

KCD-HS Modbus RTU protocol

2022.05.13 ver 1.1

Connection Information

Wire Connection

Wire Color	description
brown	supply voltage(12~24vdc)
black	ground
gray	RS485 A(+)
blue	RS485 B(-)
white	anlog output

Function Codes

Function Code (Decimal)	Function Code (Hexadecimal)	Register type
03	03 hex	Read Holding Register
04	04 hex	Read Input Register
06	06 hex	Read Single Coil Register
16	10 hex	Write Holding Register

Default COM Setting

Description	Default	Note
Modbus Address(id)	31	1F hex
Baudrate	38400bps	
Data bits	8	
parity	none	
Stop bits	1	

Register Table

Modbus Measurement Data Registers : function code 0x04(Read), 0x06(Read)

Address (Decimal)	Address (Hexadecimal)	Register Description	Data Format	Unit
4	0004 _{hex}	Measured CO2 value	16-bit unsigned integer	1ppm@KCD-HS100 0.01%.vol@KCD-HS300
40	0028 _{hex}	Measured CO2 value	32-bit float	

§ ppm : The output of the Measured KCD-HS300 CO₂ value register (address 4) is scaled and must be multiplied by 100.

Modbus Product Information Data Registers : function code 0x04(Read), 0x06(Read)

Address (Decimal)	Address (Hexadecimal)	Register Description	Data Format	Description
65280	FF00 _{hex}	Application type	16-bit unsigned integer	0 : CO ₂ 1 : pH&EC Controller 2 : - 3 : O ₂ 4 : Soil Moisture 5 : Signal Converter 6 : Controller
65281	FF01 _{hex}	Hardware type	16-bit unsigned integer	3 : KCD-HS100 4 : KCD-HS200 5 : KCD-HS300
65282	FF00 _{hex}	Software Release	16-bit unsigned integer	Version 1.0.910.0
65283	FF01 _{hex}	Software Version	16-bit unsigned integer	Version 1.0.910.0
65284	FF02 _{hex}	Software Level	16-bit unsigned integer	Version 1.0.910.0
65285	FF03 _{hex}	Software Patch	16-bit unsigned integer	Version 1.0.910.0

Modbus Status Registers : function code 0x04(Read), 0x06(Read)

Address (Decimal)	Address (Hexadecimal)	Register Description	Data Format	Description
65296	FF10 _{hex}	Device status	16-bit unsigned integer	0 = Status OK. 1 = Critical error. 2 = Error. 4 = Warning.
65297	FF11 _{hex}	Com status	16-bit unsigned integer	0 = Status OK. 1 = CO ₂ reading

Modbus Configuration Data Registers : function code 0x03(Read), 0x10(Write)

Address (Decimal)	Address (Hexadecimal)	Register Description	Data Format	Description
1024	0400 _{hex}	Calibration	16-bit unsigned integer	0 : Factory reset other : calibration
1040	0410 _{hex}	Output change [changeable]	16-bit unsigned integer	At Current output Setting 0 : 4~20mA 1 : 0~20mA At Voltage output Setting 2 : 0~5V 3 : 0~10V
1041	0411 _{hex}	Measurement Range change	16-bit unsigned integer	KCD-HS100 2 = 2000 3 = 3000 : 9 = 9000 10 = 10000 [default:2, 2000ppm] KCD-HS200, HS300 10 = 100,000, 10% 11 = 110,000, 11% : 19 = 190,000, 19% 20 = 200,000, 20% [default:20, 20%]
65408	FF80 _{hex}	Command	16-bit unsigned integer	0 : Wait 1 : Flash Load 2 : Flash Save 3 : Reboot 4 : Factory Reset
65409	FF81 _{hex}	Modbus Address(ID)	16-bit unsigned integer	1...31 [default: 31]
65410	FF82 _{hex}	Baudrate	enum	Valid range 2400...115200bps 0 = 2400 1 = 4800 2 = 9600 3 = 19200 4 = 38400 5 = 57600 6 = 115200 [default:4, 38400bps]
65411	FF83 _{hex}	Stop bits	16-bit integer	Valid range 1...2 [default: 1]
65412	FF84 _{hex}	Parity bit	enum	0 = None 1 = Even 2 = Odd [default: 0, None]