



# USER MANUAL

EN/ Version 20.11.2014

## MODBUS COMMUNICATION

PASSIVE VENTILATION / HEAT RECOVERY  
OPTIMA250, DESIGN PANEL SW 3.1



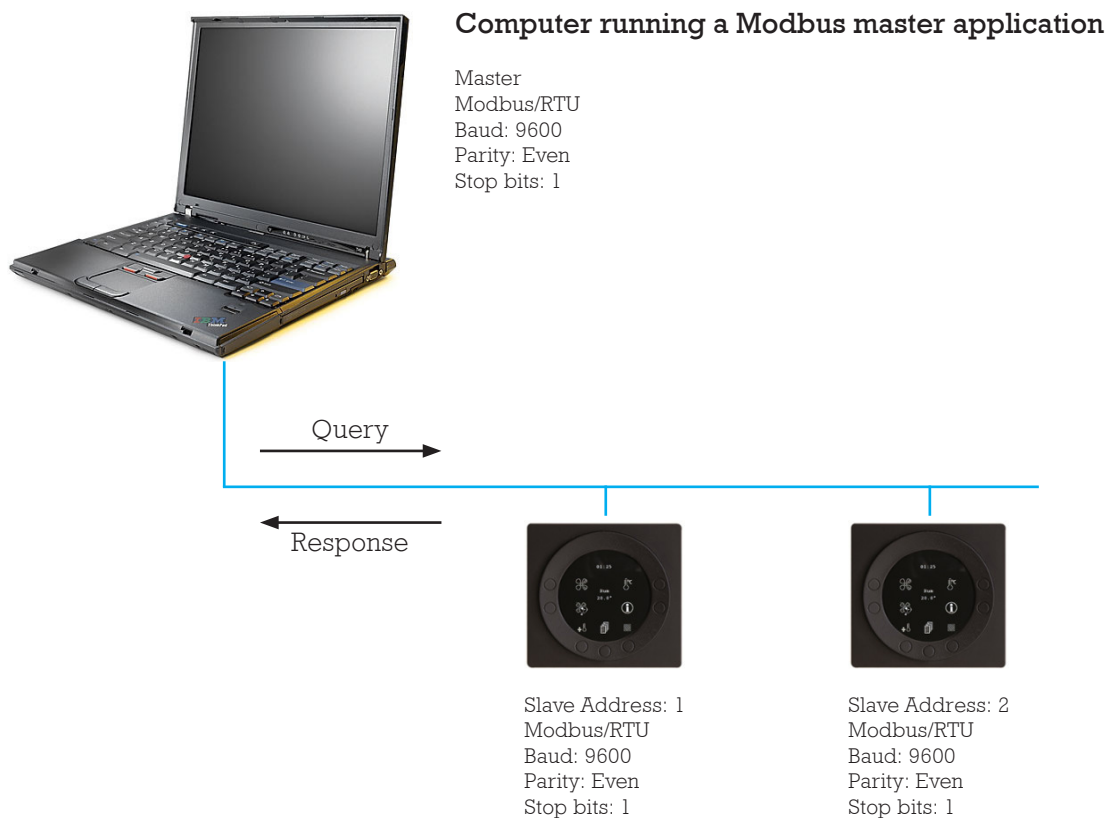
GES ENERGY S / GES ENERGY M / ENERGY ECO 180  
GES ENERGY 1  
GE ENERGY 1 / GE ENERGY 2 / GE ENERGY 3



## Modbus Communication:

### Optima 250, Design Panel SW 3.1 with MODBUS.

A Modbus network consists of one Master unit and one or more Slave units. The master controls the communication and requests information from the slave units. The rules for communication are set by the protocol. The Modbus protocol specification can be downloaded for free from the Modbus Organization. [www.modbus.org](http://www.modbus.org)



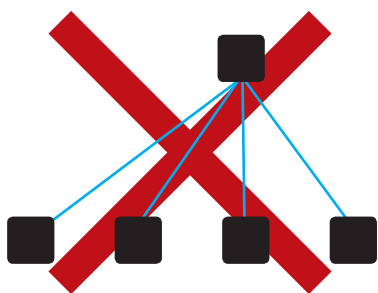
## Connection

Screened twisted pair cable should be used  $2 \times 2 \times 0,25 \text{ mm}^2$ . The cable screen should be connected to the "Gnd" terminal. The cable should be terminated at each end with a 150 ohm resistor and "Daisy Chain" or "straight line" connection should be used. A "Star" or network with "Stubs (Tees)" is not recommended as reflection within the cable may result in data corruption.

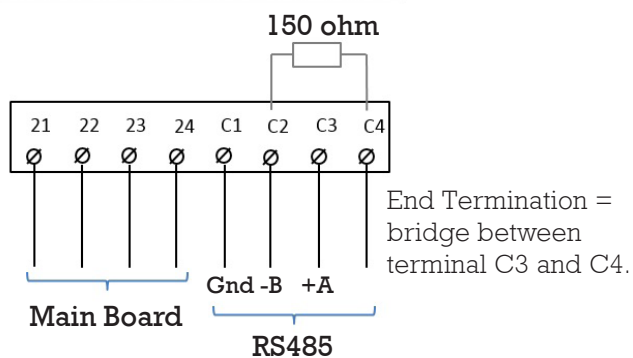
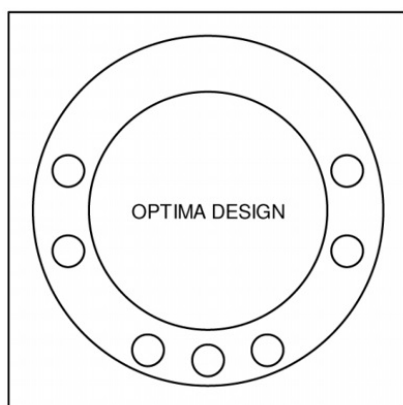
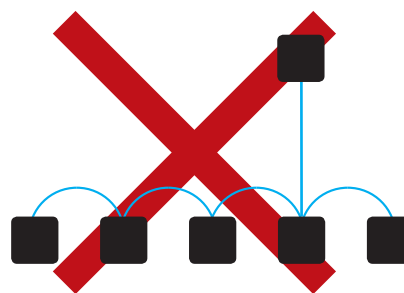
**Daisy Chained Connection  
(Correct)**



**Star Connection  
(WRONG)**



**Star Connection  
(WRONG)**



## RS485 setup:

### Standard:

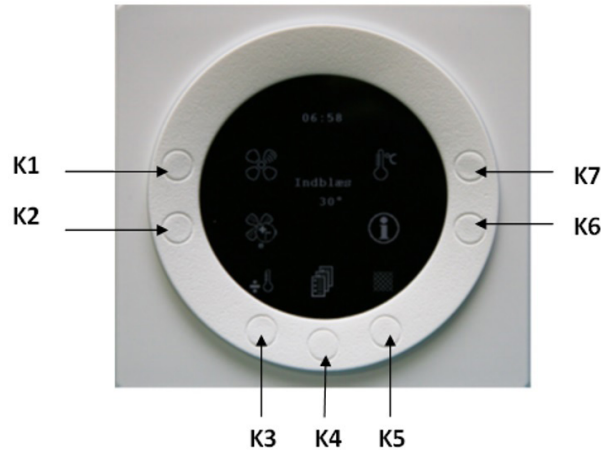
#### Modbus application protocol specification V1.1b3 Modbus over serial line V1.02

|            |                               |             |   |
|------------|-------------------------------|-------------|---|
| Mode:      | RTU                           | (MSB first) |   |
| Baud:      | 0=Modbus off, 1=9600, 2=19200 | default     | 0 |
| Start bits | 1                             | fixed       |   |
| Data bits  | 8                             | fixed       |   |
| Stop bits  | 1                             | fixed       |   |
| Parity     | Even                          | fixed       |   |
| Adress     | 1-247                         | default     | 1 |

### Function:

| Code | Description            | Description  |
|------|------------------------|--|
| 01   | Read coils             | Read the status off the coils<br>(0X)                          |
| 02   | Read Discrete Inputs   | Read the status off discrete inputs.<br>(1X)                   |
| 03   | Read Holding Registers | Read the contents of read/write location<br>(4X)               |
| 04   | Read Input Registers   | Read the contents of read only location<br>(3X)                |
| 06   | Write Single Register  | Used to write a single holding register in a<br>remote device. |

## Switch MODBUS on in Display:



1. Press K4 to enter the main menu
2. Press K5 ("arrow up") choose service menu
3. Press K4 ("enter")
4. Press K5 until the arrow reaches menu point 30
5. Press K4 ("enter") choose mode
6. Press K3 ("-") or K5 ("++") to choose menu point



Menupunkt 30 = modbus mode

- 0 = modbus off (USB ON)
- 1 = 9600 baud (USB OFF)
- 2 = 19200 baud (USB OFF)
- Factory set points: 0

7. Press K4 ("enter") save the setting
8. Press K6 ("exit") back to the main menu
9. Press K6 ("exit")

| Register No | Data Description             | R/W | Size | Units  | Valid response    | Remarks           |
|-------------|------------------------------|-----|------|--------|-------------------|-------------------|
| 0x0000      | Relay 1                      | R   | 1    | UINT16 | ON/OFF            | 0=OFF 1=ON        |
| 0x0001      | Relay 2                      | R   | 1    | UINT16 | ON/OFF            | 0=OFF 1=ON        |
| 0x0002      | Relay 3                      | R   | 1    | UINT16 | ON/OFF            | 0=OFF 1=ON        |
| 0x0003      | Relay 4                      | R   | 1    | UINT16 | ON/OFF            | 0=OFF 1=ON        |
| 0x0004      | Relay 5                      | R   | 1    | UINT16 | ON/OFF            | 0=OFF 1=ON        |
| 0x0005      | Relay 6                      | R   | 1    | UINT16 | ON/OFF            | 0=OFF 1=ON        |
| 0x0006      | Relay 7                      | R   | 1    | UINT16 | ON/OFF            | 0=OFF 1=ON        |
| 0x0007      | Relay 8                      | R   | 1    | UINT16 | ON/OFF            | 0=OFF 1=ON        |
| 0x0008      | Relay 9                      | R   | 1    | UINT16 | ON/OFF            | 0=OFF 1=ON        |
| 0x0009      | Relay 10                     | R   | 1    | UINT16 | ON/OFF            | 0=OFF 1=ON        |
| 0x0010      | Relay 11                     | R   | 1    | UINT16 | ON/OFF            | 0=OFF 1=ON        |
| 0x0011      | Not Used Digital out 1       | R   | 1    | UINT16 | ON/OFF            | 0=OFF 1=ON        |
| 0x0012      | Not Used Digital out 2       | R   | 1    | UINT16 | ON/OFF            | 0=OFF 1=ON        |
| 0x0013      | Not Used Digital out 3       | R   | 1    | UINT16 | ON/OFF            | 0=OFF 1=ON        |
| 0x0014      | Not Used Digital out 4       | R   | 1    | UINT16 | ON/OFF            | 0=OFF 1=ON        |
| 1x0000      | Hystostat                    | R   | 1    | UINT16 | ON/OFF            | 0=OFF 1=ON        |
| 1x0001      | Start/stop                   | R   | 1    | UINT16 | ON/OFF            | 0=OFF 1=ON        |
| 1x0002      | Not Used Digital in 1        | R   | 1    | UINT16 | ON/OFF            | 0=OFF 1=ON        |
| 1x0003      | Not Used Digital in 2        | R   | 1    | UINT16 | ON/OFF            | 0=OFF 1=ON        |
| 1x0004      | Not Used Digital in 3        | R   | 1    | UINT16 | ON/OFF            | 0=OFF 1=ON        |
| 1x0005      | Not Used Digital in 4        | R   | 1    | UINT16 | ON/OFF            | 0=OFF 1=ON        |
| 3x0000      | T1                           | R   | 1    | UINT16 | -30grdC - 70grd C | 300=0.0°C         |
| 3x0001      | T2                           | R   | 1    | UINT16 | -30grdC - 70grd C | 300=0.0°C         |
| 3x0002      | T3                           | R   | 1    | UINT16 | -30grdC - 70grd C | 300=0.0°C         |
| 3x0003      | T4                           | R   | 1    | UINT16 | -30grdC - 70grd C | 300=0.0°C         |
| 3x0004      | T5                           | R   | 1    | UINT16 | -30grdC - 70grd C | 300=0.0°C         |
| 3x0005      | T6                           | R   | 1    | UINT16 | -30grdC - 70grd C | 300=0.0°C         |
| 3x0006      | T7                           | R   | 1    | UINT16 | -30grdC - 70grd C | 300=0.0°C         |
| 3x0007      | T8                           | R   | 1    | UINT16 | -30grdC - 70grd C | 300=0.0°C         |
| 3x0008      | T9                           | R   | 1    | UINT16 | -30grdC - 70grd C | 300=0.0°C         |
| 3x0009      | T2 Panel                     | R   | 1    | UINT16 | -30grdC - 70grd C | 300=0.0°C         |
| 3x0010      | Measured Humidity            | R   | 1    | UINT16 | 0-100%            | 0=0%, 100=100%    |
| 3x0011      | Humidity calculated setpoint | R   | 1    | UINT16 | 0-100%            | 0=0%, 100=100%    |
| 3x0101      | Alarm                        | R   | 1    | UINT16 | Bits              |                   |
| 3x0102      | Inlet fan                    | R   |      | UINT16 | 0-100%            |                   |
| 3x0103      | Extract fan                  | R   | 1    | UINT16 | 0-100%            |                   |
| 3x0104      | Bypass                       | R   | 1    | UINT16 | 0-100%            |                   |
| 3x0105      | Watervalve                   | R   | 1    | UINT16 | 0-100%            |                   |
| 3x0106      | Humidity FAN control +/-     | R   | 1    | UINT16 | -100% - 100%      | 0=-100%, 200=100% |
| 3x0107      | Bypass ON/OFF                | R   | 1    | UINT16 | 0=OFF, 1=ON       |                   |
| 3x0108      | Inlet fan RPM                | R   | 1    | UINT16 | 0-9999            |                   |
| 3x0109      | Extract fan RPM              | R   | 1    | UINT16 | 0-9999            |                   |
| 3x0200      | Programme Version Controller | R   | 1    | UINT16 | 0-9999            | 1=0..1            |
| 3x0201      | Programme Version Display    | R   | 1    | UINT16 | 0-9999            | 1=0..1            |
| 3x0202      | Sub Version Controller       | R   | 1    | UINT16 | 0-9999            | ascii 97=a, 98=b  |
| 3x0203      | Sub Version Display          | R   | 1    | UINT16 | 0-9999            | ascii 97=a, 98=b  |
| 3x0204      | ModbusVersion                | R   | 1    | UINT16 | 0-9999            | 1=0..1            |
| 3x0205      | Sub ModbusVersion            | R   | 1    | UINT16 | 0-9999            | ascii 97=a, 98=b  |



| Register No | Data description                         | R/W | Size | Units  | Valid response | Remarks                       | Min | Max | Offset | Resolution | Min                     | Max   |
|-------------|--|-----|------|--------|----------------|-------------------------------|-----|-----|--------|------------|-------------------------|-------|
|             |  |     |      |        |                |                               | Min | Max | Offset | Resolution | Display + offset<br>Min | Max   |
| 4x0000      | 01) Temperature (°C)                     | R/W | 1    | UINT16 |                |                               | 0   | 200 | 100    | 0,1        | 10,0                    | 30,0  |
| 4x0001      | 02) Preheat (on/off)                     | R/W | 1    | UINT16 |                |                               | 0   | 1   | 0      | 1          | 0,0                     | 1,0   |
| 4x0002      | 03) Reheat (on/off)                      | R/W | 1    | UINT16 |                |                               | 0   | 1   | 0      | 1          | 0,0                     | 1,0   |
| 4x0003      | 04) Timer level 3-4 (on/off)             | R/W | 1    | UINT16 |                |                               | 0   | 1   | 0      | 1          | 0,0                     | 1,0   |
| 4x0004      | 05) Filter change (mtr)                  | R/W | 1    | UINT16 |                |                               | 0   | 6   | 0      | 1          | 0,0                     | 6,0   |
| 4x0005      | 06) Humidity (on/off)                    | R/W | 1    | UINT16 |                |                               | 0   | 1   | 0      | 1          | 0,0                     | 1,0   |
| 4x0006      | 10) Level 1 supply (%)                   | R/W | 1    | UINT16 |                |                               | 0   | 100 | 0      | 1          | 0,0                     | 100,0 |
| 4x0007      | 11) Level 2 supply (%)                   | R/W | 1    | UINT16 |                |                               | 0   | 100 | 0      | 1          | 0,0                     | 100,0 |
| 4x0008      | 12) Level 3 supply (%)                   | R/W | 1    | UINT16 |                |                               | 0   | 100 | 0      | 1          | 0,0                     | 100,0 |
| 4x0009      | 13) Level 1 extract (%)                  | R/W | 1    | UINT16 |                |                               | 0   | 100 | 0      | 1          | 0,0                     | 100,0 |
| 4x0010      | 14) Level 2 extract (%)                  | R/W | 1    | UINT16 |                |                               | 0   | 100 | 0      | 1          | 0,0                     | 100,0 |
| 4x0011      | 15) Level 3 extract (%)                  | R/W | 1    | UINT16 |                |                               | 0   | 100 | 0      | 1          | 0,0                     | 100,0 |
| 4x0012      | 16) T2 adjustment (°C)                   | R/W | 1    | UINT16 |                |                               | 0   | 50  | -50    | 0,1        | -5,0                    | 0,0   |
| 4x0013      | 17) Level 3-4 (hour)                     | R/W | 1    | UINT16 |                |                               | 1   | 9   | 0      | 1          | 1,0                     | 9,0   |
| 4x0014      | 18) Filter change autostop (on/off)      | R/W | 1    | UINT16 |                |                               | 0   | 1   | 0      | 1          | 0,0                     | 1,0   |
| 4x0015      | 19) Reform (0=Run, 1=indbl, 2=udsug)     | R/W | 1    | UINT16 |                |                               | 0   | 2   | 0      | 1          | 0,0                     | 2,0   |
| 4x0016      | 20) Preheat Temperature (°C)             | R/W | 1    | UINT16 |                |                               | 0   | 150 | -150   | 0,1        | -15,0                   | 0,0   |
| 4x0017      | 21) Bypass max (°C)                      | R/W | 1    | UINT16 |                |                               | 10  | 100 | 0      | 0,1        | 1,0                     | 10,0  |
| 4x0018      | 22) Water reg interval (sec)             | R/W | 1    | UINT16 |                |                               | 1   | 250 | 0      | 1          | 1,0                     | 250,0 |
| 4x0019      | 23) Power reg interval (min)             | R/W | 1    | UINT16 |                |                               | 1   | 30  | 0      | 1          | 1,0                     | 30,0  |
| 4x0020      | 24) Frost reduction (°C)                 | R/W | 1    | UINT16 |                |                               | 0   | 100 | 0      | 0,1        | 0,0                     | 10,0  |
| 4x0021      | 25) Frost (on/off)                       | R/W | 1    | UINT16 |                |                               | 0   | 1   | 0      | 1          | 0,0                     | 1,0   |
| 4x0022      | 26) Frost Default (°C)                   | R/W | 1    | UINT16 |                |                               | 0   | 100 | 0      | 0,1        | 0,0                     | 10,0  |
| 4x0023      | 27) Aux. relay R9                        | R/W | 1    | UINT16 |                |                               | 0   | 5   | 0      | 1          | 0,0                     | 5,0   |
| 4x0024      | 28) Stop unit (on/off)                   | R/W | 1    | UINT16 |                |                               | 0   | 1   | 0      | 1          | 0,0                     | 1,0   |
| 4x0025      | 29) End bypass at low fresh air (°C)     | R/W | 1    | UINT16 |                |                               | 0   | 20  | 0      | 1          | 0,0                     | 20,0  |
| 4x0026      | 30) Modbus mode (0=OFF, 1=9600, 2=19200) | R/W | 1    | UINT16 |                | 0=Modbus Off, 1=9600, 2=19200 | 0   | 2   | 0      | 1          | 0,0                     | 2,0   |
| 4x0027      | 31) Modbus address                       | R/W | 1    | UINT16 |                |                               | 1   | 247 | 0      | 1          | 1,0                     | 247,0 |
| 4x0028      | 32) Humidity max temp.                   | R/W | 1    | UINT16 |                |                               | 5   | 25  | 0      | 1          | 5,0                     | 25,0  |
| 4x0029      | 33) Humidity max value                   | R/W | 1    | UINT16 |                |                               | 35  | 85  | 0      | 1          | 35,0                    | 85,0  |
| 4x0030      | 34) Humidity Fan speed                   | R/W | 1    | UINT16 |                |                               | 5   | 30  | 0      | 1          | 5,0                     | 30,0  |
| 4x0031      | 35) Humidity regulation                  | R/W | 1    | UINT16 |                |                               | 1   | 60  | 0      | 1          | 1,0                     | 60,0  |

| Register No | Data description                   | R/W | Size | Units  | Valid response | Remarks                          |
|-------------|------------------------------------|-----|------|--------|----------------|----------------------------------|
| 4x0100      | Panel fan mode speed switch        | R/W | 1    | UNIT16 | 0-4            | 0=Off, 1=S1, 2=S2, 3=S3,<br>4=S4 |
| 4x0102      | Function K3 Heat ON                | R/W | 1    | UNIT16 | 0-1            | 0=Off, 1=ON                      |
| 4x0106      | Function K2 Timer                  | R/W | 1    | UNIT16 | 0-9            | 0=Off, 1-9 = 1-9Hour             |
| 4x0200      | Hour                               | R/W |      | UNIT16 | 0-23           |                                  |
| 4x0201      | Minute                             | R/W |      | UNIT16 | 0-59           |                                  |
| 4x0202      | Day                                | R/W |      | UNIT16 | 1-7            |                                  |
| 4x0203      | Date                               | R/W |      | UNIT16 | 1-31           |                                  |
| 4x0204      | Month                              | R/W |      | UNIT16 | 1-12           |                                  |
| 4x0205      | Year                               | R/W |      | UNIT16 | 0-99           | 0= Jahr 2000                     |
| 4x0500      | 1 Calendar change merged hour+Min  | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0501      | 2 Calendar change merged hour+Min  | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0502      | 3 Calendar change merged hour+Min  | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0503      | 4 Calendar change merged hour+Min  | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0504      | 5 Calendar change merged hour+Min  | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0505      | 6 Calendar change merged hour+Min  | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0506      | 7 Calendar change merged hour+Min  | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0507      | 8 Calendar change merged hour+Min  | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0508      | 9 Calendar change merged hour+Min  | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0509      | 10 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0510      | 11 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0511      | 12 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0512      | 13 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0513      | 14 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0514      | 15 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0515      | 16 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0516      | 17 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0517      | 18 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0518      | 19 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0519      | 20 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0520      | 21 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0521      | 22 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0522      | 23 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0523      | 24 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0524      | 25 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0525      | 26 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0526      | 27 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0527      | 28 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0528      | 29 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0529      | 30 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0530      | 31 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0531      | 32 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0532      | 33 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0533      | 34 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0534      | 35 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0535      | 36 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0536      | 37 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0537      | 38 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0538      | 39 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |
| 4x0539      | 40 Calendar change merged hour+Min | R/W | 1    | UNIT16 |                | HB:Hour LB:Min                   |



| Register No | Data description                          | R/W | Size | Units  | Valid response | Remarks                |
|-------------|---|-----|------|--------|----------------|------------------------|
| 4x0540      | 41 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0541      | 42 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0542      | 43 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0543      | 44 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0544      | 45 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0545      | 46 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0546      | 47 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0547      | 48 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0548      | 49 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0549      | 50 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0550      | 51 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0551      | 52 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0552      | 53 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0553      | 54 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0554      | 55 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0555      | 56 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0556      | 57 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0557      | 58 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0558      | 59 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0559      | 60 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0560      | 61 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0561      | 62 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0562      | 63 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0563      | 64 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0564      | 65 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0565      | 66 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0566      | 67 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0567      | 68 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0568      | 69 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0569      | 70 Calendar change merged hour+Min        | R/W | 1    | UNNT16 |                | HB:Hour LB:Min         |
| 4x0600      | 1 Calendar change merged Speed+Reduction  | R/W | 1    | UNNT16 |                | HB:Speed LB: Reduction |
| 4x0601      | 2 Calendar change merged Speed+Reduction  | R/W | 1    | UNNT16 |                | HB:Speed LB: Reduction |
| 4x0602      | 3 Calendar change merged Speed+Reduction  | R/W | 1    | UNNT16 |                | HB:Speed LB: Reduction |
| 4x0603      | 4 Calendar change merged Speed+Reduction  | R/W | 1    | UNNT16 |                | HB:Speed LB: Reduction |
| 4x0604      | 5 Calendar change merged Speed+Reduction  | R/W | 1    | UNNT16 |                | HB:Speed LB: Reduction |
| 4x0605      | 6 Calendar change merged Speed+Reduction  | R/W | 1    | UNNT16 |                | HB:Speed LB: Reduction |
| 4x0606      | 7 Calendar change merged Speed+Reduction  | R/W | 1    | UNNT16 |                | HB:Speed LB: Reduction |
| 4x0607      | 8 Calendar change merged Speed+Reduction  | R/W | 1    | UNNT16 |                | HB:Speed LB: Reduction |
| 4x0608      | 9 Calendar change merged Speed+Reduction  | R/W | 1    | UNNT16 |                | HB:Speed LB: Reduction |
| 4x0609      | 10 Calendar change merged Speed+Reduction | R/W | 1    | UNNT16 |                | HB:Speed LB: Reduction |
| 4x0610      | 11 Calendar change merged Speed+Reduction | R/W | 1    | UNNT16 |                | HB:Speed LB: Reduction |
| 4x0611      | 12 Calendar change merged Speed+Reduction | R/W | 1    | UNNT16 |                | HB:Speed LB: Reduction |
| 4x0612      | 13 Calendar change merged Speed+Reduction | R/W | 1    | UNNT16 |                | HB:Speed LB: Reduction |
| 4x0613      | 14 Calendar change merged Speed+Reduction | R/W | 1    | UNNT16 |                | HB:Speed LB: Reduction |
| 4x0614      | 15 Calendar change merged Speed+Reduction | R/W | 1    | UNNT16 |                | HB:Speed LB: Reduction |
| 4x0615      | 16 Calendar change merged Speed+Reduction | R/W | 1    | UNNT16 |                | HB:Speed LB: Reduction |
| 4x0616      | 17 Calendar change merged Speed+Reduction | R/W | 1    | UNNT16 |                | HB:Speed LB: Reduction |
| 4x0617      | 18 Calendar change merged Speed+Reduction | R/W | 1    | UNNT16 |                | HB:Speed LB: Reduction |
| 4x0618      | 19 Calendar change merged Speed+Reduction | R/W | 1    | UNNT16 |                | HB:Speed LB: Reduction |
| 4x0619      | 20 Calendar change merged Speed+Reduction | R/W | 1    | UNNT16 |                | HB:Speed LB: Reduction |

[illegible]

| Alarm bit | Description                 | Value |
|-----------|-----------------------------|-------|
| bit0      | External stop               | 1     |
| bit1      | Main Filter                 | 2     |
| bit2      | HighPressure                | 4     |
| bit3      | Frost                       | 8     |
| bit4      | CommError Panel->Controller | 16    |
| bit5      | External Filter             | 32    |
| bit6      | Fan Speed                   | 64    |
| bit7      |                             | 128   |
| bit8      |                             | 256   |
| bit9      |                             | 512   |
| bit10     |                             | 1024  |

## Our Units and Controls - Your Choice

Genvex has more than 40 years of experience in creating quality units providing optimum indoor climate with excellent energy efficiency. Our systems employ the newest technologies in heat recovery and have heat recovery rates of up to 96%. The systems are continuously optimised with the newest technologies

Advanced controls ensure that as little energy as possible is used for reaching an optimum level of comfort.

Today's and future construction place greater and greater requirements for energy-friendly, yet compact systems. We at Genvex are aware of this and are continuously developing solutions that meet these needs. For example, a brilliant solution for decentralised housing ventilation is a range hood solution with full integration to the system's control which ensures that the most efficient ventilation system is achieved with the simplest installation.

