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01.03.2017

Modbus RTU Specifications

for device PLU-IO-4.5

Supported Modbus types:
3 = Holding Register
4 = Input Register

Supportet Modbus functions:
3 = Read Holding Register
4 = Read Input Register
6 = Write Single Register
16 = Write Multiple Register

Physical Layer:
RS485, 2400 to 115200Baud, 1/8 unit-load, no terminator required, line polarization integrated
max. 128 devices without repeater
For additional information about Modbus specifications see http://www.modbus.org/

Device Typ:
Modbus RTU Slave

Default settings:
Slave address = 1, Baudrate = 19200 Baud, Even parity, 8 Databits, 1 Stopbit
Values can be changed by Modbus Parameter or USB connection with the programming software RIN-PROG-USB

Input Register

Signal Name	Typ	Modbus address	Default value	Typ	Description
dev_ver	uint16	0 (30001)			Device version, shown as xxx.xx example: value 100 = version 1.00
dev_typ	uint16	1			Device typ: 27 = PLU-IO-4.5
in_value(1)	uint16	2			Data of Input 1, see in_hw_conf
…					
in_value(4)	uint16	5			Data of Input 4
in_digital_hold	uint16	6			Data of Inputs set as digital input. Input set High will be hold until read out .0 Input 1 … .3 Input 4

Holding Register

Signal Name	Typ	Modbus address	Default value	Typ	Description
dev_mode	uint16	0 (40001)	1	rem.	Modbus slave mode: 1 = normal operation 2 = mode for PLU-IO-3.2 device: out AO2 linked to out AO1 out DO2 linked to out DO1
dev_address	uint16	1	1	rem.	Modbus slave address
dev_baudrate	uint16	2	8	rem.	Modbus Baudrate: 0 = reserved 4 = 2400 Baud 5 = 4800 Baud 6 = 9600 Baud 7 = 14400 Baud 8 = 19200 Baud 9 = 28800 Baud 10 = 38400 Baud 11 = 57600 Baud 12 = 115200 Baud
dev_parity	uint16	3	2	rem.	Modbus parity bit: 0 = No parity (2bit stop) 1 = Odd parity (1bit stop) 2 = Even parity (1bit stop) 3 = No parity (1bit stop)

in_hw_conf(1)	uint16	4	2	rem.	Input configuration: **For input configuration set to temp.-sensor the input value is scaled to Kelvin * 10. As example: input value 2731 = 0°C, 2931 = 20°C** 0 = disable 1 = digital (5-24V DC, 0=OFF, 65535=ON) 2 = analog U (0-30V, 0=0V, 65535=30V) 3 = low-analog (0-3,3V, 0V=0, 3,3V=65535) 4 = resistance (*Ohm) 5 = analog I (0-20mA, 0=0mA, 65535=20mA) 128* = PT100 (*0,1K) 129* = PT200 (*0,1K) 130* = PT500 (*0,1K) 131* = PT1000 (*0,1K) 132* = NI100 DIN (*0,1K) 133* = NI200 DIN (*0,1K) 134* = NI500 DIN (*0,1K) 135* = NI1000 DIN (*0,1K) 136* = NI100 TK5000 (*0,1K) 137* = NI200 TK5000 (*0,1K) 138* = NI500 TK5000 (*0,1K) 139* = NI1000 TK5000 (*0,1K) 256 = NTC 1K (*0,1K) 257 = NTC 1K8 (*0,1K) 258 = NTC 2K (*0,1K) 259 = NTC 2K2 (*0,1K) 260 = NTC 3K (*0,1K) 261 = NTC 4K7 (*0,1K) 262 = NTC 5K (*0,1K) 263 = NTC 10K (*0,1K) 264 = NTC 12K (*0,1K) 265 = NTC 15K (*0,1K) 266 = NTC 20K (*0,1K) 267 = NTC 3k3, Stefa FT-T30 (*0,1K) 268 = NTC 22k, Stefa FT-TH2 (*0,1K) *=with sensor error detection: input value = 0: sensor short circuit input value = 65535: sensor open
…					
in_hw_conf(4)	uint16	7	2	rem.	
out_value(1)	uint16	8	0		analog: out_value_min to out_value_max = 0-10V digital: 0 = off >0 = on out_value(1) = AO1 out_value(2) = AO2 out_value(3) = DO1 out_value(4) = DO2 out_value(5) = DO3
…					

out_value(5)	uint16	12	0		
out_value_min(1)	uint16	13	0	rem.	analog output: out_value for 0V output
…					
out_value_min(5)	uint16	17	0	rem.	
out_value_max(1)	uint16	18	65535	rem.	analog output: out_value for 10V output
…					
out_value_max(5)	uint16	22	65535	rem.	
out_hw_conf(1)	uint16	23	out 1+2: 3 out3-5: 1	rem.	Output configuration: (analog mode only for output 1+2 = AO1+2) 0 = disable 1 = digital (out_value=0: OFF, out_value>0: ON) 2 = digital pwm (out_value=out_value_min: 0% pwm out_value=out_value_max: 100% pwm) 3 = analog (out_value=out_value_min: 0V out_value=out_value_max: 10V)
…					
out_hw_conf(5)	uint16	27	3	rem.	
out_hw_pwm_time(1)	uint16	28	200	rem.	time for pwm cycle (1 step = 50ms)
…					
out_hw_pwm_time(5)	uint16	32	200	rem.	
in_hw_s_lenght(1)	uint16	33	0	rem.	compensation value for resistance on cable (temp.-sensor and resistance inputs) (*0,1Ohm)
…					
in_hw_s_lenght(4)	uint16	36	0	rem.	
fault_timer	uint16	37	0	rem.	fault timer 0 = disabled >0 = time for bus fault (1 step = 50ms) On bus fault, out_value will be set to fault_out_value
fault_out_value(1)	uint16	38	0	rem.	fault value for output 1
…					
fault_out_value(5)	uint16	42	0	rem.	

rem. = remanence data