Guide to the GOLD version E/F/G functions Xzone - combi coil

1. General

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

The Combi coil function is used when a common coil both cools and heats the air. A common coil, instead of one heating coil and one cooling coil, means the pressure drop in the supply air duct decreases.

The function can be used for water coils in a 2-pipe system (one valve) or 4-pipe system (two valves). It can also be used for a reversible heat pump or a common DX-coil.

GOLD air handling unit, combi coil, valve set and a possible circulation pump are designed and sized in the product selection program AHU Design.

2. Material specification

Air handling unit — All types of **GOLD** with Pv.2.43 or higher.

Combi coil:
Air cooler, water **TBKA/TCKA**
or
Air cooler DX **TBKC/TCKC**

Control box for Xzone **TBLZ-4-50-0-b-cc-d**

Code: **b** 1= With supply air temperature sensor
2 = With supply air and extract air temp. sensor
3 = With supply air and room air temp. sensor
cc 01 = With 1-metre long communication cable
03 = With 3-metre long communication cable
05 = With 5-metre long communication cable
10 = With 10-metre long communication cable
15 = With 15-metre long communication cable
d 0 = Without temperature monitor
1 = Temperature monitor heating
2 = Temperature monitor cooling
3 = Temperature monitor heating and cooling

Valve set: The **TBVL-3-aa-b** valve set can be used. If the valve and valve actuator are not included in Swegon's supply, a TBLZ-1-27-a set of components for electrical connection is required.

Circulation pump **TBPA-5/6-aaa**
Including non-return valve and commissioning valve. The circulation pump can also be included in equipment from another supplier.

aaa = Capacity of the circulation pump

Set of electrical connections **TBLZ-1-27-3**
or
Adapter RJ45 to screw terminal **TBLZ-1-90**
Used for controlling a reversible heat pump

Set of electrical connections **TBLZ-1-27-a**
Used when a valve and actuator from another supplier are included in the equipment.

a 1 = Strap-on sensor
2 = Insertion-type sensor

3. Function

3.1 Temperature control

For the combi coils Xzone function, Xzone heating and/or cooling are used. Temperature control for the Xzone operates completely separated from the temperature control of the main zone. Xzone combi coil cannot be selected in combination with Xzone.

3.2 Frost guard function in case of cooling operation

When the combi coils Xzone function is activated, the temperature sensor's (sensor 1 see basic circuit diagram below) heat retention function is blocked when the unit is operational (factory set to regulate the valve to a set point of 13°C). The frost guard alarm and heat retention function in the event of a stationary unit are active (also see section 3.7).

3.3 Temperature monitor

The function requires that one sensor (sensor 2, see basic circuit diagram above) is installed that measures the supply flow temperature to the combi coil. The sensor should be placed to ensure water circulation. Depending on the type of GOLD air handling unit, the air temperature of the supply air is measured or calculated before the combi coil (sensor 3, see basic circuit diagram above). Does not require any extra accessories. For an activated function and heating requirement, it is necessary for the supply flow temperature to be higher than the supply air temperature in order for the valve to open. For an activated function and cooling requirement, it is necessary for the supply flow temperature to be lower than the supply air temperature in order for the valve to open.

3.4 Controlling pumps

A circulation pump can be controlled from each IQlogic+ module, heating or cooling, via a free normally-open contact. There is an input for an alarm function. The input can be set to produce an alarm from a free normally-closed or free normally-open contact function. The alarm can also be obtained via a contactor response, which means that when the pump output is activated, a response is required from the service contact in the pump or from the contactor. An alarm is then given if there is no response or if the input is active without the pump output being active.

Note that for a 4-pipe system with a common circulation pump and contactor response selected as the alarm function, this must be tripped with an external relay function. It is possible to choose exercising of the circulation pumps. The exercise interval and exercise time are adjustable.

3.5 Switching between cooling and heating

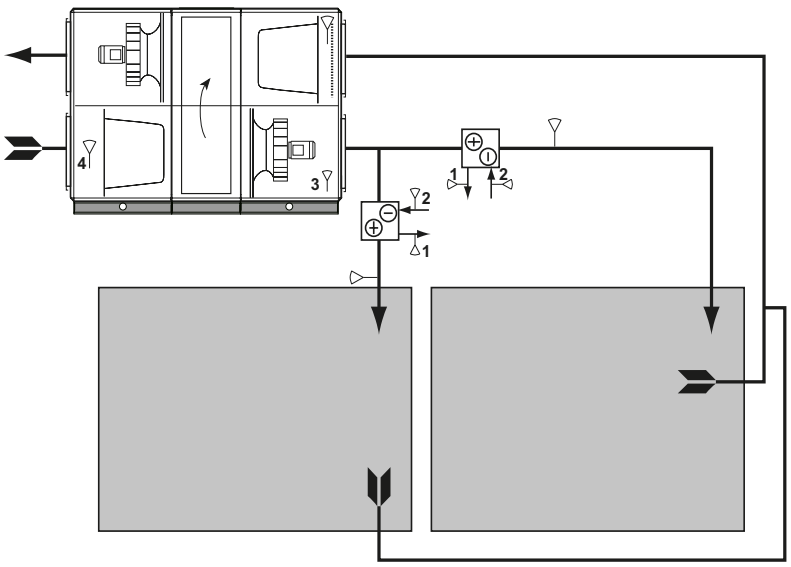
It is possible to activate a function for external switching between cooling and heating. The function can be selected to be controlled from a master system (BMS), or from an external free normally-open contact. The function can be selected for heating or cooling. The heating sequence is interlocked when heating is selected and the input is not active. The cooling sequence is interlocked when cooling is selected and the input is not active.

3.6 Indication of cooling and heating

It is also possible to activate a function where the GOLD air handling unit's regulation sequence controls whether heating or cooling is distributed to the combi coil. A free normally-open contact on each IQlogic+ module then controls switching between cooling and heating. The output is activated and a selection is made whether the contact should close in the event of heating or cooling requirement. The function can be used for a switching valve or as a signal to a reversible heat pump.

3.7 Outdoor temperature-controlled heat retention function

If the GOLD air handling unit is stopped during specific operating times, an external Outdoor temperature sensor (sensor 4, see basic circuit diagram below) is recommended for this function. When the function is activated, an outdoor temperature limit can be set for the heat retention function when the unit is stopped. The outdoor temperature limit can be set 0 - 20°C (Factory setting 12°C). Heat retention is permitted when the outdoor temperature is lower than the set value and is blocked when the outdoor temperature has exceeded the set value by 1K. This function also affects forced starting of the pump. When the outdoor temperature is below the set value, the pump is forced started (if the function is not activated the pump is always forced started at an outdoor temperature <12°C). The function is activated and the settings are made on the Service level.



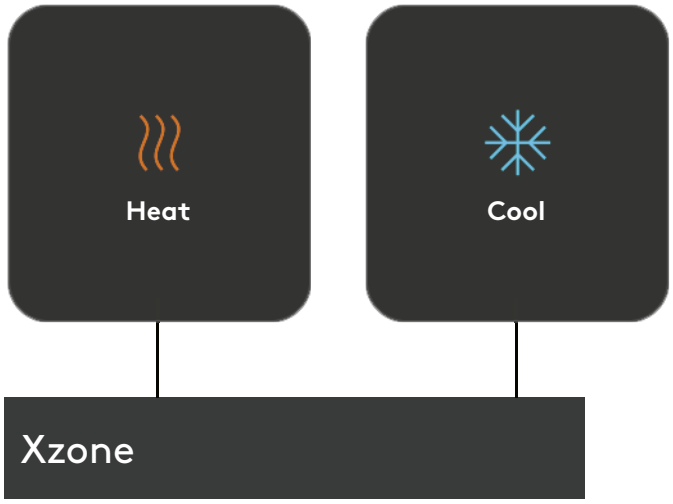
Swegon reserves the right to alter specifications.

4. Electrical connections.

See the Installation Instructions for the TBLZ-4-50 zone control box.

5. Settings.

For basic instructions on how to use the hand-held terminal, see the Function manual, installation, for the GOLD unit. The combi coil function can be selected under Functions/Core/Heat or Functions/Core/Cool.



2-pipe system and reversible heat pump:

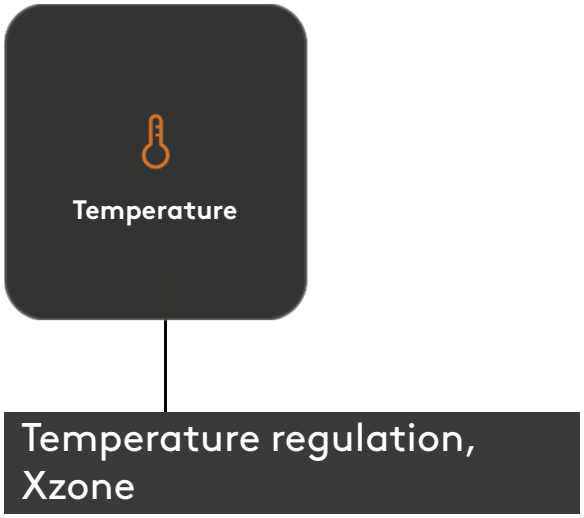
1. Activate the Xzone combi coil under Functions/Core/Heat if a combi coil in the extra zone is desired.
2. Select function heating and cooling
3. Select exercising of the pump and valves, and the interval and time. Must not be active with a reversible heat pump.
4. Select the desired alarm function.
5. Activate temperature monitor if necessary.
6. Select external signal function if necessary.
7. Activate combi coil digital output function if necessary, and select whether the output should be active for heating or cooling.

4-pipe system:

Operating mode for Xzone heating is set as heating, also active Xzone combi coil under Cooling. Other settings are made as above.

When any of the Xzone heating or Xzone cooling functions is activated, a new view is shown in the hand-held terminal, Temperature regulation Xzone under Functions/Core/Temperature.

Set the required temperature regulation function for the extra zone and the required set point.

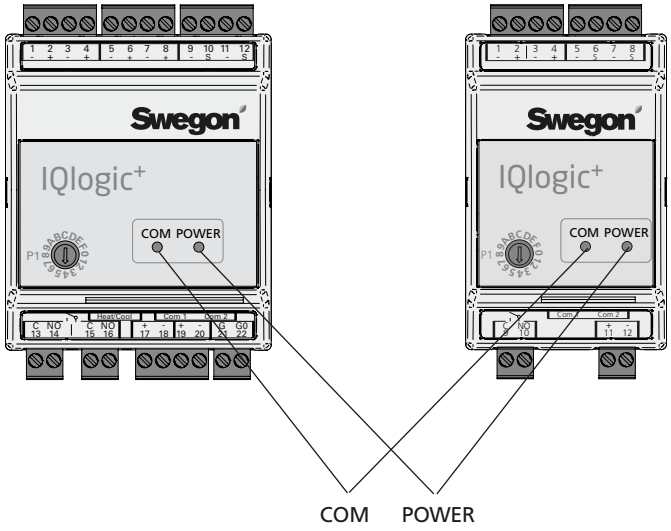


6. Performance checks

Module IQlogic⁺:

LED POWER indicates that power is being supplied from the GOLD air handling unit's control unit with a steady light.

LED COM indicates correct communication with the GOLD air handling unit's control unit with a flashing light.



Temperature sensor:

Current temperature readings can be viewed under Temperature/ Status. If the temperature readings are reasonable, wiring has been carried out correctly.

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