

MODBUS TABLE GLOBAL TAC6

User's manual



Swegon 

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1 Scope

Description and details of Modbus tables and registers for Modbus RTU or TCP/IP communication between a BMS (master) and the control boards (slaves) on GLOBAL TAC6 product range.

The MODBUS communication with TAC6 control boards requires an additional satellite circuit which is used as communication interface:

- **MODBUS RTU** communication protocol:
 - SAT MODBUS Option:
 - On RS-485 physical network.
 - Details in « MI Regulation TAC5/6 + Modbus RTU » manual.
- **MODBUS TCP/IP** communication protocol:
 - SAT WIFI Option:
 - On wireless Wi-Fi network.
 - Details in « MI Regulation TAC5/6 + Modbus TCP/IP » manual.
 - SAT ETHERNET Option:
 - On Ethernet over twisted pair 10 BASE T/100Base-TX IEEE 802.3 network.
 - Details in « MI Regulation TAC5/6 + Modbus TCP/IP » manual.

The features of TAC6 regulation are plainly explained in the operation manual.

2 Modbus map overview

The GLOBAL TAC6 regulation can be entirely monitored by the MODBUS communication. The MODBUS table can thus configure the SETUP, advanced SETUP, the display setup of all parameters and the control of the operation of the unit (airflows and temperatures).

The MODBUS table is structured as follows:

Registers	Group	Read/Write
40001 ...	<u>General info.</u> Provides general information about the system.	Read only
40020 ... 40050 ... 40150 ...	<u>Visualization.</u> Shows actual values of a number of setup parameters and unit parameters (flows, pressures, inputs and outputs).	Read only
40200 ...	<u>Control.</u> Control speed by different sources. Control of functionalities like bypass, fire alarm, post-heating,). Run initialization of pressure parameters. Control of resets	Read and write
40300 ...	<u>Alarms.</u> Bitmap with alarm flags.	Read only
40400 ...	<u>Setup parameters.</u>	Read and write
40500 ...	<u>Advanced Setup parameters.</u>	Read and write
41000 ...	<u>Time table configuration parameters.</u>	Read and write

3 Use of MODBUS commands

The MODBUS Communication gives access to all the parameters of the regulation. You will find below the MODBUS registers associated with the principal functionalities of the TAC6. For more details on these registers or for complete information on the parameters accessible via MODBUS, see the complete table in §4.

3.1 MODBUS Address

Default MODBUS Address of a TAC6 circuit is "1".

It is possible to modify this value via a MODBUS command (40543).

Caution: only connect to the network TAC6 circuits with different addresses

Setup:

Description	Register
Modification of MODBUS address	40543

3.2 MODBUS Commands

3.2.1 Fans working modes

3.2.1.1 CA MODE – airflows are continuously being sent by MODBUS:

The CA mode is available only if fan airflow modulation is selected (register 40608 = 0). Units without CA kit cannot use airflow modulation, excepted those equipped with forward fans.

Setup:

Description	Register
Set MODBUS as master of airflow control	40200

Control:

Description	Register
Enter supply airflow	40204
Enter exhaust airflow	40205

3.2.1.2 CA Mode – 3 airflow set points:

Setup:

Description	Register
Select CA mode	40426
Select Airflow set point 1	40428
Select Airflow set point 2	40429
Select Airflow set point 3	40430
Airflow unbalance ratio exhaust/supply	40427

Control:

Description	Register
MODBUS is master of airflow set point position	40200
Selection of airflow set point position (OFF, I, II or III)	40201

3.2.1.3 TQ MODE – percentage of maximum fan torque are continuously being sent by MODBUS:

The TQ and CA mode being mutually exclusive, the mode CA registers are used for TQ mode.

Setup:

Description	Register
Set MODBUS as master of torque control	40200

Control:

Description	Register
Enter the percentage of supply fan torque	40204
Enter the percentage of exhaust fan torque	40205

3.2.1.4 TQ MODE– 3 set points for fan torque percentages:

The TQ mode is available only if the modulation of percentage of maximum fan torque is selected (register 40608 = 1). This is always the case for units without CA kit and not equipped with forward fans.

Setup:

Description	Register
Select TQ mode	40426
Select fan torque percentage set point 1	40428
Select fan torque percentage set point 2	40429
Select fan torque percentage set point 3	40430
Torques unbalance ratio exhaust/supply	40427

Control:

Description	Register
MODBUS is master of torque set point position	40200
Selection of torque set point position (OFF, I, II or III)	40201

3.2.1.5 LS MODE:

The magnitude that the regulation board will modulate in function of the signal voltage is normally the airflow unless that the unit has backward fans without pressure sensor, or when the forced TQ mode has been configured, then the percentage of the maximum fan torque will be modulated. In this last case, no computed pressure alarm will be available. Please, refer to the specific regulation manual for further details.

Setup:

Description	Register
Select LS mode	40426
Select minimum signal (Vmin)	40438
Select maximum signal (Vmax)	40439
Select airflow (or % max torque) corresponding to Vmin	40440
Select airflow (or % max torque) corresponding to Vmax	40441
Select unbalance ratio exhaust/supply	40427
Select sleep mode reduction for position III.	40442
Possibility to stop the fans below a certain voltage threshold	40500
Value of the voltage lower threshold	40501
Possibility to stop the fans above a certain threshold	40502
Value of the voltage upper threshold	40503
Possibility to manage another signal connected on K3	40505
Possibility to assign the signal on K3 either to the exhaust flow (by default) or to the supply	40584

Control:

Description	Register
Set MODBUS as master of ventilation position	40200

Select ventilation position (OFF, I or III)	40201
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3.2.1.6 CPs MODE:

The magnitude that the regulation board will modulate to keep the pressure constant is normally the airflow unless that the unit has backward fans without pressure sensor, or when the forced TQ mode has been configured, then the percentage of the maximum fan torque will be modulated. Please, refer to the specific regulation manual for further details.

Setup:

Description	Register
Select CPs mode	40426
Choice of the flow of regulation (supply and/or extraction)	40443
If CPs applied to one airflow side, supply or exhaust	
Select unbalance ratio exhaust/supply	40427
Select sleep mode reduction for position III.	40442
If manual configuration:	
Select assignment value to be kept constant	40446
If configuration via initialization procedure:	
Select initialization airflow (or % max torque)	40254
If CPs on 2 flows: supply and exhaust	
If manual configuration:	
Enter set point value to be kept constant in the supply airflow	40446
Enter set point value to be kept constant in the exhaust airflow	40449
If configuration via nominal airflow procedure:	
Enter nominal supply airflow (or % max torque) for initialization procedure	40254
Enter nominal exhaust airflow (or % max torque) for initialization procedure	40257
Start initialization procedure and pressure measurement	40256
Alarm while initialization procedure of set point pressure value	40302-bit 12 to 15 40303- bit 0 to 3

Control:

Description	Register
Set MODBUS as master of ventilation position	40200
Select ventilation position (OFF, I or III)	40201

3.2.2 Viewing of fan data:

Description	Register
Operating mode	40052
Ventilation Position (OFF, I, II, III)	40053
Supply set point	40056
Exhaust set point	40057
Actual airflow (or % max torque) on supply fan 1	40065
Actual pressure on supply fan 1	40066
Actual airflow (or % max torque) on supply fan 2	40069
Actual pressure on supply fan 2	40070
Actual airflow (or % max torque) on exhaust fan 1	40073
Actual pressure on exhaust fan 1	40074
Actual airflow (or % max torque) on exhaust fan 2	40077
Actual pressure on exhaust fan 2	40078
Fan failure alarm	40300 - bit 2 to 5

3.2.3 Viewing temperatures:

Description	Register
Inlet Temperature of fresh air (from outside): T1	40155
Inlet Temperature of stale air (from the interior): T2	40156
Exhaust air temperature after heat exchanger (towards outside): T3	40157
Temperature T°4	40158
Supply air temperature after heat exchanger (towards inside): T5	40159
Temperature of hydraulic preheating battery (Bain option) : T°6	40160
Hot water coil temperature (IBA, EBA+): T7	40161
Cold/reversible water coil temperature (EBA-, EBA+/-): T8	40162
Temperature sensor default alarm	40300 – bit 8 à 15 40301 – bit 0 à 7

3.2.4 Pressure Alarm:

Setup:

Description	Register
Pressure alarm activation	40431
Select delta P for pressure alarm on supply airflow	40432
Select delta P for pressure alarm on exhaust airflow	40433
Stop the unit if pressure alarm	40500
If manual configuration:	
Select reference airflow to determine pressure alarm threshold on supply side	40434
Select reference pressure to determine alarm threshold on supply side	40435
Select reference airflow to determine pressure alarm threshold on exhaust side	40436
Select reference pressure to determine alarm threshold on exhaust side	40437
If configuration via initialisation:	
Select initialization airflow	40254
Start initialization procedure to measure pressure	40253
Initialization can last for 1 to 3 minutes (according to stabilization of working point). After 1 minute the system will store the fan's calculated pressure value. The operating mode register (40052) is temporarily set to « 9 » during this initialization phase.	
Alarm while initializing pressure set point	40302-bit 12 to 15 40303 - bit 0 to 3

Control:

Description	Register
Activate « pressure alarm » status	40221

Visualization:

Description	Register
Reference airflow for pressure alarm supply side	40061
Pressure for pressure alarm supply side	40062
Reference airflow for pressure alarm exhaust side	40063
Pressure for pressure alarm exhaust side	40064
Status of pressure alarm on the supply and/or exhaust side(s)	40300- bit 6 & 7
Status of external pressure alarm	40303 - bit 6

3.2.5 Fire alarm:

Setup:

Description	Register
Select contact logic for fire alarm contact: normally «open» or «closed»	40510
Select action (off/on) in case of fire alarm supply side	40226
Select 'supply' airflow (or % max torque) in case of fire alarm	40511
Select action (off/on) in case of fire alarm exhaust side	40227
Select 'exhaust' airflow (or % max torque) in case of fire alarm	40512

Control:

Description	Register
Forcing status «fire alarm»	40222

Visualization:

Description	Register
Fire alarm status	40303 – bit 7 & 8

3.2.6 Bypass:

For the modulating bypass, the freecooling feature will be available if the setup modality is freecooling or antifreeze + freecooling. Please, refer to the operation manual for further details.

Setup:

Description	Register
Select outside temperature threshold to open bypass	40513
Select inside temperature threshold to open bypass	40514
Force special airflow (or % max torque) when bypass open	40515
Select supply airflow (or % max torque) when bypass open	40516
Select exhaust airflow (or % max torque) when bypass open	40517
If modulating bypass: freecooling temperature set point	40454
If modulating bypass: modulating bypass modality (0=antifreeze, 1=freecooling, 2 = antifreeze + freecooling)	40562

Control:

Description	Register
Force open bypass status (even when conditions not met)	40223
If modulating bypass: force the degree of bypass opening	40258

Visualization:

Description	Register
Bypass status	40084
If modulating bypass: degree of bypass opening	40091

3.2.7 Boost:

Setup:

Description	Register
Enter BOOST supply airflow (or % max torque) rate when activated	40548
Enter BOOST exhaust airflow (or % max torque) rate when activated	40549
Possibility to activate boost by contact (default) or by relative humidity rate (%RH) through a 0-10V humidity sensor connected on K3.	40577
If boost by %RH, definition of the relative humidity rate for activation	40578
If boost by %RH, definition of the relative humidity rate for deactivation	40579
If boost by %RH, minimum signal (Vmin) sent back by the humidity sensor	40580
If boost by %RH, maximum signal (Vmax) sent back by the humidity sensor	40581
If boost by %RH, choice of the relative humidity rate corresponding to Vmin	40582
If boost by %RH, choice of the relative humidity rate corresponding to Vmax	40583

Control:

Description	Register
Force activation of « BOOST » airflow	40228

3.2.8 Post-heating – internal coil (IBA or KWout option):

Setup:

Description	Register
Choice of the comfort temperature regulation from the measured value of the supply T° (comfort on T5, default) or of the extract/ambient T° (comfort on T2)	40570
Select comfort air T° set point	40425

Control:

Description	Register
De-activate post heating function	40225

Visualization:

Description	Register
Comfort air T° assignment	40059
If IBA option: %age of opening of 3-way valve	40172
If KWout option: power %age of KWout coil	40187
Extract air temperature (T°2)	40156
Supply air temperature (T°5)	40159
Antifreeze status of internal water coil	40083

3.2.9 Post-heating or cooling: external coil:**Setup:**

Description	Register
Choice of the comfort temperature regulation from the measured value of the supply T° (comfort on T5, default) or of the extract/ambient T° (comfort on T2)	40570
Choose external coil type	40550
Enter comfort airflow set point temperature for heating	40425
Enter comfort airflow set point temperature for cooling	40447

Control:

Description	Register
Disable post-heating	40225
Disable post-cooling	40229
Select heating or cooling method	40230

Visualization:

Description	Register
Actual comfort air T° set point (cool or heat)	40059
If EBA+ option: %age opening of 3-way valve	40174
If EBA- or EBA+/- option: %age opening of 3-way valve	40175
If KWext option: actual %age of maximum capacity of KW coil	40188
Extract air temperature (T°2)	40156
Actual Supply air T°(T°5)	40159
Antifreeze status of external water coils	40088

3.2.10 Post-heating and cooling: automatic changeover between heat and cool:**Setup:**

Description	Register
Enable automatic changeover between heat and cool	40589
Select the dead zone in automatic changeover between heat and cool	40590

Visualization:

Description	Register
Changeover status	40098

3.2.11 Run time and maintenance alarms:**Setup:**

Description	Register
Activate run time logging	40534
Activate maintenance alarm based on fan running hours	40536
Hours count limit for maintenance alarm based on fan running hours	40537
Activate maintenance alarm based on fan running hours with a fan stop	40539
Hours count limit for maintenance alarm based on fan running hours with fan stop	40540
Hours count for minor maintenance alarm based on elapsed time	40457
Hours count for major maintenance alarm based on elapsed time	40458

Control:

Description	Register
RESET fan running hours count	40252
RESET minor maintenance hours count	40260
RESET major maintenance hours count	40261

Visualization:

Description	Register
Fan running hours count of unit	40081
Minor maintenance hours count of unit	40096
Major maintenance hours count of unit	40109
Status of maintenance alarm based on fan running hours	40303 – bit 4 & 5
Status of minor maintenance alarm based on elapsed time	40304 – bit 10
Status of major maintenance alarm based on elapsed time	40304 – bit 13

3.2.12 Operating with time tables:

TAC6 units can operate automatically according to a timetable. The timetable features 7 days/ 6 timeslots per day programming. For each time slot, it is possible to configure the working mode and its different parameters, the supply air T° set point (heating and cooling) and the status of the bypass.

Setup:

Description	Register
See MODBUS §4.2.6 table below	41000..41417

Control:

Description	Register
Enable automatic operation	40200

3.2.13 Seasonal programming:

3 features can be en/disabled during certain periods of the year: the bypass, the post-heating and the post-cooling. Configure a time period between 2 dates and enter feature status (i.e. closed position for the Bypass and OFF for the heating or cooling), regardless of the configuration and actual temperature values.

Setup:

Description	Register
Enter time periods for BYPASS: see MODBUS table §4.2.7 below	41800..41803
Enter time periods for post-heating: see MODBUS table §4.2.7 below	41804..41807
Enter time periods for post-cooling: see MODBUS table §4.2.7 below	41808..41811

3.2.14 Advanced setup

Other parameters and advanced functionalities are accessible via MODBUS. They require a thorough knowledge of the regulation. You can find the details concerning these parameters in the MODBUS table or in the document associated with the specific regulation available on our www.swegon.com site:

- Fans start torque
- Prevent stop of the fans
- Configuration of AF (anti-frost) of coils
- Reaction speed of modifications on post-heating/cooling
- OUT1 and OUT2 definition (with SAT IO option)
- In mode CPs: positive or negative logic
- In mode CPs: reaction speed of the CPs algorithm
- If comfort on T2 (on extract/ambient T°):
 - comfort reaction speed
 - upper and lower limit value of the temperature reached in the supply duct.
- Automatic changeover between heat and cool
- Post-ventilation configuration
- Access code configuration
- Factory reset

4 Detailed MODBUS table

Legend:

Read/Write

R = Read only

R/W = Read and Write

4.1 General info

Register	Read / Write	Description	Accepted values /Examples
40001 40002	R	Magic number to detect a product Swegon. Two words. First word is 19533, second word is 20051. These are the ASCII values of "LMNS". If read as a 32-bit value, the value is 1,314,081,869.	19533, 20051
40003	R	Swegon product identification code number of the TAC regulation (CID)	Unsigned 0..32767
40004	R	Modbus mapping version. = Major * 100 + minor Example: 100 (major=1, minor=0)	Unsigned 0..32767
40005	R	Software version, major. The software version number scheme is: major.minor.revision. Leading zeros are not used. Valid versions would be v1.0.0, v1.3.18 or v2.14.6. V1.03.18 would be invalid. Each part can be 0..99, at least.	0..99
40006	R	Software version, minor.	0..99
40007	R	Software version, revision.	0..99
40008	R/W	Flag indicating that controller has been reset. The Modbus master can use this to detect that the controller has reset. Flag can be written to zero by the master.	0 or 1
40009	R	Software version, build number This number will increase with each release.	Ex.: 1984
40010	R/W	Unit name (char 1-2), alphanumeric ascii only	Ex.: 16961 (BA)
40011	R/W	Unit name (char 3-4), alphanumeric ascii only	Ex.: 17475 (DC)
40012	R/W	Unit name (char 5-6), alphanumeric ascii only	Ex.: 17989 (FE)
40013	R/W	Unit name (char 7-8), alphanumeric ascii only	Ex.: 18503 (HG)
40014	R/W	Unit name (char 9-10), alphanumeric ascii only	Ex.: 19017 (JI)
40015	R/W	Unit name (char 11-12), alphanumeric ascii only	Ex.: 19531 (LK)
40016	R/W	Unit name (char 13-14), alphanumeric ascii only	Ex.: 20045 (NM)
40017	R/W	Unit name (char 15-16), alphanumeric ascii only	Ex.: 20559 (PO)

4.2 Specific Tables

4.2.1 Visualization

Register	Read / Write	Description	Accepted values
40020 40021	R	Factory configuration: REC TYPE 32-bit value in 2 words	32-bit value in 2 words
40022	R	Factory configuration: PREHEAT OPTION 0=OFF, 1=ON-KWin	0 or 1
40023	R	Factory configuration: POSTHEAT OPTION 0=OFF, 1=ON-KWout, 2=ON-IBA	0, 1 or 2
40024	R	Factory configuration: CT IN (damper) OPTION 0=NO, 1=YES	0 or 1
40025	R	Production setup: BYPASS% (system has a proportional bypass) 0=NO, 1=YES	0 or 1
40026	R	Has Backward fans? 0=NO, 1=YES	0 or 1
40027	R	Has Heat wheel? 0=NO, 1=YES	0 or 1
40028	R	Mode TQ? 0=NO 1=YES	0 or 1
40030	R	Heat wheel RPM at 10 V?	5..40
40031	R	Backward fans have sensor? (0=NO 1=YES)	0 or 1
40050 40051	R	FAN TYPE 32-bit value in 2 words. Ex.: 720054	32-bit value in 2 words
40052	R	Current Working Mode 0=OFF, 1=CA, 2=LS, 4=CPs, (5=CAs), 6=TQ 9=INIT (temporary mode during init of pressure alarm or init of CPs mode)	0, 1, 2, 4 or 6
40053	R	Current speed as stop/low/medium/high 0=STOP, 1=LOW/I, 2=MEDIUM/II, 3=HIGH/III Or 0=stopped and 1=running.	0, 1, 2 or 3
40054	R	Current set point (SET VAL): Range 0..9999 Can be m3/h, Pa, 0.1V or % unit. See 40055.	0..9999
40055	R	Current Set point (SET VAL) unit: 0=m3/h; 1=Pa; 2=0,1V; 3=percentage of maximum torque (%) Applies to 40054 only.	0, 1, 2 or 3
40056	R	Current set point for supply fans F1/F2. Can be m3/h, Pa, 0.1V or % unit.	0..max of unit
40057	R	Current set point for extraction fans F3/F4 Can be m3/h, Pa, 0.1V or % unit.	0..max of unit
40058	R	Preheat set point, in 0,1 °C units. Range -99..+99 meaning -9,9 .. +9,9°C. 400 (+40.0°C) is a special case allowed for production tests.	-99..99
40059	R	Current comfort T° setpoint, in 0,1 °C units. Range 1..+999 meaning +0,1 .. +99,9°C May be heating or cooling. 0 means supply heating and cooling are OFF.	0..999
40060	R	Current Exhaust/Supply ratio (unbalance between exhaust and supply flows) in %: Range 5 .. 999 %	5..999
40061	R	Pressure alarm data: Supply: reference flow for pressure alarm, in m3/h	0..max of unit
40062	R	Pressure alarm data: Supply: reference pressure for pressure alarm, in Pa	0..max of unit
40063	R	Pressure alarm data: Exhaust: reference flow for pressure alarm, in m3/h	0..max of unit
40064	R	Pressure alarm data: Exhaust: reference pressure for pressure alarm, in Pa	0..max of unit
40065	R	Fan 1 (Supply 1) flow or torque (%TQ)	0..max of unit
40066	R	Fan 1 pressure	0..max of unit
40067	R	Fan 1 sent torque. Range: 0..255 (127=50%)	0..255

40068	R	Fan 1 RPM	0..6000
40069	R	Fan 2 (Supply 2) flow or torque (%TQ)	0..max of unit
40070	R	Fan 2 pressure	0..max of unit
40071	R	Fan 2 sent torque. Range: 0..255 (127=50%)	0..255
40072	R	Fan 2 RPM	0..6000
40073	R	Fan 3 (Exhaust 1) flow or torque (%TQ)	0..max of unit
40074	R	Fan 3 pressure	0..max of unit
40075	R	Fan 3 sent torque. Range: 0..255 (127=50%)	0..255
40076	R	Fan 3 RPM	0..6000
40077	R	Fan 4 (Exhaust 2) flow or torque (%TQ)	0..max of unit
40078	R	Fan 4 pressure	0..max of unit
40079	R	Fan 4 sent torque. Range: 0..255 (127=50%)	0..255
40080	R	Fan 4 RPM	0..6000
40081	R	working hours of the unit: RUN TIME: xxxxxx h	0..999999
40082		32-bit value in 2 words.	
40083	R	Antifreeze status of the integrated exchangers: 0=OFF 1= antifreeze of the air-air heat exchanger is activated 2= antifreeze of the warm water heat exchanger is activated	0, 1 or 2
40084	R	Bypass status 0=INACTIVE, 1=ACTIVE, 2=PARTIALLY ACTIVE	0, 1 or 2
40085	R	CTin option: Damper status 0=CLOSED or CLOSING, 1=OPENING, 2=OPEN	0, 1 or 2
40086	R	post ventilation status 0=NO, 1=active	0 or 1
40087	R	Current control mode: indicates what controls the airflows 1 = FATAL ERROR: Fans are stopped 2 = FIRE ALARM (registers 40511 and 40512) 3 = USER INTERFACE 4 = EXTERNAL CONTACTS: K1-K2-K3 contacts 6 = TIMESCHEDULER 7 = MODBUS register 40201 8 = BYPASS (registers 40516 and 40517) 9 = BOOST (registers 40548 and 40549) 10 = MODBUS registers 40204 and 40205 11 = KNX	1..11
40088	R	Antifreeze status of the external exchangers: 0=OFF 1= antifreeze of the water exchanger EBA+ or EBA+- is activated 2= antifreeze of the cold-water exchanger EBA- is activated 3= antifreeze of the warm and cold-water exchangers EBA+ and EBA- are activated	0, 1, 2 or 3
40089	R	Current comfort T° heating set point, in 0,1 °C units. Range 1..+999 meaning +0,1 .. +99,9°C 0 is heating OFF.	0..999
40090	R	Current comfort T° cooling set point, in 0,1 °C units. Range 1..+999 meaning +0,1 .. +99,9°C 0 is cooling OFF.	0..999
40091	R	Bypass valve position. 0 .. 100%. 0% if closed, 100% if fully open. For a proportional bypass valve: this value can be any value in the range 0 .. 100%. For an on/off bypass valve: this value can be any 0% or 100% only.	0..100
40092	R	Heat wheel RPM	0..20
40096	R	Minor maintenance hours count of unit: xxxxxx h 32-bit value in 2 words.	0..999999
40098	R	Changeover status (0=inactive, 1=heating, 2=cooling)	0, 1 or 2
40099	R	Defrost state (0=IDLE, 1=ACTIVE, 2=STOP to drain water)	0, 1 or 2
40104	R	Delta Supply Pa Alarm (%)	0...999
40105	R	Delta Exhaust Pa Alarm (%)	0...999
40109	R	Major maintenance hours count of unit: xxxxxx h	0..999999

		32-bit value in 2 words.	
40150	R	Status of digital inputs block 0. Bitmap with 1 bit per input. 0=OFF, 1=ON. Bit 0: K1 Bit 1: K2 (as on/off) Bit 2: K3 (as on/off) Bit 3: IN1 (Fire Alarm) Bit 4: IN2 (BOOST) Bit 5: IN3 (bypass_on) Bit 6: IN4 (drain pan full) Bit 7: ADI1 (rotor speed feedback) Bit 8: ADI2 (Supply dPa switch) Bit 9: ADI3 (Exhaust dPa switch) Bit 10: not used Bit 11: not used Bit 12: SATIO IN5 (master selection) Bit 13: SATIO IN6 (select heating or cooling, open = heating, closed = cooling)	0..16383
40152	R	K1 Analogue voltage, K1 is a digital input but it is shown here for completeness. 0..100 = 0..10,0V	0..100
40153	R	K2 Analogue voltage, 0..100 = 0..10,0V	0..100
40154	R	K3 Analogue voltage, 0..100 = 0..10,0V	0..100
40155	R	Temperature T°1, in 0,1°C units. Range -990 .. +990 meaning -99.0 .. +99.0 °C. -999 means open circuit. +999 means short circuit.	-999..999
40156	R	Temperature T°2, in 0,1°C units. Range -990 .. +990 meaning -99.0 .. +99.0 °C. -999 means open circuit. +999 means short circuit.	-999..999
40157	R	Temperature T°3, in 0,1°C units. Range -990 .. +990 meaning -99.0 .. +99.0 °C. -999 means open circuit. +999 means short circuit.	-999..999
40158	R	Temperature T°4, in 0,1°C units. Range -990 .. +990 meaning -99.0 .. +99.0 °C. -999 means open circuit. +999 means short circuit.	-999..999
40159	R	Temperature T°5, in 0,1°C units. Range -990 .. +990 meaning -99.0 .. +99.0 °C. -999 means open circuit. +999 means short circuit.	-999..999
40160	R	Temperature T°6, in 0,1°C units. Range -990 .. +990 meaning -99.0 .. +99.0 °C. -999 means open circuit. +999 means short circuit.	-999..999
40161	R	Temperature T°7, in 0,1°C units. Range -990 .. +990 meaning -99.0 .. +99.0 °C. -999 means open circuit. +999 means short circuit.	-999..999
40162	R	Temperature T°8, in 0,1°C units. Range -990 .. +990 meaning -99.0 .. +99.0 °C. -999 means open circuit. +999 means short circuit.	-999..999
40163	R	Backward fans inlet diff pressure, Analogue input PR1, 0..100 = 0..10,0V	0..100
40164	R	Backward fans inlet diff pressure, Analogue input PR2, 0..100 = 0..10,0V	0..100
40165	R	Backward fans inlet diff pressure, Analogue input PR1, 0..16383 = 0..10,0V	0..16383
40166	R	Backward fans inlet diff pressure, Analogue input PR2, 0..16383 = 0..10,0V	0..16383

40168	R	Status of digital outputs block 0. Bitmap with 1 bit per input. 0=OFF, 1=ON. Bit 0: DO9 alarm, 1="alarm" Bit 1: linear bypass moving forward. Bit 2: linear bypass moving backward Bit 3: CT Bit 4: KWin Bit 5: KWout Bit 6: DO10 "pressure alarm" Bit 7: DO11 "fan on" Bit 8: DO7 "heat output" Bit 9: SAT IO OR3-OR3 "bypass on" Bit 10: DO7 "cool output" Bit 11: SAT IO DO16	0..4095
40169	R	Status of digital outputs block 1. Bitmap with 1 bit per input. 0=OFF, 1=ON. Bit 0: OUT1 Bit 1: OUT2 Bit 2: OUT3 Bit 3: OUT4 Bit 4: OUT5	0..31
40170	R	Analogue output SAT IO AO5 OUT1 (option). Image of the flow or pressure of one fan (to be configured in advanced setup). In 0,1V units, range 0..100 meaning 0,0V .. 10.0V. 0 – 10V = 0 – Max airflow or pressure of the fan	0..100
40171	R	Analogue output SAT IO AO6 OUT2 (option). Image of the flow or pressure of one fan (to be configured in advanced setup). In 0,1V units, range 0..100 meaning 0,0V .. 10.0V. 0 – 10V = 0 – Max airflow or pressure of the fan	0..100
40172	R	Analogue output AO4 - IBA. Post heat IBA option: opening of the 3-ways valve In 0,1V units, range 0..100 meaning 0,0V .. 10.0V.	0..100
40174	R	Analogue output AO1. Post heat EBA+ option: opening of the 3-ways valve In 0,1V units, range 0..100 meaning 0,0V .. 10.0V.	0..100
40175	R	Analogue output AO3. Post cool EBA- option: opening of the 3-ways valve In 0,1V units, range 0..100 meaning 0,0V .. 10.0V.	0..100
40186	R	output KWin Preheat KWin option: power of the electric coil (%) In % units, range 0..100 meaning 0..100%.	0..100
40187	R	output KWout Post heat KWout option: power of the electric coil (%) In % units, range 0..100 meaning 0..100%.	0..100
40188	R	output external KW Post heat KWext option: power of the electric coil (%) In % units, range 0..100 meaning 0..100%.	0..100
40189	R	Heat wheel: Measured RPM In 0.1 RPM unit. 0-300 is 0.0-30.0 RPM.	0..300
40190	R	Pressure measured with Modbus sensor for Supply fan in CP mode. Pa unit.	0..9999
40191	R	Pressure measured with Modbus sensor for Exhaust fan in CP mode. Pa unit.	0..9999

4.2.2 Control

Register	Read / Write	Description	Accepted values
40200	R/W	Selection of the control master (who will determine speed). 0= USER INTERFACE determines speed 1=MODBUS determines speed via register 40201 2=TIMETABLE determines airflows (automatic working) 3= MODBUS determines airflows via registers 40204/40205	0, 1, 2 or 3
40201	R/W	Speed selection via Modbus (only if 40200=1) 0=STOP 1=LOW-pos.I 2=MEDIUM-pos.II 3=HIGH-pos.III	0, 1, 2 or 3
40204	R/W	Supply airflow/torque (%TQ) selection via Modbus (only if 40200=3) Range 0..9999	min..max of unit + 0
40205	R/W	Exhaust airflow/torque (%TQ) selection via Modbus (only if 40200=3) Range 0..9999	min..max of unit + 0
40221	R/W	External pressure alarm 0=No alarm 1=Pressure alarm activated	0 or 1
40222	R/W	Fire alarm 0=No alarm 1=Fire alarm activated	0 or 1
40223	R/W	Override: force bypass active or inactive. Range 0/1/2. Set to 0 for auto.bypass control (based on measured T°1 and T°2). Set to 1 to force bypass active (on). Set to 2 to force bypass inactive (off). Setting this register to 1 is equivalent to activating the "Force bypass open" input IN3.	0..2
40224	R/W	Override: force automatic mode. Set to 1 to force automatic mode.	0 or 1
40225	R/W	ON/OFF Post heat: to deactivate the post heating 0=Post heating allowed 1=Post heating not allowed	0 or 1
40226	R/W	Fire alarm supply airflow/torque (%TQ) 0=Supply fan is stopped in fire alarm 1=Supply fan is running in fire alarm	0 or 1
40227	R/W	Fire alarm exhaust airflow/ torque (%TQ) 0=Exhaust fan is stopped in fire alarm 1=Exhaust fan is running in fire alarm	0 or 1
40228	R/W	Boost control 0= Boost function not activated 1= Boost function activated	0 or 1
40229	R/W	ON/OFF Post cool: to deactivate the cooling 0= cooling allowed 1= cooling not allowed	0 or 1
40230	R/W	Cooling or heating selection: 0= heating position 1= cooling position	0 or 1
40250	R/W	RESET Perform a reset to clear pending alarms and resume normal working. Required to recover from fatal alarms. This operation takes about 1 second. The Modbus write command will be answered immediately, then the operation will be executed. Modbus commands will not be answered during the operation. Read: always 0. Write: 1 to perform reset.	0 or 1
40251	R/W	RESET TO FACTORY DEFAULT VALUES. Reset setup and advanced setup parameters to their factory default values. This operation takes about 3 seconds. The Modbus write command will be answered immediately, then the operation will be executed.	0 or 1

		Modbus commands will not be answered during the operation. Read: always 0. Write: 1 to perform reset.	
40252	R/W	RESET RUN TIME Reset run time (working hours) to zero. Read: always 0 Write: 1 to perform reset.	0 or 1
40253	R/W	Pressure alarm initialization Start the initialization <u>Will be accepted in CA and LS mode only!</u> Initialization is: run with reference flow set in 40254, measure pressure, store reference pressure. Working mode is set to 9 during the initialization. Read: 0=idle, 1=start. Write: 1 to start	0 or 1
40254	R/W	Pressure initialization Initialization flow/torque 1: Reference flow/torque used for: - CA/LS mode: Pa alarm initialization (supply fan flow) - CPs mode: initialization (supply fan flow/torque if "CPs on SUP" or "CPs on SUP+EXH", exhaust fan flow/torque if "CPs on EXH") Range is limited to the minimum and maximum flow/torque of the fans used	min. max of unit
40256	R/W	CPs mode initialization. Start the initialization <u>Will be accepted in CPs mode only!</u> - "CPs on SUP": run supply with reference flow/torque set in 40254, run exhaust with ratio, measure K2 voltage, store reference voltage. - "CPs on EXH": run exhaust with reference flow/torque set in 40254, run supply with 1/ratio, measure K2 voltage, store reference voltage. - "CPs on SUP+EXH": run supply with reference flow/torque set in 40254, run exhaust with reference flow/torque set in 40257, measure K2 voltage for supply, measure K3 voltage for exhaust, store reference voltage. Working mode is set to 9 during the initialization. Read: 0=idle, 1=start. Write: 1 to start	0 or 1
40257	R/W	Initialization flow 2: Reference flow used for: - CPs mode initialization (exhaust fan flow if "CPs on SUP+EXH") Range is limited to the minimum and maximum flow/torque of the fans used	min..max of unit
40258	R/W	Override: force proportional bypass valve position. -1 is no override. 0 .. 100% is override to this position. 0% is closed. 100% is open. This override has lower priority than Antifreeze. Default value is -1.	-1..100
40259	R/W	Override: force heat wheel RPM. -1 is no override. 0 .. 99 is overridden use this RPM. 0 is heat wheel stop. Value is clipped to the maximum heat wheel RPM. This override has higher priority than Antifreeze! Default value is -1.	-1..100
40260	R/W	RESET MINOR MAINTENANCE HOURS Reset minor maintenance hours to zero. Read: always 0 Write: 1 to perform reset.	0 or 1
40261	R/W	RESET MAJOR MAINTENANCE HOURS Reset major maintenance hours to zero. Read: always 0 Write: 1 to perform reset.	0 or 1

4.2.3 Alarms

See our Alarm document for more details

Register	Read / Write	Alarm bits Alarm flags are bits in holding registers. 1 bit per alarm, 16 alarms per register.	Accepted values
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		Bit is 1 if alarm is active. Read only.	
40300	R	Bit 0: ALARM_PROGRAM_ERROR Bit 1: ALARM_DATA_ERROR Bit 2: ALARM_FAN1 Bit 3: ALARM_FAN2 Bit 4: ALARM_FAN3 Bit 5: ALARM_FAN4 Bit 6: ALARM_PRESSURE_F1 Bit 7: ALARM_PRESSURE_F3 Bit 8: ALARM_T1_OPEN Bit 9: ALARM_T1_SHORT Bit 10: ALARM_T2_OPEN Bit 11: ALARM_T2_SHORT Bit 12: ALARM_T3_OPEN Bit 13: ALARM_T3_SHORT Bit 14: ALARM_T4_OPEN Bit 15: ALARM_T4_SHORT	0..65535
40301	R	Bit 0: ALARM_T5_OPEN Bit 1: ALARM_T5_SHORT Bit 2: ALARM_T6_OPEN Bit 3: ALARM_T6_SHORT Bit 4: ALARM_T7_OPEN Bit 5: ALARM_T7_SHORT Bit 6: ALARM_T8_OPEN Bit 7: ALARM_T8_SHORT Bit 8: ALARM_CP_FAN_1_HIGH Bit 9: ALARM_CP_FAN_1_LOW Bit 10: ALARM_CP_FAN_3_HIGH Bit 11: ALARM_CP_FAN_3_LOW Bit 12: ALARM_LS_FAN_1_LOW Bit 13: ALARM_LS_FAN_1_HIGH Bit 14: ALARM_LS_FAN_2_LOW Bit 15: ALARM_LS_FAN_2_HIGH	0..65535
40302	R	Bit 0: ALARM_LS_FAN_3_LOW Bit 1: ALARM_LS_FAN_3_HIGH Bit 2: ALARM_LS_FAN_4_LOW Bit 3: ALARM_LS_FAN_4_HIGH Bit 4: ALARM_CA_FAN_1_LOW Bit 5: ALARM_CA_FAN_1_HIGH Bit 6: ALARM_CA_FAN_2_LOW Bit 7: ALARM_CA_FAN_2_HIGH Bit 8: ALARM_CA_FAN_3_LOW Bit 9: ALARM_CA_FAN_3_HIGH Bit 10: ALARM_CA_FAN_4_LOW Bit 11: ALARM_CA_FAN_4_HIGH Bit 12: ALARM_PA_INIT_F1_NOT_STAB Bit 13: ALARM_PA_INIT_F3_NOT_STAB Bit 14: ALARM_PA_INIT_F1_TOO_LOW Bit 15: ALARM_PA_INIT_F3_TOO_LOW	0..65535

40303	R	Bit 0: ALARM_PA_INIT_F1_NOT_ACHIEVED Bit 1: ALARM_PA_INIT_F3_NOT_ACHIEVED Bit 2: ALARM_PA_INIT_F1_TOO_HIGH Bit 3: ALARM_PA_INIT_F3_TOO_HIGH Bit 4: ALARM_MAINT_WARN Bit 5: ALARM_MAINT_FATAL Bit 6: ALARM_DPA Bit 7: ALARM_FIRE Bit 8: ALARM_END_OF_FIRE_ALARM Bit 9: ALARM_VLOWERVLOW Bit 10: ALARM_VHIGERVHIGH Bit 11: ALARM_PREHEAT_REDUCED Bit 12: ALARM_PREHEAT_STOP Bit 13: ALARM_AF_REDUCED Bit 14: ALARM_AF_STOP Bit 15: ALARM_POSTHEAT_SETPOINT (comfort T° too low)	0..65535
40304	R	Bit 0: ALARM_POSTCOOLING_SETPOINT (comfort T° too high) Bit 1: - Bit 2: ALARM CONDENS DRAINPAN IS FULL, CHACK PUMP Bit 3: ALARM T5_AF_STOP, AF_REC_ON, STOP FANS Bit 4: ALARM HEATWHEEL RPM TOO LOW OR TOO HIGH Bit 5: ALARM PROP BYPASS POSITION Bit 6: ALARM AF IBA STOP Bit 7: ALARM AF EBA+ STOP Bit 8: ALARM AF EBA- STOP Bit 9: ALARM AF EBA+/- STOP bit10=ALARM MINOR MAINTENANCE bit11=DEFROST ALARM bit12=ALARM MODBUS COMMUNICATION ERROR bit13=ALARM MAJOR MAINTENANCE	0..65535

4.2.4 SETUP parameters

Register	Read / Write	Description	Accepted values
40400	R/W	Current time: seconds (Do not write the time register cyclically, doing so will slow the clock counter)	0..59
40401	R/W	Current time: minutes: (Do not write the time register cyclically, doing so will slow the clock counter)	0..59
40402	R/W	Current time: hours: (Do not write the time register cyclically, doing so will slow the clock counter)	0..23
40403	R/W	Current date: day of month: (Do not write the time register cyclically, doing so will slow the clock counter)	1..31
40404	R/W	Current time: month: 1=January 12=December (Do not write the time register cyclically, doing so will slow the clock counter)	1..12
40405	R/W	Current time: year: (Do not write the time register cyclically, doing so will slow the clock counter)	2000..2099
40406	R	Current time: Day of the week: 0=Monday, 1=Tuesday, 2=Wednesday, 3=Thursday, 4=Friday, 5=Saturday, 6=Sunday. This register is read only! The weekday is automatically calculated when the date changes.	0..6
40407	R/W	Automatic adjustment "Daylight Saving Time (DST)". 0=NO ; 1=YES	0 or 1
		Notes on the real time clock: <ul style="list-style-type: none"> The range of the clock is 1 jan 2000 .. 31 dec 2099. The date is validated when written. Automatic leap year correction. Automatic Daylight Saving Time (DST) adjustment following EU rules. Adjust +01:00 at 2:00 on the last Sunday in March. Adjust -1:00 at 3:00 at the last Sunday in October. 	
40420	R/W	LANGUAGE language on the user interface 0=GB(English), 1=F(French), 2=D(German), 3=NL(Dutch), 4=SW(Swedish), 5=DK(Danish), 6=NO(Norwegian), 7=PO(Polish)	0, 1, 2, 3, 4, 5, 6 or 7
40421 40422	R/W	FAN TYPE 32-bit value in 2 words. Cannot be changed if a RECTYPE is set.	32-bit value in 2 words
40423	R/W	NUMBER OF FANS, (# FANS) Some configurations allow 2 or 4 fans only. Cannot be changed if a RECTYPE is set.	1..4
40424	R/W	FAN POSITIONS If #FANS=1: don't care If #FANS=2: position=0: Fan1+Fan3 position=1: Fan1+Fan2 if #FANS=3: position=0: Fan1+Fan3+Fan4 position=1: Fan1+Fan2+Fan3 if #FANS=4: don't care Cannot be changed if a RECTYPE is set.	0 or 1
40425	R/W	Post heat set point For IBA, KWout, EBA+, EBA+/- and KWext options In 0,1 °C units. Range 0..+999 meaning 0 .. +99,9°C 0 is OFF	0..999
40426	R/W	FANS WORKING MODE 0=OFF: unit is stopped 1=CA: constant airflows 2=LS: airflow linked to 0-10V input signal 4=CPs: constant pressure with sensor 6=TQ: constant torque 9=INIT (9 is a temporary mode during initialization of pressure for	0, 1, 2, 4, 6 or 9

		pressure alarm or CPs mode)	
40427	R/W	Exhaust/Supply flows ratio To create an unbalance between flows	5..999
40428	R/W	Airflow selection in CA mode, % of maximum torque in TQ mode: Speed 1 (K1 – Pos.I) Range 0..9999	0..max of unit
40429	R/W	Airflow selection in CA mode, % of maximum torque in TQ mode: Speed 2 (K2 – Pos.II) Range 0..9999	0..max of unit
40430	R/W	Airflow selection in CA mode, % of maximum torque in TQ mode: Speed 3 (K3 – Pos.III) Range 0..9999	0..max of unit
40431	R/W	Pressure alarm selection For CA and LS mode only: Pressure alarm selection 0=No pressure alarm 1=Pressure alarm selected	0 or 1
40432	R/W	Pressure alarm data For CA and LS mode only: Pressure offset on supply (increase of pressure) In Pa units	25..999
40433	R/W	Pressure alarm data For CA and LS mode only: Pressure offset on exhaust (increase of pressure) In Pa units	25..999
40434	R/W	Pressure alarm data For CA and LS mode only: Reference flow on supply for pressure alarm In m3/h units	min..max of unit
40435	R/W	Pressure alarm data For CA and LS mode only: Pressure at reference flow on supply. In Pa units	0..max of unit
40436	R/W	Pressure alarm data For CA and LS mode only: Reference flow on exhaust for pressure alarm In m3/h units	min..max of unit
40437	R/W	Pressure alarm data For CA and LS mode only: Pressure at reference flow on exhaust. In Pa units	0..max of unit
40438	R/W	Signal link data For LS mode only: Minimum signal value: Vmin In 0,1V units, 0..100 meaning 0..10,0V	0..100
40439	R/W	Signal link data For LS mode only: Maximum signal value: Vmax In 0,1V units, 0..100 meaning 0..10,0V	0..100
40440	R/W	Signal link data For LS mode only: Airflow/torque at Vmin In m3/h units or % max torque	min..max of unit
40441	R/W	Signal link data For LS mode only: Airflow/torque at Vmax In m3/h units or % max torque	min..max of unit
40442	R/W	Sleep mode reduction on K3 For LS and CPs mode only: reduction in % of the nominal set point In % unit	1..100
40443	R/W	For all modes: Control set point on F1 (Supply fans)? F3 (Exhaust fans)? Or both? 0=on F1(supply) 1=on F3(exhaust) (if supported) 2=F1+F3 (supply and exhaust)	0,1 or 2
40444	R/W	For CPs mode only: Initialization flow 1: Reference flow used for: - CPs mode initialization (supply fan flow if “CPs on SUP” or “CPs on SUP+EXH”, exhaust fan flow if “CPs on EXH”).	min..max of unit

40446	R/W	For CPs mode only: Set point 1 voltage for supply fans in "CPs on SUP" or "CPs on SUP+EXH", or for exhaust fans in "CPs on EXH" In 0,1V units, range 0..100 is 0..10.0V.	0..100
40447	R/W	Cooling set point For EBA- and EBA+/- options In 0,1 °C units. Range 0..+999 meaning 0 .. +99,9°C. 0 is OFF	0..999
40448	R/W	Constant pressure data For CPs mode only: Reference flow 2 used for measuring pressure. exhaust fan flow/torque if "CPs on SUP+EXH" In m3/h units or % max torque	min..max of unit
40449	R/W	Constant pressure data For CPs on SUP+EXH only: Reference voltage for exhaust flow to keep constant In 0,1V units, range 0..100 is 0..10.0V.	0..100
40454	R/W	Freecooling set point temperature (for freecooling via proportional bypass valve). In 0,1 °C units.	0..999
40457	R/W	Hours count for minor maintenance alarm based on elapsed time. In hours units. 0 is counting disabled	0..9999
40458	R/W	Hours count for major maintenance alarm based on elapsed time. In hours units. 0 is counting disabled	0..9999

4.2.5 ADVANCED SETUP parameters

Register	Read / Write	Description	Accepted values
40500	R/W	Stop the fans in pressure alarm For CA and LS mode only: 0=NO, 1=YES	0 or 1
40501	R/W	Stop the fans if signal on K2 is lower than Vlow For LS mode only 0=NO, 1=YES	0 or 1
40502	R/W	If 40501 is 1, value of Vlow For LS mode only In 0,1V units, range 0..100 meaning 0..10,0V	0..100
40503	R/W	Stop the fans if signal on K2 is higher than Vhigh For LS mode only 0=NO, 1=YES	0 or 1
40504	R/W	If 40503 is 1, value of Vhigh For LS mode only In 0,1V units, range 0..100 meaning 0..10,0V	0..100
40505	R/W	Signal to control exhaust airflow on K3 For LS mode only 0=NO, 1=YES	0 or 1
40506	R/W	Reaction speed in CPs mode For CPs mode only Range 10..0 (10=fastest (default value) – 0=slowest)	0..10
40507	R/W	Reaction logic in CPs mode For CPs mode only 0=POSITIVE: airflow increase if Vk2 > set point 1=NEGATIVE: airflow increase if Vk2 < set point	0 or 1
40508	R/W	Start torque In % unit	2..98
40509	R/W	“FANS OFF” allowed? If 0, the ventilation cannot be stopped (above in alarm) 0=NO, 1=YES	0 or 1
40510	R/W	Fire alarm: normally open or closed contact selection 0 = normally open (N.O.) 1 = normally closed (N.C.)	0 or 1
40511	R/W	Fire alarm: airflow selection Airflow/torque for supply In m3/h units or % max torque	min..max of unit + 0
40512	R/W	Fire alarm: airflow selection Airflow/torque for exhaust In m3/h units or % max torque	min..max of unit + 0
40513	R/W	Bypass data T°1 value (40514 is raised if required to meet the T2 >= (T1+1°C) requirement) In 0,1°C units, Range 50 .. 270 meaning 5.0 .. 27.0 °C	50..270
40514	R/W	Bypass data T°2 value (T2 must be >= (T1+1°C)) In 0,1°C units, Range 60 .. 280 meaning 6.0 .. 28.0 °C	60..280
40515	R/W	Bypass data To force airflows when bypass is open 0=NO, 1=YES	0 or 1
40516	R/W	Bypass data If 40515 = 1, Supply airflow/torque when bypass is open In m3/h units or % max torque	min..max of unit + 0
40517	R/W	Bypass data If 40515 = 1, Exhaust airflow/torque when bypass is open In m3/h units or % max torque	min..max of unit + 0
40518	R/W	AF REC set point. Used for KWin/BAin preheat set point, proportional bypass and heat wheel anti-frosting In 0,1°C units, Range -99..99 meaning -9.9 .. 9.9°C	-99..99
40519	R/W	Antifreeze air-air exchanger Activation of the antifreeze protection 0=NO, 1=YES	0 or 1
40520	R/W	Antifreeze air-air exchanger	-10..30

		T° LOW (Antifreeze T° HIGH is raised if required to meet the T°HIGH >= (T° LOW +1°C) requirement) In 0,1°C units, Range -10 .. +30 meaning -1 .. +3°C	
40521	R/W	Antifreeze air-air exchanger T° HIGH (T°HIGH must be >= (T° LOW +1°C)) In 0,1°C units, Range 10 .. 50 meaning 1.0 .. 5.0 °C	10..50
40522	R/W	Antifreeze air-air exchanger Allow supply airflow to be stopped if T°3 < T°LOW 0=NO, 1=YES	0 or 1
40523	R/W	KWin option Preheat KWin PID: PB (Gain = 100/PB) In % units	1..100
40524	R/W	KWin option Preheat KWin PID: Ti In sec. units	0..9999
40525	R/W	KWin option Preheat KWin PID: Td In sec. units	0..9999
40526	R/W	IBA and EBA+ option Post heat IBA or EBA+ speed Range 10..1 (10=fastest, 1=slowest)	1..10
40527	R/W	KWout or KWext option Post heat KWout PID: PB (Gain = 100/PB) In % units	1..100
40528	R/W	KWout or KWext option Post heat KWout PID: Ti In sec. units	0..9999
40529	R/W	KWout or KWext option Post heat KWout PID: Td In sec. units	0..9999
40530	R/W	Analogue output OUT1 option Selection of the parameter to be sent on OUT1 0=m3/h F1, 1=Pa F1, 8=%TQ F1, 2=m3/h F2, 3=Pa F2, 9=%TQ F2, 4=m3/h F3, 5=Pa F3, 10=%TQ F3, 6=m3/h F4, 7=Pa F4, 11=%TQ F4,	0..11
40531	R/W	Analogue output OUT2 option Selection of the parameter to be sent on OUT2 0=m3/h F1, 1=Pa F1, 8=%TQ F1, 2=m3/h F2, 3=Pa F2, 9=%TQ F2, 4=m3/h F3, 5=Pa F3, 10=%TQ F3, 6=m3/h F4, 7=Pa F4, 11=%TQ F4,	0..11
40532	R/W	Post ventilation Activation of the post-ventilation 0=NO, 1=YES	0 or 1
40533	R/W	Post ventilation Selection of the post-ventilation time In sec. units	0..9999
40534	R/W	Fan run time Activation of the telling of the working hours of the unit 0=NO, 1=YES	0 or 1
40536	R/W	Fan run time To activate a "SERVICE alarm" after a predetermined time 0=NO, 1=YES	0 or 1
40537 40538	R/W	Fan run time Time for the "SERVICE alarm" In hours units 32-bit value in 2 words.	0 .. 999999
40539	R/W	Fan run time To stop the fans after a predetermined time 0=NO, 1=YES	0 or 1
40540 40541	R/W	Fan run time Time to stop the fans in "SERVICE alarm" In hours units 32-bit value in 2 words.	0 .. 999999

40543	R/W	MODBUS configuration Address of the TAC6 circuit. Validated after reset of the control board.	1..247
40544	R/W	MODBUS configuration Baudrate: 0=1200;1=4800; 2=9600; 3=19200. Validated after reset of the control board.	0..3
40545	R/W	MODBUS configuration Parity: 0=None;1=Even; 2=Odd. Validated after reset of the control board.	0..2
40546	R/W	Access code for basic user To require a code to get access to setup menus 0=NO, 1=YES	0 or 1
40547	R/W	Access code for basic user Code selection	0..9999
40548	R/W	Boost data Supply airflow/torque when "Boost "is activated. In m3/h units or % max torque	min..max of unit + 0
40549	R/W	Boost data Exhaust airflow/torque when "Boost "is activated. In m3/h units or % max torque	min..max of unit + 0
40550	R/W	External heating, cooling, reversible batteries Selection of the external heating or cooling exchanger: 0 = none 1 = EBA+ 2 = EBA- 3 = EBA+/EBA- (2 exchangers) 4 = EBA+/- (reversible battery: 1 exchanger for heating and cooling) 5 = KWext 6 = KWext / EBA - 7 = BAin 8 = BAin/EBA+ 9 = BAin/EBA+ 10= KWext 0-10V 11= KWext 0-10V / EBA-	0..9
40551	R/W	BA- or BAin option Cooling EBA- or preheat BAin speed Range 10..1 (10=fastest, 1=slowest)	1..10
40552	R/W	EBA+ Antifreeze T° threshold: In 0,1°C units. Range -100..+999 meaning -10 .. +99,9°C	-100..999
40553	R/W	EBA- or BAin Antifreeze T° threshold: In 0,1°C units. Range -100..+999 meaning -10 .. +99,9°C	-100..999
40554	R/W	IBA Antifreeze T° threshold: In 0,1°C units. Range -100..+999 meaning -10 .. +99,9°C	-100..999
40560	R/W	Proportional bypass: Nr of pulses per step	0..32767
40561	R/W	Proportional bypass: Delay after step (1...255 seconds)	1..255
40562	R/W	Proportional bypass mode. 0 = ANTIFREEZE 1 = FREECOOLING 2 = ANTIFREEZE +FREECOOLING	0..2
40563	R/W	Heat wheel nominal RPM	0-20
40564	R/W	Heat wheel AF RPM	0-20
40565	R/W	Preheat KWin on T5 (0=KWin on T3, 1=KWin on T5)	0 or 1
40566	R/W	Post heat: stop fans if T5 < 5°C (0=NO 1=YES)	0 or 1
40567	R/W	Proportional bypass: limit supply flow if prop bypass is >= this % open	0..100
40570	R/W	Comfort T2 regulation - on T5 (supply) or T2 (extract/ambient) 0=T5 (default), 1=T2	0 or 1
40571	R/W	Comfort T2 regulation - speed 0..10, 0=slow, 10=fast (8 is default)	0..10
40572	R/W	Comfort T2 regulation - T5 MIN temp In 0,1°C units. Range 0 .. +200 meaning 0,0 .. +20,0°C.	0..200
40573	R/W	Comfort T2 regulation - T5 MAX temp In 0,1°C units. Range 160 .. +500 meaning 16,0 .. +50,0°C. T5 MAX must also be >= T5 MIN +2°C. If T5 MIN is changed, T5 MAX will automatically be increased to be >= T5 MIN +2°C. Range 160..+500 meaning 16 .. +50,0°C	160..500

40577	R/W	Boost on (0=contact, 1=RH) If set to 1 and in LS/CPs mode, K3 is not used as setpoint anymore (MB40505 forced to 0)	0 or 1
40578	R/W	RH level on (1...100%)	1..100
40579	R/W	RH level off (0...99%)	0..99
40580	R/W	RH Vmin (0...10V, steps 0.1V)	0..100
40581	R/W	RH Vmax (0...10V, steps 0.1V)	0..100
40582	R/W	RH Vmin corresponds with ...% humidity	0..100
40583	R/W	RH Vmax corresponds with ...% humidity	0..100
40584	R/W	LS K3 Flow (0=exhaust, 1=supply) If 1, 2 sensors on K2 and K3 is enabled If 0, normal LS mode	0 or 1
40585	R/W	Unit Type (0=m ³ /h, 1= l/s). If l/s is selected, then all values for registers in airflow units will be converted from m ³ /h to l/s.	0 or 1
40589	R/W	Enable automatic changeover between heat and cool. When both postheater and postcooler are present, select whether to enable the automatic change over. This will allow the automatic change over between heating and cooling.	0 or 1
40590	R/W	Select the dead zone for changeover If change over enabled, select the dead zone above to the desired comfort setpoint. A change over from heat to cool will automatically occur when the measured temperature will exceed this band. Range13..70 meaning 1,3 .. 7°C	13..70
40597	R/W	KW cycle time: period duration of PWM signal for the control of electrical postheater. In sec. units.	6...60 sec
40598	R/W	CT time: duration of the inlet dampers opening/closing. In sec. units.	0...600 sec

4.2.6 Time scheduler

4.2.6.1 Time scheduler structure

Time scheduler for 1 week

6 time segments per day

Each time segment has 8 parameters (10 registers are provided per time segment)

Register	Name	Description	Accepted values
41xx0	Start time	Starting time of this time segment. Value = (100*hh)+mm 800 (8h00) Value = -1: this time segment is not used Each time segment runs until another time segment starts. Factory default = -1 (time segment not used).	0..2359 -1 (not used)
41xx1	Working mode	Working mode 0=OFF, 1=CA, 2=LS, 4=CPs, 6=TQ	0, 1, 2, 4 or 6
41xx2	Start/Stop	0: Fans stopped 1: Fans run Factory default = 1 (Run). Not used: always at 1	1
41xx3	Set point 1	If 41001=0 (OFF mode): not used. If 41001=1 (CA mode): 0 or positive value: set point for supply airflow. In m3/h units. Range: 0..max of unit. -1= Speed I; -2=Speed II; -3=Speed III; -4=BOOST speed If 41001=2 (LS mode): 0 or positive value: percentage of nominal set point (if 40505=1: set point only for supply). In % units. Range: 0..100%. -1=Normal speed; -3=Reduced speed; -4=BOOST speed If 41001=4 (CPs mode): 0 or positive value: percentage of nominal set point (if 40443=2: set point only for supply). In % units. Range: 0..100%. -1=Normal speed; -3=Reduced speed; -4=BOOST speed If 41001=6 (TQ mode): 0 or positive value: set point for percentage of supply fan(s) maximum torque. In %. Range: 0..100%. -1= Speed I; -2=Speed II; -3=Speed III; -4=BOOST speed	0..9999
41xx4	Set point 2	If 41001=0 (OFF mode): not used. If 41001=1 (CA mode): Set point for exhaust airflow. In m3/h units. Range: 0..max of unit. If 41001=2 (LS mode): If 40505=0: Exhaust/Supply ratio. Range: 5..999%. If 40505=1: Percentage of nominal set point for extraction. Range: 1.100%. In % units. If 41001=4 (CPs mode): If 40443=0 or 1: Exhaust/Supply ratio. Range: 5..999%. If 40443=2: Percentage of nominal set point for extraction. Range: 1.100%. In % units. If 41001=6 (TQ mode): Set point for percentage of exhaust fan(s) maximum torque. In %. Range: 0..100%.	0..9999
41xx5	T° Set point - heating	Post heat set point For IBA, KWout, EBA+, EBA+/- and KWext options In 0,1 °C units. Range 0..+999 meaning 0 .. +99,9°C. 0 is OFF	0..999

41xx6	T° Set point - cooling	Cooling set point For EBA- and EBA+/- options In 0,1 °C units. Range 0..+999 meaning 0 .. +99,9°C. 0 is OFF	0..999
41xx7	Bypass mode	Selection of the bypass status 0=Bypass auto (based on measured T°1 and T°2) 1=Bypass forced inactive 2=Bypass forced active	0, 1 or 2

4.2.6.2 Time scheduler mapping

Register	Read / Write	Description	Accepted values
41000..41007	R/W	Parameters for Monday Time segment 1	
41010..41017	R/W	Parameters for Monday Time segment 2	
41020..41027	R/W	Parameters for Monday Time segment 3	
41030..41037	R/W	Parameters for Monday Time segment 4	
41040..41047	R/W	Parameters for Monday Time segment 5	
41050..41057	R/W	Parameters for Monday Time segment 6	
41060..41067	R/W	Parameters for Tuesday Time segment 1	
41070..41077	R/W	Parameters for Tuesday Time segment 2	
41080..41087	R/W	Parameters for Tuesday Time segment 3	
41090..41097	R/W	Parameters for Tuesday Time segment 4	
41100..41107	R/W	Parameters for Tuesday Time segment 5	
41110..41117	R/W	Parameters for Tuesday Time segment 6	
41120..41127	R/W	Parameters for Wednesday Time segment 1	
41130..41137	R/W	Parameters for Wednesday Time segment 2	
41140..41147	R/W	Parameters for Wednesday Time segment 3	
41150..41157	R/W	Parameters for Wednesday Time segment 4	
41160..41167	R/W	Parameters for Wednesday Time segment 5	
41170..41177	R/W	Parameters for Wednesday Time segment 6	
41180..41187	R/W	Parameters for Thursday Time segment 1	
41190..41197	R/W	Parameters for Thursday Time segment 2	
41200..41207	R/W	Parameters for Thursday Time segment 3	
41210..41217	R/W	Parameters for Thursday Time segment 4	
41220..41227	R/W	Parameters for Thursday Time segment 5	
41230..41237	R/W	Parameters for Thursday Time segment 6	
41240..41247	R/W	Parameters for Friday Time segment 1	
41250..41257	R/W	Parameters for Friday Time segment 2	
41260..41267	R/W	Parameters for Friday Time segment 3	
41270..41277	R/W	Parameters for Friday Time segment 4	
41280..41287	R/W	Parameters for Friday Time segment 5	
41290..41297	R/W	Parameters for Friday Time segment 6	
41300..41307	R/W	Parameters for Saturday Time segment 1	
41310..41317	R/W	Parameters for Saturday Time segment 2	
41320..41327	R/W	Parameters for Saturday Time segment 3	
41330..41337	R/W	Parameters for Saturday Time segment 4	
41340..41347	R/W	Parameters for Saturday Time segment 5	
41350..41357	R/W	Parameters for Saturday Time segment 6	
41360..41367	R/W	Parameters for Sunday Time segment 1	
41370..41377	R/W	Parameters for Sunday Time segment 2	
41380..41387	R/W	Parameters for Sunday Time segment 3	
41390..41397	R/W	Parameters for Sunday Time segment 4	
41400..41407	R/W	Parameters for Sunday Time segment 5	
41410..41417	R/W	Parameters for Sunday Time segment 6	

4.2.7 Season management

4.2.7.1 Season management structure

3 features can be disabled by the calendar date

Each feature can be disabled for a period between 2 dates: from "Start date" to "End date".

4 registers are provided to define those 2 dates.

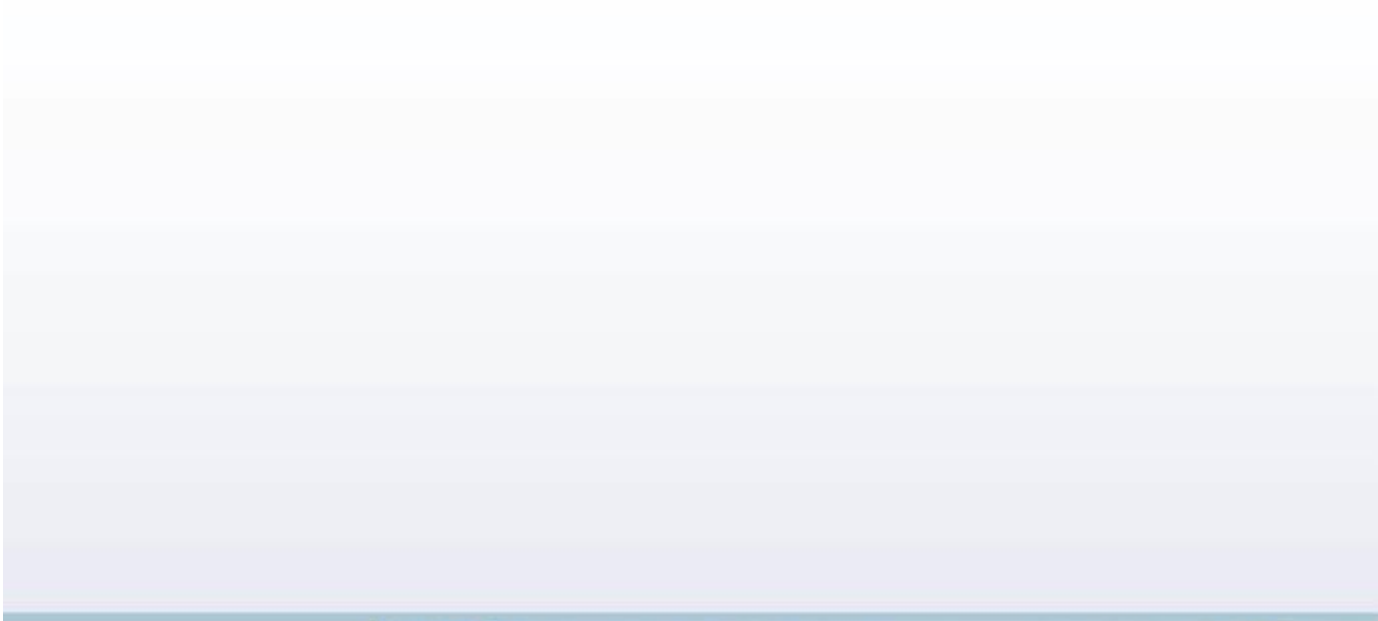
Register	Name	Description	Accepted values
418xx	Start day	Start date for disable of the feature day of the month	1..31
418xx+1	Start month	Start date for disable of the feature month	1..12
418xx+2	End day	End date for disable of the feature day of the month	1..31
418xx+3	End month	End date for disable of the feature month	1..12

If these 4 registers are configured, the feature is disabled from the start date up to (and including) the end date. Set any of these to 0 to disable seasonal management of this feature.

4.2.7.2 Season management mapping

Register	Read / Write	Description	Accepted values
41800..41803	R/W	Season disable of the bypass: 41800: Start date: day-of-month, 1..31 41801: Start date: month, 1..12 41802: End date: day-of-month, 1..31 41803: End date: month, 1..12 Set any of these to 0 to disable seasonal management of the bypass.	
41804..41807	R/W	Season disable of the post heating: For IBA, KWout, EBA+, EBA+/- and KWext options 41804: Start date: day-of-month, 1..31 41805: Start date: month, 1..12 41806: End date: day-of-month, 1..31 41807: End date: month, 1..12 Set any of these to 0 to disable seasonal management of the post heating.	
41808..41811	R/W	Season disable of the cooling: For EBA- and EBA+/- options 41808: Start date: day-of-month, 1..31 41809: Start date: month, 1..12 41810: End date: day-of-month, 1..31 41811: End date: month, 1..12 Set any of these to 0 to disable seasonal management of the cooling.	

Although we put a lot of care in the making of our documentation, we cannot be held responsible for any error and/or omissions that could have slipped in.



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