

Prepared Jonas Hemming	Date 2016-02-11	Version C	No 2/ICD-600:00 227
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Oden Modbus interface

Prepared Jonas Hemming	Date 2016-02-11	Version C	No 2/ICD-600:00 227
---------------------------	--------------------	--------------	------------------------

1 Generic.....	3
1.1 Document history.....	3
1.2 References.....	3
2 Settings.....	4
2.1 RS485 settings.....	4
2.2 ADU.....	4
3 Modbus register.....	5
3.1 Coils.....	5
3.2 Discrete inputs.....	5
3.3 Input registers.....	5
3.4 Holding registers.....	7

Prepared Jonas Hemming	Date 2016-02-11	Version C	No 2/ICD-600:00 227
---------------------------	--------------------	--------------	------------------------

1 Generic

1.1 Document history

Version	Date	Sign	Comment
PA1	2012-11-20		Initial release.
PA2	2012-11-21		Clarifications, max and default values added
PB1	2014-07-10		Update with extended functions
B	2014-09-10		Definitive release
PC1	2015-05-04		Further extended functions
C	2016-02-11	JH	English translation complete, definitive release

1.2 References

- [1] MODBUS Application Protocol Specification V1.1b,
<http://www.modbus.org>, December 28, 2006.
- [2] MODBUS over serial line specification and implementation guide V1.02,
<http://www.modbus.org>, December 20, 2006.
- [3] <http://www.simplymodbus.ca/FAQ.htm>

Prepared Jonas Hemming	Date 2016-02-11	Version C	No 2/ICD-600:00 227
---------------------------	--------------------	--------------	------------------------

2 Settings

2.1 RS485 settings

Parameter	Setting
Baudrate	19200
Parity	0
Stop bit	1
Data bits	8

2.2 ADU

ID (1 byte)	Function Code	Data	CRC (2 bytes)
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Default slave ID for the Oden actuator is 2, using the GUI:t this can be modified from 1 to 32.
CRC polynomial is 0xA001.

Prepared Jonas Hemming	Date 2016-02-11	Version C	No 2/ICD-600:00 227
---------------------------	--------------------	--------------	------------------------

3 Modbus register

3.1 Coils

Address		Min	Max	Default
0x0001	On/Off run decrease (0=inactive, 1=decrease) Only valid for On/Off actuators, delay will be inserted if direction is changed during run	0	1	0
0x0002	On/Off run increase (0=inactive, 1=increase) Only valid for On/Off actuators, delay will be inserted if direction is changed during run	0	1	0

3.2 Discrete inputs

Address		Min	Max	Default
1x0001	End position open (0=not open, 1=open)	0	1	0
1x0002	End position closed (0=not closed, 1=closed)	0	1	0
1x0003	Error signal (0=no error, 1=error)	0	1	0
1x0004	Local control (0=remote, 1=local)	0	1	0

3.3 Input registers

Address		Min	Max	Default
3x0001	Modbus protocol version	0	65535	1
3x0002	Hardware version 0	0	65535	0
3x0003	Hardware version 1	0	65535	0
3x0004	Product version 0 (137)	0	65535	137
3x0005	Product version 1 (2048=H)	0	65535	0
3x0006	Software version 0 (95)	0	65535	95
3x0007	Software version 1 (257=PB1)	0	65535	0
3x0008	Reserved			
3x0009	Reserved			
3x0010	Reserved			
3x0011	Reserved			
3x0012	Reserved			
3x0013	Reserved			

Prepared Jonas Hemming	Date 2016-02-11	Version C	No 2/ICD-600:00 227
---------------------------	--------------------	--------------	------------------------

3x0014	Reserved			
3x0015	Reserved			
3x0016	Reserved			
3x0017	Reserved			
3x0018	Reserved			
3x0019	Reserved			
3x0020	<p>Error register (LSB)</p> <p>0000 0000 0000 0001 = Current measurement 0000 0000 0000 0010 = Hall sensor 0000 0000 0000 0100 = Current measurement offset 0000 0000 0000 1000 = V_Logic 0000 0000 0001 0000 = V_Drive 0000 0000 0010 0000 = 12 V 0000 0000 0100 0000 = Isolated AD 0000 0000 1000 0000 = Initialization required 0000 0001 0000 0000 = Lost 4-20 mA signal 0000 0010 0000 0000 = Calibration 0000 0100 0000 0000 = Overtemperature 0000 1000 0000 0000 = Parameter memory fault 0001 0000 0000 0000 = Overload 0010 0000 0000 0000 = End position lost 0100 0000 0000 0000 = Magnet cross value not valid 1000 0000 0000 0000 = Magnet cross function not valid</p>	0	65535	0
3x0021	<p>Error register (MSB)</p> <p>0000 0000 0000 0001 = Stuck error 0000 0000 0000 0010 = Magnets not found</p>	0	3	0
3x0022	<p>Selected setpoint source</p> <p>0 = None 1 = 4 – 20mA 2 = 0 – 10VDC 3 = Inc/Dec input (3-point control) 4 = Modbus</p>	0	4	0
3x0023	<p>Status for setpoint source</p> <p>0 = Setpoint source in control 1 = Other source in control (Actuator in reset mode, calibration mode or manually controlled from GUI or internal 3-point control)</p>	0	1	0
3x0024	Actual position (0-65535 corresponds to 0-100%)	0	65535	0
3x0025	Speed in 0.1 degrees/s (signed)	-32767	32768	0

Prepared Jonas Hemming	Date 2016-02-11	Version C	No 2/ICD-600:00 227
---------------------------	--------------------	--------------	------------------------

3x0026	Temperature in °C (signed)	-32767	32768	0
3x0027	Available torque in Nm (signed)	-32767	32768	0

3.4 Holding registers

Address		Min	Max	Default
4x0001	Setpoint (0-65535 corresponds to 0-100% of calibrated range) This register is disabled (=0) for On/Off actuators	0	65535	0
4x0002	Activation position for closed indication (1 = 0.1% of stroke range)	0	100	0
4x0003	Activation position for opened indication (1 = 0.1% of stroke range)	900	1000	1000
4x0004	Max speed (degrees/s)	0	Dep on actuator type	Dep on actuator type
4x0005	Control torque (Nm)	0	Dep on actuator type	Dep on actuator type
4x0006	Hold torque (Nm)	0	Dep on actuator type	Dep on actuator type
4x0007	Control force (kN)	0	Dep on actuator type	Dep on actuator type
4x0008	Hold force (kN)	0	Dep on actuator type	Dep on actuator type
4x0009	Closing torque (Nm)	0	Dep on actuator type	Dep on actuator type
4x0010	Closing force (kN)	0	Dep on actuator type	Dep on actuator type
4x0011	Transient zone (0.1 %)	0	Dep on actuator type	Dep on actuator type
4x0099	Modbus-ID	1	32	2