GOLD version E/F, Function Guide, All Year Comfort

1. General

The *All Year Comfort* function is designed for regulating the primary water circuit for cooling and/or heating to climate beams, perimeter climate systems, etc.

The required water temperatures can be set at the User Level.

By enabling one of a number of different compensation functions, the current temperature setpoints can be influenced by external circumstances.

2. Material specification

Air handling units, All types of **GOLD**

Electrical equipment cubicle, **TBLZ-2-59-a-b-cc**
Function selector switch set to position 7.

Code: **a**
1 = Cooling water regulation
2 = Heating water regulation
3 = Cooling and heating water regulation

Code: **b**
0 = without room sensor
1 = with room sensor (GOLD RX/PX/CX/SD)
2 = with room sensor (GOLD LP)

Code: **cc**
01 = 1 m long cable
02 = 3 m long cable
03 = 5 m long cable
05 = 10 m long cable
10 = 15 m long cable
xx = Cable length > 15 m

Humid. sensor for dew point compensation **TBLZ-4-31-2**

Other necessary equipment:
Valve actuator, 3-way valve, circulation pump, etc.

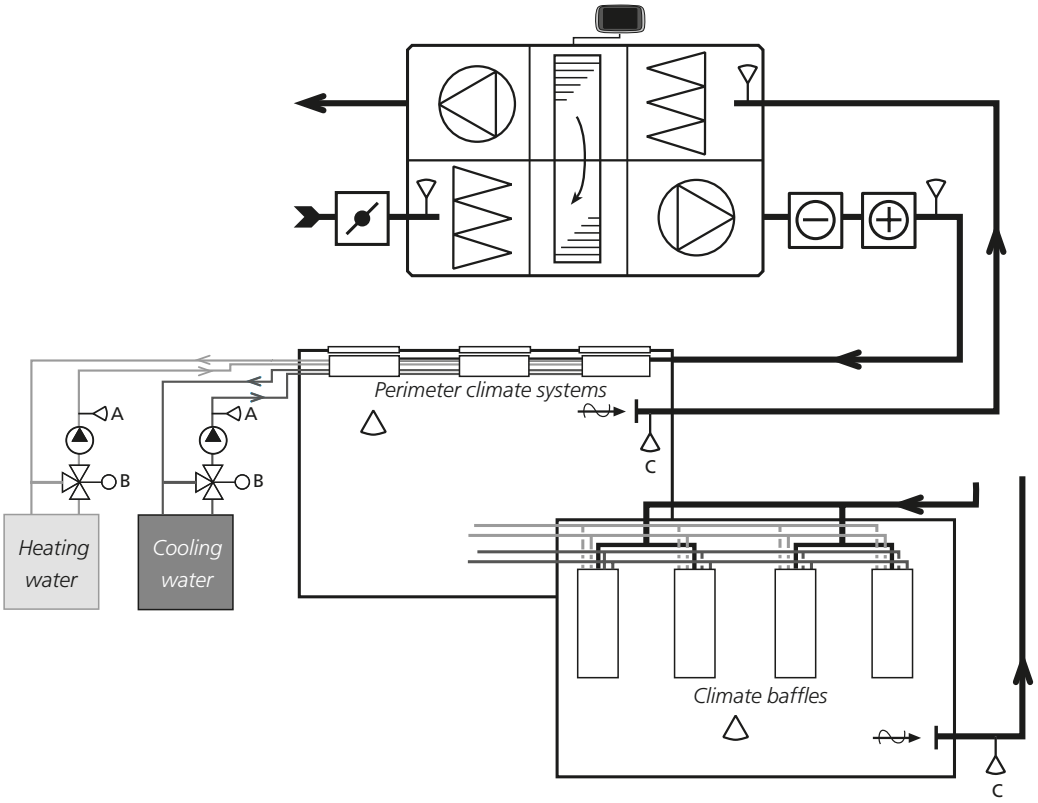
3. Function

The function keeps the cooling or heating water in the connected cooling and the heating system constantly at the required temperature.

Water temperatures are measured by means of two strap-on temperature sensors (see A in the illustration below) to be mounted on the water pipe downstream of the control valve (see B in the illustration below).

The function selector switch on the IQlogic+ module must be set to position 7.

The base setpoint for the controller can be set in the All Year Comfort menu accessible at the User Level. The menu becomes accessible when any of the All Year Comfort functions is enabled.

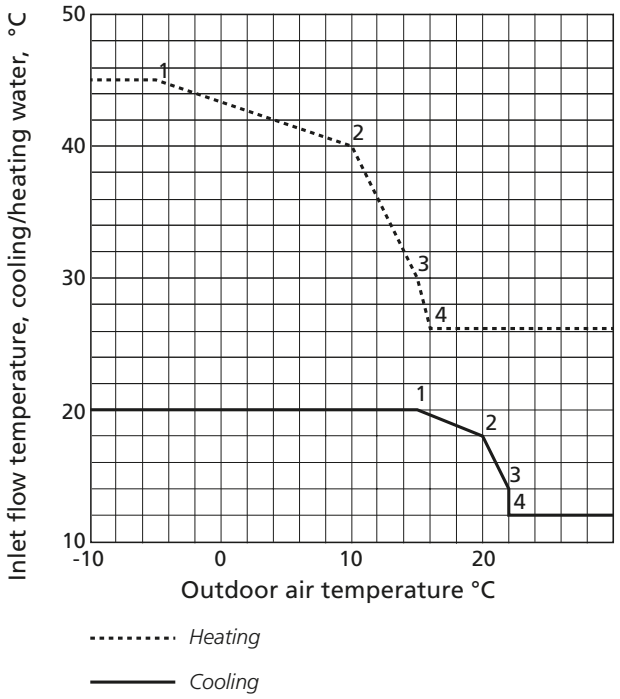


3.1 Outdoor compensation

To make it possible to adapt the primary water circuit temperature to the design of the building and the outdoor air temperature, the inlet flow temperature set point for cooling/heating water must be adjusted in line with the outdoor air temperature according to an adjustable performance curve. The curve can be adapted to various conditions by means of four adjustable points. One example for heating/cooling can be viewed in the diagram to the right.

When the function is enabled, the current setpoint from the compensation curve supersedes the base setpoint.

The temperature by the internal outdoor sensor or by the external outdoor sensor (if the External Outdoor Sensor function is enabled) influences the setpoint for water temperature and controllers respectively.



3.2 Room compensation

If extra cooling or heating is required, the inlet flow temperature for the cooling or heating water can be adjusted to save energy and increase the comfort.

The inlet flow temperature set point is influenced by the room temperature. The set point for heating water regulation is lowered if the room temperature exceeds the preset limit. The controller increases the set point for cooling water regulation if the room temperature drops below the preset limit.

On a deviation of 1 °C the water temperature setpoint is offset 1 °C within the range of the preset P band.

3.3 Night compensation

If the premises is not occupied at night and on weekends, the water temperature can be adjusted in order to save energy.

The supply flow temperature set point is decreased (heating circuit) or is increased (cooling circuit) during the preset period.

It is possible to set two periods for night and weekends respectively via two time schedulers.

3.4 Dew point compensation (cooling water only)

The humidity and temperature in the extract air (see C in the illustration below the section on Operation) are measured in order to ensure that condensation precipitation will not form on cold metal surfaces.

By means of relative humidity and temperature readings, the current dew point (the temperature at which moisture condenses) is calculated. When the dew point exceeds the cooling water temperature, the controller raises the cooling water set point to counteract condensate precipitation.

To compensate for the loss in cooling power as the cooling water temperature rises, the airflow can be increased to carry away surplus heat. The increase in air flow from the current air flow rate (for each degree the cooling water temperature increases) is set as a percentage. This is called the compensation flow.

3.5 Pump/valve

The pump for the heating circuit is started and stopped according to preset outdoor limit temperatures.

The pump for the cooling circuit is operated together with the GOLD unit and is stopped when the air handling unit is shut down. Provision is also available for stopping the pump for the cooling circuit with the outdoor temperature is exceeded.

It is possible to monitor the pumps and initiate alarms in the event of a malfunction according to three different principles:

1. Alarm in the event of a broken signal
2. Alarm in the event of a closed signal
3. Contactor feedback signal

The valves are monitored and an alarm is initiated in the event of a deviating valve position.

In order to prevent the pumps and valves from becoming clogged, in the event of a longer down period, they can be exercised at preset time intervals

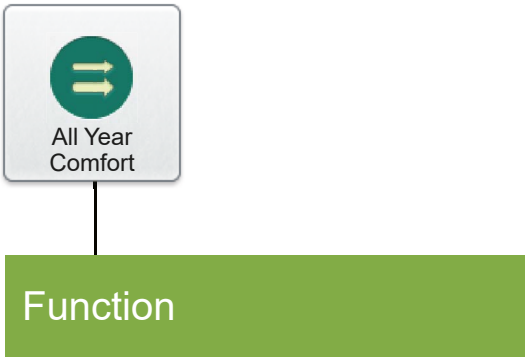
4. Connecting up.

See the Installation Instructions for the electrical equipment cubicle, TBLZ-2-59.

5. Settings

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

The functions for regulating chilled and heated water must be activated and set under Functions/AYC.



1. Activate the function under Operating mode to select chilled water, heated water or chilled and heated water.

2. After the required function has been activated, adjust the required temperature under Temperature settings.

3. Set/activate the required function settings for chilled water and/or heated water.

The following functions can be selected: pump control, outdoor temperature compensation, room temperature compensation, night compensation - heated water/chilled water, exercising of pump/valve and alarm.

4. Set the pump(s) start/stop temperatures under Pump control.

5. If required, activate the function for outdoor temperature compensation.

5. If required, activate the function for room temperature compensation - heated water/chilled water and select the required room temperature set point, P-band and possible night blocking.

6. If required, activate the function for night compensation - heated water/chilled water and select night temperature reduction, time as well as period for night compensation.

6. If required, activate the function for chilled water dew point compensation and airflow compensation.

7. If required, activate Exercising and set the interval and time.

8. If required, activate and set the pump alarm and valve alarm.

6. To check the performance

IQogic⁺ Module:

POWER indicates correct power supply from the GOLD unit's control unit if it has a steady glow.

COM indicates correct communication with the GOLD unit's control unit if it is flashing.

Temperature sensors:

Current humidity, temperatures, valve signals can be read under Status. If the readings are reasonable, the connections are correct.

If functions are activated without the corresponding accessories connected, an alarm will trip. See the Operation and Maintenance Instructions for the GOLD air handling unit for descriptions of the alarms.