GOLD Function Guide, SMART Link/AQUA Link (Blue Box)

1. General

The *BlueBox* function is intended for use in controlling the times, temperatures, etc. as well as reading the alarms and settings of a Blue Box chiller/heat pump via a hand-held micro terminal and web page in a GOLD air handling unit.

The *BlueBox* function can be used for the GOLD RX/PX/CX/SD with program version 6.08 or better.

For electrical wiring and functionality at connection with Nestor, see separate documentation.

1.1 Energy-saving functions

1.1.1 Control of the supply air temperature/supply flow temperature

By comparing the supply air temperature downstream of the fan with the supply flow temperature to the coil, the equipment makes sure that the valve for the coil opens only if the water has a temperature that conveys energy to the air.

This means that if there is a heat load and the water temperature is lower than the supply air temperature, which can occur during defrosting cycles, the valve is not allowed to open. If there is a cooling load, the reverse applies.

1.1.2 Optimisation function

A cooling unit/heat pump will be more effective if the difference between the outdoor temperature and the water temperature is as small as possible. This reduces energy consumption.

The supply air energy to a water coil is controlled by a valve. Optimisation of the valve position so that it always strives to be fully open, and instead control the water temperature, saves energy.

1.1.3 AQUA Link

The AQUA Link provides both air handling units and comfort modules with cooling power. Even here energy savings are obtainable by allowing the need to control the water temperature.

Depending on whatever the specific need is (dehumidification, cooling of the supply air, cooling of the room via comfort modules), the temperature of the chilled water can be varied and the control system ensures that the chiller will not produce chilled water that is colder than necessary.

1.1 Installation

The installation work is fast and simple compared with that of other systems. It requires only hydraulic and electric connection between the GOLD unit, chiller/heat pump and possible AQUA Link.

All the necessary control functions are ready to activate.

One supplier of all the equipment.

2. Material Specification

Air handling unit	**GOLD RX/PX/CX/SD**
Cable adapter	**TBLZ-1-64**

Chiller/heat pump manufactured by Blue Box that uses glycolic water as cooling or heating media (not evaporative media).

Communication interface, SMART Link incl. RS485 interface for *µCH2*
Required for the chiller/heat pump,
EPSILON ECHOS, TAU, GEYSER, MU ECHOS, CORE all sizes.
BETA, BETA HP sizes 3.2-5.2
ZETA, ZETA HP sizes 3.2-5.2
ZETA A, ZETA A HP, ZETA SLN, ZETA SLN HP sizes 3.2-4.2
BETA, BETA HP sizes 3.2-5

Other equipment to the extent required:
Set of valves, air heater, air cooler, dual-purpose coil, AQUA Link.

3. Operation

See below and the following pages for diagrammatic descriptions of the function.

3.1 Control of cooling/heating to the GOLD via Blue Box chiller/heat pump

3.1.1 Chiller

The cooling capacity for cooling the supply air is controlled via the GOLD unit's ordinary output for cooling (0-10 V) and can be activated in the hand-held micro terminal of the GOLD unit, see the Operation and Maintenance Instructions for the GOLD.

Communication with the chiller can be activated under Functions in the hand-held micro terminal of the GOLD unit. See Section 5.

If temperature sensor BT1 calls for cooling, the function transmits a refrigerant setpoint (12°C*) to the chiller via Modbus.

If the temperature by temperature sensor BT50 is lower than the temperature by temperature sensor BT30**, the function allows valve MF2 to regulate the flow.

If the temperature by temperature sensor BT50 is higher than the temperature by temperature sensor BT30**, the function does not allow valve MF2 to regulate the flow (forces it to close).

Optimisation function active:
Optimisation is not carried out if temperature regulation is selected for extract air regulation.

To ensure the best functionality when the optimisation function is activated, the value for cooling diff. (2 °C*) should be set to the same value as that set in the chiller, see Section 5.
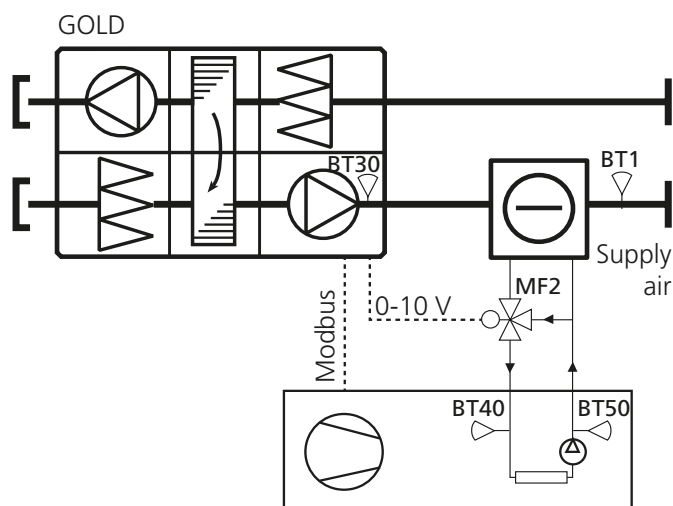
If the temperature by temperature sensor BT40 (return water) is higher than the current refrigerant temperature setpoint and less than the current refrigerant temperature setpoint plus 2° C* and has been so during a continuous period of more than 60 seconds* the optimisation function is allowed.

If the optimisation function is allowed and valve MF2 is fully open (100%*) the controller decreases the refrigerant temperature setpoint at a rate of 0.3° C/minute*.

If the optimisation function is allowed and valve MF2 is open less than 80%*, the controller increases the refrigerant temperature setpoint at a rate of 0.6° C/minute*.

* Factory setting. The value can be changed.
** Estimated temperature in the GOLD RX.

Blue Box chiller
A pump and accumulator tank can be added and, depending on the size of the system, can be located inside or outside the chiller. For more information, see the Blue Box product brochure.

3.1.2 Heat pump

The heating capacity for heating the supply air is controlled via the GOLD unit's ordinary output for cooling (0-10 V) and can be activated in the hand-held micro terminal of the GOLD unit, see the Operation and Maintenance Instructions for the GOLD.

Communication with the heat pump can be activated under Functions in the hand-held micro terminal of the GOLD unit. See Section 5.

If temperature sensor BT1 calls for heating, the function transmits a start signal and heating medium setpoint (40°C*) to the heat pump via Modbus.

If the temperature by temperature sensor BT50 is higher than the temperature by temperature sensor BT30**, the function allows valve MF1 to regulate the flow.

If the temperature by temperature sensor BT50 is lower than the temperature by temperature sensor BT30**, the function does not allow valve MF1 to regulate the flow (forces it to close).

Optimisation function active:
Optimisation is not carried out if temperature regulation is selected for extract air regulation.

To ensure the best functionality when the optimisation function is activated, the heating diff. value (3 °C*) should be set to the same value as that set in the heat pump. See Section 5.
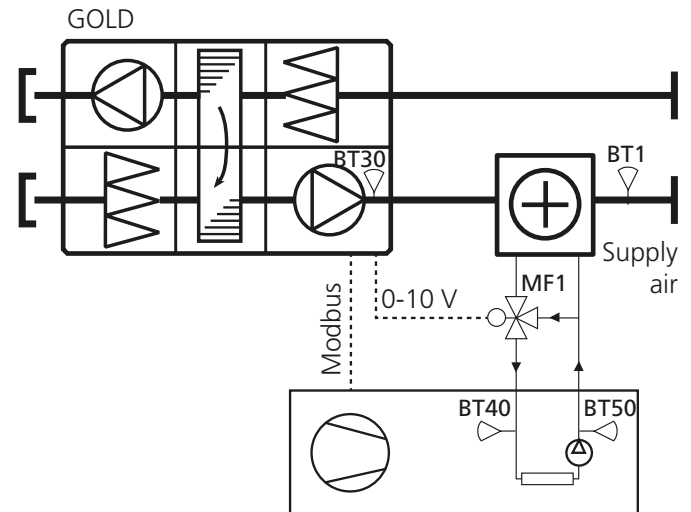
If the temperature by temperature sensor BT40 (return water) is lower than the current heating medium temperature setpoint and higher than the current heating medium temperature setpoint minus 3° C* and has been so during a continuous period of more than 60 seconds* the optimisation function is allowed.

If the optimisation function is allowed and valve MF1 is fully open (100%*) the controller increases the heating medium temperature setpoint at a rate of 0.3° C/minute*.

If the optimisation function is allowed and valve MF1 is open less than 80%*, the controller decreases the refrigerant temperature setpoint at a rate of 0.6° C/minute*.

* Factory setting. The value can be changed.
** Estimated temperature in the GOLD RX.

GOLD

Blue Box heat pump
A pump and accumulator tank can be added and, depending on the size of the system, can be located inside or outside the heat pump. For more information, see the Blue Box product brochure.

3.1.3 Reversible chiller/heat pump

The heating or cooling capacity for heating/cooling the supply air is controlled via the GOLD unit's extra heating and cooling control sequence (economy 0-10 V) and can be activated in the hand-held micro terminal of the GOLD unit. See the Operation and Maintenance Instructions for the GOLD.

Communication with the reversible chiller/heat pump can be activated under Functions in the hand-held micro terminal of the GOLD unit. See Section 5.

Cooling
If temperature sensor BT1 calls for cooling, the function transmits a start signal for cooling and a refrigerant set-point (12°C*) to the reversible chiller/heat pump via Modbus.

If the temperature by temperature sensor BT50 is lower than the temperature by temperature sensor BT30**, the function allows valve MF1 to regulate the flow.

If the temperature by temperature sensor BT50 is higher than the temperature by temperature sensor BT30**, the function does not allow valve MF1 to regulate the flow (forces it to close).

Optimisation function active:
Optimisation is not carried out if temperature regulation is selected for extract air regulation.

To ensure the best functionality when the optimisation function is activated, the value for cooling diff. (2 °C*) should be set to the same value as that set in the reversible chiller/heat pump. See Section 5.

If the temperature by temperature sensor BT40 (return water) is higher than the current refrigerant temperature setpoint and less than the current refrigerant temperature setpoint plus 2° C* and has been so during a continuous period of more than 60 seconds* the optimisation function is allowed.

If the optimisation function is allowed and valve MF1 is fully open (100%*) the controller decreases the refrigerant temperature setpoint at a rate of 0.3° C/minute*.
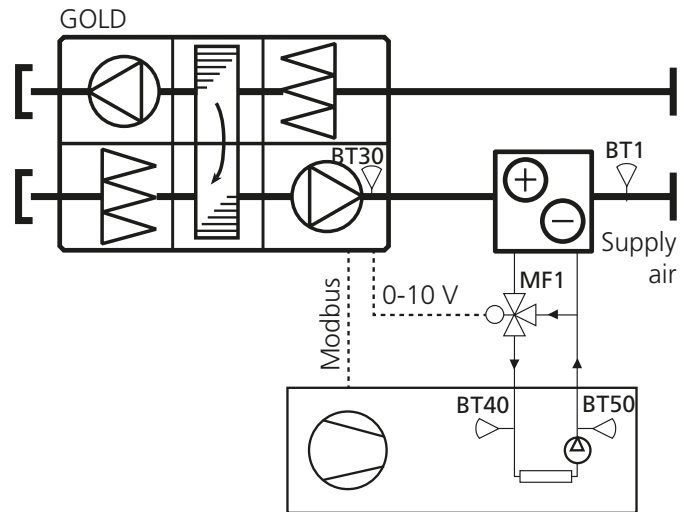
If the optimisation function is allowed and valve MF1 is open less than 80%*, the controller increases the refrigerant temperature setpoint at a rate of 0.6° C/minute*.

Heating
If temperature sensor BT1 calls for cooling, the function transmits a start signal for heating and a heating medium setpoint (40°C*) to the reversible chiller/heat pump via Modbus.

If the temperature by temperature sensor BT50 is higher than the temperature by temperature sensor BT30**, the function allows valve MF1 to regulate the flow.

If the temperature by temperature sensor BT50 is lower than the temperature by temperature sensor BT30**, the function does not allow valve MF1 to regulate the flow (forces it to close).

GOLD

Blue Box chiller/heat pump
A pump and accumulator tank can be added and, depending on the size of the system, can be located inside or outside the chiller/heat pump. For more information, see the Blue Box product brochure.

Optimisation function active:
Optimisation is not carried out if temperature regulation is selected for extract air regulation.

To ensure the best functionality when the optimisation function is activated, the heating diff. value (3 °C*) should be set to the same value as that set in the reversible chiller/heat pump. See Section 5.

If the temperature by temperature sensor BT40 (return water) is lower than the current heating medium temperature setpoint and higher than the current heating medium temperature setpoint minus 3° C* and has been so during a continuous period of more than 60 seconds* the optimisation function is allowed.

If the optimisation function is allowed and valve MF1 is fully open (100%*) the controller increases the heating medium temperature setpoint at a rate of 0.3° C/minute*.

If the optimisation function is allowed and valve MF1 is open less than 80%*, the controller decreases the heating medium temperature setpoint at a rate of 0.6° C/minute*.

* Factory setting. The value can be changed.
** Estimated temperature in the GOLD RX.

3.1.4 Chiller and external heating

The cooling capacity for cooling the supply air is controlled via the GOLD unit's ordinary output for cooling (0-10 V) and can be activated in the hand-held micro terminal of the GOLD unit, see the Operation and Maintenance Instructions for the GOLD.

The function controls external heating (waterborne or electric) via the GOLD unit's ordinary output for heating (0-10 V). Water coil type air heaters have an anti-frost protection function which is automatically activated when they are connected to the system.

Communication with the chiller can be activated under Functions in the hand-held micro terminal of the GOLD unit. See Section 5.

If temperature sensor BT1 calls for cooling, the function transmits a refrigerant setpoint (12°C*) to the chiller via Modbus.

If the temperature by temperature sensor BT50 is lower than the temperature by temperature sensor BT30**, the function allows valve MF2 to regulate the flow.

If the temperature by temperature sensor BT50 is higher than the temperature by temperature sensor BT30**, the function does not allow valve MF2 to regulate the flow (forces it to close).

If dehumification is active, the function allows valve MF1 to regulate the flow.

Optimisation function active:
Optimisation is not carried out if temperature regulation is selected for extract air regulation.

To ensure the best functionality when the optimisation function is activated, the value for cooling diff. (2 °C*) should be set to the same value as that set in the chiller, see Section 5.
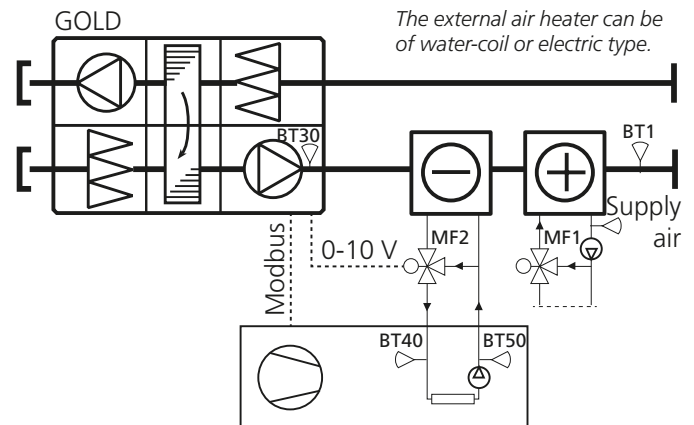
If the temperature by temperature sensor BT40 (return water) is higher than the current refrigerant temperature setpoint and less than the current refrigerant temperature setpoint plus 2° C* and has been so during a continuous period of more than 60 seconds* the optimisation function is allowed.

If the optimisation function is allowed and valve MF2 is fully open (100%*) the controller decreases the refrigerant temperature setpoint at a rate of 0.3° C/minute*.

If the optimisation function is allowed and valve MF2 is open less than 80%*, the controller increases the refrigerant temperature setpoint at a rate of 0.6° C/minute*.

* Factory setting. The value can be changed.
** Estimated temperature in the GOLD RX.

GOLD

The external air heater can be of water-coil or electric type.

Blue Box chiller
A pump and accumulator tank can be added and, depending on the size of the system, can be located inside or outside the chiller. For more information, see the Blue Box product brochure.

3.5 Heat pump and external heating

The heating capacity for heating the supply air is controlled via the GOLD unit's extra heating control sequence (economy 0-10 V) and can be activated in the hand-held micro terminal of the GOLD unit, see the Operation and Maintenance Instructions for the GOLD.

The function controls external heating (waterborne or electric) via the GOLD unit's ordinary output for heating (0-10 V). Water coil type air heaters have an anti-frost protection function which is automatically activated when they are connected to the system.

Communication with the heat pump can be activated under Functions in the hand-held micro terminal of the GOLD unit. See Section 5.

If temperature sensor BT1 calls for heating, the function transmits a start signal and heating medium setpoint (40°C*) to the heat pump via Modbus.

If the temperature by temperature sensor BT50 is higher than the temperature by temperature sensor BT30**, the function allows valve MF1 to regulate the flow.

If the temperature by temperature sensor BT50 is lower than the temperature by temperature sensor BT30**, the function does not allow valve MF1 to regulate the flow (forces it to close).

Optimisation function active:
Optimisation is not carried out if temperature regulation is selected for extract air regulation.

To ensure the best functionality when the optimisation function is activated, the heating diff. value (3 °C*) should be set to the same value as that set in the heat pump. See Section 5.
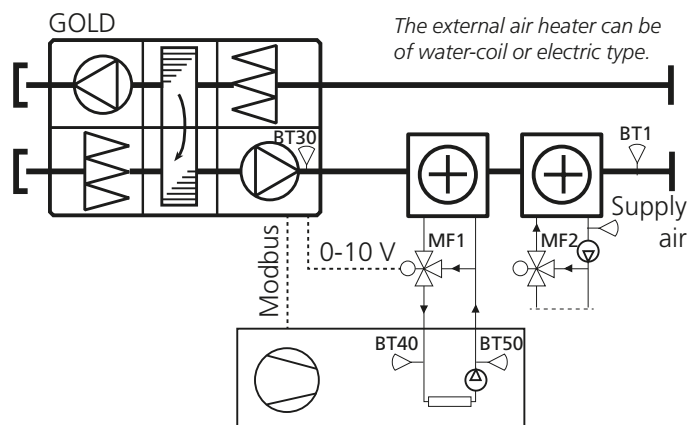
If the temperature by temperature sensor BT40 (return water) is lower than the current heating medium temperature setpoint and higher than the current heating medium temperature setpoint minus 3° C* and has been so during a continuous period of more than 60 seconds* the optimisation function is allowed.

If the optimisation function is allowed and valve MF1 is fully open (100%*) the controller increases the heating medium temperature setpoint at a rate of 0.3° C/minute*.

If the optimisation function is allowed and valve MF1 is open less than 80%*, the controller decreases the heating medium temperature setpoint at a rate of 0.6° C/minute*.

* Factory setting. The value can be changed.
** Estimated temperature in the GOLD RX.

The external air heater can be of water-coil or electric type.

Blue Box heat pump
A pump and accumulator tank can be added and, depending on the size of the system, can be located inside or outside the heat pump. For more information, see the Blue Box product brochure.

3.1.6 Reversible chiller/ heat pump and external heating

The heating or cooling capacity for heating/cooling the supply air is controlled via the GOLD unit's extra heating and cooling control sequence (economy 0-10 V) and can be activated in the hand-held micro terminal of the GOLD unit. See the Operation and Maintenance Instructions for the GOLD.

The function controls external heating (waterborne or electric) via the GOLD unit's ordinary output for heating (0-10 V). Water coil type air heaters have an anti-frost protection function which is automatically activated when they are connected to the system.

Communication with the reversible chiller/heat pump can be activated under Functions in the hand-held micro terminal of the GOLD unit. See Section 5.

Cooling

If temperature sensor BT1 calls for cooling, the function transmits a start signal for cooling and a refrigerant set-point (12°C*) to the reversible chiller/heat pump via Modbus.

If the temperature by temperature sensor BT50 is lower than the temperature by temperature sensor BT30**, the function allows valve MF1 to regulate the flow.

If the temperature by temperature sensor BT50 is higher than the temperature by temperature sensor BT30**, the function does not allow valve MF1 to regulate the flow (forces it to close).

Optimisation function active:
Optimisation is not carried out if temperature regulation is selected for extract air regulation.

To ensure the best functionality when the optimisation function is activated, the value for cooling diff. (2 °C*) should be set to the same value as that set in the reversible chiller/heat pump. See Section 5.

If the temperature by temperature sensor BT40 (return water) is higher than the current refrigerant temperature setpoint and less than the current refrigerant temperature setpoint plus 2° C* and has been so during a continuous period of more than 60 seconds* the optimisation function is allowed.
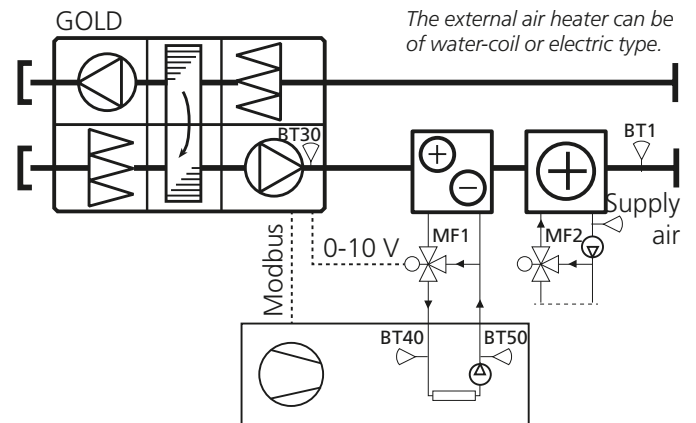
If the optimisation function is allowed and valve MF1 is fully open (100%*) the controller decreases the refrigerant temperature setpoint at a rate of 0.3° C/minute*.

If the optimisation function is allowed and valve MF1 is open less than 80%*, the controller increases the refrigerant temperature setpoint at a rate of 0.6° C/minute*.

Heating

If temperature sensor BT1 calls for heating, the function transmits a start signal for heating and a heating medium setpoint (40°C*) to the reversible chiller/heat pump via Modbus.

If the temperature by temperature sensor BT50 is higher than the temperature by temperature sensor BT30**, the function allows valve MF1 to regulate the flow.

GOLD

The external air heater can be of water-coil or electric type.

Blue Box chiller/heat pump
A pump and accumulator tank can be added and, depending on the size of the system, can be located inside or outside the chiller/heat pump. For more information, see the Blue Box product brochure.

If the temperature by temperature sensor BT50 is lower than the temperature by temperature sensor BT30**, the function does not allow valve MF1 to regulate the flow (forces it to close).

Optimisation function active:
Optimisation is not carried out if temperature regulation is selected for extract air regulation.

To ensure the best functionality when the optimisation function is activated, the heating diff. value (3 °C*) should be set to the same value as that set in the reversible chiller/ heat pump. See Section 5.

If the temperature by temperature sensor BT40 (return water) is lower than the current heating medium temperature setpoint and higher than the current heating medium temperature setpoint minus 3° C* and has been so during a continuous period of more than 60 seconds* the optimisation function is allowed.

If the optimisation function is allowed and valve MF1 is fully open (100%*) the controller increases the heating medium temperature setpoint at a rate of 0.3° C/minute*.

If the optimisation function is allowed and valve MF1 is open less than 80%*, the controller decreases the heating medium temperature setpoint at a rate of 0.6° C/minute*.

* Factory setting. The value can be changed.
** Estimated temperature in the GOLD RX.

3.2 Control of cooling energy to the GOLD and comfort modules via the Blue Box chiller and AQUA Link

3.2.1 Control of cooling energy to the GOLD

The cooling capacity for cooling the supply air is controlled via valve actuator MF2 and the GOLD unit's ordinary output for cooling (0-10 V). Cooling can be activated in the hand-held micro terminal of the GOLD unit. See the Operation and Maintenance Instructions for the GOLD.

3.2.2 Control of cooling energy to the comfort modules

See the function guide for All Year Comfort (AYC).

3.2.3 Blue Box chiller and AQUA Link

Communication with the chiller can be activated under Functions in the hand-held micro terminal of the GOLD unit. See Section 5.

Communication with AQUA Link takes place via the IQnomic Plus module (function selector switch set to 5) which controls and manages alarms from pump G20. The module is located in the AQUA Links cubicle.

The chiller's water temperature setpoint is controlled by the GOLD unit and is determined by the cooling load in the ventilation system. The temperature setpoint from the AYC function is compared with the ordinary cooling supply air setpoint and the lowest value of these is transmitted as a setpoint to the chiller.

Circulation pump G20 located inside the AQUA Link is started and stopped via the GOLD unit. When the GOLD unit is in operation and valve MF2 or MF10 is open more than 5%, circulation pump G20 starts up.

Optimisation function active:
Applies to the supply air cooling setpoint.

Optimisation is not carried out if temperature regulation is selected for extract air regulation.

To ensure the best functionality when the optimisation function is activated, the value for cooling diff. (2 °C*) should be set to the same value as that set in the chiller, see Section 5.

If the temperature by temperature sensor BT40 (return water) is higher than the current refrigerant temperature setpoint and less than the current refrigerant temperature setpoint plus 2° C* and has been so during a continuous period of more than 60 seconds* the optimisation function is allowed.

If the optimisation function is allowed and valve MF2 is fully open (100%*) the controller decreases the refrigerant temperature setpoint at a rate of 0.3° C/minute*.

If the optimisation function is allowed and valve MF2 is open less than 80%*, the controller increases the refrigerant temperature setpoint at a rate of 0.6° C/minute*.

* Factory setting. The value can be changed.

4. Electrical connections.

4.1 SMART Link

For installation and connection to the GOLD air handling unit's control circuit card across a TBLZ-64 cable adapter (accessory). See separate instructions.

The communication cable between the chiller/heat pump control equipment and TBLZ-64 cable adapter should be wired according to one of the alternatives below.

The cable is not included in the supply. Twisted-pair cables are recommended.

4.1.1 Alternative 1. Connection directly to the chiller's/heat pump's controller

Alternative 1 should be used when the chiller/heat pump is of the following type:
OMEGA.V ECHOS, KAPPA.V EVO, ZETA FC, TETRIS FC, TETRIS A FC, TETRIS SLN FC, TETRIS A+ FC, TETRIS A SLN FC, OMICRON S, OMICRON V, CORE HWS all sizes and variants.
TETRIS, TETRIS HP sizes 20.3-93.1,
TETRIS A, TETRIS A HP, TETRIS SLN, TETRIS SLN HP sizes 16.3-68.12
TETRIS A+, TETRIS A+ HP, TETRIS A SLN, TETRIS A SLN HP sizes13.3-54.12
BETA, BETA HP sizes 14.4-33.4
BETA SLN, BETA SLN HP sizes 14.4-33.4
SIGMA 2002, SIGMA 2002 HP sizes 14.4-26.4
ZETA, ZETA HP sizes 14.4-33.4
ZETA SLN, ZETA SLN HP sizes 14.4-26.4
TETRIS 2 SLN, TETRIS 2A
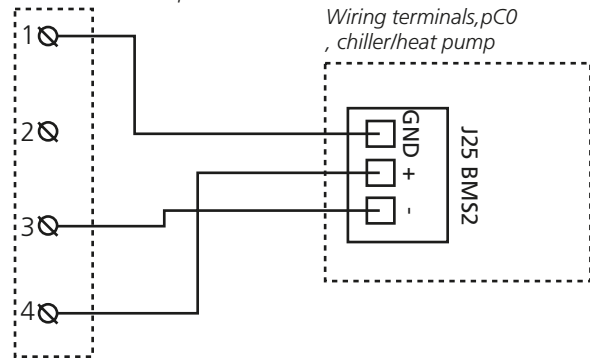
4.1.2 Alternative 2. Connection via external SMART Link communications interface

Alternative 2 should be used when the chiller/heat pump is of the following type:
EPSILON ECHOS, TAU, GEYSER, MU ECHOS, CORE all sizes.
BETA, BETA HP sizes 3.2-5.2
ZETA, ZETA HP sizes 3.2-5.2
ZETA A, ZETA A HP, ZETA SLN, ZETA SLN HP sizes 3.2-4.2
BETA, BETA HP sizes 3.2-5

Wiring terminals for the TBLZ-64 cable adapter

Wiring terminals,pC0 , chiller/heat pump

Wiring terminals. TBLZ-64 cable adapter

Wiring terminals, SMART Link communications interface

Wiring terminals, electric cubicle, chiller/heat pump
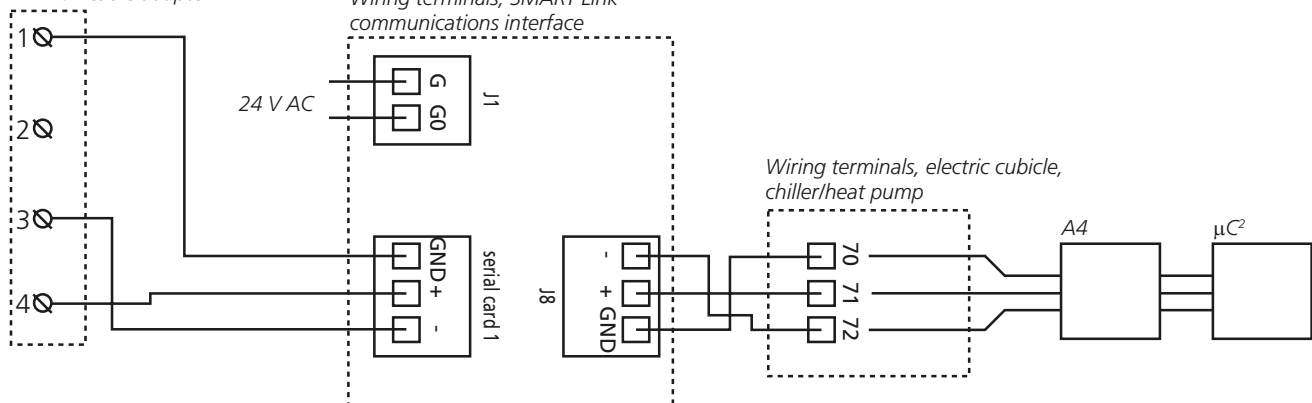
4.1.3 Alternative 3. Connection direct via integrated communications interface A2

Alternative 3 should be used when the chiller/heat pump is of the following type:
TETRIS, TETRIS HP sizes 10.2-16.2
SIGMA 2002, SIGMA 2002 HP sizes 3.2-13.2
BETA, BETA HP sizes 6.2-16.2
ZETA, ZETA HP sizes 6.2-16.2
ZETA A, ZETA A HP, ZETA SLN, ZETA SLN HP sizes 5.2-12.2
TETRIS A, TETRIS A HP, TETRIS SLN, TETRIS SLN HP size 11.2
TETRIS A+, TETRIS A+ HP, TETRIS A SLN, TETRIS A SLN HP size 8.2
BETA LE, BETA LE/HP sizes 14.4-33.4
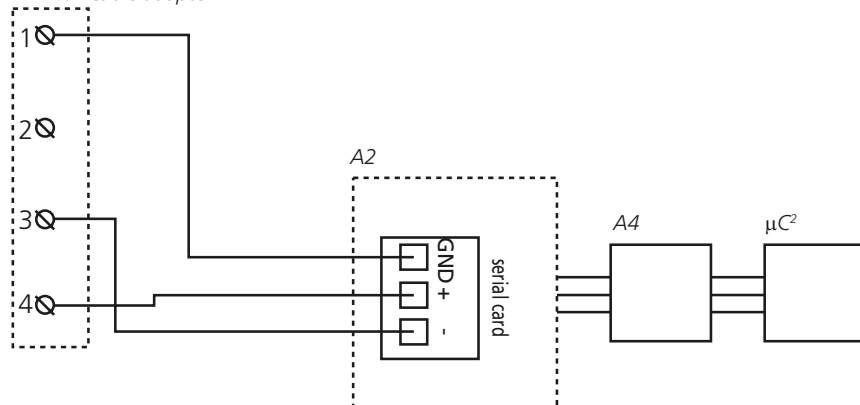BETA LE SLN, BETA SLN LE/HP sizes 14.4-33.4
ZETA LE, ZETA LE/HP sizes 14.4-33.4
ZETA LE SLN, ZETA SLN LE/HP sizes 14.4-26.4
BETA, BETA HP sizes 6.2-16.2

Wiring terminals for the TBLZ-64 cable adapter

4.2 AQUA Link

If AQUA Link is included in the system, a modular cable must be connected between the IQnomic Plus module in the AQUA Link electrical distribution box, and one of the modular connections, marked "Internal EIA-485" on the GOLD control unit. See sketch.

GOLD control unit

IQnomic Plus module AQUA Link

The function selector switch must be in position 5
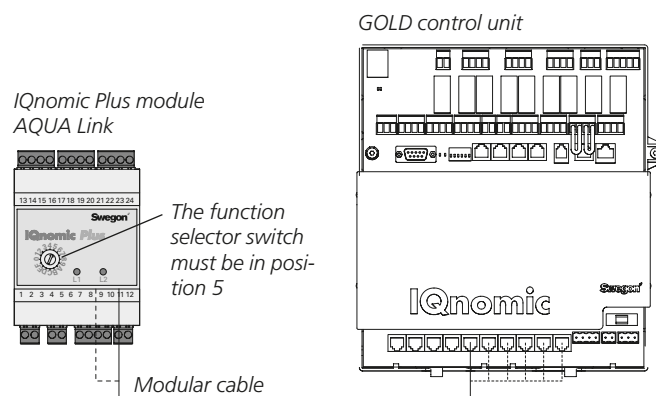
Modular cable

4.2.1 All Year Comfort

If All Year Comfort is included in the system (together with AQUA Link), a modular cable must be connected between the IQnomic Plus module in the AQUA Link electrical distribution box and the IQnomic Plus module in the All Year Comfort electrical equipment cubicle.

Other connections between AQUA Link and All Year Comfort is carried out on terminal blocks.

See sketch.

All Year Comfort electrical equipment cubicle

The function selector switch must be in position 7

PE 101 102   103 104 105 106 107 108 109 110

101 102 103 104

AQUA Link electrical distribution box

105 106   107 108   109 110

Brown *White*

-BTT

101 102 103 104   G0 G MX X1 G1

The function selector switch must be in position 5

Modular cable
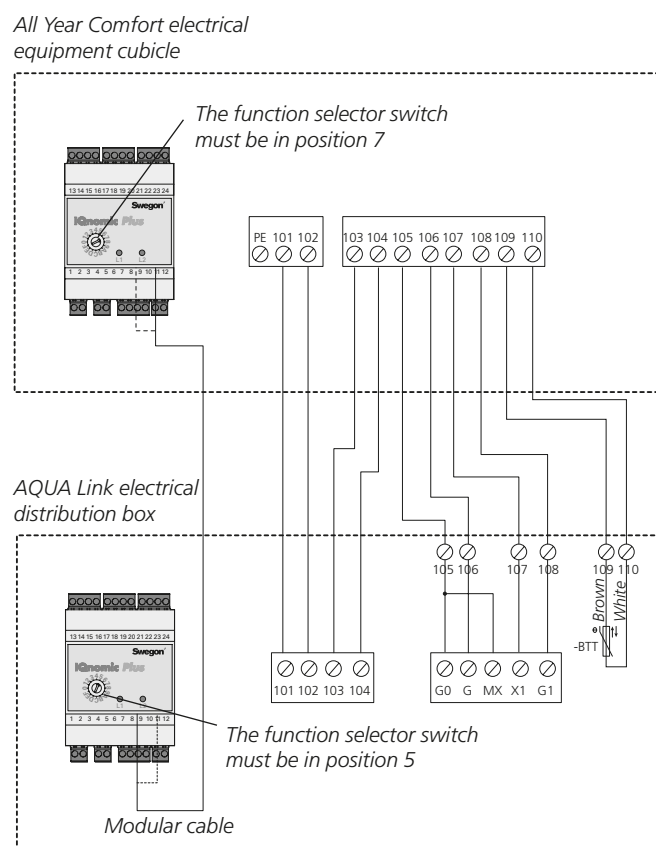
5. To enter settings

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

The chiller/heat pump functions must be manually activated under INSTALLATION – FUNCTIONS – BLUE BOX.

```
INSTALLATION

  FUNCTIONS

    *FUNCTIONS*
    TEMPERATURE
    FLOW/PRESSURE
    FILTERS
    OPERATION
    HEATING
    COOLING
    BLUE BOX
    HUMIDITY
    ReCO2
    IQNOMIC PLUS
    ALL YEAR COMFORT
    OPTIMIZE
    MIRU Control
```

The function can be activated under FUNCTION OFF/ON.

```
*BLUE BOX*
  FUNCTION OFF/ON
  SETTINGS
```

When the function is activated, proceed to the SETTINGS menu.

```
*BLUE BOX*
  FUNCTION OFF/ON
  SETTINGS
```

Set the type of unit supplied (heat pump or chiller or reversible chiller/heat pump) under TYPE OF UNIT.

```
*BLUE BOX*
  TYPE OF UNIT
  TEMPERATURE
  OPTIMIZE
  AQUA Li

        *TYPE OF UNIT*
          NONE

        CHANGE
                    *TYPE OF UNIT*
                      NONE
                      HEAT PUMP
                      COOLING UNIT
                      REVERSIBLE
```
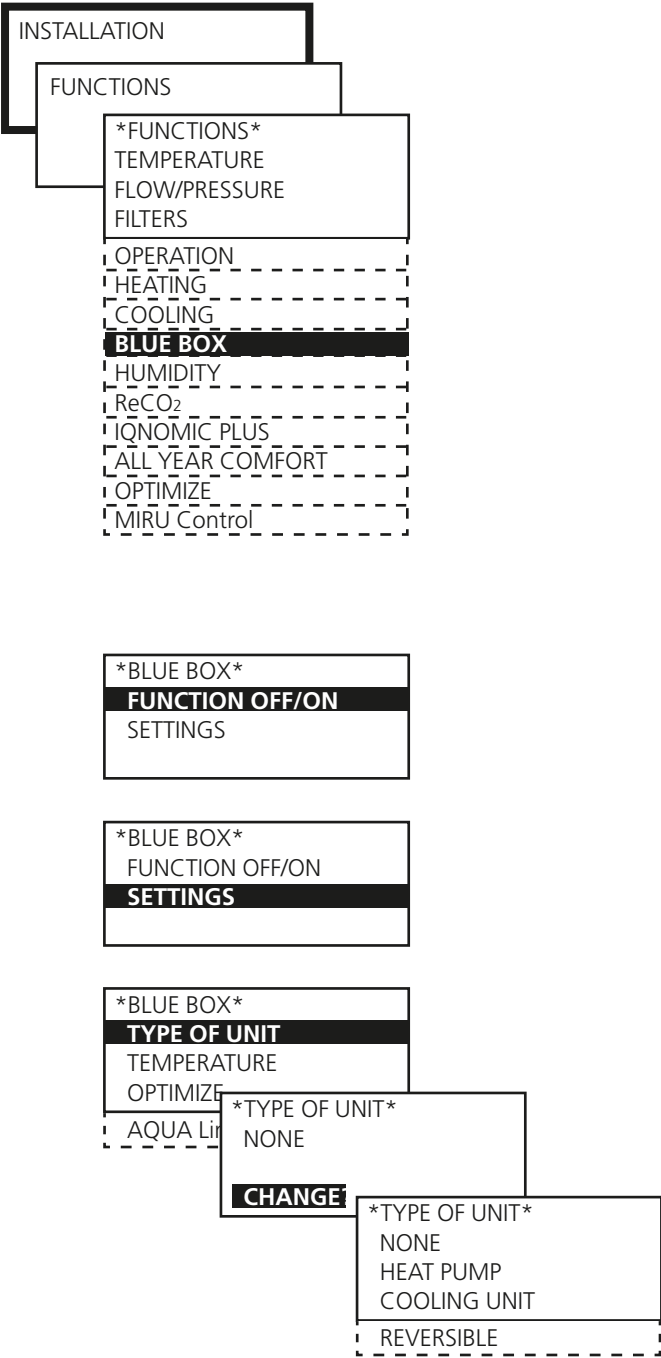
Set the required COOLING SETPOINT and/or HEATING SETPOINT under TEMPERATURE. The setpoints represent the temperature of the refrigerant and heating medium leaving the cooling/heating coil respectively.

```
*BLUE BOX*
 TYPE OF UNIT
 TEMPERATURE
 OPTIMIZE
          *BLUE BOX*
 AQUA Li    COOL. SETPOINT    12.0°C
            HEAT. SETPOINT    40.0°C
```

The setpoint optimisation function can be activated under OPTIMIZE, FUNCTION OFF/ON.

```
*BLUE BOX*
 TYPE OF UNIT
 TEMPERATURE
 OPTIMIZE
          *BLUE BOX*
 AQUA Li    FUNCTION OFF/ON
            SETTINGS
```

When the function is activated, proceed to the SETTINGS menu.

The upper and lower limit values for the valve can be set under VALVE DEG (%).

The delay required (in seconds), for increasing or decreasing the cooling setpoint and/or heating setpoint, can be set under DELAY.

Values for COOLOPT UP, COOLOPT. DOWN or for the HEATOPT. UP, HEATOPT. DOWN can be set. The values represent the rate (°C/minute) at which the cooling setpoint and/or heating setpoint will increase or decrease for optimisation.
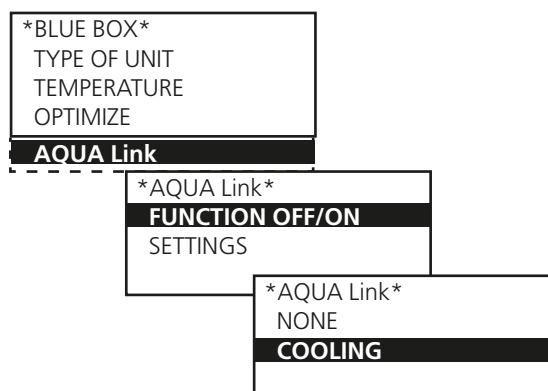
Values can be set for COOL DIFF and/or HEAT DIFF. The values represent the interval in relation to the current setpoint. Optimisation is permissible within this interval. The values should be set so that they are the same as the preset interval values in the chiller/heat pump, where return temperature will be controlled.

Other chiller/heat pump settings must be entered in the chiller/heat pump.

```
*OPTIMIZE*
 FUNCTION OFF/ON
 SETTINGS
          *OPTIMIZE*
           VALVE DEG.: 80%   100%
           DELAY              60 s
           COOLOPT. UP:     0.60°C
           COOLOPT. DOWN: 0.30°C
           HEATOPT. UP:     0.30°C
           HEATOPT. DOWN:  0.60°C
           COOL DIFF.        2.0°C
           HEAT DIFF.        3.0°C
```

The functions for AQUA Link must be manually activated.

AQUA Link can be activated under AQUA Link, FUNKTION OFF/ON. Select COOLING

```
*BLUE BOX*
 TYPE OF UNIT
 TEMPERATURE
 OPTIMIZE
 AQUA Link
        *AQUA Link*
         FUNCTION OFF/ON
         SETTINGS
                *AQUA Link*
                 NONE
                 COOLING
```

When the function is activated, proceed to the SETTINGS menu.

Select COOLING

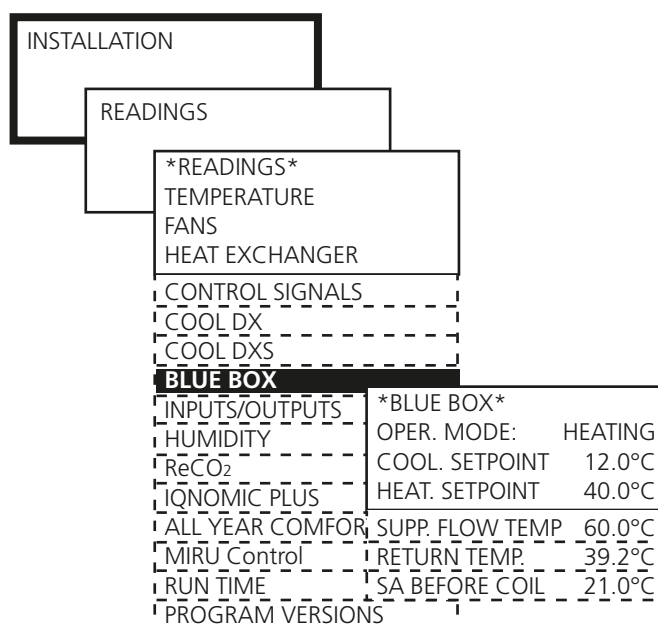Select INACTIVE, NORMALLY OPEN, NORMALLY CLOSED or CONTACTOR for the pump alarm.

```
*AQUA Link*
 FUNCTION OFF/ON
 SETTINGS
        *AQUA Link*
         COOLING
                *AQUA Link*
                 INACTIVE
                 NORMALLY OPEN
                 NORMALLY CLOSED
                 CONTACTOR
```
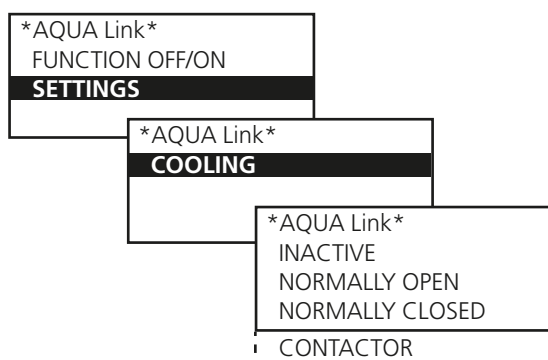
6. Readings

The chiller/heat pump readings can be viewed under READINGS.

No values can be altered in this menu group.

The viewable readings are specified in the menu to the right.

SA BEFORE COIL shows temperature between the heat exchanger and the coil(s). The value for the GOLD RX is estimated; the value for the other types of air handling unit is measured.

```
INSTALLATION
    READINGS
        *READINGS*
         TEMPERATURE
         FANS
         HEAT EXCHANGER
         CONTROL SIGNALS
         COOL DX
         COOL DXS
         BLUE BOX
         INPUTS/OUTPUTS         *BLUE BOX*
         HUMIDITY               OPER. MODE:      HEATING
         ReCO2                  COOL. SETPOINT    12.0°C
         IQNOMIC PLUS           HEAT. SETPOINT    40.0°C
         ALL YEAR COMFOR        SUPP. FLOW TEMP   60.0°C
         MIRU Control           RETURN TEMP.      39.2°C
         RUN TIME               SA BEFORE COIL    21.0°C
         PROGRAM VERSIONS
```

7. Manual Test

The current input and output values on the circulation pump can be manually controlled Under INSTALLATION – MANUAL TEST - AQUA Link.