

GOLD Functions Guide, Dew Point Regulation (control)

1. General

The *Dew point regulation (control) function* for regulating the cooling water temperature is designed for use if climate baffles or a perimeter climate systems are used in rooms with excess humidity during certain periods, for example conference rooms and assembly halls.

The function ensures that increasing moisture content in the room air will not cause condensation precipitation on cold uninsulated surfaces.

The moisture content is measured with a combined humidity and temperature sensor mounted in the extract air duct.

The function can be advantageous when combined with Dehumidification. See the Functional Guide.

2. Material Specification

Air handling unit	All types of GOLD
IQnomic Plus module	TBIQ-2-1-aa
Function selector switch in Position 7.	

Code: **aa**

- 00 = 0,25 m. long cable
- 01 = 1 m. long cable
- 03 = 3 m. long cable
- 05 = 5 m. long cable
- 10 = 10 m. long cable
- 15 = 15 m. long cable

Humidity sensor for extract air duct	TBLZ-1-31-2
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Strap-on temperature sensor	TBLZ-1-32
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Other equipment required:
Valve actuator for cooling water valve, 3-way valve for cooling water, circulation pump

3. Operation

The function keeps the water temperature constant at the required setting in the connected cooling system.

The water temperature is measured with a strap-on temperature sensor (see A in the figure below) fitted to the cooling water pipe downstream of the regulating valve (see B in the figure below).

The function selector switch on the IQnomic Plus module must be set to the 7 position.

The moisture content and temperature of the extract air (see C in the figure below) is measured in order to ensure that no condensation forms on cold metallic surfaces.

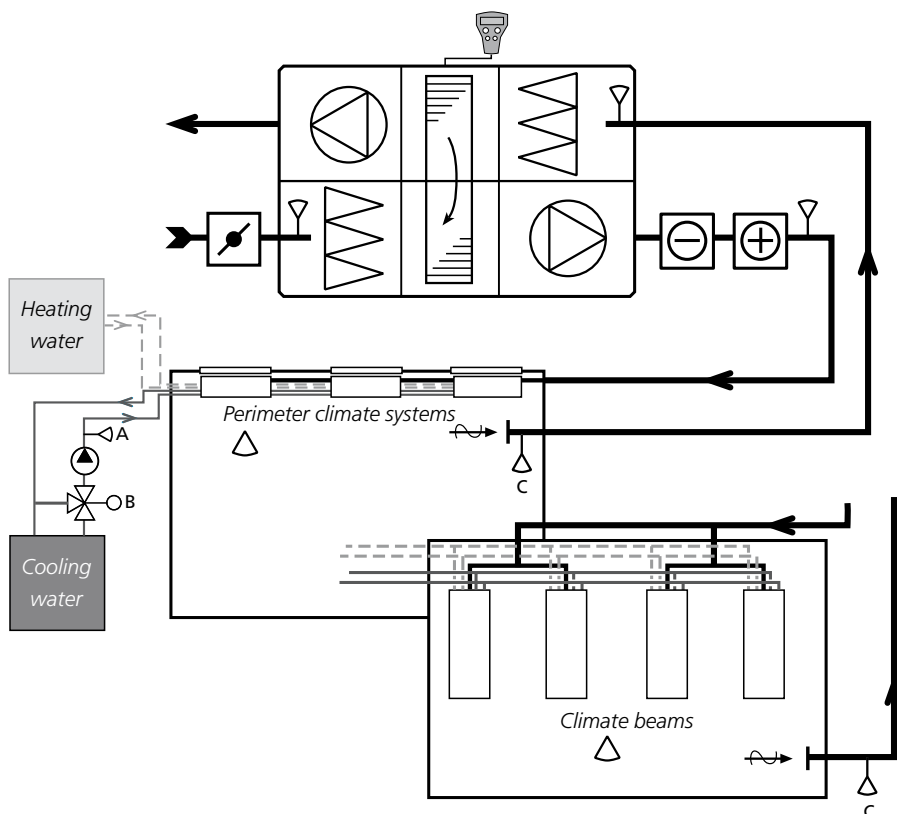
On the basis of the measured values for relative humidity and temperature, the controls calculate the current dew point (the temperature at which the moisture in the air condensates).

In order to counteract condensation, the controls increase the cooling water set point when the dew point exceeds the cooling water temperature.

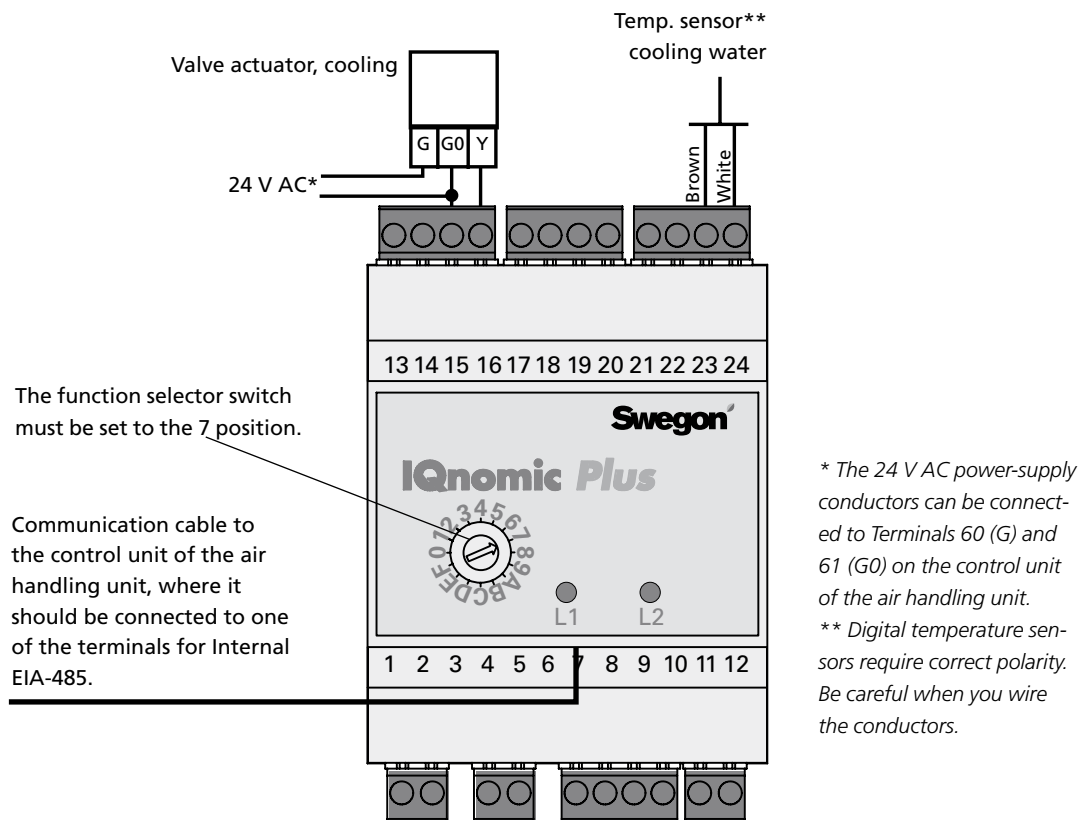
To compensate any losses in cooling capacity on increasing cooling water temperature, the controls increase the air flow to extract more excess heat.

The amount by which the airflow has to increase from the current airflow (to compensate for each degree by which the cooling water temperature increases) must be set as a percentage. This is called the compensation flow.

The function has no means for controlling the operation of a circulation pump in the cooling water system. It is assumed that the pump operates continuously or that it is controlled by an external pump control system.



4. Electrical Connections.



5. Settings

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

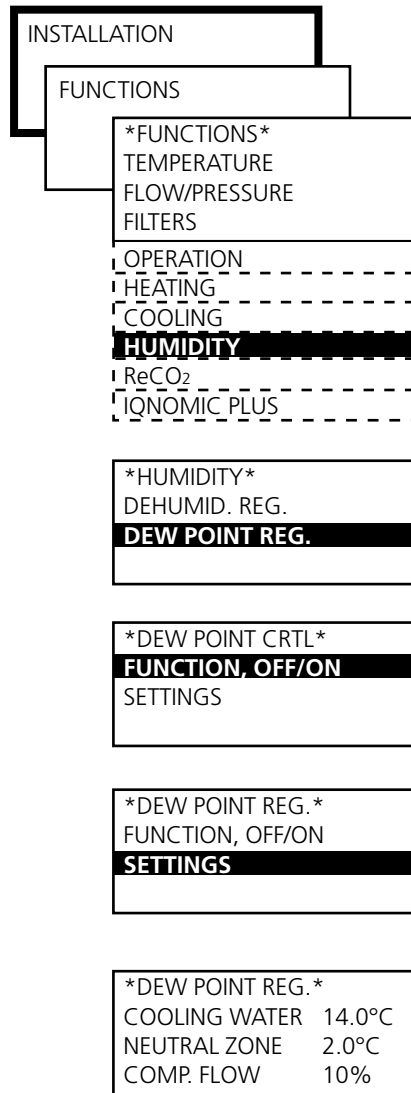
The dew point control function must be manually activated, under INSTALLATION – FUNCTIONS – HUMIDITY in the hand-held terminal.

Select Dew point regulation (control).

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

Set the values required under SETTINGS.

Select the cooling water temperature required.
 Select the neutral zone (the neutral zone is a safety margin for errors in measurement and calculation).
 Select the compensation flow as a percentage. The compensation flow is the amount by which the airflow has to increase from the current airflow, for each degree by which the cooling water temperature increases.

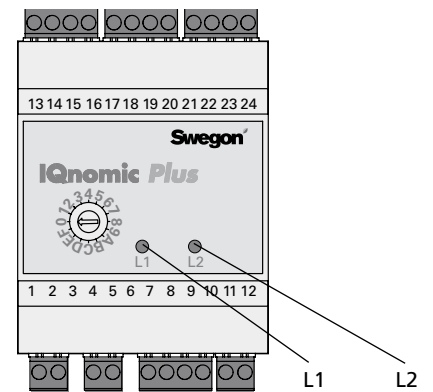


6. Performance Checks

IQnomic Plus module:

Light-emitting diode L2 lit with a steady glow indicates that power is being supplied from the GOLD unit's control unit.

A flashing light-emitting diode L1 indicates correct communication with the GOLD unit's control unit.



Temperature sensor:

Current moisture content, temperature and cooling water output readings can be viewed under INSTALLATION – READINGS – HUMIDITY – DEW POINT REG. If the temperature readings are reasonable, then the wiring has been connected correctly.

If the functions are activated but the accessories have not been connected correctly, an alarm will be initiated. See the *Operation and Maintenance Instructions for the GOLD unit* for a description of each alarm.

