

ARGEE3 Modbus interface

Application:

ARGEE uses ARGEE_TO_PLC registers and the PLC_TO_ARGEE registers to communicate with the PLC. The ARGEE program handles Modbus READ (FC3), Modbus Write (FC16).

The program uses as default communication parameters (19200 baud, no parity, 1 stop bit). Both Ports use the same parameters. (This can be modified in the TBEN webserver)

COM 0 - Parameters	
Operation mode	RS485 ▼
Swap A/B Line	no ▼
Data rate	19.2 kBit/s ▼
Character format	8N ▼
Stop bits	1 bit ▼
EOF detection	character timeout ▼
Termination active	yes ▼
Biasing active	yes ▼
Power supply VAUX1	V1(24VDC) ▼
Character timeout	20
Response timeout	30
1st end delimiter	3
2nd end delimiter	0
Time between frames (ms)	0

For communication to the PLC, the ARGEE program uses 32 IN words and 32 Out Words

		IN		OUT
		ARGEE TO PLC		PLC TO ARGEE
Word	bit	description	bit	description
0	0	Ack_read_cmd	0	Read_cmd
	1	Read_ready	1	Write_cmd
	2	Read_error		
	3	Ack_write_cmd		
	4	Write_ready		
	5	write_error		
1		reg_in0		PORT
2		reg_in1		SLID
3		reg_in2		REG
4		reg_in3		LEN
5		reg_in4		reg_out0
6		reg_in5		reg_out1
7		reg_in6		reg_out2
8		reg_in7		reg_out3
9		reg_in8		reg_out4
10		reg_in9		reg_out5
11		reg_in10		reg_out6
12		reg_in11		reg_out7
13		reg_in12		reg_out8
14		reg_in13		reg_out9
15		reg_in14		reg_out10
16		reg_in15		reg_out11
17		reg_in16		reg_out12
18		reg_in17		reg_out13
19		reg_in18		reg_out14
20		reg_in19		reg_out15
21		reg_in20		reg_out16
22		reg_in21		reg_out17
23		reg_in22		reg_out18
24		reg_in23		reg_out19
25				reg_out20
26				reg_out21
27				reg_out22
28				reg_out23

Read function

1. PLC loads the Modbus read parameters
 - **PORT** : the comport to read 0 or 1.
 - **SLID** : the Slave ID.
 - **REG** : the starting address
 - **LEN** : the number of registers to read. (max 24)
2. PLC sets the **Read_cmd** bit.
3. The ARGEE program sets **ACK_read_cmd**. On successful read, it will also set the **Read_ready bit** and the **Read_error**.
 - **Read_error 0** : Read succesfull
 - **Read_error 1** : Read timeout
4. The ARGEE program fills the **reg_in with** data read.
5. PLC reset the **Read_cmd** bit.

Write function

1. PLC loads the output registers **Reg_out**.
2. PLC loads the Modbus write parameters
 - **PORT** : the comport to read 0 or 1.
 - **SLID** : the Slave ID. Slave ID 0 broadcast to all devices on the comport and does not expect a reply.
 - **REG** : the starting address
 - **LEN** : the number of registers to read. (max 24)
3. PLC sets the **Write_cmd** bit.
4. The ARGEE program sets **ACK_write_cmd**. On successful write, it will also set the **Write_ready bit** and the **Write_error**.
 - **Write_error 0** : Write succesfull
 - **Write_error 1** : Write timeout
 - **Write_error 2** : NO reply was expected.
5. PLC reset the **Write_cmd** bit.

ARGEE HMI

For testing purposes, the ARGEE program also supports a HMI to operate the interface without a PLC. The HMI runs in a browser on URL: IP-address/hmi.html

Read

Screens for Modbus

[Read](#) [Write](#)

Port:

SLID:

Start reg:

Length(max 24):

read

SUCCESS

reg0: 61023	reg12: 0
reg1: 8192	reg13: 0
reg2: 58300	reg14: 0
reg3: 8192	reg15: 0
reg4: 58824	reg16: 48
reg5: 8192	reg17: 2
reg6: 0	reg18: 2
reg7: 0	reg19: 1
reg8: 60681	reg20: 0
reg9: 8192	reg21: 1
reg10: 58300	reg22: 1
reg11: 8192	reg23: 1

Write
(use the “set data” button before “write”)

Screens for Modbus

ReadWrite

Port: 0

SLID: 0

Start reg: 0

Length(max 7): 0

write

SUCCESS

Reg0: 0	Reg8: 0	Reg16: 0
Reg1: 0	Reg9: 0	Reg17: 0
Reg2: 0	Reg10: 0	Reg18: 0
Reg3: 0	Reg11: 0	Reg19: 0
Reg4: 0	Reg12: 0	Reg20: 0
Reg5: 0	Reg13: 0	Reg21: 0
Reg6: 0	Reg14: 0	Reg22: 0
Reg7: 0	Reg15: 0	Reg23: 0

Set data