

# OPERATION AND MAINTENANCE INSTRUCTIONS FOR THE GOLD RX/PX/SD, GENERATION A

Applicable to program version 1.25 and newer versions

GOLD PX



GOLD RX



GOLD SD



## Safety Instructions ..... 3

1.1 Safety Switch .....	3
1.2 Risks .....	3
1.3 Safety Guards .....	3
1.4 Glycol .....	3

## 2. General ..... 4

2.1 Handling of units before commissioning .....	4
2.2 Range of Application .....	4
2.3 Mechanical Design .....	4
2.4 Control System .....	4
2.5 Environm. Documentation .....	4
2.6 Type of Heat Exchanger .....	4
2.7 The Components of the Air Handling Units .....	5
2.7.1 GOLD RX with rotary heat exchanger .....	5
2.7.2 GOLD PX with plate heat exchanger .....	6
2.7.3 GOLD SD sizes 05-08 .....	7
2.7.4 GOLD SD size 11/12 .....	8
2.7.5 GOLD SD separate supply air and return air handling units, Sizes 14-100, with coil heat exchangers .....	9

## 3. Commissioning ..... 10

3.1 General .....	10
3.3 Pressure Balance .....	11
3.3.1 General .....	11
3.3.2. Correct direction of air leakage .....	12

## 4. IQnavigator and Image Management ..... 13

4.1 IQnavigator Hand-held Terminal .....	13
4.1.1 General .....	13
4.1.2 How to use the micro terminal .....	14
4.1.3 Buttons .....	15
4.1.4 Indicator symbols .....	15
4.1.5 Keyboard .....	16
4.2 Image Management .....	17
4.2.1 Selection of language .....	18
4.2.2 Dashboard .....	18
4.2.2.1 General .....	18
4.2.2.2 To change the operating mode .....	18
4.2.2.3 Alarm log .....	18
4.2.2.4 Log diagram .....	19
4.2.2.5 Flow chart .....	19

## 5. User (local) ..... 20

5.1 Image Management .....	20
5.2 Filter Calibration .....	21
5.3 Functions .....	22
5.3.1 Airflow .....	22
5.3.1.1 Status .....	22
5.3.1.2 Operation level .....	22
5.3.1.3 Air adjustment .....	22
5.3.2 Temperature .....	23
5.3.2.1 Status .....	23
5.3.2.2 Settings .....	23
5.3.2.3 Regulation Mode .....	25
5.3.3 Time and schedule .....	26
5.3.3.1 Time and date .....	26
5.3.3.3 Day schedule .....	27
5.3.3.4 Exceptions schedule .....	27
5.3.3.5 Calendar 1 and 2 .....	28
5.3.3.6 Prolonged operation .....	28
5.3.4 Energy monitoring .....	29
5.3.5 Filters .....	29
5.3.6 Software .....	29
5.3.7 Language .....	29

## 6. Installation ..... 30

6.1 Image Management .....	30
6.2 Main Setup .....	31
6.3 Filter Calibration .....	31
6.4 Functions .....	32
6.4.1 Airflow .....	32
6.4.1.1 Status .....	32
6.4.1.2 Operation level .....	32

6.4.1.3 Regulation mode .....	33
6.4.1.4 Optimize .....	34
6.4.1.5 Set point displacement .....	34
6.4.1.6 Unit .....	34
6.4.1.7 Air adjustment .....	34
6.4.1.8 Outdoor air compensation .....	35
6.4.1.9 Booster diffusers .....	36
6.4.1.10 Automatic operation .....	36
6.4.2 Temperature .....	37
6.4.2.1 Status .....	37
6.4.2.2 Settings .....	37
6.4.2.3 Regulation mode .....	40
6.4.2.4 Unit of temperature .....	41
6.4.2.5 Set point displacement .....	41
6.4.2.6 Neutral zone .....	42
6.4.2.7 External temperature sensors .....	42
6.4.2.8 Regulation sequence .....	43
6.4.2.9 Min. exhaust air .....	44
6.4.2.10 Morning Boost .....	45
6.4.2.11 Heating Boost .....	45
6.4.2.12 Cooling Boost .....	46
6.4.2.13 Intermittent night heat .....	47
6.4.2.14 Summer night cool .....	48
6.4.2.15 Down regulation (airflow/pressure) .....	49
6.4.3 Time and schedule .....	50
6.4.3.1 Time and date .....	50
6.4.3.2 Schedule settings .....	50
6.4.3.3 Day schedule .....	51
6.4.3.4 Exceptions schedule .....	51
6.4.3.5 Calendar 1 and 2 .....	52
6.4.3.6 Prolonged operation .....	52
6.4.4 Energy monitoring .....	53
6.4.5 Filters .....	53
6.4.6 Software .....	53
6.4.7 Language .....	53
6.4.8 Alarm settings .....	54
6.4.8.1 Fire alarms .....	54
6.4.8.2 External alarms .....	55
6.4.8.3 Temperature protection .....	55
6.4.8.4 Temperature alarm limits .....	56
6.4.8.5 Service period .....	56
6.4.8.6 Alarm priority .....	57
6.4.9 Log .....	58
6.4.9.1 Continuous log .....	58
6.4.9.2 Log sender .....	58
6.4.10 Air handling unit .....	59
6.4.10.1 Settings .....	59
6.4.10.2 Fan status .....	60
6.4.10.3 Operation time .....	60
6.4.10.4 VOC/CO <sub>2</sub> sensor .....	60
6.4.10.5 Automatic functions .....	60
6.4.11 Heat .....	61
6.4.11.1 Status .....	61
6.4.11.2 Pre-heat .....	61
6.4.11.3 Extra regulation sequences 1 and 2 .....	62
6.4.11.4 Reheat .....	63
6.4.11.5 Xzone .....	63
6.4.11.6 Electric air heater .....	64
6.4.11.7 Season Heat .....	64
6.4.11.8 Automatic functions .....	64
6.4.12 Cool .....	65
6.4.12.1 Status .....	65
6.4.12.2 Extra regulation sequences 1 and 2 .....	65
6.4.12.3 Cool .....	66
6.4.12.4 Xzone .....	67
6.4.12.5 Delay time .....	68
6.4.12.6 Outdoor air limits .....	68
6.4.12.7 Airflow, limits .....	68
6.4.13 Heat/Cool recovery .....	69
6.4.13.1 Status .....	69
6.4.13.2 Carry over control .....	69
6.4.13.3 Efficiency measurement .....	69
6.4.13.4 Defrost .....	70
6.4.13.5 Calibration/Optimization (GOLD PX) .....	71
6.4.13.6 Automatic functions .....	71
6.4.15 Humidity .....	72
6.4.15.1 Status .....	72
6.4.15.2 Humidifying .....	72
6.4.15.3 Dehumidifying .....	73
6.4.15.4 Humidifier alarm .....	73
6.4.16 ReCO <sub>2</sub> .....	74

6.4.17 All Year Comfort .....	75
6.4.19 Inputs/Outputs .....	76
6.4.20 Communication .....	77
6.4.20.1 External Port B .....	77
6.4.20.2 Wireless LAN .....	77
6.4.20.3 E-mail .....	78
6.4.20.4 EIA-485 .....	78
6.4.20.5 Modbus TCP .....	78
6.4.20.6 BACnet IP .....	78
6.4.20.7 EXOnline TCP .....	79
6.4.20.8 Operation level communication .....	79
6.4.21 Base setting .....	80
6.4.22. Users .....	80
6.4.23 Notes .....	81
6.4.24 Manual test .....	81
6.4.25 IQnavigator (hand-held terminal) .....	82
6.4.25.1 Connect to IQlogic .....	82
6.4.25.2 Backlight brightness .....	82
6.4.25.3 Acoustics .....	82

## 7. Maintenance ..... 83

7.1 Filter Change .....	83
7.1.1 Removing filters .....	83
7.1.2 Installing new filters .....	83
7.2 Cleaning and Inspection .....	84
7.2.1 General .....	84
7.2.2 Filter spaces .....	84
7.2.3 Heat exchangers .....	84
7.2.4 Fans and fan spaces .....	84
7.3 General inspection and functionality check .....	84

## 8. Alarms and Troubleshooting ..... 85

8.1 General .....	85
8.1.1 A and B alarms .....	85
8.1.2 Resetting the alarm .....	85
8.1.3 Changing alarm settings .....	85
8.2 Alarm Descriptions with Factory Settings .....	86

## 9. Information Messages ..... 98

## 10. Technical Data ..... 100

10.1 Dimensions, GOLD RX with rotary heat exchanger .....	100
10.2 Dimensions, GOLD PX with plate heat exchanger .....	103
10.3 Dimensions, separate GOLD SD supply air and return air handling units .....	104
10.5 Connection to wiring terminals .....	108
10.6 Electrical data .....	109
10.6.1 Air handling unit .....	109
10.6.2 Fans .....	110
10.6.3 Electrical equipment cubicle .....	111
10.6.4 Motor in rotary heat exchanger .....	112
10.6.4.1 Standard rotor .....	112
10.6.4.2 Recosorptic rotor .....	112
10.6.5 Control inaccuracy .....	112
10.7 Volume of glycol/water SD coil heat exchangers .....	112

## 1. Safety Instructions

All staff concerned must acquaint themselves with these instructions before beginning any work on the unit. Any damages to the unit or parts of it due to improper handling or misuse by the purchaser or the fitter cannot be considered subject to guarantee if these instructions have not been followed correctly.



### Warning

Only a qualified electrician or service personnel trained by Swegon shall be permitted to modify the air handling unit in conjunction with electrical installations or the wiring of external functions.

### 1.1 Safety Isolating Switch/Main Switch

On the size 05, 07/08, 11/12, 14/20 and 25/30 GOLD one-piece air handling units with rotary heat exchanger (RX) or plate heat exchanger (PX), the safety isolating switch is externally located on the junction hood.

On the size 35/40, 50/60, 70/80 and 100 GOLD one-piece air handling units with rotary heat exchanger (RX), the safety isolating switch is externally located on the centre section of the unit.

On the size 05-80 GOLD SD separate supply air and return air handling units, the safety isolating switch is located on the inspection side by the fan section's inspection door. On the size 100 units, the safety isolating switch is located in a plastic enclosure on the inspection side of the air handling unit.

The air handling unit should normally be started and stopped from the hand-held terminal; not by switching the safety isolating switch on and off.

Always switch off the safety isolating switch before servicing the unit if not otherwise specified in the pertinent instructions.

### 1.2 Risks



### Warning

Before carrying out any work, make sure that the power supply to the air handling unit has been switched off.

#### Risk areas with moving parts

Moving parts are fan impellers, drive pulley for the rotary heat exchanger, if fitted, and by-pass/shut-off damper of the plate heat exchanger, if fitted.

The lockable inspection doors serve as protection from contact with the fans and protection for the heat exchanger. If the ducts are not firmly connected to the fan outlets, the outlets must be firmly fitted with a safety guard (wire mesh screen).



### Warning

The inspection doors on the filter/fan sections must not be opened while the air handling unit is in operation.  
Stop the unit when it is operating normally via the hand-held terminal.  
Wait until the fans have stopped rotating before opening the inspection door.  
The air pressure inside the filter/fan section is positive, which means that the door can fly open.  
Keep the key at a safe spot separate from the air handling unit.

### 1.3 Safety Guards

The cover of the electrical equipment cubicle, and when applicable the junction hood, serve as safety guards on the size 05 and 08 one-piece units with rotary heat exchanger (RX), as well as on all the other variants (PX/SD). On the size 12, 14/20, 25/30, 35/40, 50/60, 70/80 and 100 one-piece air handling units with rotary heat exchanger (RX), the lockable door over the electrical equipment cubicle, and if applicable the junction hood, serve as safety guards.

Only a qualified electrician or trained service technicians shall be allowed to remove the safety guards.



### Warning

The power supply to the unit shall be isolated by switching off the safety isolating switch before removing the safety guard.

When the air handling unit is operating, the safety guards must always be mounted, all inspection doors must be closed, and the junction hood on the top of the unit must be mounted.

### 1.4 Glycol

Glycol is used in the GOLD air handling units with coil heat exchangers.



### Warning



Never pour glycol down a drain; collect it in a receptacle and leave it at a recycling centre, petrol station, etc. Glycol is highly dangerous to consume and can cause fatal poisoning or damage the kidneys. Contact a doctor! Also avoid breathing glycol vapour in confined spaces. If you get glycol in your eyes, flush them thoroughly with water (for about 5 minutes). If glycol splashes on your skin, wash with soap and water.

## 2. General

### 2.1 Handling of air handling units before commissioning

The air handling unit and its duct connections should be protected against wetness and condensation until the unit is commissioned.

### 2.2 Range of Application

The GOLD units are designed for use in comfort ventilation applications. Depending on the variant selected, GOLD units can be utilised in buildings such as office buildings, schools, day nurseries, public buildings, shops, residential buildings, etc.

GOLD units equipped with plate heat exchangers (PX) and separate supply air and return air handling units (SD) can also be used for the ventilation of moderately humid buildings; however not where the humidity is continuously high, such as in indoor swimming baths.

The separate GOLD supply air and return air handling units (SD) are designed for applications in which the supply air and return air flows need to be completely separated from one another or where, due to limited available space, separate units for supply air and return air respectively are needed. They can also be used individually if only one of the variants is needed.

In order to fully obtain all the benefits the GOLD system has to offer, it is important to take the special characteristics of the air handling units into account when planning them into the project, installing, commissioning and operating them.

The air handling unit in its basic version should be installed indoors. The ABTA/ABTB accessory should be used if the air handling units are installed outdoors. If the duct accessories are installed outdoors, they must be housed in an insulated casing (type ACxx).



#### Important!

Always read the safety instructions in Section 1 that explain the risks involved in running the unit and designate who shall be permitted to operate and service the unit, and carefully follow the installation instructions provided in each paragraph.

The product identification plates are located on the inspection side of the air handling unit and on a wall inside the fan section. Refer to the particulars on the product identification plate when you contact Swegon.

### 2.3 Mechanical Design

The GOLD is available in 9 physical sizes and for 16 airflow ranges.

Its sheet steel exterior is painted in a beige colour. NCS S2005-Y30R. The inner skin material is coated galvanized sheet steel. Environmental class C4. Panel thickness of 2 in. with intervening insulation consisting of mineral wool.

All units are equipped with MERV 13 supply air and return air filters made of glass fibre. All units come equipped to accept a MERV 8 2" cartridge prefilter.

The plate heat exchangers are as standard equipped with bypass and shut-off dampers for variable and automatic control of the heat exchanger's efficiency on heat recovery.

The supply air and return air fans are of GOLD Wing+ type, an axi-cen-

trifugal fan with backward-curved blades. The fans are direct-driven and have a motor controller for variable speed control.

### 2.4 Control System

The IQlogic control system is microprocessor-based and is integrated into the air handling unit. It controls and regulates the fans, heat exchanger, temperatures, airflows, in operation times and a large number of internal and external functions as well as alarms.

### 2.5 Environm. Documentation

The air handling unit is designed in such a way that it can be dismantled into its natural parts for scrapping. When the unit has ended its useful product life, the services of an accredited recycling company should be utilized for disposal.

The recyclable weight of the GOLD is about 94% of its initial weight.

Swegon AB is associated with the REPA Register, No. 5560778465.

Contact Swegon NA, Phone: 416-291-7371, if you have any questions regarding the dismantling instructions or the air handling unit's impact on the environment.

### 2.6 Type of Heat Exchanger

The GOLD one-piece air handling unit is supplied with either a rotary heat exchanger (RX) or a plate heat exchanger (PX). A coil heat exchanger is available as an option for the separate supply air and return air handling units (SD).

If any section, function, etc. deals only with one type of heat exchanger, it is marked with an appropriate symbol as specified below:



Rotary heat exchanger (RX)

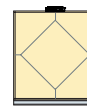


Plate heat exchanger (PX)



Coil heat exchangers (SD)

## 2.7 The Components of the Air Handling Units

### 2.7.1 GOLD RX one-piece air handling unit with rotary heat exchanger

The individual components are each specified below in a simplified and diagrammatical description.

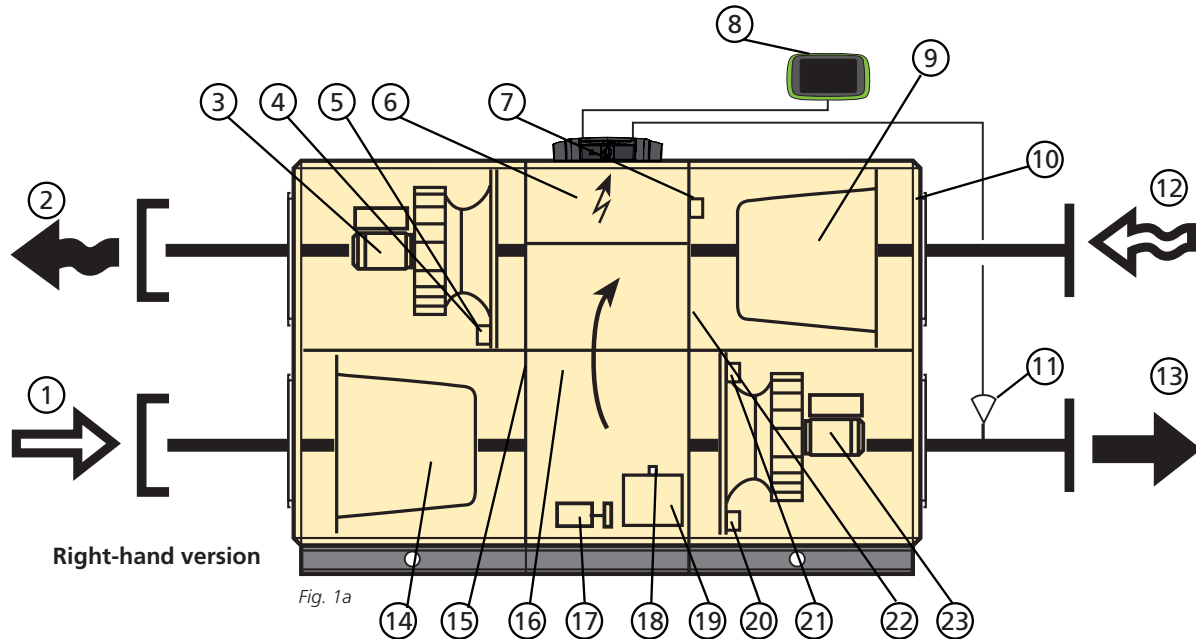


Fig. 1a

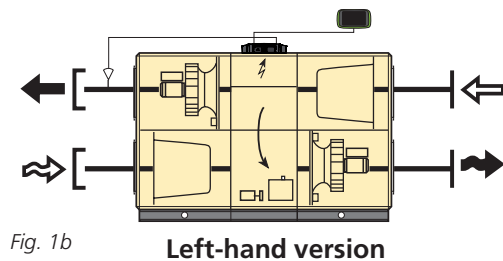


Fig. 1b

GOLD 05-100: The air handling units can be ordered in the right-hand version as shown in Fig. 1a or in the left-hand version as shown in Fig. 1b.

GOLD 12-100: The air handling unit in Fig. 1a shows Fan Arrangement 1. The unit can also be ordered according to Fan Arrangement 2. The fans and filters are then vertically mirror-inverted.

In the left-hand version (Fig. 1b), the components marked with an asterisk change function and designation (the components are named according to whether they are for supply air or return air).

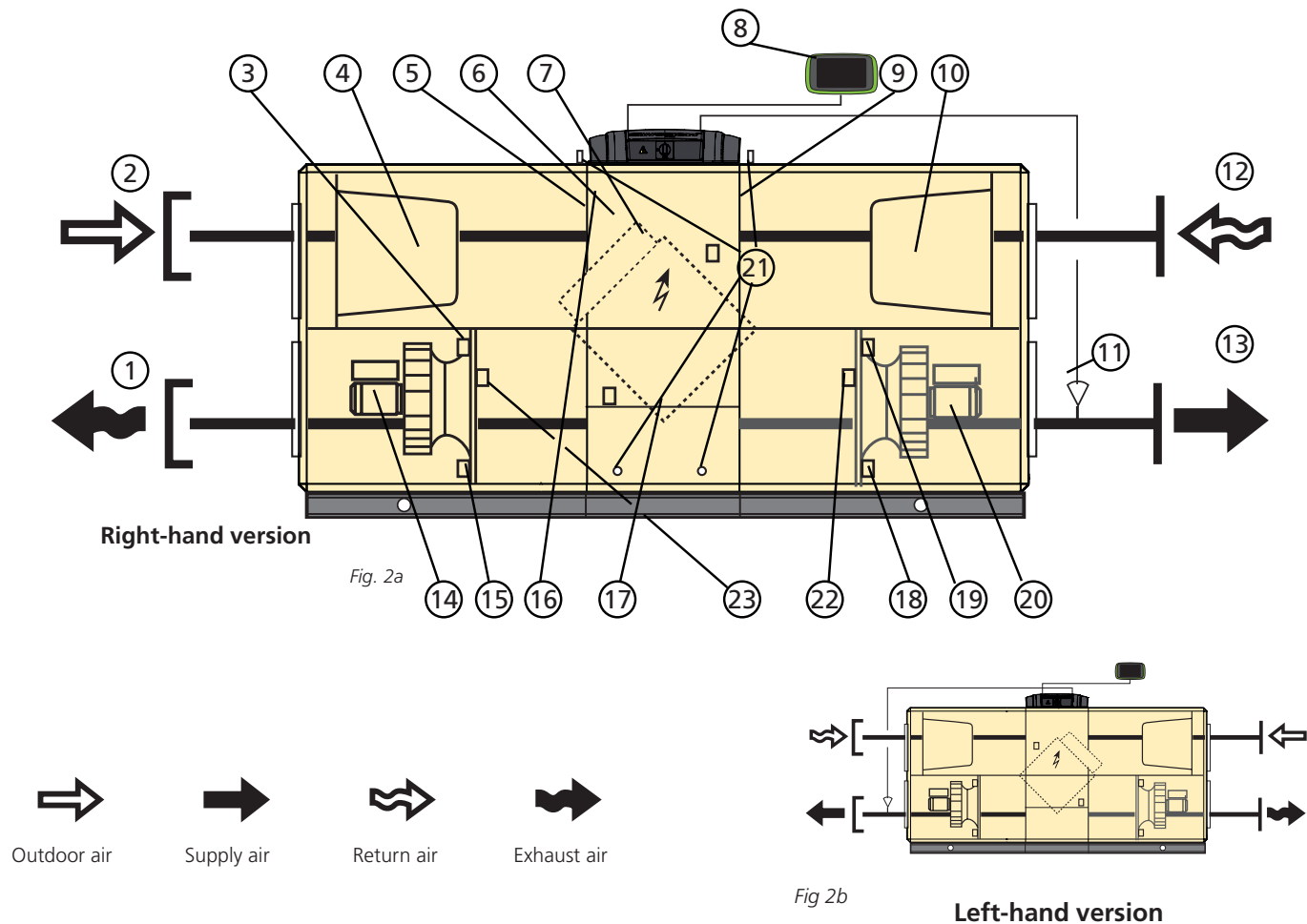
#### The arrangement of the components and their designations

- 1 OUTDOOR AIR\* (In left-hand version: Return air)
- 2 EXHAUST AIR\* (In left-hand version: Supply air)
- 3 Return air fan\* with motor and motor controller
- 4 Pressure sensor, return air fan\*  
(Position on function selector switch = 1)
- 5 Pressure sensor, supply air filter\*
- 6 Electrical equipm. cubicle with control unit
- 7 Pressure sensor, heat exchanger  
(Position on function selector switch = B)
- 8 IQnavigator hand-held terminal
- 9 Return air filter\*
- 10 Commissioning plate (Left-hand unit version -  
by left-hand filter section)

- 11 Temperature sensor, supply air (to be mounted in supply air duct)
- 12 Return AIR\* (In left-hand version: Outdoor air)
- 13 SUPPLY AIR\* (In left-hand version: Exhaust air)
- 14 Supply air filter\*
- 15 Temperature sensor, outdoor air\*
- 16 Heat exchanger
- 17 Drive motor, heat exchanger
- 18 Rotation monitor sensor
- 19 Heat exchanger control unit
- 20 Pressure sensor, supply air fan\*  
(Position on function selector switch = 2)
- 21 Pressure sensor, return air filter\*  
(Position on function selector switch = 4)
- 22 Temperature sensor, return air\*
- 23 Supply air fan\* with motor and motor controller

## 2.7.2 GOLD PX one-piece air handling unit with plate heat exchanger

The individual components are each specified below in a simplified and diagrammatical description.



The air handling units are supplied in the right-hand or left-hand version as shown in Fig. 2a and 2b. In the left-hand version (Fig. 2b), the components marked with an asterisk change function and designation (the components are named according to whether the function is for supply air or return air.).

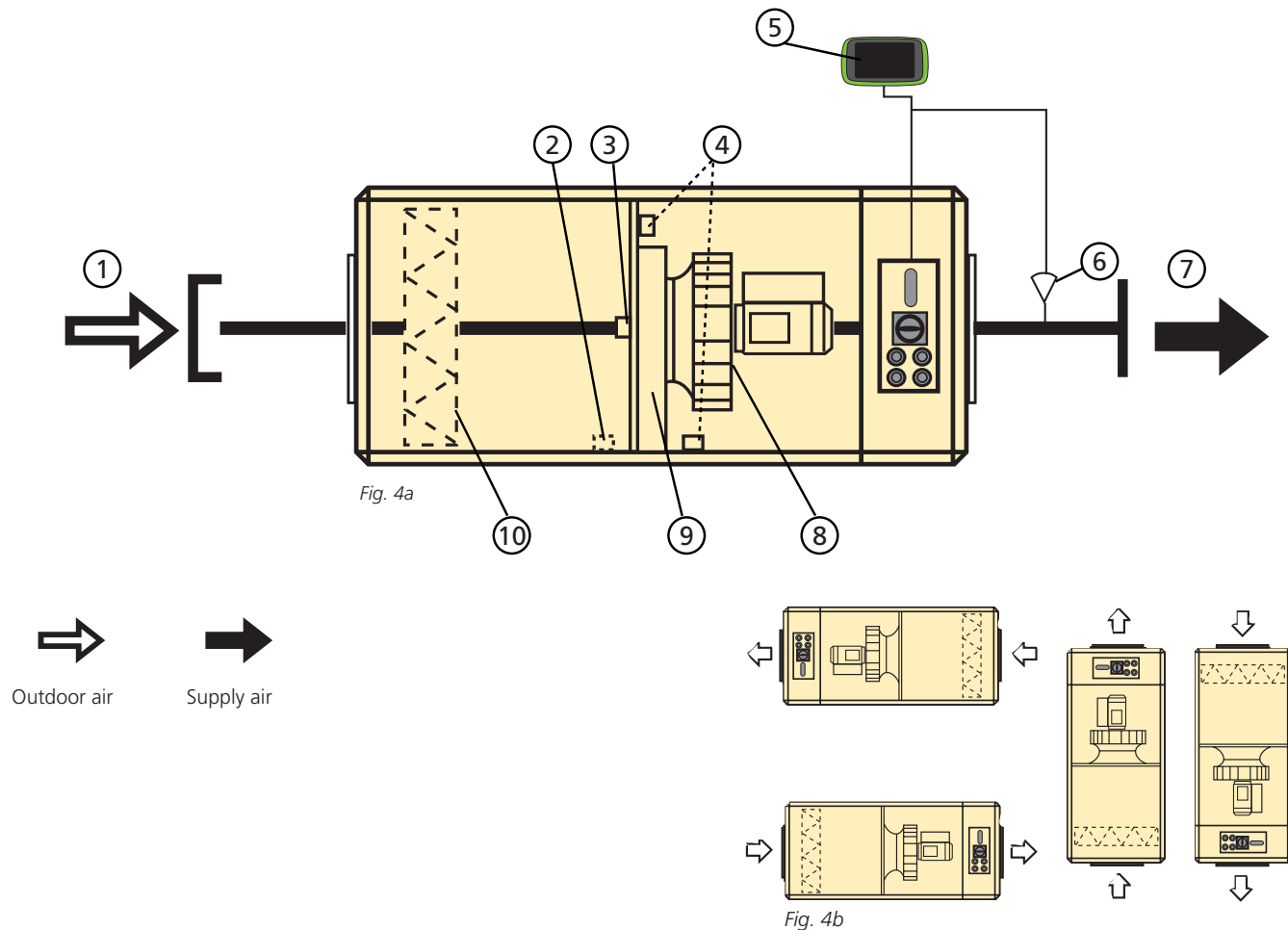
### The arrangement of the components and their designations

- 1 EXHAUST AIR\* (In left-hand version: Supply air)
- 2 OUTDOOR AIR\* (In left-hand version: Return air)
- 3 Pressure sensor, supply air filter\* (Position on function selector switch = 3)
- 4 Supply air filter\*
- 5 Temperature sensor, outdoor air\*
- 6 Electrical equipment cubicle with control unit
- 7 Valve actuators, shut-off and bypass dampers
- 8 Hand-held terminal
- 9 Temperature/relative humidity sensor, return air\* (applies to RECOFrost only)
- 10 Return air filter\*
- 11 Temperature sensor, supply air (to be mounted in supply air duct)
- 12 Return AIR\* (In left-hand version: Outdoor air)

- 13 SUPPLY AIR\* (In left-hand version: Exhaust air)
- 14 Return air fan\* with motor and motor controller
- 15 Pressure sensor, return air fan\* (Position on function selector switch = 1)
- 16 Return air/exhaust air pressure sensor (applies only to RECOFrost, function selector switch position = C)
- 17 Plate heat exchanger with bypass and shut-off damper
- 18 Pressure sensor, supply air fan\* (Position on function selector switch = 2)
- 19 Pressure sensor, return air filter\* (Position on function selector switch = 4)
- 20 Supply air fan\* with motor and motor controller
- 21 Tappings for measuring pressure drop across the heat exchanger.
- 22 Temperature/air density sensor, supply air.
- 23 Temperature/air density sensor, return air.

## 2.7.3 GOLD SD separate supply air and return air handling units, sizes 05-08

The individual components are each specified below in a simplified and diagrammatical description.



The air handling unit is supplied in the variant as shown in Fig. 4a. This variant can be positioned in several different ways as shown in Fig. 4b.

The air handling unit is shown here as a supply air handling unit. If the unit is used as a return air handling unit, the components marked with an asterisk change function and designation (the components are named according to whether the function is for supply air or return air).

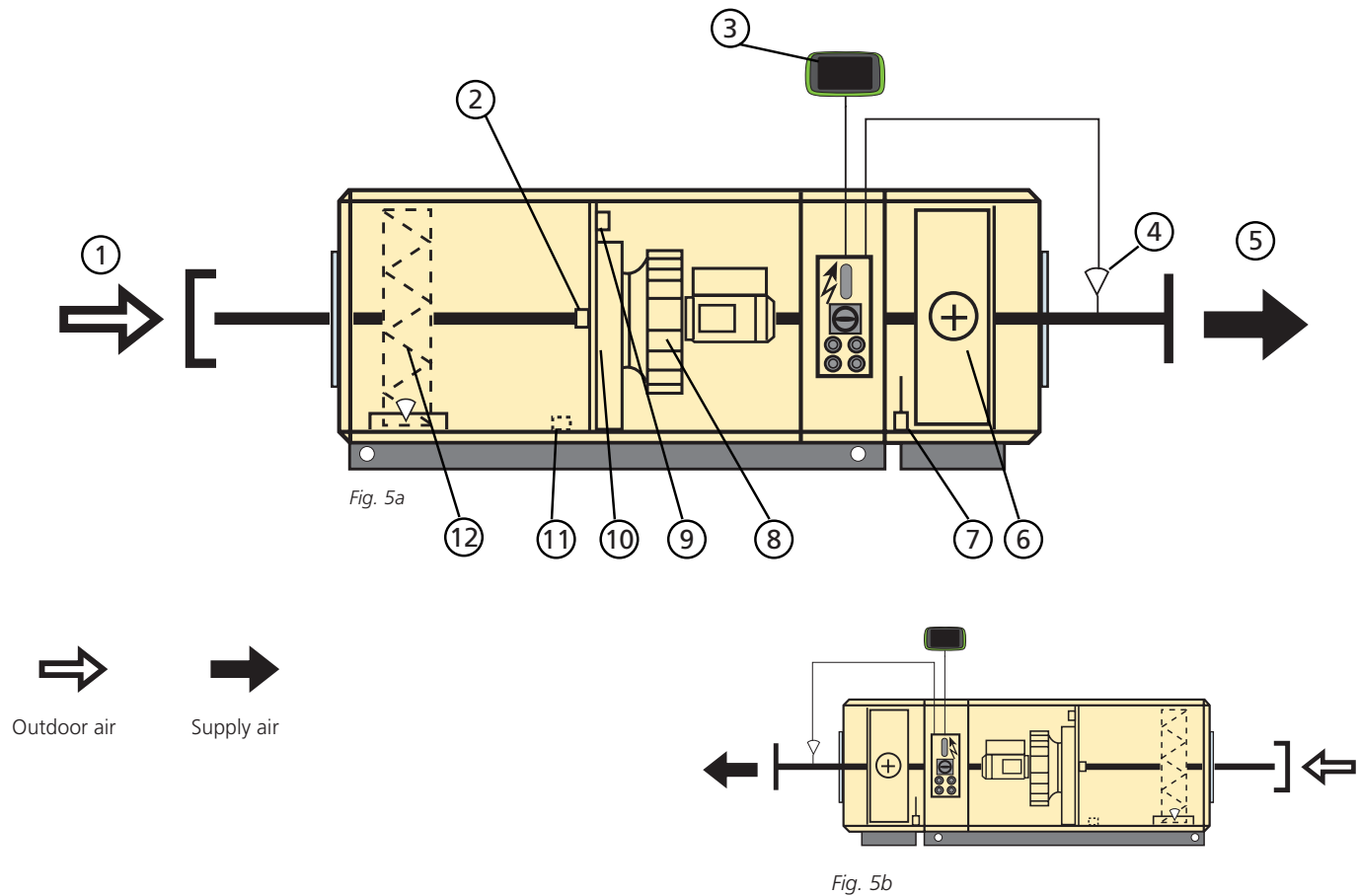
### The arrangement of the components and their designations

- |   |   |    |  |
|---|---|----|--|
| 1 | OUTDOOR AIR*  | 5  | Hand-held terminal   |
|   | (In return air handling units: Return air)  | 6  | Temperature sensor, supply air (to be mounted in supply air duct)  |
| 2 | Pressure sensor, supply air filter*, if applicable (Position on function selector switch = 3) |    | (Not used in return air handling units)  |
| 3 | Temperature sensor, outdoor air/air density sensor, supply air*                               | 7  | SUPPLY AIR*  |
|   | (In return air handling units: Pressure sensor, return air filter)                            |    | (In return air handling units: Exhaust air)  |
| 4 | Pressure sensor, supply air fan*  | 8  | Supply air fan* with motor and motor controller (In return air handling units: Return air fan with motor and motor controller) |
|   | (Position on function selector switch = 2)  | 9  | Electrical equipment cubicle with control unit   |
|   | (In return air handling units: Pressure sensor, return air fan)                               | 10 | Supply air filter, if applicable*  |
|   |   |    | (In return air handling units: Return air filter)  |



## 2.7.4 GOLD SD separate supply air and return air handling units, size 11/12

The individual components are each specified below in a simplified and diagrammatical description.



The air handling units can be ordered in the right-hand version as shown in Fig. 5a or the left-hand version as shown in Fig. 5b. The air handling units can also consist of filter and fan only or fan only.

The air handling unit is shown here as a supply air handling unit. If the unit is used as an return air handling unit, the components marked with an asterisk change function and designation (the components are named according to whether the function is for supply air or return air).

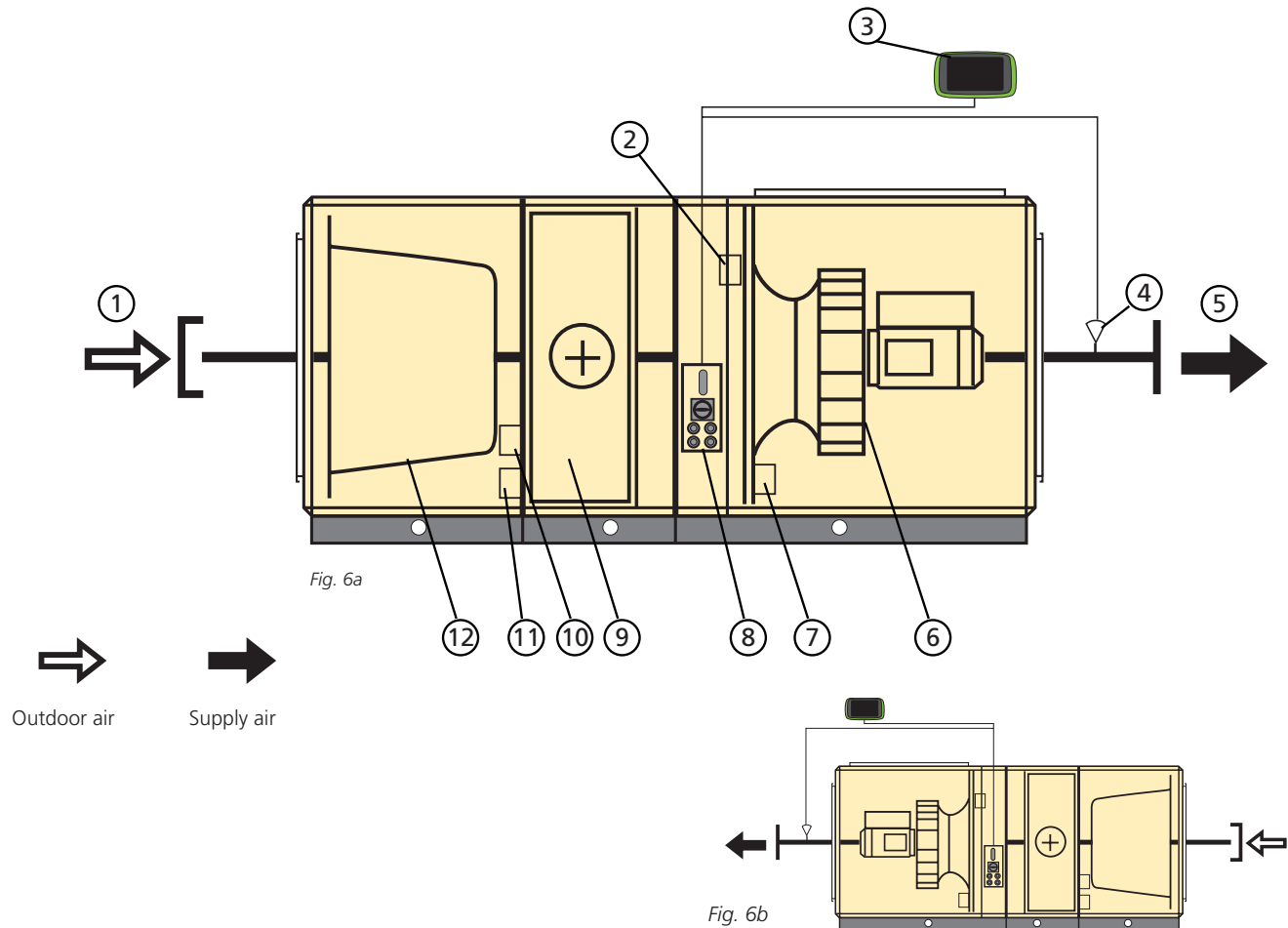
### The arrangement of the components and their designations

- |    |  |  |
|----|--|--|
| 1  | OUTDOOR AIR*   |  |
|    | (In return air units: Return air)  |  |
| 2  | Temperature sensor, outdoor air/air density sensor, supply air*                                |  |
|    | (In return air handling units: Temperature sensor, return air/air density sensor, exhaust air) |  |
| 3  | Hand-held terminal   |  |
| 4  | Temperature sensor, supply air (to be mounted in supply air duct)                              |  |
|    | (Not used in return air handling units)  |  |
| 5  | SUPPLY AIR*  |  |
|    | (In return air handling units: Exhaust air)  |  |
| 6  | Coil heat exchanger, supply air*, if applicable  |  |
|    | (In return air handling units: Coil heat exchanger, return air)                                |  |
| 7  | Temperature sensor, outdoor air*   |  |
|    | (Only in units with coil heat exchanger)   |  |
|    | (In return air handling units: Temperature/relative humidity sensor, return air)               |  |
| 8  | Supply air fan* with motor and motor controller  |  |
|    | (In return air handling units: Return air fan with motor and motor controller)                 |  |
| 9  | Pressure sensor, supply air fan*   |  |
|    | (Position on function selector switch = 2)   |  |
|    | (In return air handling units: Pressure sensor, return air fan)                                |  |
| 10 | Electrical equipment cubicle with control unit   |  |
| 11 | Pressure sensor, supply air filter*, if applicable   |  |
|    | (Position on function selector switch = 3)   |  |
|    | (In return air handling units: Pressure sensor, return air filter)                             |  |
| 12 | Supply air filter*, if applicable  |  |
|    | (In return air handling units: Return air filter)  |  |



## 2.7.5 GOLD SD separate supply air and return air handling units, Sizes 14-100, with coil heat exchangers

The individual components are each specified below in a simplified and diagrammatical description.



The air handling units can be ordered in the right-hand version as shown in Fig. 6a or the left-hand version as shown in Fig. 6b. The air handling units can also consist of filter and fan only or fan only.

The air handling unit is shown here as a supply air handling unit. If the unit is used as an return air handling unit, the components marked with an asterisk change function and designation (the components are named according to whether the function is for supply air or return air).

### The arrangement of the components and their designations

- |    |  |  |
|----|--|--|
| 1  | OUTDOOR AIR*   |  |
|    | (In return air handling units: Return air)   |  |
| 2  | Temperature sensor, outdoor air/air density sensor, supply air*                                |  |
|    | (In return air handling units: Temperature sensor, return air/air density sensor, exhaust air) |  |
| 3  | Hand-held terminal   |  |
| 4  | Temperature sensor, supply air (to be mounted in supply air duct)                              |  |
|    | (Not used in return air handling units)  |  |
| 5  | SUPPLY AIR*  |  |
|    | (In return air handling units: Exhaust air)  |  |
| 6  | Supply air fan* with motor and motor controller  |  |
|    | (In return air handling units: Return air fan with motor and motor controller)                 |  |
| 7  | Pressure sensor, supply air fan*   |  |
|    | (Position on function selector switch = 2)   |  |
|    | (In return air handling units: Pressure sensor, return air fan)                                |  |
| 8  | Electrical equipment cubicle with control unit   |  |
| 9  | Coil heat exchanger, supply air*, if applicable  |  |
|    | (In return air handling units: Coil heat exchanger, return air)                                |  |
| 10 | Temperature sensor, outdoor air*   |  |
|    | (Only in units with coil heat exchanger)   |  |
|    | (In return air handling units: Temperature/relative humidity sensor, return air)               |  |
| 11 | Pressure sensor, supply air filter*  |  |
|    | (Position on function selector switch = 3)   |  |
|    | (In return air units: Pressure sensor, return air filter)                                      |  |
| 12 | Supply air filter*, if applicable  |  |
|    | (In return air handling units: Return air filter)  |  |

## 3. Commissioning

### 3.1 General

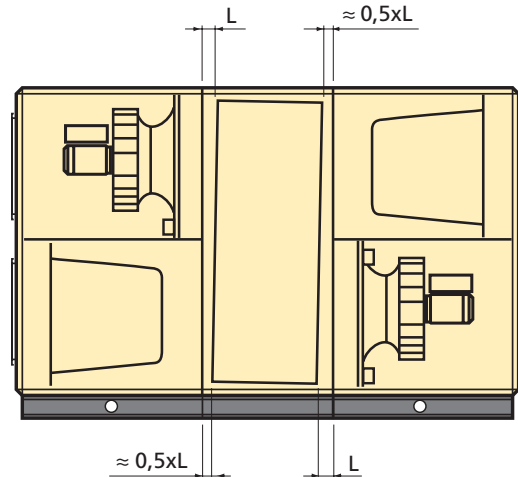
Commissioning sequence:

1. Remove the air handling unit's protective plastic foil.
2. Check that there are no foreign objects inside the unit, duct system or functional sections.
3. Check that rotary heat exchanger rotor (only GOLD RX) rotates easily. On sizes 50-100, the rotary heat exchanger must be angled slightly towards the filter, see drawing below.

*If the inclination needs adjusting, see special instructions for adjusting the inclination of the rotary heat exchanger (05-80).*

*GOLD RX, sizes 50-100: The illustration shows the factory-preset rotor inclination for Fan Arrangement 1. The inclination must always be toward the filter, which means that the inclination for Fan Arrangement 2 is in the other direction.*

4. Turn the safety isolating switch to the ON position (I).
5. Select the appropriate language, if you have not already done so. See Section 5.3.7 or 6.4.7.
6. The air handling unit has a factory setting that makes it ready to operate. See Section 11.2 Commissioning Report.  
However, in many cases, these settings need to be adjusted to suit the current installation.  
If necessary, enter the fan position setting (inspection side), see Section 6.4.10.  
Program the timer (switch clock), operating mode, temperatures, airflows and functions according to the procedures in Sections 4-15.  
Select whether the airflow unit of measurement shall be l/s, m<sup>3</sup>/s, m<sup>3</sup>/h or cfm.  
Fill out the Commissioning Record and save it in the document pocket of the air handling unit.  
In some cases it might be necessary to adjust the P-band and the I-time if the heating regulation system is oscillating or operates sluggishly. This requires entering a special code. Contact your Swegon representative.
7. Activate, if needed, manual or auto operation (Dashboard) or lock the speed of the fans (AIRFLOW ADJUSTMENT image). Adjust the airflow in the duct system and air terminals as described in Section 3.2.
8. Check and adjust, if required, the pressure balance in the air handling unit as described in Section 3.3.
9. Finish off with a filter calibration as described in Section 6.3.



### 3.3 To Adjust the Pressure Balance



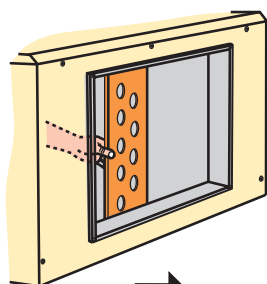
Applicable to air handling units with rotary heat exchanger only.

#### Commissioning plates

##### GOLD RX

##### Air intake viewed from the side

Sizes 05 – 12, 1 – 2 plates    Sizes 14 – 100, 1 – 5 plates



**CLOSE**  
(Insert one or more  
commissioning plates)



**OPEN**  
(Remove commissioning plates)

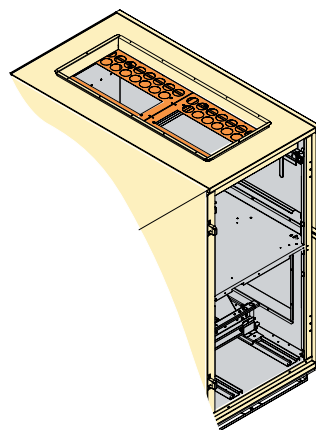
#### 3.3.1 General

There should be a certain degree of negative pressure in the return air section so that the direction of air leakage through the heat exchanger and the function of the purging sector will be correct. This ensures that return air will not be transferred to the supply air.

The pressure balance in the unit should be adjusted when the ventilation system has been fully installed and the airflows discharged from all the air diffusers and registers have been adjusted, and when the supply air and return airflows are as they should be while the air handling unit is operating normally.

##### Air intake viewed from above

Sizes 14 – 30, 2 plates



Secure the commissioning plates to the ceiling with self-tapping screws from inside the AHU.

Adjust the pressure balance by blanking off the holes in the commissioning plate using the plastic plugs supplied with it (reach up and insert plastic plug through the rectangular hole in the commissioning plate).

### 3.3.2. Ensure correct direction of air leakage

The commissioning plates fitted in the return air inlet are used for adjusting the pressure balance in the unit. The commissioning plates are supplied separately and should be fitted in the unit by the fitter when he connects the return air ducting to the air handling unit. See the illustrations on the following pages.

Connect a pressure gauge to the pressure measurement tappings of the air handling unit. The unit has four pressure measurement tappings. The two tappings closest to the return air duct should be used. The blue pressure measurement tapping is used for measuring the negative pressure in the return air section and the white pressure measurement tapping is used for measuring the negative pressure in the supply air section.

On the size 05-08 units, the pressure measurement tappings are in the electrical equipment cubicle/electrical distribution box and on the size 11-100 units they are inside in the centre section of the unit.

Note that both pressure measurement tappings are used for measuring negative pressure.

#### MEASURED VALUES

The negative pressure in the return air section should be higher or the same as the negative pressure in the supply air section.

If the negative pressure in the return air section is the same or up to 0.08 in. WG. greater than the negative pressure in the supply air section, then you've finished this adjustment.

#### Deviations

If the negative pressure in the return air section is less than that in the supply air section, the damper setting must be adjusted as follows:

1. Stop the air handling unit, open the inspection door to access the return air filter. GOLD RX with air intake from above: Blank off an appropriate number of holes in the commissioning plate using the plastic plugs supplied.

GOLD RX with air intake from the side: Slightly push the commissioning plates forward (close them) in the return air intake.

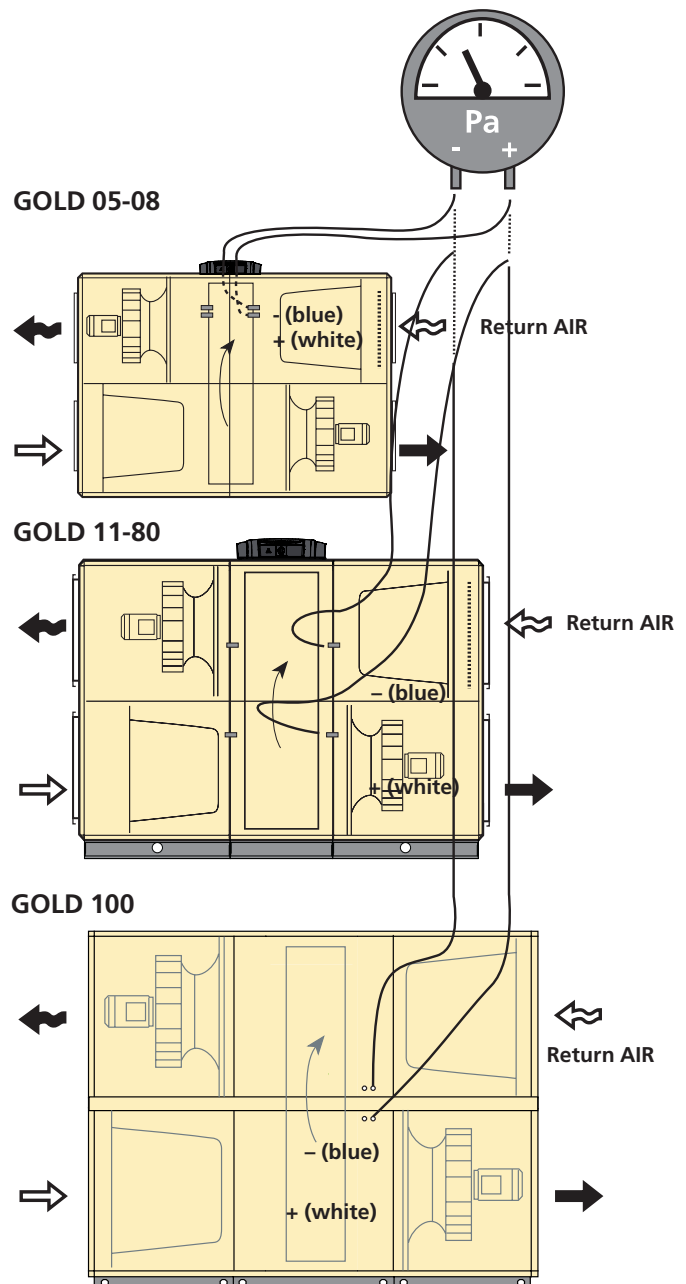
For full face connection (duct accessory in insulated casing): If the commissioning plate(s) is/are completely closed and the sub-atmospheric pressure in the return air section is still less than in the supply air section, blank off an appropriate number of holes in the commissioning plate using the plastic plugs supplied.

3. Close the inspection door and restart the unit.
4. Measure the pressures.

Repeat this procedure until the negative pressure in the return air section is just as high or up to 0.08 in. WG higher than the negative pressure in the supply air section (0–0.08 in. WG).

5. If the negative pressure in the return air section is higher than 0.08 in. WG. compared with the supply air section, although the commissioning plates are completely open, the leakage and purging air flow will be more than necessary, and this will cause the return air fan to consume more power.

### Pressure measurement tappings, direction of air leakage (Right-hand air handling unit)



## 4. IQnavigator Hand-held Terminal and Image Management

### 4.1 IQnavigator Hand-held Terminal

#### 4.1.1 General

The hand-held terminal consists of a 7" capacitive touch screen with a 3 metre long cable for connection to the air handling unit's control circuit card by means of a quick-fit connector.

The hand-held terminal is switched on/off with an on/off button located on the top side of the terminal. If the hand-held terminal is not used for 45 minutes, it switches over to the sleep mode.

See the illustrations below for particulars of the connections, buttons and LEDs.

IQnavigator can be used outdoors, but it must be kept at a weatherproof place.

#### Data:

Operating temperature:	-4 – 120°F (-20 – 50°C)
Height from which it can be dropped without damage:	3 feet



Alarm indicating LED  
Flashes red in event of an alarm

Light sensor

In operation indicating LED  
Green steady glow while unit is operating



**N.B.!** When you disconnect the cable from IQnavigator, squeeze the connector so that you press in the catch inside the connector (hidden under the protective rubber covering).



On/off button:

When the touch screen is at rest or is switched off:  
Brief press of the On/Off button = touch screen awakens or starts up

When the touch screen is on:  
Brief press of the On/Off button = touch screen at rest  
Long press of the On/Off button = Question, "Do you want to power off IQnavigator?" is displayed, press OK, touch screen switches off



SD card  
for future  
function

USB connection  
for future  
function

RJ12 contact for  
future function

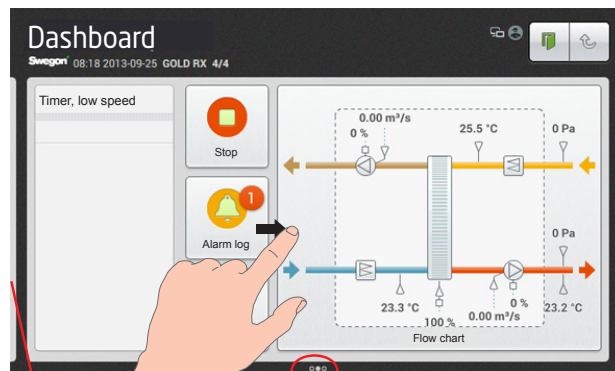
Headphone  
connection  
For future  
function

RJ45 connection for power and communication cable for IQnavigator (PoE) or connection to the network (requires a ABLZ-1-70 net adapter accessory)

Connection for  
external power  
supply (accessory)

## 4.1.2 How to use the micro terminal

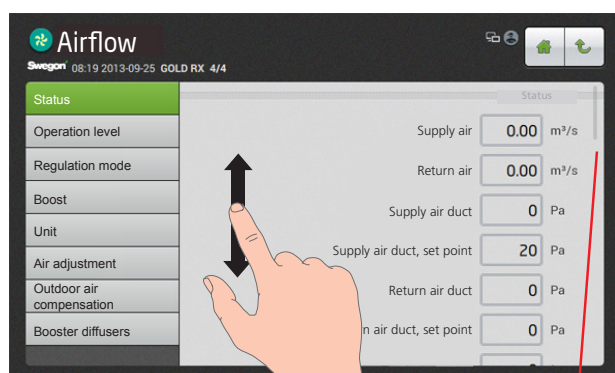
When a light grey surface is displayed to the right and/or to the left on the touch screen and an image indication is displayed at the bottom edge, this indicates that it is possible to navigate to one side or both sides.



Light grey surface

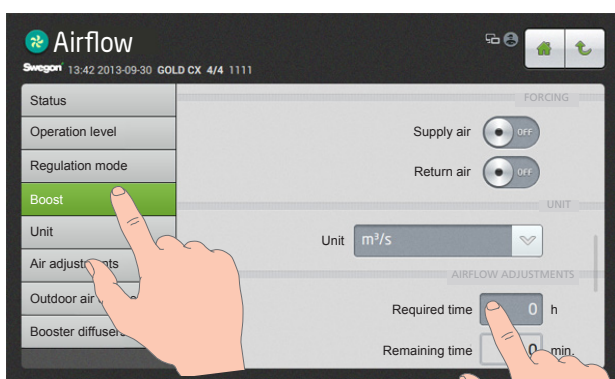
Image indication  
(In this case the screen indicates that it is possible to navigate to both sides)

When a scroll bar is displayed on the touch screen, the screen's content can be scrolled upward or downward.

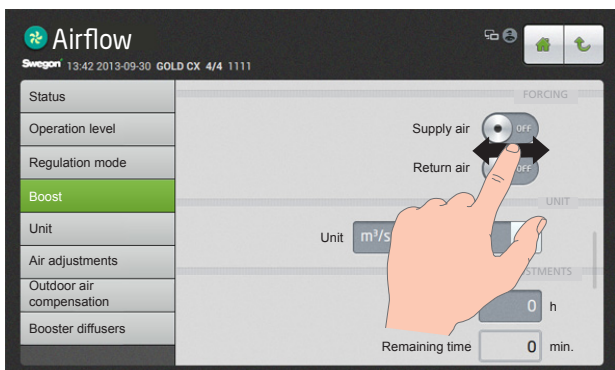


Scroll bar

Press the object you want to open or highlight.



When the On/Off button is displayed on the touch screen, drag or point to it so that it shows the required position.





### 4.1.3 Buttons

Buttons along the upper edge of the touch screen have the following functions:



Press this button to log out.



Press this button to go one step upward in the image tree.



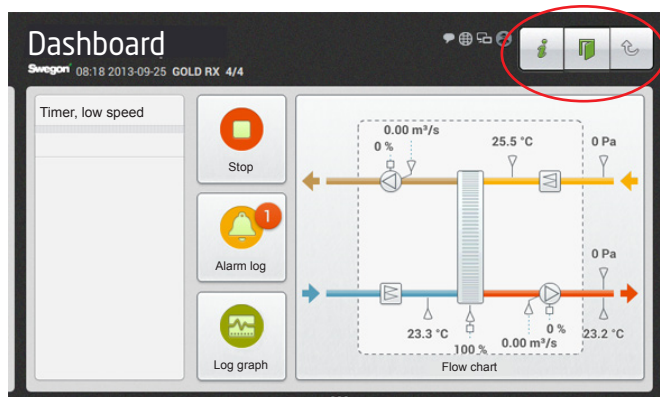
Press this button to close a window and to return to a previously displayed object.



Press this button to return to the dashboard.



Help texts for the current view.



### 4.1.4 Indicator symbols



Hand-held terminal connected.



The hand-held terminal has no connection.



Not logged on



Logged on user (local)



Logged on installation

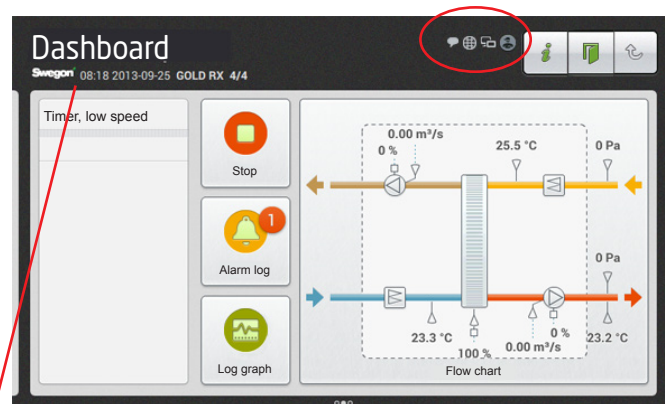


Indicates that the web page is active



Indicates that some communication protocol is activated

The current time/date, type of air handling unit and the name of the plant are displayed along the upper edge of the touch screen. See also Section 6.4.10.1.











## 4.1.5 Keyboard

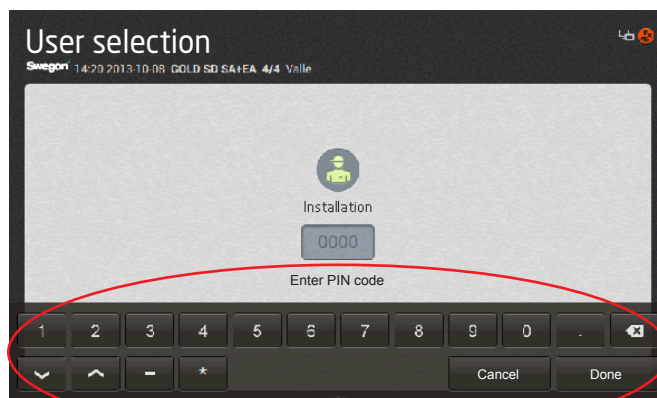
The value that can be changed is highlighted in grey. A keyboard is displayed at the lower edge of the touch screen when you log on and enter settings.

A value you want to change can be highlighted by pressing it on the touch screen.

Then enter the required value and save it by pressing on the Done button.

The function of the buttons:

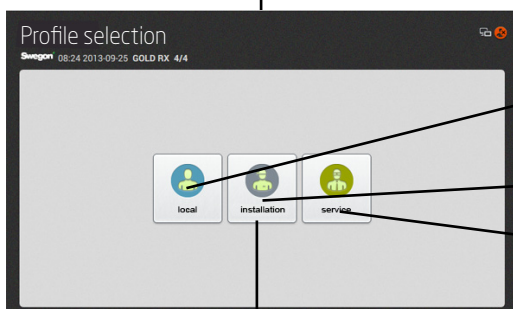
-  Decimal point
-  Deletes previous character
-  Decreases the highlighted value
-  Increases the highlighted value
-  Minus sign.  
Used for writing negative values.
-  Unspecified value.  
Used for the time and schedule function.



## 4.2 Image Management

Start-up image

Select required language (displayed when starting for first time). See Section 4.2.1.

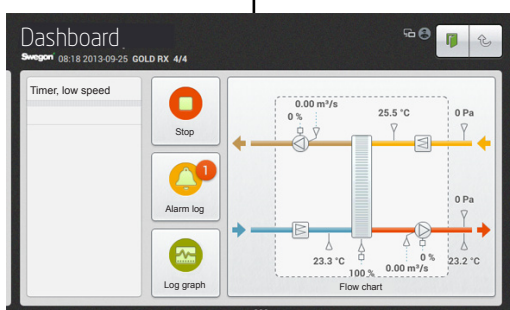


Select the required authorization level.

local (user). See Section 5.  
No access code is required.

installation. See Section 6.  
Code (=1111) is required for access to this image group

service.  
Code and special training are required for access to this image group.



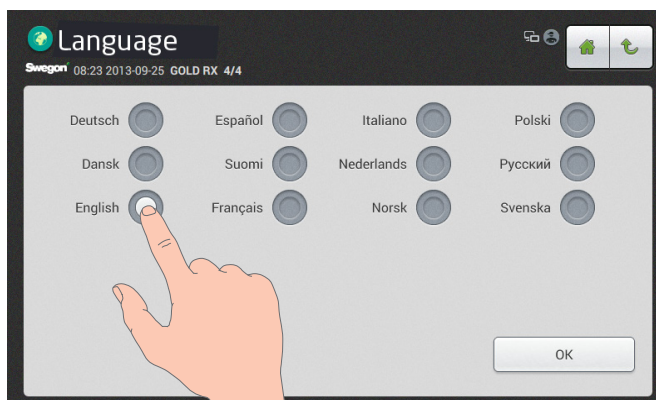
Dashboard. See Section 4.2.2.

N.B.! The appearance of the image varies depending on the type of air handling unit and functions selected.

## 4.2.1 Selection of language

When the air handling unit starts up for the first time, a language selection image is displayed. Select required language and press OK.

If you want to change to a different language later on – or if you've selected the wrong language – you can change the language under Functions in the hand-held terminal. See Section 5.3.7.



## 4.2.2 Dashboard

### 4.2.2.1 General

The dashboard is normally displayed if no other image has been selected.

The touch screen switches to the sleep mode after 45 minutes. To leave the sleep mode, press on the touch screen's On/Off button.

The content in the flow chart changes depending on the selected type of air handling unit and other functions that affect the relevant operating conditions.

### 4.2.2.2 To change the operating mode

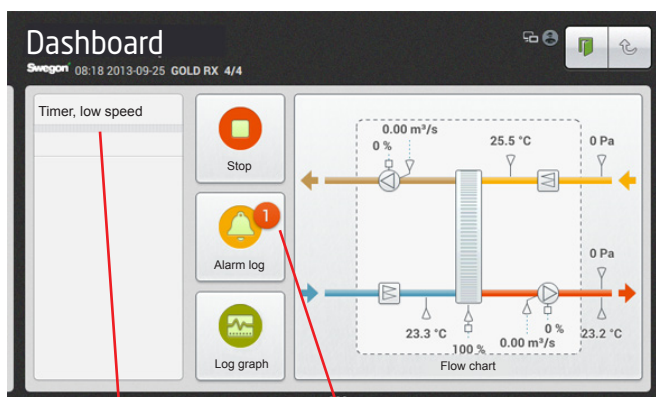
You can start and stop the air handling unit or change over to manual or automatic operation from the dashboard.



The air handling unit should normally be started and stopped from the hand-held terminal; not by switching the safety isolating switch on and off.

### 4.2.2.3 Alarm log

Active alarms, pending alarms and alarm history (50 latest) can be viewed under Alarm log. See also Section 8.



Shows current operation status

Shows number of current alarms

#### 4.2.2.4 Log diagram

An SD card must be fitted into the air handling unit's control circuit card (installed from the factory) in order to make this function possible. Does not apply to the real time log.

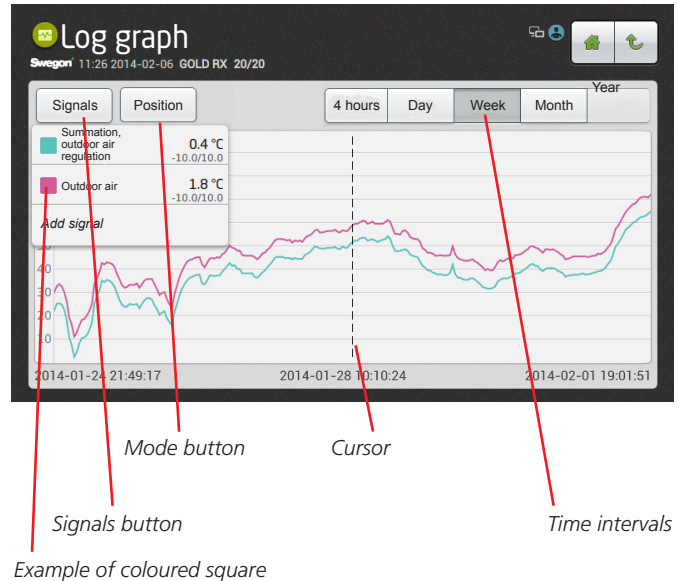
Under "Log diagram", a number of signals can be read in diagram form. Up to four signals can be freely selected and read in the list under the "Signals" button. The log diagram's time interval can be selected as follows: 4 hours, day, week, month or year.

In the list under the "Signals" button, you can also choose to mark one of the signals to display it with a thicker line in the log diagram. This is done by tapping the desired coloured square.

The program automatically adjusts the resolution of the signals. The means that the program adapts the amplitude of the signal to the height of the diagram within the selected time interval.

The Log diagram can be selected in two types: History or Real time, under the "Mode" button.

The cursor of the diagram is fixed and the time line can be moved by scrolling to the right or to the left.



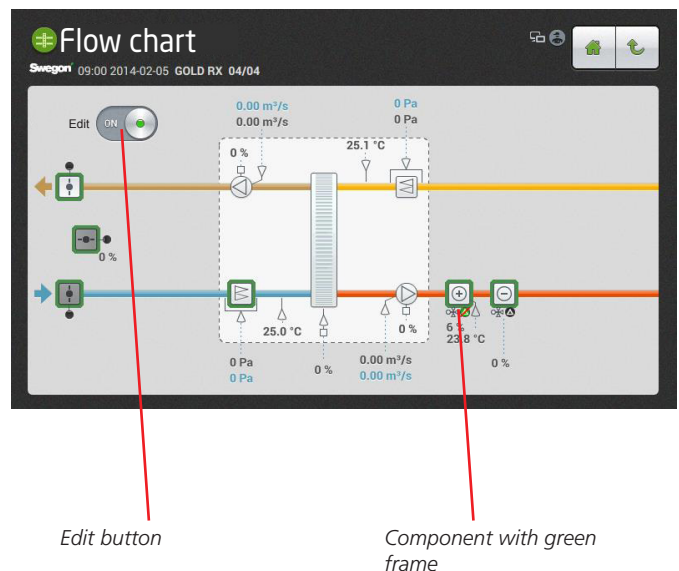
#### 4.2.2.5 Flow chart

The flow chart can be displayed in full screen by tapping the Flow chart heading.

Setting the Edit button to ON makes the flow chart editable.

The positions of all the components marked with a green frame are interchangeable, for example the mutual order between the air heater and the air cooler. Place your finger on the relevant component, drag it to the desired position and lift your finger. The circulation pump of the air heater can be hidden by clicking on the air heater symbol.

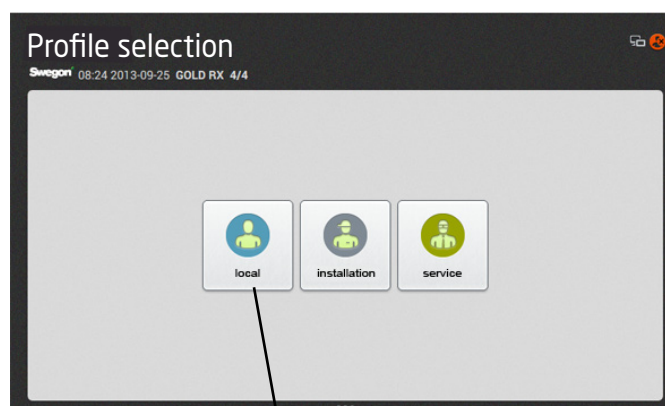
The grey-marked components with green frame are inactive. These can be activated by tapping the desired component.



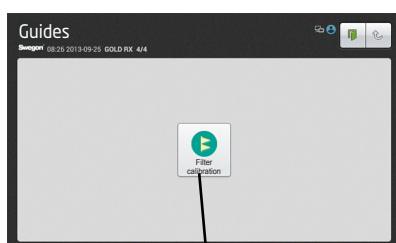
## 5. User (local)

### 5.1 Image Management

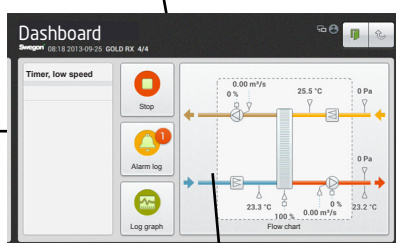
If the touch screen is at rest, press the hand-held terminal's On/Off button.



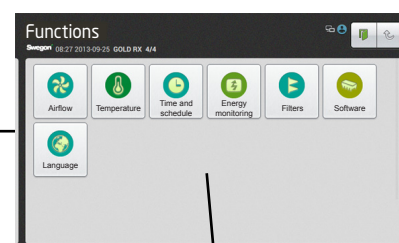
Profile selection. Press on local (user). Does not require entering a code



Filter calibration.  
See Section 5.2



Dashboard.  
See Section 4.2.2



Functions.  
See Section 5.3

## 5.2 Filter Calibration

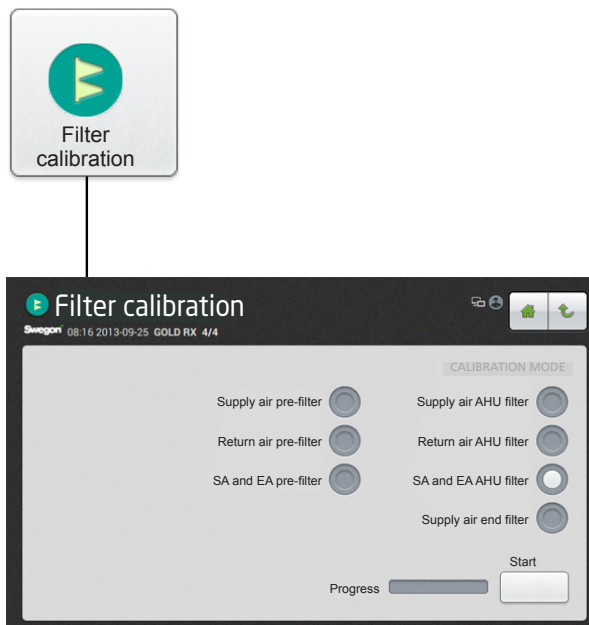
All the filters should be calibrated when the fans are started up for the first time and when the duct system, air terminals and commissioning plates, if required, have been installed and commissioned.

After that every time filters are replaced. Calibration should then be activated for the filter or filters that are new. Relevant filters are the Supply air pre-filter, Return air pre-filter, Supply air AHU filter, Return air AHU filter, SA and EA AHU filter and Supply air end filter.

When filter calibration is activated, the AHU fans operate at preset max. speed (depending on the functionality selected) for about 3 minutes.

After the filters have been calibrated, a pressure rise of up to 0.4 in. WG. is permissible (as the filters arrest impurities) after which an alarm indicating fouled filter is initiated. The alarm limit can be changed under Installation, Functions, Filters.

The filter function must be activated (see Section 6.4.5) in order to make it possible to enable filter calibration and alarm functions of the end filter and pre-filter in GOLD SD supply air and return air handling units.



## 5.3 Functions

### 5.3.1 Airflow

See also Section 6.4.1 in which the functions for airflow described in detail.

#### 5.3.1.1 Status

All the relevant values can be read here. Used for performance checks.

#### 5.3.1.2 Operation level

The functions selected (under Installation) and the min. and max. airflows of each AHU size (see the table below) determine which values can be set.

Values for airflow (l/s, m³/s, m³/h, cfm), pressure (Pa, psi, in. wc.) or input signal strength (%) can be preset depending on the function selected.

##### Low speed

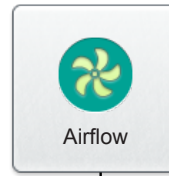
Should always be preset. The value for low speed cannot be higher than the value for high speed. Low speed can be set to 0, which means that the AHU is idle.

##### High Speed

Should always be preset. The value or pressure for high speed cannot be lower than the value for low speed.

##### Max. speed

Should always be preset. Used mainly for filter calibration. While filter calibration is in progress, the max. speed setting should be as high as the ventilation system permits without causing any breakdown. Also used for the pressure regulation, forcing, Heating Boost and Cooling Boost functions. The value for max speed cannot be lower than the value for high speed.



Status

Operation level

Air adjustment

#### Min. /Max. speed

Used for the demand control function (the previous section also applies to max. speed). Preset the lowest and highest permissible flows for each fan. This means that the fans will not operate outside these limits, regardless the load.

#### 5.3.1.3 Air adjustment

The speed of the fans can be locked for up to 72 hours. When the function is activated, the speed is locked at the current speed of operation. This is practical when making airflow adjustments in the duct system and air terminals. The desired period is preset, but can be interrupted earlier by selecting Stop or by changing the time setting to 0.

#### Min./Max. flows

AIRFLOW	MIN. FLOW FOR AIRFLOW REG., ALL VARIANTS <sup>2</sup>		MAX. FLOW, ONE-PIECE AHU ROTARY HEAT EXCH. (RX)		MAX. FLOW, ONE-PIECE AHU PLATE H. EXCH. (PX)		MAX. FLOW, SA AND EA AHU'S (SD)		SMALLEST STEP	
SIZE	CFM	L/s	CFM	L/s	CFM	L/s	CFM	L/s	CFM	L/s
GOLD 05	170	80	1377	650	1377	650	1695	800	15	7
GOLD 07	170	80	1589	750	1589	750	1695	800	15	7
GOLD 08	424	200	2119	1000	2119	1000	2543	1200	15	7
GOLD 11	424	200	2331	1100	2331	1100	2543	1200	15	7
GOLD 12	424	200	2967	1400	2967	1400	3814	1800	15	7
GOLD 14	424	200	3496	1650	3496	1650	3814	1800	15	7
GOLD 20	636	300	4450	2100	4450	2100	5933	2800	15	7
GOLD 25	636	300	5298	2500	5298	2500	5933	2800	15	7
GOLD 30	1060	500	6781	3200	6781	3200	8476	4000	15	7
GOLD 35	1060	500	8264	3900			8476	4000	59	28
GOLD 40	1589	750	10595	5000			12714	6000	59	28
GOLD 50	1271	600	10595	5000			12714	6000	59	28
GOLD 60	2119	1000	13774	6500			16952	8000	59	28
GOLD 70	2119	1000	15893	7500			16952	8000	59	28
GOLD 80	3179	1500	20131	9500			25428	12000	59	28
GOLD 100	3179	1500	23309	11000			25428	12000	59	28

1) When adjusting the flow, round off the value to the nearest settable step.

2) If pressure regulation is used, the airflow can be regulated to zero, however this presupposes a certain static pressure drop in the ducting (approx. 0.2 in. WG).



## 5.3.2 Temperature



Basic functions can be set under Installation and the values can be read and set under User (local).

Therefore see also Section 6.4.2 in which the functions for temperature are described in detail.

**N.B.!** If the entry of new temperature settings involve large changes, you should first stop the AHU before you enter the new settings.

Specific temperatures, such as set points, should be specified in °C or °F, whereas displacements, deviations and differentials should be specified in K (Kelvin).

If only GOLD SD supply air handling units are installed, they require an external room sensor for ERS, ORE and return air regulation.

### 5.3.2.1 Status

All the relevant values can be read here. Used for performance checks.

### 5.3.2.2 Settings

#### ERS Regulation 1

The control unit regulates the ratio between the supply air and return air temperature according to a factory-preset curve.

Settings (see also diagram to the right):

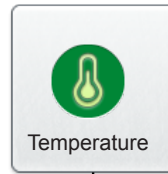
Value	Setting range	Factory setting
Return related supply air-1 step	1 – 4	2
Return related supply air-1 diff	1 – 7 K	3 K
Return related supply air-1 breakpoint (refers to return air temperature)	54 – 79°F	72°F

#### ERS Regulation 2

An individually adjusted curve regulates the ratio between the supply air and the return air temperature. The curve has four adjustable break-points.

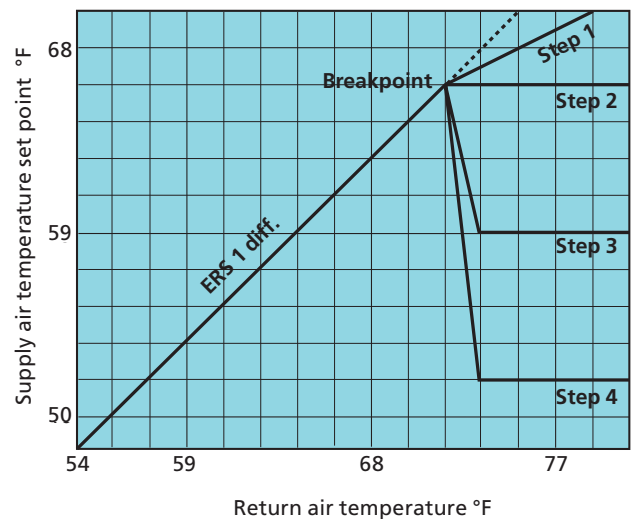
Settings (see also diagram to the right):

Value	Setting range	Factory setting
<i>Return air temperature</i>		
Return related supply air-2 X1	50 – 104°F	59°F
Return related supply air-2 X2	50 – 104°F	68°F
Return related supply air-2 X3	50 – 104°F	72°F
Return related supply air-2 X4	50 – 104°F	72°F
<i>Supply air temperature set point</i>		
Return related supply air-2 Y1	50 – 104°F	68°F
Return related supply air-2 Y2	50 – 104°F	64°F
Return related supply air-2 Y3	50 – 104°F	57°F
Return related supply air-2 Y4	50 – 104°F	54°F

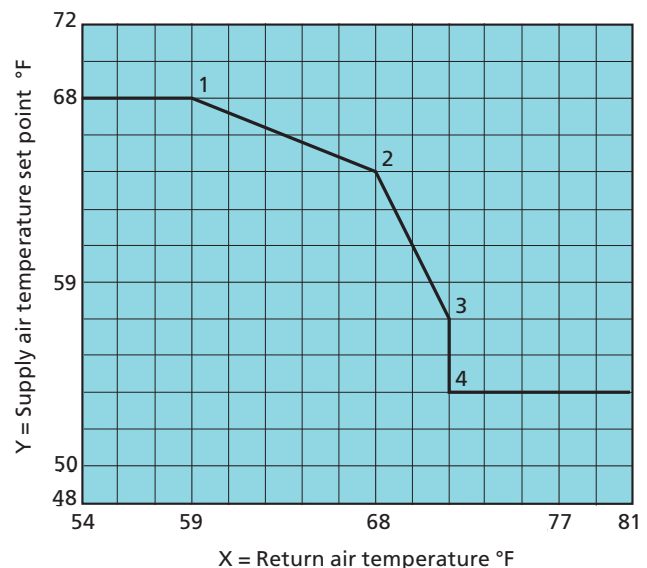


Status

Settings



#### ERS Regulation 2, example



## Supply air regulation

Supply air regulation involves maintaining a constant supply air temperature without consideration to the load in the premises.

Settings:

Value	Setting range	Factory setting
Supply air (temp. set point)	32 – 104°F	70°F

## Return air regulation

Return air regulation involves maintaining a constant temperature in the return air duct (the premises), by regulating the supply air temperature.

Settings:

Value	Setting range	Factory setting
Return air (temp. set point)	32 – 104°F	70°F
Supply air, min.	32 – 86°F	59°F
Supply air, max.	61 – 122°F	82°F

## ORS regulation

An individually adjusted curve regulates the ratio between the outdoor air and the supply air temperature. The curve has four adjustable break-points.

Settings (see also diagram to the right):

Value	Setting range	Factory setting
<i>Outdoor air temperature</i>		
Outdoor related supply air X1	-58 – 122°F	-4°F
Outdoor related supply air X2	-58 – 122°F	14°F
Outdoor related supply air X3	-58 – 122°F	50°F
Outdoor related supply air X4	-58 – 122°F	68°F
<i>Supply air temperature set point</i>		
Outdoor related supply air Y1	50°F	71°F
Outdoor related supply air Y2	50°F	71°F
Outdoor related supply air Y3	50°F	71°F
Outdoor related supply air Y4	50°F	71°F

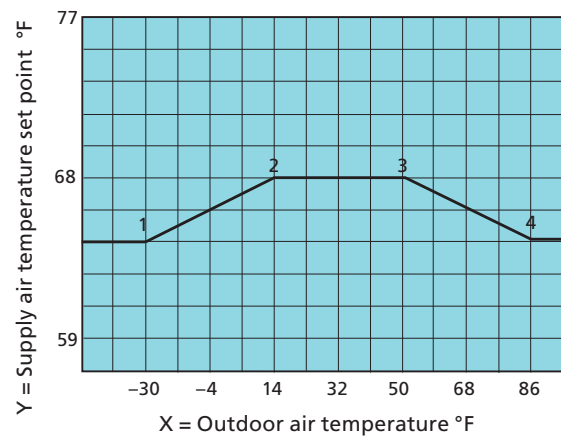
## ORE regulation

An individually adjusted curve regulates the ratio between the outdoor air and the return air temperature. The curve has four adjustable break-points.

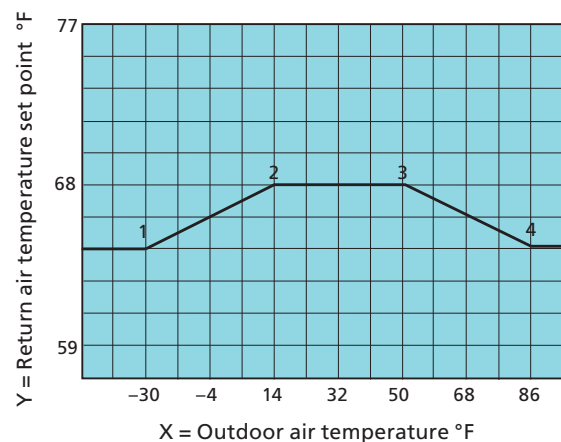
Settings (see also diagram to the right):

Value	Setting range	Factory setting
Supply air, min.	32 – 68°F	60.8°F
Supply air, max.	32 – 112°F	82.4°F
<i>Outdoor air temperature</i>		
Outdoor related return air X1	-58 – 122°F	-4°F
Outdoor related return air X2	-58 – 122°F	14°F
Outdoor related return air X3	-58 – 122°F	50°F
Outdoor related return air X4	-58 – 122°F	68°F
<i>Return air temperature set point</i>		
Outdoor related return air Y1	50°F	71°F
Outdoor related return air Y2	50°F	71°F
Outdoor related return air Y3	50°F	71°F
Outdoor related return air Y4	50°F	71°F

### ORS regulation, example



### ORE regulation, example



### 5.3.2.3 Regulation Mode

The temperature, at which seasonal controlled temperature regulation shall be enabled and disabled respectively, can be preset.

Settings:

If only GOLD SD supply air handling units are installed, they require an external room sensor for ERS, ORE and return air regulation.

Value	Setting range	Factory setting
<i>Seasonal controlled temperature regulation, enabled</i>	-4 – 104°F	32°F
<i>Seasonal controlled temperature regulation, disabled</i>	-4 – 104°F	32°F

### 5.3.3 Time and schedule

The built-in timer enables you to control the AHU's operating mode/time. Certain other oversteering functions such as external timer, communication, etc. affect the preset operating modes.

There are five different operating modes:

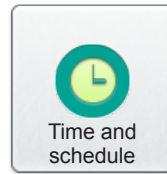
**Total stop** = The AHU is completely stopped, no internal automatic functions or external control commands can start the AHU. Total stop also oversteers manual operation via the hand-held terminal.

**Low speed** = The AHU is running at the preset low speed setting.

**High speed** = The AHU is running at the preset high speed setting.

**Normal Stop** = The AHU has stopped, however all the internal and external automatic functions oversteer the stop.

**Extended Normal Stop** = The AHU has stopped, however all the internal and external automatic functions, with exception of Summer night cool, oversteer the stop.



#### 5.3.3.1 Time and date

The current date and time can be set and adjusted if needed. The timer automatically takes leap years into consideration.

The relevant region and city can be selected, summer time/winter time change-over will then be managed automatically.

Time source can be set to manual or via SNTP (requires connection to network) and BACnet. The time format and date format can be set.

#### Time and date

#### 5.3.3.2 Schedule settings

The relevant operating mode can be read under Schedule settings. Here you can also set a preselected operating mode, in which the air handling unit always operates during non-programmed time, under Day schedule and Exceptions schedule. This setting (start and stop date not activated) is used most often and covers the majority of needs.

When the start and stop date is activated, this means that during the preset period (date) preset time applies during the day schedule and the exceptions schedule, and at all other times the AHU runs in the preselected operating mode.

Settings:

#### Schedule settings

Value	Setting range	Factory settings
Preselected operating mode	Total stop/Low speed/High speed/Normal Stop/ Extended Normal Stop	Low speed
Start date	Active/Inactive	Inactive
Stop date	Year/Month/Day	
Stop date	Active/Inactive	Inactive
Stop date	Year/Month/Day	

### 5.3.3.3 Day schedule

Times and days can be set when the air handling unit is to run in the high speed mode, low speed mode or be switched off.

For each day (Monday - Sunday), six different events can be set to occur at a given point in time. Here, it is also possible to set six different events for two exceptions under Ex1 and Ex2. The provisions for these exceptions can then be set under Exceptions schedule, Calendar 1 and Calendar 2.

Note that the preset event will not be carried over to the next 24-hour period. If no event is set from 00.00 hours of the next 24-hour period, the AHU will operate in the preselected operating mode preset under Schedule settings.

Settings:

Value	Setting range	Factory settings
Day	Mon/Tues/Wed/Thurs/Fri/Sat/Sun/Ex1/Ex2	
Time	00:00-23:59	00:00
Action	Inactive/Total stop/Low speed/High speed/Normal Stop/ Extended Normal Stop/Ignore	Inactive

### Day schedule

### 5.3.3.4 Exceptions schedule

Possible exceptions (Ex1 and Ex2), previously preset in the day schedule can be set in the Exceptions schedule. Here you can determine on which date or weekday the relevant exception shall apply. If you select Calendar 1 or Calendar 2, which is the most often the case, these can be set according to particulars in the next section.

Settings:

Value	Setting range	Factory settings
<i>Exceptions schedule 1/2</i>		
Exceptions method	Inactive/Date/Date range/Weekday/Calendar 1/Calendar 2	Calendar 1/2
<i>Date</i>		
Start date	Year/Month/Day	
Start weekday	Each day/Monday/Tuesday/Wednesday/Thursday/Friday/Saturday/Sunday	Each day
<i>Date range</i>		
Start date	Year/Month/Day	
Start weekday	Each day/Monday/Tuesday/Wednesday/Thursday/Friday/Saturday/Sunday	Each day
Stop date	Year/Month/Day	
Stop weekday	Each day/Monday/Tuesday/Wednesday/Thursday/Friday/Saturday/Sunday	Each day
<i>Weekday</i>		
Start date	Mon 1-12/Odd/Even/Each Day 1-7/8-14/15-21/22-28/29-31/Latest 7 days/Each day	
Start weekday	Each day/Monday/Tuesday/Wednesday/Thursday/Friday/saturday/Sunday	Each day
Calendar 1	See next chapter	
Calendar 2	See next chapter	

### Exceptions schedule

### 5.3.3.5 Calendar 1 and 2

The specific days when Exceptions schedule 1 or 2 shall apply can be set in Calendars 1 and 2. On condition that Calendar 1 or 2 is selected, see previous section. In other cases, these settings will have no effect.

There is a total of ten possible settings under each calendar and various functions can be selected for each.

Settings (For Calendar 1 and Calendar 2 respectively):

Value	Setting range	Factory setting
Function 1-10	Inactive/Date/Date range/Weekday	Inactive
<i>Date</i>		
Start date	Year/Month/Day	
Start weekday	Each day/Monday/Tuesday/Wednesday/Thursday/Friday/Saturday/Sunday	Each day
<i>Date range</i>		
Start date	Year/Month/Day	
Stop date	Year/Month/Day	
<i>Weekday</i>		
Start date	Month 1-12/Odd/Even/Each Day 1-7/8-14/15-21/22-28/29-31/Latest 7 days/Each day	
Start weekday	Each day/Monday/Tuesday/Wednesday/Thursday/Friday/Saturday/Sunday	Each day

#### Calendar 1

#### Calendar 2

### 5.3.3.6 Prolonged operation

The control unit inputs for external low speed (terminals 14-15) and external high speed (terminals 16-17) respectively, can be supplemented with prolonged operation. They can be used for overtime running activated by a push button, for example.

The required time in hours and minutes can be set as follows.

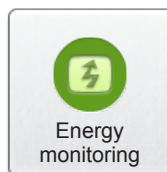
Settings:

Value	Setting range	Factory setting
Ext. low speed	0:00 - 23:59	0:00
Ext. high speed	0:00 - 23:59 (hrs.:min.)	0:00 (hrs.:min.)

#### Prolonged operation

### 5.3.4 Energy monitoring

Status of the power consumed by fans and other AHU components can be viewed here. SFP status for the AHU fans and the efficiency on heat transfer of the rotary heat exchanger can also be viewed.

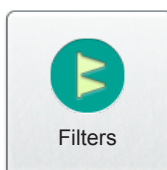


### 5.3.5 Filters

Basic functions can be set under Installation and the values can be read and set under User (local).

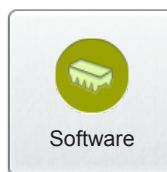
The filter status and the current alarm limit status for filters with activated monitoring can be viewed here. Relevant filters are the Supply air prefilter, Return air pre-filter, Supply air AHU filter, Return air AHU filter, SA and EA AHU filter and Supply air end filter.

Filter calibration can be manually activated for each filter. For more detailed information, see Section 5.2.



### 5.3.6 Software

The relevant program versions for the IQlogic control unit, IQnavigator hand-held terminal and input units on the communication bus can be viewed and updated from the SD circuit card inserted in the IQlogic control unit (this can take a few minutes).

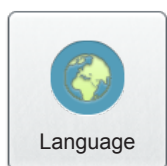


### 5.3.7 Language

The language desired can be set here. The appropriate language is normally selected the first time the AHU is started up. However, the language setting can be changed at any time.

Settings:

Value	Setting range	Factory setting
Language	Available languages are displayed	English

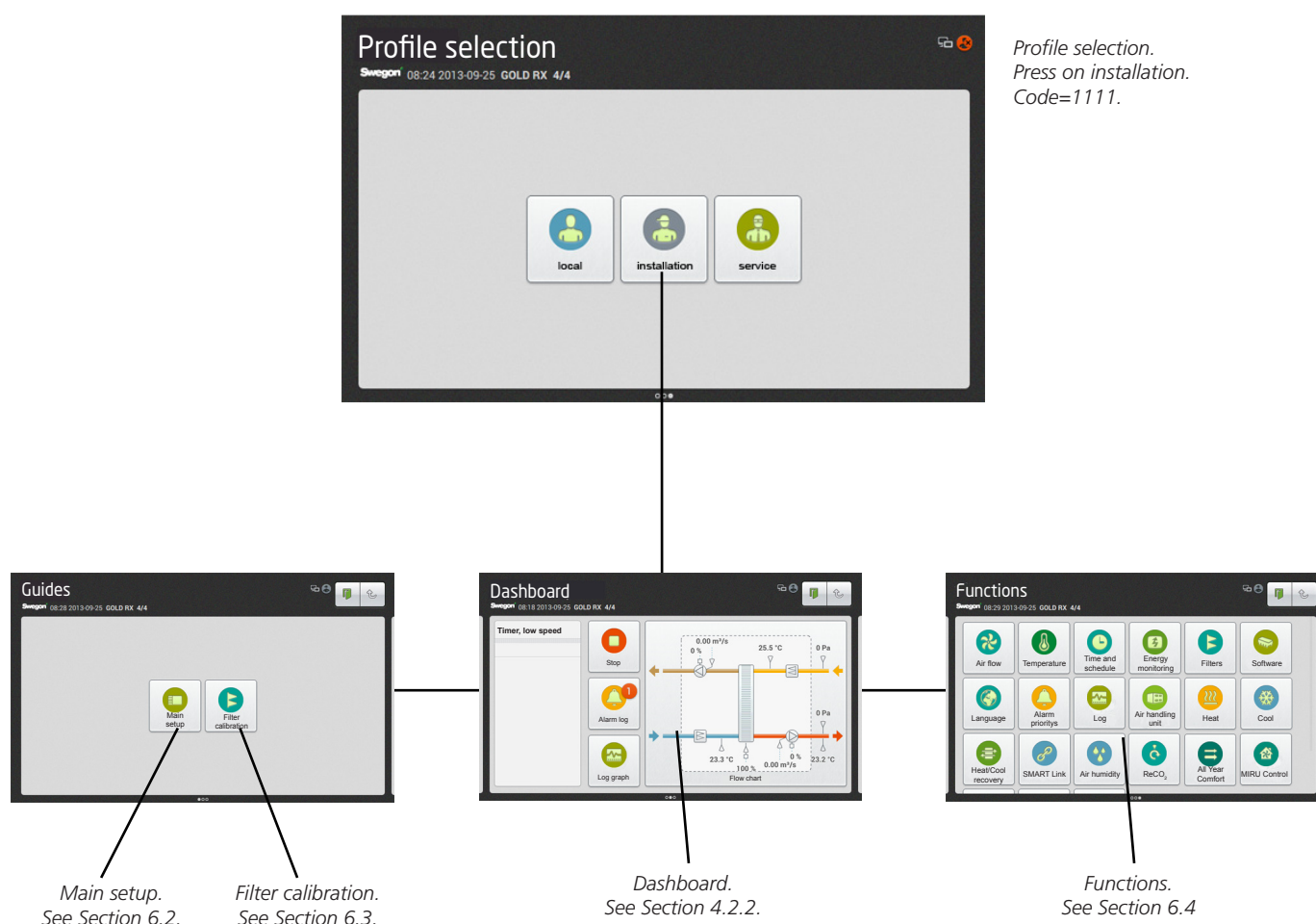




## 6. Installation

### 6.1 Image Management

If the touch screen is at rest, press the hand-held terminal's On/Off button.



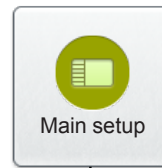
## 6.2 Main Setup

Main setup can be selected when installing the AHU and is an aid for configuring and starting up the AHU.

Time and date, air flow unit, airflow regulation mode, airflow operation level, temperature regulation, temperature settings and fan position settings can be entered here.

For more detailed information, see the relevant function below.

See Section 6.4.3.1  
See Sections 6.4.1.6 and 6.4.2.4  
See Section 6.4.1.3  
See Section 6.4.1.2  
See Section 6.4.2.3  
See Section 6.4.2.2  
See Section 6.4.10.1



Main setup



## 6.3 Filter Calibration

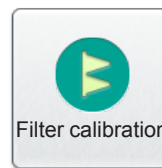
All the filters should be calibrated when the fans are started up for the first time and when the duct system, air terminals and commissioning plates, if required, have been installed and commissioned.

After that every time filters are replaced. Calibration should then be activated for the filter or filters that are new. Relevant filters are the Supply air prefilter, Return air pre-filter, Supply air AHU filter, Return air AHU filter, SA and EA AHU filter and Supply air end filter.

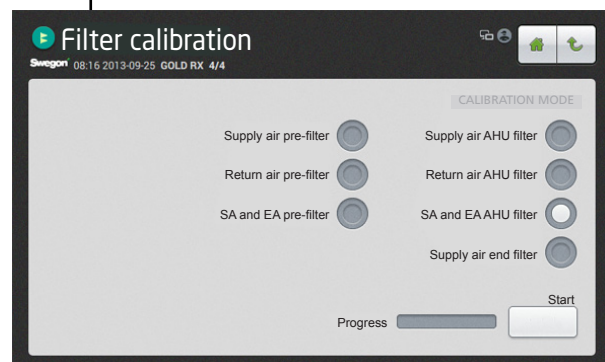
When filter calibration is activated, the air handling unit runs at the preset max. speed (depending on the functionality selected) for about 70 seconds.

After the filters have been calibrated, a pressure rise of up to 100 Pa is permissible (as the filters arrest impurities) after which an alarm indicating fouled filter is initiated. The alarm limit can be changed under Installation, Functions, Filters.

The filter function must be activated (see Section 6.4.5) in order to make it possible to enable filter calibration and alarm functions of the end filter and pre-filter in GOLD SD supply air and return air handling units.



Filter calibration



## 6.4 Functions

### 6.4.1 Airflow

#### 6.4.1.1 Status

All the relevant values can be read here. Used for performance checks.

#### 6.4.1.2 Operation level

The functions selected and the min. and max. airflows of each AHU size (see the table below) determine which values can be set.

Depending on the function selected, flows can be set as follows (l/s, m³/s, m³/h, cfm), pressure (Pa, psi, in. wc.) or input signal strength (%).

##### Low speed

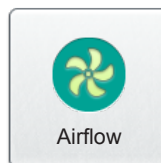
Should always be preset. The value for low speed cannot be higher than the value for high speed. Low speed can be set to 0, which means that the AHU is idle.

##### High Speed

Should always be preset. The value or pressure for high speed cannot be lower than the value for low speed.

##### Max. speed

Should always be preset. Used mainly for filter calibration. While filter calibration is in progress, the max. speed setting should be as high as the ventilation system permits without causing any breakdown. Also used



Status

Operation level

for the pressure regulation, boosting, Heating Boost and Cooling Boost functions. The value for max speed cannot be lower than the value for high speed.

##### Min. /Max. speed

Used for the demand control function (the previous section also applies to max. speed). Preset the lowest and highest permissible flows for each fan. This means that the fans will not operate outside these limits, regardless the load.

#### Min./Max. flows

AIRFLOW  SIZE	MIN. FLOW FOR AIRFLOW REG., ALL VARIANTS <sup>2</sup>		MAX. FLOW, ONE-PIECE AHU ROTARY HEAT EXCH. (RX)		MAX. FLOW, ONE-PIECE AHU PLATE H. EXCH. (PX)		MAX. FLOW, SA AND EA AHU'S (SD)		SMALLEST STEP	
	CFM	L/s	CFM	L/s	CFM	L/s	CFM	L/s	CFM	L/s
GOLD 05	170	80	1377	650	1377	650	1695	800	15	7
GOLD 07	170	80	1589	750	1589	750	1695	800	15	7
GOLD 08	424	200	2119	1000	2119	1000	2543	1200	15	7
GOLD 11	424	200	2331	1100	2331	1100	2543	1200	15	7
GOLD 12	424	200	2967	1400	2967	1400	3814	1800	15	7
GOLD 14	424	200	3496	1650	3496	1650	3814	1800	15	7
GOLD 20	636	300	4450	2100	4450	2100	5933	2800	15	7
GOLD 25	636	300	5298	2500	5298	2500	5933	2800	15	7
GOLD 30	1060	500	6781	3200	6781	3200	8476	4000	15	7
GOLD 35	1060	500	8264	3900			8476	4000	59	28
GOLD 40	1589	750	10595	5000			12714	6000	59	28
GOLD 50	1271	600	10595	5000			12714	6000	59	28
GOLD 60	2119	1000	13774	6500			16952	8000	59	28
GOLD 70	2119	1000	15893	7500			16952	8000	59	28
GOLD 80	3179	1500	20131	9500			25428	12000	59	28
GOLD 100	3179	1500	23309	11000			25428	12000	59	28

1) When adjusting the flow, round off the value to the nearest settable step.

2) If pressure regulation is used, the airflow can be regulated to zero, however this presupposes a certain static pressure drop in the ducting (approx. 50 Pa).

### 6.4.1.3 Regulation mode

The regulation mode can be selected individually for the supply air or the return air respectively.

#### Regulation mode

#### Airflow

Flow regulation involves operating the air handling unit to keep the preset airflow constant. The speed of the fans is automatically regulated to provide correct airflow even if the filters begin to become clogged, if air diffusers become blocked, etc.

A constant airflow is advantageous, since the airflow is always at the level preset from the beginning.

It should however be noted that everything that increases the pressure drop in the ventilation system, such as the blocking of air devices and dust accumulating in the filters, causes the fans to run at a higher speed. This causes higher power consumption and may also cause discomfort to the occupants such as excessive sound.

#### Duct pressure

The airflow automatically varies to provide constant pressure in the ducting. This type of regulation is therefore also called VAV Regulation (Variable Air Volume).

Pressure regulation is used when e.g. damper operations increase the air volume in sections of the ventilation system.

The duct pressure is measured by an external in-duct pressure sensor which is connected to the control unit's BUS communication. The set point required (separate for low speed and high speed) is preset in Pa.

The function can be limited so that the fan speed will not exceed the preset max. values.

#### Demand

The airflow required is regulated in response to 0-10 V input signals from an external sensor, such as a carbon dioxide sensor, connected to control unit terminals 18-19. The required set point is set as a percentage of the input signal or in ppm.

The function can be limited so that the flow will not be higher or lower than the preset max. and min. values respectively.

#### Slave

The flow is constantly regulated to the same value as the other fan. If one fan is pressure-controlled or demand-controlled, the other one can be controlled as a slave to generate the same airflow.

The performance of the slave fan can be restricted if its maximum flow is set to a lower airflow rate.

It is not possible to control both fans as slaves. If you select one fan to operate as a slave, you lose the option to select the other fan as a slave.

Settings:

#### Value

Supply air

Return air

#### Settings

Airflow  
Duct pressure  
Demand  
Slave  
Airflow  
Duct pressure  
Demand  
Slave

### 6.4.1.4 Optimize

The Optimize function optimises the air handling unit's airflow for the connected WISE system; see separate documentation for the WISE.

The function requires that the duct pressure setting is preset regulation type.

Settings:

Value	Setting range	Factory setting
Optimize	On/Off	Off

Optimize

### 6.4.1.5 Set point displacement

The airflow is regulated between two flows in response to an 0-10 V DC input signal from an external signal, for example a potentiometer. The TBIQ-3-2 IQlogic+ module accessory is required.

Set point displacement can be used e.g. in assembly halls, where a higher rate of air change is needed under full-load conditions.

The function is activated only when the AHU fans operate at high speed.

On a 0-10 V DC signal, the fans are gradually accelerated from the AHU's high speed setting to its max. speed setting. On a max. input 10 V DC signal, the AHU fans operate at max. speed.

The function must be activated separately for the supply air fan and for the return air fan.

Settings:

Value	Setting range	Factory setting
Supply air	On/Off	Off
Return air	On/Off	Off

Set point displacement

### 6.4.1.6 Unit

The required unit of airflow and unit of pressure can be set.

Settings:

Value	Setting range	Factory settings
Unit of airflow	l/s m <sup>3</sup> /s m <sup>3</sup> /h cfm	m <sup>3</sup> /s
Unit of pressure	Pa psi in.wc	Pa

Unit

### 6.4.1.7 Air adjustment

The speed of the fans can be locked for up to 72 hours. When the function is activated, the speed is locked at the current speed of operation. This is practical when making airflow adjustments in the duct system and air terminals. The desired period is preset, but can be interrupted earlier by selecting Stop or by changing the time setting to 0.

Air adjustment

### 6.4.1.8 Outdoor air compensation

Outdoor air compensation of the airflow can be activated if you want to change the airflow for specific outdoor air temperatures. An individually adjusted curve regulates the ratio between the airflow and the outdoor air temperature. The curve has four adjustable breakpoints.

If the function is selected solely for low speed or high speed operation, the curve will regulate only one of these. The airflow for the operating case that has not been selected will then be according to the preset set point for airflow/duct pressure.

In the flow regulation mode, the current set point for airflow is changed. When pressure regulation is selected, the current set point for pressure is changed. The function has no effect if the airflow is demand-controlled.

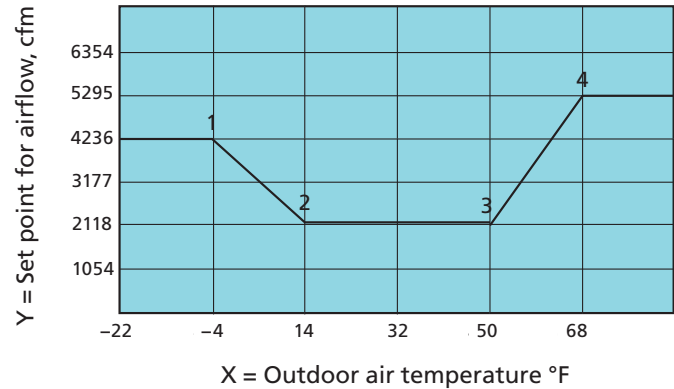
The airflow change is expressed in the preset airflow unit and pressure in Pa.

Settings:

Value	Setting range	Factory setting
Outdoor air compensation mode	Inactive/Low speed/High speed/Low speed and High speed	Inactive
X1, breakpoint, outdoor air temp.	-58 – 122°F	-4°F
X2, breakpoint, outdoor air temp.	-58 – 122°F	-14°F
X3, breakpoint, outdoor air temp.	-58 – 122°F	68°F
X4, breakpoint, outdoor air temp.	-58 – 122°F	68°F
<i>Supply air, flow</i>		
Y1, breakpoint, supply air	<sup>1)</sup>	25% of max. airflow for air handling unit
Y2, breakpoint, supply air	<sup>1)</sup>	25% of max. airflow for air handling unit
Y3, breakpoint, supply air	<sup>1)</sup>	25% of max. airflow for air handling unit
Y4, breakpoint, supply air	<sup>1)</sup>	25% of max. airflow for air handling unit
<i>Return air, flow</i>		
Y1, breakpoint, return air	<sup>1)</sup>	25% of max. airflow for air handling unit
Y2, breakpoint, return air	<sup>1)</sup>	25% of max. airflow for air handling unit
Y3, breakpoint, return air	<sup>1)</sup>	25% of max. airflow for air handling unit
Y4, breakpoint, return air	<sup>1)</sup>	25% of max. airflow for air handling unit
<i>Supply air, pressure</i>		
Y1, breakpoint, supply air	0.08 - 3 in W.G.	0.4 in W.G.
Y2, breakpoint, supply air	0.08 - 3 in W.G.	0.4 in W.G.
Y3, breakpoint, supply air	0.08 - 3 in W.G.	0.4 in W.G.
Y4, breakpoint, supply air	0.08 - 3 in W.G.	0.4 in W.G.
<i>Return air, pressure</i>		
Y1, breakpoint, return air	0.08 - 3 in W.G.	0.4 in W.G.
Y2, breakpoint, return air	0.08 - 3 in W.G.	0.4 in W.G.
Y3, breakpoint, return air	0.08 - 3 in W.G.	0.4 in W.G.
Y4, breakpoint, return air	0.08 - 3 in W.G.	0.4 in W.G.

<sup>1)</sup> See table for min./max. flows in Section 6.4.1.2

### Outdoor air compensation



Example:

*Flow regulated air handling unit* The same principle can be applied to a pressure regulated AHU, however this will cause a reduction in pressure in W.G.

If the outdoor air temperature is under -4°F (X1), the flow set point will be a constant 4238 cfm (Y1).

If the outdoor air temperature is between -4°F (X1) and 50°F (X2), the airflow will decrease from 4238 cfm (Y1) to 2119 cfm (Y2) as shown in the curve.

If the outdoor air temperature is between -14°F (X2) and 10 °C (X3), the flow set point will be a constant 2119 cfm (Y2 and Y3).

If the outdoor air temperature is between 50°F (X3) and 68°F (X4), the airflow will increase from 2119 cfm (Y3) to 5297 cfm (Y4) as shown in the curve.

If the outdoor air temperature is over 68°F (X4), the flow set point will be a constant 5297 cfm.

### 6.4.1.9 Booster diffusers

The function for Booster diffusers is used for controlling the air damper inside the air terminal and can be activated for heating or cooling. Heating or cooling is modulated depending on whether the supply air is warmer or colder than the room/return air. An indicator is displayed if heating or cooling is active.

The IQlogic<sup>®</sup> module, ABIQ-3-2, accessory is required.

Value	Setting range	Factory setting
Booster diffusers	On/Off	Off

### Booster diffusers

### 6.4.1.10 Automatic operation

#### Density-corrected airflow

The density of the air is different at different temperatures. This means that a specific volume of air changes at various air densities. The AHU automatically corrects this, so that correct air volume is always obtained.

The control equipment always displays the corrected airflow.

#### Pressure balance corrected return airflow

The return airflow is corrected by continuously measuring the pressure balance across the rotary heat exchanger. The return airflow is guaranteed with consideration given to the air purging and leakage air flow.



## 6.4.2 Temperature

**N.B.!** If the entry of new temperature settings involve large changes, you should first stop the AHU before you enter the new settings.

Specific temperatures, such as set points, should be specified in °C or °F, whereas displacements, deviations and differentials should be specified in K (Kelvin).

If only GOLD SD supply air handling units are installed, they require an external room sensor for ERS, ORE and return air regulation.

### 6.4.2.1 Status

All the relevant values can be read here. Used for performance checks.

### 6.4.2.2 Settings

#### ERS Regulation 1

ERS regulation refers to Return air temperature-Related Supply air temperature regulation. This means that the temperature of the supply air is regulated in relation to the temperature of the return air.

Under normal circumstances, the supply air temperature is regulated to be a few degrees lower than the return air temperature. In this way, the heat exchanger will provide optimal performance, and this means excellent operating economy. ERS control is suitable for use when there is surplus heat in the premises generated e.g. by machinery, lighting or people, and the premises have supply air diffusers suitable for discharging air below room temperature.

#### ERS Regulation 1

The control unit regulates the ratio between the supply air and return air temperature according to a factory-preset curve.

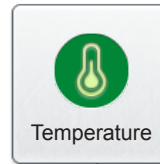
See the diagram to the right.

The step in the curve, breakpoint and differential can be changed.

Settings:

Value	Setting range	Factory setting
Return related supply air-1 step	1 – 4	2
Return related supply air-1 diff	1–7 K	3 K
Return related supply air-1 breakpoint (refers to return air temperature)	54 – 79°F	72°F

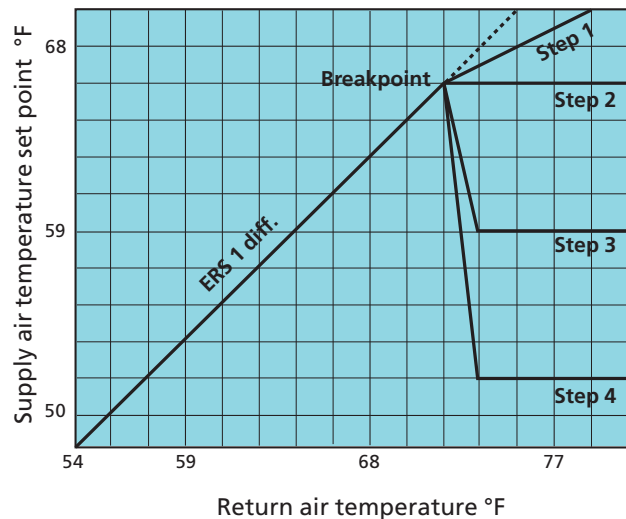
The setting range for breakpoint and deviation are limited by the min. and max. settings.



Status

Settings

#### ERS Regulation 1



Factory setting means:

If the return air temperature is below 72°F (breakpoint), the supply air temperature set point will be automatically regulated to be 3 K (diff.) lower.

If the return air temperature is above 72°F, the supply air temperature set point will constantly be 66°F (step 2).

## ERS Regulation 2

Used if the factory preset performance curve in the ERS Control 1 function does not provide the results desired to meet special needs and conditions. Depending on which setting have been entered, the installation of an air heater for reheating may be required.

An individually adjusted curve regulates the ratio between the supply air and the return air temperature. The curve has four adjustable break-points..

See the diagram to the right.

Settings:

Value	Setting range	Factory setting
<i>Return air temperature</i>		
Return related supply air-2 X1	50 - 104°F	59°F
Return related supply air-2 X2	50 - 104°F	68°F
Return related supply air-2 X3	50 - 104°F	72°F
Return related supply air-2 X4	50 - 104°F	72°F
<i>Supply air temperature set point</i>		
Return related supply air-2 Y1	50 - 104°F	68°F
Return related supply air-2 Y2	50 - 104°F	64°F
Return related supply air-2 Y3	50 - 104°F	57°F
Return related supply air-2 Y4	50 - 104°F	54°F

The set point displacement and Summer night cool functions can also affect the preset temperatures.

## Supply air regulation

Supply air regulation involves maintaining a constant supply air temperature without consideration to the load in the premises.

This type of regulation can be used when the load and temperatures of the premises are predictable. In most cases this requires the installation of an air heater for reheating, possibly an air cooler as well.

Settings:

Value	Setting range	Factory setting
Supply air (temp. set point)	32 - 104°F	70°F

## Return air regulation

Return air control involves maintaining a constant temperature in the return air duct (the premises), by regulating the supply air temperature.

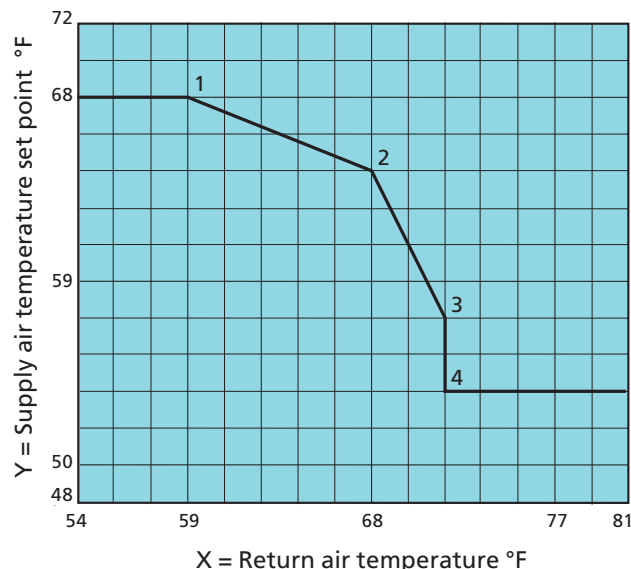
This provides a uniform temperature in the premises regardless of the load and this type of regulation requires the installation of an air heater for reheating; possibly a cooling coil as well.

The return air temperature is measured by the air handling unit's internal temperature sensor. If this internal temperature sensor does not give an adequate representative return air temperature reading, an external room temperature sensor can be installed and wired to the control unit's communications BUS (optional COM1-3).

Settings:

Value	Setting range	Factory setting
Return air (temp. set point)	32 - 104°F	70°F
Supply air, min.	32 - 86°F	61°F
Supply air, max.	61 - 122°F	82°F

## ERS Regulation 2



Breakpoints according to factory setting involve the following:

If the return air temperature is below 59°F (X1), the supply air temperature set point will constantly be 68°F (Y1).

If the return air temperature is between 59°F (X1) and 68°F (X2), the supply air temperature set point is regulated from 68°F (Y1) down to 64°F (Y2) as shown in the curve.

If the return air temperature is between 68°F (X2) and 72°F (X3), the supply air temperature set point is regulated from 64°F (Y2) down to 57°F (Y3) as shown in the curve.

When the return air temperature is 72°F (X4), the supply air temperature set point is regulated from 57°F (Y3) down to 54°F (Y4).

If the return air temperature is over 72°F (X4), the supply air temperature set point will constantly be 54°F (Y4).

## ORS regulation

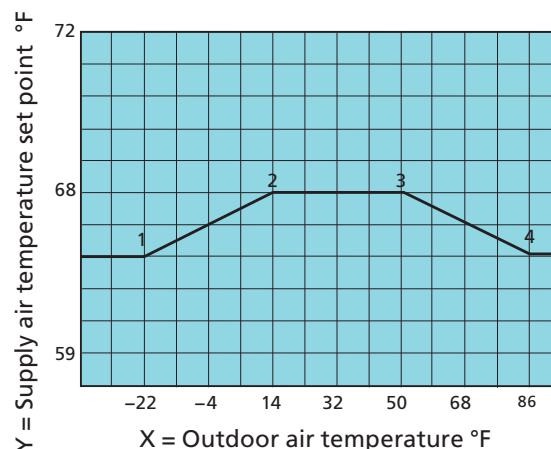
ORS regulation refers to Outdoor air temperature-Related Supply air temperature regulation. This means that the temperature of the supply air is regulated in relation to the temperature of the outdoor air.

An individually adjusted curve regulates the ratio between the supply air and the outdoor air temperature. The curve has four adjustable break-points.

Settings (see also diagram to the right):

Value	Setting range	Factory setting
<i>Outdoor air temperature</i>		
Outdoor related supply air X1	-58 – 122°F	-4°F
Outdoor related supply air X2	-58 – 122°F	14°F
Outdoor related supply air X3	-58 – 122°F	50°F
Outdoor related supply air X4	-58 – 122°F	68°F
<i>Supply air temperature set point</i>		
Outdoor related supply air Y1	50 – 104°F	71°F
Outdoor related supply air Y2	50 – 104°F	71°F
Outdoor related supply air Y3	50 – 104°F	71°F
Outdoor related supply air Y4	50 – 104°F	71°F

## ORS regulation



Example:

If the outdoor air temperature is under -22°F (X1), the supply air temperature set point will constantly be 64°F (Y1).

If the outdoor air temperature is between -22°F (X1) and 14°F (X2), the supply air temperature set point is regulated from 64°F (Y1) up to 20°F (Y2) as shown in the curve.

If the outdoor temperature is between 14°F (X2) and 50°F (X3) the supply air set point will constantly be 20°F (Y3).

If the outdoor air temperature is between 50°F (X3) and 86°F (X4), the supply air temperature set point is regulated from 20°F (Y3) down to 64°F (Y4) as shown in the curve.

If the outdoor air temperature is over 86°F (X4), the supply air temperature set point will constantly be 64°F (Y4).

## ORE regulation

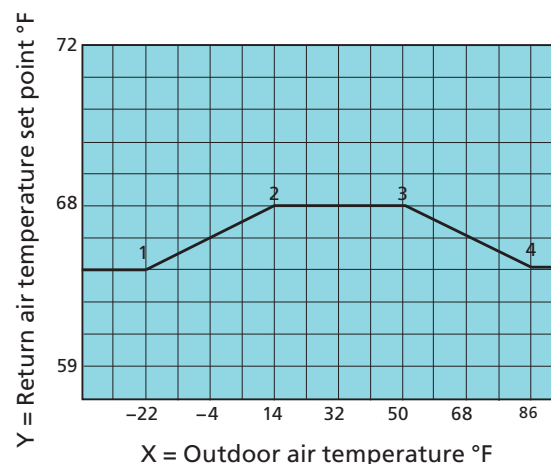
ORE regulation refers to Outdoor air temperature-Related Return air temperature regulation. This means that the return air temperature is regulated in relation to the outdoor air temperature.

An individually adjusted curve regulates the ratio between the return air and the outdoor air temperature. The curve has four adjustable break-points.

Settings (see also diagram to the right):

Value	Setting range	Factory setting
Supply air, min.	32 – 68°F	61°F
Supply air, max.	61 – 122°F	82°F
<i>Outdoor air temperature</i>		
Outdoor related return air X1	-58 - 122°F	-4°F
Outdoor related return air X2	-58 - 122°F	14°F
Outdoor related return air X3	-58 - 122°F	50°F
Outdoor related return air X4	-58 - 122°F	68°F
<i>Return air temperature set point</i>		
Outdoor related return air Y1	50 - 104°F	71°F
Outdoor related return air Y2	50 - 104°F	71°F
Outdoor related return air Y3	50 - 104°F	71°F
Outdoor related return air Y4	50 - 104°F	71°F

## ORE regulation



Example:

If the outdoor air temperature is under -22°F (X1), the return air temperature set point will constantly be 64°F (Y1).

If the outdoor air temperature is between -22°F (X1) and 14°F (X2), the return air temperature set point is regulated from 64°F (Y1) up to 68°F (Y2) as shown in the curve.

If the outdoor temperature is between 14°F (X2) and 50°F (X3) the return air set point will constantly be 68°F (Y3).

If the outdoor air temperature is between 50°F (X3) and 86°F (X4), the return air temperature set point is regulated from 68°F (Y3) down to 64°F (Y4) as shown in the curve.

If the outdoor air temperature is over 86°F (X4), the return air temperature set point will constantly be 64°F (Y4).

### 6.4.2.3 Regulation mode

Select ERS 1, ERS 2, Supply air, Extract air, ORS or ORE temperature regulation.

Seasonal controlled temperature regulation makes it possible to have two different temperature regulation modes that alternate at preset outdoor temperatures.

Seasonal controlled temperature regulation operates with the air handling unit's internal temperature sensor, however for the best performance we recommend external outdoor temperature sensor ABLZ-1-24-3; see separate installation instructions.

Enable seasonal controlled temperature regulation and temperature regulation (ERS 1, ERS 2, Supply air, Extract air, ORS or ORE). Set the temperature at which seasonal controlled temperature regulation shall be enabled and disabled respectively. By setting a span between the different temperatures, unwanted switching operations between the types of regulation can be avoided.

Settings:

Value	Setting range	Factory setting
Temperature control	ERS 1/ERS 2/Supply air/Extract air/ORS/ORE	Supply air
Seasonal controlled temperature regulation	On/Off	Off
Seasonal controlled temperature regulation, enabled	ERS 1/ERS 2/Supply air/Return air/ORS/ORE -4 – 104°F	Return Air 32°F
Seasonal controlled temperature regulation, disabled	-4 – 104°F	68°F

## Regulation mode

### 6.4.2.4 Unit of temperature

The desired unit of temperature can be set.

Settings:

Value	Setting range	Factory settings
Unit	°C/ °F	°F

### Unit of temperature

### 6.4.2.5 Set point displacement

Used for changing the supply air and return air temperature set points by means of an external 0-10 VDC signal. For example, the temperature can be increased or decreased at certain times of the day by means of an external timer or potentiometer.

The accessory, IQlogic+ module ABIQ-3-2, is required.

The set point can be influenced by 9°F.

If the AHU is operating in the supply air regulation or ORS regulation mode, the supply air temperature set point is displaced and the AHU is operating in the return air regulation or ORE regulation mode, the return air temperature set point is displaced.

When the AHU is operating in the ERS regulation 1 mode, the difference between return air and supply air is influenced. The difference cannot be less than 0°F. The difference will decrease as the input signal increases.

If the AHU is operating in the ERS regulation 2 mode, the supply air set point will be displaced.

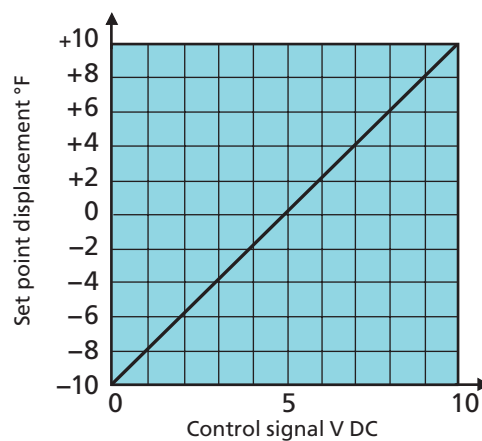
When the function is activated, the set point is displaced as plotted in the diagram to the right.

Set point displacement will not affect any possible extra temperature zone (Xzone) which regulates according to its ordinary set point if set point displacement is in operation.

Settings:

Value	Setting range	Factory setting
Set point displacement	On/Off	Off

### Set point displacement



Set point displacement involves the following:  
 Control signal 0 V DC: The set point is decreased by 9°F.  
 Control signal 5 V DC: No change in set point.  
 Control signal 10 V DC: The set point increases by 9°F.

### 6.4.2.6 Neutral zone

The neutral zone prevents the cooling and heating systems from counter-acting each other.

The preset neutral zone is added to the set point for heating and the sum of these provides the set point for cooling.

When return air regulation is active, the supply air set point is not affected. The neutral zone has no effect if the unit is operating in the ERS regulation mode.

Settings:

Value	Setting range	Factory setting
Supply air, temperature control	0.0 - 10 K	0.5 K
Return air, temperature control	0.0 - 10 K	0.5 K

### Neutral zone

### 6.4.2.7 External temperature sensors

An return air duct temperature sensor, ABLZ-1-76, can be connected to the air handling unit's control circuit card. See separate instructions for installation.

Up to four external room temperature and/or outdoor temperature sensors can be wired to the air handling unit's control circuit card. The ABLZ-1-24-2 room temperature sensor or ABLZ-1-24-3 outdoor temperature sensor accessories should be used. See separate installation instructions.

The sensor can be selected to control only intermittent night heat and/or summer night cooling (the AHU is then controlled during the daytime in response to signals from the internal sensor inside the AHU).

Locate the temperature sensors at suitable places to obtain representative readings.

The air handling unit is controlled in response to a computed mean value of the temperature sensors' readings, alternatively in response to signals from the temperature sensor that measures the lowest or highest value.

As an alternative, a temperature reading can be transmitted to the air handling via communication from e.g. a main system.

The same provision is available for room sensors for the Xzone function.

Settings:

Value	Setting range	Factory setting
Return air duct, temperature sensor	On/Off	Off
Room sensor 1	On/Off	Off
Room sensor 2	On/Off	Off
Room sensor 3	On/Off	Off
Room sensor 4	On/Off	Off
Room sensor function	Medium/min./Max.	Medium
Room temperature from communication	On/Off	Off
Room temperature, for intermittent night heat only	On/Off	Off
Room temperature, for summer night cooling only	On/Off	Off
Outdoor air sensor 1	On/Off	Off
Outdoor air sensor 2	On/Off	Off
Outdoor air sensor 3	On/Off	Off
Outdoor air sensor 4	On/Off	Off
Outdoor air sensor function	Medium/min./Max.	Medium
Outdoor temperature from communication	On/Off	Off

### External temperature sensors

### 6.4.2.8 Regulation sequence

#### Heating mode

The mutual order for the heating mode regulation sequence can be selected as specified below.

Functions that have not been selected have no effect on the relevant regulation sequence.

Value	Setting range	Factory setting
Heating mode	1/2/3/4/5/6*	1

\* 1 = HX - Extra regulation sequence - ReCO<sub>2</sub> - Reheating - HC - Down regulation of fan

2 = HX - Extra regulation sequence - Reheating - ReCO<sub>2</sub> - HC - Down regulation of fan

3 = HX - Reheating - ReCO<sub>2</sub> - HC - Extra regulation sequence - Down regulation of fan

4 = HX - Reheating - Extra regulation sequence - ReCO<sub>2</sub> - HC - Down regulation of fan

5 = HX - ReCO<sub>2</sub> - HC - Reheating - Extra regulation sequence - Down regulation of fan

6 = HX - ReCO<sub>2</sub> - HC - Extra regulation sequence - Reheating - Down regulation of fan

HX (heat exchanger):

The temperature efficiency of the air handling unit's heat exchanger is modulated to provide max. heat recovery.

Extra regulation sequence:

Used in the heating mode for air heater (if required), air recirculation damper, etc.

ReCO<sub>2</sub>:

Recirculated air is variably mixed in up to the lowest permissible supply airflow. Assumes inclusion of the ACBR air recirculation section accessory.

HC:

HC in the heat pump function starts to produce heating.

Reheating:

Air heater for reheating provides heating capacity.

Down regulation of fan:

Down regulation can be selected for supply air only or supply air and return air.

## Regulation sequence

### Cooling mode

The mutual order for the cooling mode regulation sequence can be selected as specified below.

Functions that have not been selected have no effect on the relevant regulation sequence.

Value	Setting range	Factory setting
Cooling mode	1/2/3/4/5/6*	1

- \* 1 = HX - Cooling Boost - Extra regulation sequence - ReCO<sub>2</sub> - HC - Cooling  
 2 = HX - Cooling Boost - Extra regulation sequence - Cooling - ReCO<sub>2</sub> - HC  
 3 = HX - Cooling Boost - Cooling - ReCO<sub>2</sub> - HC - Extra regulation sequence  
 4 = HX - Cooling Boost - Cooling - Extra regulation sequence - ReCO<sub>2</sub> - HC  
 5 = HX - ReCO<sub>2</sub> - HC - Cooling Boost - Cooling - Extra regulation sequence  
 6 = HX - ReCO<sub>2</sub> - HC - Cooling Boost - Extra regulation sequence - Cooling

HX (heat exchanger):

The temperature efficiency of the air handling unit's heat exchanger is modulated to provide max. cool recovery.

Cooling Boost (Economy):

Involves increasing the supply air and return air airflows to convey more cooling energy to the premises. The flow increase takes place between the current flow and the preset max. flow.

Extra regulation sequence:

Used in the cooling mode for air cooler (if required), etc.

ReCO<sub>2</sub>:

Recirculated air is variably mixed in up to the lowest permissible supply airflow. Assumes inclusion of the ACBR air recirculation section accessory.

HC:

HC in the chiller function starts to produce cooling.

Cooling:

Air cooler provides cooling capacity.

### 6.4.2.9 Min. exhaust air



The min. exhaust air function can be used whenever the exhaust air temperature is not permitted to be below a predetermined value.

Min. exhaust air

The function controls the heat exchanger rotor speed (efficiency) in order to limit the exhaust air temperature to the required value. The function decelerates the heat exchanger rotor speed from the current level, until the exhaust air temperature reaches the preset minimum permissible setting.

Exhaust air regulation requires a separate ABLZ-1-58-aa temperature sensor (accessory) fitted in the AHU's exhaust air.

See separate installation instructions for the ABLZ-1-58-aa Internal temperature sensor.

Settings:

Value	Setting range	Factory setting
Min. exhaust air	On/Off	Off
Min. exhaust air temperature	-40 – 68°F	41°F



### 6.4.2.10 Morning Boost

The unit is utilized for heating the premises during a preset period prior to the switch-in time set on the timer.

The function is used if an air recirculation section is installed.

The AHU starts up prematurely and uses the same temperature regulation settings. The airflow / air pressure is adjustable.

When the function starts, the air recirculation damper opens and the supply air fan starts up. The return air fan and the outdoor air damper remain closed.

Settings:

Value	Setting range	Factory setting
Morning Boost	On/Off	Off
Start time (before the ordinary start time according to the timer)	hour:min.	00:00
Supply air, set point	<sup>1)</sup>	50% of max. supply air for AHU alt. 0.4 in W.G.

<sup>1)</sup> The setting range is the same as the AHU's min./max. setting for flow regulation and 10-750 Pa for pressure regulation

### Morning Boost

### 6.4.2.11 Heating Boost

Heating boost (forced heating) means that the air handling unit, operating in the normal flow regulation mode, increases both the supply airflow and the return airflow in order to carry more heat into the premises.

The fans are permitted to operate in the range between current flow modes or pressure (low speed, high speed) and the preset max speed. See Section 6.4.1.2.

The functions operates only when the AHU is operating in the return air regulation and ORE regulation mode. If demand control or boost is selected in combination with heating boost, the flow is controlled by the function that transmits the highest output signal to the fans.

A regulated ramp function switches in and gradually increases the airflow when there is a heating load, and the supply air temperature is 3 K (preset at factory) lower than the preset max. supply air temperature.

Settings:

Value	Setting range	Factory setting
Heating Boost	On/Off	Off
Start limit	2-10 K	3 K

### Heating Boost

### 6.4.2.12 Cooling Boost

Cooling Boost (forced cooling) means that the supply air and return air airflows are increased to convey more cool air to the premises.

The fans are permitted to operate in the range between current flow modes or pressure (low speed, high speed) and the preset max speed. See Section 6.4.1.2.

The function can be selected in five variants as follows:

#### Comfort

The cooling outputs are activated if there is a cooling load.

A regulated ramp function switches in and gradually increases the airflow when there is a cooling load, and the supply air temperature is 3 K (preset at factory) higher than the preset max. supply air temperature.

#### Economy

Cooling Boost Economy initially uses a higher airflow to cool the premises, before a start signal is transmitted to chillers.

The function can also operate without the cooling function activated.

In the event of a cooling load, the airflows are slowly increased up to preset maximum flow. When the flows are up to max and if a cooling load is still present, the output contacts for cooling are activated.

The function requires that the outdoor air temperature is at least 2 K lower than the return air temperature for it to be activated. The normal cooling function is activated if the temperature difference is too small.

#### Sequence

The Cooling Boost Sequence is used if a chiller is sized for a higher cooling flow than normal flow.

If there is a cooling load, the flow is increased up to the preset max. flow and the cooling function is activated afterwards.

The Cooling Boost Sequence is blocked if no cooling function has been selected.

#### Comfort and economy

The comfort variant and the economy variant can be combined. The function that has the highest signal (highest setpoint) applies.

#### Economy and sequence

The economy variant and the sequence variant can be combined. The function that has the highest signal (highest setpoint) applies.

#### Sequence and comfort

The sequence variant and the comfort variant can be combined. The function that has the highest signal (highest setpoint) applies.

#### Comfort, economy and sequence

The comfort variant, economy variant and the sequence variant can be combined. The function that has the highest signal (highest setpoint) applies.

## Cooling Boost

Settings:

Value	Setting range	Factory setting
Cooling Boost	Inactive Comfort Economy Sequence Comfort and economy Economy and sequence Sequence and comfort/ Comfort, economy and sequence	Inactive
Start limit (Comfort)	2-10 K	3 K

### 6.4.2.13 Intermittent night heat

The AHU is utilized for heating the premises when it is normally stopped by timer.

The function requires that an external room sensor is wired to the control unit's communication BUS (optional COM 1-3) and that the AHU is fitted with an air heater for reheating the air. The function works best if the GOLD is equipped with an air recirculation section and shut-off dampers for the outdoor air and the exhaust air.

When the function is activated, the air handling unit detects when the room temperature drops below the preset start temperature. The unit starts with preset flows and the supply air temperature set point. At the same time, the damper in the air recirculation section opens, if one is installed.

If recirculation is in the Off position, the return air fan is operating and the damper relay is open. The return airflow setting can be decreased to the air handling unit's min. flow.

Intermittent night heat does not affect any possible extra temperature zone (Xzone) which regulates according to its ordinary set point if Intermittent night heat is in operation.

*Conditions to be met for intermittent night-time heating to start:*

- The AHU must be set to normal stop or extended normal stop.
- The room temperature must be lower than the preset start temperature.

*Conditions to be met so that Intermittent night heat will stop:*

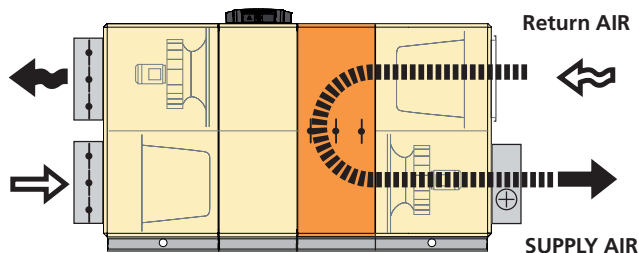
- The air handling unit is running at normal low/high speed or external manual stop has been activated.
- The room temperature exceeds the preset stop temperature.
- The alarm with preset stop priority trips.  
(If needed, the air handling unit fans will continue to operate to cool the electric air heater although other conditions for stop have been met.)

Settings:

Value	Setting range	Factory setting
Intermittent night heat	On/Off	Off
Air recirculation	On/Off	On
Room temperature, start	41 - 77°F	61°F
Room temperature, stop	41 - 77°F	64°F
Supply air temperature, set point	41 - 122°F	82°F
Supply airflow, set point	<sup>1)</sup>	50% of max. supply air for AHU alt. 100 Pa
Return air flow, set point	<sup>1)</sup>	50% of max. supply air for AHU alt. 100 Pa

<sup>1)</sup> The setting range is the same as the AHU's min./max. setting for flow regulation and 0.04 – 3 in W.G. for pressure regulation

### Intermittent night heat



*Intermittent night heat with air recirculation section:*

Recirculation in the On position:

*When conditions for start are met, outdoor air and exhaust air shut-off dampers remain closed. The damper in the air recirculation section opens. The return air fan is idle.*

*The supply air fan operates according to the preset supply airflow and the air heater for reheating operates according to the preset supply air temperature set point, until the conditions for stop are met.*

### 6.4.2.14 Summer night cool

The lower temperature at night is utilized to cool down the building structure. This reduces the cooling load during the first hours of the day. If a cooling unit is installed, it will not need to be operated, thus offering savings. If no cooling unit is installed, a certain cooling effect will still be achieved.

When the function is activated, the AHU fans operate at high speed, with a supply air set point of 50°F (factory setting) from the preset time until the conditions necessary for stop are satisfied.

If the air handling unit is stopped for a period of time, test starts can be implemented in order to check whether all conditions, except heating demand, for summer night cooling have been met. If the conditions have been met, summer night cooling can be run. The start and stop dates of the period during which the air handling unit will be stopped can be preset.

The set point for flow or pressure on the supply air and extract air can be set. This then means that any outdoor compensation does not affect summer night cooling.

An extra temperature zone (Xzone), if required, obtains the same supply air set point if Summer night cool is in operation.

*Conditions that must be met for Summer night cool to start at the preset time:*

- The time is between the preset start time and stop time.
- The outdoor air temperature shall be higher than the preset value.
- The return air temperature shall be higher than the preset value.
- The return air is at least 2°F warmer than the outdoor air.
- Heating load has not been required between 12.00 and 23.59 hours (heating load for dehumidification is not registered as a heating load). <sup>1)</sup>
- The air handling unit shall be running at low speed or be in the normal stop operating mode.
- Intermittent night heat has not been active during the day.

*Conditions that must be met for Summer night cool to stop:*

- The time is not between the preset start time and stop time.
- The return air temperature drops below the preset value.
- The outdoor temperature drops below the preset value.
- The return air is less than 1°F warmer than the outdoor air.
- The air handling unit is running at normal high speed or external/manual stop has been activated.

### Summer night cool

The function starts once per preset time period.

Settings:

Value	Setting range	Factory setting
Summer night cool	On/Off	Off
Start time	00:00-00:00	23:00
Stop time	00:00-00:00	06:00
Outdoor air, start	23 - 59°F	50°F
Return air, start	63 - 81°F	72°F
Return air, stop	54 - 72°F	61°F
Supply air, set point	0 - 68°F	50°F
Start, period with stopped air handling unit*	01-01 – 01-01 (month - day)	05-01
Stop, period with stopped air handling unit*	01-01 – 01-01 (month - day)	10-01
Supply air, set point	Unit's maximum flow - maximum flow <sup>2)</sup>	50% of maximum air flow for air handling unit 100 Pa
Supply air, set point	20 - 750 Pa	
Return air, set point	Unit's maximum flow - maximum flow <sup>2)</sup>	
Return air, set point	20 - 750 Pa	

<sup>1)</sup> The condition for heating load can be deselected during the preset period.

<sup>2)</sup> See section 4.1.2.

### 6.4.2.15 Down regulation (airflow/pressure)

Down regulation of the supply air flow is the last step in the regulation sequence for heating. The supply air fan or both the supply air and return air fan can be selected. The return air fan only cannot be selected.

See also Section 6.4.2.7.

Down regulation can take place to max. of 50% of the preset value, however not lower than the min. flow or 0.08 in. WG.

Settings:

Value	Setting range	Factory setting
Down regulation	Inactive/Supply air/ Supply air and return air	Inactive

## Down regulation

## 6.4.3 Time and schedule

The built-in timer enables you to control the AHU's operating mode/time. Certain other oversteering functions such as external timer, communication, etc. affect the preset operating modes.

There are five different operating modes:

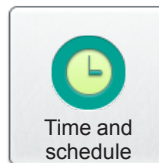
Total stop = The AHU is completely stopped, no internal automatic functions or external control commands can start the AHU.

Normal Stop = The AHU has stopped, however all the internal and external automatic functions oversteer the stop.

Extended Normal Stop = The AHU has stopped, however all the internal and external automatic functions, with exception of Summer night cool, oversteer the stop.

Low speed = The AHU is running at the preset low speed setting.

High speed = The AHU is running at the preset high speed setting.



### 6.4.3.1 Time and date

The current date and time can be set and adjusted if needed. The timer automatically takes leap years into consideration.

The relevant region and city can be selected, summer time/winter time change-over will then be managed automatically.

Time source can be set to manual or via SNTP (requires connection to network) and BACnet. The time format and date format can be set.

#### Time and date

### 6.4.3.2 Schedule settings

The relevant operating mode can be read under Schedule settings. Here you can also set a preselected operating mode, in which the air handling unit always operates during non-programmed time, under Day schedule and Exceptions schedule. This setting (start and stop date not activated) is used most often and covers the majority of needs.

When the start and stop date is activated, this means that during the preset period (date) preset time applies during the day schedule and the exceptions schedule, and at all other times the AHU runs in the preselected operating mode.

Settings:

Value	Setting range	Factory settings
Preselected operating mode	Total stop/Low speed/High speed/Normal Stop/ Extended Normal Stop	Low speed
Start date	Active/Inactive	Inactive
Start date	Year/Month/Day	
Stop date	Active/Inactive	Inactive
Stop date	Year/Month/Day	

#### Schedule settings

### 6.4.3.3 Day schedule

Times and days can be set when the air handling unit is to run in the high speed mode, low speed mode or be switched off.

For each day (Monday - Sunday), six different events can be set to occur at a given point in time. Here, it is also possible to set six different events for two exceptions under Ex1 and Ex2. The provisions for these exceptions can then be set under Exceptions schedule, Calendar 1 and Calendar 2.

Note that the preset event will not be carried over to the next 24-hour period. If no event is set from 00.00 hours of the next 24-hour period, the AHU will operate in the preselected operating mode preset under Schedule settings.

Settings:

Value	Setting range	Factory settings
Day	Mon/Tues/Wed/Thurs/Fri/Sat/Sun/Ex1/Ex2	
Time	00:00-23:59	00:00
Action	Inactive/Total stop/Low speed/High speed/Normal Stop/ Extended Normal Stop/Ignore	Inactive

### Day schedule

### 6.4.3.4 Exceptions schedule

Possible exceptions (Ex1 and Ex2), previously preset in the day schedule can be set in the Exceptions schedule. Here you can determine on which date or weekday the relevant exception shall apply. If you select Calendar 1 or Calendar 2, which is the most often the case, these can be set according to particulars in the next section.

Settings:

Value	Setting range	Factory settings			
<i>Exceptions schedule 1/2</i>					
Exceptions method	Inactive/Date/Date range/Weekday/Calendar 1/Calendar 2	Calendar 1/2			
<i>Date</i>					
Start date	Year/Month/Day				
Start weekday	Each day/Monday/Tuesday/Wednesday/Thursday/Friday/Saturday/Sunday	Each day	Start weekday	Each day/Monday/Tuesday/Wednesday/Thursday/Friday/saturday/Sunday	Each day
<i>Date range</i>					
Start date	Year/Month/Day				
Start weekday	Each day/Monday/Tuesday/Wednesday/Thursday/Friday/Saturday/Sunday	Each day	Calendar 1 Calendar 2	See next chapter See next chapter	
Stop date	Year/Month/Day				
Stop weekday	Each day/Monday/Tuesday/Wednesday/Thursday/Friday/Saturday/Sunday	Each day			
<i>Weekday</i>					
Start date	Mon 1-12/Odd/Even/Each Day 1-7/8-14/15-21/22-28/29-31/ Latest 7 days/Each day				

### Exceptions schedule

### 6.4.3.5 Calendar 1 and 2

The specific days when Exceptions schedule 1 or 2 shall apply can be set in Calendars 1 and 2. On condition that Calendar 1 or 2 is selected, see previous section. In other cases, these settings will have no effect.

There is a total of ten possible settings under each calendar and various functions can be selected for each.

Settings (For Calendar 1 and Calendar 2 respectively):

Value	Setting range	Factory setting
Function 1-10	Inactive/Date/Date range/Weekday	Inactive
<i>Date</i>		
Start date	Year/Month/Day	
Start weekday	Each day/Monday/Tuesday/Wednesday/Thursday/Friday/Saturday/Sunday	Each day
<i>Date range</i>		
Start date	Year/Month/Day	
Stop date	Year/Month/Day	
<i>Weekday</i>		
Start date	Month 1-12/Odd/Even/Each Day 1-7/8-14/15-21/22-28/29-31/Latest 7 days/Each day	
Start weekday	Each day/Monday/Tuesday/Wednesday/Thursday/Friday/Saturday/Sunday	Each day

#### Calendar 1

#### Calendar 2

### 6.4.3.6 Prolonged operation

The control unit inputs for external low speed (terminals 14-15) and external high speed (terminals 16-17) respectively, can be supplemented with Prolonged operation. They can be used for overtime running activated by a push button, for example.

The required time in hours and minutes can be set as follows.

Settings:

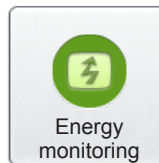
Value	Setting range	Factory setting
Ext. low speed	0:00 - 23:59	00:00
Ext. high speed	0:00 - 23:59 (hrs.:min.)	00:00 (hrs.:min.)

#### Prolonged operation



## 6.4.4 Energy monitoring

Readings of the power consumed by fans and other AHU components can be viewed here. SFP readings for the AHU fans and the efficiency on heat transfer of the rotary heat exchanger can also be viewed. Accumulated energy consumption can be reset to zero.



## 6.4.5 Filters

### Status

The current filter status and the current alarm limit can be viewed here. Used for performance checks.

### Calibration

The filters should be calibrated when the fans are started up for the first time and when the duct system, air terminals and commissioning plates, if required, have been installed and commissioned. After that every time filters are replaced. See also Section 6.3.

### Pre-filter/AHU filter (GOLD SD)/End filter

Filter monitoring must be activated for the filter (in addition to the internal filter in the GOLD RX/PX) to be monitored.

Settings:

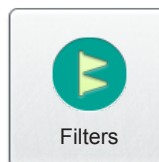
Value	Setting range	Factory setting
Pre-filter	Inactive/Supply air/Return air/Supply air and return air	Inactive
AHU filters	Inactive/Supply air/Return air/Supply air and return air	Inactive
End filter	On/Off	Off

### Alarm limits

Alarm limit for installed filters can be changed.

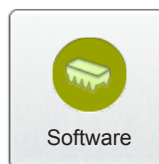
Setting:

Value	Setting range	Factory setting
Installed filters	0-2 in W.G.	0.4 in W.G.



## 6.4.6 Software

The current program versions for the IQlogic control unit, IQnavigator hand-held terminal and the component units on the communications bus can be viewed and updated from the SD circuit card.

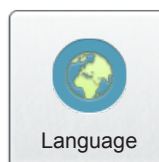


## 6.4.7 Language

The language desired can be set here. The appropriate language is normally selected the first time the AHU is started up. However, the language setting can be changed at any time.

Settings:

Value	Setting range	Factory setting
Language	Available languages are displayed	English



## 6.4.8 Alarm settings

### 6.4.8.1 Fire alarms

#### Internal fire alarm

The air handling unit's internal temperature sensors serve as fire protection thermostats. An alarm is initiated if the supply air temperature sensor registers more than 158°F or when the return air temperature sensor registers more than 122°F.

If an external Return air/Room temperature sensor is connected and activated, this works parallel with the return air temperature sensor of the AHU.

#### External fire alarm 1 and 2

External fire alarm 1 (Terminals 6-7) and external fire alarm 2 (Terminals 8-9) are used for external fire-control equipment.

#### Alarm reset

The resetting of internal fire alarms as well as the external fire alarms 1 and 2 can be individually selected to manual or automatic.

#### After cool

The After cool function for electric air heaters can be individually activated, for internal fire alarms as well as external fire alarms 1 and 2.

#### Fan operation at fire alarm

The fans of the air handling unit can be used for evacuating smoke, etc. It is possible to individually select the type of fan operation for each separate fire alarm.

If the AHU is idle, the fans selected start up (10-100%), irrespective of whether stop (all types) is activated.

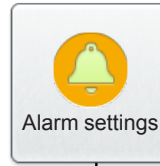
The AHU's damper relay is energized and the AHU's operation relay is de-energized. The damper that should be open in event of fire, shall be connected to the damper relay (control unit terminals 28-30). The damper that should be closed in event of fire, shall be connected to the operation relay (terminals 26-27 of the control unit, potential-free contact).

#### Priority

The mutual priority of the internal and the external fire alarms can be set. If automatic is selected, this means that the first input to be activated is given priority.

#### Fire bypass in flow diagram

The fire bypass is shown on the hand-held terminal's flow diagram when the function is activated. Fan operation for extract air must be active for at least one of the fire alarms. Dampers switch to fire bypass if any of the fire alarms are active and the extract air fan is operational.



### Fire alarms

Settings:

Value	Setting range	Factory settings
Internal fire alarm	On/Off	Off
Internal fire alarm reset	Manual/Auto	Manual
Internal fire alarm after cool	Active/Inactive	Inactive
External fire alarm 1/2, resetting	Manual/Auto	Manual
External fire alarm 1/2, after cool	Active/Inactive	Inactive
Fan operation on an internal fire alarm	Inactive/Supply air/Return air/Supply air and return air	Inactive
Supply air fan on an internal fire alarm	10-100%	100%
Return air fan on an internal fire alarm	10-100%	100%
Fan operation on external fire alarm 1/2	Inactive/Supply air/Return air/Supply air and return air	Inactive
Supply air fan on external fire alarm 1/2	10-100%	100%
Return air fan on external fire alarm 1/2	10-100%	100%
Order of priority	External fire alarm 1/External fire alarm 2/Internal fire alarm/Automatic	External fire alarm 1
Fire bypass in flow diagram	On/Off	Off

### 6.4.8.2 External alarms

External alarms can be used for external functions (control unit terminals 10-11 and 12-13).

Typical uses:

- Motor protection for the circulation pump in the heating or cooling circuit.
- Service alarm actuated by smoke detectors.

Set the following: Manual or automatic alarm reset, post-cooling for electric air heater and whether the alarm shall be activated on a closed or open circuit. The alarm can be time delayed.

Settings:

Value	Setting range	Factory setting
External alarm 1 reset	Manual/Auto	Manual
External alarm 1 after cool	Inactive/Active	Active
External alarm 1 input	Closed circuit/ Open circuit	Closed circuit
External alarm 1 delay time	0-600 sec.	10 sec.
External alarm 2 reset	Manual/Auto	Manual
External alarm 2 after cool	Inactive/Active	Active
External alarm 2 input	Closed circuit/ Open circuit	Closed circuit
External alarm 2 delay time	0-600 sec.	10 sec.

### External alarms

### 6.4.8.3 Temperature protection

In the GOLD PX units, the sensor in the inlet of the supply air fan can be used as temperature protection. Alarm priority and whether the AHU shall stop or not in event of an alarm can be set under Alarm priority, see Section 6.4.8.6.

For the GOLD RX unit, it is possible to use a separate sensor and its wiring is routed to the control unit. Select sensor input 4 for supply air = right and select sensor input 3 for supply air = left.

The alarm limit and alarm delay can be set for the sensor.

Settings:

Value	Setting range	Factory settings
Temperature protection	On/Off	Off
Alarm delay	1-900 sec.	30 sec.
Alarm limit	30 – 68°F	45°F

### Temperature protection

#### 6.4.8.4 Temperature alarm limits



Changes in the factory-preset alarm limits should only be made if you have special reasons for doing so and you should be aware of the consequences.

#### Temperature alarm limits

##### Pre-heating below set point

You can preset how much the temperature downstream of the pre-heater should be permitted to be below the temperature set point before an alarm is initiated.

##### Supply air below/above set point

You can preset how much the supply air temperature shall be permitted to be below or above the supply air temperature set point before an alarm is initiated. The alarm for supply air above the set point is normally blocked. Used in the cases in which cooling is installed.

##### Return air below alarm limit

Alarm limit for extract air temperature can be set. When the extract air temperature is below the alarm limit, alarm 12:6 is generated.

##### Outdoor temperature, stop limit

On tripped heat exchanger alarms, alarm numbers: 15:1-15:4, 16;1-16:4, 17:1, 17:4-17:9 (see Section 8.2), the following applies: if the outdoor air temperature is above this stop limit, an alarm only will be initiated and if it is below the stop limit, the AHU will stop and an alarm will be initiated.

Settings:

Value	Setting range	Factory setting
Pre-heat below set point	2 – 15 K	5.0 K
Supply air below set point	2 – 15 K	5.0 K
Supply air above set point	2 – 15 K	7.0 K
Return air below alarm limit	18 → 68°F	54°F
Outdoor temperature limit stop	-40 → 122°F	41°F

#### 6.4.8.5 Service period

The air handling unit's service period can be set here. The remaining time to alarm can be read. An alarm will be initiated after the time interval has expired. If you reset the alarm in the alarm log, the alarm will trip again after 7 days. Following completed service, the alarm must always be reset in this menu and this will launch a new service interval.

Settings:

Value	Setting range	Factory setting
Service period	0 – 99 months	12 months

#### Service period

### 6.4.8.6 Alarm priority



Changes in alarm priority should only be made if you have special reasons for doing so and you should be aware of the consequences. The priority of certain alarms cannot be changed.

Settings:

Value	Setting range
Alarm number	1:1 - 60:10
Active	On/Off
Priority	Info*/A/B
Air handling unit stop	On/Off

*\* Alarms are indicated as a flashing red LED on the hand-held terminal, no group alarm is forwarded.*

## Alarm priority

## 6.4.9 Log

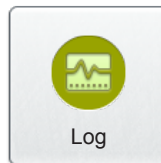
An SD card must be fitted into the AHU's control card for the log function to work (4 GB SD cards are installed from the factory.)

### 6.4.9.1 Continuous log

The continuous log can be activated here. The login interval is one minute (1440 logins per 24-hour period). One login file is created for each 24-hour period.

Settings:

Value	Setting range	Factory settings
Log file period	On/Off	On



Continuous log

### 6.4.9.2 Log sender

The log function has a log sender function which can e-mail the log to an optional e-mail address and/or FTP address.

Settings:

Value	Setting range	Factory setting
Log sender active	On/Off	Off
Live mode	E-mail/FTP/E-mail and FTP	E-mail

Other settings can be entered in the AHU's web page.

Log sender

## 6.4.10 Air handling unit

### 6.4.10.1 Settings



Set the type of air handling unit here. The type of air handling unit is normally preset for the unit supplied; except the GOLD SD return air unit which must be set here.

**N.B.!** Do not change the air handling unit setting to a type that differs from the one supplied. If you do so, the air handling unit will not operate satisfactorily.

The air handling unit can be given a specific name (e.g. the unit's serial number). Naming in the hand-held terminal can only be done with digits, however on the web page the naming can also be done with alphabetical characters. The given name is then shown in all the images in the hand-held terminal and web page.

The type of AHU, size of the supply air and return air fan respectively can be viewed.

#### GOLD RX/PX



The AHU's fan position 1 (left-hand fan seen from the inspection side, see illustrations) can be read and preset.

**N.B.!** This changes the function of the fans from supply air to return air and vice versa. GOLD RX size 05-100 can be changed at the site. The other variants must not be changed from the factory setting.

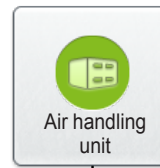
The fan position in the flow chart can be read and should be set according to the AHU's actual configuration.

#### GOLD SD

The fan position, upper or lower level, can be read and should be set according to the AHU's actual configuration.

Settings:

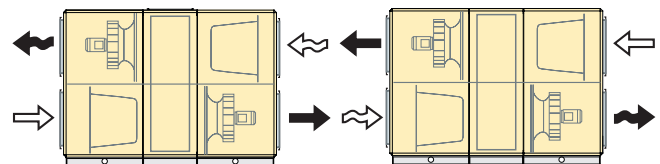
Value	Setting range	Factory setting
Type of air handling unit	GOLD RX/GOLD PX/GOLD SD Supply air/GOLD SD Return air/ GOLD SD Supply air+GOLD SD Supply air+Return air/ GOLD SD Supply air+Return air	Type of air handling unit supplied, except the GOLD SD return air handling unit
GOLD RX/PX Name	Optional	
Fan position 1	Return air/ Supply air	Return air
Flow chart, supply air fan position GOLD SD Name	Optional	
Flowchart fan position	Upper level/Lower level	Lower level



### Settings

#### GOLD RX 05-40

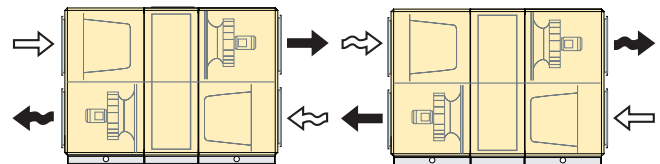
##### Fan arrangement 1



Fan pos. 1 set as return air  
(right-hand inspection side)

Fan pos. 1 set as supply air  
(left-hand inspection side)

##### Fan arrangement 2



Fan pos. 1 set as return air  
(right-hand inspection side)

Fan pos. 1 set as supply air  
(left-hand inspection side)

### 6.4.10.2 Fan status

The fan control speed setting can be viewed in percent of max. speed here.

Fan status

### 6.4.10.3 Operation time

In operation times (in days) can if applicable be viewed for fan controls, heat exchanger/cooling recovery, preheating, extra heating regulation sequence, Xzone heating, AHU reheating, ReCO<sub>2</sub> heating, extra cooling regulation sequence, Xzone cooling, AHU cooling, ReCO<sub>2</sub> cooling, AYC heating water and AYC cooling water.

Operation time

### 6.4.10.4 VOC/CO<sub>2</sub> sensor

You can select here the operating mode for the VOC sensor and the CO<sub>2</sub> unit. The VOC level can be read. The VOC sensor position in the flow chart can be selected if only monitoring has been selected.

VOC/CO<sub>2</sub> sensor

Settings:

Value	Setting range	Factory setting
VOC sensor mode	Inactive/Monitoring only/Monitoring and regulation	Inactive
CO <sub>2</sub> unit <sup>1)</sup>	%/ppm	% <sup>1)</sup>
Flow chart, VOC sensor position	Supply air/Return air	Supply air

<sup>1)</sup> Factory set values: 0% = 500 ppm, 50% = 1000 ppm, 100% = 1500 ppm

### 6.4.10.5 Automatic functions

#### Start up sequence

The air handling unit has a start up sequence with a factory-preset time delay between each step as follows:

1. The damper relay is energized and opens the shut-off damper (if installed). The heat exchanger is controlled to max. heat recovery (not the GOLD SD without heat exchanger). The valve for reheating opens to 40% (if installed)  
Time delay: 30 seconds.
2. The return air fan starts in the current operating mode (not for ventilation systems with GOLD SD supply air handling unit only)  
Time delay: 60 seconds.
3. The supply air fan starts (not for ventilation systems with GOLD SD return air handling unit only)  
Time delay: 30 seconds.
4. The reheating function is ramped up or down depending on the heating load. Ramp time: 180 seconds. After that the heat exchanger is ramped up or down depending on the heating load. Ramp time: 180 seconds.

The entire start up sequence can be followed in the dashboard image.

The start up sequence prevents the return air fan from starting up if the shut-off damper is closed. By first starting up the return air fan and the heat exchanger, you can avoid chilling the premises with supply air on a start up under cold weather conditions.

#### Zero point calibration

The pressure sensor of the AHU is automatically calibrated. The calibration process takes about 70 seconds after the AHU has stopped (a notification is shown if the AHU has not stopped). The zero point calibration text is displayed in the hand-held terminal. The fans cannot start while calibration is in progress.



## 6.4.11 Heat

### 6.4.11.1 Status

All the relevant values can be read here. Used for performance checks.

### 6.4.11.2 Pre-heat

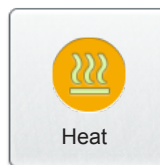
By preheating the outdoor air, it is possible to prevent moisture precipitation in the AHU's outdoor air filter, to reduce the risk of frosting in the heat exchanger and to eliminate the risk that pressure sensors and motor control systems are operating in too low ambient temperature.

Scope for setting Outdoor air temperature related preheat is available.

See also the Pre-heat function guide for more detailed information.

Settings:

Value	Setting range	Factory setting
Pre-heat	On/Off	Off
Pre-heat set point	-40 - 104°F	41°F
Outdoor air temperature related	On/Off	
Difference,	0-25 K	5 K
outdoor air temperature		
Preheat, min. limit	-40 - 104°F	14°F
Periodic operation of pump	On/Off	On
Periodic operation of valve	On/Off	On
Periodic operation interval	0 - 168 hrs.	24 hrs.
Periodic operation period	0 - 60 min.	3 min.
Alarm input, function	Inactive/Alarm on open contact/Alarm on closed contact/Contactor function	Inactive



Status

Pre-heat

### 6.4.11.3 Extra regulation sequences 1 and 2

Used for extra regulation functions controlled by a 0-10 V (10-0 V) signal with ordinary temperature regulation sequence.

The function can be used for utilizing existing heating or cooling sources, such as from a chiller. The function can also be used for an extra air heater or air cooler.

It can also be used for controlling dampers for recirculation, if required. In these cases, an inverted 10-0 V output is used.

Recirculation control is used for the ABBD mixing section (GOLD SD only) The 10-0 V inverted output should be in the On position.

The maximum output signal can be limited from 100% down to 0 %.

The output signal of the extra regulation sequence is controlled from the ABIQ-3-2 IQlogic+ module accessory, see separate installation instructions.

The extra regulation sequence makes it possible to control two air heaters at the same time in the following combinations: water - electricity, water - water, electricity - electricity (Season heat, see also Section 6.4.11.7). The air heater for hot water is available without or without frost guard function.

When the output of the first air heater is not sufficient, the second is automatically brought into the sequence.

A start-up sequence, frost guard function, pump control, post-cooling for electric air heater and other functionality are available.

For the start-up sequence, frost guard function, periodic operation and post-cooling, the same settings are used as for regular reheating.

Settings:

Value	Setting range	Factory setting
Extra regulation sequence 1/2	Inactive/Heat/Cool/Heat and cool	Inactive
Inverted output 10-0V	On/Off	Off
Recirculation control	On/Off	Off
Max. output signal	0-100%	100%
Periodic operation of pump	On/Off	On
Periodic operation of valve	On/Off	On
Periodic operation interval	0-168 hrs.	24 hrs.
Periodic operation period	0-60 min.	3 min.
Pump alarm	Inactive/Alarm on open contact/Alarm on closed contact/Contactor function	Inactive

### Extra regulation sequence 1/2

#### 6.4.11.4 Reheat

The air heater is equipped with a quick-fit connector for connection to the AHU's control unit which automatically senses the type of air heater in use.

##### Air heater for hot water

When there is a reheating load, and the function Periodic operation of pump or of pump+valve is selected, the relay output is activated (control unit terminals 20-21) and this starts the circulation pump of the air heater.

If the outdoor temperature is low (colder than 54°F), the pump output contact is continuously activated. During other times, the pump output contact is activated 3 min./day (factory setting) for periodic operation the circulation pump.

Settings:

Value	Setting range	Factory setting
<i>Air heater for hot water</i>		
Periodic operation of pump	On/Off	On
Periodic operation of valve	On/Off	On
Periodic operation interval	0-168 hrs.	24 hrs.
Periodic operation period	0-60 min.	3 min.

##### Electric air heater

When there is a reheating load, the relay output is activated (control unit terminals 20-21).

The relay output can be used for indicating or blocking the external function.

#### Reheat

#### 6.4.11.5 Xzone

The Xzone temperature control function is designed for controlling one extra temperature zone via the ventilation system.

Xzone can be used for all types of air handling units, and both reheating and cooling can be controlled in the extra zone.

See also the Xzone function guide for more detailed information.

Settings:

Value	Setting range	Factory setting
Xzone	On/Off	Off
<i>Air heater for hot water</i>		
Periodic operation of pump	On/Off	On
Periodic operation of valve	On/Off	On
Periodic operation interval	0-168 hrs.	24 hrs.
Periodic operation period	0-60 min.	3 min.
Alarm input, function	Inactive/Alarm on open contact/Alarm on closed contact/Contactor function	Inactive

#### Xzone

### 6.4.11.6 Electric air heater

If the electric air heater has been in operation, the air heater is post-cooled for about 3 minutes (factory setting) when stop has been activated.

The text "After cool" appears in the hand-held terminal.

Settings:

Value	Setting range	Factory setting
After cool	1 - 25 min	3 min.

### Electric air heater

### 6.4.11.7 Season Heat

The Season Heat function involves that the extra regulation sequence 1 functions is activated. See Section 6.4.11.3.

When both the standard function for reheating and the extra heating sequence are activated, it is possible to alternate between these via a digital input or communication.

Example: Hot water is only available in the winter. In the summer, any reheating load is backed up by an electric air heater. Changeover can be done manually or via external thermostat, external clock function or the like.

Settings:

Value	Setting range	Factory setting
Season Heat	Inactive/Extra reg. seq. 1 closed contact/ Extra reg. seq. 1 open contact/Extra reg. seq. 1 Manual <sup>1)</sup>	Inactive
Extra reg. seq. enabled (manual only)	On/Off <sup>2)</sup>	Off

### Season Heat

<sup>1)</sup> Extra regulation sequence 1 closed contact = When the contact is closed, only the standard reheating function is active. When the contact is opened a changeover to extra heating regulation sequence occurs.

Extra regulation sequence 1 open contact = When the contact is open, only the standard reheating function is active. When the contact is closed, a changeover to extra heating regulation sequence occurs.

Extra regulation sequence 1 Manual = Changeover is done in the hand-held terminal or on the AHU's web page.

<sup>2)</sup> Extra regulation sequence in Off position involves that the standard function for reheating is active and in the On position a changeover to extra regulation sequence occurs.

### 6.4.11.8 Automatic functions

#### Frost guard function, air heater for water

The frost guard function is always active if the connected air heater for hot water has been supplied by Swegon.

The function activates a heating device that keeps the temperature in the coil at 55°F while the air handling unit is operating and 77°F in the coil when the unit is stopped. An alarm is initiated and stops the AHU if the temperature sensor senses a temperature below 45°F.

#### Capacity reduction of the electric air heater

Only in combination with Swegon's electric air heater.

A min. permissible air velocity of 394 fpm is required for preventing the electric heating elements from becoming overheated when they are generating full heating output.

If the air handling unit supply airflow drops below the value that corresponds to an air velocity of 394 fpm across the heat exchanger, the heating output of the air heater will be automatically reduced.

## 6.4.12 Cool

### 6.4.12.1 Status

All the relevant values can be read here. Used for performance checks.

### 6.4.12.2 Extra regulation sequences 1 and 2

Used for extra regulation functions controlled by a 0-10 V (10-0 V) signal with ordinary temperature regulation sequence.

The function can be used for utilizing existing heating or cooling sources, such as from a chiller. The function can also be used for an extra air heater or air cooler.

It can also be used for controlling dampers for recirculation, if required. In these cases, an inverted 10-0 V output is used.

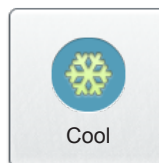
Recirculation control is used for the ABBD mixing section (GOLD SD only) The 10-0 V inverted output should be in the On position.

The maximum output signal can be limited from 100% down to 0 %.

The output signal of the extra regulation sequence is controlled from the ABIQ-3-2 IQlogic+ module accessory, see separate installation instructions.

Settings:

Value	Setting range	Factory setting
Extra regulation sequence 1/2	Inactive/Heat/Cool/Heat and cool	Inactive
Output inverse 10-0V	On/Off	Off
Recirculation control	On/Off	Off
Max. output signal	0-100%	100%
Periodic operation of pump	On/Off	On
Periodic operation of valve	On/Off	On
Periodic operation interval	0-168 hrs.	24 hrs.
Periodic operation period	0-60 min.	3 min.
Pump alarm	Inactive/Alarm on open contact/Alarm on closed contact/Contactor function	Inactive



Status

Extra regulation sequence 1/2

### 6.4.12.3 Cool

The valve actuator of the air cooler for water is equipped with a quick-fit connector for connection to the AHU's control unit which automatically activates the cooling function.

## Cool

#### 1-step

Used if cooling in one step is connected. The cooling controller of the AHU regulates the cooling output according to the cooling load, 0-100 %. The cooling relay is energized when the cooling load exceeds 5 % and is de-energized when the cooling load is below 2 %.

#### 2-step

Used when cooling in 2 steps is connected. The cooling controller of the AHU regulates the cooling output according to the cooling load, 0-100 %.

Cooling relay 1 is energized when the cooling load exceeds 5 % and is de-energized when the cooling load is less than 2 %. Cooling relay 2 is energized when the cooling load exceeds 55 % and is de-energized when the cooling load is less than 50 %.

#### 3-step, binary

Used when cooling with two inputs controlled with three binary steps is connected. The cooling controller of the AHU regulates the cooling output according to the cooling load, 0-100 %.

*On an increasing cooling load:*

Cooling relay 1 is energized when the cooling load is above 5 % and is de-energized when the cooling load is between 40-70 %. Cooling relay 2 is energized when the cooling load is above 40 %. Cooling relay 1 is energized again (together with cooling relay 2) when the cooling load is above 70%.

*On a decreasing cooling load:*

Cooling relay 1 is de-energized when cooling load is below 60 %, it is energized again when cooling load is below 30 % and is de-energized again when cooling load is below 2 %. Cooling relay 2 is de-energized when cooling load is below 30 %.

Settings:

Value	Setting range	Factory setting
Cooling	Inactive/1 step/2 steps/3 steps, binary	Inactive
<i>Air cooler for water</i>		
Periodic operation of pump 1	On/Off	On
Periodic operation of pump 2	On/Off	On
Periodic operation of valve	On/Off	On
Periodic operation interval	0-168 hrs.	24 hrs.
Periodic operation period	0-60 min.	3 min.

### 6.4.12.4 Xzone

The Xzone temperature control function is designed for controlling one extra temperature zone via the ventilation system.

Xzone can be used for all types of air handling units, and both reheating and cooling can be controlled in the extra zone.

See also the Xzone function guide for more detailed information.

Settings:

Value	Setting range	Factory setting
Cooling	Inactive/1 step/2 steps/3 steps, binary	Inactive
<i>Air cooler for water</i>		
Periodic operation of pump 1	On/Off	On
Periodic operation of pump 2	On/Off	On
Periodic operation of valve	On/Off	On
Periodic operation interval	0-168 hrs.	24 hrs.
Periodic operation period	0-60 min.	3 min.
Alarm input 1, function	Inactive/Alarm on open contact/Alarm on closed contact/Contactor function	Inactive
Alarm input 2, function	Inactive/Alarm on open contact/Alarm on closed contact/Contactor function	Inactive

## Xzone

### 6.4.12.6 Delay time

Stop drying delay is the delay time between switching off and stop of the air handling unit. Used to dry out any moisture if cooling has been operational.

Restart time is computed from when the compressor starts until it is permitted to start again.

Step switch time is the time delay between two steps.

Stop/start time is computed from when the compressor stops until it is permitted to start again.

Settings:

Value	Setting range	Factory setting
Stop, drying delay	On/Off	Off
Stop, drying delay time	1-60 min.	3 min.
Restart time	0-20 min.	5 min.
Step switch time	0-15 min.	5 min.
Stop/start time	0-15 min.	5 min.

### Delay time

### 6.4.12.7 Outdoor air limits

Provision is available for setting an outdoor temperature-related blocking function in 3 steps. If the outdoor temperature is below each step limit, the function of the cooling relays will be blocked. The function is used for preventing the relevant compressors from being switched on and off too many times.

Settings:

Value	Setting range	Factory setting
Step 1	32 – 86°F	59°F
Step 2	32 – 86°F	64°F
Step 3	32 – 86°F	68°F

### Outdoor air limits



## 6.4.12.8 Airflow, limits

### Cooling, 0-10 V:

The cooling function is blocked if the supply or return airflows are lower than the preset limit.

If the airflow limit function is not of immediate interest, both flow limits are set to 0.

### Cooling, On/Off:

The current airflow must exceed the preset airflow as a condition for the respective cooling step to be put into operation.

Settings:

Value	Setting range	Factory settings
<i>Cooling, 0-10 V</i>		
Supply air, 0-10 V	0 - Max. flow	25% of max. airflow for air handling unit
Return air, 0-10 V	0 - Max. flow	25% of max. airflow for air handling unit
<i>Cooling, On/Off</i>		
Supply air, On/Off, step 1	0 - Max. flow	25% of max. airflow for air handling unit
Return air, On/Off, step 1	0 - Max. flow	25% of max. airflow for air handling unit
Supply air, On/Off, step 2	0 - Max. flow	50% of max. airflow for air handling unit
Return air, On/Off, step 2	0 - Max. flow	50% of max. airflow for air handling unit
Supply air, On/Off, step 3	0 - Max. flow	75% of max. airflow for air handling unit
Return air, On/Off, step 3	0 - Max. flow	75% of max. airflow for air handling unit

## Air flow limits

## 6.4.13 Heat/Cool recovery

### 6.4.13.1 Status

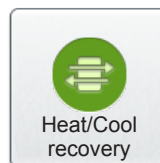
All the relevant values can be read here. Used for performance checks.

See below for designations of each PX sectional damper (counterflow heat exchanger):

Sectional damper 1 (farthest out) = 1A

Bypass damper (centre) = 2A

Sectional damper 2 (farthest in) = 3A



Status

### 6.4.13.2 Carry over control



If the fans are generating low airflows, the rotary heat exchanger is decelerated to an appropriate speed to ensure a correct purging airflow through the heat exchanger.

Carry over control

Settings:

Value	Setting range	Factory setting
Carry over control	On/Off	Off

### 6.4.13.3 Efficiency measurement

The efficiency measurement of heat exchangers for RX/PX can be enabled here.

The function requires two extra sensors, ABLZ-2-31-2 (extract air) and ABLZ-2-31-4 (exhaust air) which measure temperature and humidity. See the separate installation instructions.

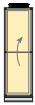
Measured values are specified under the humidity function.

Settings:

Value	Setting range	Factory setting
Efficiency measurement	On/Off	Off

Efficiency measurement

#### 6.4.13.4 Defrost



In environments where the return air can occasionally be humid, the defrosting function can be activated to protect the heat exchanger from frosting. The function continuously monitors the condition of the heat exchanger rotor to prevent it from becoming clogged due to condensate that has frozen inside the exchanger.

The function requires a separate pressure sensor (preset for heat exchanger defrosting) wired to the control unit inputs for external BUS communication and connected to the AHU pressure measurement tapings. See special installation instruction for the ABLZ-1-23-aa pressure sensor.

The pressure drop across the rotor must then be calibrated to establish a reference pressure drop for monitoring purposes. Calibration is put into effect by setting Calibration to the On position.

When the defrosting function is activated the pressure drop across the heat exchanger is continuously measured and the reading is compared with the calibration reading. If the pressure drop exceeds the preset limit value, a defrosting sequence is implemented in which the rotor speed is gradually ramped down (ramp time max. 4 minutes). The lowest permissible speed of the rotor is 0.5 rpm. During the defrosting process, the warm extract air thaws any possible ice that has formed on surfaces.

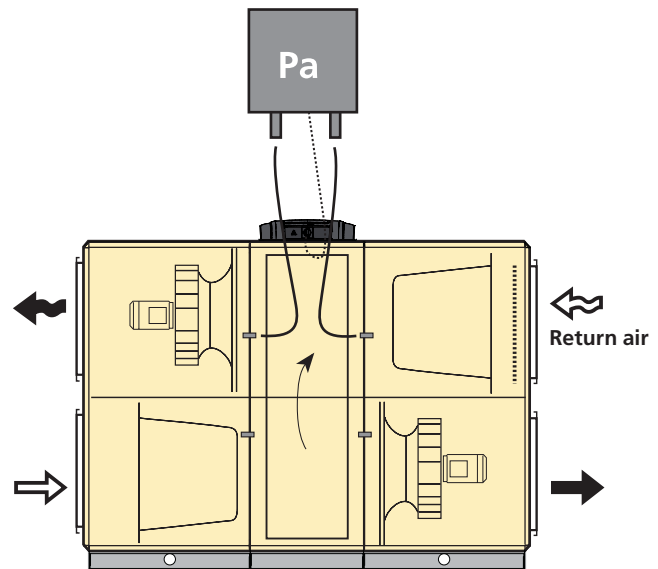
If defrosting reduces the speed to the min. speed 0.5 rpm for more than 2.5 h an alarm is generated.

Note that the heat exchanger performs less efficiently while defrosting is in progress and that the supply air temperature will also drop downstream of the heat exchanger.

Settings:

Value	Setting range	Factory setting
Defrost	On/Off	Off
Defrost limit value	0.12 - 0.4 in W.G.	0.2 in W.G.
Calibration	On/Off	Off

#### Defrost



Connection principle for the defrosting function with separate pressure sensor.

### 6.4.13.5 Calibration/Optimization (GOLD PX)



#### Defrosting, Standard

When the air handling unit is started up or if needed, a calibration should be carried out. When calibration is in progress, the air handling unit's limit values for alarms and defrosting are calculated.

#### Defrosting, RECO Frost

When the air handling unit is started up and if needed, a calibration should be carried out. When calibration is in progress, the air handling unit's limit values for alarms and defrosting are calculated.

When the air handling unit is started up and if needed, bypass optimization should be carried out. When bypass optimization is in progress, the damper positions of the bypass are optimized.

Calibration and bypass optimization can be activated to occur at the same time or individually. If they are activated individually, whichever one is activated first is of no importance.

Settings:

Value	Setting range	Factory settings
Calibration	On/Off	Off
Bypass optimization (RECO Frost only)	On/Off	Off

### 6.4.13.6 Automatic functions

#### GOLD RX (rotary heat exchanger)

##### Purging function

Purging is an automatic function that prevents the rotary heat exchanger from standing still in the same position for a longer period when no heat-ing is necessary.

Purging operation is activated when the AHU is operating but the heat exchanger rotor is not rotating. The heat exchanger rotor then rotates for 10 seconds every 10 minutes to purge its surfaces clean of impurities.

##### Calculation of the efficiency

The efficiency is calculated and displayed (0 – 100%).

##### Calculation of recovered energy

Recovered sensible energy is calculated and the values are displayed (instantaneous and accumulated).

##### Cooling recovery

Cooling recovery is an automatic function that helps the air handling unit on a cooling load and high outdoor air temperature to utilize the relative "cooling energy" that can be indoors. The heat exchanger rotates at max. speed and in this way recovers the relative cooling energy or chilli-ness in the return air.

The conditions for this function to be activated are that there is a cooling demand and that the outdoor temperature is 1°F higher than the return air. The function stops when the cooling load ceases to exist or when the outdoor temperature is the same as that of the return air.

##### Overtime heat exchanger operation

If the AHU stops, the heat exchanger automatically continues to recover heat for about 1 minute.

It takes a little time for the fans to stop rotating after a stop has been ordered and this prevents the supply air from chilling the premises.

#### GOLD SD (coil heat exchanger)

##### Pump control, coil heat exchanger

The pump of the pipework package starts when heat recovery is needed. If heat recovery is not needed for more than 24 hours, the pump is exer-cised once a day.

##### Anti-frost protection

## Calibration/Optimization

In cold weather, and if the return air is humid, there is risk of frosting in the coil heat exchanger. The GOLD SD is equipped with anti-frosting protection.

The temperature of the liquid circulated to the return air coil and the humidity in the return air are measured.

Taking the humidity into consideration, the control system calculates the lowest permissible temperature without risk of frosting inside the coil. The valve in the pipework package is then regulated to prevent the circulated liquid from dropping below this temperature.

#### GOLD PX (plate heat exchanger)

In cold weather, and when the return air is humid, there is risk of frost-ing in the plate heat exchanger. The GOLD PX is therefore equipped with anti-frost protection.

##### Anti-frost protection, standard

The pressure drop across the heat exchanger and the outdoor air tem-perature are measured.

With consideration given to the pressure drop across the heat exchanger and the outdoor air temperature, the control system regulates damp-ers for bypass and heat exchanger (interlinked) in order to prevent the formation of frost.

##### RECO Frost anti-frost protection

The pressure drop across the heat exchanger, return air temperature, moisture content in the return air and outdoor air temperature are measured.

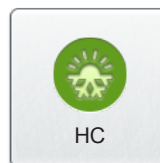
With consideration given to the pressure drop across the heat exchanger, the return air temperature, the moisture content in the return air and the outdoor air temperature, the control system individually regulates damp-ers for bypass and the heat exchanger for section-by-section defrosting without the formation of frost.

## 6.4.14 HC, reversible heat pump/chiller

If the functions Dehumidifying regulation and Humidifying are activated  
The HC function is designed to control a reversible heat pump/chiller in the unit GOLD RX/HC.

For further information, see the GOLD RX/HC Function Guide.

Settings:



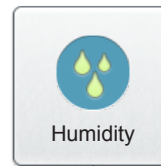
Value	Setting range	Factory setting
<i>Function</i>		
Position HC	On/Off	Off
HC defrosting accessories	Inactive/Recirculation/ Electric air heater	Inactive
Heating Function	Standard/Comfort	Comfort
Cooling Function	Standard/Comfort	Comfort
Time for comfort mode	300 - 1800 s	900 s
<i>Outdoor temperature limits</i>		
Heating	-58 – 122°F	-4°F
Cool	32 – 122°F	-59°F
<i>Airflow limits</i>		
Supply Air	0 – Max. flow	40% of max. air flow for air handling unit
Return Air	0 – Max. flow	40% of max. air flow for air handling unit

## 6.4.16 Humidity

If the functions Dehumidifying regulation and Humidifying are activated at the same time, Dehumidifying regulation has priority and the possible settings for Humidifying are limited to being the same or lower than the setting for Dehumidifying regulation. There is a delay of 5 minutes between Dehumidifying regulation having stopped and Humidifying starting up (and vice versa).

### 6.4.16.1 Status

All the relevant values can be read here. Used for performance checks.



Status

### 6.4.16.2 Humidifying

#### Evaporative humidification (On/Off)

This function is suitable together with an evaporative humidifier (not Swegon).

The function requires the ABIQ-3-1 IQlogic+ module accessory and one ABLZ-2-31-2 humidity sensor. See separate installation instructions. Install the humidity sensor in the return air duct (or in the premises), see drawing.

The humidity in the return air duct (the premises) is regulated between adjustable start and stop limits.

#### Steam humidification (0 - 10V)

The function is appropriate for operation together with a steam humidifier (not supplied by Swegon) and is a variable control system via 0-10 V control signal, as well as a contact function which interlocks the humidifier if the air handling unit stops, if Summer night cool is used or if the humidity in the supply air exceeds the set point by more than 10%.

The function requires the ABIQ-3-1 IQlogic Plus module accessory and one ABLZ-2-31-1 humidity sensor accessories (for supply air regulation) or two ABLZ-2-31-1/2 humidity sensor accessories (for return air regulation), see separate installation instructions. Install the humidity sensors in the return air duct and the supply air duct respectively. See drawing!

The function keeps the humidity level constant in the return air duct (the premises) by regulating the humidity in the supply air. In order to prevent the humidity in the supply air from being too high, it is restricted to a maximum limit.

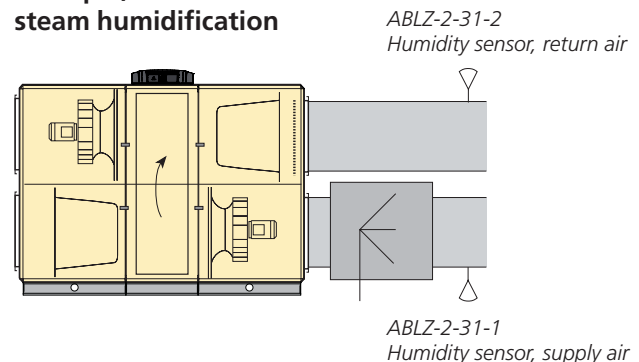
Alternatively the humidity in the supply air duct can be kept constant by selecting a regulating humidity sensor in the supply air.

The set point cannot be set higher than the max limit. If the dehumidification function is activated, the max limit cannot be set higher than the set point for dehumidification.

Settings:

Value	Setting range	Factory setting
Humidifying	Inactive/On/Off/ 0-10V	Inactive
Regulation sensor	Supply air/Return air	Supply air
Evaporative		
Start	10 - 95%RH	40%RH
Stop	10 - 95%RH	45%RH
Steam		
Set point	10 - 95%RH	30%RH
Max. supply air	10 - 95%RH	80%RH

#### Example, steam humidification



### 6.4.16.3 Dehumidifying

The function is intended for dehumidifying the supply air in order to prevent condensation in the supply air duct or in connected air conditioning products.

The dehumidification regulation function controls the humidity in the supply air duct or the return air duct by means of an air cooler and an air heater for reheating.

The function requires that an air cooler be mounted upstream of the air heater in the supply air duct. See the example to the right.

If control of the humidity in the supply air duct is required, install a ABLZ-2-31-1 humidity sensor in the supply air duct. If control of the humidity in the return air duct is required, install a ABLZ-2-31-2 humidity sensor in the return air duct and a ABLZ-2-31-1 humidity sensor in the supply air duct. Connect the sensor to the AHU. See separate installation instructions.

Cooling energy is emitted to condense the moisture in the supply airflow, which then is heated to the desired supply air temperature. This causes a reduction in the moisture content of the supply air.

The cooling unit used must be sized so that the temperature of the supply air will be below the dew point, otherwise no condensation will arise and no dehumidification will occur.

Settings:

Value	Setting range	Factory settings
Dehumidification	Inactive/Supply air/Return air	Inactive
Supply air - relative humidity	10-90%RH	50%RH
Return air - relative humidity	10-90%RH	50%RH

### 6.4.16.4 Humidifier alarm

The alarm input can be selected to closed circuit, open circuit or contactor function.

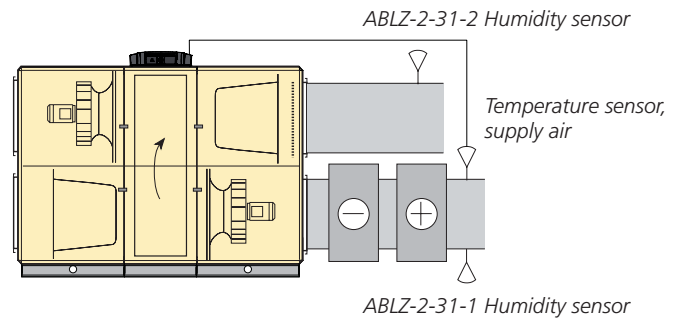
Settings:

Value	Setting range	Factory setting
Alarm input	Inactive/Closed circuit/Open circuit/Contactor function <sup>1)</sup>	Inactive

<sup>1)</sup> Closed circuit involves closing the circuit in order to initiate an alarm. Open circuit involves opening the circuit in order to initiate an alarm. Contactor function involves the use of an auxiliary contact from a contactor, which controls the humidifier. The aux. contact is connected to the alarm input.

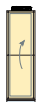
## Dehumidifying

### Example: Dehumidification regulation



## Humidifier alarm

## 6.4.17 ReCO<sub>2</sub>



The ReCO<sub>2</sub> function is designed for ensuring the correct air quality or air temperature, by means of recirculating return air and minimizing the inflow of outdoor air.

The function can be used in ventilation systems in which recirculated air intermixture is acceptable.

The function presupposes that the outdoor air damper and the damper in the air recirculation section are equipped with modulating damper actuators.

Lower outdoor air and exhaust air flows as well as lower return air fan speed enable the unit to consume less power. A separate air quality sensor continuously measures the air quality of the ventilation system.

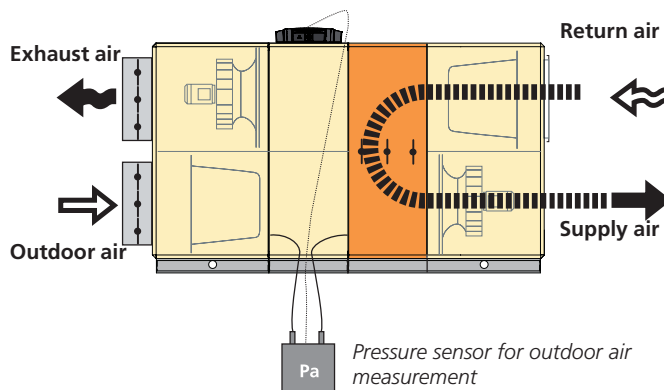
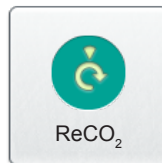
The pressure drop across the rotor must then be calibrated to establish a reference pressure drop for the function. Calibration is put into effect by setting Calibration to the On position.

For more information, see the ReCO<sub>2</sub> function guide.

Settings:

Value	Setting range	Factory setting
<i>Regulation mode</i>		
CO <sub>2</sub> /VOC, operating mode	Inactive/ CO <sub>2</sub> /VOC / CO <sub>2</sub> /VOC and air flow boost On/Off	Inactive
CO <sub>2</sub> /VOC free cooling Temperature mode	Inactive/Heat sequence/ Cool sequence/Heat and cool sequence On/Off	Off Inactive
Temperature free cooling CO <sub>2</sub> /VOC		On
Set point	0 - 100%	50%
CO <sub>2</sub> , set point	0 - 10000 ppm	1000 ppm
VOC, set point	0 - 10000 ppm	1500 ppm
Min. outdoor air	<sup>1)</sup>	25% of max. airflow for air handling unit
Min. exhaust air	<sup>1)</sup>	25% of max. airflow for air handling unit
Calibration Temperature	On/Off	Off
Min. outdoor air	<sup>1)</sup>	25% of max. airflow for air handling unit
Min. exhaust air	<sup>1)</sup>	25% of max. airflow for air handling unit
Calibration	On/Off	Off

<sup>1)</sup> The setting range is the same as the AHU's min. - max. settings.



Outdoor airflow kept constant by pressure sensor

When the recirculation damper opens the return air fan speed decreases and vice versa.



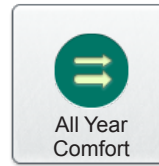
## 6.4.18 All Year Comfort

The All Year Comfort function controls, via control valves, the supply flow temperature to the comfort modules, cooling beams, perimeter wall units, etc. The water temperature is measured by two strap-on temperature sensors mounted on the water pipe of each circuit.

All Year Comfort has functions for outdoor compensation, room compensation, night compensation, dew point compensation as well as the monitoring and exercising of pumps and valves.

For more information, see the All Year Comfort function guide.

Settings:



Value	Setting range	Factory setting		
Function	Inactive/Cooling water/Heating water/ Cooling water and heating water	Inactive		
<i>Chilled water</i>			Outdoor temp for pump start	-40 - 104°F 59°F
Chilled water <sup>1)</sup>	41 - 86°F	57°F	Outdoor temp for pump stop	-40 - 104°F 54°F
Outdoor temp compensation	On/Off	Off	Room temp compensation	On/Off Off
Outdoor temp X1	-40 - 104°F	122°F	Room temp. set point	32 - 104°F 70°F
Outdoor temp X2	-40 - 104°F	68°F	Room temp. P-band	1 - 10 K 5 K
Outdoor temp X3	-40 - 104°F	77°F	Room comp. night block	On/Off Off
Outdoor temp X4	-40 - 104°F	86°F	Night compensation	On/Off Off
Chilled water temp Y1	41 - 86°F	72°F	Night reduction	0 - -10 K -2 K
Chilled water temp Y2	41 - 86°F	64°F	Time channel 1/2 start of night	00:00 - 23:59 00:00
Chilled water temp Y3	41 - 86°F	57°F	Time channel 1/2 end of night	00:00 - 23:59 00:00
Chilled water temp Y4	41 - 86°F	54°F	Time channel 1/2 period	Inactive/Monday/ Tuesday/ Wednesday/ Thursday/Friday/ Saturday/Sunday Mon - Fri/Mon - Sun/ Sat - Sun
Outdoor temp for pump start	-40 - 104°F	50°F		
Outdoor temp for pump stop	-40 - 104°F	50°F		
Room temp compensation	On/Off	Off	Air flow compensation	On/Off Off
Room temp. set point	32 - 104°F	70°F	Periodic operation pump	On/Off On
Room temp. P-band	1 - 10 K	5 K	Periodic operation valve exercising	On/Off Off
Room comp. night block	On/Off	Off	Periodic operation interval	0-168 hrs. 24 hrs.
			Periodic operation period	0-60 min. 3 min.
Night compensation	On/Off	Off	Pump alarm	Inactive/Alarm on closed contact/ Alarm on open contact/Contactor function
Night reduction	0 - 10 K	2 K		On/Off Off
Time channel 1/2 start of night	00:00 - 23:59	00:00	Valve alarm	On/Off Off
Time channel 1/2 end of night	00:00 - 23:59	00:00		
Time channel 1/2 period	Inactive/Monday/ Tuesday/ Wednesday/ Thursday/Friday/ Saturday/Sunday Mon - Fri/Mon - Sun/ Sat - Sun	Inactive		
Dew point compensation	On/Off	Off		
Air flow compensation	On/Off	Off		
Periodic operation pump	On/Off	On		
Periodic operation valve exercising	On/Off	Off		
Periodic operation interval	0-168 hrs.	24 hrs.		
Periodic operation period	0-60 min.	3 min.		
Pump alarm	Inactive/Alarm on closed contact/ Alarm on open contact/Contactor function	Inactive		
Valve alarm	On/Off	Off		
<i>Heated water</i>				
Heated water <sup>1)</sup>	50 - 176°F	86°F		
Outdoor temp compensation	On/Off	Off		
Outdoor temp X1	-40 - 104°F	-4°F		
Outdoor temp X2	-40 - 104°F	32°F		
Outdoor temp X3	-40 - 104°F	41°F		
Outdoor temp X4	-40 - 104°F	59°F		
Heated water temp Y1	50 - 176°F	104°F		
Heated water temp Y2	50 - 176°F	68°F		
Heated water temperature Y3	50 - 176°F	68°F		
Heated water temp Y4	50 - 176°F	59°F		

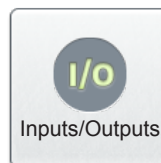
<sup>1)</sup> Omitted if the outdoor temperature compensation is selected.

## 6.4.20 Inputs/Outputs

Can for example be used if the air handling unit will be controlled/monitored via microprocessor substation or a PLC system.

External operation module 3/6 requires the ABIQ-3-2 IQlogic+ module accessory; external communication module A/B/C requires the ABIQ-3-1 accessory. See separate installation instructions.

Settings:



Value	Setting range	Factory setting
External operation module 3/6		
Digital output 1/2 mode	Inactive/Air handling unit in operation/Air handling unit in auto operation/ Air handling unit in manual operation/Air handling unit in low speed operation/ Air handling unit in high speed operation/A alarm/B alarm/ Damper relay/Heat exchanger/ Heat exchanger defrost/Reheat/ Reheating power reduction/Heating Boost/Morning Boost/Intermittent night heat/Airflow down regulation/Extra reg. sequence 1/2 heat/Extra reg. sequence 1/2 cool/ Cooling/Cooling Boost/Summer night cool/ Supply air fan in operation/Return air fan in operation/ Internal fire alarm tripped/External fire alarm 1/External fire alarm 2/ External fire alarm 1 or 2/Any fire alarm/External fire alarm 1 with priority/External fire alarm 2 with priority/Internal fire alarm tripped with priority/ Preheating	Inactive
Digital input 1/2	Inactive/Alarm reset/Stop AYC heated water/Stop AYC chilled water	Inactive
Analogue output 1	Indicates present supply airflow, from 0 to air handling unit's max. speed (%)	
Analogue output 2	Indicates present return airflow, from 0 to air handling unit's max. speed (%)	
Analogue input 1/2*	Inactive/Set point displacement/ Set point displacement, supply air/ Set point displacement, return air	Inactive
External communication module A/B/C	On/Off	Off
External communication module A/B/C	On/Off	Off
Temperature sensor no. 1	On/Off	Off
Temperature sensor no. 2	On/Off	Off

\* If analogue inputs 1 and 2 are both selected for setpoint displacement, only analogue input 1 will be used.

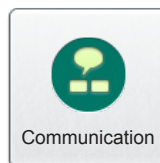
## 6.4.21 Communication



The potential for communication and monitoring is integrated as standard into the AHU. The AHU is ready to be connected via EIA-485. For connection and wiring to the AHU, see Section 10.5 Wiring to terminals.

Communication can also be established via Ethernet without software other than an ordinary web browser such as Internet Explorer.

Further information about interfaces, protocols and configuration is available at [www.swegon.se](http://www.swegon.se) (com).



### External Port B

### 6.4.21.1 External Port B

For communication with network. Specify protocol and settings for Ethernet.

Settings:

Value	Setting range	Factory setting
DHCP	On/Off	Off
IP address		10.200.1.1
(static or dynamic)		
Net mask		255.255.255.0
Default GATEWAY		0.0.0.0
Primary DNS		0.0.0.0
Secondary DNS		0.0.0.0
MAC address		Not adjustable

### 6.4.21.2 Wireless LAN

The AHU's control unit is, as standard, equipped with Wi-Fi function and can be connected to e.g. a wireless hand-held terminal (accessory), portable computer or smart phone.

The password can, via the hand-held terminal, be changed to an optional combination of digits. The password and the SSID can also be entered in alphabetical form on the AHU's web page.

To connect to a portable computer or smart phone, note the settings on SSID, password and IP address. Activate Wi-Fi in the portable computer or smart phone and search for the wireless network (with the same name as the SSID). Connect by entering the password.

Open your web browser and update the page. The web browser will then automatically connect to the control circuit card. To log on, write your user name (local or installation), and enter the password (local = 0000, installation = 1111, factory setting).

Settings:

Value	Setting range	Factory setting
Wireless LAN	On/Off	Off
SSID	Optional	GOLD
Password (WPA2-PSK)	<sup>1)</sup>	123456789
IP address	Not adjustable	192.168.234.1
Net mask	Not adjustable	255.255.255.0
MAC address	Not adjustable	Not adjustable
Channel (frequency band)	5 - 11	5

<sup>1)</sup> Certain smart phones require at least six characters.

### Wireless LAN

### 6.4.21.3 E-mail

You can select whether the AHU shall handle outgoing e-mail here.

The settings can be entered on the AHU web page. See separate instructions.

There is a button for test transmission.

Settings:

Value	Setting range	Factory setting
SMTP server	External/Internal	External
SMTP server	Optional address	
SMTP port number		25
SMTP username	Optional, to be entered on the web page	
SMTP password	Optional, to be entered on the web page	
Encryption	On/Off	Off
E-mail sender	Optional, to be entered on the web page	
E-mail reply path	Optional, to be entered on the web page	

### E-mail

### 6.4.21.4 EIA-485

Specify protocol and settings for EIA-485.

Settings:

Value	Setting range	Factory setting
Protocol	Inactive/Modbus/EXoline/Metasys N2 Open/LON	Modbus
Baud rate	4800/9600/19200/38400	9600
Parity	None/Even/Odd	None
Stopbits	1/2	2
Modbus ID/	1 - 247	1
Metasys ID/PLA		
ELA	1-255	1
Shortest feedback delay	0 - 100 ms	0 ms

### EIA-485

### 6.4.21.5 Modbus TCP

Specify settings for Modbus TCP.

Settings:

Value	Factory setting
Port number	502
Approved client IP address	0.0.0.0
Approved client netmask	0.0.0.0

### Modbus TCP

### 6.4.21.6 BACnet IP

Enter the BACnet IP settings.

Settings:

Value	Factory setting
Network number Ext. B	0
Internal network number A	0
Device ID	0
Port number	47808

### BACnet IP

### 6.4.21.7 EXOline TCP

EXOline can be activated and enter the port number.

Settings:

Value	Setting range	Factory setting
Port number		26486
PLA	1 - 247	1
ELA	1-255	1

### EXOline TCP

### 6.4.21.8 Operation level communication

It is possible to change the operation level communication here.

Settings:

Value	Setting range	Factory setting
Operation level communication	Inactive/Total stop/Low speed/High speed/Normal stop/ Extended normal stop	Inactive

### Operation level Communication

## 6.4.22 Base setting

Used for saving, loading and restoring the settings.

Date and time for the latest saved backup copy can be viewed.

The AHU's settings/communication settings are saved/loaded to/from the control unit's internal memory or external SD circuit card that can be inserted into the control unit.

The AHU settings involve all settings except communication settings.

Communication settings involve all settings (except AHU settings).

Settings:

### Value

### Alternative

#### Air handling settings

Export air handling settings

Export to local backup/Export to SD card

Import air handling settings

Import from local backup/Import from SD card

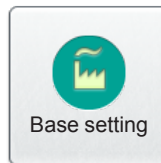
#### Communication settings

Export communication settings

Export to local backup/Export to SD card

Import communication settings

Import from local backup/Import from SD card



## 6.4.23 Users

The requirements for password can be activated here under User level (local). The password is always 0000.

Settings:

### Value

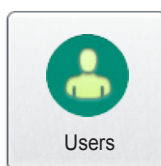
### Setting range

### Factory setting

Requirements for user password

On/Off

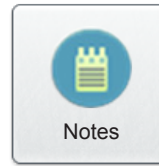
Off



IQnavigator user

### 6.4.24 Notes

Notes can be read here. Notes can only be written on the AHU's web page.



### 6.4.25 Manual test



**NB!** Manual test running can cause indoor comfort problems. There is also risk of overloading the system. The responsibility for discomfort and overload rests totally on the person who activates the function.

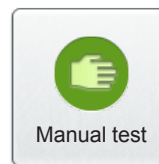
When you enter manual test, select safe mode or operating mode. Safe mode involves stopping the AHU and being able to run each installed function separately or together. Operating mode involves permitting the AHU to continue to operate in the normal operating mode and installed functions can be influenced manually.

Manual test operation can take place for testing the inputs and outputs, fans and heat exchanger, etc.

Used for installation or troubleshooting to test that wired connections and functions operate correctly.

Certain alarms, functions and normal control modes will be blocked while manual testing is in progress.

Each image indicates which functions can be test run.



## 6.4.26 IQnavigator (hand-held terminal)

### 6.4.26.1 Connect to IQlogic

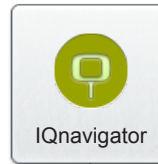
The method of connection between the IQnavigator and IQlogic can be selected here.

Can be selected as direct (standard cable), DHCP or static IP (requires connection to network), and direct/wireless (requires the IQnavigator hand-held terminal with WLAN ABLZ-1-71-2 accessory. See separate instructions).

If the hand-held terminal is placed at a distance so that the standard cable between the hand-held terminal and control unit is not sufficient, the mains adapter TBLZ-1-70, available as an accessory, is required to power the hand-held terminal.

Settings:

Value	Setting range	Factory setting
Connect to IQlogic	Direct/DHCP/Static IP/Direct/Wireless	Direct
IQnavigator IP address	Optional	
IQnavigator Netmask	Optional	
Pre-selected IQnavigator gateway	Optional	
IQlogic IP address	Optional	



Connect to IQlogic

### 6.4.26.2 Backlight brightness

The hand-held terminal can be set to four different backlight brightness settings.

Settings:

Value	Setting range	Factory setting
Brightness mode	Auto adjust/Low/Medium/High	Auto adjust

Brightness mode

### 6.4.26.3 Acoustics

Button sound effects on the hand-held terminal can be activated and the volume can be set in five steps.

Settings:

Value	Setting range	Factory settings
Button sound effects	On/Off	Off
Volume	1-5	3

Acoustics



## 7. Maintenance



### Warning

Before carrying out any work, make sure that the power supply to the air handling unit has been switched off.

### 7.1 Filter Change

Filters made of glass fibre should be replaced, and if a pre-filter made of woven aluminum is fitted, it should be washed, when the corresponding filter alarm has been activated.

Order new filters from Swegon or your nearest Swegon representative. Specify the size of the GOLD unit, whether the replacement concerns one or two directions of airflow and if you are replacing standard filters and/or possibly a pre-filter.

#### 7.1.1 Removing filters

It is advisable to clean inside the filter space while the filters are removed.

*Standard filters:*

Pull out the handles (A) to free the filters from the filter holder. Withdraw the filters.

*Pre-filters, if required, in the AHU:*

Withdraw the filters.

#### 7.1.2 Installing new filters

*Standard filter:*

Insert the filters into the filter holder. At the same time, stretch the filter bags, so that they will not become caught, damaged or folded.

Insert the filters as far as possible into the unit and press them lightly against the filter frames, so that they fit tightly.

Push in the handles (A) to clamp the filters in position in the filter holder.

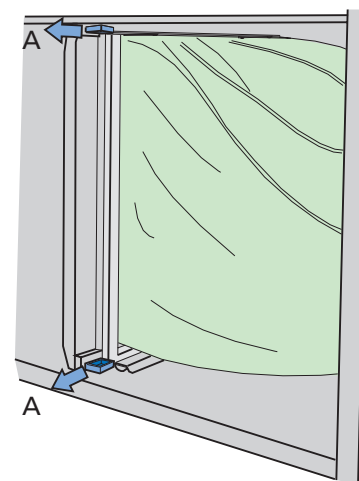
Close the inspection doors.

Calibrate the filters as described in Section 6.3.

*Possible pre-filters in the AHU:*

Insert the filters as far as possible into the unit and press them lightly against the filter frames, so that they fit tightly.

Calibrate the filters as described in Section 6.3.



## 7.2 Cleaning and Inspection

### 7.2.1 General

Clean the interior of the air handling unit if needed. Inspection of the air handling unit should be performed when you change filters or at least twice a year.

### 7.2.2 Filter spaces

The most appropriate time to clean the unit is when you change the filters.

### 7.2.3 Heat exchangers

Check at least twice a year whether cleaning is necessary. Cleaning can be done from the filter space.

#### Rotary heat exchanger

The heat exchanger should above all be cleaned by vacuum cleaning with a soft nozzle to prevent damage to the air passages in the rotor.

Turn the rotor by hand to reach all surfaces. If the heat exchanger is substantially fouled, its surfaces can be blown clean with compressed air.

If needed, the heat exchanger can be withdrawn from the unit casing and washed with de-greasing solvent. Only service personnel trained by Swegon shall be permitted to wash it in this way.

#### *Vinyl-coated fabric seal*

Lift up the fabric seal and inspect its underside. Clean if needed by brushing or vacuum cleaning.

If the fabric seal is worn or substantially fouled, it should be replaced. Do not lubricate it!

#### *Drive belt tension*

Replace the drive belt if it feels loose or worn and slightly slips if it meets resistance. Contact service personnel trained by Swegon.

#### Plate heat exchangers

Always clean against the regular direction of airflow.

Cleaning must only be done by blowing with compressed air, vacuum cleaning with a soft nozzle or wet cleaning with water and/or solvent. Before you begin cleaning, cover adjacent functional sections to protect them.

If cleaning solvent is used, do not use solvent that will corrode aluminium or copper. Swegon's cleaning agent is recommended. This cleaning agent is sold by Swegon Service.

Inspect the drain to make sure that it isn't clogged. The by-pass and shut-off dampers do not require maintenance.

#### Coil heat exchangers

Make sure that the coils are purged of air. If a droplet eliminator is fitted, remove it and flush it clean with water.

Always clean against the regular direction of airflow.

Cleaning must only be done by blowing with compressed air, vacuum cleaning with a soft nozzle or wet cleaning with water and/or solvent. Before you begin cleaning, cover adjacent functional sections to protect them.

If cleaning solvent is used, do not use solvent that will corrode aluminium or copper. Swegon's cleaning agent is recommended. This cleaning agent is sold by Swegon Service.

While cleaning, check whether venting is necessary, check the content of glycol in the water and the condition of the coil for leakage. Also check that the drain is not clogged.

### 7.2.4 Fans and fan spaces

Inspect and, if needed, clean the fan impellers to remove dirt deposits.

Check the impeller to make sure that it is not out of balance.

Vacuum clean the fan motor or brush its surfaces. It can also be cleaned by carefully wiping it with a damp cloth and with dishwashing detergent.

Clean the fan space, if needed.

## 7.3 General inspection and functionality check

A general inspection and functionality check should be performed whenever you change filters or at least once a year.

Parts subject to wear such as fan bearings, seals, drive belts, etc. should be checked and be replaced if necessary.

Compare the air handling unit's values with the commissioning report. Remedial measures should be taken to correct any possible inconsistencies.

## 8. Alarms and Troubleshooting

### 8.1 General

Alarms are displayed by a flashing red LED in the hand-held terminal.

When the LED flashes, go in under Alarm log in the dashboard. See Section 4.2.2.3.

Active alarms, pending alarms and alarm history (50 latest) can be viewed under Alarm log.

For resetting alarms, you can select individual alarms or all the alarms.

The reset time can also be viewed under History.

A fault can be traced by examining the function or functional component indicated in the alarm text.

#### **If the fault cannot be immediately remedied:**

Consider whether the air handling unit can continue to operate until the fault has been remedied. Choose to block the alarm and/or to change it from stop to operation. See Section 6.4.8.6.

#### 8.1.1 A and B alarms

A alarms send an indication to the output for alarm relay A (IQlogic module\*).

B alarms send an indication to the output for alarm relay B (IQlogic module\*).

Alarms can be forwarded with different priority via these relays.

#### 8.1.2 Resetting the alarm

Alarms with manual resetting can be reset from the hand-held terminal. Select reset in the alarm log.

Alarms that reset themselves automatically will do so as soon as the fault has been remedied.

Alarms can also be reset via a communication network (not applicable to frost guard alarm).

#### 8.1.3 Changing alarm settings

See Section 6.4.8.6.

## 8.2 Alarm Descriptions with Factory Settings

Alarm No.	Alarm text Function	Priority	Stop	Delay	Resetting
		0 = Blocked	0 = In operat.	s = second	0 = manual
		A = A alarm	1 = Stop	m = minute	1 = automatic
		B = B alarm		h=hour	
Alarm group 1: Fire alarm					
1:1	EXTERNAL FIRE ALARM NO. 1 TRIPPED For the fire protection function connected to terminals 6-7.	A <sup>1)</sup>	1	3 s	0
1:2	EXTERNAL FIRE ALARM NO. 2 TRIPPED For the fire protection function connected to terminals 8-9.	A <sup>1)</sup>	1	3 s	0
1:3	INTERNAL FIRE ALARM TRIPPED The air handling unit's supply air sensor measures more than 158°F and/ or its return air temperature sensor measures more than 122°F. The function must be activated manually.	A <sup>1)</sup>	1	3 s	0
Alarm group 2: External alarm					
2:1	EXTERNAL ALARM NO. 1 TRIPPED External alarm, connected to control unit terminals 10-11, has tripped..	A	1 <sup>3)</sup>	1 s <sup>2)</sup>	0
2:2	EXTERNAL ALARM NO. 2 TRIPPED External alarm, connected to control unit terminals 12-13, has tripped..	B	0 <sup>3)</sup>	1 s <sup>2)</sup>	0
Alarm group 3: Pre-heating					
3:1	PRE-HEAT, I/O MODULE NO. 9 COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communica- tion with I/O module No. 9 for pre-heating.	A	0 <sup>3)</sup>	10 s	1
3:2	PRE-HEAT, OVERHEATING PROTECTION FOR ELECTRIC AIR HEATER TRIPPED The overheating protection, electric air heater, has tripped.	A <sup>1)</sup>	0 <sup>3)</sup>	10 s	0
3:3	PRE-HEAT, FROST GUARD TRIPPED Frost guard temperature sensor measures temperature less than preset alarm limit. Factory setting: 45°F.	A <sup>1)</sup>	1	5 s	0
3:4	PRE-HEAT, FROST GUARD TEMPERATURE SENSOR DEFECTIVE Frost guard temperature sensor is defective or is not connected.	A <sup>1)</sup>	1	3 s	1
3:5	PRE-HEAT, TEMPERATURE SENSOR DEFECTIVE Sensor is defective or is not connected.	A	0 <sup>3)</sup>	3 s	1
3:6	PRE-HEAT, VALVE MONITORING TRIPPED Valve actuator, air heater for water is defective.	A	0 <sup>3)</sup>	10 m	0
3:7	PRE-HEAT, TEMPERATURE BELOW SET POINT ALARM LIMIT Temperature is below preset set point longer than 20 minutes.	A	0 <sup>3)</sup>	20 m	0
3:8	PRE-HEAT, ALARM INPUT TRIPPED Alarm input pre-heat has tripped.	A	0	20 s	0
Alarm group 4: Extra regulation sequence					
4:1	EXTRA REGULATION SEQUENCE 1, I/O-MODULE No E COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communica- tion with I/O module No. E for extra regulation sequence.	A	0 <sup>3)</sup>	10 s	1
4:2	EXTRA REGULATION SEQUENCE 1, OVERHEATING PROTECTION FOR ELECTRIC AIR HEATER TRIPPED Overheating protection, electric air heater, has tripped.	A <sup>1)</sup>	0 <sup>3)</sup>	10 s	0
4:3	EXTRA REGULATION SEQUENCE 1, FROST GUARD TRIPPED Frost guard temperature sensor measures temperature less than preset alarm limit. Factory setting: 45°F.	A <sup>1)</sup>	1	5 s	0
4:4	EXTRA REGULATION SEQUENCE 1, FROST GUARD TEMPERATURE SEN- SOR DEFECTIVE Frost guard temperature sensor is defective or is not connected.	A <sup>1)</sup>	1	3 s	1

Alarm No.	Alarm text Function	Priority	Stop	Delay	Resetting
		0 = Blocked	0 = In operat.	s = second	0 = manual
		A = A alarm	1 = Stop	m = minute	1 = automatic
		B = B alarm		h=hour	
4:5	EXTRA REGULATION SEQUENCE 1, VALVE MONITORING TRIPPED Valve actuator, air heater for water, is defective.	B	0 <sup>3)</sup>	10 m	0
4:6	EXTRA REGULATION SEQUENCE 1, ALARM INPUT TRIPPED Alarm input extra regulation sequence has tripped.	A	0	20 s	0
4:7	EXTRA REGULATION SEQUENCE 1, TEMPERATURE PROTECTION VIA COMMUNICATION, COMMUNICATION ERROR The air handling unit's control unit is not receiving any temperature reading via the external communication interface within the preset time limit.	B	0	5 m	1
4:9	EXTRA REGULATION SEQUENCE 2, I/O-MODULE No F COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with I/O module No. E for extra regulation sequence.	A	0 <sup>3)</sup>	10 s	1
4:10	EXTRA REGULATION SEQUENCE 2, OVERHEATING PROTECTION FOR ELECTRIC AIR HEATER TRIPPED Overheating protection, electric air heater, has tripped.	A <sup>1)</sup>	0 <sup>3)</sup>	10 s	0
4:11	EXTRA REGULATION SEQUENCE 2, FROST GUARD TRIPPED Frost guard temperature sensor measures temperature less than preset alarm limit. Factory setting: 45°F.	A <sup>1)</sup>	1	5 s	0
4:12	EXTRA REGULATION SEQUENCE 2, FROST GUARD TEMPERATURE SENSOR DEFECTIVE Frost guard temperature sensor is defective or is not connected.	A <sup>1)</sup>	1	3 s	1
4:13	EXTRA REGULATION SEQUENCE 2, VALVE MONITORING TRIPPED Valve actuator, air heater for water, is defective.	B	0 <sup>3)</sup>	10 m	0
4:14	EXTRA REGULATION SEQUENCE 2, ALARM INPUT TRIPPED Alarm input extra regulation sequence has tripped.	A	0	20 s	0

#### Alarm group 5: Reheating

5:1	REHEAT, OVERHEATING PROTECTION FOR ELECTRIC AIR HEATER TRIPPED The overheating protection, electric air heater, has tripped.	A <sup>1)</sup>	0 <sup>3)</sup>	10 s	0
5:2	REHEAT, FROST GUARD TRIPPED Frost guard temperature sensor measures temperature less than preset alarm limit. Factory setting: 45°F.	A <sup>1)</sup>	1	5 s	0
5:3	REHEAT, FROST GUARD TEMPERATURE SENSOR DEFECTIVE Frost guard temperature sensor is defective or is not connected.	A <sup>1)</sup>	1	3 s	1
5:4	REHEAT, VALVE MONITORING TRIPPED Valve actuator, air heater for water is defective.	B	0 <sup>3)</sup>	10 m	0

#### Alarm group 6: Xzone I/O-module no. A

6:1	Xzone, I/O-MODULE NO. A COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with I/O module No. A for Xzone.	A	0 <sup>3)</sup>	10 s	1
6:2	Xzone, OVERHEATING PROTECTION FOR ELECTRIC AIR HEATER TRIPPED The overheating protection, electric air heater, has tripped.	A <sup>1)</sup>	0 <sup>3)</sup>	10 s	0
6:3	Xzone, FROST GUARD TRIPPED Frost guard temperature sensor measures temperature less than preset alarm limit. Factory setting: 45°F.	A <sup>1)</sup>	1	5 s	0
6:4	Xzone, FROST GUARD TEMPERATURE SENSOR DEFECTIVE Frost guard temperature sensor is defective or is not connected.	A <sup>1)</sup>	1	3 s	1

Alarm No.	Alarm text Function	Priority	Stop	Delay	Resetting
		0 = Blocked	0 = In operat.	s = second	0 = manual
		A = A alarm	1 = Stop	m = minute	1 = automatic
		B = B alarm		h=hour	
6:5	Xzone, SUPPLY AIR TEMPERATURE SENSOR DEFECTIVE Supply air sensor is defective or is not connected.	A	1 <sup>3)</sup>	3 s	1
6:6	Xzone, HEATING VALVE MONITORING TRIPPED Valve actuator, air heater for water is defective.	B	0 <sup>3)</sup>	10 m	0
6:7	Xzone, SUPPLY AIR TEMPERATURE BELOW SET POINT ALARM LIMIT The supply air temperature is below the preset set point (ERS and Supply air regulation) or Min SA temp (Return air regulation) longer than 20 minutes.	A	0 <sup>3)</sup>	20 m	0
6:8	Xzone, SUPPLY AIR TEMPERATURE ABOVE SET POINT ALARM LIMIT The supply air temperature is above the preset set point (ERS and Supply air regulation) or Max. SA temp (Return air regulation) longer than 20 minutes.	B	0 <sup>3)</sup>	20 m	0
6:9	Xzone, HEAT, ALARM INPUT TRIPPED Alarm input Xzone heat has tripped.	A	0	20 s	0

#### Alarm group 7: Xzone I/O-module no. B

7:1	Xzone, I/O-MODULE NO. B COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with I/O module No. B for Xzone.	A	0 <sup>3)</sup>	10 s	1
7:2	Xzone, Return AIR TEMPERATURE SENSOR DEFECTIVE Return air sensor is defective or is not connected.	A	1 <sup>3)</sup>	3 s	1
7:3	Xzone, COOLING VALVE MONITORING TRIPPED Valve actuator, air cooler for water is defective.	B	0 <sup>3)</sup>	10 m	0
7:4	Xzone, Return AIR TEMPERATURE SENSOR BELOW SET POINT ALARM LIMIT The return air temperature is below preset alarm limit for more than 20 minutes.	A	0 <sup>3)</sup>	20 m	0
7:5	Xzone, COOL, ALARM INPUT 1 TRIPPED Alarm input 1 Xzone cool has tripped.	A	0	20 s	0
7:6	Xzone, COOL, ALARM INPUT 2 TRIPPED Alarm input 2 Xzone cool has tripped.	A	0	20 s	0

#### Alarm group 8: Cooling

8:5	COOLING, VALVE MONITORING TRIPPED Valve actuator, air cooler, is defective.	B	0 <sup>3)</sup>	10 s	0
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#### Alarm group 9: Spare

#### Alarm group 10: AHU, internal temperature sensor

10:1	SUPPLY AIR TEMPERATURE SENSOR DEFECTIVE Supply air sensor is defective or is not connected.	A	1 <sup>3)</sup>	3 s	1
10:2	SUPPLY AIR TEMPERATURE SENSOR FOR DENSITY COMPENSATION DEFECTIVE Supply air sensor in the supply air fan intake cannot establish correct communication or shows an incorrect value.	B	0 <sup>3)</sup>	3 s	1
10:3	Return AIR TEMPERATURE SENSOR DEFECTIVE Return air sensor is defective or is not connected.	A	1 <sup>3)</sup>	3 s	1
10:4	Return AIR TEMPERATURE SENSOR FOR DENSITY COMPENSATION DEFECTIVE (GOLD RX/PX) Temperature sensor in return air fan intake cannot establish correct communication or shows incorrect value. GOLD RX: Exhaust air regulation has been selected, but the temperature sensor in the exhaust air is defective or is not connected.	B	0 <sup>3)</sup>	3 s	1

Alarm No.	Alarm text Function	Priority	Stop	Delay	Resetting
		0 = Blocked	0 = In operat.	s = second	0 = manual
		A = A alarm	1 = Stop	m = minute	1 = automatic
		B = B alarm		h=hour	
10:5	Return AIR TEMPERATURE SENSOR FOR HEAT EXCHANGER DEFROSTING DEFECTIVE Temperature sensor, for heat exchanger defrosting is defective.	A	1 <sup>3)</sup>	10 s	1
10:6	Return AIR TEMPERATURE SENSOR FOR DENSITY COMPENSATION IN SD AHU DEFECTIVE Temperature sensor in return air fan intake cannot establish correct communication or shows incorrect value.	A	1 <sup>3)</sup>	10 s	1
10:7	Return AIR DUCT TEMPERATURE SENSOR DEFECTIVE The temperature sensor in the return air duct is defective or is not connected.	A	1 <sup>3)</sup>	10 s	1
10:10	OUTDOOR AIR TEMPERATURE SENSOR DEFECTIVE (GOLD SD) Outdoor temperature sensor is defective or is not connected.	B	0 <sup>3)</sup>	3 s	1

#### Alarm group 11: External temperature sensors

11:1	ROOM TEMPERATURE SENSOR NO. 1 DEFECTIVE Temperature sensor 1 is defective or is not connected.	B	0 <sup>3)</sup>	10 s	1
11:2	ROOM TEMPERATURE SENSOR NO. 2 DEFECTIVE Room temperature sensor 2 is defective or is not connected.	B	0 <sup>3)</sup>	10 s	1
11:3	ROOM TEMPERATURE SENSOR NO. 3 DEFECTIVE Room temperature sensor 3 is defective or is not connected.	B	0 <sup>3)</sup>	10 s	1
11:4	ROOM TEMPERATURE SENSOR NO. 4 DEFECTIVE Room temperature sensor 4 is defective or is not connected.	B	0 <sup>3)</sup>	10 s	1
11:5	Xzone, ROOM TEMPERATURE SENSOR NO. 5 DEFECTIVE Xzone room temperature sensor 5 is defective or is not connected.	B	0 <sup>3)</sup>	10 s	1
11:6	Xzone, ROOM TEMPERATURE SENSOR NO. 6 DEFECTIVE Xzone room temperature sensor 6 is defective or is not connected.	B	0 <sup>3)</sup>	10 s	1
11:7	Xzone, ROOM TEMPERATURE SENSOR NO. 7 DEFECTIVE Xzone room temperature sensor 7 is defective or is not connected.	B	0 <sup>3)</sup>	10 s	1
11:8	Xzone, ROOM TEMPERATURE SENSOR NO. 8 DEFECTIVE Xzone room temperature sensor 8 is defective or is not connected.	B	0 <sup>3)</sup>	10 s	1
11:9	OUTDOOR TEMPERATURE SENSOR NO. A DEFECTIVE Outdoor temperature sensor A is defective or is not connected.	B	0 <sup>3)</sup>	10 s	1
11:10	OUTDOOR TEMPERATURE SENSOR NO. B DEFECTIVE Outdoor temperature sensor B is defective or is not connected.	B	0 <sup>3)</sup>	10 s	1
11:11	OUTDOOR TEMPERATURE SENSOR NO. C DEFECTIVE Outdoor temperature sensor C is defective or is not connected.	B	0 <sup>3)</sup>	10 s	1
11:12	OUTDOOR TEMPERATURE SENSOR NO. D DEFECTIVE Outdoor temperature sensor D is defective or is not connected.	B	0 <sup>3)</sup>	10 s	1
11:13	ROOM TEMPERATURE VIA COMMUNICATION, COMMUNICATION ERROR The air handling unit's control unit is not receiving any temperature reading via the external communication interface within the preset time limit.	B	0 <sup>3)</sup>	5 m <sup>2)</sup>	1
11:14	Xzone, ROOM TEMPERATURE VIA COMMUNICATION, COMMUNICATION ERROR The air handling unit's control unit is not receiving any temperature reading via the external communication interface within the preset time limit.	B	0 <sup>3)</sup>	5 m <sup>2)</sup>	1
11:15	OUTDOOR TEMPERATURE VIA COMMUNICATION, COMMUNICATION ERROR The air handling unit's control unit is not receiving any temperature reading via the external communication interface within the preset time limit.	B	0 <sup>3)</sup>	5 m <sup>2)</sup>	1

Alarm No.	Alarm text Function	Priority	Stop	Delay	Resetting
		0 = Blocked	0 = In operat.	s = second	0 = manual
		A = A alarm	1 = Stop	m = minute	1 = automatic
		B = B alarm		h=hour	

#### Alarm group 12: AHU, temperature diff.

12:1	SUPPLY AIR TEMPERATURE BELOW SET POINT ALARM LIMIT The supply air temperature is lower than the preset set point (ERS, ORS, ORE and Supply air regulation) or has deviated from the supply air controller's current set point (Return air regulation) longer than 20 minutes.	A	1 <sup>3)</sup>	20 m	0
12:2	SUPPLY AIR TEMPERATURE ABOVE SET POINT ALARM LIMIT The supply air temperature is above the preset set point (ERS, ORS, ORE and Supply air regulation) or has deviated from the supply air controller's current set point (Return air regulation) longer than 20 minutes.	B	0 <sup>3)</sup>	20 m	0
12:6	Return AIR TEMPERATURE BELOW ALARM LIMIT The return air temperature is below preset alarm limit for more than 20 minutes.	A	1 <sup>3)</sup>	20 m	0
12:11	TEMPERATURE PROTECTION BELOW ALARM LIMIT The temperature protection reading is below preset alarm limit.	A	1 <sup>3)</sup>	30 s <sup>2)</sup>	0
12:13	HEAT EXCHANGER EFFICIENCY BELOW ALARM LIMIT The heat exchanger's efficiency is below the preset alarm limit for more than 2 minutes.	B	0 <sup>3)</sup>	2 hrs.	0

#### Alarm group 13: Humidity/VOC

13:1	HUMIDIFICATION, I/O MODULE NO. 4 COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with I/O module No. 4 for humidity.	B	0 <sup>3)</sup>	10 s	1
13:2	SUPPLY AIR HUMIDITY SENSOR DEFECTIVE The humidity sensor in the supply air duct is defective or is not connected.	A	0 <sup>3)</sup>	10 s	1
13:3	RETURN AIR HUMIDITY SENSOR DEFECTIVE The humidity sensor in the return air duct is defective or is not connected.	A	0 <sup>3)</sup>	10 s	1
13:3	RETURN AIR HUMIDITY SENSOR DEFECTIVE The humidity sensor in the exhaust air duct is defective or is not connected.	A	0 <sup>3)</sup>	10 s	1
13:9	HUMIDIFIER, ALARM OUTPUT TRIPPED The humidifier has tripped alarm output.	A	0 <sup>3)</sup>	10 s	0
13:11	VOC SENSOR COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with the VOC sensor.	B	0 <sup>3)</sup>	20 m	1
13:12	VOC SENSOR, INTERNAL COMMUNICATION ERROR The air handling unit's control unit cannot achieve correct communication with the VOC sensor.	B	0 <sup>3)</sup>	60 s	1
13:13	VOC SENSOR, INTERNAL ERROR VOC sensor defective.	B	0 <sup>3)</sup>	60 s	1
13:14	VOC SENSOR, LEVEL BELOW/ABOVE SET POINT ALARM LIMIT The VOC sensor has read a level below or above the set point alarm limit for more than 60 seconds.	B	0 <sup>3)</sup>	60 s	1

#### Alarm group 14: Spare

#### Alarm group 15: Plate heat exchanger

15:1	PLATE HEAT EXCHANGER, I/O-MODULE NO. 2 COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with I/O module No. 2 for plate heat exchanger.	A	1 <sup>3/4)</sup>	10 s	1
15:2	PLATE HEAT EXCHANGER, TEMPERATURE SENSOR NO. 1 DEFECTIVE Temperature sensor 1 for frost guard in heat exchanger cube is defective or is not connected.	A	1 <sup>3/4)</sup>	3 s	1
15:3	PLATE HEAT EXCHANGER, TEMPERATURE SENSOR NO. 2 DEFECTIVE Temperature sensor 2 for frost guard in heat exchanger cube is defective or is not connected.	A	1 <sup>3/4)</sup>	3 s	1
15:4	PLATE HEAT EXCHANGER, DAMPER MONITORING TRIPPED Damper actuator for plate heat exchanger is defective.	A	0 <sup>3/4)</sup>	10 m	0



Alarm No.	Alarm text Function	Priority	Stop	Delay	Resetting
		0 = Blocked	0 = In operat.	s = second	0 = manual
		A = A alarm	1 = Stop	m = minute	1 = automatic
		B = B alarm		h=hour	
15:7	PLATE HEAT EXCHANGER, I/O-MODULE NO. 3 COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with I/O module No. 3 for the plate heat exchanger.	A	1 <sup>3/4</sup>	10 s	1
15:8	PLATE HEAT EXCHANGER, BYPASS DAMPER MONITORING TRIPPED The bypass damper monitoring function of the plate heat exchanger has tripped.	A	0 <sup>3/4</sup>	10 m	0
15:9	PLATE HEAT EXCHANGER, DAMPER NO. 1 MONITORING TRIPPED The section damper 1 monitoring function of the plate heat exchanger has tripped.	A	0 <sup>3/4</sup>	10 m	0
15:10	PLATE HEAT EXCHANGER, DAMPER NO. 2 MONITORING TRIPPED The section damper 2 monitoring function of the plate heat exchanger has tripped.	A	0 <sup>3/4</sup>	10 m	0
15:11	PLATE HEAT EXCHANGER, I/O-MODULE NO. 3 COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with I/O module No. 3 for the plate heat exchanger.	A	1 <sup>3/4</sup>	10 s	1
15:12	PLATE HEAT EXCHANGER, BYPASS DAMPER MONITORING TRIPPED The bypass damper monitoring function of the plate heat exchanger has tripped.	A	0 <sup>3/4</sup>	10 m	0
15:13	PLATE HEAT EXCHANGER, COUNTER-FLOW, DEFROSTING PRESSURE OVER ALARM LIMIT There has been a continuous need for full defrosting for 2 hours.	B	1 <sup>3/4</sup>	2 h	0
15:14	PLATE HEAT EXCHANGER, DEFROSTING SENSOR NO. C COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with defrosting sensor C for the heat exchanger.	B	0	10 m	1
15:15	PLATE HEAT EXCHANGER, DEFROSTING PRESSURE OVER ALARM LIMIT The need for defrosting has been over 95% continuously for 144 minutes.	B	1	2.4 h	0
<b>Alarm group 16: Coil heat exchangers</b>					
16:1	COIL HEAT EXCHANGER, I/O-MODULE NO. 1 COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with I/O module No. 1 for coil heat exchanger.	A	1 <sup>3/4</sup>	10 s	1
16:2	COIL HEAT EXCHANGER, TEMPERATURE SENSOR DEFECTIVE The temperature sensor on the coil heat exchanger's pipework package for the frost guard is defective or is not connected.	A	1 <sup>3/4</sup>	3 s	1
16:3	COIL HEAT EXCHANGER, VALVE MONITORING TRIPPED Valve actuator of the coil heat exchanger is defective.	A	0 <sup>3/4</sup>	10 m	0
16:4	COIL HEAT EXCHANGER, PUMP MONITORING TRIPPED No in-service indication from the pump is obtained.	A	1 <sup>3/4</sup>	20 s	0
16:5	COIL HEAT EXCHANGER, I/O-MODULE NO. C COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with I/O module No. C for coil heat exchanger.	A	1	10 s	1
16:6	COIL HEAT EXCHANGER, PRESSURE SENSOR DEFECTIVE Pressure sensor for the coil heat exchanger is defective or is not connected.	A	1	10 m	1
16:7	COIL HEAT EXCHANGER, LOW PRESSURE IN HYDRONIC CIRCUIT Pressure gauge registers a too low pressure	A	1	5 m	0
16:8	COIL HEAT EXCHANGER, PRESSURE BELOW ALARM UNIT Fluid pressure sensor registers a too low pressure	A	1	10 s	1
<b>Alarm group 17: Rotary heat exchanger</b>					
17:1	ROTARY HEAT EXCHANGER, MOTOR CONTROLLER COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with the heat exchanger motor controller.	A	1 <sup>3/4</sup>	10 s	1

Alarm No.	Alarm text Function	Priority	Stop	Delay	Resetting
		0 = Blocked	0 = In operat.	s = second	0 = manual
		A = A alarm	1 = Stop	m = minute	1 = automatic
		B = B alarm		h=hour	
17:2	ROTARY HEAT EXCHANGER, DEFROSTING PRESSURE SENSOR NO. 7 COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with the heat exchanger pressure sensor no. 7. Applicable to the defrosting function only.	B	0 <sup>3)</sup>	10 s	1
17:3	ROTARY HEAT EXCHANGER, DEFROSTING PRESSURE OVER ALARM LIMIT The need for defrosting has been over 95% continuously for 144 minutes.	B	1 <sup>3/4)</sup>	2,4 h	0
17:4	ROTARY HEAT EXCHANGER, ROTATION DETECTOR TRIPPED No impulses from the rotation detector are registered with the heat exchanger controller.	A <sup>1)</sup>	1 <sup>3/4)</sup>	3 s	0
17:5	ROTARY HEAT EXCHANGER, MOTOR CONTROLLER OVERCURRENT Heat exchanger motor controller has registered excessively high current supplier to the drive motor.	A <sup>1)</sup>	1 <sup>3/4)</sup>	3 s	0
17:6	ROTARY HEAT EXCHANGER, MOTOR CONTROLLER UNDERVOLTAGE Low feed voltage is supplied to the rotary heat exchanger's motor controller.	A <sup>1)</sup>	1 <sup>3/4)</sup>	3 s	0
17:7	ROTARY HEAT EXCHANGER, MOTOR CONTROLLER OVERVOLTAGE High feed voltage is supplied to the rotary heat exchanger's motor controller.	A <sup>1)</sup>	1 <sup>3/4)</sup>	3 s	0
17:8	ROTARY HEAT EXCHANGER, MOTOR CONTROLLER EXCESS TEMPERATURE High temperature (194°F) inside the heat exchanger's motor controller.	A <sup>1)</sup>	1 <sup>3/4)</sup>	3 s	0
17:9	ROTARY HEAT EXCHANGER, MOTOR CONTROLLER START UP ERROR Drive motor does not rotate during start up.	A <sup>1)</sup>	1 <sup>3/4)</sup>	3 s	0
<b>Alarm group 18: AYC</b>					
18:1	AYC, I/O MODULE No. 7 COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with I/O module No. 7 for AYC.	A	0 <sup>3)</sup>	10 s	1
18:2	AYC HEATING, TEMPERATURE SENSOR DEFECTIVE Heating temperature sensor is defective or is not connected.	A	0 <sup>3)</sup>	3 s	1
18:3	AYC HEATING, VALVE MONITORING TRIPPED The heated water valve actuator is defective.	B	0 <sup>3)</sup>	10 m	0
18:4	AYC HEATING, PUMP MONITORING TRIPPED The heated water pump is defective.	A	0 <sup>3)</sup>	20 s	0
18:5	AYC HEATING, TEMPERATURE BELOW SET POINT LIMIT Heating water temperature is below preset set point longer than 30 minutes.	A	0 <sup>3)</sup>	30 m	0
18:6	AYC HEATING, TEMPERATURE ABOVE SET POINT ALARM LIMIT <sup>5)</sup> Heating water temperature exceeds preset set point longer than 30 minutes.	B	0 <sup>3)</sup>	30 m	0
18:9	AYC COOLING, TEMPERATURE SENSOR DEFECTIVE Temperature sensor for the AYC function (All Year Comfort) cooling is defective or is not connected.	A	0 <sup>3)</sup>	3 s	1
18:10	AYC COOLING, VALVE MONITORING TRIPPED The chilled water valve actuator is defective.	B	0 <sup>3)</sup>	10 m	0
18:11	AYC COOLING, PUMP MONITORING TRIPPED The chilled water pump is defective.	A	0 <sup>3)</sup>	20 s	0
18:12	AYC COOLING, TEMPERATURE BELOW SET POINT ALARM LIMIT Heating water temperature is below preset set point longer than 30 minutes.	A	0 <sup>3)</sup>	30 m	0

Alarm No.	Alarm text Function	Priority	Stop	Delay	Resetting
		0 = Blocked	0 = In operat.	s = second	0 = manual
		A = A alarm	1 = Stop	m = minute	1 = automatic
		B = B alarm		h=hour	
18:13	AYC COOLING, TEMPERATURE ABOVE SET POINT ALARM LIMIT <sup>5)</sup> Cooling water temperature exceeds preset set point longer than 30 minutes.	B	0 <sup>3)</sup>	30 m	0
<b>Alarm group 19-20: Spare</b>					
<b>Alarm group 22: Spare</b>					
<b>Alarm group 24-25: Spare</b>					
<b>Alarm group 26: Pre-filter</b>					
26:1	PRE-FILTER, SUPPLY AIR PRESSURE SENSOR NO. 8 COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with the sensor of the supply air pre-filter.	B	0 <sup>3)</sup>	10 s	1
26:2	PRE-FILTER, SUPPLY AIR FOULED The pressure across the supply air pre-filter exceeds the preset alarm limit for more than 10 minutes.	B	0 <sup>3)</sup>	10 m	0
26:7	PRE-FILTER, Return AIR PRESSURE SENSOR NO. 9 COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with the sensor of the return air pre-filter.	B	0 <sup>3)</sup>	10 s	1
26:8	PRE-FILTER, Return AIR FOULED The pressure across the return air pre-filter exceeds the preset alarm limit for more than 10 minutes.	B	0 <sup>3)</sup>	10 m	0
<b>Alarm group 27: AHU, internal filters</b>					
27:1	AHU FILTER, SUPPLY AIR PRESSURE SENSOR NO. 3/4 COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with the sensor of the AHU supply air filter.	B	0 <sup>3)</sup>	10 s	1
27:2	AHU FILTER, SUPPLY AIR FOULED The pressure across the AHU supply air filter has exceeded the preset alarm limit for more than 10 minutes.	B	0 <sup>3)</sup>	10 m	0
27:7	AHU FILTER, Return AIR PRESSURE SENSOR NO. 3/4 COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with the sensor of the AHU return air filter.	B	0 <sup>3)</sup>	10 s	1
27:8	AHU FILTER, Return AIR FOULED The pressure across the AHU return air filter has exceeded the preset alarm limit for more than 10 minutes.	B	0 <sup>3)</sup>	10 m	0
<b>Alarm group 28: Final filter</b>					
28:1	END FILTER, SUPPLY AIR PRESSURE SENSOR NO. A COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with the sensor of the supply air end filter.	B	0 <sup>3)</sup>	10 s	1
28:2	END FILTER, SUPPLY AIR, FOULED The pressure across the supply air end filter has exceeded the preset alarm limit for more than 10 minutes.	B	0 <sup>3)</sup>	10 m	0
<b>Alarm group 29: Spare</b>					
<b>Alarm group 30: Flow measurement</b>					
30:1	AIRFLOW MEASUREMENT, SUPPLY AIR PRESSURE SENSOR NO. 1/2 COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with the flow pressure sensor in the supply air.	A	1 <sup>3)</sup>	10 s	1

Alarm No.	Alarm text Function	Priority	Stop	Delay	Resetting
		0 = Blocked	0 = In operat.	s = second	0 = manual
		A = A alarm	1 = Stop	m = minute	1 = automatic
		B = B alarm		h=hour	
30:2	AIRFLOW MEASUREMENT, SUPPLY AIRFLOW BELOW SET POINT ALARM LIMIT The supply airflow has gone below its set point by more that 10%, during a longer period than 20 minutes.	B	0 <sup>3)</sup>	20 m	0
30:3	AIRFLOW MEASUREMENT, SUPPLY AIRFLOW ABOVE SET POINT ALARM LIMIT The supply airflow has exceeded its set point by more that 10%, during a longer period than 20 minutes.	B	0 <sup>3)</sup>	20 m	0
30:6	AIRFLOW MEASUREMENT, Return AIR PRESSURE SENSOR NO. 1/2 COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with the flow pressure sensor in the return air.	A	1 <sup>3)</sup>	10 s	1
30:7	AIRFLOW MEASUREMENT, Return AIRFLOW BELOW SET POINT ALARM LIMIT The return airflow has gone below its set point by more that 10%, during a longer period than 20 minutes.	B	0 <sup>3)</sup>	20 m	0
30:8	AIRFLOW MEASUREMENT, Return AIRFLOW ABOVE SET POINT ALARM LIMIT The return airflow has exceeded its set point by more that 10%, during a longer period than 20 minutes.	B	0 <sup>3)</sup>	20 m	0
30:11	AIRFLOW MEASUREMENT, PURGING PRESSURE SENSOR NO. B COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with the sensor of the rotary heat exchanger purging sector.	B	0 <sup>3)</sup>	10 s	1
<b>Alarm group 31: Pressure regulation</b>					
31:1	PRESSURE REGULATION, SUPPLY AIR PRESSURE SENSOR NO. 5 COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with the duct pressure sensor in the supply air. Applies only to pressure regulation of the supply air.	A	1 <sup>3)</sup>	10 s	1
31:2	PRESSURE REGULATION, SUPPLY AIR PRESSURE BELOW SET POINT ALARM LIMIT The duct pressure has gone below its set point by more that 10%, during a longer period than 20 minutes ( if pressure sensors are connected).	B	0 <sup>3)</sup>	20 m	0
31:3	PRESSURE REGULATION, SUPPLY AIR PRESSURE ABOVE SET POINT ALARM LIMIT The supply air duct pressure has exceeded its set point by more that 10%, during a longer period than 20 minutes (if pressure sensors are connected).	B	0 <sup>3)</sup>	20 m	0
31:6	PRESSURE REGULATION, Return AIR PRESSURE SENSOR NO. 6 COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with the duct pressure sensor in the return air. Applies only to pressure regulation of the return air.	A	1 <sup>3)</sup>	10 s	1
31:7	PRESSURE REGULATION, Return AIR PRESSURE BELOW SET POINT ALARM LIMIT The return air duct pressure has gone below its set point by more that 10%, during a longer period than 20 minutes (if pressure sensors are connected).	B	0 <sup>3)</sup>	20 m	0
31:8	PRESSURE REGULATION, Return AIR PRESSURE ABOVE SET POINT ALARM LIMIT The return air duct pressure has exceeded its set point by more that 10%, during a longer period than 20 minutes (if pressure sensors are connected).	B	0 <sup>3)</sup>	20 m	0
<b>Alarm group 32: ReCO<sub>2</sub>/Intermittent night heating</b>					
32:1	ReCO <sub>2</sub> , I/O MODULE NO. 0 COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with I/O module no. 0.	A	0 <sup>3)</sup>	10 s	1

Alarm No.	Alarm text Function	Priority	Stop	Delay	Resetting
		0 = Blocked	0 = In operat.	s = second	0 = manual
		A = A alarm	1 = Stop	m = minute	1 = automatic
		B = B alarm		h=hour	
32:2	ReCO <sub>2</sub> , PRESSURE SENSOR NO. 0 COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with the pressure sensor.	A	0 <sup>3)</sup>	10 s	1
32:3	ReCO <sub>2</sub> /INTERMITTENT NIGHT HEATING, RECIRCULATED AIR DAMPER MONITORING TRIPPED The damper actuator does not move to the right position. The position-confirming output signal from the damper is not the same as the input control signal.	B	0 <sup>3)</sup>	10 m	0
32:4	ReCO <sub>2</sub> , OUTDOOR AIR DAMPER MONITORING TRIPPED The damper actuator does not move to the right position. The position-confirming output signal from the damper is not the same as the input control signal.	B	0 <sup>3)</sup>	10 m	0

### Alarm group 33: Service

33:1	PERIOD BETWEEN SERVICING PAST ALARM LIMIT The preset service period has expired. If the alarm is RESET via the hand-held terminal, the alarm will be initiated again after 7 days. A new service period can be set and reset under ALARM SETTINGS.	B	0 <sup>3)</sup>	5 s <sup>2)</sup>	0
33:15	LOCK FUNCTION TRIPPED Contact Swegon or their representative.	—	—	—	0 <sup>6)</sup>

### Alarm group 34: External controls

34:1	EXTERNAL CONTROL, I/O MODULE NO. 3 COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with I/O module No. 3 for external control.	B	0 <sup>3)</sup>	10 s	1
34:2	EXTERNAL CONTROL, I/O MODULE NO. 6 COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with I/O module No. 6 for external control.	B	0 <sup>3)</sup>	10 s	1

### Alarm group 35: Booster diffusers

35:1	BOOSTER AIR TERMINALS, I/O MODULE NO. 8 COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with I/O module No. 8 for Booster diffusers.	B	0 <sup>3)</sup>	10 s	1
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### Alarm group 36: External communication, I/O-modules

36:1	EXTERNAL COMMUNICATION, I/O MODULE NO. A COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with I/O module No. A.	B	0 <sup>3)</sup>	10 s	1
36:2	EXTERNAL COMMUNICATION, I/O MODULE NO. A TEMPERATURE SENSOR NO. 1 DEFECTIVE I/O-module A, temperature sensor 1, is defective or is not connected.	B	0 <sup>3)</sup>	3 s	1
36:3	EXTERNAL COMMUNICATION, I/O MODULE NO. A TEMPERATURE SENSOR NO. 2 DEFECTIVE I/O-module A, temperature sensor 2, is defective or is not connected	B	0 <sup>3)</sup>	3 s	1
36:6	EXTERNAL COMMUNICATION, I/O MODULE NO. B COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with I/O module No. B.	B	0 <sup>3)</sup>	10 s	1
36:7	EXTERNAL COMMUNICATION, I/O MODULE NO. B TEMPERATURE SENSOR NO. 1 DEFECTIVE I/O-module B, temperature sensor 1, is defective or is not connected.	B	0 <sup>3)</sup>	3 s	1

Alarm No.	Alarm text Function	Priority	Stop	Delay	Resetting
		0 = Blocked	0 = In operat.	s = second	0 = manual
		A = A alarm	1 = Stop	m = minute	1 = automatic
		B = B alarm		h=hour	
36:8	EXTERNAL COMMUNICATION, I/O MODULE NO. B TEMPERATURE SENSOR NO. 2 DEFECTIVE I/O-module B, temperature sensor 2, is defective or is not connected.	B	0 <sup>3)</sup>	3 s	1
36:11	EXTERNAL COMMUNICATION, I/O MODULE NO. C COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with I/O module No. C.	B	0 <sup>3)</sup>	10 s	1
36:12	EXTERNAL COMMUNICATION, I/O MODULE NO. C TEMPERATURE SENSOR NO. 1 DEFECTIVE I/O-module C, temperature sensor 1, is defective or is not connected.	B	0 <sup>3)</sup>	3 s	1
36:13	EXTERNAL COMMUNICATION, I/O MODULE NO. C TEMPERATURE SENSOR NO. 2 DEFECTIVE I/O-module C, temperature sensor 2, is defective or is not connected.	B	0 <sup>3)</sup>	3 s	1

#### Alarm group 37: Spare

#### Alarm group 49-54: Supply air fan no. 1A-3B <sup>8)</sup>

49-54:1	SUPPLY AIR FAN 1-3/A-B COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with the supply air fan motor controller.	A	1 <sup>3)</sup>	10 s	1
49-54:2	SUPPLY AIR FAN 1-3/A-B MOTOR CONTROLLER OVERCURRENT High current supplied to motor	A <sup>1)</sup>	1 <sup>3)</sup>	10 s	0
49-54:3	SUPPLY AIR FAN 1-3/A-B MOTOR CONTROLLER UNDERVOLTAGE Voltage below the normal level is supplied.	A <sup>1)</sup>	1 <sup>3)</sup>	10 s	0
49-54:4	SUPPLY AIR FAN 1-3/A-B MOTOR CONTROLLER OVERVOLTAGE Excessively high voltage is supplied.	A <sup>1)</sup>	1 <sup>3)</sup>	10 s	0
49-54:5	SUPPLY AIR FAN 1-3/A-B MOTOR CONTROLLER EXCESS TEMPERATURE High internal temperature.	A <sup>1)</sup>	1 <sup>3)</sup>	10 s	0
49-54:6	SUPPLY AIR FAN 1-3/A-B MOTOR CONTROL START UP ERROR Supply air fan does not rotate on a start up, rotates in wrong direction or rotates at excessively high speed.	A <sup>1)</sup>	1 <sup>3)</sup>	10 s	0
49-54:7	SUPPLY AIR FAN 1-3/A-B MOTOR CONTROLLER UNEVEN PHASE VOLTAGE High voltage difference between the phases (3-phase, 400 V), which causes rippling.	A <sup>1)</sup>	1 <sup>3)</sup>	10 s	1
49-54:8	SUPPLY AIR FAN 1-3/A-B MOTOR CONTROLLER PHASE FAILURE Phase failure in motor controller.	A <sup>1)</sup>	1 <sup>3)</sup>	10 s	1
49-54:9	SUPPLY AIR FAN 1-3/A-B MOTOR CONTROLLER MEMORY ERROR Internal memory error in motor controller.	A <sup>1)</sup>	1 <sup>3)</sup>	10 s	1
49-54:10	SUPPLY AIR FAN 1-3/A-B MOTOR CONTROLLER CURRENT LIMITATION Current/Voltage limitation in motor controller.	B	0 <sup>3)</sup>	60 s	1
49-51:11	SUPPLY AIR FAN 1A-3A MOTOR CONTROLLER INTERNAL COMMUNICATION ERROR Internal communication error in motor controller.	A	1 <sup>3)</sup>	10 s	1

#### Alarm group 55-60: Return air fan no. 1A-3B <sup>9)</sup>

55-60:1	Return AIR FAN 1-3/A-B COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with the return air fan motor controller.	A	1 <sup>3)</sup>	10 s	1
55-60:2	Return AIR FAN 1-3/A-B MOTOR CONTROLLER OVERCURRENT High current supplied to motor	A <sup>1)</sup>	1 <sup>3)</sup>	3 s	0

Alarm No.	Alarm text Function	Priority	Stop	Delay	Resetting
		0 = Blocked	0 = In operat.	s = second	0 = manual
		A = A alarm	1 = Stop	m = minute	1 = automatic
		B = B alarm		h=hour	
55-60:3	Return AIR FAN 1-3/A-B MOTOR CONTROLLER UNDERVOLTAGE Voltage below the normal level is supplied.	A <sup>1)</sup>	1 <sup>3)</sup>	60 s	0
55-60:4	Return AIR FAN 1-3/A-B MOTOR CONTROLLER OVERCURRENT Excessively high voltage is supplied.	A <sup>1)</sup>	1 <sup>3)</sup>	3 s	0
55-60:5	Return AIR FAN 1-3/A-B MOTOR CONTROLLER EXCESS TEMPERATURE High internal temperature.	A <sup>1)</sup>	1 <sup>3)</sup>	3 s	0
55-60:6	Return AIR FAN 1-3/A-B MOTOR CONTROLLER START UP ERROR Return air fan does not rotate on a start up, rotates in wrong direction or rotates at excessively high speed.	A <sup>1)</sup>	1 <sup>3)</sup>	3 s	0
55-60:7	Return AIR FAN 1-3/A-B MOTOR CONTROLLER UNEVEN PHASE VOLTAGE High voltage difference between the phases (3-phase, 400 V), which causes rippling.	A <sup>1)</sup>	1 <sup>3)</sup>	5 s	1
55-60:8	Return AIR FAN 1-3/A-B MOTOR CONTROLLER PHASE FAILURE Phase failure in motor controller.	A <sup>1)</sup>	1 <sup>3)</sup>	5 s	1
55-60:9	Return AIR FAN 1-3/A-B MOTOR CONTROLLER MEMORY ERROR Internal memory error in motor controller.	A <sup>1)</sup>	1 <sup>3)</sup>	5 s	1
55-60:10	Return AIR FAN 1-3/A-B MOTOR CONTROLLER CURRENT LIMITATION Current/Voltage limitation in motor controller.	B	0 <sup>3)</sup>	60 s	1
55-57:11	Return AIR FAN 1A-3A MOTOR CONTROLLER INTERNAL COMMUNICATION ERROR Internal communication error in motor controller.	A	1 <sup>3)</sup>	5 s	1

#### Alarm group 61: Supply air fan, I/O module

61:1	SUPPLY AIR FAN NO. 1A I/O MODULE COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with supply air fan no. 1A I/O module.	A	1 <sup>3)</sup>	10 s	1
61:6	SUPPLY AIR FAN NO. 2A I/O MODULE COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with supply air fan no. 2A I/O module.	A	1 <sup>3)</sup>	10 s	1
61:11	SUPPLY AIR FAN NO. 3A I/O MODULE COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with supply air fan no. 3A I/O module.	A	1 <sup>3)</sup>	10 s	1

#### Alarm group 62: Return air fan, I/O module

62:1	Return AIR FAN NO. 1A I/O MODULE COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with return air fan no. 1A I/O module.	A	1 <sup>3)</sup>	10 s	1
62:6	Return AIR FAN NO. 2A I/O MODULE COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with return air fan no. 2A I/O module.	A	1 <sup>3)</sup>	10 s	1
62:11	Return AIR FAN NO. 3A I/O MODULE COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with return air fan no. 3A I/O module.	A	1 <sup>3)</sup>	10 s	1

#### Alarm groups 70 – 74: Reversible heat pump/chiller HC

70:1	HC CONTROL UNIT COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with the HC control unit.	A	0	10 s	1
70:2	HC CONTROL UNIT GROUP ALARM TRIPPED The HC control unit has tripped a common fault alarm	A	0	10 s	1

Alarm No.	Alarm text Function	Priority	Stop	Delay	Resetting
		0 = Blocked	0 = In operat.	s = second	0 = manual
		A = A alarm	1 = Stop	m = minute	1 = automatic
		B = B alarm		h=hour	
70:1	HC CONTROL UNIT COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with the HC control unit.	A	0	10 s	1
70:2	HC CONTROL UNIT GROUP ALARM TRIPPED The HC control unit has tripped a common fault alarm	A	0	10 s	1
70:3	HC CONTROL UNIT DEFECTIVE TIMER CIRCUIT HC control unit is defective or is not connected.	A	0	10 s	1
70:5	HC DEFROSTING, PRESSURE SENSOR NO. D COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with the pressure sensor no. D for HC defrosting.	A	0	10 s	1
70:6	HC DEFROSTING, I/O MODULE NO. 5 COMMUNICATIONS ERROR The air handling unit's control unit cannot establish correct communication with I/O module no. 5 for HC defrosting.	A	0	10 s	1
70:7	HC DEFROSTING, RECIRCULATION DAMPER MONITORING TRIPPED Recirculation damper alarm HC defrosting has tripped.	A	0	10 s	1
70:8	HC DEFROSTING, EL. HEATING COIL TRIPPED Electric air heating coil alarm HC defrosting has tripped.	A	0	10 s	1
70:9	HC DEFROSTING TIME CIRCUIT 1 ABOVE ALARM LIMIT HC defrosting time for circuit 1 has been exceeded.	A	0	10 s	1
70:10	HC DEFROSTING TIME CIRCUIT 2 ABOVE ALARM LIMIT HC defrosting time for circuit 2 has been exceeded.	A	0	10 s	1
71:1	HC COMPRESSOR MOTOR CONTROL COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with the HC compressor motor control.	A	0	10 s	1
71:2	HC COMPRESSOR MOTOR CONTROL START-UP FAILURE The compressor motor does not rotate during start up.	A	0	10 s	1
71:3	HC COMPRESSOR MOTOR CONTROL OVER OR UNDER VOLTAGE Low or high power supply to compressor motor control.	A	0	10 s	1
71:4	HC COMPRESSOR OUTSIDE WORKING RANGE HC compressor works outside its ordinary working range.	A	0	10 s	1
71:9	HC EXPANSION VALVE CONTROL CIRCUIT 1 COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with the HC expansion valve control circuit 1.	A	0	10 s	1
71:10	HC EXPANSION VALVE CONTROL CIRCUIT 2 COMMUNICATION ERROR The air handling unit's control unit cannot establish correct communication with the HC expansion valve control circuit 2.	A	0	10 s	1
72:1	HC HIGH PRESSURE MONITOR CIRCUIT 1 TRIPPED The high pressure monitor alarm HC circuit 1, has tripped.	A	0	10 s	1
72:2	HC HIGH PRESSURE CIRCUIT 1 ABOVE ALARM LIMIT The high pressure alarm HC circuit 1, has tripped.	A	0	10 s	1
72:3	HC THERMOSTATIC CONTACT CIRCUIT 1 TRIPPED The thermostatic contacts alarm HC circuit 1, has tripped.	A	0	10 s	1



Alarm No.	Alarm text Function	Priority	Stop	Delay	Resetting
		0 = Blocked	0 = In operat.	s = second	0 = manual
		A = A alarm	1 = Stop	m = minute	1 = automatic
		B = B alarm		h=hour	
72:4	HC HOT GAS TEMPERATURE CIRCUIT 1 ABOVE ALARM LIMIT The hot gas temperature alarm HC circuit 1, has tripped.	A	0	10 s	1
72:5	HC HOT GAS TEMPERATURE CIRCUIT 1 DEFECTIVE Hot gas temperature sensor is defective or is not connected.	A	0	10 s	1
72:6	HC HIGH PRESSURE SENSOR CIRCUIT 1 DEFECTIVE High pressure sensor HC circuit 1, is defective or is not con-nected.	A	0	10 s	1
72:7	HC LOW PRESSURE SENSOR CIRCUIT 1 DEFECTIVE Low pressure sensor HC circuit 1, is defective or is not con-nected.	A	0	10 s	1
72:8	HC SUCTION GAS TEMPERATURE CIRCUIT 1 DEFECTIVE Suction gas line temperature sensor HC circuit 1, is defective or is not connected.	A	0	10 s	1
72:9	HC PRESSURE DIFFERENCE CIRCUIT 1 BELOW ALARM LIMIT The pressure difference HC circuit 1, has tripped.	A	0	10 s	1
72:10	HC SERVICE OF CIRCUIT 1 AND COMPRESSOR Service of circuit 1 and compressor required.	A	0	10 s	1
72:11	HC OVERHEATING TEMPERATURE CIRCUIT 1 BELOW ALARM LIMIT HC overheating temperature circuit 1 falls below the set alarm limit.	A	0	10 s	1
72:12	HC PRESSURE EQUALISATION OF LOW PRESSURE CIRCUIT 1 HC pressure equalisation low pressure circuit 1, has tripped.	A	0	10 s	1
72:13	HC PRESSURE EQUALISATION OF HIGH PRESSURE CIRCUIT 1 HC pressure equalisation high pressure circuit 1, has tripped.	A	0	10 s	1
72:14	HC LOW PRESSURE CIRCUIT 1 BELOW ALARM LIMIT HC low pressure circuit 1 falls below the set alarm limit.	A	0	10 s	1
74:1	HC HIGH PRESSURE MONITOR CIRCUIT 2 TRIPPED The high pressure monitor alarm HC circuit 2, has tripped.	A	0	10 s	1
74:2	HC HIGH PRESSURE CIRCUIT 2 ABOVE ALARM LIMIT The high pressure alarm HC circuit 2, has tripped.	A	0	10 s	1
74:3	HC THERMOSTATIC CONTACT CIRCUIT 2 TRIPPED The thermostatic contacts alarm HC circuit 2, has tripped.	A	0	10 s	1
74:4	HC HOT GAS TEMPERATURE CIRCUIT 2 ABOVE ALARM LIMIT The hot gas temperature alarm HC circuit 2, has tripped.	A	0	10 s	1
74:5	HC HOT GAS TEMPERATURE CIRCUIT 2 DEFECTIVE Hot gas temperature sensor is defective or is not connected.	A	0	10 s	1
74:6	HC HIGH PRESSURE SENSOR CIRCUIT 2 DEFECTIVE High pressure sensor HC circuit 2, is defective or is not con-nected.	A	0	10 s	1
74:7	HC LOW PRESSURE SENSOR CIRCUIT 2 DEFECTIVE Low pressure sensor HC circuit 2, is defective or is not con-nected.	A	0	10 s	1

Alarm No.	Alarm text Function	Priority	Stop	Delay	Resetting
		0 = Blocked	0 = In operat.	s = second	0 = manual
		A = A alarm	1 = Stop	m = minute	1 = automatic
		B = B alarm		h=hour	
74:8	HC SUCTION GAS TEMPERATURE CIRCUIT 2 DEFECTIVE Suction gas line temperature sensor HC circuit 2, is defective or is not connected.	A	0	10 s	1
74:9	HC PRESSURE DIFFERENCE CIRCUIT 2 BELOW ALARM LIMIT The pressure difference HC circuit 2, has tripped.	A	0	10 s	1
74:10	HC SERVICE OF CIRCUIT 2 AND COMPRESSOR Service of circuit 2 and compressor required.	A	0	10 s	1
74:11	HC OVERHEATING TEMPERATURE CIRCUIT 2 BELOW ALARM LIMIT HC overheating temperature circuit 2 falls below the set alarm limit.	A	0	10 s	1
74:12	HC PRESSURE EQUALISATION OF LOW PRESSURE CIRCUIT 2 HC pressure equalisation low pressure circuit 2, has tripped.	A	0	10 s	1
74:13	HC PRESSURE EQUALISATION OF HIGH PRESSURE CIRCUIT 2 HC pressure equalisation high pressure circuit 2, has tripped.	A	0	10 s	1
74:14	HC LOW PRESSURE CIRCUIT 2 BELOW ALARM LIMIT HC low pressure circuit 2 falls below the set alarm limit.	A	0	10 s	1

<sup>1)</sup> Cannot be blocked.

<sup>2)</sup> The delay is adjustable.

<sup>3)</sup> Adjustable.

<sup>4)</sup> Stops the AHU if the temperature is below the adjustable limit.

<sup>5)</sup> Inactive as factory setting.

<sup>6)</sup> Contact Swegon or their representative.

<sup>7)</sup> Alarm group 38 = MIRU Control 1. Alarm group 39 = MIRU Control 2. Alarm group 40 = MIRU Control 3. Alarm group 41 = MIRU Control 4. Alarm group 42 = MIRU Control 5. Alarm group 43 = MIRU Control 6. Alarm group 44 = MIRU Control 7. Alarm group 45 = MIRU Control 8. Alarm group 46 = MIRU Control 9. Alarm group 47 = MIRU Control 10.

<sup>8)</sup> Alarm group 49 = Supply air fan 1A. Alarm group 50 = Supply air fan 2A. Alarm group 51 = Supply air fan 3A. Alarm group 52 = Supply air fan 1B. Alarm group 53 = Supply air fan 2B. Alarm group 54 = Supply air fan 3B.

<sup>9)</sup> Alarm group 55 = Extrat air fan 1A. Alarm group 56 = Extrat air fan 2A. Alarm group 57 = Extrat air fan 3A. Alarm group 58 = Extrat air fan 1B. Alarm group 59 = Extrat air fan 2B. Alarm group 60 = Extrat air fan 3B.

## 9. Information Messages

Information messages are displayed in the hand-held terminal. Information messages are displayed only when the terminal is in the Dashboard image.

Information messages provide information e.g. about necessary settings that have not been entered or unfavourable operating conditions. The information message is indicated by a blue circle in the alarm log button on the instrument panel.

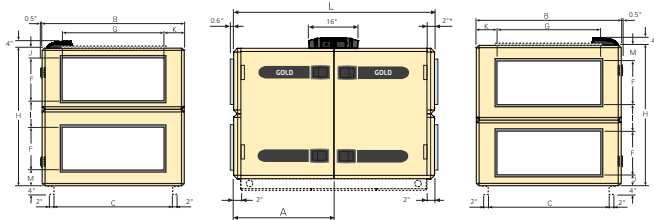
Message No.	Message text
96:1	HC DEFROSTING CALIBRATION NOT PERFORMED HC defrosting calibration cannot be performed.
96:2	HC DEFROSTING CALIBRATION NOT APPROVED HC defrosting calibration is performed, but read values are not approved.
97:12	PLATE HEAT EXCHANGER, BYPASS OPTIMIZATION NOT PERFORMED Bypass optimization of plate heat exchanger cannot be performed.
97:13	PLATE HEAT EXCHANGER, BYPASS OPTIMIZATION FAILURE Bypass optimization of the plate heat exchanger has been performed, but the readings are not satisfactory.
97:14	PLATE HEAT EXCHANGER DEFROSTING CALIBRATION NOT PERFORMED Defrosting calibration of the plate heat exchanger cannot be performed.
97:15	PLATE HEAT EXCHANGER DEFROSTING CALIBRATION FAILURE Defrosting calibration of the plate heat exchanger has been performed, but the readings are not satisfactory.
98:1	SUPPLY AIR PRE-FILTER CALIBRATION NOT PERFORMED Pre-filter calibration, supply air, not performed after first start. Recurrent at 30 minute intervals. The message is not received after completed filter calibration.
98:2	SUPPLY AIR PRE-FILTER CALIBRATION FAILURE Pre-filter calibration failure, supply air. Recurrent at 5 second intervals.
98:3	Return AIR PRE-FILTER CALIBRATION NOT PERFORMED Pre-filter calibration, return air, not performed after first start. Recurrent at 30 minute intervals. The message is not received after completed filter calibration.
98:4	Return AIR PRE-FILTER CALIBRATION FAILURE Pre-filter calibration failure, return air. Recurrent at 5 second intervals.
98:5	SUPPLY AIR AHU FILTER CALIBRATION NOT PERFORMED supply air AHU filter calibration, supply air, not performed after first start. Recurrent at 30 minute intervals. The message is not received after completed filter calibration.
98:6	SUPPLY AIR AHU FILTER CALIBRATION FAILURE AHU filter calibration failure, supply air. Recurrent at 5 second intervals.
98:7	Return AIR AHU FILTER CALIBRATION NOT PERFORMED AHU filter calibration, return air, not performed after first start. Recurrent at 30 minute intervals. The message is not received after completed filter calibration.
98:8	Return AIR AHU FILTER CALIBRATION FAILURE AHU filter calibration failure, return air. Recurrent at 5 second intervals.
98:9	SUPPLY AIR END FILTER CALIBRATION NOT PERFORMED End filter calibration, supply air, not performed after first start. Recurrent at 30 minute intervals. The message is not received after completed filter calibration.
98:10	SUPPLY AIR END FILTER CALIBRATION FAILURE End filter calibration failure, supply air. Recurrent at 5 second intervals.
98:11	ROTARY HEAT EXCHANGER DEFROSTING CALIBRATION NOT PERFORMED Defrost calibration, rotary heat exchanger, not performed after function was activated for first time. Recurrent at 30 minute intervals. The message is not received after completed heat exchanger calibration.
98:12	ROTARY HEAT EXCHANGER DEFROSTING CALIBRATION FAILURE Defrost calibration failure, rotary heat exchanger. Recurrent at 5 second intervals.
98:13	ReCO <sub>2</sub> CALIBRATION NOT PERFORMED ReCO <sub>2</sub> calibration not performed after function was activated for first time. Recurrent at 30 minute intervals. Message is not received after completed ReCO <sub>2</sub> calibration.

Alarm No.	Alarm text Function
98:14	ReCO <sub>2</sub> CALIBRATION FAILURE ReCO <sub>2</sub> calibration failure. Recurrent at 5 second intervals.
98:15	ReCO <sub>2</sub> WRONG SETTING Pressure regulation, slave control or wrong type of AHU is selected. Recurrent at 5 second intervals.
99:1	E-MAIL ERROR Error when sending e-mail. The message is received after ten tries.
99:5	FTP ERROR Error when sending to ftp. The message is received after ten tries.
99:7	SD SHORT MEMORY SOON FULL The SD card's memory is soon full. The oldest log data will soon be deleted.
99:8	SD SHORT MEMORY FULL The SD card's memory is full. The oldest log data is being deleted.
99:14	INTERNAL SERIAL MEMORY ERROR CPEX1 Internal serial memory error CPEX1
99:15	CLOCK CIRCUIT DEFECTIVE Circuit for the clock is defective

## 10. Technical Data

### 10.1 Dimensions, GOLD RX one-piece air handling unit with rotary heat exchanger

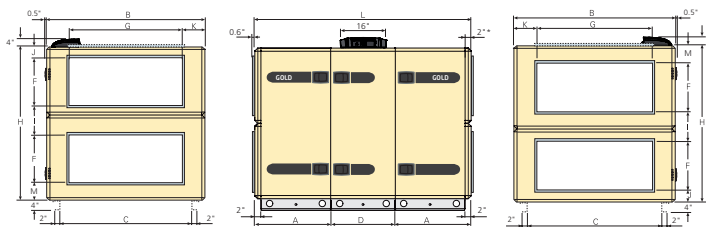
#### GOLD 05, 07/08



\* The air handling unit is supplied without end connection panel if a duct accessory housed in an insulated casing will be connected.

Base beams are optional.

#### GOLD 11/12



\* The air handling unit is supplied without end connection panel if a duct accessory housed in an insulated casing will be connected.

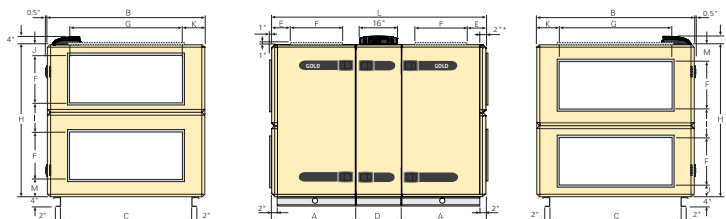
Size	A	B	C	D	F	G	H	J	K	L	Weight, lb
05	29.53	32.48	22.09	13.58	12	18	36.22	2.26	7.24	4.53	534.6
07	31.50	39.17	28.74	17.32	14	24	42.72	2.02	7.59	4.04	662.2
08	31.50	39.17	28.74	17.32	14	24	42.72	2.02	7.59	4.04	679.8
11	25.79	47.20	36.81	21.65	18	32	50.98	1.92	7.60	3.84	1091.2
12	25.79	47.20	36.81	21.65	18	32	50.98	1.92	7.60	3.84	1139.6

Imperial

Size	A	B	C	D	F	G	H	J	K	L	Weight, kg
05	750.00	825.00	561.00	345.00	300	450	920.00	57.50	187.50	114.99	243.0
07	800.00	995.00	730.00	440.00	350	600	1085.00	51.27	197.50	102.54	301.0
08	800.00	995.00	730.00	440.00	350	600	1085.00	51.27	197.50	102.54	309.0
11	655.00	1199.00	935.00	550.00	450	800	1295.00	48.72	199.50	97.45	496.0
12	655.00	1199.00	935.00	550.00	450	800	1295.00	48.72	199.50	97.45	518.0

Metric

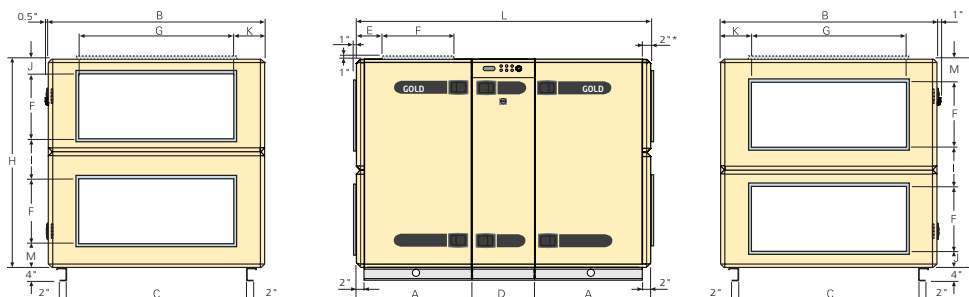
## GOLD 14/20, 25/30



\* The air handling unit is supplied without end connection panel if a duct accessory housed in an insulated casing will be connected.

The dimension print shows the connection configuration for fan arrangement 1. For fan arrangement 2 the connections are mirror-inverted.

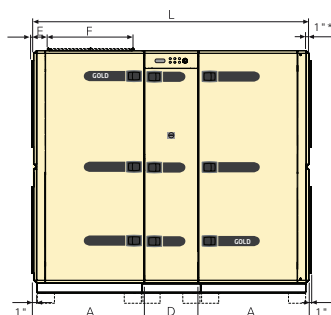
## GOLD 35/40



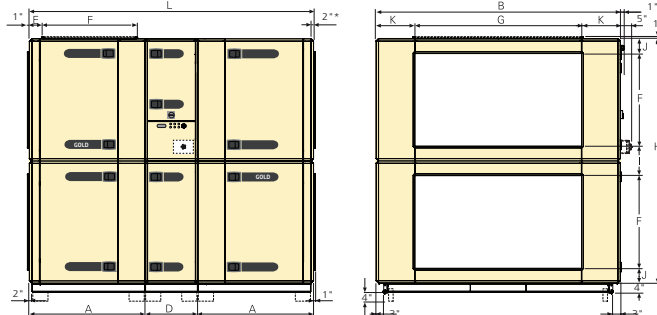
\* The air handling unit is supplied without end connection panel if a duct accessory housed in an insulated casing will be connected.

The dimension print shows the connection configuration for fan arrangement 1. For fan arrangement 2 the connections are mirror-inverted.

## GOLD 50/60



## GOLD 70/80



\* The air handling unit is supplied without end connection panel if a duct accessory housed in an insulated casing will be connected.

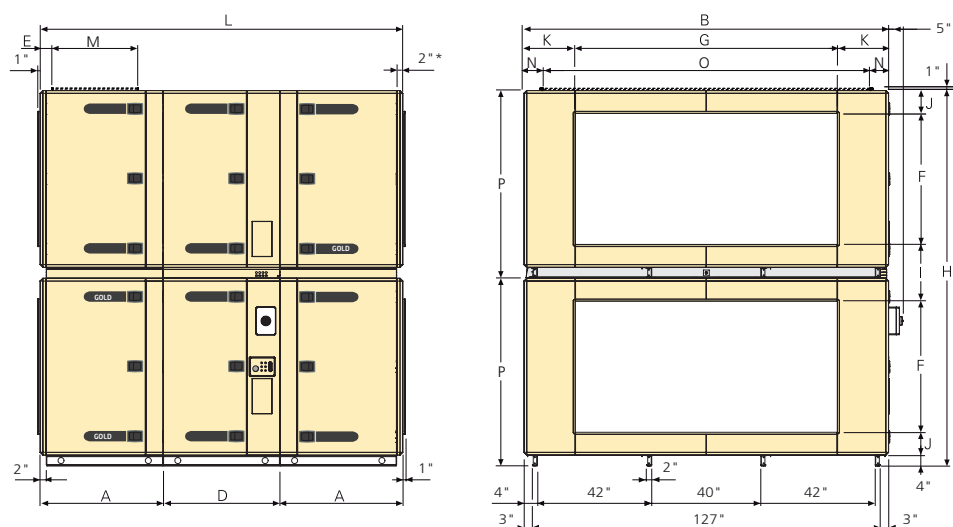
Size	A	B	C	D	E	F	G	H	I	J	K	L	M	Weight, lb
14	30.12	55.12	44.72	21.65	8.19	16	40	54.92	11.73	4.29	7.87	81.89	7.40	1295.8
20	30.12	55.12	44.72	21.65	8.19	16	40	54.92	11.73	4.29	7.87	81.89	7.40	1375.0
25	32.87	62.99	52.60	21.65	7.60	20	48	62.80	11.73	3.70	7.87	87.40	7.99	1641.2
30	32.87	62.99	52.60	21.65	7.60	20	48	62.80	11.73	3.70	7.87	87.40	7.99	1729.2
35	37.32	78.35	67.95	21.65	7.87	24	56	78.15	15.43	6.02	11.61	96.30	9.45	2354.0
40	37.32	78.35	67.95	21.65	7.87	24	56	78.15	15.43	6.02	11.61	96.30	9.45	2464.0
50	41.34	91.26		22.44	5.91	32	64	88.70	16.65	4.53	14.17	105.12		3121.8
60	41.34	91.26		22.44	5.91	32	64	88.70	16.65	4.53	14.17	105.12		3295.6
70	50.20	103.82		22.44	6.46	40	72	103.94	12.56	6.34	16.50	122.83		4864.2
80	50.20	103.82		22.44	6.46	40	72	103.94	12.56	6.34	16.50	122.83		5357.0

Imperial

Size	A	B	C	D	E	F	G	H	I	J	K	L	M	Weight, kg
14	765	1400	1136	550	208	400	1000	1395	298	109	200	2080	188	589
20	765	1400	1136	550	208	400	1000	1395	298	109	200	2080	188	625
25	835	1600	1336	550	193	500	1200	1595	298	94	200	2220	203	746
30	835	1600	1336	550	193	500	1200	1595	298	94	200	2220	203	786
35	948	1990	1726	550	200	600	1400	1985	392	153	295	2446	240	1070
40	948	1990	1726	550	200	600	1400	1985	392	153	295	2446	240	1120
50	1050	2318	-	570	150	800	1600	2253	423	115	360	2670	-	1419
60	1050	2318	-	570	150	800	1600	2253	423	115	360	2670	-	1498
70	1275	2637	-	570	164	1000	1800	2640	319	161	419	3120	-	2211
80	1275	2637	-	570	164	1000	1800	2640	319	161	419	3120	-	2435

Metric

## GOLD 100



\* The air handling unit is supplied without end connection panel if a duct accessory housed in an insulated casing will be connected.

Size	A	B	D	E	F	G	H	I	J	K	L	M	N	O	P	Weight, lb
100	44.33	131.50	42.13	7.52	48	96	135.43	20.47	8.27	18.50	130.79	31.50	6.69	98.43	67.72	8580.0

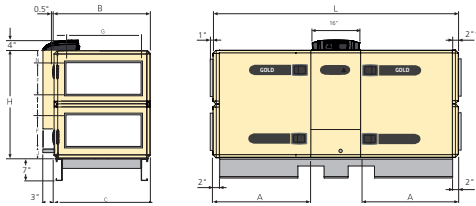
Imperial

Size	A	B	D	E	F	G	H	I	J	K	L	M	N	O	P	Weight, kg
100	1126	3340	1070	191	1200	2400	3440	520	210	470	3322	800	170	2500	1720	3900

Metric

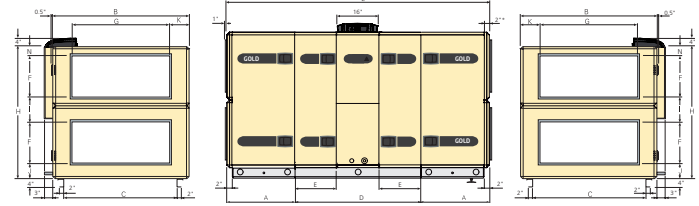
## 10.2 Dimensions, GOLD PX one-piece air handling unit with plate heat exchanger

### GOLD 05, 07/08



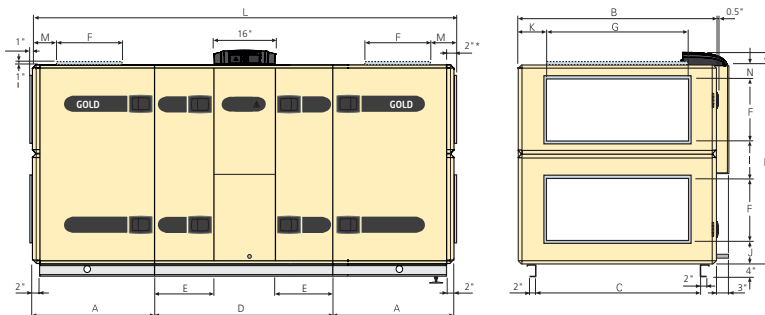
\* The air handling unit is supplied without end connection panel if a duct accessory housed in an insulated casing will be connected.

### GOLD 11/12



\* The air handling unit is supplied without end connection panel if a duct accessory housed in an insulated casing will be connected.

### GOLD 14/20, 25/30



\* The air handling unit is supplied without end connection panel if a duct accessory housed in an insulated casing will be connected.

Size	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Weight, lb
05	31.50	32.48	-	13.58	-	12	18	36.22	4.53	2.26	7.24	78.74	-	2.26	741.4
07	36.02	39.17	-	17.32	-	14	24	42.72	4.04	2.02	7.59	87.80	-	2.02	921.8
08	36.02	39.17	-	17.32	-	14	24	42.72	4.04	2.02	7.59	87.80	-	2.02	941.6
11	25.79	47.20	36.81	47.24	15.63	18	32	50.98	3.84	1.92	7.60	98.82	-	1.92	1421.2
12	25.79	47.20	36.81	47.24	15.63	18	32	50.98	3.84	1.92	7.60	98.82	-	1.92	1469.6
14	30.12	55.12	44.72	51.18	17.72	16	40	54.92	11.92	7.52	7.56	111.42	8.19	4.36	1700.6
20	30.12	55.12	44.72	51.18	17.72	16	40	54.92	11.92	7.52	7.56	111.42	8.19	4.36	1779.8
25	32.87	62.99	52.60	61.02	22.64	20	48	62.80	11.92	8.12	7.50	126.77	7.60	3.76	2327.6
30	32.87	62.99	52.60	61.02	22.64	20	48	62.80	11.92	8.12	7.50	126.77	7.60	3.76	2415.6

#### Imperial

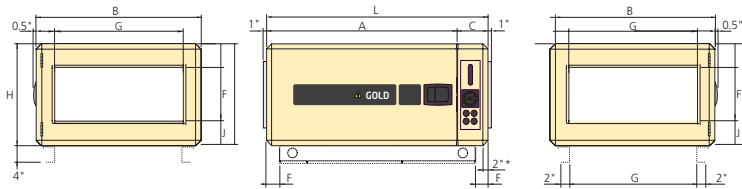
Size	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Weight, kg
05	800	825	-	345	-	300	450	920	115	57	184	2000	-	57	337
07	915	995	-	440	-	350	600	1085	103	51	193	2230	-	51	419
08	915	995	-	440	-	350	600	1085	103	51	193	2230	-	51	428
11	655	1199	935	1200	397	450	800	1295	97	49	193	2510	-	49	646
12	655	1199	935	1200	397	450	800	1295	97	49	193	2510	-	49	668
14	765	1400	1136	1300	450	400	1000	1395	303	191	192	2830	208	111	773
20	765	1400	1136	1300	450	400	1000	1395	303	191	192	2830	208	111	809
25	835	1600	1336	1550	575	500	1200	1595	303	206	190	3220	193	96	1058
30	835	1600	1336	1550	575	500	1200	1595	303	206	190	3220	193	96	1098

#### Metric



## 10.3 Dimensions, separate GOLD SD supply air and return air handling units

### GOLD 05, 07/08



\* If a duct accessory housed in an insulated casing will be connected, the air handling unit is supplied with an end connection panel designed for connection to the duct accessory.

Base beams are optional.

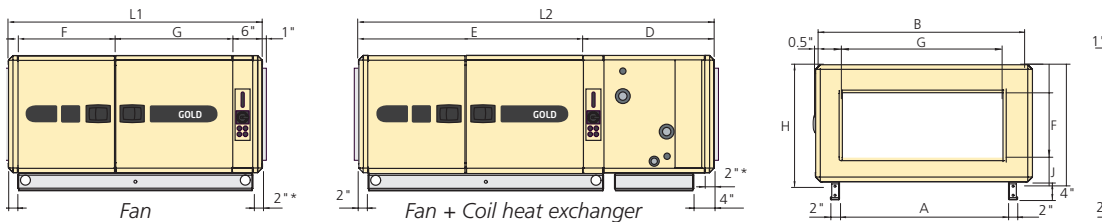
Size	L	B	H	A	C	D	E	F	G	I	J	Weight, lb
05	43.27	32.48	19.29	36.89	6.38	12	18	4.02	22.09	7.24	3.65	261.8
07	46.22	39.17	22.64	39.84	6.38	14	24	2.87	28.74	7.59	4.32	292.6
08	46.22	39.17	22.64	39.84	6.38	14	24	2.87	28.74	7.59	4.32	301.4

Imperial

Size	L	B	H	A	C	D	E	F	G	I	J	Weight, kg
05	1099	825	490	937	162	300	450	102	561	187.5	95	119
07	1174	995	575	1012	162	350	600	73	730	197.5	112.5	133
08	1174	995	575	1012	162	350	600	73	730	197.5	112.5	137

Metric

### GOLD 11/12



\* The air handling unit is supplied without end connection panel if a duct accessory housed in an insulated casing will be connected.

\*\* Width of coil heat exchanger (if required) = B + 200 mm.

Size	Weight, lb fan + filter	Weight, lb fan + filter + coil
11	387	763
12	411	788

Size	Weight, kg fan + filter	Weight, kg fan + filter + coil
11	176	347
12	187	358

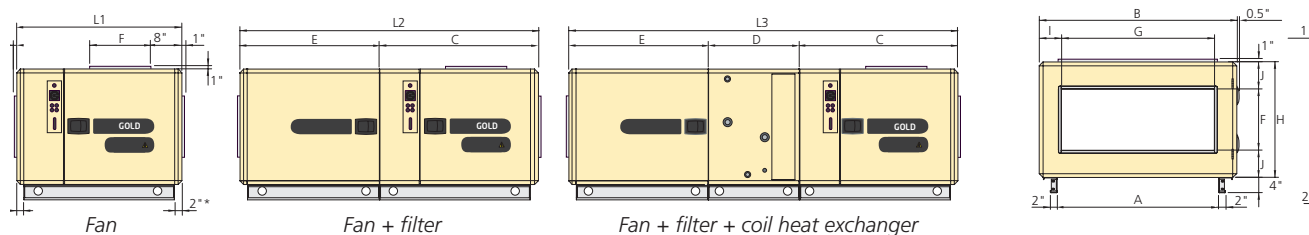
Size	L1	L2	B	H	A	D	E	F	G	I	J	K	L
11	55.28	82.36	47.20	25.51	36.81	29.13	53.23	21.26	25.59	7.85	3.90	18	32
12	55.28	82.36	47.20	25.51	36.81	29.13	53.23	21.26	25.59	7.85	3.90	18	32

Imperial

Size	L1	L2	B	H	A	D	E	F	G	I	J	K	L
11	1404	2092	1199	648	935	740	1352	540	650	199.5	99	450	800
12	1404	2092	1199	648	935	740	1352	540	650	199.5	99	450	800

Metric

## GOLD 14/20



\* The air handling unit is supplied without end connection panel if a duct accessory housed in an insulated casing will be connected.

\*\* Width of coil heat exchanger (if required) =  $B + 200$  mm

Size	Weight, lb fan	Weight, lb fan + filter	Weight, lb fan + filter + coil
14/20	413.6	642.4	1139.6

Size	Weight, kg fan	Weight, kg fan + filter	Weight, kg fan + filter + coil
14/20	188	292	518

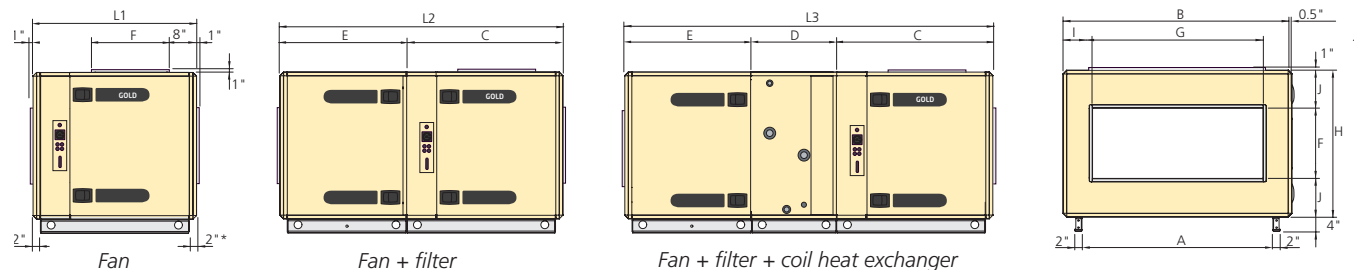
Size	L1	L2	L3	B	H	A	C	D	E	F	G	I	J
14/20	40.94	73.82	102.95	55.12	31.73	44.72	38.90	29.13	34.92	16	40	7.87	7.99

Imperial

Size	L1	L2	L3	B	H	A	C	D	E	F	G	I	J
14/20	1040	1875	2615	1400	806	1136	988	740	887	400	1000	200	203

Metric

## GOLD 25/30, 35/40



\* If a duct accessory housed in an insulated casing will be connected, the air handling unit is supplied with an end connection panel designed for connection to the duct accessory.

\*\* Width of coil heat exchanger (if required) =  $B + 200$  mm

Size	Weight, lb fan	Weight, lb fan + filter	Weight, lb fan + filter + coil
25/30	587.4	840.4	1491.6
35/40	770.0	1069.2	1894.2

Size	Weight, kg fan	Weight, kg fan + filter	Weight, kg fan + filter + coil
25/30	267	382	678
35/40	350	486	861

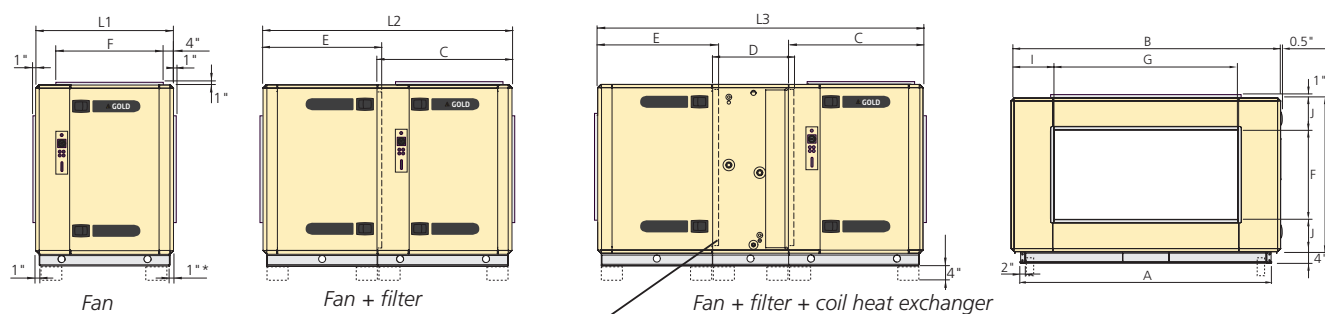
Size	L1	L2	L3	B	H	A	C	D	E	F	G	I	J
25/30	45.08	77.95	107.09	62.99	40.39	52.60	43.03	29.13	34.92	20	48	7.87	10.35
35/40	45.08	77.95	107.09	78.35	44.33	67.95	43.03	29.13	34.92	24	56	11.61	10.35

Imperial

Size	L1	L2	L3	B	H	A	C	D	E	F	G	I	J
25/30	1145	1980	2720	1600	1026	1336	1093	740	887	500	1200	200	263
35/40	1145	1980	2720	1990	1126	1726	1093	740	887	600	1400	295	263

Metric

## GOLD 50/60



\* If a duct accessory housed in an insulated casing will be connected, the air handling unit is supplied with an end connection panel designed for connection to the duct accessory.

\*\* Width of coil heat exchanger (if required) =  $B + 200$  mm

Supplied on 100 mm high support feet. The feet can be removed or kept as they are when the unit is at its final location. The unit has provision for mounting adjustable support feet.

Size	Weight, lb fan	Weight, lb fan + filter	Weight, lb fan + filter + coil
50	902.0	1364.0	2541.0
60	990.0	1452.0	2629.0

Size	Weight, kg fan	Weight, kg fan + filter	Weight, kg fan + filter + coil
50	410	620	1155
60	450	660	1195

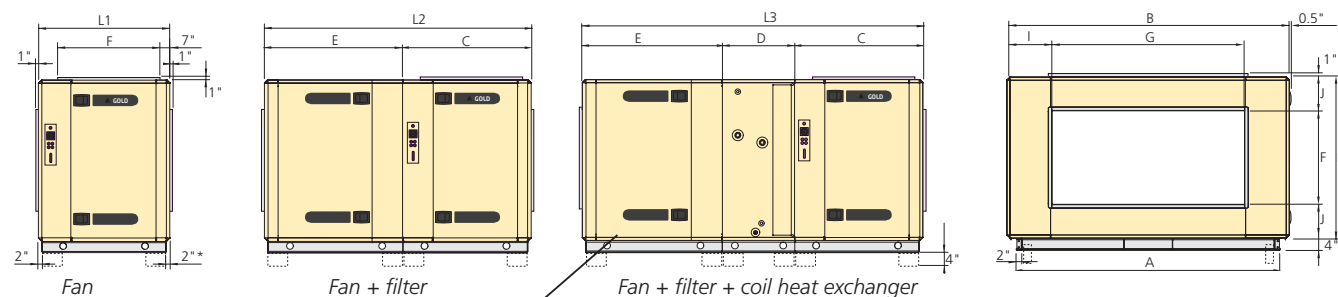
Size	L1	L2	L3	A	B	H	C	D	E	F	G	I	J
50/60	42.44	76.65	105.79	85.28	91.26	51.97	41.34	30.00	36.18	32	64	14.13	10.24

Imperial

Size	L1	L2	L3	A	B	H	C	D	E	F	G	I	J
50/60	1078	1947	2687	2166	2318	1320	1050	762	919	800	1600	359	260

Metric

## GOLD 70/80



Supplied on 100 mm high support feet. The feet can be removed or kept as they are when the unit is at its final location. The unit has provision for mounting adjustable support feet.

\* The air handling unit is supplied without end connection panel if a duct accessory housed in an insulated casing will be connected.

\*\* Width of coil heat exchanger (if required) =  $B + 200$  mm.

Size	Weight, lb fan	Weight, lb fan + filter	Weight, lb fan + filter + coil
70	1298.0	1889.8	3605.8
80	1408.0	1999.8	3715.8

Size	Weight, kg fan	Weight, kg fan + filter	Weight, kg fan + filter + coil
70	590	859	1639
80	640	909	1689

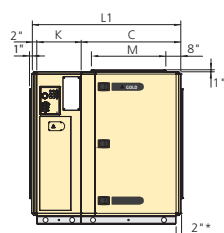
Size	L1	L2	L3	A	B	H	C	D	E	F	G	I	J
70/80	52.24	100.39	135.91	97.83	103.82	51.97	50.20	35.51	50.20	40	72	16.50	6.30

Imperial

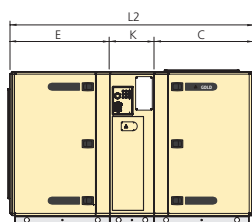
Size	L1	L2	L3	A	B	H	C	D	E	F	G	I	J
70/80	1327	2550	3452	2485	2637	1320	1275	902	1275	1000	1800	419	160

Metric

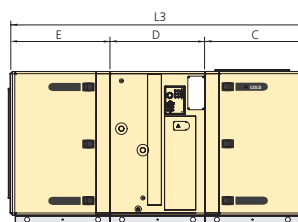
## GOLD 100



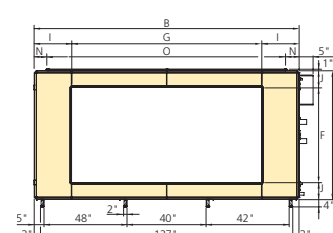
Section for power conn. + fan



Filter + section for power conn. + fan



Filter + coil heat exchanger + fan



\* The air handling unit is supplied without end connection panel if a duct accessory housed in an insulated casing will be connected.

\*\* Width of coil heat exchanger (if required) = B + 200 mm

Size	Weight, kg section for power connection + fan	Weight, kg filter + section for power conn. + fan	Weight, kg filter + coil + fan
100	1079	1608	2367

Size	Weight, lb section for power connection + fan	Weight, lb filter + section for power conn. + fan	Weight, lb filter + coil + fan
100	2373.8	3537.6	5207.4

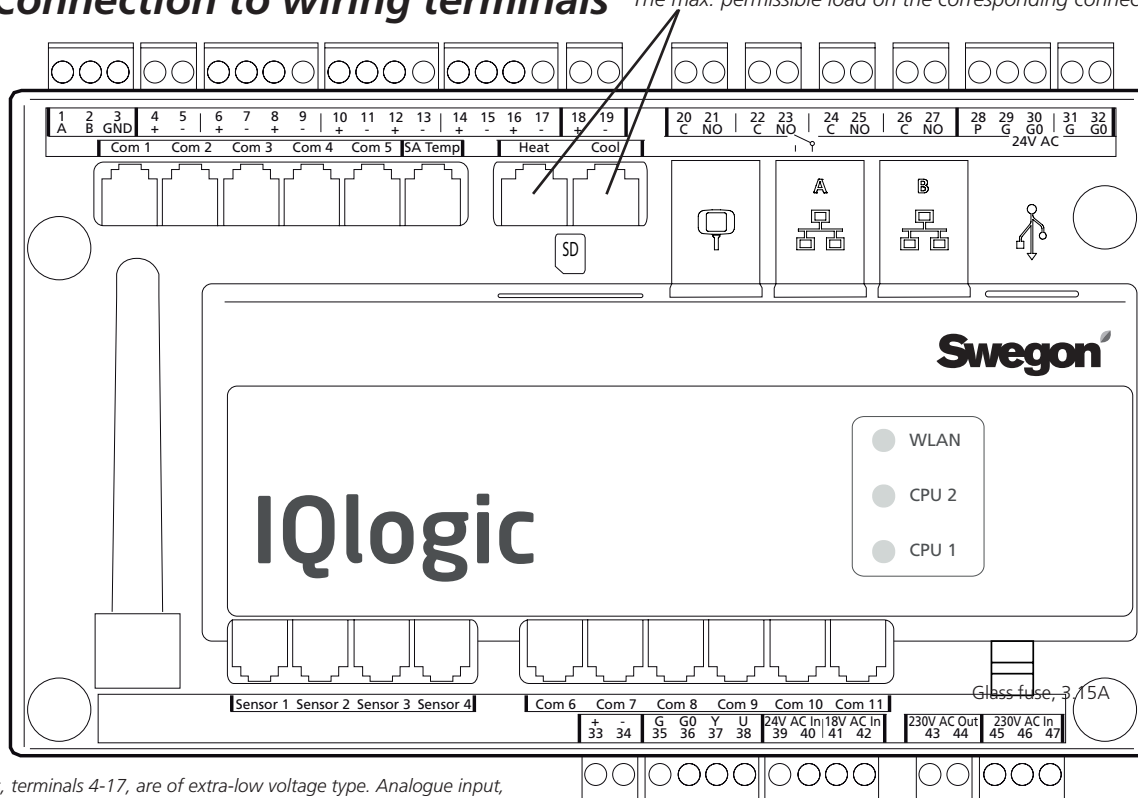
Size	L1	L2	L3	B	H	C	D	E	F	G	I	J	K	M	N	O
100	66.22	108.35	133.70	131.50	63.78	44.33	45.04	44.33	48	96	18.50	8.27	19.69	31.50	6.69	100.39

Imperial

Size	L1	L2	L3	B	H	C	D	E	F	G	I	J	K	M	N	O
100	1682	2752	3396	3340	1620	1126	1144	1126	1200	2400	470	210	500	800	170	2550

Metric

## 10.5 Connection to wiring terminals The max. permissible load on the corresponding connection is 16 VA.



Digital inputs, terminals 4-17, are of extra-low voltage type. Analogue input, terminals 18-19 have an input impedance of 66 kΩ.  
230 VAC control voltage is on external terminals 101 (L) and 102 (N).

Wiring terminal	Function	Remarks
1,2,3	Connections for EIA -485	1= Communication connection A/RT+, 2= Communication connection B/RT-, 3= GND/COM.
4,5	External stop	Stops the air handling unit by opening the circuit. On delivery, this function is fitted with a jumper. If the connection is interrupted, the air handling unit will stop.
6,7	External fire/smoke function 1	External fire and smoke function. On delivery, this function is fitted with a jumper. If the connection is interrupted, the function will trip and initiate an alarm.
8,9	External fire/smoke function 2	External fire and smoke function. On delivery, this function is fitted with a jumper. If the connection is interrupted, the function will trip and initiate an alarm.
10,11	External alarm 1	External contact function. Optional: Normally open/normally closed.
12,13	External alarm 2	External contact function. Optional: Normally open/normally closed.
14,15	External low speed	External contact function. Oversteers the timer from stop to low speed operation.
16,17	External high speed	External contact function. Oversteers the timer from stop or low speed to high speed operation.
18,19	Demand control	Input for 0-10 VDC. The input signal influences the supply air/return airflow set point if the unit is operating in the demand control mode. For connection of a sensor, for example CO <sub>2</sub> , CO and VOC
20,21	Circulation pump, heating circuit	Independent contact, max. 5 A/AC1, 2 A/AC3, 250 VAC. Closes on a heating load.
22,23	Circulation pump, cooling circuit or cooling on/off, 1-step operation	Independent contact, max. 5 A/AC1, 2 A/AC3, 250 VAC. Closes on a cooling load.
24,25	Cooling, on/off, 2-step operation	Independent contact, max. 5 A/AC1, 2 A/AC3, 250 VAC. Closes on a cooling load.
26,27	In-operation indication	Independent contact, max. 5 A/AC1, 2 A/AC3, 250 VAC. Closes when the unit is operating.
28,29,30	Damper control	24 VAC. 28= Controlled 24 VAC (G), 29= 24 VAC (G), 30= 24 VAC (G0).
31,32	Control voltage <sup>1)</sup>	24 VAC control voltage. Terminals 31-32 are loaded with a total of 16 VA. Opened by means of the safety isolating switch.
33,34	Reference voltage	Output for constant 10 VDC. Max. permissible load: 8 mA.
35,36,37,38	Control, recirculation damper	The recirculation damper can be loaded with max. 2 mA at 10 VDC. 35= 24 V AC (G), 36= 24 V AC (G0), 37= 0-10 V DC control signal, 38= 0-10 VDC feedback signal.

The max permissible common load on terminals 31-32, outputs for Heat/Cool and damper output (terminals 28-30) is max 32 VA (SD) eller 50 VA (RX/IPX).

<sup>1)</sup> GOLD 100: If more than 16 VA is required, use wiring terminals 201 (G) and 202 (G0). Terminals 201-202 can be loaded with a total of max. 48 VA.

## 10.6 Electrical data

### 10.6.1 Air handling unit

MIN. POWER SUPPLY, ONE-PIECE GOLD UNIT WITH ROTARY (RX) OR PLATE (PX) HEAT EXCHANGER.

GOLD 05, capacity variant 2:

1-phase, 3-wire, 230 V -10/+15%, 60 Hz, 15 AT

GOLD 07, capacity variant 2:

1-phase, 3-wire, 230 V -10/+15%, 60 Hz, 15 AT

GOLD 08, capacity variant 1:

1-phase, 3-wire, 230 V -10/+15%, 60 Hz, 15 AT

GOLD 11, capacity variant 1:

1-phase, 3-wire, 230 V -10/+15%, 60 Hz, 15 AT

GOLD 12, capacity variant 2:

3-phase, 4-wire, 460 V -10/+15%, 60 Hz, 15 AT

3-phase, 4-wire, 600 V -10/+15%, 60 Hz, 15 AT

GOLD 14, capacity variant 2:

3-phase, 4-wire, 460 V -10/+15%, 60 Hz, 15 AT

3-phase, 4-wire, 600 V -10/+15%, 60 Hz, 15 AT

GOLD 20, capacity variant 2:

3-phase, 4-wire, 460 V -10/+15%, 60 Hz, 15 AT

3-phase, 4-wire, 600 V -10/+15%, 60 Hz, 15 AT

GOLD 25, capacity variant 2:

3-phase, 4-wire, 460 V -10/+15%, 60 Hz, 15 AT

3-phase, 4-wire, 600 V -10/+15%, 60 Hz, 15 AT

GOLD 30, capacity variant 2:

3-phase, 4-wire, 460 V -10/+15%, 60 Hz, 20 AT

3-phase, 4-wire, 600 V -10/+15%, 60 Hz, 15 AT

GOLD 35, capacity variant 2:

3-phase, 4-wire, 460 V -10/+15%, 60 Hz, 20 AT

3-phase, 4-wire, 600 V -10/+15%, 60 Hz, 15 AT

GOLD 40, capacity variant 2:

3-phase, 4-wire, 460 V -10/+15%, 60 Hz, 30 AT

3-phase, 4-wire, 600 V -10/+15%, 60 Hz, 20 AT

GOLD 50, capacity variant 2:

3-phase, 4-wire, 460 V -10/+15%, 60 Hz, 30 AT

3-phase, 4-wire, 600 V -10/+15%, 60 Hz, 20 AT

GOLD 60, capacity variant 2:

3-phase, 4-wire, 460 V -10/+15%, 60 Hz, 50 AT

3-phase, 4-wire, 600 V -10/+15%, 60 Hz, 40 AT

GOLD 70, capacity variant 2:

3-phase, 4-wire, 460 V -10/+15%, 60 Hz, 50 AT

3-phase, 4-wire, 600 V -10/+15%, 60 Hz, 40 AT

GOLD 80, capacity variant 1:

3-phase, 4-wire, 460 V -10/+15%, 60 Hz, 50 AT

3-phase, 4-wire, 600 V -10/+15%, 60 Hz, 40 AT

GOLD 100, capacity variant 1:

3-phase, 4-wire, 460 V -10/+15%, 60 Hz, 50 AT

3-phase, 4-wire, 600 V -10/+15%, 60 Hz, 40 AT

GOLD 11, capacity variant 1:

1-phase, 3-wire cable, 230 V -10/+15%, 60 Hz, 15 AT

GOLD 12–35, capacity variant 2:

3-phase, 4-wire, 460 V -10/+15%, 60 Hz, 15 AT

3-phase, 4-wire, 600 V -10/+15%, 60 Hz, 15 AT

GOLD 40, capacity variant 2:

3-phase, 4-wire, 460 V -10/+15%, 60 Hz, 20 AT

3-phase, 4-wire, 600 V -10/+15%, 60 Hz, 15 AT

GOLD 50, capacity variant 2:

3-phase, 4-wire, 460 V -10/+15%, 60 Hz, 15 AT

3-phase, 4-wire, 600 V -10/+15%, 60 Hz, 15 AT

GOLD 60, capacity variant 2:

3-phase, 4-wire, 460 V -10/+15%, 60 Hz, 30 AT

3-phase, 4-wire, 600 V -10/+15%, 60 Hz, 20 AT

GOLD 70, capacity variant 2:

3-phase, 4-wire, 460 V -10/+15%, 60 Hz, 30 AT

3-phase, 4-wire, 600 V -10/+15%, 60 Hz, 20 AT

GOLD 80, capacity variant 1:

3-phase, 4-wire, 460 V -10/+15%, 60 Hz, 30 AT

3-phase, 4-wire, 600 V -10/+15%, 60 Hz, 20 AT

GOLD 100, capacity variant 1:

3-phase, 4-wire, 460 V -10/+15%, 60 Hz, 30 AT

3-phase, 4-wire, 600 V -10/+15%, 60 Hz, 20 AT

MIN. POWER SUPPLY, SEPARATE SUPPLY AIR AND Return AIR HANDLING UNITS, GOLD (SD)

GOLD 05, capacity variant 2:

1-phase, 3-wire, 230 V -10/+15%, 60 Hz, 15 AT

GOLD 07, capacity variant 2:

1-phase, 3-wire cable, 230 V -10/+15%, 60 Hz, 15 AT

GOLD 08, capacity variant 1:

1-phase, 3-wire cable, 230 V -10/+15%, 60 Hz, 15 AT

## 10.6.2 Fans

### RATED DATA PER FAN

GOLD 05:	Motor shaft power: 1.15 kW, motor controller: 1 x 230 V, 60 Hz
GOLD 07:	Motor shaft power: 1.15 kW, motor controller: 1 x 230 V, 60 Hz
GOLD 08:	Motor shaft power: 1.15 kW, 1 x 230 V, 60 Hz
GOLD 11:	Motor shaft power: 1.15 kW, 1 x 230 V, 60 Hz
GOLD 12:	Motor shaft power: 2.4 kW, motor controller: 3 x 460 or 600 V, 60 Hz
GOLD 14:	Motor shaft power: 2.4 kW, motor controller: 3 x 460 or 600 V, 60 Hz
GOLD 20:	Motor shaft power: 3.4 kW, motor controller: 3 x 460 or 600 V, 60 Hz
GOLD 25:	Motor shaft power: 3.4 kW, motor controller: 3 x 460 or 600 V, 60 Hz
GOLD 30:	Motor shaft power: 5.0 kW, motor controller: 3 x 460 or 600 V, 60 Hz
GOLD 35:	Motor shaft power: 5.0 kW, motor controller: 3 x 460 or 600 V, 60 Hz
GOLD 40:	Motor shaft power: 6.5 kW, motor controller: 3 x 460 or 600 V, 60 Hz
GOLD 50:	Motor shaft power: 3.4 kW, motor controller: 3 x 460 or 600 V, 60 Hz
GOLD 60:	Motor shaft power: 2 x 6.5 kW, motor controller: 3 x 460 or 600 V, 60 Hz
GOLD 70:	Motor shaft power: 2 x 6.5 kW, motor controller: 3 x 460 or 600 V, 60 Hz
GOLD 80:	Motor shaft power: 2 x 6.5 kW, motor controller: 3 x 460 or 600 V, 60 Hz
GOLD 100:	Motor shaft power: 2 x 6.5 kW, motor controller: 3 x 460 or 600 V, 60 Hz

\* The motor controller limits the output power to the value specified.

## 10.6.3 Electrical equipment cubicle

Fuse protection for the air handling unit must not exceed the value stated in Section 10.6.1.

### SAFETY ISOLATING SWITCH

#### Capacity variant 1

GOLD RX/PX/SD 08-11:	40 A
GOLD RX 80-100:	63 A
GOLD SD 80-100:	40 A

#### Capacity variant 2

GOLD RX/PX/SD 05:	40 A
GOLD RX/PX 12-25 and GOLD SD 05-70:	40 A
GOLD RX 35-40:	30 A
GOLD RX 50-70:	63 A

### Fans

GOLD 05-07 capacity variant 2, GOLD 08, capacity variant 1, GOLD 11 capacity variant 1

RX/PX Two 2-pole, 10A automatic circuit breakers

SD One 2-pole, 10A automatic circuit breaker

GOLD 12-14, capacity variant 2:

RX/PX Two protective motor switches

SD One protective motor switch

GOLD 20-35, capacity variant 2:

RX/PX Two 6.3A protective motor switches

SD One 6.3A protective motor switch

GOLD 40 capacity variant 2:

RX Two 10A protective motor switches

SD One 10A protective motor switch

GOLD 60 capacity variant 2, GOLD 70 capacity variant 2, GOLD 80 capacity variant 1, GOLD 100 capacity variant 1:

RX Four 10A protective motor switches

SD Two 10A protective motor switches

### Motor and motor controller of the rotary heat exchanger

GOLD RX, standard rotor, sizes 100 and

GOLD RX, Recosorptic rotor, sizes 50:

1 pc. 2-pole, 6A automatic circuit breaker

### FUSES IN THE CONTROL UNIT

3.15 AT, incoming 230V. For mounting, see Section 10.5. For replacement, dismantle the control unit's plastic enclosure.

RX	600 V				460 V				230 V	
	Transformers				Transformers				Transformers	
Size	Size of T1 Fuse	T1 model	Size of T2 Fuse	T2 model	Size of T1 Fuse	T1 model	Size of T2 Fuse	T2 model	Size of T1 Fuse	T1 model
05-11	-	-	-	-	-	-	-	-	2	LP-CC-2
12-40	0.5	LP-CC-1/2	1	LP-CC-1	0.5	LP-CC-1/2	1	LP-CC-1	-	-
50-100	0.5	LP-CC-1/2	4	LP-CC-4	0.5	LP-CC-1/2	5	LP-CC-5	-	-

SD	600V		460V		230V	
	Transformers		Transformers		Transformers	
Size	Size of T1 Fuse (A)	T1 model	Size of T1 Fuse	T1 model	Size of T1 Fuse	T1 model
05-11	-	-	-	-	2.5	LP-CC-2
12-40	0.5	LP-CC-1/2	0.5	LP-CC-1/2	-	-
50-100	0.5	LP-CC-1/2	0.5	LP-CC-1/2	-	-

PX	600V		460V		230V	
	Transformers		Transformers		Transformers	
Size	Size of T1 Fuse (A)	T1 model	Size of T1 Fuse	T1 model	Size of T1 Fuse	T1 model
05-11	-	-	-	-	2.5	LP-CC-2
12-30	0.5	LP-CC-1/2	0.5	LP-CC-1/2	-	-



## 10.6.4 Motor in rotary heat exchanger

### 10.6.4.1 Standard rotor

GOLD RX 05-30: Stepping motor, 2 Nm  
On starting max. 6.0 A/77 W. During operation max. 5 A/69 W.  
GOLD RX 35-40: Stepping motor, 4 Nm  
On starting max. 9.6 A/146 W. During operation max. 8A/130W.  
GOLD RX 50-80: Stepping motor, 6 Nm  
On starting max. 12 A/220 W. During operation max. 10A/195W.  
GOLD RX 100: 3-phase step motor.  
Max 4.5 A/380 W.

### 10.6.4.2 Recosorptic rotor

GOLD RX 05-08: Stepping motor, 2 Nm  
On starting: max. 6.0 A/77 W. During operation: max. 5 A/69 W.  
GOLD RX 11-40: Stepping motor, 4 Nm  
On starting: max. 9.6A/146W. During operation: max. 8A/130W.  
GOLD RX 50-100: 3-phase stepping motor.  
Max 4.5 A/380 W.

## 10.6.5 Control inaccuracy

Temperature  $\pm 1^{\circ}\text{C}$ .  
Airflow  $\pm 5\%$ .

## 10.7 Volume of glycol/water SD coil heat exchangers

Total volume of the coils (excl. pipework package and piping):

SD, size 11/12	58 litres
SD, size 14/20	90 litres
SD, size 25/30	136 litres
SD, size 35/40	184 litres
SD, size 50/60	256 litres
SD, size 70/80	280 litres
SD, size 100	452 litres

All documentation is available in digital form and can be downloaded from  
[www.swegon.com](http://www.swegon.com)