WISE – Modbus tables

Technical documentation for designers, commissioning and management engineers 20150223

New versions and functions

- ADAPT Device and Damper version 5.2
- ADAPT Damper with CAC control
- CONTROL Room and Zone

Swegon

Contents

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*) Flow-constant tables for Room and Zone applications has been moved to the Service Manual.

Table 1. Version code for the ADAPT-controller

ADAPT device & damper version	Versions code in the controller, 3x0018
3	3
4	4 or 256
5	768
5.1	1024 and 1025
5.2	1280

Modbus variables for the ADAPT products

Coil Status Discrete Output (1 bit) R/W

Modbus	Name	Min/Max	Remarks	Std	Version
0x0001	Emergency control	0/1	Activates the Emergency control function which opens or closes the dampers.	0	3-5
0x0002	Emergency action	0/1	0=Damper closes when Emergency control is activated,1=Damper opens when Emergency control is activated	0	3-5
0x0003	Test Level	0/1	1=used to set controller to manual mode. See "Damper 1 pos man"	0	3-5
0x0004	OCC Manual	0/1	0=Auto 1=Manual set	0	3-5
0x0005	OCC Set	0/1	0=sets standby, 1=sets occupied	0	3-5
0x0006	Heating present	0/1	1=Heating with water is connected, includes cooling with air, 0=Only cooling	1	3-5
0x0007	Night cool	0/1	0=No action, 1=Night cool on.	0	3-5
0x0008	Moorning boost	0/1	Sets controller to new set point quick heating (28 °C)	0	5
0x0009	Valve test	0/1	Activates heat output for 8 minutes	0	5
0x0010	Reversed emergency function	0/1	Makes it possible to have different damper position on slave products in emergency mode.	0	5
0x0011	Ventilation boost	0/1	Activates the ventilation boost function after a longer unoccupied mode.	0	5
0x0012	Air quality control	0/1	Activates air quality control in unoccupied mode	0	5
0x0013	Not used	0/1			
0x0014	Not used	0/1			

Input Status Discrete Input (1 bit) Read only

Modbus	Name	Min/Max	Remarks	Std	Version
1x0001	OCC Sensor Status	0/1	Local Device Occupancy Sensor Status. 1=occupied, 0=standby, resets after 1 min.		3-5
1x0002	OCC Mode	0/1	System occupancy mode. 1=occupied, 0=standby, resets after time set in OCC Delay off.		3-5
1x0003	Spare 1	0/1	Spare		3-5
1x0004	Spare 2	0/1	Spare		3-5
1x0005	Alarm stroke fault	0/1	Operating Alarm; 1=stroke calibration fault - LED is red		3-5
1x0006	Alarm actuator	0/1	Operating Alarm; 1=actuator fault - LED is red		3-5
1x0007	Alarm pressure sensor	0/1	Operating Alarm; 1=pressure sensor values out of range - LED is red		3-5
1x0008	Alarm temperature sensor	0/1	Operating Alarm; 1=room temp sensor values out of range - LED is red		3-5
1x0009	Alarm temperature sensor	0/1	Operating Alarm; 1=internal temp sensor fault values out of range - LED is red		3-5
1x0010	Alarm wrong set points	0/1	Operating Alarm: 1=set point for heating and cooling are overlapping - LED is red		3-5
1x0011	Alarm CAC sensor	0/1	1=value from CAC sensor incorrect or missing		5
1x0012	Alarm comfort temp	0/1	Room temperature outside set point ±2° K. Limit is adjustable in variable 4x0040 - LED is flashing red/green		5
1x0013	Alarm comfort CO_2	0/1	CO_2 level above max level + 200 ppm. Limit is adjustable in variable 4x0041. - LED is flashing red/green		5
1x0014	Not used	0/1			
1x0015	Not used	0/1			

Holding register 16 bit integer register R/W

Modbus	Name	Min/Max	Remarks	Std	Version
4x0001	Component ID	0-10	ID for type of controller in CONTROL Room/Zone/Optimize and WISE system	6	3-5
4x0002-18	Component Name	0-999	Name built of max 16 char, use ASCII standard table.	0	3-5
4x0019	*Operating mode*	0-10	0=Normal air cool and water heat 1=Not used! 2=Not used! 3=Air cool, Air heat and Water heat (Needs DETECT Ta) 4=Air cool and Water cooling (2 step cooling)	0	3-5
4x0020	Application type	0-10	0=Internal controller, 1=External controller (CO_2 + Temp), 2=External signal CO_2+ intern Room temp, 3=Slave function, 4=External set point adjuster ±5 Volt, 5=External 0-10 V temp sensor (10°=0 V 30°=10 V)	0	3-5
4x0021	Temp sensor use	0-3	Internal temperature sensor, if DETECT Ta is defined it replaces the room temp sensor in the ADAPT products. 0=[Sensor 1=room temp, Sensor 2=supply temp] 1=[Sensor 1=not used, Sensor 2=room temp] 2=[Sensor 1=not used, Sensor 2=supply temp] Note:: 0=All Supply devices, 1=Damper in extract duct, 2=Damper in supply duct. When 4x0020=5 set 4x0021 to 0	0	3-5
4x0022	CoolSetpointTempOcc	0-50 °C	Cool set temperature, occupied	23	
4x0023	HeatSetpointTempOcc	0-50 °C	Heat set temperature, occupied	21	
4x0024	CoolSetpointTempEcon	0-50 °C	Cool set temperature, economy	25	3-5
4x0025	HeatSetpointTempEcon	0-50 °C	Heat set temperature, economy	20	3-5
4x0026	SetpointTempNight	0-50 °C	Set point night cooling room controller (from BMS)	18	3-5
4x0027	SetpointTempMBoost	0-50 °C	Set point for morning boost function	25	3-5
4x0028	Min flow economy	0-32000 l/s	Min flow set point at standby (supply air)	5	3-5
4x0029	Min flow occupied	1-32000 l/s	Min flow set point at occupied (supply air)	10	3-5
4x0030	Max flow occupied	1-32000 l/s	Max flow set point at occupied l/s	40	3-5
4x0031	CO_2 min	300-1000 ppm	Min value for CO_2 start point for airflow control 4x0020=2	500	3-5
4x0032	CO_2 max	500-2000 ppm	Max value for CO_2 endpoint where airflow has reached max 4x0020=2	1000	3-5
4x0033	CO_2 in room		Calculated CO_2 if voltage measurement is used with Application type 2. Must reset to 0 if appl. type 2 is not used. Value might be set by BMS system.	0	3-5
4x0034	OCC delay off	0-60 min	Time before switching from occupied to economy.	20	3-5
4x0035	OCC delay on	0-120 s	Time before switching from economy to occupied	0	3-5
4x0036	Manual Damper pos	0-100%	Manual device position for device when Test Level=1	0	3-5
4x0037	LED function	0-4	0=No LED indication, 1=Function control, 2=Comfort, 3=Function+Comfort, 4=Function, no LED at stand by.	1	3-5
4x0038	Alarm set time	10-120 m	Time before alarm code is set	60	3-5
4x0039	Alarm reset time	0-60 m	Time before alarm is reset.	1	3-5
4x0040	Max temp deviation	1-10 K	Max deviation before alarm is set	2	3-5
4x0041	Max CO_2 deviation	100-1000 ppm	Allowed deviation + ppm of CO_2 value before alarm is set. Resets automatically.	200	3-5
4x0042	Security access Enter	0-9999	Entry of security code for accessing protected values. Resets to protected mode after 30 minutes.		3-5
4x0043	CoolHeatTempDiff	0-50 °C	Minimum difference between room set point and supply air temperature before using Air cooling or Air heating.	10	3-5
4x0044	Room temp gain Cool	1-20000	PI controller gain for cooling (x16del)	500	3-5
4x0045	Room temp itime Cool	1-1800	PI controller Itime for cooling (x16del)	10	3-5

Modbus	Name	Min/Max	Remarks	Std	Version
4x0046	Room temp gain Heat	1-20000	PI controller gain for heating (x16del)	500	3-5
4x0047	Room temp itime Heat	1-1800	PI controller Itime for heating (x16del)	10	3-5
4x0048	Man flow option	0-10	0=Normal mode controller is in operation. 1=max flow, 2=min flow, 3=min flow unoccupied. Controller sets fixed airflow, led=orange for values 1-3.	3	3-5
4x0049	CO_2 per volt	10-5000ppm	CO_2 ppm per volt if analogy sensor is used. If value=0 CO_2 value must be sent to 4x0033.	200	3-5
4x0050	Device constant 1	±32000	Constant used in flow calculation	2997	3-5
4x0051	Device constant 2	±32000	Constant used in flow calculation	1001	3-5
4x0052	Device constant 3	±32000	Constant used in flow calculation	-501	3-5
4x0053	Device constant 4	±32000	Constant used in flow calculation	6840	3-5
4x0054	HeatValveOpenTime	0-1000	Time constant used to calculate opening interval on heat valve when using proportional control. Set to 60 sec when controlling electrical heater.	350	3-5
4x0055	OCC sensor set level	100-1000	Sets level for detecting Occupancy.	250	3-5
4x0056	Security access code	0-9999	Code needed for changing protected variables.	XXXX	3-5
4x0057	Device pressure zero cal	±500 dPa	Pressure sensor offset to calibrate to 0 Pa		3-5
4x0058	Modbus address	1-248	Controller Modbus address		3-5
4x0059	Baud rate	0-2	Communication speed Modbus: 0=9600, 1=19200, 2=38400	2	3-5
4x0060	Parity	0-2	Parity: 0=ODD, 1=EVEN, 2=NONE	2	3-5
4x0061	Stop bits	1-2	Number of stop bits: 1=1 stop bit 2=2 stop bits	1	3-5
4x0062	OCC time counter	0-32767	Counts time in hours when 1x0002 is 1		3-5
4x0063	Run time counter	0-32767	Counts time in hours when controller has power		3-5
4x0064	MotorZeroReturn	0-500 steps	Return of Zero point for the damper. 1 step=10°	9	3-5
4x0065	MotorRuntime	30-180s	Runtime in seconds between 0-100% damper stroke.	30	3-5
4x0066	Min airflow with electrical heater	0-32000	If this variable sets >0 the controller assumes there are a electrical heater in the duct. In heating mode this is the min airflow to prevent the heater to get overheated.	0	5.1
4x0067	Damper stroke	15-200	Theoretical stroke length for damper motor, 1 mm is equal to 1 turn of the motor. Se 3x0020.	15	4-5
4x0068	Min output on heat level	10-50%	Sets lower limit on heat output, used for prevent cold influence from window.	0	4-5
4x0069	Limit for min set point heat	0-50%	Sets highest cold level when min output on heat can be activated, if Cool value is higher than set level the output on heat is always 0.	50	4-5
4x0070	Valve exercise interval	0-14	Sets time between exercise off Heat output, 0=inactivated value is in days (x24h). Exercise only takes place if heating is activated	5	4-5
4x0071	CAC use	0-1	Activates the CAC function in ADAPT Damper extract air		5
4x0072	CAC min %	15-80	Lower set point where increase of air starts	25	5
4x0073	CAC max %	30-90	High set point where increase of air has reached max set point	35	5
4x0074	Vent boost delay	24-300h	Time limit for ventilation boost, if occupancy is activated after the limit airflow is set to maximum for a short time	72h	5
4x0075	Vent boost time	0-60min	Ventilation boost after longer unoccupied time	5m	5
4x0076	CAC calc factor 1	0-32000	Calculation factor for CAC to a CO_2 value		5
4x0077	CAC calc factor 2	0-32000	Calculation factor for CAC to a CO_2 value		5
4x0078	CAC calc factor 3	0-32000	Calculation factor for CAC to a CO_2 value		5
4x0079	Temp Calibrating Au	±0-32000	Correction factor coold supply air		5.1
4x0080	Temp Calibrating Bu	±0-32000	Correction factor coold supply air		5.1
4x0081	Temp Calibrating Cu	±0-32000	Correction factor coold supply air	0	5.1

Modbus	Name	Min/Max	Remarks	Std	Version
4x0082	Temp Calibrating Du	±0-32000	Correction factor coold supply air	0	5.1
4x0083	Temp Calibrating Eu	±0-32000	Correction factor coold supply air	0	5.1
4x0084	Temp Calibrating Fu	±0-32000	Correction factor coold supply air	0	5.1
4x0085	Temp Calibrating Ao	±0-32000	Correction factor warm supply air	0	5.1
4x0086	Temp Calibrating Bo	±0-32000	Correction factor warm supply air	0	5.1
4x0087	Temp Calibrating Co	±0-32000	Correction factor warm supply air	0	5.1
4x0088	Temp Calibrating Do	±0-32000	Correction factor warm supply air	0	5.1
4x0089	Temp Calibrating Eo	±0-32000	Correction factor warm supply air	0	5.1
4x0090	Temp Calibrating Fo	±0-32000	Correction factor warm supply air	0	5.1

Input register 16 bit integer register Read only

Modbus	Name	Min/Max	Remarks	Std	Version.
3x0001	Room temp	0-500	Temperature in room. Value is actual Deg C *10!		
3x0002	Supply temp	0-500	Temperature in supply air. Value is actual Deg C *10!		
3x0003	Calc actual set point	0-500	Calculated room set point value, when controller is in neutral zone the room temp is shown. Value is actual Deg C *10!		
3x0004	Room temp deviation	0-500	Difference between set value and actual value. Value is actual ° K *10!		3-5
3x0005	Set point extern	0-100%	Calculated airflow set point from external controller. 0%=lowest airflow (4x0028 or 4x0029) 100%=max airflow		3-5
3x0006	Calc airflow	0-100%	Calculated airflow set point from internal controller, 0%=lowest airflow (4x0028 or 4x0029) 100%=max airflow		3-5
3x0007	Airflow	0-10000 l/s	Actual airflow, exactly calculated airflow from device pos and dev. pressure. Calculated airflow set point is not shown in any variable!		3-5
3x0008	Cool value	0-100%	Shows controllers cooling level. 100%=max cooling. Slave output is shown in this variable!		3-5
3x0009	Heat value	0-100%	Shows controllers heating level. 100%=max heating.		3-5
3x0010	Controller mode	0-10	Controller mode: 0=Occupied 1=Standby, 2=night cool, (3=morning boost, will not be presented to market)		3-5
3x0011	Alarm function A	0000000	Summary of alarms (A) from variables 1x0005-1x0011		3-5
3x0012	Alarm function B	0000	Summary of alarms (B) from variables 1x0012-1x0015		3-5
3x0013	Device pressure	0-2500 dPa	Actual Device pressure, dPa.		3-5
3x0014	OCC sensor level	0-10000	Momentary sensor level from internal IR sensor.		3-5
3x0015	Configuration set		Binary Summary of the Coil Status variables 1-16		3-5
3x0016	Configuration set		Binary Summary of the Input Status variables 1-16		3-5
3x0017	Actual device position	0-100	Actual device/damper position in % where 0=closed and 100 is fully open.		3-5
3x0018	Program version		Software programme version id		3-5
3x0019	Controller serial number	100-32767	Controller serial number, values higher than 100 is for official release.		3-5
3x0020	Actual damper stroke	15-100	Actual detected stroke after power up. Used for position and flow calculation correction		4-5
3x0021	Heat valve output %	0-100	This variable shows the output level for heat Valve. Important to see if cold fall protection is active or not.		4-5
3x0022	CAC level %	0-100	Actual air quality level, is only available for ADAPT Damper extract		5
3x0023	CAC > CO_2 ppm	400-2000	Calculated CO_2 ppm value from the CAC level		5
3x0024	Airflow set point	0-10000 l/s	Calculated airflow set point from controller		5

Notes for 3x0011 (also presented as separate bits 1x0005-1x0011)

B0000001	Stroke calibration fault - LED is red
B0000010	Actuator fault - LED is red
B0000100	Pressure sensor values out of range - LED is red
B0001000	Room temp sensor values out of range - LED is red
B0010000	Internal temp sensor fault values out of range - LED is red
B0100000	Set point for heating and cooling are overlapping - LED is red
B1000000	VOC sensor fault - LED is red

Notes for 3x0012 (also presented as separate bits 1x0012-1x0015)

B0000001	Temperature deviation
B0000010	CO_2 deviation
B0000100	Not defined, spare
B0001000	Not defined, spare

Notes for 3x0015 (also presented as separate bits 0x0001-0x0007)

B0000001	Activates emergency of the actuator in the product
B0000010	Emergency action 0=Damper closes when emergency contol is active 1=Damper opens when emergency contol is active
B0000100	Used to manually controll the damper into defined positions, LED is orange
B0001000	OCC Manual 0=Normal operation with internal or external OCC sensor 1=Manual control
B0010000	OCC Set 0=Manual control to unoccupied mode 1=Manual control to occupied mode
B0100000	Heating present 1=Heat regulation with water is activated 0=Only air cooling
B1000000	The controller is activated externally from a BMS/SCADA system 0=Normal operation 1=Night cooling on

Notes for 3x0016 (also presented as separate bits 1x0001-1x0004)

B0000001	OCC Sensor Status 1=Occupancy detected 0=Unoccupied mode, value resets to 0 after 1 minute
B0000010	Controller Mode 1=Occupancy 0=Unoccupoed mode, resets after expiration of time delay setting in 4x0034
B0000100	Not defined, spare
B0001000	Not defined, spare

Modbus variables for CONTROL Room

This Modbus listings are only valid when controller is set to BMS position, dip sw 2=On.

Coil Status Discrete Output (1 bit) R/W

Modbus	Name	Min/Max	Parameter	Remark	Std
0x0001	Not used				0
0x0002	Emergency pos supply damper	0/1	P_1526	0=Close, 1=Open	0
0x0003	Emergency pos extract damper	0/1	P_1527	0=Close, 1=Open	0
0x0004	Not used				0
0x0005	Not used				0
0x0006	Not used				0
0x0007	CO_2 sensor use	0/1	P_1537	0=not connected, 1=connected	0

Input Status Discrete Input (1 bit) Read only

Modbus	Name	Min/Max	Parameter	Remark	Std
1x0001	Alarm condensation	0/1		If risk of condensation with water cooling	
1x0002	Relay status	0/1		Shows if the internal relay is on	
1x0003	Occupancy sensor	0/1		Shows Occupancy mode 1=on ore 2=off	
1x0004	Window switch	0/1		Shows switch mode 1=on ore 2=off	
1x0005	Occupancy status	0/1		Occupancy status including delay off time	
1x0006	No alarm is activated	0/1		Overall information	
1x0007	No room unit (1)	0/1		Alarm resets automatically	
1x0008	No room unit (2)	0/1		Alarm resets automatically	
1x0009	No pressure sensor	0/1		Not used in CONTROL Room	
1x0010	No supply flow sensor	0/1		Alarm resets automatically	
1x0011	No extract flow sensor	0/1		Alarm resets automatically	
1x0012	Room unit (1) Temperature	0/1		Alarm resets automatically	
1x0013	Room unit (2) Temperature	0/1		Alarm resets automatically	
1x0014	Supply temp sensor shortcut	0/1		Alarm resets automatically	
1x0015	No supply temp sensor	0/1		Alarm resets automatically	
1x0016	Low battery level in room unit	0/1		Alarm resets automatically	
1x0017	Control overload (PI control)	0/1		Alarm resets automatically	
1x0018	Control overload set point	0/1		Alarm resets automatically	
1x0019	Not used	0/1			
1x0020	Not used	0/1			
1x0021	No application parameters	0/1		Alarm resets automatically	
1x0022	Power supply >27 V AC	0/1		Alarm resets automatically	
1x0023	System fault	0/1		Alarm resets automatically	
1x0024	No serial number	0/1			
1x0025	Not used	0/1			
1x0026	Output X11 shortcut	0/1		Alarm, needs hardware reset	
1x0027	Output X12 shortcut	0/1		Alarm, needs hardware reset	
1x0028	Output X13 shortcut	0/1		Alarm, needs hardware reset	
1x0029	Output X14 shortcut	0/1		Alarm, needs hardware reset	
1x0030	SPI Flash memory empty	0/1		Alarm, needs hardware reset	
1x0031	Radio chip broken	0/1		Alarm, needs hardware reset	

Input Status Discrete Input (1 bit) Read only

Modbus	Name	Min/Max	Parameter	Remark	Std
1x0032	Parameter file updated	0/1		Alarm, needs hardware reset	
1x0033	Parameter file, format error	0/1		Alarm, needs hardware reset	
1x0034	No Modbus ID	0/1		Alarm, needs hardware reset	
1x0035	No Application	0/1		Alarm, needs hardware reset	
1x0036	Parameter file missing	0/1		Alarm, needs hardware reset	
1x0037	Parameter missing	0/1		Alarm, needs hardware reset	
1x0038	Parameter incorrect	0/1		Alarm, needs hardware reset	
1x0039	Parameter file wrong size	0/1		Alarm, needs hardware reset	
1x0040	Wrong parameter file	0/1		Alarm, needs hardware reset	
1x0041	Not used				
1x0042	Not used				
1x0043	Previous parameter missing	0/1		Alarm, needs hardware reset	
1x0044	Parameters uploaded	0/1		Alarm, needs hardware reset	
1x0045	Not used				
1x0046	Not used				
1x0047	Not used				
1x0048	Not used				
1x0049	Not used	0/1			
1x0050	Not used	0/1			
1x0051	Supply power (24V) to low	0/1		Alarm resets automatically	
1x0052	Not used				
1x0053	Not used				
1x0054	Negative pressure	0/1		Alarm resets automatically	

Holding register 16 bit integer register R/W

Modbus	Name	Min/Max	Parameter	Remark	Std
4x0001	Relay at emergency	0/1	P_107	0=Close, 1=Open, 2=No action	1
4x0002	Controller running mode	1/7		1=Normal, 2=Unoccupied, 3=Closed, 4=Overtime, 5=Night cool, 6=Emergency, 7=Manual	1
4x0003	Room number	0/32000	P_114	Possible to set at room number.	
4x0004	Valve exercise interval	0/72	P_108	Time in hour between exercise 0=inactivated	0
4x0005	Delay off time	0/20	P_109	Delay before controller sets to unoccupied mode	20
4x0006	Alarm delay in general	0/60	P_110	Alarm delay in minutes	30
4x0007	Alarm delay controller	0/60	P_111	Alarm delay in minutes	30
4x0008	Alarm delay set points	0/60	P_112	Alarm delay in minutes	30
4x0009	Not used				
4x0010	Not used				1
4x0011	Not used				0
4x0012	Not used				1
4x0013	Not used				1
4x0014	Control type	1/3	P_1501	1=Heating and cooling, 2=Only cooling	1
4x0015	Number of room units	1/2	P_1536	1 or 2 room units	1

Holding register 16 bit integer register R/W

Modbus	Name	Min/Max	Parameter	Remark	Std
4x0016	Window switch	0/2	P_1520	0=Not used 1=Normally closed 2=Normally open	0
4x0017	DETECT Occupancy	0/2	P_1520	0=Not used 1=Normally closed 2=Normally open	0
4x0018	Cool valve output	1/2	P_1546	1=24V AC on/off 2=0-10V DC	1
4x0019	Heat valve output	1/2	P_1547	1=24V AC on/off 2=0-10V DC	1
4x0020	Air flow sensor type	0/2	P_1531	0=Not used, 1=Analogue, 2=Modbus	2
4x0021	Not used				
4x0022	Not used				
4x0023	Freeze protection level	5/15 °C	P_1513	Lowest allowed room temp before heating is activated if window switch is open	10
4x0024	Cool set point occupied	15/30 °C	P_1508	Set point for cooling	23
4x0025	Heat set point occupied	15/30 °C	P_1509	Set point for heating	21
4x0026	Cool set point unoccupied	10/30 °C	P_1510	Set point for cooling	25
4x0027	Heat set point unoccupied	10/30 °C	P_1511	Set point for heating	19
4x0028	Cool set point night cool	5/20 °C	P_1512	Set point for cooling	15
4x0029	Room unit min set point	10/30 °C	P_1550	Min set point from room unit	10
4x0030	Room unit max set point	25/50 °C	P_1724	Max set point from room unit	40
4x0031	Not used				
4x0032	Not used				
4x0033	Not used				
4x0034	Not used				
4x0035	Room unit reset time	0/1200 min	P_1549	Time before manual set point goes back to normal	480
4x0036	Min supply airflow OCC	1/10000	P_1502	Airflow at occupied mode (l/s)	
4x0037	Max supply airflow OCC	1/20000	P_1503	Airflow at occupied mode (l/s)	
4x0038	Min supply airflow UnOCC	1/10000	P_1504	Airflow at unoccupied mode (l/s)	
4x0039	Min extract airflow OCC	1/10000	P_1505	Airflow at occupied mode (l/s)	
4x0040	Max extract airflow OCC	1/20000	P_1507	Airflow at occupied mode (l/s)	
4x0041	Min extract airflow UnOCC	1/10000	P_1508	Airflow at unoccupied mode (l/s)	
4x0042	Not used				
4x0043	Not used				
4x0044	Not used				
4x0045	Not used				
4x0046	Supply damper pos	0/100	P_1529	Damper position when sensor fault (%)	50
4x0047	Extract damper pos	0/100	P_1530	Damper position when sensor fault (%)	50
4x0048	P term Supply air	1/1000	P_1522	PI controllers internal factor	25
4x0049	I term Supply air	10/10000	P_1523	PI controllers internal factor	50
4x0050	P term Extract air	1/1000	P_1524	PI controllers internal factor	25
4x0051	I term Extract air	10/10000	P_1525	PI controllers internal factor	50
4x0052	Not used				
4x0053	Not used				
4x0054	Supply air damper limit	0/5000	P_1514	Min output signal (mV)	0
4x0055	Supply air damper limit	5000/10000	P_1515	Max output signal (mV)	10000
4x0056	Extract air damper limit	0/5000	P_1516	Min output signal (mV)	0
4x0057	Extract air damper limit	5000/10000	P_1517	Max output signal (mV)	10000
4x0058	Flow calculation method	1/2	P_1541	1=Linear,2=Quadratic	1

Holding register 16 bit integer register R/W

Modbus	Name	Min/Max	Parameter	Remark	Std
4x0059	Supply K-factor linear	1/15000	P_1542	Scale 1:100	500
4x0060	Supply K-factor Quadratic	1/25000	P_1543	Scale 1:10	10
4x0061	Extract K-factor linear	1/15000	P_1544	Scale 1:100	500
4x0062	Extract K-factor Quadratic	1/25000	P_1545	Scale 1:10	10
4x0063	Not used				
4x0064	Not used				
4x0065	Not used				
4x0066	CO_2 min	350/1000	P_1538	Min level where increasing of airflow starts	800
4x0067	CO_2 max	350/2000	P_1539	Max level when airflow is equal tom max set point	1000
4x0068	CO_2 per volt	10/500	P_1540	Signal level from sensor (0-10V DC) (ppm/volt)	200
4x0069	Copy of Coil Status 1-16	0/65535		"Bit0=0x0001 …Bit15=0x0016"	

Input register 16 bit integer register Read only

Modbus	Name	Min/Max	Parameter	Remark	Std
3x0001	Product ID	0/10		ID defining the product type in the WISE-system	
3x0002 - 0017	Product mark	0/999		Mark with max 16 char (ASCII standard)	
3x0018	Application ID	1/10	P_106	FSFE normal=5, FSFE with 2 step cooling=6	6
3x0019	HW serial number				
3x0020	SW version				
3x0021	Not used				
3x0022	Running mode	0/8		0=Initialise, 1=Normal, 2=Unoccupied, 3=Closed, 4=Overtime, 5=Night cool, 6=Emergency, 7=Manually	
3x0023	Not used				
3x0024	Not used				
3x0025	Time count (Year)			Time count since last power up.	
3x0026	Time count (Hours)	0/8760		After 8760 hours, year count is updated	
3x0027	Time count (Minutes)	0/60		After 60 min, hour count is updated	
3x0028	Supply temperature			Temperature Scaled 1:10 (°Cx10)	
3x0029	Room temp unit 1			Temperature Scaled 1:10 (°Cx10)	
3x0030	Room temp unit 2			Temperature Scaled 1:10 (°Cx10)	
3x0031	Set point from room unit			Manually changed set point.	
3x0032	Not used				
3x0033	Battery level in room unit			Volt scaled 1:10	
3x0034	Not used				
3x0035	Supply flow sensor pressure			Pressure scaled x10 (dPa)	
3x0036	Extract flow sensor pressure			Pressure scaled x10 (dPa)	
3x0037	Analogue Input 1	0/10000		(mV) Window contact/switch	
3x0038	Analogue Input 2	0/10000		(mV) Occupancy	
3x0039	Analogue Input 3	0/10000		(mV)	
3x0040	Analogue Input 4	0/10000		(mV) CO_2	
3x0041	PWM 1 output	0/100		(%) Cooling	

Input register 16 bit integer register Read only

Modbus	Name	Min/Max	Parameter	Remark	Std
3x0042	PWM output 2	0/100		(%) Heating	
3x0043	PWM output 3	0/100		(%) Supply damper	
3x0044	PWM output 4	0/100		(%) Extract damper	
3x0045	Analogue output 1	0/10000		(mV)	
3x0046	Analogue output 2	0/10000		(mV)	
3x0047	Analogue output 3	0/10000		(mV)	
3x0048	Analogue output 4	0/10000		(mV)	
3x0049	PID controller out level	-100/100		Shows cooling -100-0% and heating >0-100%	
3x0050	Not used				
3x0051	PID supply level	0/100		(%) Regulator level	
3x0052	PID extract level	0/100		(%) Regulator level	
3x0053	Cool output	0/100		Outlevel (%)	
3x0054	Heat output	0/100		Outlevel (%)	
3x0055	Supply damper position	0/100		(%)	
3x0056	Extract damper position	0/100		(%)	
3x0057	Not used				
3x0058	Supply airflow			(l/s)	
3x0059	Extract airflow			(l/s)	
3x0060	Room temperature			Temperature scaled 1:10 (°Cx10)	
3x0061	Supply air temperature			Temperature scaled 1:10 (°Cx10)	
3x0062	CO_2 in room			Displays the CO_2 value of the connected sensor (ppm)	
3x0063	Copy of Input Status 1-16	0/65535		"Bit 0=0x0001…Bit 15=0x0016"	
3x0064	Copy of Input Status 17-32	0/65535		"Bit 0=0x0017…Bit 15=0x0032"	
3x0065	Copy of Input Status 33-48	0/65535		"Bit 0=0x0033...Bit 15=0x0048"	
3x0066	Copy of Input Status 49-64	0/65535		"Bit 0=0x0049...Bit 15=0x0064"	
3x0067	Not used				
3x0068	Not used				

Modbus variables for CONTROL Zone

This Modbus listings are only valid for CONTROL Zone set to BMS function, dip SW 2=On.

Coil Status Discrete Output (1 bit) R/W

Modbus	Name	Min/Max	Parameter	Remark	Std
0x0001	Not used	0/1			0
0x0002	Emergency action supply	0/1	P_1709	0=Close, 1=Open on supply dampers	0
0x0003	Emergency action extract	0/1	P_1710	0=Close, 1=Open on extract dampers	0
0x0004	Not used	0/1		1=clears alarm	0
0x0005	Not used	0/1			0
0x0006	Not used	0/1			0
0x0007	Not used	0/1			0

Input Status Discrete Input (1 bit) Read only

Modbus	Name	Min/Max	Parameter	Remark	Std
1x0001	Condensation	0/1			
1x0002	Relay state	0/1			
1x0003	Not used	0/1			
1x0004	External switch	0/1			
1x0005	Not used	0/1			
1x0006	No active alarms	0/1		ALARM INFO	
1x0007	No Room Unit 1	0/1		Not used in CONTROL Zone	
1x0008	No Room Unit 2	0/1		Not used in CONTROL Zone	
1x0009	No Pressure sensor	0/1		ALARM, resets automatically	
1x0010	Supply Flow sensor error	0/1		ALARM, resets automatically	
1x0011	Extract Flow sensor error	0/1		ALARM, resets automatically	
1x0012	Room Unit 1 Temp. error	0/1		Not used in CONTROL Zone	
1x0013	Room Unit 2 Temp. error	0/1		Not used in CONTROL Zone	
1x0014	Regulator KTY short circuit	0/1		Not used in CONTROL Zone	
1x0015	Regulator KTY open circuit	0/1		Not used in CONTROL Zone	
1x0016	Room Unit Low Battery	0/1		Not used in CONTROL Zone	
1x0017	PI-controller overload	0/1		ALARM, resets automatically	
1x0018	Set point not reached	0/1		ALARM, resets automatically	
1x0019	Not used	0/1			
1x0020	Not used	0/1			
1x0021	No device list	0/1		ALARM, resets automatically	
1x0022	AC overload	0/1		ALARM, resets automatically	
1x0023	System fault	0/1		ALARM	
1x0024	No serial number	0/1		ALARM	
1x0025	Not used	0/1			
1x0026	Short circuit Output X11	0/1		ALARM, requires Hardware reset	
1x0027	Short circuit Output X12	0/1		ALARM, requires Hardware reset	
1x0028	Short circuit Output X13	0/1		ALARM, requires Hardware reset	
1x0029	Short circuit Output X14	0/1		ALARM, requires Hardware reset	
1x0030	SPI Flash broken	0/1		ALARM, requires Hardware reset	
1x0031	Radio chip broken	0/1		ALARM, requires Hardware reset	
1x0032	Parameter file revision	0/1		ALARM, requires Hardware reset	
1x0033	Parameter file, format error	0/1		ALARM, requires Hardware reset	
1x0034	No Modbus ID	0/1		ALARM, requires Hardware reset	

Modbus variables for CONTROL Zone

Input Status Discrete Input (1 bit) Read only

Modbus	Name	Min/Max	Parameter	Remark	Std
1x0035	No Application			ALARM, requires Hardware reset	
1x0036	No parameters			ALARM, requires Hardware reset	
1x0037	Parameter missing			ALARM, requires Hardware reset	
1x0038	Parameter value error			ALARM, requires Hardware reset	
1x0039	Parameter file size			ALARM, requires Hardware reset	
1x0040	Wrong parameter file			ALARM, requires Hardware reset	
1x0041	Check Duct Group Control Optimize			ALARM, resets after right parameters	
1x0042	Check Duct Group			ALARM, resets after right parameters	
1x0043	Previous parameters are lost			ALARM, requires Hardware reset	
1x0044	Factory parameters take up			ALARM, requires Hardware reset	
1x0045	Not used				
1x0046	Not used				
1x0047	No supply pressure from AHU			Not used in CONTROL Zone	
1x0048	No extract pressure from AHU			Not used in CONTROL Zone	
1x0049	Supply duct 100% open			Not used in CONTROL Zone	
1x0050	Extract duct 100% open			Not used in CONTROL Zone	
1x0051	Low voltage detect			ALARM, resets automatically	
1x0052	Not used				
1x0053	Duct group member missing			Not used in CONTROL Zone	
1x0054	Negative pressure			ALARM, resets automatically	

Holding register 16 bit integer register R/W

Modbus	Name	Min/Max	Parameter	Remark	Std
4x0001	Relay in Emergency	0/1	P_107	0=Close, 1=Open, 2=No Action	
4x0002	Application transition	1/4		1=Operational, 2=Manual, 3=Emergency, 4=Closed	
4x0003	Room number	0/32000	P_114		
4x0004	Not used				
4x0005	Not used				
4x0006	Not used				
4x0007	PI-overload warning time	0/60	P_111	Warning delay, PI-overload (minutes)	10
4x0008	Set-point warning time	0/60	P_112	Warning delay, Set point (minutes)	10
4x0009	Pressure sensor warning time	0/60	P_113	Warning delay, pressure sensor (minutes)	1
4x0010	Not used				1
4x0011	Not used				0
4x0012	Not used				1
4x0013	Not used				1
4x0014	Case selection	1/3	P_1701	1=PSFE, 2=PS/FS, 3=PE/FE	1
4x0015	Control type	1/2	P_1702	1=Flow, 2=Pres.	2
4x0016	Ext. Switch	0/2	P_1703	0=Not used 1=Normally Closed 2=Normally Open	0
4x0017	Not used				
4x0018	Not used				
4x0019	Not used				
4x0020	SA Flow sensor	0/2	P_1704	0=Not used, 1=Analogue, 2=ModBus	
4x0021	EA Flow sensor	0/2	P_1705	0=Not used, 1=Analogue, 2=ModBus	

Modbus variables for CONTROL Zone

Holding register 16 bit integer register R/W

Modbus	Name	Min/Max	Parameter	Remark	Std
4x0022	Pressure sensor	0/2	P_1706	0=Not used, 1=Analogue, 2=ModBus	
4x0023	Not used				
4x0024	Not used				
4x0025	Not used				
4x0026	Not used				
4x0027	Not used				
4x0028	Not used				
4x0029	Not used				
4x0030	SA flow set point	0/20000	P_1724	Only used when groups are not used (l/s)	0
4x0031	EA flow set point	0/20000	P_1725	Only used when groups are not used (l/s)	0
4x0032	SA flow offset	-5000/5000	P_1713	Only used in Case C (Setp from SM)	0
4x0033	EA flow offset	-5000/5000	P_1716		0
4x0034	SA flow Manual	0/100		Maybe not needed	
4x0035	EA flow Manual	0/100		Maybe not needed	
4x0036	Pressure set point	0/300	P_1726	(Pa)	30
4x0037	Not used				
4x0038	Not used				
4x0039	Not used				
4x0040	Not used				
4x0041	Not used				
4x0042	Not used				
4x0043	Not used				
4x0044	Not used				
4x0045	Not used				
4x0046	SA damper after sensor error	0/100	P_1707	Used only when sensor faulty (%)	50
4x0047	EA damper after sensor error	0/100	P_1708	Used only when sensor faulty (%)	50
4x0048	P term SA	10/10000	P_1711	Pa control if selected, otherwise flow control. Only supply function is used.	25
4x0049	I term SA	1/1000	P_1712		50
4x0050	P term EA	1/1000	P_1714	Pa control if selected, otherwise flow control. Only supply function is used.	25
4x0051	I term EA	10/10000	P_1715		50
4x0052	Not used				
4x0053	Not used				
4x0054	SA 0% value	0/5000	P_1717	Voltage offset for 0% (mV)	0
4x0055	SA 100% value	5000/10000	P_1718	Voltage offset for 100% (mV)	10000
4x0056	EA 0% value	0/5000	P_1719	Voltage offset for 0% (mV)	0
4x0057	EA 100% value	5000/10000	P_1720	Voltage offset for 100% (mV)	10000
4x0058	Flow calc.type	1/2	P_1721	1=Linear,2=Quadratic	1
4x0059	SA K-term linear	500/15000	P_1722	Factor, se separate tables, Scale 1:100	500
4x0060	SA K-term Quadric	10/25000	P_1723	Factor, se separate tables, Scale 1:10	10
4x0061	EA K-term linear	500/15000	P_1727	Factor, se separate tables, Scale 1:100	500
4x0062	EA K-term Quadric	10/25000	P_1728	Factor, se separate tables, Scale 1:10	10
4x0063	Not used				
4x0064	Not used				
4x0065	Not used				

Modbus variables for CONTROL Zone

Holding register 16 bit integer register R/W

Modbus	Name	Min/Max	Parameter	Remark	Std
4x0066	Not used				
4x0067	Not used				
4x0068	Not used				
4x0069	Copy of Coil Status 1-16	0/65535		"Bit0=0x0001 …Bit15=0x0016"	

Input register 16 bit integer register Read only

Modbus	Name	Min/Max	Parameter	Remark	Std
3x0001	Component Name ID	0/10	X	ID for type of controller in Conductor and Wise system	
3x0002 - 0017	Component Name	0/999		Name built of max 16 char, exch char (ASCII standard)	
3x0018	Application ID		P_106	Always factory set, do not shange, for FSFE use 8.	8
3x0019	HW Serial No.				
3x0020	SW version				
3x0021	Not used				
3x0022	Application state	0/4		0=Initiation, 1=Operational, 2=Manual, 3=Emergency, 4=Closed	
3x0023	Control method				
3x0024	Case				
3x0025	Time since last boot (Year)				
3x0026	Time since last boot (Hours)	0/8760		After 8760h Year is updated	
3x0027	Time since last boot (Min)	0/60		After 60min Hour is updated	
3x0028	Not used				
3x0029	Not used				
3x0030	Not used				
3x0031	Not used				
3x0032	Not used				
3x0033	Not used				
3x0034	SA pressure MB sensor			Not used in CONTROL Zone	
3x0035	SA flow pressure MB sensor			Not used in CONTROL Zone	
3x0036	EA flow pressure MB sensor			Not used in CONTROL Zone	
3x0037	Input Analog 1	0/10000		(mV)	
3x0038	Input Analog 2	0/10000		(mV)	
3x0039	Input Analog 3	0/10000		(mV)	
3x0040	Input Analog 4	0/10000		(mV)	
3x0041	Output PWM 1	0/100		Not used in CONTROL Zone	
3x0042	Output PWM 2	0/100		Not used in CONTROL Zone	
3x0043	Output PWM 3	0/100		(%)	
3x0044	Output PWM 4	0/100		(%)	
3x0045	Output Analog 1	0/10000		Not used in CONTROL Zone	
3x0046	Output Analog 2	0/10000		Not used in CONTROL Zone	
3x0047	Output Analog 3	0/10000		(mV)	
3x0048	Output Analog 4	0/10000		(mV)	
3x0049	Not used				
3x0050	Not used				
3x0051	PID SA Out	-100/100		(%)	
3x0052	PID EA Out	-100/100		(%)	

Modbus variables for CONTROL Zone

Input register 16 bit integer register Read only

Modbus	Name	Min/Max	Parameter	Remark	Std
3x0053	Not used				
3x0054	Not used				
3x0055	SA Damper pos.	0/100		(%)	
3x0056	EA Damper pos	0/100		(%)	
3x0057	Duct Pressure			(Pa)	
3x0058	Airflow Supply			(l/s)	
3x0059	Airflow Extract			(l/s)	
3x0060	Not used				
3x0061	Not used				
3x0062	Not used				
3x0063	Copy of Input Status 1-16	0/65535		"Bit0=0x0001…Bit15=0x0016"	
3x0064	Copy of Input Status 17-32	0/65535		"Bit0=0x0017…Bit15=0x0032"	
3x0065	Copy of Input Status 33-48	0/65535		"Bit0=0x0033...Bit15=0x0048"	
3x0066	Copy of Input Status 49-64	0/65535		"Bit0=0x0049...Bit15=0x0064"	

Modbus variables for CONTROL Optimize

Coil Status Discrete Output (1 bit) R/W

Modbus	Name	Min/Max	Parameter	Remark	Std
0x0001	AHU status	0/1		0=not running 1=running	
0x0002	Manual	0/1		0=Auto 1=System Manager AHU control set to Manual Mode	
0x0003	Emergency control	0/1		0=No emergency, 1=Emergency state	
0x0004					
0x0005	Restart	0/1		Writing 1 to this register Restarts AHU control.	
0x0006	Night Cool	0/1		0=No night cool, 1=Night cool	

Input Status Discrete Input (1 bit) Read only

Modbus	Name	Min/Max	Parameter	Remark	Std
1x0001	Alarm Code Supply			If supply pressure not reached, bit is 1	
1x0002	Alarm Code Extract			If extract pressure not reached, bit is 1	
1x0003	Alarm Damper			If some duct is 100% open, this bit is 1	

Holding register 16 bit integer register R/W

Modbus	Name	Min/Max	Parameter	Remark	Std
4x0001	AHU SuPress			Supply pressure from AHU	
4x0002	AHU Express			Extract pressure from AHU	
4x0003	Start Delay	1/60	P_1001	Start time in minutes	5
4x0004	Min Press SU	50/5000	P_1004	Min regulated pressure (Supply) Pa	50
4x0005	Start Press Su	50/5000	P_1002	Start pressure for AHU (Supply) Pa	100
4x0006	Max Press SU	50/5000	P_1005	Max regulated Supply pressure Pa	200
4x0007	Min Press EX	50/5000	P_1006	Min regulated extract pressure Pa	50
4x0008	Start Press EX	50/5000	P_1003	Start pressure for AHU (Extract) Pa	100
4x0009	Max Press EX	50/5000	P_1007	Max regulated Extract pressure Pa	200
4x0010	Increase limit	70/100	P_1013	Energy optimization	95
4x0011	Decrease limit	40/80	P_1014	Energy optimization	70
4x0012	Manual SuPress			Manual supply pressure set point. Only in manual mode	
4x0013	Manual ExPress			Manual extract pressure set point. Only in manual mode	
4x0014	Alarm delay time	10/60	P_1011	Set time in minutes before Any alarms is given	10
4x0015	Energy optim. Step size	1/100	P_1012	Step in Pa for increase/decrease pressure	10
4x0016	Duct reading interval	1/100	P_1096	Time in minutes between reading values	1
4x0017	Not used				
4x0018	Deviation	1/100	P_1008	Allowed pressure deviation from Set point Pa	2

Modbus variables for CONTROL Optimize

Input register 16 bit integer register Read only

Modbus	Name	Min/Max	Parameter	Remark	Std
3x0001	Pressure supply			Set point Pa sent to GOLD	
3x0002	Pressure extract			Set point Pa sent to GOLD	
3x0004	Start Delay Control			Counting down from value given, seconds	
3x0005	Not used				
3x0006	Not used				
3x0007	Not used				
3x0008	Not used				
3x0009	Not used				
3x0010	Not used				
3x0011 ↓ 3x0055	SA damper 01 SA damper 45			Supply damper position in %, 0% closed Pos 1-15 reserved for PSFE A with MBid 1-15 Pos 16-45 reserved for PS with MBid 20-49	
3x0061 ↓ 3x0105	EA damper 01 EA damper 45			Extract damper position in %, 0% closed Pos 1-15 reserved for PSFE with MBid 1-15 Pos 16-45 reserved for EA with MBid 50-79	

Parameters for CONTROL Room and Zone

All CONTROL products is supplied with a parameter file. The file has all unique data valid for chosen application. All parameter data can be set via modbus or TUNE Control. On our home page there is excel sheets downloadable for all different applications, se example below.

Swegon Ordernr: 20XX-XX-XX

ver 1.91

CONTROL Zone Damper Setup data — *Order no: xx*

Product : **CONTROL Za xxx PSFE** | Modbuss ID: **1** | Vst. Order no: **1**

Marking | Object: **1**

Object : | Prog ver: **0.56 or later**

Param	Factory set	New	unit	Description	Min / Max
P_101	1		ID	Modbus Address	1/79
P_102	3			BMS Baudrate, 9.6 19.2 38.4	1/3
P_103	2			BMS Parity 0=Odd 1=Even 2=None	0/3
P_104	1			BMS Stop bits	1/2
P_105	**2**			Component type, always 2 for this product	
P_106	**8**			Application type, always 8 for this product	
P_107	*0*			Relay at emer. 0=Open 1=Close 2=No action	
P_108	*0*	-	hour	Valve exercise 0=Not used	
P_109	*20*		min	Motion timer, not used for this product	
P_110	*30*		min	Warning delay from start-up	
P_111	*30*		min	Warning delay, PI-overload	
P_112	*30*		min	Warning delay, Set point	
P_113	*10*		min	Warning delay, pressure sensor	
P_114	0			Number for identification, optional	0/65000
P_118	0		hour	Time between 0-calibration, MB press. senso	0 / 672
P_119	4		min	Close time för the damper when 0-calibrating	1 / 6
P_1701	**1**			Case selection (1=PSFE 2=PS/FS 3=PE/FE)	
P_1702	**2**			Control type 1=Flow, 2=Pressure	