

CARTE 8 INPUTS 8 OUTPUTS MODBUS RTU

Hardware resources:

1. RS485 communication interface
2. TTL communication interface
- 3.8 Optocoupler Isolated Input
- 4.8 optocoupler isolated output
5. A reset button
6. One user button
7. One user LED indicator
8. A power indicator
9. One STM8S103K microcontroller (new version changed to STM8S030K, 103K is single-chip microcomputer 030K is ARM)
- 10 8 relay status indication LED lights
11. DC Power Supply (12V Power Supply)
12. Power terminal interface (12V power supply)

Modbus RTU instructions

All characters in hexadecimal

Baud rate : **9600 8 NONE 1** Send in hexadecimal Hexadecimal reception

Web site for CRC calcul : <https://www.lammertbies.nl/comm/info/crc-calculation>

Address setting (ZUCZUG specification not MODBUS) (Pour cartes achetées en 2020) :

Default address is 01

Address to change

Set the address to 09	00 10 00 00 00 01 02 00 09 (no CRC)	address change to 09
Return	00 10 00 00 00 01 00 18	
Set the address to 07	00 10 00 00 00 01 02 00 07 (no CRS)	address change to 07
Return	00 10 00 00 00 01 00 18	

Address setting (specification not MODBUS) (Pour cartes achetées en 2023) :

Default address is 01

Address to change

Set the address to 01	00 10 00 00 00 01 02 00 01 6A 00	address change to 01
Return	00 10 00 00 00 01 02 00 01 6A 00	
Set the address to 02	00 10 00 00 00 01 02 00 02 2A 01	address change to 02
Return	00 10 00 00 00 01 02 00 01 2A 01	
Set the address to 03	00 10 00 00 00 01 02 00 03 EB C1	address change to 03
Return	00 10 00 00 00 01 02 00 01 EB C1	

Set the address to 04 00 10 00 00 00 01 02 00 **04** AA 03 address change to 04
 Return 00 10 00 00 00 01 02 00 **01** AA 03

Set the address to 05 00 10 00 00 00 01 02 00 **05** 6B C3 address change to 05
 Return 00 10 00 00 00 01 02 00 **01** 6B C3

Set the address to 06 00 10 00 00 00 01 02 00 **06** 2B C2 address change to 06
 Return 00 10 00 00 00 01 02 00 **01** 2B C2

00 10 00 00 00 01 02 00 **01** 6A 00//Passer à 01

Régler l'adresse : 02

00 10 00 00 00 01 02 00 **02** 2A 01//Passer à 02

Régler l'adresse : 03

00 10 00 00 00 01 02 00 **03** EB C1//Modifié en 03

Read address :

Read address 00 03 00 00 00 01 85 DB
 Return: 00 03 02 00 **01** CRC **01** is the address

MIND : specification not MODBUS ! **Only one module on serial com at once !**

Write coils 05 (trames RTU):

Address **Function** **Register** **Address** **Register Data** **CRC check**

Slave 0 Relay 0 turns on : **01** **05** 00 00 FF 00 8C 3A
 Slave 0 Relay 0 turns off : **01** **05** 00 00 00 00 CD CA

Slave 0 Relay 1 turns on : **01** **05** 00 01 FF 00 DD FA
 Slave 0 Relay 1 turns off : **01** **05** 00 01 00 00 9C 0A

Slave 0 Relay 2 turns on : **01** **05** 00 02 FF 00 2D FA
 Slave 0 Relay 2 turns off : **01** **05** 00 02 00 00 6C 0A

Slave 0 Relay 3 turns on : **01** **05** 00 03 FF 00 7C 3A
 Slave 0 Relay 3 turns off : **01** **05** 00 03 00 00 3D CA

Slave 0 Relay 4 turns on : **01** **05** 00 04 FF 00 CD FB
 Slave 0 Relay 4 turns off : **01** **05** 00 04 00 00 8C 0B

Write coils 05 (trames TCP/IP):

Address **Function** **Register** **Address** **Register Data** **CRC check**

	N°	0	1	2	3	4	5	6	7	8	9	10	11	
Slave 0 Relay 0 turns on :		00	00	00	00	00	06	01	05	00	00	FF	00	8C 3A relay 1 ON
Slave 0 Relay 0 turns off :		00	00	00	00	00	06	01	05	00	00	00	00	CD CA relay 1 OFF

Slave 0 Relay 4 turns on : 00 00 00 00 00 06 01 05 00 04 FF 00 8C 3A relay 5 ON
 Slave 0 Relay 4 turns off : 00 00 00 00 00 06 01 05 00 04 00 00 CD CA relay 5 OFF

Write all coils on/off (frames RTU):

Address CRC check

Slave 0 all on : 01 0F 00 00 00 08 01 00 FE 95 !
 Slave 0 all off : 01 0F 00 00 00 08 01 FF BE D5

Read coils 01 (frames RTU):

Address Function Register Address Register Data Register Data CRC check

Slave 1 Read 8 Relays :
 Send : 01 01 00 00 00 00 00 01 CRC
 Receive : 01 01 01 YY CRC YY : 8 Relays status

Read inputs 02 (frames RTU):

Address Function Register Address Register Data

SEND	Slave 01 Read 8 Inputs :	01	02	00	00	00	08	
RECEIVED		01	02	01	00			all inputs OFF
RECEIVED		01	02	01	01			input 1 at ON (all others OFF)
RECEIVED		01	02	01	02			input 2 at ON (all others OFF)
RECEIVED		01	02	01	03			input 3 at ON (all others OFF)
RECEIVED		01	02	01	04			input 4 at ON (all others OFF)
RECEIVED		01	02	01	10			input 5 at ON (all others OFF)
RECEIVED		01	02	01	20			input 6 at ON (all others OFF)
RECEIVED		01	02	01	40			input 7 at ON (all others OFF)
RECEIVED		01	02	01	80			input 8 at ON (all others OFF)
...
RECEIVED		01	02	01	03			input 1 and 2 at ON (all others OFF)
...
RECEIVED		01	02	01	11			input 1 and 5 at ON (all others OFF)
...
RECEIVED		01	02	01	C0			input 8 and 6 at ON (all others OFF)
...

Read inputs 02 (frames TCP/IP):

Address Function Register Address Register Data

		N°	0	1	2	3	4	5	6	7	8	9	10	11	
SEND	Slave 01 Read 8 Inputs :		00	00	00	00	00	06	01	02	00	00	00	08	
RECEIVED			00	00	00	00	00	06	01	02	01	00			all inputs OFF
RECEIVED			00	00	00	00	00	06	01	02	01	01			input 1 at ON
RECEIVED			00	00	00	00	00	06	01	02	01	02			input 2 at ON
RECEIVED			00	00	00	00	00	06	01	02	01	03			input 3 at ON
RECEIVED			00	00	00	00	00	06	01	02	01	04			input 4 at ON

RECEIVED	00 00 00 00 00 06	01	02	01	10	input 5 at ON
RECEIVED	00 00 00 00 00 06	01	02	01	20	input 6 at ON
RECEIVED	00 00 00 00 00 06	01	02	01	40	input 7 at ON
RECEIVED	00 00 00 00 00 06	01	02	01	80	input 8 at ON
...
RECEIVED	00 00 00 00 00 06	01	02	01	03 E1	input 1 and 2 at ON
...
RECEIVED	00 00 00 00 00 06	01	02	01	11 61	input 1 and 5 at ON
...
RECEIVED	00 00 00 00 00 06	01	02	01	A0 A1	input 8 and 6 at ON
...

ATTENTION : when more than 2 inputs there is a value at number 10 ! SCR ?

Web site for CRC calcul : <https://www.lammertbies.nl/comm/info/crc-calculation>

P + P- connection method [for IN1-IN8 switching value or voltage signal input]:

1. Switch input, jumper selection 3.3V: P + connected to 3V3, P- connected to GND.

IN1-IN8 connected to GND

2. Unplug the voltage signal input. External power supply [3.3-12V], the voltage signal is connected to IN1-IN8.

