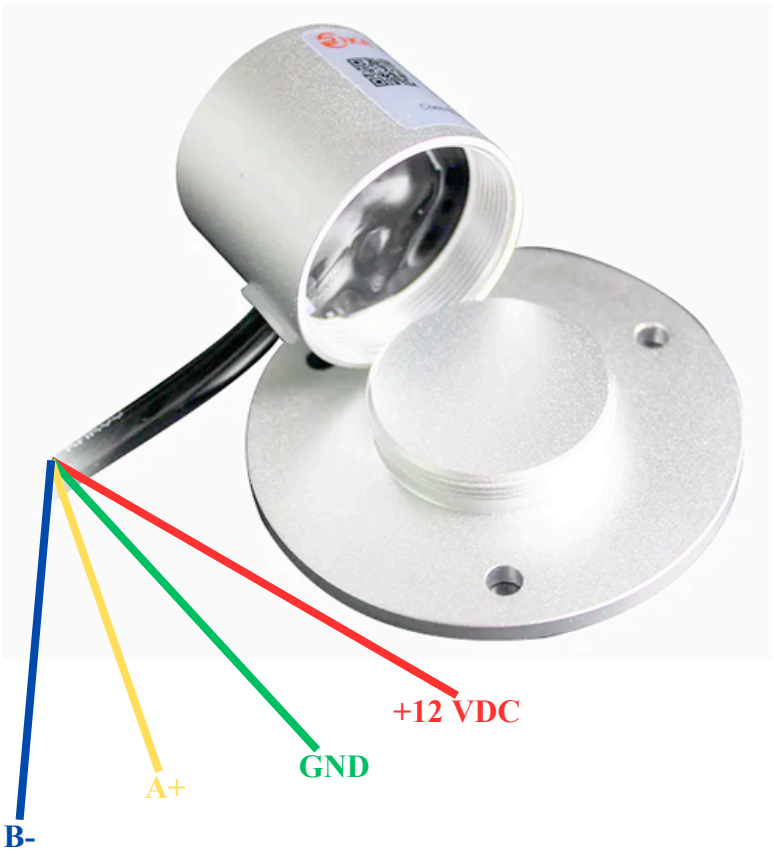
00 20 00 68

00 20 (add) (crc) (crc)

Note

- **Blue** is the command to be sent to the sensor.
- **Red** is a bytes that the sensor responds, when the command is sent.
- **(add)** is register or address of the sensor
- **(crc)** or Cyclical Redundancy Checking is a 2-byte appended value, it can be calculated via crccalc.com.
- **(spd)** is wind speed measured by the sensor.
- **(dir)** is wind direction measured by the sensor.
- **(tem)** is atmospheric temperature measured by sensor
- **(hum)** is atmospheric humidity measured by sensor
- **(prs)** is atmospheric pressure measured by sensor
- **(new)** is the address you want to change of the device.
- **(bud)** is baud rate (change by convert to Hexa)

RK200-02



Read Value

(add) **04 00 00 00 01** (crc) (crc)

(add) **04 02** (uvr) (uvr) (crc) (crc)

Modify Address

(add) **06 00 42 00** (new) (crc) (crc)

(add) **06 00 42 00** (new) (crc) (crc)

Note

- **Blue** is the command to be sent to the sensor.
- **Red** is a bytes that the sensor responds, when the command is sent.
- **(add)** is register or address of the sensor
- **(crc)** or Cyclical Redundancy Checking is a 2-byte appended value, it can be calculated via crccalc.com.
- **(uvr)** is UV radiation measured by sensor
- **(new)** is the address you want to change of the device.

CWT-TH02S

Read Temperature and Humidity

(add) **03 00 00 00 04** (crc) (crc)
(add) **03 08 02 FF FF FF** (tem) (tem) (hum) (hum) (crc) (crc)

Set ID

(add) **06 07 D0 00** (new) (crc) (crc)
(add) **06 07 D0 00** (new) (crc) (crc)

Enquiry ID

FF 03 07 D0 00 01 91 59
FF 03 02 00 (add) (crc) (crc)

Set Baud Rate

(add) **06 07 D1 00** (bud) (crc) (crc)
(add) **06 07 D1 00** (bud) (crc) (crc)

Note

- **Blue** is the command to be sent to the sensor.
- **Red** is a bytes that the sensor responds, when the command is sent.
- **(add)** is register or address of the sensor (1-254)
- **(crc)** or Cyclical Redundancy Checking is a 2-byte appended value, it can be calculated via crccalc.com.
- **(tem)** is temperature measured by sensor
- **(hum)** is humidity measured by sensor
- **(new)** is the address you want to change of the device.
- **(bud)** is baud rate {(0x00, 2400),(0x01, 4800),(0x02, 9600)}

TH-EC-PH-NPK

Read Everything

(add) **03 00 00 00 07** (crc) (crc)
(add) **03 0E** (hum) (hum) (tem) (tem) (con) (con) (ph) (ph) (n) (n) (p) (p) (k) (k) (crc) (crc)

Enquiry slave ID

FF 03 07 D0 00 01 91 59
FF 03 02 00 (add) (crc) (crc)

Set Slave ID

(add) **06 07 D0 00** (new) (crc) (crc)
(add) **06 07 D0 00** (new) (crc) (crc)

Set baud rate

(add) **06 07 D1 00** (bud) (crc) (crc)
(add) **06 07 D1 00** (bud) (crc) (crc)

Note

- **Blue** is the command to be sent to the sensor.
- **Red** is a bytes that the sensor responds, when the command is sent.
- **(add)** is register or address of the sensor (1-254)
- **(crc)** or Cyclical Redundancy Checking is a 2-byte appended value, it can be calculated via crccalc.com.
- **(hum)** is soil humidity measured by sensor
- **(tem)** is soil temperature measured by sensor
- **(con)** is soil conductivity measured by sensor
- **(ph)** is soil pH measured by sensor
- **(n)** is soil nitrogen measured by sensor
- **(p)** is soil phosphorus measured by sensor
- **(k)** is soil potassium measured by sensor
- **(new)** is the address you want to change of the device.
- **(bud)** is baud rate {(0x00, 2400),(0x01, 4800),(0x02, 9600)}