Software protocol MODBUS-RTU

Modbus RTU
Communication Settings:
9600 baud
8 data bits
No parity
1 stop bit

Supported functions:

Read Register (3)		
Request:	Response:	Exceptions:
Byte 0 : FC = 0x3	Byte 0 : FC = 0x3	Byte 0 : FC = 0x83
Byte 1-2: Address	Byte 1 : Number of bytes	Byte 1 : 0x02 (Illegal adres)
Byte 3-4 : Number	Byte 2-n: Values	

Write Register (6)		
Request:	Response:	Exceptions:
Byte 0: FC = 0x06	Byte 0: FC = 0x06	Byte 0: FC = 0x86
Byte 1-2: Address	Byte 1-2: Address	Byte 1: 0x02 (Illegal address)
Byte 3-4: New value	Byte 3-4: New value	0x03 (Illegal value)

Read actual value (4)		
Request:	Response:	Exceptions:
Byte 0: FC = 0x04	Byte 0: FC = 0x04	Byte 0: FC = 0x84
Byte 1-2: Address	Byte 1-2: Number of bytes	Byte 1: 0x02 (Illegal address)
Byte 3-4: Number	Byte 3-4: Values	

Request slave ID (17)		
Request:	Response:	Exceptions:
Byte 0: FC = 0x11	Byte 0: FC = 0x11	None
	Byte 1: Number of bytes	
	Byte 2: Sw version	
	Byte 3: Status	
	(0 = OFF, 0xFF = ON)	
	Byte 4: Configuration	
	Byte 5: Slave ID (180)	

Illegal function (all nog listed Requests)		
Example Request:	Response:	Exceptions:
Byte 0: FC = 0x02	None	Byte 0: FC = 0x82
		Byte 1: 0x01 (Illegal function)

Swentibold WTW Modbus registers **26-8-2013**

Registers					
no	Discription	mode	repr'	unit	range
0	Type	R		-	1 = basis 2 = Bypass 3 = comfort
1	On/Off	R	B	-	0 = off 1 = on
2	Bypass open temperature	R/W	A	ºC	15.0 . . 30.0
3	Recirculation temperature	R/W	A	ºC	-10.0 . . 30.0
4	comfort temperature	R/W	A	ºC	setp min . . setp max
5	turn on delay Hygr	R/W	B	min	0 . . 120
6	turn off delay Hygr	R/W	B	min	0 . . 120
7	filter pollution time	R/W	B	weeks	1 . . 99
8	filter time reset	R/W	B	-	0 = no 1 = yes
9	Start monday day	R/W	B	min*10	0:00 . . 23:50, OFF
10	Start monday night	R/W	B	min*10	0:00 . . 23:50, OFF
11	Start tuesday day	R/W	B	min*10	0:00 . . 23:50, OFF
12	Start tuesday night	R/W	B	min*10	0:00 . . 23:50, OFF
13	Start wednesday day	R/W	B	min*10	0:00 . . 23:50, OFF
14	Start wednesday night	R/W	B	min*10	0:00 . . 23:50, OFF
15	Start thursday day	R/W	B	min*10	0:00 . . 23:50, OFF
16	Start thursday night	R/W	B	min*10	0:00 . . 23:50, OFF
17	Start friday day	R/W	B	min*10	0:00 . . 23:50, OFF
18	Start friday night	R/W	B	min*10	0:00 . . 23:50, OFF
19	Start saturday day	R/W	B	min*10	0:00 . . 23:50, OFF
20	Start saturday night	R/W	B	min*10	0:00 . . 23:50, OFF
21	Start sunday day	R/W	B	min*10	0:00 . . 23:50, OFF
22	Start sunday night	R/W	B	min*10	0:00 . . 23:50, OFF
23	autom. summer/winter time	R/W	B	-	0 = no 1 = yes
24	holiday mode active	R/W	B	-	0 = no 1 = yes
25	hour counter low position	R	B	hour	-
26	hour counter middle position	R	B	hour	-
27	hour counter high position	R	B	hour	-
28	hour counter filter	R	B	hour	-
29	Status	R	C		Bit 0 = reserved Bit 1 = middle vent Bit 2 = high vent Bit 3 . . 16 reserved
30	Digin	R	C		Bit 0 = dp_la Bit 1 = dp_bla Bit 2 = hygrostate Bit 3 = fan high (3-s) Bit 4 = fan middle (3-s) Bit 5 = on/off Bit 6 = air under press. Bit 7 = air quality Bit 8 = reserved
31	Bypass status	R	B	-	0 = close 1 = open
32	earth cooler status	R	B	-	0 = close 1 = open

33	clock: SEC	R/W	B	-	59
34	clock: MIN	R/W	B	-	59
35	clock: HR	R/W	B	-	23
36	clock: day of week	R	B	-	0=mon . .6=sun
37	clock: week of month	R/W	B	-	1 . . 31
38	clock: month	R/W	B	-	1 . . 12
39	clock: year	R/W	B	-	. . . .
40	error status-1	R/C	C	-	Bit 0 = reserved Bit 1 = E1 Bit 2 = E2 Bit 3 = E3 Bit 4 = E4 Bit 5 = E5 Bit 6 = Et Bit 7 = Ea Bit 8 = Ft Bit 9 = Fa Bit 10 = oO Bit 11 = time Bit 12 = EP
41	error status-2	R/C	C	-	Reserved
42	ventilation position	R/W	B	-	0 = auto 1 = low 2 = middle 3 = high
43	recirculation status	R	B	-	0 = open 1 = close
44	cooling status	R	B	-	0 = off 1 = on
45	heating status	R	B	-	0 = off 1 = on
46	cooling percentage	R	B	%	0 . . 100 %
47	heating percentage	R	B	%	0 . . 100 %

**) Writing to this register has the same effect as switching a switch OFF connteted to terminals SK6-6 and SK6-7 of the base board (provided P4.55 = 0 or 1).
Note: the controller also switches itself on and off under certain conditions, e.g. for the temperature supply protection and the hygrostat input.

***) Writing to this register has the same effect as switching the bypass as with the Carel contol panel.

Actual values					
no	Description	mode	repr'	unit	Range
0	continued air temperature (Fortluft)	R	A	ºC	–30.0 . . 80.0 ºC
1	fresh air temperature (Zuluft)	R	A	ºC	–30.0 . . 80.0 ºC
2	exhausted air temperature (Abluft)	R	A	ºC	–30.0 . . 80.0 ºC
3	outdoor air temperature (Aussenluft)	R	A	ºC	–30.0 . . 80.0 ºC
4	outdoor temperature	R	A	ºC	–30.0 . . 80.0 ºC
5	room temperature	R	A	ºC	–30.0 . . 80.0 ºC
6	rotational speed fresh air (Zuluft)	R	B	rpmx10	0 . . Rpm max
7	rotational speed exhausted air (Abluft)	R	B	rpmx10	0 . . Rpm max
8	Setpoint rpm fresh air (Zuluft)	R	B	rpm	0 . . Rpm max
9	Setpoint rpm exhausted air (Abluft)	R	B	rpm	0 . . Rpm max
10	speedcontrol fresh air (Zuluft)	R	B	%	0 . . 100 %
11	speedcontrol exhaused air (Abluft)	R	B	%	0 . . 100 %

*) Repr = representation:

A = fixed point one decimal
B = whole number
C = bit representation

*1) time representation:
The value entered and read is the value in minutes. Only values divisible by 10 can be used (0, 10, 20, 30, 40, 50, etc.)
(0 = 0:00, 1430 = 23:50, 1440 = off)