Service Instruction, GOLD, version E/F, sizes 04-120, applicable to program version 1.26 and newer versions

1. General

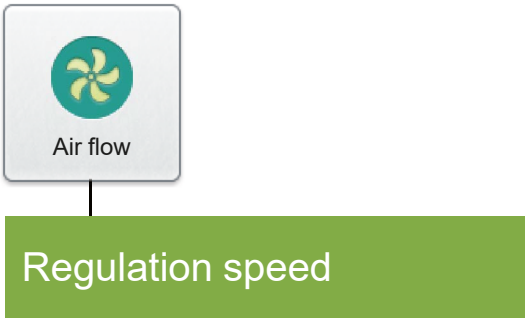
These instructions describe possible settings and adjustments in the hand-held terminal under Service, excluding settings/adjustments described in the Operation and Maintenance Instructions for the GOLD unit.

Service becomes accessible by logging in with a special code (2222).

For basic facts on how to use the hand-held terminal and images, see the Operation and Maintenance Instructions for the GOLD unit.

2. Air flow

2.1 Regulation speed



The Regulation area functions are used for flow and pressure regulation. The controller works with normal integration only within a settable range round the relevant set point. The range is limited by the preset values, in % of the set point, over and under the relevant set point. The higher values produce slower and calmer transcience to the required set point. The lower values produce faster transience.

In the range outside the regulation area, the controller works with max. and min. output signals. On a start, the fans are modulated to operate at 100% until the relevant flow/pressure are within the regulation area when the integrator takes over.

The I-time is used for setting the integral time. Integral time refers to a form of regulation where the size and time of the input signal have an effect on the output signal. A large deviation during a long period produces a large output signal and vice versa. A small deviation for a short period produces a small output signal. This signal is added to the P-controller. The I-time is defined as the time it takes to increase the output signal just as much as the P-band.

A high value for the I-time produces slower and calmer transience to the required set point. Lower values produce faster transience, but also greater risk of self-oscillation.

In order to achieve the best possible regulation speed for the current operation, the function auto correction adjusts P-band and I-time for the fan regulations continuously. The function affects both air flow regulation and pressure regulation. The function affects both supply air fan and exhaust air fan.

Settings:

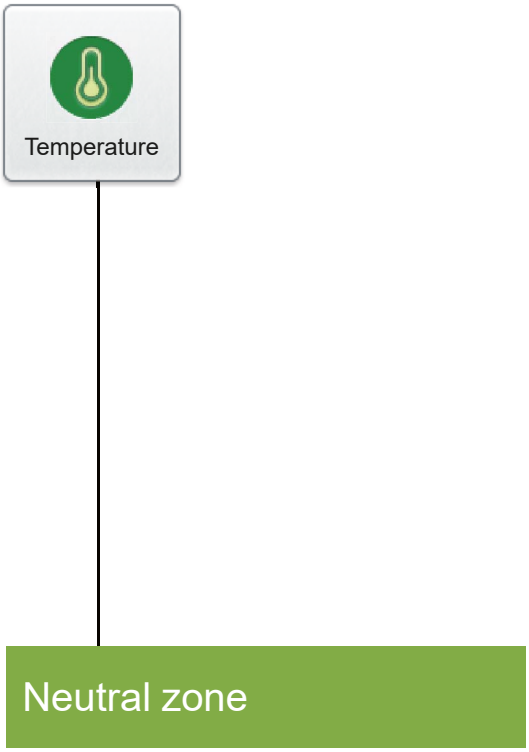
Value	Setting range	Factory setting
Supply air flow reg. area	1 – 40 %	20 %
Supply air flow reg. I-time	1 - 1800 s	40 s
Extract air flow reg. area	1 – 40 %	20 %
Extract air flow reg. I-time	1 - 1800 s	40 s
Supply air pressure reg. area	1 – 40 %	15 %
Supply air pressure reg. I-time	1 - 1800 s	60 s
Extract air pressure, P-band	1 – 40 %	15 %
Extract air pressure reg. I-time	1 - 1800 s	60 s
Demand reg., P-band %	0 – 100 %	40 %
Demand reg., P-band CO_2	0 – 10000 ppm	600 ppm
Demand reg., P-band VOC	0 – 10000 ppm	1000 ppm
Demand reg., I-time	1 - 30000 sec.	1200 sec.
Auto correction	On/Off	On

3. Temperature

The P-band is the amplification of the output signal. A high value produces "calmer" regulation.

The I-time is used for setting the integral time. Integral time refers to a form of regulation where the size and time of the input signal have an effect on the output signal. A large deviation during a long period produces a large output signal and vice versa. A small deviation for a short period produces a small output signal. This signal is added from the P-controller. The I-time is defined as the time it takes to increase the output signal just as much as the P-band.

A high value for the I-time produces slower and calmer transience to the required set point. Lower values produce faster transience, but also greater risk of self-oscillation.



3.1 Neutral zone

It is possible to set a neutral zone between each control step.

Neutral zone function selected as setpoint implies that the setpoint is offset so that it becomes the preset setpoint minus (heating cases) or plus (cooling cases) the neutral zone. Example: Heating case, setpoint 20°C, neutral zone 2 K. This implies that the offset setpoint will be 18°C. In the cooling case the offset setpoint will be 22°C.

Neutral zone function selected as the start limit implies that the preset setpoint minus (heating cases) or plus (cooling cases) neutral zone will be the start limit for the relevant control step. Example: Heating case, setpoint 20°C, neutral zone 2 K. This implies that the control step start limit will be 18°C, the setpoint remain as 20°C. In the cooling case the control step start limit will be 22°C.

Settings:

Value	Setting range	Factory settings
Extra reg. sequence 1, heat	0 – 10 K	0 K
Extra reg. sequence 2, heat	0 – 10 K	0 K
ReCO2, heat	0 – 10 K	0 K
Reheating	0 – 10 K	0 K
Down regulation	0 – 10 K	0 K
Extra reg. sequence 1, cool	0 – 10 K	0 K
Extra reg. sequence 2, cool	0 – 10 K	0 K
ReCO2, cool	0 – 10 K	0 K
Cooling	0 – 10 K	0 K
Cooling Boost	0 – 10 K	0 K
HC, heat	0 – 10 K	0 K
HC, cool	0 – 10 K	0 K
Neutral zone function, heat	Setpoint/Start limit	Setpoint
Neutral zone function, cool	Setpoint/Start limit	Setpoint

3.2 External temperature sensors

External temperature sensors

Alarm delay, communication, can be set and viewed here.

Settings:

Value	Setting range	Factory settings
Room temp. alarm delay, communication	0 – 9999 min.	5
Outdoor temp. alarm delay, communication	0 – 9999 min.	5
Xzone, room temp. alarm delay, communication	0 – 9999 min.	5

3.3 Min. exhaust air

Min. exhaust air

The regulation speed, P-band and I-times can be set and read here, with regard to min. exhaust air regulation.

Settings:

Value	Setting range	Factory settings
Regulation speed P-band	1 – 40 K	8.0 K
Regulation speed I-time	0 - 30000 s	30 s

3.4 Heating boost

Heating boost

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

The factory-preset value 4%/s means that it takes 25 seconds for the flow to go from preset normal flow to preset max. flow.

Settings:

Value	Setting range	Factory settings
Regulation speed	1 -25 %/s	4%/s

3.5 Cooling Boost (Comfort)

A regulated ramp function (Regulation speed) switches in and gradually increases the airflow when there is a cooling load, and the supply air temperature is 3 K (factory-preset under installation level) higher than preset min. supply air temperature.

The factory-preset value 4%/s means that it takes 25 seconds for the flow to go from preset normal flow to preset max. flow.

Settings:

Value	Setting range	Factory settings
Regulation speed	1 -25 %/s	4%/s

Cooling boost

3.6 Regulation speed

The P-band and I-times can be set and read here, with regard to temperature.

When supply air regulation, ORS regulation or ERS regulation are selected, the various heating and cooling sequences are regulated with individual P-bands and I-times.

When extract air regulation or ORE regulation are selected, this is regulated as a cascade function. The extract air controller sets the supply air set point with consideration taken to the set point/actual value deviation of the extract air and preset P-band. The I-time adjusts the P-deviation so that it moves to 0.

Settings:

Value	Setting range	Factory settings
Extract air regulation, P-band	1 - 10 K	5.0 K
Extract air regulation, I-time	1 - 1800 sec.	180 sec.
Xzone, Extract air regulation, P-band	1 - 10 K	5.0 K
Xzone, Extract air regulation, I-time	1 - 1800 sec.	180 sec.
Pre-heat, P-band	1 - 40 K	5.0 K
Pre-heat, I-time	1 - 1800 sec.	30 sec.
Xzone, Pre-heat, P-band	1 - 40 K	5.0 K
Xzone, Pre-heat, I-time	1 - 1800 sec.	30 sec.
Heat exchange, P-band	1 - 40 K	7.0 K
Heat exchanger, I-time	1 - 1800 sec.	60 sec.
HC heat, P-band	1 - 40 K	12.0 K
HC heat, I-time	1 - 1800 sec.	160 sec.
Extra reg. sequence heat 1, P-band	1 - 40 K	5.0 K
Extra reg. sequence heat 1, I-time	1 - 1800 sec.	30 sec.
Extra reg. sequence heat 2, P-band	1 - 40 K	5.0 K
Extra reg. sequence heat 2, I-time	1 - 1800 sec.	30 sec.
Re-heat, P-band	1 - 40 K	5.0 K
Re-heat, I-time	1 - 1800 sec.	30 sec.
Xzone heat, P-band	1 - 40 K	5.0 K
Xzone heat, I-time	1 - 1800 sec.	30 sec.
Xzone heat P-band	1 - 40 K	5,0 K
Xzone heat I-time	1 - 1800 s	30 s
Fan down reg. P-band	1 - 40 K	7,0 K
Fan down reg. I-time	1 - 1800 s	60 s
Extra reg. sequence 1 cool P-band	1 - 40 K	9,0 K
Extra reg. sequence 1 cool I-time	1 - 1800 s	80 s

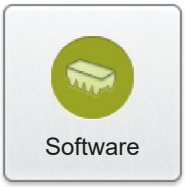
Regulation speed

Extra reg. sequence 2 cool P-band	1 - 40 K	9,0 K
Extra reg. sequence 2 cool I-time	1 - 1800 s	80 s
Cool P-band	1 - 40 K	9,0 K
Cool I-time	1 - 1800 s	80 s
HC cool, P-band	1 - 40 K	12.0 K
HC cool, I-time	1 - 1800 sec.	160 sec.
Cooling boost P-band	1 - 40 K	5,0 K
Cooling boost I-time	1 - 1800 s	30 s
Xzone cool P-band	1 - 40 K	5,0 K
Xzone cool I-time	1 - 1800 s	30 s

4. Software

Here the status of the IQlogic+ module, pressure sensors, heat exchanger motor controller, fan motor controllers, humidity sensor, VOC sensor, external temperature sensors and SMART Link can be viewed.

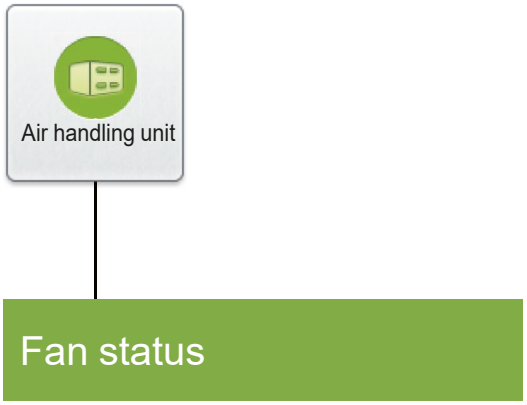
Manual upgrade/downgrade of individual program versions for componenets can be performed.



5. Air handling unit

5.1 Fan status

Readings for each motor controller can be individually viewed here when more than one fan is installed in each direction of airflow.



5.2 Start up sequence

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 extract 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 extract air handling unit only)

   Time delay: 30 seconds. This time varies depending on the preset values for other times. The time delay = The time for the start sequence minus other preset delay times.

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

Settings:

Value	**Setting range**	**Factory settings**
Start up sequence	0 - 600 s	300 s
Supply air fan start delay	0 - 600 s	60 s
Extract air fan start delay	0 - 600 s	30 s
Heat recovery, Ramp down	0 - 1800 sec.	180 sec.
Re-heat ramp down	0 - 900 s	180 s
Re-heat level	0 – 100 %	40%
CX pump level	0 – 100 %	40%
Start up after power failure	Auto/Manual	Auto

5.3 Auto zero point calibration

Auto zero point calibration

Functions for automatic zero-point calibration can be deactivated here for all the connected pressure sensors. Used in cases, in which pressure sensors are located in a duct/air handling unit where flow/pressure conditions exist even when the air handling unit is switched off. In these cases, the pressure sensor receives the wrong reference value for automatic zero-point calibration.

Settings:

Value	Setting range	Factory settings
Supply air fan	On/Off	On
Extract air fan	On/Off	On
Supply air duct	On/Off	On
Extract air duct	On/Off	On
Supply air internal filter	On/Off	On
Extract air internal filter	On/Off	On
Supply air pre-filter	On/Off	On
Extract air pre-filter	On/Off	On
Supply air end filter	On/Off	On
Rotary heat exch. defrost	On/Off	On
Rotary heat exch. carry over	On/Off	On
Cross-flow/counter-flow plate heat exchanger	On/Off	On
ReCO2	On/Off	On
HC	On/Off	On
MIRU 1 flow	On/Off	On
MIRU 1 pressure	On/Off	On
MIRU 2 flow	On/Off	On
MIRU 2 pressure	On/Off	On
MIRU 3 flow	On/Off	On
MIRU 3 pressure	On/Off	On

5.4 Manual zero point calibration

Manual zero point calibration

If automatic zero-point calibration is deactivated for any pressure sensor (see previous section), manual zero-point calibration can be activated for this pressure sensor. The calibration time can be viewed.

Settings:

Value	Setting range	Factory settings
Supply air fan	On/Off	Off
Extract air fan	On/Off	Off
Supply air duct	On/Off	Off
Extract air duct	On/Off	Off
Supply air internal filter	On/Off	Off
Extract air internal filter	On/Off	Off
Supply air pre-filter	On/Off	Off
Extract air pre-filter	On/Off	Off
Supply air end filter	On/Off	Off
Rotary heat exchanger		
Heat exchanger, defrost	On/Off	Off
Heat exchanger, transfer	On/Off	Off
Plate heat exchanger		
Heat exchanger, defrost	On/Off	Off
ReCO2	On/Off	Off
HC	On/Off	Off
MIRU 1 flow	On/Off	Off
MIRU 1 pressure	On/Off	Off
MIRU 2 flow	On/Off	Off
MIRU 2 pressure	On/Off	Off
MIRU 3 flow	On/Off	Off
MIRU 3 pressure	On/Off	Off

5.5 VOC/CO_2 sensor

VOC/CO_2 sensor

Used for WISE Apartment, ReCO_2 and demand control. The signal is forwarded via Modbus protocol.

The VOC level can be viewed and the min./max. alarm limit can be set.

The CO_2 sensor's ppm level at 0 and 100% can be set.

Settings:

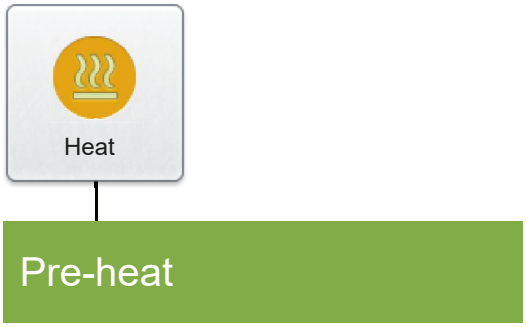
Value	Setting range	Factory settings
VOC level, alarm limit, min.	450 - 10000 ppm	450 ppm
VOC level, alarm limit, max.	450 - 10000 ppm	10000 ppm
ppm, level at 0%	0 - 10000 ppm	500 ppm
ppm, level at 100%	0 - 10000 ppm	1500 ppm

5.6 Lock function

Lock function

The entering of a code and separate instructions are required for the lock function.

6. Heat



6.1 Pre-heat

heat retentiont/alarm limit for the frost guard function as well as valve monitoring for preheating can be set and read here.

Settings:

Value	Setting range	Factory settings
Heat retention at stop	0 - 40 °C	25.0 °C
Heat retention at operation	0 - 40 °C	13.0 °C
Frost protection alarm limit	0 - 40 °C	7.0 °C
Valve monitoring	On/Off	Off

6.2 Extra regulation sequence 1 and 2

Heat retention/alarm limit for the frost guard function as well as valve monitoring for the extra regulation sequence, heating, can be set and read here.

Settings:

Value	Setting range	Factory settings
Heat retention at stop (1 only)	0 - 40 °C	25.0 °C
Heat retention at operation (1 only)	0 - 40 °C	13.0 °C
Frost protection alarm limit (1 only)	0 - 40 °C	7.0 °C
Valve monitoring	On/Off	Off
Temperature guard	On/Off	Off
Alarm delay, temperature relay	0 - 9999	5 min.

6.3 Re-heat

Heat retention/alarm limit for the frost guard function as well as valve monitoring for reheating can be set and read here.

Re-heat

Settings:

Value	Setting range	Factory settings
Heat retention at stop	0 - 40 °C	25.0 °C
Heat retention at operation	0 - 40 °C	13.0 °C
Frost protection alarm limit	0 - 40 °C	7.0 °C
Valve monitoring	On/Off	Off

6.4 Xzone

Heat retention/alarm limit for the frost guard function as well as valve monitoring for Xzone, heating, can be set and read here.

Xzone

Settings:

Value	Setting range	Factory settings
Heat retention at stop	0 - 40 °C	25.0 °C
Heat retention at operation	0 - 40 °C	13.0 °C
Frost protection alarm limit	0 - 40 °C	7.0 °C
Valve monitoring	On/Off	Off

6.5 Outdoor temp. controlled heat retention

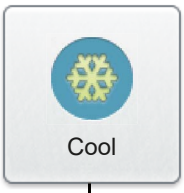
Outdoor temp. controlled heat retention can be set and read here. Heat retention is deactivated at a set outdoor air temperature.

Outdoor temp. controlled heat retention

Settings:

Value	Setting range	Factory settings
Outdoor temp. controlled heat retention	On/Off	Off
Outdoor temperature limit	0 - 20 °C	12 °C

7. Cool



7.3 Extra regulation sequence 1 and 2

The function for monitoring valves for the extra regulation sequence can be activated here.

Settings:

Value	Setting range	Factory settings
Valve monitoring	On/Off	Off
Temperature guard	On/Off	Off
Alarm delay, temperature relay	0 - 9999	5 min.

Extra regulation sequence 1/2

7.2 Cool

The function for monitoring valves for cooling can be activated here.

Settings:

Value	Setting range	Factory settings
Valve monitoring	On/Off	Off

Cool

7.3 Xzone

The function for monitoring valves for Xzone, cooling, can be activated here.

Settings:

Value	Setting range	Factory settings
Valve monitoring	On/Off	Off

Xzone

7.4 COOL DX

Stop limits, alarm limits, P-band and I-times can be set and read here, with regard to the COOL DX.

Settings:

Value	Setting range	Factory settings
Compressor 1/2		
Low pressure stop lim.	0 - 34,5 Bar	4.00 - 34.5 Bar
High pressure stop lim.	0 - 45.5 Bar	39.00 Bar
Low pressure alarm lim.	0 - 34.5 Bar	3.00 Bar
High pressure alarm lim.	0 - 45.5 Bar	40.50 Bar
Heat exchange P-band (comfort)	1 – 10 K	5.0 K
Heat exchange I-time (comfort)	1 - 1800 s	30 s

COOL DX

8. 8. Heat/Cooling energy recovery

8.1 Current reduction

The function for current reduction can be activated here. Should normally be set to the Off position.

Settings:

Value	Setting range	Factory settings
Current reduction	On/Off	Off

Current reduction

8.2 Efficiency measurement

Setpoints for alarm limits can be preset here. Temperature difference, alarm limit refers to the minimum differemce between the extract air and exhaust air temperature before an alarm is initiated. Efficiency, alarm limit refers to the heat exchanger's minimum permissible efficiency before an alarm is initiated (exception defrost if required).

Settings:

Value	Setting range	Factory setting
Temperature difference, alarm limit	3 – 20 K	6 K
Efficiency, alarm limit	10 – 70 %	50%

Efficiency measurement

8.3 Heat retention

The function for the heat exchanger when heat retention of some air heater for re-heat coil is active (applies to extra regulation sequences 1 and 2, Xzone and ordinary re-heat) can be activated here. The function can be selected as On/Off or Regulating. On/off implies that the heat exchanger is operated to provide max. heat recovery as long as the heat-retention function is active. Regulating implies that the heat exchanger is regulated in order to keep the temperature at the heat retention limit.

Settings:

Value	Setting range	Factory settings
Heat retention	Inactive, On/Off, Regulated	Regulated
P-band	1-40 K	8 K
I-time	1-600 sec.	60 sec.

Heat retention

8.4 Temperature protection

The function for the heat exchanger when the temperature protection function is used can be activated here.

When the function is activated, the heat exchanger is regulated in order to keep the temperature 5 K above the alarm limit of the temperature monitor.

Settings:

Value	Setting range	Factory settings
Temperature protection	On/Off	Off
P-band	1-40 K	5 K
I-time	1-600 sec.	60 sec.

Temperature protection

8.5 Dehumidifying regulation

Dehumidifying regulation

The function for dehumidification regulation can be activated here. Dehumidification regulation involves using the heat exchanger for reheating when COOL DX is installed and the dehumidification function is selected.

NOTE! Only applicable to rotors in standard or epoxy versions (not sorption).

Settings:

Value	Setting range	Factory settings
Dehumidifying regulation	On/Off	Off

8.6 Block heat exchange at warm outdoor temp

Block heat exchange at warm outdoor temp

The function blocking of heat exchange at warm outdoor temperatures can be deactivated here. When it is 1°C warmer outdoors than indoors and heating is required, the heat exchanger normally is blocked (factory setting On). In the Off position, heat exchanger start up is not blocked and it continues to operate.

Settings:

Value	Setting range	Factory settings
Block heat exchange at warm outdoor temp	On/Off	On

8.7 Recosorptic rotor

Recosorptic rotor

The operation of the Recosorptic can be set here as follows: Inactive, Active only when cooling energy is recovered or Always active.

Settings:

Value	Setting range	Factory settings
Recosorptic rotor	Inactive/Active on cooling energy recovery/ Always active	Inactive

8.8 Type of heat exchanger (PX/CX)

Type of heat exchanger

The type of heat exchanger for the GOLD PX and CX can be selected here.

Settings:

Value	Setting range	Factory setting
Heat exchanger, control		
PX	Standard humidity, temperature*/RECOfrost/ Standard, pressure	Depending on the type ordered
Heat exchanger, type (For RECOfrost only)	Cross-flow/Counter-flow	Depending on the type ordered
CX	Fixed-speed controlled pump/Pressure controlled pump**	Pressure-controlled pump
*Edition****	ERP 2016/ERP 2018	

**GOLD PX supplied before week no. 46, 2014*

*** Fixed-speed controlled pump is for air handling units supplied before or during 2015. Pressure controlled pump is for air handling units supplied during 2016 and afterward.*

**** ERP 2016 = 10 tube rows, ERP 2018 = 12 tube rows*

8.9 Glycol (CX)

The type of glycol and the content of glycol can be set here.

Glycol

Settings:

Value	Setting range	Factory settings
Type of glycol	Ethylene/Propylene	Ethylene
Content of glycol	20/30/40%	30%

8.10 Bypass/Defrosting (GOLD PX/CX)

The humidity level, dew point and calculated defrost factors can be read here.

Bypass/Defrosting

GOLD PX:
Standard humidity, temperature
(Applies to GOLD PX supplied before week no. 46, 2014):
The humidity level, dew point and calculated limit can be read here. The start limit (temperature limit) for bypass sensors, at which defrosting starts, can be set.

RECOfrost:
The humidity level, dew point and calculated defrost factors can be read here. The bypass level can be set.

The bypass level is a calculated factor between 0-100% obtained when bypass optimization is enabled (the factor is factory-preset to 60%). If the value increases, the bypass damper opens more, which enables more efficient defrosting, lower efficiency (during defrosting) and less formation of frost between cycles. If the value decreases, the bypass damper closes more, which enables less efficient defrosting, higher efficiency (during defrosting) and more formation of frost between cycles.

Standard, pressure:
The calculated defrost factors can be read here. The bypass level and bypass reduction limit can be set.

The bypass level is a calculated factor between 0-100% obtained when bypass optimization is enabled (the factor is factory-preset to 60%). If the value increases, the bypass damper opens more, which enables more efficient defrosting, lower efficiency (during defrosting) and less formation of frost between cycles. If the value decreases, the bypass damper closes more, which enables less efficient defrosting, higher efficiency (during defrosting) and more formation of frost between cycles.

Bypass reduction limit determines how much the bypass damper is open after the defrosting cycle.

Settings:

Value	Setting range	Factory settings
Standard humidity, temperature		
Start limit	-10 – +5 °C	-3 °C
Bypass, P-band	1 - 10 K	5.0 K
Bypass, I-time	1 - 1800 sec.	30 sec.
RECOfrost/Standard, pressure		
Bypass level	0 - 100%	60%
Bypass reduction limit (Standard, pressure only)	12 - 32%	22%

Settings:

Value	Setting range	Factory settings
Standard humidity, temperature		
Start limit	-10 – +5 °C	-3 °C
Bypass P-band	1 - 10 K	5.0 K
Bypass I-time	1 - 1800 sec.	30 sec.
RECOfrost/Standard, pressure		
Bypass level	0 - 100%	60%
Defrost factor, stop	0 - 20	9
Defrost factor, start	10 - 30	25
Defrost factor, safety 1 (RECOfrost only)	30 - 50	35
Bypass reduction limit (Standard, pressure only)	12 - 32%	22%

GOLD CX:
Start limit (temperature limit) for water temperature sensors, at which defrosting starts, can be set.

The P-band and I-time start limits can be set and read here.

Settings:

Value	Setting range	Factory settings
Start limit	-10 – +5 °C	-5 °C
Bypass P-band	1 - 10 K	5.0 K
Bypass I-time	1 - 1800 sec.	30 sec.

8.11 Periodic operation (GOLD PX/CX)

Periodic operation

The functions for periodic operation can be set here.

Settings:

Value	Setting range	Factory settings
GOLD PX		
Periodic operation of damper	On/Off	Off
Periodic operation interval	0-168 hrs.	24 hrs.
Periodic operation period	0-60 min.	3 min.
GOLD CX		
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.

8.12 Start up (GOLD RX)

Start up

The start current and time for start current for rotary heat exchanger can be set here.

Settings:

Value	Setting range	Factory settings
Start current (current)	1)	1)
Start current (time)	0 - 100 s	80 s

1) The start current settings is adjusted to each size/variant respectively.

9. SMART Link

9.1 Optimize

The function Optimize can be set here. Se also the SMART Link function guide.

Settings:

Value	Setting range	Factory settings
Optimize	On/Off	On
Low limit	5 - 90 %	80%
High limit	70 - 100 %	100 %
Delay	30 - 32000 s	60 s
Heat regulation speed	0.1 - 6 K/min	0.3 K/min
Cool regulation speed	0.1 - 6 K/min	0.3 K

10. Humidity

10.1 Humidification

Humidification can be deactivated here while cooling.

Settings:

Value	Setting range	Factory setting
Deactivate humidification while cooling	On/Off	Off

10.2 Sensors only

The function Sensors only can be activated here. Used for measuring the humidity in the supply air and/or extract air. No function coupled to sensors.

Settings:

Value	Setting range	Factory settings
Supply air sensor	On/Off	Off
Extract air sensor	On/Off	Off

10.3 Regulation speed

The P-band and I-times can be set and read here, with regard to the humidity in the air.

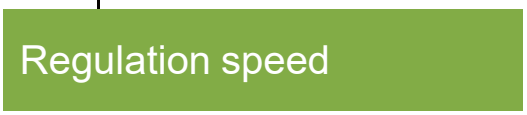
Settings:

Value	Setting range	Factory settings
Supply air humidifying P-band	1 - 80 %RH	60 %RH
Supply air humidifying I-time	1 - 1800 s	50 s
Extract air humidifying P-band	1 - 80 %RH	60 %RH
Extract air humidifying I-time	1 - 1800 s	180 s
Supply air dehumidifying P-band	1 - 80 %	60%
Supply air dehumidifying I-time	0 - 180 s	50 s
Extract air dehumidifying P-band	1 - 50 %	25%
Extract air dehumidifying I-time	0 - 1800 s	900 s

11. ReCO$_2$

11.1 Regulation speed

The P-band and I-times can be set and read here, with regard to the ReCO function$_2$.



Settings:

Value	Setting range	Factory settings
CO_2/VOC, P-band (%)	1 - 100%	50%
CO_2/VOC, P-band (CO_2)	0 - 10000 ppm	600 ppm
CO_2/VOC, P-band (VOC)	0 - 10000 ppm	1000 ppm
CO_2/VOC, I-time	1 - 1800 sec.	60 sec.
CO_2/VOC boost, P-band (%)	1 - 100%	40%
CO_2/VOC boost, P-band (CO_2)	0 - 10000 ppm	400 ppm
CO_2/VOC boost, P-band (VOC)	0 - 10000 ppm	800 ppm
CO_2/VOC boost, I-time	1 - 1800 sec.	60 sec.
Heat, P-band	1 - 40 K	7.0 K
Heat I-time	1 - 1800 s	60 s
Cool P-band	1 - 40 K	7.0 K
Cool I-time	1 - 1800 s	60 s
Free cool P-band	1 - 40 K	5.0 K
Free cool I-time	1 - 1800 s	60 s

12. All Year Comfort

12.1 Chilled water dew point compensation

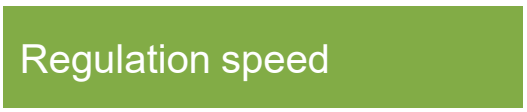
The neutral zone and airflow compensation regulation speed can be set here, with regard to the All Year Comfort function. See also the All Year Comfort function guide.

Settings:

Value	Setting range	Factory settings
Neutral zone	0 - 5 K	2.0 K
Air flow compensation reg. speed	0 - 30 %	10%

12.2 Regulation speed

The P-band and I-times can be set and read here, with regard to the All Year Comfort function.



Settings:

Value	Setting range	Factory settings
Heated water P-Band	1 – 40 K	15.0 K
Heated water I-time	1 - 600 s	60 s
Chilled water P-Band	1 – 40 K	15.0 K
Chilled water I-time	1 - 600 s	60 s

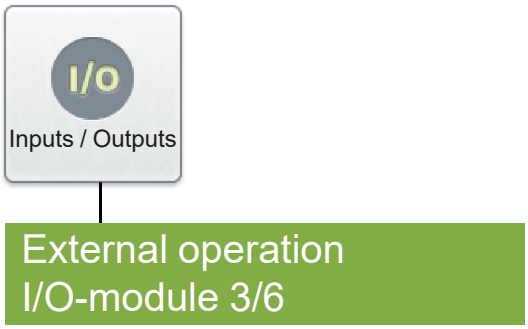
13. Inputs / Outputs

13.1 External operation I/O-module 3 and 6

Here digital output 1 and 2 can be set to the functions open (NO) or closed (NC).

Settings:

Value	Setting range	Factory setting
Digital Output 1	Open contact, NO/Closed contact, NC	Open contact, NO
Digital Output 2	Open contact, NO/Closed contact, NC	Open contact, NO



14. Communication

14.1 Web encryption

Here there is provision for activating web encryption. Web encryption is used when a higher level of security is desirable. The IP address shall then be stated with the prefix https://

Settings:

Value	Setting range	Factory settings
Web encryption	On/Off	Off

14.2 TCP ports

Here there is provision for opening/closing ports.

Settings:

Value	Setting range	Factory settings
Web	-	80
SSH Port B	On/Off	Off
SSH Port A	On/Off	Off
SSH Wireless LAN	On/Off	Off

14.3 GOLDen gate config

Here there is provision for activating GOLDen gate config. Provides the opportunity to make the AHU visible via GOLDen gate config-programvara.

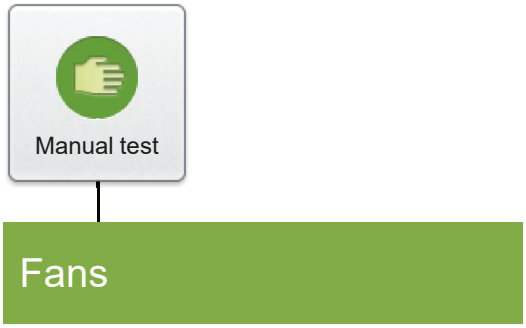
Settings:

Value	Setting range	Factory settings
Port A	On/Off	On
Port B	On/Off	On

15. Manual test

15.1 Fans

Temperature, voltage, current and power usage readings can be viewed here for each fan controller.

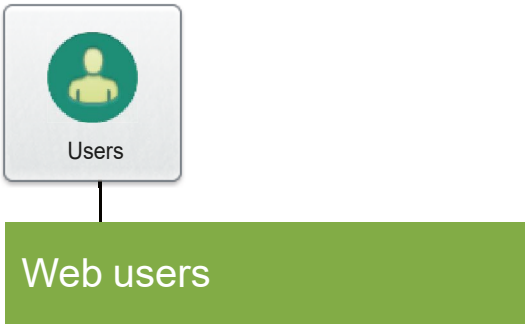


15.2 Heat exchanger (only RX)

Temperature, voltage, current and power usage readings can be viewed here for heat exchangers.

16. Users

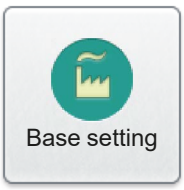
Here is provision for resetting the web users accounts to factory settings.



17. Base setting

Factory reset and Reset air handling settings, means re-storing all the settings except communication settings and calibrated values.

Factory reset and Reset air handling and communication settings, means restoring all the settings except calibrated values.



Total Factory reset means restoring all the settings. Note that even the calibrated values on the pressure sensor, etc., will be restored.

Settings:

Value	Option
Restoring the factory settings	Restore the air handling unit settings/ Restore the air handling unit and communication settings/Total Factory reset

16. Commissioning Record

Company

Our reference

Client	Date	SO No.
Plant	**Project/Air handling unit**	**Series no.:**
Plant address	**Type/size**	**Program version:**

Function		Factory-preset value	Adjusted value
Air flow			
Regulation speed			
Supply air flow reg. area	%	20	
Supply air flow reg. I-time	s	40	
Extract air flow reg. area	%	20	
Extract air flow reg. I-time	s	40	
Supply air pressure reg. area	%	15	
Supply air pressure reg. I-time	s	60	
Extract air pressure, P-band	%	15	
Extract air pressure, I-time	sec.	60	
Demand reg., P-band %	%	40	
Demand reg., P-band CO_2	ppm	600	
Demand reg., P-band VOC	ppm	1000	
Demand reg. I-time	s	1200	
Auto correction		☒ On ☐ Off	☐ On ☐ Off

Function		Factory-preset value	Adjusted value
Temperature			
Neutral zone			
Extra reg. sequence 1, heat	K	0	
Extra reg. sequence 2, heat	K	0	
ReCO2, heat	K	0	
Reheating	K	0	
Down regulation	K	0	
Extra reg. sequence 1, cool	K	0	
Extra reg. sequence 2, cool	K	0	
ReCO2, cool	K	0	
Cooling	K	0	
Cooling Boost	K	0	
HC, heat	K	0	
HC, cool	K	0	
Neutral zone function, heat		☒ Setpoint ☐ Start limit	☐ Setpoint ☐ Start limit
Neutral zone function, cool		☒ Setpoint ☐ Start limit	☐ Setpoint ☐ Start limit
External temperature sensors			
Room temp. alarm delay, communication	m	5	
Outdoor temp. alarm delay, communication	m	5	
Xzone, room temp. alarm delay, communication	m	5	
Min. exhaust air			
Regulation speed P-band	K	8,0	
Regulation speed I-time	s	30	
Heating boost			
Regulation speed	%/s	4	
Cooling Boost (Comfort)			
Regulation speed	%/s	4	
Regulation speed			
Xzone, Extract air regulation, P-band	K	5,0	
Xzone, Extract air regulation, I-time	s	180	
Pre-heat, P-band	K	5,0	
Pre-heat, I-time	s	30	
Xzone, Pre-heat, P-band	K	5,0	
Xzone, Pre-heat, I-time	s	30	
Heat exchange, P-band	K	7,0	
Heat exchanger, I-time	s	60	
HC heat, P-band	K	12,0	
HC heat, I-time	s	160	
Extra reg. sequence 1 heat, P-band	K	5,0	
Extra reg. sequence 1 heat, I-time	s	30	
Extra reg. sequence 2 heat, P-band	K	5,0	
Extra reg. sequence 2 heat, I-time	s	30	
Re-heat, P-band	K	5,0	
Re-heat, I-time	s	30	
Xzone heat, P-band	K	5,0	
Xzone heat, I-time	s	30	
Fan down reg., P-band	K	7,0	
Fan down reg., I-time	s	60	
Xzone, Fan down reg., P-band	K	7,0	
Xzone, Fan down reg., I-time	s	60	

Fan down reg. P-band	K	7,0	
Fan down reg. I-time	s	60	
Extra reg. sequence 1 cool P-band	K	9,0	
Extra reg. sequence 1 cool I-time	s	80	
Extra reg. sequence 2 cool P-band	K	9,0	
Extra reg. sequence 2 cool I-time	s	80	
Cool P-band	K	9,0	
Cool I-time	s	80	
HC cool P-band	K	12,0	
HC cool I-time	s	160	
Cooling boost P-band	K	5,0	
Cooling boost I-time	s	30	
Xzone cool P-band	K	5,0	
Xzone cool I-time	s	30	

Function		Factory-preset value		Adjusted value	
Air handling unit					
Start up sequence					
Start up sequence	s	300			
Supply air fan start delay	s	60			
Extract air fan start delay	s	30			
Heat recovery ramp down	s	180			
Re-heat ramp down	s	180			
Re-heat level	%	40			
CX pump level	%	40			
Start up after power failure		Auto			
Auto zero point calibration					
Supply air fan		☒ On	☐ Off	☐ On	☐ Off
Extract air fan		☒ On	☐ Off	☐ On	☐ Off
Supply air duct		☒ On	☐ Off	☐ On	☐ Off
Extract air duct		☒ On	☐ Off	☐ On	☐ Off
Supply air internal filter		☒ On	☐ Off	☐ On	☐ Off
Extract air internal filter		☒ On	☐ Off	☐ On	☐ Off
Supply air pre-filter		☒ On	☐ Off	☐ On	☐ Off
Extract air pre-filter		☒ On	☐ Off	☐ On	☐ Off
Supply air end filter		☒ On	☐ Off	☐ On	☐ Off
Rotary heat exch. defrost		☒ On	☐ Off	☐ On	☐ Off
Rotary heat exch. carry over		☒ On	☐ Off	☐ On	☐ Off
Cross-flow/counter-flow plate heat exch.		☒ On	☐ Off	☐ On	☐ Off
$ReCO_2$		☒ On	☐ Off	☐ On	☐ Off
HC		☒ On	☐ Off	☐ On	☐ Off
MIRU 1 flow		☒ On	☐ Off	☐ On	☐ Off
MIRU 1 pressure		☒ On	☐ Off	☐ On	☐ Off
MIRU 2 flow		☒ On	☐ Off	☐ On	☐ Off
MIRU 2 pressure		☒ On	☐ Off	☐ On	☐ Off
MIRU 3 flow		☒ On	☐ Off	☐ On	☐ Off
MIRU 3 pressure		☒ On	☐ Off	☐ On	☐ Off
VOC/CO_2 sensor					
VOC level, alarm limit, min.	ppm	450			
VOC level, alarm limit, max.	ppm	10000			
ppm, level at 0%	ppm	500			
ppm, level at 100%	ppm	1500			

Function		Factory-preset value		Adjusted value	
Heat					
Pre-heat					
Heat retention at stop	°C	25.0			
Heat retention at operation	°C	13.0			
Frost protection alarm limit	°C	7.0			
Valve monitoring		☐ On	☒ Off	☐ On	☐ Off
Extra regulation sequence					
Extra regulation sequence 1					
Heat retention at stop	°C	25.0			
Heat retention at operation	°C	13.0			
Frost protection alarm limit	°C	7.0			
Valve monitoring		☐ On	☒ Off	☐ On	☐ Off
Temperature guard		☐ On	☒ Off	☐ On	☐ Off
Alarm delay, temperature relay	m	5			
Extra regulation sequence 2					
Valve monitoring		☐ On	☒ Off	☐ On	☐ Off
Temperature guard		☐ On	☒ Off	☐ On	☐ Off
Alarm delay, temperature relay	m	5			
Re-heat					
Heat retention at stop	°C	25.0			
Heat retention at operation	°C	13.0			
Frost protection alarm limit	°C	7.0			
Valve monitoring		☐ On	☒ Off	☐ On	☐ Off
Xzone					
Heat retention at stop	°C	25.0			
Heat retention at operation	°C	13.0			
Frost protection alarm limit	°C	7.0			
Valve monitoring		☐ On	☒ Off	☐ On	☐ Off
Outdoor temp. controlled heat retention					
Outdoor temp. controlled heat retention		☐ On	☒ Off	☐ On	☐ Off
Outdoor temperature limit	°C	12			

Function		Factory-preset value	Adjusted value
Cool			
Extra regulation sequence			
Extra regulation sequence 1			
Valve monitoring		☐ On ☒ Off	☐ On ☐ Off
Temperature guard		☐ On ☒ Off	☐ On ☐ Off
Alarm delay, temperature relay	m	5	
Extra regulation sequence 2			
Valve monitoring		☐ On ☒ Off	☐ On ☐ Off
Temperature guard		☐ On ☒ Off	☐ On ☐ Off
Alarm delay, temperature relay	m	5	
Cool			
Valve monitoring		☐ On ☒ Off	☐ On ☐ Off
Xzone			
Valve monitoring		☐ On ☒ Off	☐ On ☐ Off
COOL DX			
Compressor 1			
Low pressure stop lim.	Bar	4.00	
High pressure stop lim.	Bar	39.00	
Low pressure alarm lim.	Bar	3.00	
High pressure alarm lim.	Bar	40.50	
Heat exchange P-band (comfort)	K	5.0	
Heat exchange I-time (comfort)	s	30	
Compressor 2			
Low pressure stop lim.	Bar	4.00	
High pressure stop lim.	Bar	39.00	
Low pressure alarm lim.	Bar	3.00	
High pressure alarm lim.	Bar	40.50	
Heat exchange P-band (comfort)	K	5.0	
Heat exchange I-time (comfort)	s	30	

Function		Factory-preset value	Adjusted value
Heat/Cooling energy recovery			
Current reduction			
Current reduction		☐ On ☒ Off	☐ On ☐ Off
Efficiency measurement			
Temp. difference, alarm limit	K	6	
Efficiency, alarm limit	%	50	
Heat retention			
Heat retention		☐ Inactive ☐ On/Off ☒ Regulated	☐ Inactive ☐ On/Off ☐ Regulated
P-band	K	8,0	
I-time	sec.	60	
Temperature protection			
Temperature protection		☐ On ☒ Off	☐ On ☐ Off
P-band	K	5,0	
I-time	sec.	60	
Dehumidifying regulation			
Dehumidifying regulation		☐ On ☒ Off	☐ On ☐ Off
Block heat exchange at warm outdoor temp			
Block heat exchange at warm out-door temp		☒ On ☐ Off	☐ On ☐ Off
Recosorptic rotor		☒ Inactive ☐ Active on cool. energy rec. ☐ Always active	☐ Inactive ☐ Active on cool. energy rec. ☐ Always active
Type of heat exchanger (PX/CX)			
GOLD PX			
Heat exchanger, control		Depending on the type ordered	☐ RECOfrost ☐ Standard, pressure ☐ Standard humidity, temperatur
Heat exch., type (RECOfrost only)		Depending on the type ordered	☐ Cross-flow ☐ Counter-flow
GOLD CX			
Heat exchanger, control		Depending on the type ordered	☐ Fixed-speed controlled pump ☐ Pressure controlled pump
Edition		Depending on the type ordered	☐ ERP2016 ☐ ERP2018
Glycol (CX)			
Type of glycol		☒ Ethylene ☐ Propylene	☐ Ethylene ☐ Propylene
Content of glycol	%	☐ 20 ☒ 30 ☐ 40	☐ 20 ☐ 30 ☐ 40
Bypass/Defrosting (PX/CX)			
GOLD PX			
Standard humidity, temperature			
Start limit	°C	-3	
Bypass P-band	K	5.0	
Bypass I-time	sec.	30	
RECOfrost/Standard, pressure			
Bypass level	%	60	
Bypass reduction limit (Standard, pressure only)	%	22	
GOLD CX			
Start limit	°C	-5	
Bypass P-band	K	5.0	
Bypass I-time	sec.	30	
Periodic operation (PX/CX)			
GOLD PX			
Periodic operation of damper		Off	
Periodic operation interval	hrs.	24	
Periodic operation period	min.	3	
GOLD CX			
Periodic operation of pump		On	
Periodic operation of valve		On	
Periodic operation interval	hrs.	24	
Periodic operation period	min.	3	
Start up (GOLD RX)			
Start current (current)	A	Depending on size/variant	
Start current (time)	s	80	

Function		Factory-preset value		Adjusted value	
SMART Link					
Optimize					
Optimize		☒ On	☐ Off	☐ On	☐ Off
Low limit	%	80			
High limit	%	100			
Delay	s	60			
Heat regulation speed	K/min	0.3			
Cool regulation speed	K/min	0.3			

Function		Factory-preset value		Adjusted value	
Humidity					
Humidifying					
Deactivate humidification while cooling		☐ On	☒ Off	☐ On	☐ Off
Sensors only					
Supply air sensor		☐ On	☒ Off	☐ On	☐ Off
Extract air sensor		☐ On	☒ Off	☐ On	☐ Off
Regulation speed					
Supply air humidifying P-band	%RH	60			
Supply air humidifying I-time	s	50			
Extract air humidifying P-band	%RH	60			
Extract air humidifying I-time	s	180			
Supply air dehumidifying P-band	%RH	60			
Supply air dehumidifying I-time	s	50			
Extract air dehumidifying P-band	%RH	25			
Extract air dehumidifying I-time	s	900			

Function		Factory-preset value	Adjusted value
ReCO₂			
Regulation speed			
CO_2/VOC, P-band (%)	%	50	
CO_2/VOC, P-band (CO_2)	ppm	600	
CO_2/VOC, P-band (VOC)	ppm	1000	
CO_2/VOC, I-time	sec.	60	
CO_2/VOC boost, P-band (%)	%	40	
CO_2/VOC boost, P-band (CO_2)	ppm	400	
CO_2/VOC boost, P-band (VOC)	ppm	800	
CO_2/VOC boost, I-time	sec.	60	
Heat P-band	K	7.0	
Heat I-time	s	60	
Cool P-band	K	7.0	
Cool I-time	s	60	
Free cool P-band	K	5.0	
Free cool I-time	s	60	

Function		Factory-preset value	Adjusted value
All Year Comfort			
Chilled water dew point compensation			
Neutral zone	K	2.0	
Air flow compensation reg. speed	%	10	
Regulation speed			
Heated water P-Band	K	15.0	
Heated water I-time	s	60	
Chilled water P-Band	K	15.0	
Chilled water I-time	s	60	

Function	Factory-preset value		Adjusted value	
Inputs / Outputs				
External operation I/O-module 3				
Digital output 1 NO/NC	☒ Closed circuit	☐ Open circuit	☐ Closed circuit	☐ Open circuit
Digital output 2 NO/NC	☒ Closed circuit	☐ Open circuit	☐ Closed circuit	☐ Open circuit
External operation I/O-module 6				
Digital output 1 NO/NC	☒ Closed circuit	☐ Open circuit	☐ Closed circuit	☐ Open circuit
Digital output 2 NO/NC	☒ Closed circuit	☐ Open circuit	☐ Closed circuit	☐ Open circuit

Function	Factory-preset value		Adjusted value	
Communication				
Web encryption				
Web encryption	☐ On	☒ Off	☐ On	☐ Off
TCP ports				
Web	80			
SSH Port B	☐ On	☒ Off	☐ On	☐ Off
SSH Port A	☐ On	☒ Off	☐ On	☐ Off
SSH Wireless LAN	☐ On	☒ Off	☐ On	☐ Off
GOLDen gate config				
Port A	☒ On	☐ Off	☐ On	☐ Off
Port B	☒ On	☐ Off	☐ On	☐ Off