TAC4

ALWAYS ONE STEP AHEAD

TAC4 + MODBUS RTU

P.LEMMENS
AIR MOVEMENT COMPANY

TAC4 + MODBUS RTU

Installation and user's manual

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1 Overview

1.1 Scope

TAC4 DG regulations for HRglobal/HRup/HRflat fans units, DT for HRtotal, DM for HRmural and TAC4 F for control of one or two fans (forward or backward). The MODBUS RTU communication with the TAC4 regulation boards requires the addition of a satellite circuit (option SAT MODBUS) being used as interface of communication. The features of each TAC4 regulation is plainly explained in their specific user manual (MI Regulation TAC4 DG + RC, MI Regulation TAC4 DT + RC, MI Regulation TAC4 DM and MI Regulation TAC4 F).

1.2 Plugging the SAT MODBUS satellite

The assembly must be carried out with the power OFF. The SAT MODBUS must be plugged on the « SAT MODBUS » plug of the TAC4 regulation board.
Caution: A bad positioning of SAT MODBUS on circuit TAC4 can fatally damage both circuits!

The following figure shows the installation of a SAT MODBUS on TAC4 control boards.
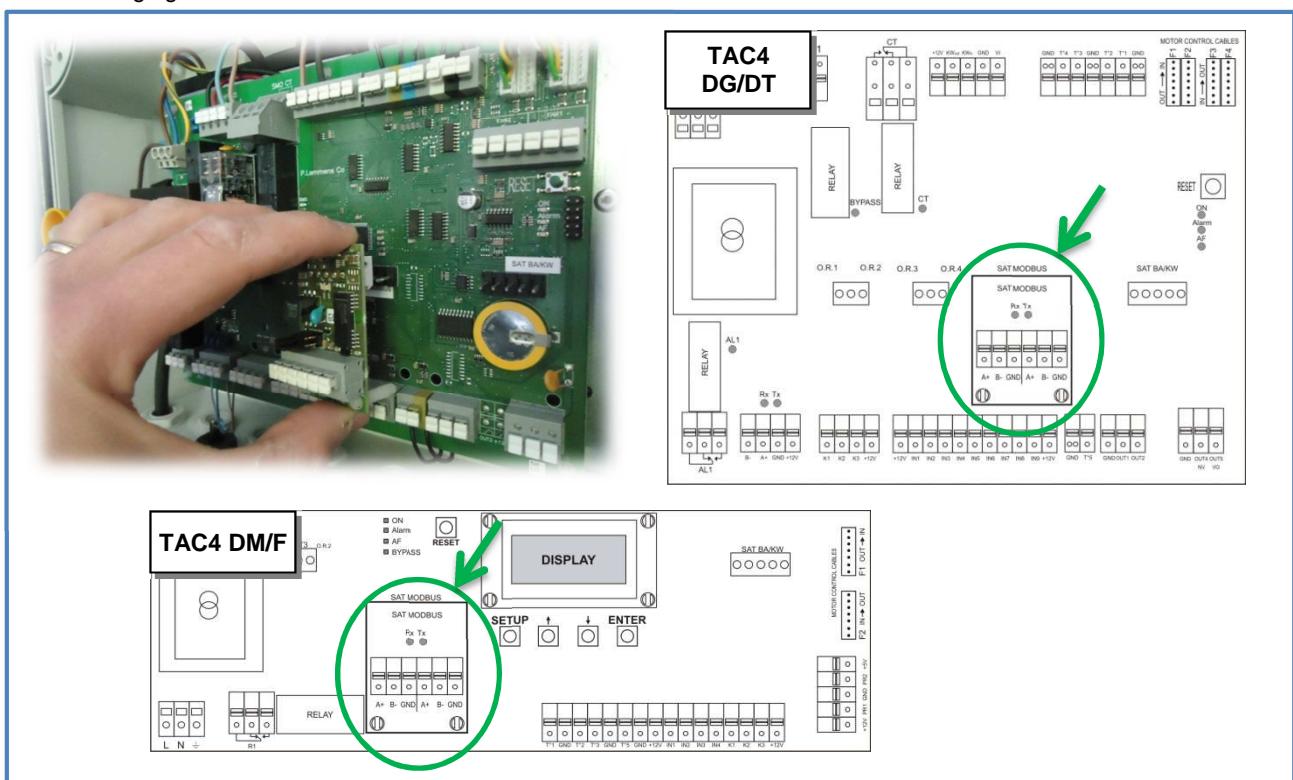
1.3 Wiring the SAT MODBUS

a) Wiring one unit
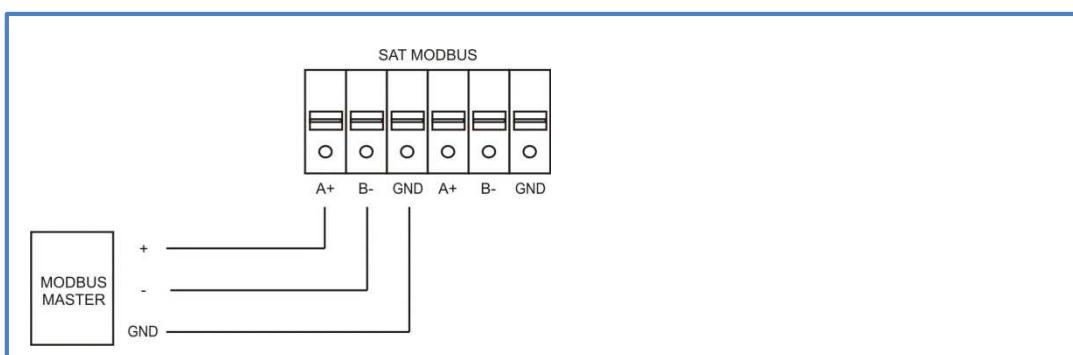
b) Network wiring
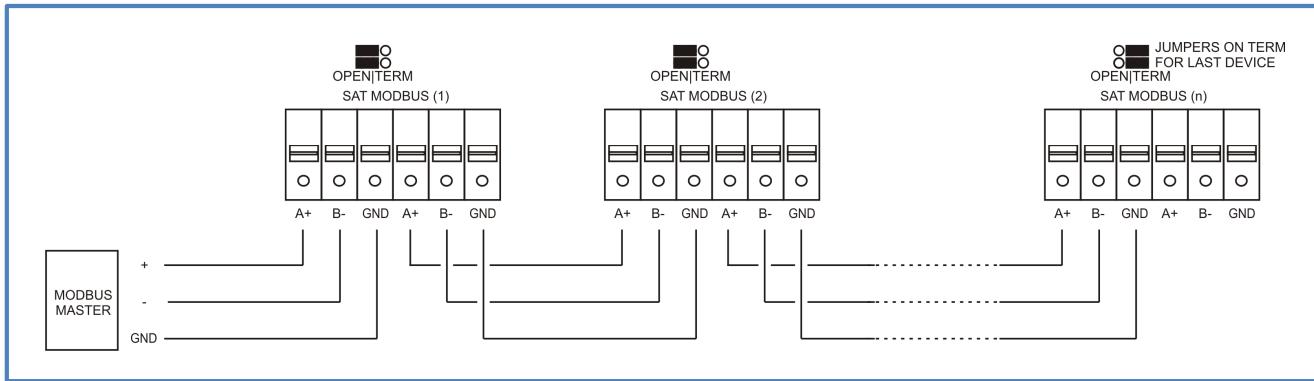
Cable Specifications :

- Armoured twisted pair (FTP) category 5. Section 0,26 … 0,50 mm². Use wires of same pair to connect B- and A+.
- Maximal cable length = 1000m.

2   Definition of the MODBUS RTU communication

2.1   MODBUS Protocol

The TAC4 controllers use the communication protocol MODBUS RTU.
This protocol is based on a master / slave architecture. Each message has the same structure: the frame is made of the slave address, the function code (writing or reading), the data and a numeric test value to test for communication errors (CRC16)

Main specifications:
- MODBUS RTU protocol (binary)
- Physical layer: RS 485- asynchronous. a 3-wire connection with GND is required
- Factory default baud rate is 9600. 1200, 4800, 9600 or 19200 are possible.

2.2   MODBUS frame

The MODBUS frame is presented in the following way:

Start		address	Function code	Data	CRC		Stop
≥ 3,5 charact.		1 à 247	03 – 06 - 16	8 bits	16 bits		≥ 3,5 charact.

Controller uses the Modbus RTU time-based framing. The receiver monitors the elapsed time between receipt of characters. If three and one-half character times elapse without a new character this is considered to be the end of frame. The actual end-of-frame detection time is rounded to milliseconds because the system timing is millisecond-based.

Address:
Possible slave address is 1 to 247. Factory default is 1.

Function code:
- Supports function code 3 (decimal) for reading multiple holding registers.
- Supports function code 6 (decimal) for writing a single holding registers.
- Supports function code 16 (decimal) for writing multiple holding registers.

Data:
Number of databits is fixed to 8.
Number of stopbits is fixed to 1

All TAC4 data is in 16-bit modbus holding registers. Modbus coils, discrete inputs or input registers are not used.
The modbus communication buffers have a size of 129 bytes. This is sufficient for reading or writing 60 registers at once.

Parity:
Factory default parity is None

CRC-16:
The RTU format follows the commands/data with a "cyclic redundancy check" checksum as an error detection mechanism to ensure the reliability of data.

In the Modbus.org standard documents, holding register addresses are given a prefix of "4" to distinguish them from other register types. For example, in their documentation a holding register at address 1001 is referred to by "41001". However, the leading "4" is not really part of the address. Also, the Modbus.org standard documents refer to register addresses using "one-based" numbering. However, the addresses that are actually sent in a Modbus command message are "zero-based". For example, to read register 1001, the address that is actually sent in the command message is 1000.

2.3   MODBUS exception

The TAC4 modbus protocol may respond with an exception code if the read or write command was invalid. Possible exceptions are:
- 01 ILLEGAL FUNCTION: The function code received in the query is not an allowable action for the slave.
- 02 ILLEGAL DATA ADDRESS: The data address received in the query is not an allowable address for the slave. Or the combination of data address and transfer length is not allowable.
- 03 ILLEGAL DATA VALUE: The master attempted to write a non-allowed value into a register. Which values are allowed may depend on configuration settings of other registers.

When a write of multiple registers is executed, the execution stops at the first invalid data address or invalid value.

2.4   MODBUS values

All values are signed values.
As usual, all modbus words are in big endian byte order.
Some registers act as bitmaps with 16 status bits.
Some values are 32-bit. They are transferred as two 16-bit registers, first low word, then high word.
When reading, the master must combine two 16-bit words into one 32-bit value. With shift: Val32=((((long)HIGH)<<16)|LOW). With math: Val32=HIGH*65536+LOW. For example: Reg1=33041, Reg2=13: Val32=885009.
When writing a 32-bit parameter, the controller first buffers the low word. Then, when the high word is written, the 32-bit parameter is updated. This low-word buffer is shared for all 32-bit parameters...

2.5   Write cycles limitation

The controller stores all setup parameters and some control parameters in non-volatile EEPROM memory to protect against power failure. This EEPROM memory has an endurance of 100 000 write cycles. Therefore, these parameters should not be changed too often! Writing a parameter with the same value is not a change. Changing a parameter once per hour would result in 8760 writes per year, or 100 000 writes in 11 years. Changing a setup parameter once per minute would result in 100 000 writes in only 69 days!
Those parameters are marked as "E1" in the MODBUS map.

Some parameters are stored in a non-volatile RAM memory. Those parameters have no writing limitation and their value is not lost in case of power break.
Those parameters are marked as "R" in the MODBUS map.

3   Modbus map overview

The TAC4 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

4   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 TAC4 regulation divided between TAC4 DG/DM/DT for controlling the counter flow units on one side and the TAC F regulation for the control of one or two fans on the other side. For more details on these registers or for complete information on the parameters accessible via MODBUS, see the complete table in §5.

4.1   MODBUS Address

Default MODBUS Address of a TAC4 circuit is "1".
It is possible to modify this value via an MODBUS command (40543).
Caution: only connect to the network TAC4 circuits with different addresses

Setup:

Description	Register
Modification of MODBUS address	40543

4.2   MODBUS Commands for TAC4 DG/DM/DT regulation

4.2.1   Fans working modes on TAC4 DG/DM/DT

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

Setup:

Description	Register
Set MODBUS as master of airflow control	40200

Control:

Description	Register
Enter supply airflow	40204
Enter exhaust airflow	40205

4.2.1.2   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

4.2.1.3   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

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

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

4.2.1.5   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 separately control exhaust (signal on K3) and supply (signal on K2) airflows (or % max torque)	40505

Control:

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

4.2.1.6   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

4.2.2   Viewing of fan data on TAC4 DG/DM/DT:

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

4.2.3   Viewing temperatures on TAC4 DG/DM/DT:

Description	Register
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
Water coil temperature (NV option): T4	40158
Supply air temperature after heat exchanger (towards inside): T5	40159
Hot water coil temperature (BA+ or BA+/- option): T7	40161
Cold water coil temperature (BA-, BAin option) : T8	40162

4.2.4   Pressure Alarm on TAC4 DG/DM/DT:

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

4.2.5   Fire alarm on TAC4 DG/DM/DT:

Setup:

Description	Register
Select contact logic (IN3 on TAC4 DG/DT, IN2 on TAC4 DM) : 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
Fire alarm status	40303 – bit 7 & 8

Visualization:

Description	Register
Fire alarm status	40303 – bit 7 & 8

4.2.6   Bypass on TAC4 DG/DM/DT:

There are two types of plates heat exchanger bypass: with all or nothing opening or with modulating opening (modulating bypass) available only on TAC4 DG and TAC4 DT. For the modulating bypass, the freecooling feature will be available if the setup modality is freecooling or antifreeze + freecooling. Please, refer to the specific regulation 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

4.2.7   Boost on TAC4 DG/DM/DT:

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

Control:

Description	Register
Force activation of « BOOST » airflow	40228

4.2.8 Post-heating – internal coil (NV or KWout option) on TAC4 DG/DT:

Setup:

Description	Register
Select supply air T° set point	40425

Control:

Description	Register
De-activate post heating function	40225

Visualization:

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

4.2.9 Post-heating or cooling: external coil (SAT BA/KW OPTION) on TAC4 DG/DM/DT:

Setup:

Description	Register
Choose external coil type	40550
Enter supply airflow set point temperature for heating	40425
Enter supply 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 supply air T° set point (cool or heat)	40059
If BA+ or BA+/- option : %age opening of 3 way valve	40174
If BA- option: %age opening of 3 way valve	40175
If KWext option : actual %age of maximum capacity of KW coil	40188
Actual Supply ait T°(T°5)	40159
Antifreeze status of external water coils	40088

4.2.10 Run time and maintenance alarms on TAC4 DG/DM/DT:

Setup:

Description	Register
Activate run time logging	40534
Display run time on RC TAC4	40535
Activate maintenance alarm	40536
Hour count limit for maintenance alarm	40537
Activate maintenance alarm with a fan stop	40539
Hour count limit for maintenance alarm with fan stop	40540

Control:

Description	Register
RESET hour count	40252

Visualization:

Description	Register
Hour count of unit	40081
Status of maintenance alarm	40303 – bit 4 & 5

4.2.11   Operating with time tables on TAC4 DG/DM/DT:

TAC4 units can operate automatically according to a timetable. The timetable features a 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 §5.2.6 table below	41000..41417

Control:

Description	Register
Enable automatic operation	40200

4.2.12   Seasonal programming on TAC4 DG/DM/DT:

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 §5.2.7 below	41800..41803
Enter time periods for post-heating : see MODBUS table §5.2.7 below	41804..41807
Enter time periods for post-cooling : see MODBUS table §5.2.7 below	41808..41811

4.2.13   Advanced setup on TAC4 DG/DM/DT

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 detailed MODBUS table or in the document associated with the specific regulation available on our www.lemmens.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
- In mode CPs: positive or negative logic
- In mode CPs: reaction speed of the CPs algorithm
- Post-ventilation configuration
- Access code configuration
- Factory reset

4.3 MODBUS commands for TAC4 F regulation

4.3.1 Fans setup on TAC4 F

Description	Register
FAN TYPES	40421
32-bit value in 2 words	40422
FANS number : 1 or 2	40423
If 2 fans: dependence selection of fan 2 relative to fan 1	
- If 2 dependent fans where fan 2 airflow (or torque) is a percentage of fan 1 airflow (or torque): 0 - If 2 independent fans with an own set point for each one: 2	40443

4.3.2 Fans working modes on TAC4 F

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

Setup:

Description	Register
Set MODBUS as master of airflow control	40200

Control:

Description	Register
Enter fan 1 airflow	40204
Enter fan 2 airflow	40205

4.3.2.2 CA Mode – 3 airflow set points:

Setup:

Description	Register
Select CA mode	40426
Select Airflow set point 1 for fan 1	40428
Select Airflow set point 2 for fan 1	40429
Select Airflow set point 3 for fan 1	40430
If 2 dependent fans	
Airflow unbalance ratio F2/F1	40427
If 2 independent fans	
Select Airflow set point 1 for fan 2	40451
Select Airflow set point 2 for fan 2	40452
Select Airflow set point 3 for fan 2	40453

Control:

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

4.3.2.3 TQ MODE – percentage of maximum fan 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 fan 1 torque	40204
Enter the percentage of fan 2 torque	40205

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

Setup:

Description	Register
Select TQ mode	40426
Select fan torque percentage set point 1 for fan 1	40428
Select fan torque percentage set point 2 for fan 1	40429
Select fan torque percentage set point 3 for fan 1	40430
If 2 dependent fans	
Torques unbalance ratio fan2/fan1	40427
If 2 independent fans	
Select fan torque percentage set point 1 for fan 2	40451
Select fan torque percentage set point 2 for fan 2	40452
Select fan torque percentage set point 3 for fan 2	40453

Control:

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

4.3.2.5   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 setup, 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
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
If 1 fan or 2 dependent fans	
Select sleep mode reduction for position III.	40442
If 2 dependent fans	
Select unbalance ratio fan2/fan1	40427

Control:

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

4.3.2.6 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 setup, 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
If manual configuration:	
Select assignment value to be kept constant for fan 1	40446
If configuration via nominal airflow procedure :	
Enter nominal fan 1 airflow (or % max torque) for initialization procedure	40254
If 1 fan or 2 dependent fans	
Select sleep mode reduction for position III.	40442
If 2 dependent fans	
Select unbalance ratio F2/F1	40427
If 2 independent fans	
If manual configuration:	
Select assignment value to be kept constant for fan 2	40449
If configuration via nominal airflow procedure :	
Enter nominal fan 2 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

4.3.2.7 CPf MODE:

The magnitude that the regulation board will modulate to keep the pressure constant can only be the airflow. Please, refer to the specific regulation manual for further details.

Setup:

Description	Register
Select CPf mode	40426
If manual configuration:	
Select assignment value to be kept constant for fan 1	40445
If configuration via nominal airflow procedure:	
Enter nominal fan 1 airflow for initialization procedure	40254
If 1 fan or 2 dependent fans	
Select sleep mode reduction for position III.	40442
If 2 dependent fans	
Select unbalance flows ratio F2/F1	40427
If 2 independent fans	
If manual configuration:	
Select assignment value to be kept constant for fan 2	40450
If configuration via nominal airflow procedure:	
Enter nominal fan 2 airflow for initialization procedure	40257
Start initialization procedure and pressure measurement	40255
Alarm while initialization procedure of set point pressure value	40302–bit 12 to 5 40303 – bit 0 to 3

Control:

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

4.3.3 Viewing of fan data on TAC4 F:

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

4.3.4 Pressure Alarm on TAC4 F:

Setup:

Description	Register
Pressure alarm activation	40431
Select delta P for pressure alarm on fan 1	40432
Select delta P for pressure alarm on fan 2	40433
Stop the unit if pressure alarm	40500
If manual configuration:	
Select reference airflow to determine pressure alarm threshold on fan 1	40434
Select reference pressure to determine alarm threshold on fan 1	40435
Select reference airflow to determine pressure alarm threshold on fan 2	40436
Select reference pressure to determine alarm threshold on fan 2	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–bit12 to 15 40303 – bit 0 to 3

Control:

Description	Register
Activate « pressure alarm » status	40221

Visualization:

Description	Register
Reference airflow for pressure alarm on fan 1	40061
Pressure for pressure alarm on fan 1	40062
Reference airflow for pressure alarm on fan 2	40063
Pressure for pressure alarm on fan 2	40064
Status of pressure alarm on fan 1 and fan 2	40300 – bit 6 & 7
Status of external pressure alarm	40303 – bit 6

4.3.5 Fire alarm on TAC4 F:

Setup:

Description	Register
Select contact logic (IN2) : normally «open» or «closed»	40510
Select action (off/on) in case of fire alarm for fan 1	40226
Select fan 1 airflow (or % max torque) in case of fire alarm	40511
Select action (off/on) in case of fire alarm for fan 2	40227
Select fan 2 airflow (or % max torque) in case of fire alarm	40512

Control:

Description	Register
Set fire alarm status	40222

Visualization:

Description	Register
Fire alarm status	40303 – bit 7&8

4.3.6 Boost on TAC4 F:

Setup:

Description	Register
enter BOOST fan 1 airflow (or % max torque) rate when activated	40548
enter BOOST fan 2 airflow (or % max torque) rate when activated	40549

Control:

Description	Register
Force activation of « BOOST » airflow (or % max torque)	40228

4.3.7 Run time and maintenance alarms on TAC4 F:

Setup:

Description	Register
Activate run time logging	40534
Display run time on RC TAC4	40535
Activate maintenance alarm	40536
Hour count limit for maintenance alarm	40537
Activate maintenance alarm with a fan stop	40539
Hour count limit for maintenance alarm with fan stop	40540

Control:

Description	Register
RESET hour count	40252

Visualization:

Description	Register
Hour count of unit	40081
Status of maintenance alarm	40303 – bit 4 & 5

4.3.8 Operating with time tables on TAC4 F:

TAC4 F units can operate automatically according to a timetable. The timetable features a 7 days/ 6 timeslots per day programming. For each time slot, it is possible to configure the working mode and its different parameters.

Setup:

Description	Register
See MODBUS §5.3.6 table below	41000..41417

Control:

Description	Register
Enable automatic operation	40200

4.3.9   Advanced setup on TAC4 F

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 detailed MODBUS table or in document *DT TAC4 F advanced setup* available on our www.lemmens.com site:

- Fans start torque
- Prevent stop of the fans
- In mode CPs: - positive or negative logic
    - reaction speed of the CPs algorithm
- Post-ventilation configuration
- Access code configuration
- Factory reset

5   Detailed MODBUS table

Legend:
Read/Write
R = Read only
R/W = Read and Write
Register type
E1 = Register in EEPROM memory with endurance of 100 000 write cycles
R = Register in a non-volatile RAM memory

5.1   General info

Register	Read / Write	Type	Description	Accepted values
40001 40002	R	E1	Magic number to detect a Lemmens product. 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	E1	Lemmens product identification code number of the TAC4 regulation (CID)	Unsigned 0..32767
40004	R	E1	Modbus mapping version. = Major * 100 + minor Example : 100 (major=1, minor=0)	Unsigned 0..32767
40005	R	E1	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	E1	Software version, minor.	0..99
40007	R	E1	Software version, revision.	0..99
40008	R/W	E1	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

5.2 Specific Tables for TAC4 DG/DM/DT regulations

5.2.1 Visualization on TAC4 DG/DM/DT

Register	Read / Write	Type	Description	Accepted values
40020 40021	R	E1	Factory configuration: REC TYPE 32-bit value in 2 words	32-bit value in 2 words
40022	R	E1	Factory configuration: PREHEAT OPTION 0=OFF, 1=ON-KWin	0 or 1
40023	R	E1	Factory configuration: POSTHEAT OPTION 0=OFF, 1=ON-KWout, 2=ON-NV	0, 1 or 2
40024	R	E1	Factory configuration: CT IN (damper) OPTION 0=NO, 1=YES	0 or 1
40025	R	E1	Production setup: BYPASS% (system has a proportional bypass) 0=NO, 1=YES	0 or 1
40050 40051	R	E1	FAN TYPE 32-bit value in 2 words. Ex.: 720054	32-bit value in 2 words
40052	R	E1	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	E1	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	E1	Current set point (SET VAL): Range 0..9999 Can be m3/h, Pa, 0.1V or % unit. See 40055.	0..9999
40055	R	E1	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	E1	Current set point for supply fans F1/F2. Can be m3/h, Pa, 0.1V or % unit.	0..max of unit
40057	R	E1	Current set point for extraction fans F3/F4 Can be m3/h, Pa, 0.1V or % unit.	0..max of unit
40058	R	E1	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	E1	Current Supply 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	E1	Current Exhaust/Supply ratio (unbalance between exhaust and supply flows) in %: Range 5 .. 999 %	5..999
40061	R	E1	Pressure alarm data : Supply: reference flow for pressure alarm, in m3/h	0..max of unit
40062	R	E1	Pressure alarm data : Supply: reference pressure for pressure alarm, in Pa	0..max of unit
40063	R	E1	Pressure alarm data : Exhaust: reference flow for pressure alarm, in m3/h	0..max of unit
40064	R	E1	Pressure alarm data : Exhaust: reference pressure for pressure alarm, in Pa	0..max of unit
40065	R	E1	Fan 1 (Supply 1) flow or torque (%TQ)	0..max of unit
40066	R	E1	Fan 1 pressure	0..max of unit
40067	R	E1	Fan 1 sent torque. Range: 0..255 (127=50%)	0..255
40068	R	E1	Fan 1 RPM	0..6000
40069	R	E1	Fan 2 (Supply 2) flow or torque (%TQ)	0..max of unit
40070	R	E1	Fan 2 pressure	0..max of unit
40071	R	E1	Fan 2 sent torque. Range: 0..255 (127=50%)	0..255
40072	R	E1	Fan 2 RPM	0..6000
40073	R	E1	Fan 3 (Exhaust 1) flow or torque (%TQ)	0..max of unit
40074	R	E1	Fan 3 pressure	0..max of unit
40075	R	E1	Fan 3 sent torque. Range: 0..255 (127=50%)	0..255
40076	R	E1	Fan 3 RPM	0..6000

40077	R	E1	Fan 4 (Exhaust 2) flow or torque (%TQ)	0..max of unit
40078	R	E1	Fan 4 pressure	0..max of unit
40079	R	E1	Fan 4 sent torque. Range: 0..255 (127=50%)	0..255
40080	R	E1	Fan 4 RPM	0..6000
40081 40082	R	E1	working hours of the unit : RUN TIME: xxxxxx h 32-bit value in 2 words.	0..999999
40083	R	E1	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	E1	Bypass status 0=CLOSED, 1=OPEN, 2=PARTIALLY OPEN	0, 1 or 2
40085	R	E1	CTin option : Damper status 0=CLOSED or CLOSING, 1=OPENING, 2=OPEN	0, 1 or 2
40086	R	E1	post ventilation status 0=NO, 1=active	0 or 1
40087	R	E1	Current control mode: indicates what controls the airflows 1 = FATAL ERROR : Fans are stopped 2 = FIRE ALARM (registers 40511 and 40512) 3 = RC : remote control RC TAC4 4 = EXTERNAL CONTACTS : K1-K2-K3 contacts 5 = TIMESCHEDULER configured by the RC TAC4 6 = TIMESCHEDULER configured by MODBUS or by the GRC 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	E1	Antifreeze status of the external exchangers: 0=OFF 1= antifreeze of the water exchanger BA+ or BA+/- is activated 2= antifreeze of the cold water exchanger BA- is activated 3= antifreeze of the warm and cold water exchangers BA+ and BA- are activated	0, 1, 2 or 3
40089	R	E1	Current Supply T° heating set point, in 0,1 °C units. Range 1..+999 meaning +0,1 .. +99,9°C 0 is supply heating OFF.	0..999
40090	R	E1	Current Supply T° cooling set point, in 0,1 °C units. Range 1..+999 meaning +0,1 .. +99,9°C 0 is supply cooling OFF.	0..999
40091	R	E1	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	E1	Heat wheel RPM	0..20
40150	R	E1	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 (Master selection) Bit 4: IN2 (DG/DT: dPa_alarm. DM: fire_alarm or dPa_alarm or bypass) Bit 5: IN3 (DG/DT: fire_alarm. DM: auto_mode) Bit 6: IN4 (DG/DT: bypass_on. DM: boost) Bit 7: IN5 (DG/DT: auto_mode) Bit 8: IN6 (DG/DT: no_postheat) Bit 9: IN7 (DG/DT: fire_alarm: run supply fans) Bit 10: IN8 (DG/DT: fire_alarm: run exhaust fans) Bit 11: IN9 (DG/DT: boost) Bit 12: IN10 (SATBA Post cooling OFF) Bit 13: IN11 (SATBA select heating or cooling, open = heating, closed = cooling) Bit 14: IN12 (DG/DT: wheel or modulating bypass input)	0..16383

40152	R	E1	K1 Analogue voltage, K1 is a digital input but it is shown here for completeness. 0..100 = 0..10,0V	0..100
40153	R	E1	K2 Analogue voltage, 0..100 = 0..10,0V	0..100
40154	R	E1	K3 Analogue voltage, 0..100 = 0..10,0V	0..100
40155	R	E1	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	E1	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	E1	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	E1	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	E1	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
40161	R	E1	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	E1	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	E1	Backward fans inlet diff pressure, Analogue input PR1, 0..100 = 0..10,0V	0..100
40164	R	E1	Backward fans inlet diff pressure, Analogue input PR2, 0..100 = 0..10,0V	0..100
40165	R	E1	Backward fans inlet diff pressure, Analogue input PR1, 0..16383 = 0..10,0V	0..16383
40166	R	E1	Backward fans inlet diff pressure, Analogue input PR2, 0..16383 = 0..10,0V	0..16383
40168	R	E1	Status of digital outputs block 0. Bitmap with 1 bit per input. 0=OFF, 1=ON. Bit 0: AL1 alarm, 1="alarm" Bit 1: BYPASS 1 (For on/off bypass: 0=closed/off 1=open/on. For prop_bypass: 0=down 1=up). Bit 2: BYPASS 2 (For on/off bypass: always on. For prop_bypass: 0=stop 1=run) Bit 3: CT Bit 4: KWin Bit 5: KWout Bit 6: OR1 SAT "pressure alarm" Bit 7: OR2 SAT "fan on" Bit 8: OR3 SAT "water pump NV" Bit 9: OR4 SAT "bypass on" Bit 10: SATBA WP Bit 11: SATBA OUT9 KWext	0..2047
40169	R	E1	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	0..31

Register	Read / Write	Type	Description	Accepted values
			Bit 3: OUT4 Bit 4: OUT5	
40170	R	E1	Analogue output OUT1. 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	E1	Analogue output OUT2. 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	E1	Analogue output OUT4 - NV. Post heat NV option : opening of the 3-ways valve In 0,1V units, range 0..100 meaning 0,0V .. 10.0V.	0..100
40174	R	E1	Analogue output OUT7. Post heat/cool BA+ or BA+/- option : opening of the 3-ways valve In 0,1V units, range 0..100 meaning 0,0V .. 10.0V.	0..100
40175	R	E1	Analogue output OUT8. Post cool BA- option : opening of the 3-ways valve In 0,1V units, range 0..100 meaning 0,0V .. 10.0V.	0..100
40186	R	E1	output KWin Preheat KWin option: power of the electric coil (%) In % units, range 0..100 meaning 0..100%.	0..100
40187	R	E1	output KWout Post heat KWout option: power of the electric coil (%) In % units, range 0..100 meaning 0..100%.	0..100
40188	R	E1	output external KW (SAT BA/KW) Post heat SAT KW option: power of the electric coil (%) In % units, range 0..100 meaning 0..100%.	0..100

5.2.2 Control on TAC4 DG/DM/DT

Register	Read / Write	Type	Description	Accepted values
40200	R/W	R	Selection of the control master (who will determine speed). 0= RC TAC4 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	R	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	R	Supply airflow/torque (%TQ) selection via Modbus (only if 40200=3) Range 0..9999	min..max of unit + 0
40205	R/W	R	Exhaust airflow/torque (%TQ) selection via Modbus (only if 40200=3) Range 0..9999	min..max of unit + 0
40221	R/W	R	External pressure alarm 0=No alarm 1=Pressure alarm activated	0 or 1
40222	R/W	R	Fire alarm 0=No alarm 1=Fire alarm activated	0 or 1
40223	R/W	R	Override: force bypass open or closed. 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 open (on). Set to 2 to force bypass close (off). Setting this register to 1 is equivalent to activating the "Force bypass open" input IN4.	0..2

40224	R/W	R	Override: force automatic mode. Set to 1 to force automatic mode. This is equivalent to activating the "automatic mode" input, if any.	0 or 1
40225	R/W	R	ON/OFF Post heat : to deactivate the post heating 0=Post heating allowed 1=Post heating not allowed	0 or 1
40226	R/W	R	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	R	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	R	Boost control 0= Boost function not activated 1= Boost function activated	0 or 1
40229	R/W	R	ON/OFF Post cool : to deactivate the cooling 0= cooling allowed 1= cooling not allowed	0 or 1
40230	R/W	R	Cooling or heating selection : 0= heating position 1= cooling position	0 or 1
40250	R/W	E1	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	E1	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. Modbus commands will not be answered during the operation. Read: always 0. Write: 1 to perform reset.	0 or 1
40252	R/W	E1	RESET RUN TIME Reset run time (working hours) to zero. Read: always 0 Write: 1 to perform reset.	0 or 1
40253	R/W	E1	Pressure alarm initialization Start the initialization Will be accepted in CA and LS mode only! 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	E1	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	E1	CPs mode initialization. Start the initialization Will be accepted in CPs mode only! - "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	0 or 1

			reference voltage. Working mode is set to 9 during the initialization. Read: 0=idle, 1=start. Write: 1 to start	
40257	R/W	E1	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	E1	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	E1	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

5.2.3 Alarms on TAC4 DG/DM/DT

See our Alarm document for more details

Register	Read / Write	Type	Alarm bits Alarm flags are bits in holding registers. 1 bit per alarm, 16 alarms per register. Bit is 1 if alarm is active. Read only.	Accepted values
40300	R	E1	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	E1	Bit 0: ALARM_T5_OPEN Bit 1: ALARM_T5_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	E1	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	E1	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 (Supply T° too low)	0..65535
40304	R	E1	Bit 0: ALARM_POSTCOOLING_SETPOINT (Supply T° too high) Bit 1 : ALARM_SAT-BA_MODULE (SAT-BA module is configured but does not respond) 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 NV STOP Bit 7: ALARM AF BA+ STOP Bit 8: ALARM AF BA- STOP Bit 9: ALARM AF BA+/- STOP	0..65535

5.2.4   SETUP parameters on TAC4 DG/DM/DT

Register	Read / Write	Type	Description	Accepted values
40400	R/W	E1	Current time: seconds (Do not write the time register cyclically, doing so will slow the clock counter)	0..59
40401	R/W	E1	Current time: minutes: (Do not write the time register cyclically, doing so will slow the clock counter)	0..59
40402	R/W	E1	Current time: hours: (Do not write the time register cyclically, doing so will slow the clock counter)	0..23
40403	R/W	E1	Current date: day of month: (Do not write the time register cyclically, doing so will slow the clock counter)	1..31
40404	R/W	E1	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	E1	Current time: year: (Do not write the time register cyclically, doing so will slow the clock counter)	2000..2099
40406	R	E1	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
			Notes on the real time clock: • 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	E1	LANGUAGE language on the Remote control RC TAC4 0=GB(English), 1=F(French), 2=D(German), 3=NL(Dutch)	0, 1, 2 or 3
40421 40422	R/W	E1	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	E1	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	E1	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	E1	Post heat set point For NV, KWout, BA+ and KWext options In 0,1 °C units. Range 0..+999 meaning 0 .. +99,9°C 0 is OFF	0..999
40426	R/W	E1	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 pressure alarm or CPs mode)	0, 1, 2, 4, 6 or 9
40427	R/W	E1	Exhaust/Supply flows ratio To create an unbalance between flows	5..999
40428	R/W	E1	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	E1	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	E1	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	E1	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	E1	Pressure alarm data For CA and LS mode only: Pressure offset on supply (increase of pressure) In Pa units	25..999
40433	R/W	E1	Pressure alarm data For CA and LS mode only: Pressure offset on exhaust (increase of pressure) In Pa units	25..999

40434	R/W	E1	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	E1	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	E1	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	E1	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	E1	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	E1	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	E1	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	E1	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	E1	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	E1	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	E1	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	E1	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	E1	Cooling set point For BA- and BA+/- options In 0,1 °C units. Range 0..+999 meaning 0 .. +99,9°C. 0 is OFF	0..999
40448	R/W	E1	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	E1	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	E1	Freecooling set point temperature (for freecooling via proportional bypass valve). In 0,1 °C units.	0..999

5.2.5 ADVANCED SETUP parameters on TAC4 DG/DM/DT

Register	Read / Write	Type	Description	Accepted values
40500	R/W	E1	Stop the fans in pressure alarm For CA and LS mode only: 0=NO, 1=YES	0 or 1
40501	R/W	E1	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	E1	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	E1	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	E1	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	E1	Signal to control exhaust airflow on K3 For LS mode only 0=NO, 1=YES	0 or 1
40506	R/W	E1	Reaction speed in CPs mode For CPs mode only Range 10..0 (10=fastest (default value) – 0=slowest)	0..10
40507	R/W	E1	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	E1	Start torque In % unit	2..98
40509	R/W	E1	"FANS OFF" allowed? If 0, the ventilation cannot be stopped (above in alarm) 0=NO, 1=YES	0 or 1
40510	R/W	E1	Fire alarm : normally open or closed contact selection 0 = normally open (N.O.) 1 = normally closed (N.C.)	0 or 1
40511	R/W	E1	Fire alarm : airflow selection Airflow/torque for supply In m3/h units or % max torque	min..max of unit + 0
40512	R/W	E1	Fire alarm : airflow selection Airflow/torque for exhaust In m3/h units or % max torque	min..max of unit + 0
40513	R/W	E1	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	E1	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	E1	Bypass data To force airflows when bypass is open 0=NO, 1=YES	0 or 1
40516	R/W	E1	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	E1	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	E1	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	E1	Antifreeze air-air exchanger Activation of the antifreeze protection 0=NO, 1=YES	0 or 1
40520	R/W	E1	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	E1	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	E1	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	E1	KWin option Preheat KWin PID: PB (Gain = 100/PB) In % units	1..100
40524	R/W	E1	KWin option Preheat KWin PID: Ti In sec. units	0..9999
40525	R/W	E1	KWin option Preheat KWin PID: Td In sec. units	0..9999
40526	R/W	E1	NV and BA+ option Post heat NV or BA+ speed Range 10..1 (10=fastest, 1=slowest)	1..10
40527	R/W	E1	KWout or KWext option Post heat KWout PID: PB (Gain = 100/PB) In % units	1..100
40528	R/W	E1	KWout or KWext option Post heat KWout PID: Ti In sec. units	0..9999
40529	R/W	E1	KWout or KWext option Post heat KWout PID: Td In sec. units	0..9999
40530	R/W	E1	Analogue output OUT1 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	E1	Analogue output OUT2 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	E1	Post ventilation Activation of the post-ventilation 0=NO, 1=YES	0 or 1
40533	R/W	E1	Post ventilation Selection of the post-ventilation time In sec. units	0..9999
40534	R/W	E1	Fan run time Activation of the telling of the working hours of the unit 0=NO, 1=YES	0 or 1
40535	R/W	E1	Fan run time To display the working hours on the RC or GRC TAC4 0=NO, 1=YES	0 or 1
40536	R/W	E1	Fan run time To activate a "SERVICE alarm" after a predetermined time 0=NO, 1=YES	0 or 1
40537 40538	R/W	E1	Fan run time Time for the "SERVICE alarm" In hours units 32-bit value in 2 words.	0 .. 999999
40539	R/W	E1	Fan run time To stop the fans after a predetermined time 0=NO, 1=YES	0 or 1
40540 40541	R/W	E1	Fan run time Time to stop the fans in "SERVICE alarm"	0 .. 999999

			In hours units 32-bit value in 2 words.	
40542	R/W	E1	To display only the alarms on the RC TAC4 (Airflows, pressures and other parameters are hidden) 0=NO, 1=YES	0 or 1
40543	R/W	E1	MODBUS configuration Modbus Address of the TAC4 circuit	1..247
40546	R/W	E1	Access code for RC TAC4 To require a code to get access to setup menus 0=NO, 1=YES	0 or 1
40547	R/W	E1	Access code for RC TAC4 Code selection	0..9999
40548	R/W	E1	Boost data Supply airflow/torque when "Boost" is activated. In m3/h units or % max torque	min..max of unit + 0
40549	R/W	E1	Boost data Exhaust airflow/torque when "Boost" is activated. In m3/h units or % max torque	min..max of unit + 0
40550	R/W	E1	SAT BA/KW option (external heating or cooling) Selection of the external heating or cooling exchanger : 0 = none 1 = BA + 2 = BA - 3 = BA+/BA- (2 exchangers) 4 = BA+/- (1 exchanger for heating and cooling) 5 = KW 6 = KW / BA - 7 = BAin 8 = BAin/BA+ 9 = BAin/BA+-	0..9
40551	R/W	E1	BA- or BAin option Cooling BA- or preheat BAin speed Range 10..1 (10=fastest, 1=slowest)	1..10
40552	R/W	E1	BA+ Antifreeze T° threshold: In 0,1°C units. Range 0..+999 meaning 0 .. +99,9°C (BA+ control enters 15min antifreeze cycle if T7 < this threshold and OUT7<3V)	0..999
40553	R/W	E1	BA- or BAin Antifreeze T° threshold: In 0,1°C units. Range 0..+999 meaning 0 .. +99,9°C (BA+ control enters 15min antifreeze cycle if T8 < this threshold and OUT8<3V)	0..999
40554	R/W	E1	NV Antifreeze T° threshold: In 0,1°C units. Range 0..+999 meaning 0 .. +99,9°C (BA+ control enters 15min antifreeze cycle if T4 < this threshold and OUT4-NV<3V)	0..999
40555	R/W	E1	For TAC4 DM: IN2 mode (0=fire_alarm, 1=pressure alarm, 2=bypass_on)	0..2
40556	R/W	E1	For TAC4 DM: OR1 mode (0=Pa_alarm, 1=fan_on, 2=CT_in)	0..2
40557	R/W	E1	For TAC4 DM: OR2 mode (0=Pa_alarm, 1=fan_on, 2=CT_in)	0..2
40558	R/W	E1	Backward fans pressure sensor type. 0: 0,5-4,5V=0-1000Pa 4: 0,5-4,5V=0-300Pa 1: 0-10V=0-1000Pa 5: 0-10V=0-300Pa 2: 0,5-4,5V=0-500Pa 6: 0,5-4,5V=0-3000Pa 3: 0-10V=0-500Pa 7: 0-10V=0-3000Pa	0..7
40559	R/W	E1	Backward K-factor	0..32767
40560	R/W	E1	Proportional bypass: Nr of pulses per step	0..32767
40561	R/W	E1	Proportional bypass: Delay after step (1...255 seconds)	1..255
40562	R/W	E1	Proportional bypass mode. 0 = ANTIFREEZE 1 = FREECOOLING 2 = ANTIFREEZE +FREECOOLING	0..2
40563	R/W	E1	Heat wheel nominal RPM	0-20
40564	R/W	E1	Heat wheel AF RPM	0-20
40565	R/W	E1	Preheat KWin on T5 (0=KWin on T3, 1=KWin on T5)	0 or 1
40566	R/W	E1	Post heat: stop fans if T5 < 5°C (0=NO 1=YES)	0 or 1
40567	R/W	E1	Proportional bypass: limit supply flow if prop bypass is >= this % open	0..100

5.2.6   Time scheduler on TAC4 DG/DM/DT

5.2.6.1   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) : Set point for supply airflow. In m3/h units. Range: 0..max of unit. If 41001=2 (LS mode) : Percentage of nominal set point (if 40505=1: set point only for supply). In % units. Range: 0..100%. If 41001=4 (CPs mode) : Percentage of nominal set point (if 40443=2: set point only for supply). In % units. Range: 0..100%. If 41001=6 (TQ mode) : Set point for percentage of supply fan(s) maximum torque. In %. Range: 0..100%.	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 NV, KWout, BA+ 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 BA- and BA+/- 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)	0, 1 or 2

| | | | 1=Bypass forced to close
2=Bypass forced to open | |

5.2.6.2   Time scheduler mapping

Register	Read / Write	Type	Description	Accepted values
41000..41007	R/W	E1	Parameters for Monday Time segment 1	
41010..41017	R/W	E1	Parameters for Monday Time segment 2	
41020..41027	R/W	E1	Parameters for Monday Time segment 3	
41030..41037	R/W	E1	Parameters for Monday Time segment 4	
41040..41047	R/W	E1	Parameters for Monday Time segment 5	
41050..41057	R/W	E1	Parameters for Monday Time segment 6	
41060..41067	R/W	E1	Parameters for Tuesday Time segment 1	
41070..41077	R/W	E1	Parameters for Tuesday Time segment 2	
41080..41087	R/W	E1	Parameters for Tuesday Time segment 3	
41090..41097	R/W	E1	Parameters for Tuesday Time segment 4	
41100..41107	R/W	E1	Parameters for Tuesday Time segment 5	
41110..41117	R/W	E1	Parameters for Tuesday Time segment 6	
41120..41127	R/W	E1	Parameters for Wednesday Time segment 1	
41130..41137	R/W	E1	Parameters for Wednesday Time segment 2	
41140..41147	R/W	E1	Parameters for Wednesday Time segment 3	
41150..41157	R/W	E1	Parameters for Wednesday Time segment 4	
41160..41167	R/W	E1	Parameters for Wednesday Time segment 5	
41170..41177	R/W	E1	Parameters for Wednesday Time segment 6	
41180..41187	R/W	E1	Parameters for Thursday Time segment 1	
41190..41197	R/W	E1	Parameters for Thursday Time segment 2	
41200..41207	R/W	E1	Parameters for Thursday Time segment 3	
41210..41217	R/W	E1	Parameters for Thursday Time segment 4	
41220..41227	R/W	E1	Parameters for Thursday Time segment 5	
41230..41237	R/W	E1	Parameters for Thursday Time segment 6	
41240..41247	R/W	E1	Parameters for Friday Time segment 1	
41250..41257	R/W	E1	Parameters for Friday Time segment 2	
41260..41267	R/W	E1	Parameters for Friday Time segment 3	
41270..41277	R/W	E1	Parameters for Friday Time segment 4	
41280..41287	R/W	E1	Parameters for Friday Time segment 5	
41290..41297	R/W	E1	Parameters for Friday Time segment 6	
41300..41307	R/W	E1	Parameters for Saturday Time segment 1	
41310..41317	R/W	E1	Parameters for Saturday Time segment 2	
41320..41327	R/W	E1	Parameters for Saturday Time segment 3	
41330..41337	R/W	E1	Parameters for Saturday Time segment 4	
41340..41347	R/W	E1	Parameters for Saturday Time segment 5	
41350..41357	R/W	E1	Parameters for Saturday Time segment 6	
41360..41367	R/W	E1	Parameters for Sunday Time segment 1	
41370..41377	R/W	E1	Parameters for Sunday Time segment 2	
41380..41387	R/W	E1	Parameters for Sunday Time segment 3	
41390..41397	R/W	E1	Parameters for Sunday Time segment 4	
41400..41407	R/W	E1	Parameters for Sunday Time segment 5	
41410..41417	R/W	E1	Parameters for Sunday Time segment 6	

5.2.7   Season management on TAC4 DG/DM/DT

5.2.7.1   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.

5.2.7.2   Season management mapping

Register	Read / Write	Type	Description	Accepted values
41800..41803	R/W	E1	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	E1	Season disable of the post heating: For NV, KWout, BA+ 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	E1	Season disable of the cooling: For BA- and BA+/- 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.	

5.3 Specific Tables for TAC4 F regulation

5.3.1 Visualization on TAC4 F

Register	Read / Write	Type	Description	Accepted values
40050 40051	R	E1	FAN TYPE 32-bit value in 2 words. Ex.: 720054	32-bit value in 2 words
40052	R	E1	Current Working Mode 0=OFF, 1=CA, 2=LS, 3=CPf, 4=CPs, (5=CAs), 6=TQ 9=INIT (temporary mode during init of pressure alarm or init of CPf or CPs mode)	0, 1, 2, 3, 4 or 6
40053	R	E1	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	E1	Current set point (SET VAL): Range 0..9999 Can be m3/h, Pa, 0.1V or % unit. See 40055.	0..9999
40055	R	E1	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	E1	Current set point for fan F1. Can be m3/h, Pa, 0.1V or % unit.	0..max of unit
40057	R	E1	Current set point for fan F2 Can be m3/h, Pa, 0.1V or % unit.	0..max of unit
40060	R	E1	Current F2/F1 (unbalance between fan 2 and fan 1flows) in %: Range 5 .. 999 %	5..999
40061	R	E1	Pressure alarm data: Fan 1: reference flow for pressure alarm, in m3/h	0..max of unit
40062	R	E1	Pressure alarm data : Fan 1: reference pressure for pressure alarm, in Pa	0..max of unit
40063	R	E1	Pressure alarm data: Fan 2: reference flow for pressure alarm, in m3/h	0..max of unit
40064	R	E1	Pressure alarm data : Fan 2: reference pressure for pressure alarm, in Pa	0..max of unit
40065	R	E1	Fan 1 flow or torque (%TQ)	0..max of unit
40066	R	E1	Fan 1 pressure	0..max of unit
40067	R	E1	Fan 1 sent torque. Range : 0..255 (127=50%)	0..255
40068	R	E1	Fan 1 RPM	0..6000
40073	R	E1	Fan 2 flow or torque (%TQ)	0..max of unit
40074	R	E1	Fan 2 pressure	0..max of unit
40075	R	E1	Fan 2 sent torque. Range : 0..255 (127=50%)	0..255
40076	R	E1	Fan 2 RPM	0..6000
40081 40082	R	E1	working hours of the unit : RUN TIME: xxxxxx h 32-bit value in 2 words.	0..999999
40086	R	E1	post ventilation status 0=NO, 1=active	0 or 1
40087	R	E1	Current control mode: indicates what controls the airflows 1 = FATAL ERROR : Fans are stopped 2 = FIRE ALARM (registers 40511 and 40512) 3 = RC : remote control RC TAC4 4 = EXTERNAL CONTACTS : K1-K2-K3 contacts 5 = TIMESCHEDULER configured by the RC TAC4 6 = TIMESCHEDULER configured by MODBUS or by the GRC 7 = MODBUS register 40201 8 = BYPASS (registers 40516 and 40517). Unused for TAC4 F 9 = BOOST (registers 40548 and 40549) 10 = MODBUS registers 40204 and 40205 11 = KNX	1..11

40150	R	E1	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 (Master selection) Bit 4: IN2 (fire_alarm or dPa_alarm) Bit 5: IN3 (auto_mode) Bit 6: IN4 (boost)	0..16383
40152	R	E1	K1 Analogue voltage, K1 is a digital input but it is shown here for completeness. 0..100 = 0..10,0V	0..100
40153	R	E1	K2 Analogue voltage, 0..100 = 0..10,0V	0..100
40154	R	E1	K3 Analogue voltage, 0..100 = 0..10,0V	0..100
40163	R	E1	Backward fans inlet diff pressure, Analogue input PR1, 0..100 = 0..10,0V	0..100
40164	R	E1	Backward fans inlet diff pressure, Analogue input PR2, 0..100 = 0..10,0V	0..100
40165	R	E1	Backward fans inlet diff pressure, Analogue input PR1, 0..16383 = 0..10,0V	0..16383
40166	R	E1	Backward fans inlet diff pressure, Analogue input PR2, 0..16383 = 0..10,0V	0..16383
40168	R	E1	Status of digital outputs block 0. Bitmap with 1 bit per input. 0=OFF, 1=ON. Bit 0: AL1 alarm, 1="alarm" Bit 6: OR1 SAT "pressure alarm" Bit 7: OR2 SAT "fan on"	0..2047

5.3.2   Control on TAC4 F

Register	Read / Write	Type	Description	Accepted values
40200	R/W	R	Selection of the control master (who will determine speed). 0= RC TAC4 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	R	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	R	Fan 1 airflow/torque (%TQ) selection via Modbus (only if 40200=3) Range 0..9999	min..max of unit + 0
40205	R/W	R	Fan 2 airflow/torque (%TQ) selection via Modbus (only if 40200=3) Range 0..9999	min..max of unit + 0
40221	R/W	R	External pressure alarm 0=No alarm 1=Pressure alarm activated	0 or 1
40222	R/W	R	Fire alarm 0=No alarm 1=Fire alarm activated	0 or 1
40224	R/W	R	Override: force automatic mode. Set to 1 to force automatic mode. This is equivalent to activating the "automatic mode" input, if any.	0 or 1
40226	R/W	R	Fire alarm fan 1 airflow/torque (%TQ) 0= fan 1 is stopped in fire alarm 1= fan 1 is running in fire alarm	0 or 1

40227	R/W	R	Fire alarm fan 2 airflow/torque (%TQ) 0= fan 2 is stopped in fire alarm 1= fan 2 is running in fire alarm	0 or 1
40228	R/W	R	Boost control 0= Boost function not activated 1= Boost function activated	0 or 1
40250	R/W	E1	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	E1	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. Modbus commands will not be answered during the operation. Read: always 0. Write: 1 to perform reset.	0 or 1
40252	R/W	E1	RESET RUN TIME Reset run time (working hours) to zero. Read: always 0 Write: 1 to perform reset.	0 or 1
40253	R/W	E1	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	E1	Pressure initialization Initialization flow/torque 1: Reference flow/torque (%TQ) used for: - CA/LS mode: Pa alarm initialization (fan 1 fan flow) - CPs mode : initialization (fan 1 flow or torque) Range is limited to the minimum and maximum flow/torque of the fans used	min..max of unit
40255	R/W	E1	Do CPf mode initialization. Start the initialization <u>Will be accepted in CPf mode only!</u> - 1 fan only or 2 dependent fans: run fan 1 with reference airflow set in 40254, compute pressure, store reference pressure. - 2 independent fans: run fan 1 with reference airflow set in 40254, run fan 2 with reference airflow set in 40257, compute pressures, store reference pressures. Working mode is set to 9 during the initialization. Read: always 0. Write: 1 to start	0 or 1
40256	R/W	E1	CPs mode initialization. Start the initialization <u>Will be accepted in CPs mode only!</u> - 1 fan only or 2 dependent fans: run fan 1 with reference airflow /torque set in 40254, measure K2 voltage, store reference voltage. - 2 independent fans: run fan 1 with reference airflow /torque set in 40254, run fan 2 with reference airflow/torque set in 40257, measure K2 voltage for F1, measure K3 voltage for F2, store reference voltages. Working mode is set to 9 during the initialization. Read: 0=idle, 1=start. Write: 1 to start	0 or 1
40257	R/W	E1	Initialization flow/torque 2: Reference flow/torque (%TQ) used for: - CPf mode : initialization (fan 2 flow with 2 independent fans)	min..max of unit

| | | | - CPs mode : initialization (fan 2 flow or torque with 2 independent fans)
Range is limited to the minimum and maximum flow/torque of the fans used | |

5.3.3 Alarms on TAC4 F

See our Alarm document for more details

Register	Read / Write	Type	Alarm bits Alarm flags are bits in holding registers. 1 bit per alarm, 16 alarms per register. Bit is 1 if alarm is active. Read only.	Accepted values
40300	R	E1	Bit 0: ALARM_PROGRAM_ERROR Bit 1: ALARM_DATA_ERROR Bit 2: ALARM_FAN1 Bit 4: ALARM_FAN2 Bit 6: ALARM_PRESSURE_F1 Bit 7: ALARM_PRESSURE_F2	0..65535
40301	R	E1	Bit 8: ALARM_CP_FAN_1_HIGH Bit 9: ALARM_CP_FAN_1_LOW Bit 10: ALARM_CP_FAN_2_HIGH Bit 11: ALARM_CP_FAN_2_LOW Bit 12: ALARM_LS_FAN_1_LOW Bit 13: ALARM_LS_FAN_1_HIGH	0..65535
40302	R	E1	Bit 0: ALARM_LS_FAN_2_LOW Bit 1: ALARM_LS_FAN_3_HIGH Bit 4: ALARM_CA_FAN_1_LOW Bit 5: ALARM_CA_FAN_1_HIGH Bit 8: ALARM_CA_FAN_2_LOW Bit 9: ALARM_CA_FAN_2_HIGH Bit 12: ALARM_PA_INIT_F1_NOT_STAB Bit 13: ALARM_PA_INIT_F2_NOT_STAB Bit 14: ALARM_PA_INIT_F1_TOO_LOW Bit 15: ALARM_PA_INIT_F2_TOO_LOW	0..65535
40303	R	E1	Bit 0: ALARM_PA_INIT_F1_NOT_ACHIEVED Bit 1: ALARM_PA_INIT_F2_NOT_ACHIEVED Bit 2: ALARM_PA_INIT_F1_TOO_HIGH Bit 3: ALARM_PA_INIT_F2_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	0..65535

5.3.4 SETUP parameters on TAC4 F

Register	Read / Write	Type	Description	Accepted values
40400	R/W	E1	Current time: seconds (Do not write the time register cyclically, doing so will slow the clock counter)	0..59
40401	R/W	E1	Current time: minutes: (Do not write the time register cyclically, doing so will slow the clock counter)	0..59
40402	R/W	E1	Current time: hours: (Do not write the time register cyclically, doing so will slow the clock counter)	0..23
40403	R/W	E1	Current date: day of month: (Do not write the time register cyclically, doing so will slow the clock counter)	1..31
40404	R/W	E1	Current time: month: 1=January 12=December	1..12

			(Do not write the time register cyclically, doing so will slow the clock counter)	
40405	R/W	E1	Current time: year: (Do not write the time register cyclically, doing so will slow the clock counter)	2000..2099
40406	R	E1	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
			Notes on the real time clock: • 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	E1	LANGUAGE language on the Remote control RC TAC4 0=GB(English), 1=F(French), 2=D(German), 3=NL(Dutch)	0, 1, 2 or 3
40421 40422	R/W	E1	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	E1	NUMBER OF FANS, (# FANS)	1 or 2
40426	R/W	E1	FANS WORKING MODE 0=OFF : unit is stopped 1=CA : constant airflows 2=LS : airflow linked to 0-10V input signal 3=CPf : constant pressure with flow calculation 4=CPs : constant pressure with sensor 6=TQ : constant torque 9=INIT (9 is a temporary mode during initialization of pressure for pressure alarm or CPs mode)	0..9
40427	R/W	E1	F2/F1 ratio (if 2 dependent fans). To create an unbalance between flows or torques	5..999
40428	R/W	E1	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	E1	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	E1	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	E1	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	E1	Pressure alarm data For CA and LS mode only: Pressure offset on fan 1 (increase of pressure) In Pa units	25..999
40433	R/W	E1	Pressure alarm data For CA and LS mode only: Pressure offset on fan 2 (increase of pressure) In Pa units	25..999
40434	R/W	E1	Pressure alarm data For CA and LS mode only: Reference flow on fan 1 for pressure alarm In m3/h units	min..max of unit
40435	R/W	E1	Pressure alarm data For CA and LS mode only: Pressure at reference flow on fan 1. In Pa units	0..max of unit
40436	R/W	E1	Pressure alarm data For CA and LS mode only: Reference flow on fan 2 for pressure alarm In m3/h units	min..max of unit

40437	R/W	E1	Pressure alarm data For CA and LS mode only: Pressure at reference flow on fan 2. In Pa units	0..max of unit
40438	R/W	E1	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	E1	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	E1	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	E1	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	E1	Sleep mode reduction on K3 For LS, CPf and CPs mode only and with 1 fan or 2 dependent fans: reduction in % of the nominal set point In % unit	1..100
40443	R/W	E1	For all modes and with 2 fans: 0 = set point on F1 (to have 2 dependent fans) 2 = set point on F1 + set point on F2 (to have 2 independent fans)	0 or 2
40444	R/W	E1	For CPf and CPs mode only: Initialization flow/torque 1: Reference flow/torque used for: - CPf mode initialization (flow fan 1) - CPs mode initialization (flow/torque fan 1)	min..max of unit
40445	R/W	E1	CPf mode: Set point 1 pressure for supply for fan 1. (Pa)	25..999
40446	R/W	E1	For CPs mode only: Set point 1 voltage for fan 1. In 0,1V units, range 0..100 is 0..10.0V.	0..100
40448	R/W	E1	Constant pressure data For CPs mode only with 2 independent fans: Reference flow/torque 2 used for measuring pressure. Flow/torque fan 2 In m3/h units or % max torque	min..max of unit
40449	R/W	E1	Constant pressure data For CPs mode only with 2 independent fans: Reference voltage for fan 2 to keep constant In 0,1V units, range 0..100 is 0..10.0V.	0..100
40450	R/W	E1	CPf mode: set point 2 pressure for fan 2 with 2 independent fans (Pa)	25..999
40451	R/W	E1	If 2 independent fans, set point for fan 2 : Airflow selection in CA mode, percentage of maximum torque in TQ mode: Speed 1 (K1 – Pos.I) Range 0..9999	min..max of unit
40452	R/W	E1	If 2 independent fans, set point for fan 2 : Airflow selection in CA mode, percentage of maximum torque in TQ mode: Speed 2 (K2 – Pos.II) Range 0..9999	min..max of unit
40453	R/W	E1	If 2 independent fans, set point for fan 2 : Airflow selection in CA mode, percentage of maximum torque in TQ mode: Speed 3 (K3 – Pos.III) Range 0..9999	min..max of unit

5.3.5 ADVANCED SETUP parameters on TAC4 F

Register	Read / Write	Type	Description	Accepted values
40500	R/W	E1	Stop the fans in pressure alarm For CA and LS mode only: 0=NO, 1=YES	0 or 1
40501	R/W	E1	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	E1	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	E1	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	E1	If 40503 is 1, value of Vhigh For LS mode only In 0,1V units, range 0..100 meaning 0..10,0V	0..100
40506	R/W	E1	Reaction speed in CPs mode For CPs mode only Range 10..0 (10=fastest (default value) – 0=slowest)	0..10
40507	R/W	E1	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	E1	Start torque In % unit	2..98
40509	R/W	E1	"FANS OFF" allowed? If 0, the ventilation cannot be stopped (above in alarm) 0=NO, 1=YES	0 or 1
40510	R/W	E1	Fire alarm : normally open or closed contact selection 0 = normally open (N.O.) 1 = normally closed (N.C.)	0 or 1
40511	R/W	E1	Fire alarm : airflow selection Airflow/torque for fan 1. In m3/h units or % max torque.	min..max of unit + 0
40512	R/W	E1	Fire alarm : airflow selection Airflow/torque for fan 2. In m3/h units or % max torque.	min..max of unit + 0
40532	R/W	E1	Post ventilation Activation of the post-ventilation 0=NO, 1=YES	0 or 1
40533	R/W	E1	Post ventilation Selection of the post-ventilation time In sec. units	0..9999
40534	R/W	E1	Fan run time Activation of the telling of the working hours of the unit 0=NO, 1=YES	0 or 1
40535	R/W	E1	Fan run time To display the working hours on the RC or GRC TAC4 0=NO, 1=YES	0 or 1
40536	R/W	E1	Fan run time To activate a "SERVICE alarm" after a predetermined time 0=NO, 1=YES	0 or 1
40537 40538	R/W	E1	Fan run time Time for the "SERVICE alarm" In hours units 32-bit value in 2 words.	0 .. 999999
40539	R/W	E1	Fan run time To stop the fans after a predetermined time 0=NO, 1=YES	0 or 1
40540 40541	R/W	E1	Fan run time Time to stop the fans in "SERVICE alarm" In hours units 32-bit value in 2 words.	0 .. 999999

40542	R/W	E1	To display only the alarms on the RC TAC4 (Airflows, pressures and other parameters are hidden) 0=NO, 1=YES	0 or 1
40543	R/W	E1	MODBUS configuration Modbus Address of the TAC4 circuit	1..247
40546	R/W	E1	Access code for RC TAC4 To require a code to get access to setup menus 0=NO, 1=YES	0 or 1
40547	R/W	E1	Access code for RC TAC4 Code selection	0..9999
40548	R/W	E1	Boost data Fan 1 airflow/torque when "Boost " is activated. In m3/h units or % max torque.	min..max of unit + 0
40549	R/W	E1	Boost data Fan 2 airflow/torque when "Boost " is activated. In m3/h units or % max torque	min..max of unit + 0
40555	R/W	E1	IN2 mode (0=fire_alarm, 1=pressure alarm)	0 or 1
40556	R/W	E1	OR1 mode (0=Pa_alarm, 1=fan_on)	0 or 1
40557	R/W	E1	OR2 mode (0=Pa_alarm, 1=fan_on)	0 or 1
40558	R/W	E1	Backward fans pressure sensor type. 0: 0,5-4,5V=0-1000Pa 4: 0,5-4,5V=0-300Pa 1: 0-10V=0-1000Pa 5: 0-10V=0-300Pa 2: 0,5-4,5V=0-500Pa 6: 0,5-4,5V=0-3000Pa 3: 0-10V=0-500Pa 7: 0-10V=0-3000Pa	0..7
40559	R/W	E1	Backward K-factor	0..32767

5.3.6   Time scheduler on TAC4 F

5.3.6.1   Time scheduler structure

Time scheduler for 1 week
6 time segments per day
Each time segment has 5 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, 3=CPf, 4=CPs; 6=TQ	0, 1, 2, 3, 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) : Set point for fan 1 airflow. In m3/h units. Range: 0..max of unit. If 41001=2 (LS mode) : Percentage of nominal set point for fan 1. In % units. Range: 0..100%. If 41001=3 (CPf mode) : Percentage of nominal set point for fan 1. In % units. Range: 0..100%. If 41001=4 (CPs mode) : Percentage of nominal set point for fan 1. In % units. Range: 0..100%. If 41001=6 (TQ mode) :	0..9999

Register			Description	Accepted values
41xx4	Set point 2		If 2 fans presents: If 41001=0 (OFF mode): not used. If 41001=1 (CA mode) : Set point for fan 1 airflow. In m3/h units. Range: 0..max of unit. If 41001=2 (LS mode) : - if 2 dependent fans: fan 2/fan 1 ratio. Range: 5..999%. - if 2 independent fans: Percentage of nominal set point for fan 2. Range: 0..100%. In % units. If 41001=3 (CPf mode) : - if 2 dependent fans: fan 2/fan 1 ratio. Range: 5..999%. - if 2 independent fans: Percentage of nominal set point for fan 2. Range: 0..100%. In % units. If 41001=4 (CPs mode) : - if 2 dependent fans: fan 2/fan 1 ratio. Range: 5..999%. - if 2 independent fans: Percentage of nominal set point for fan 2. Range: 0..100%. In % units. If 41001=6 (TQ mode) : Set point for percentage of fan 2 maximum torque. In %. Range: 0..100%.	0..9999

Top of table (preceding row):
Set point for percentage of fan 1 maximum torque.
In %. Range: 0..100%.

5.3.6.2 Time scheduler mapping

Register	Read / Write	Type	Description	Accepted values
41000..41004	R/W	E1	Parameters for Monday Time segment 1	
41010..41014	R/W	E1	Parameters for Monday Time segment 2	
41020..41024	R/W	E1	Parameters for Monday Time segment 3	
41030..41034	R/W	E1	Parameters for Monday Time segment 4	
41040..41044	R/W	E1	Parameters for Monday Time segment 5	
41050..41054	R/W	E1	Parameters for Monday Time segment 6	
41060..41064	R/W	E1	Parameters for Tuesday Time segment 1	
41070..41074	R/W	E1	Parameters for Tuesday Time segment 2	
41080..41084	R/W	E1	Parameters for Tuesday Time segment 3	
41090..41094	R/W	E1	Parameters for Tuesday Time segment 4	
41100..41104	R/W	E1	Parameters for Tuesday Time segment 5	
41110..41114	R/W	E1	Parameters for Tuesday Time segment 6	
41120..41124	R/W	E1	Parameters for Wednesday Time segment 1	
41130..41134	R/W	E1	Parameters for Wednesday Time segment 2	
41140..41144	R/W	E1	Parameters for Wednesday Time segment 3	
41150..41154	R/W	E1	Parameters for Wednesday Time segment 4	
41160..41164	R/W	E1	Parameters for Wednesday Time segment 5	
41170..41174	R/W	E1	Parameters for Wednesday Time segment 6	
41180..41184	R/W	E1	Parameters for Thursday Time segment 1	
41190..41194	R/W	E1	Parameters for Thursday Time segment 2	
41200..41204	R/W	E1	Parameters for Thursday Time segment 3	
41210..41214	R/W	E1	Parameters for Thursday Time segment 4	
41220..41224	R/W	E1	Parameters for Thursday Time segment 5	
41230..41234	R/W	E1	Parameters for Thursday Time segment 6	
41240..41244	R/W	E1	Parameters for Friday Time segment 1	
41250..41254	R/W	E1	Parameters for Friday Time segment 2	
41260..41264	R/W	E1	Parameters for Friday Time segment 3	
41270..41274	R/W	E1	Parameters for Friday Time segment 4	

41280..41284	R/W	E1	Parameters for Friday Time segment 5	
41290..41294	R/W	E1	Parameters for Friday Time segment 6	
41300..41304	R/W	E1	Parameters for Saturday Time segment 1	
41310..41314	R/W	E1	Parameters for Saturday Time segment 2	
41320..41324	R/W	E1	Parameters for Saturday Time segment 3	
41330..41334	R/W	E1	Parameters for Saturday Time segment 4	
41340..41344	R/W	E1	Parameters for Saturday Time segment 5	
41350..41354	R/W	E1	Parameters for Saturday Time segment 6	
41360..41364	R/W	E1	Parameters for Sunday Time segment 1	
41370..41374	R/W	E1	Parameters for Sunday Time segment 2	
41380..41384	R/W	E1	Parameters for Sunday Time segment 3	
41390..41394	R/W	E1	Parameters for Sunday Time segment 4	
41400..41404	R/W	E1	Parameters for Sunday Time segment 5	
41410..41414	R/W	E1	Parameters for Sunday Time segment 6	

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