Guide to the GOLD version E/F functions
Hygrostatic rotor controller

1. General

In order to achieve a good indoor climate, the function efficiently recovers and maintains indoor humidity in a controlled manner.

In cases where additional humidification is required, the function can be supplemented with any of the GOLD air handling unit's humidification functions.

Controlling the speed of the heat exchanger, taking into account the relative humidity of the room and the outdoor air, allows the optimisation of moisture recovery.

In winter, a drying function can be run to avoid temporarily high humidity indoors.

The function requires GOLD program version 2.36 or a later version.

This function guide describes only the functions, connections and settings that are specific to hygrostatic rotor controller.

For a description of additional functions, such as steam humidification 0-10 V and evaporative humidification, please refer to the operation and maintenance manuals and separate instructions.

2. Material specification

Air handling unit	**GOLD RXRX with rotary heat exchanger of the type RECOsorptic**
Humidity sensor, supply air	**TBLZ-4-31-1**
Humidity sensor, extract air	**TBLZ-4-31-2**
Humidity sensor, exhaust air	**TBLZ-4-31-4**
Humidity sensor, outdoor air	**TBLZ-4-31-5**
Humidity sensor, room	**TBLZ-4-31-6**
Connection kit 1-2 kits depending on other functions.	**TBLZ-1-64**

3. Function

3.1 Overview

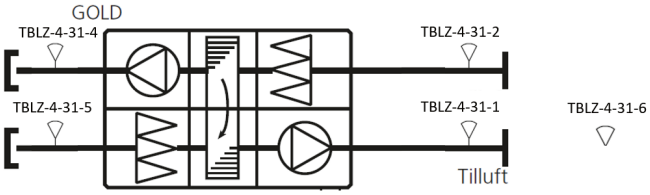
The function requires 5 humidity sensors. The room humidity sensor is used to control and regulate the rotary heat exchanger. Humidity sensors for supply air, extract air, outdoor air and exhaust air are used to take measurements, which are saved in log files for evaluation and analysis.

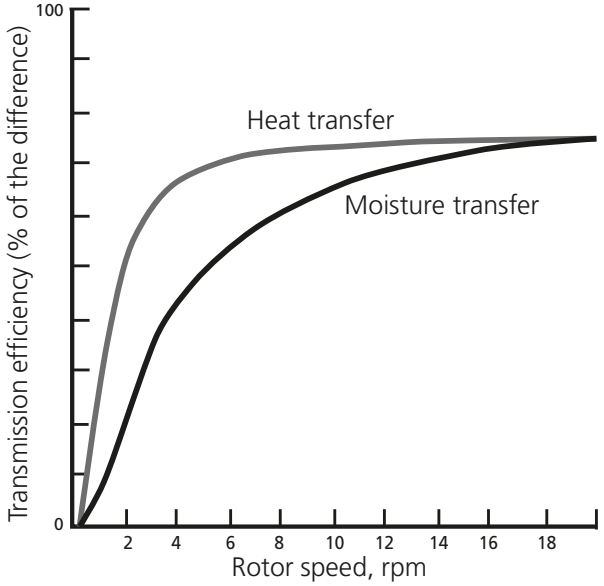
A rotary heat exchanger is normally temperature controlled, and the speed is controlled 0-100% as a sequence in the temperature control. With the hygrostatic rotor control function, the speed of the heat exchanger is also controlled taking into account the relative humidity of the room.

RECOsorptic is a sorption-treated heat exchanger that reaches a maximum degree of humidity efficiency at about 20 rpm. For the same heat exchanger, a maximum degree of temperature efficiency is reached at about 10 rpm. The efficiency/speed ratio is different for temperature and humidity. Even at low heat exchanger speeds, high temperature efficiency is achieved, while the humidity efficiency has a flatter efficiency curve.

The function has 3 operating modes.

The functionality of the operating modes with factory-set limit values is described below. The limit values may be changed.





Schematic diagram of the temperature efficiency/moisture efficiency ratio

3.2 Operating mode normal operation

The rotary heat exchanger is controlled between 0-10 rpm, as a sequence in the temperature control.

3.3 Operating mode moisture recovery

If the outdoor temperature is below +5 °C (outdoor temperature start) and the relative humidity in the room is below 30% RH (humidity mode start), the heat exchanger is controlled up to 20 rpm for maximum humidity recovery.

If the outdoor temperature exceeds +7 °C (outdoor temperature stop) or the relative humidity in the room exceeds 47% RH (humidity recovery limit -3% RH), the function will stop and the heat exchanger will return to normal operation.

3.4 Operating mode drying

If the outdoor temperature is below +5 °C (outdoor temperature start) and the relative humidity in the room exceeds 50% RH (humidity recovery limit), the heat exchanger is reduced to 25% of the maximum rotor speed (5 rpm, drying mode).

When the relative humidity in the room drops to 47% RH (humidity recovery limit -3% RH) or if the outdoor temperature exceeds +7 °C (outdoor temperature stop), the function is stopped and the heat exchanger returns to normal operation.

4. Connection.

4.1 Electrical connection

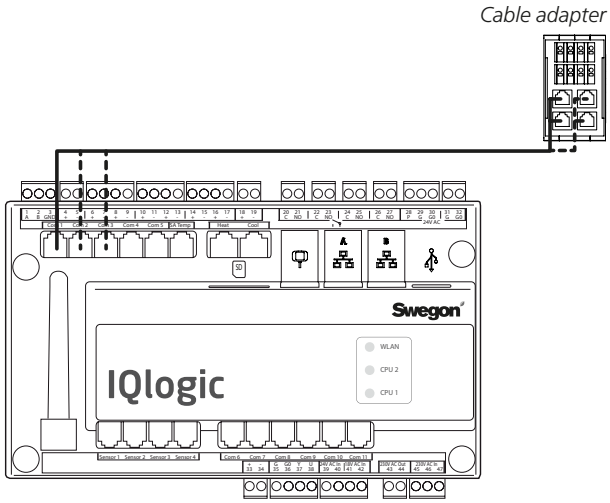
All component parts of the system must be wired and connected according to the installation instructions, manuals and product sheets that are available for each component part.

Electrical connection must be performed in accordance applicable provisions.

4.2 Connection of the humidity sensors

All five humidity sensors must be connected to COM1-3 on the IQlogic controller.

Depending on the other connected functions, 1 or 2 connection kits TBLZ-1-64 must be used.



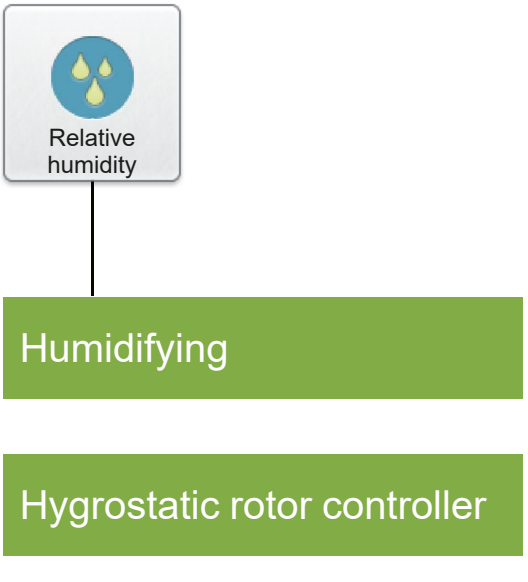
GOLD control unit

5. Settings

5.1 General

The hygrostatic rotor controller function can only be activated and configured by personnel accredited by Swegon. Activation of the function and all settings are made on the service level.

Only specific settings for the hygrostatic rotor function are described below.



5.2 Hygrostatic rotor controller settings

Activate the function.

Set the following values:
- Humidity mode start
- Humidity recovery level
- Drying mode, max. rotor speed
- Outdoor temperature start
- Outdoor temperature stop