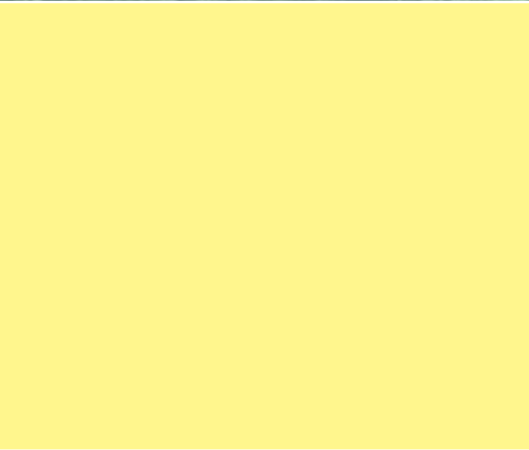


# ENERGY- SAVING

SAVE ENERGY  
BY OPTIMISING  
YOUR DST  
DEHUMIDIFIER



[www.dst-sg.com](http://www.dst-sg.com)



# Control your dehumidification

DST offers everything from simple hygrostats to PLC-based moisture and temperature control. In most cases, if dehumidification installations are controlled well, you get a very short pay-off time in return. This brochure takes a look at control systems carefully adapted to suit the DST range of dehumidifiers. All variants are available fully assembled and tested. Investing in a good control system can result in considerable reductions in operating costs. At the same time, you are helping to preserve our environment – an important consideration if you hold environmental accreditation, or are thinking of applying for it.

## One supplier

The process industry often makes stringent demands of climate – precise regulation is the name of the game. DST offers a number of systems to control both moisture and temperature. This means that you can avoid having to coordinate a number of installations: these will all be optimised and provided by one supplier.

## Choose the control that meets your needs best

DST offers three levels of PLC control: C1, C2 and C3. All PLC variants are developed to meet different needs, and C2 and C3 also have expansion capabilities for demanding applications.



*You can communicate with and control your dehumidifier without actually being present! This saves time, money and personnel resources.*

### C1:

- For advanced control of Recusorb RZ or Flexisorb device.
- Graphical display.
- Communication via GSM, telephone socket, remote access\* and via Ethernet\*\*.
- Cost-effective control of the process via the Internet.

The functions of C3 offer considerable scope for adaptation to your specific wishes.

For example, it is possible to see operating data, alarm logs and other settings via the Internet. You can also duplicate the PLC on your computer screen, which means that you can look after the PLC without actually being present. The communication possibilities provide many advantages - you no longer have to travel to the dehumidifier, and you can save personnel and travelling time, which is also beneficial from an environmental point of view. You can check the process wherever you are in the world. You can also upgrade your software via a telephone socket, modem or the Internet.

### C1:

- Control of Recusorb RZ dehumidifier, standard.
- 1-row display.



### C2:

- Control of Flexisorb dehumidifier, standard.
- 2-row display.
- Alarm notification via SMS.
- Communication via GSM, telephone socket or remote access\*.



\* Opportunity to provide a duplicate image of the operator's panel via cable.

\*\* Ethernet: software which communicates via the Internet, e.g. between a computer and a dehumidifier.

# Humidity control

## Energysaving, step 1

A two-step hygrostat, e.g. EH-3, initially regulates down to approx. half capacity, then in the second stage it regulates down to zero.

## Energysaving, step 2

A control system regulates the dehumidification capacity from zero up to full capacity by regulating the regeneration heater, in binary or linear fashion, depending on the unit and the type of heater (electricity, steam or gas). The moisture sensor controls the heater by means of a regulator.

In other cases, the moisture sensor supplied is fitted externally and wired to the distribution box for the dehumidifier.

## Energysaving, step 3

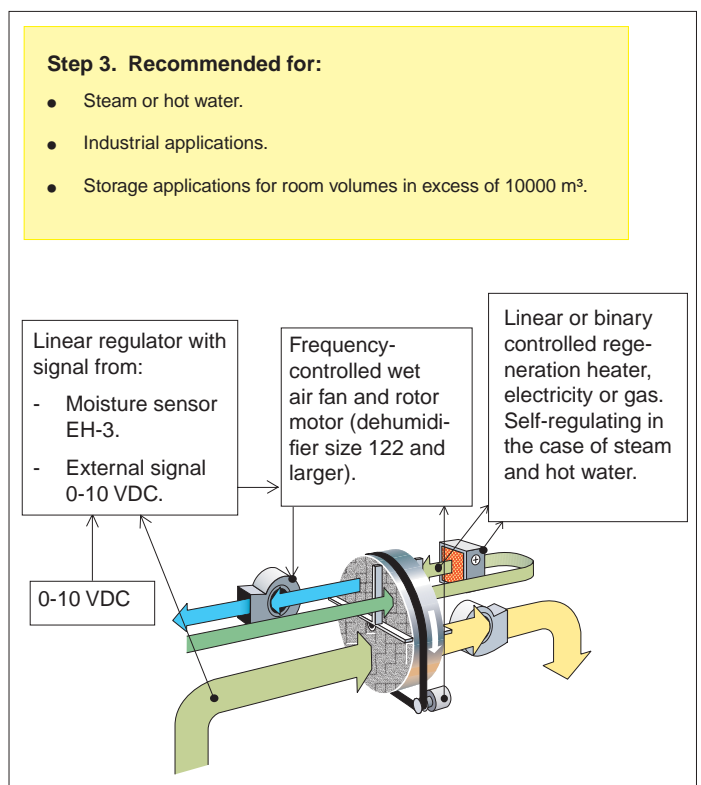
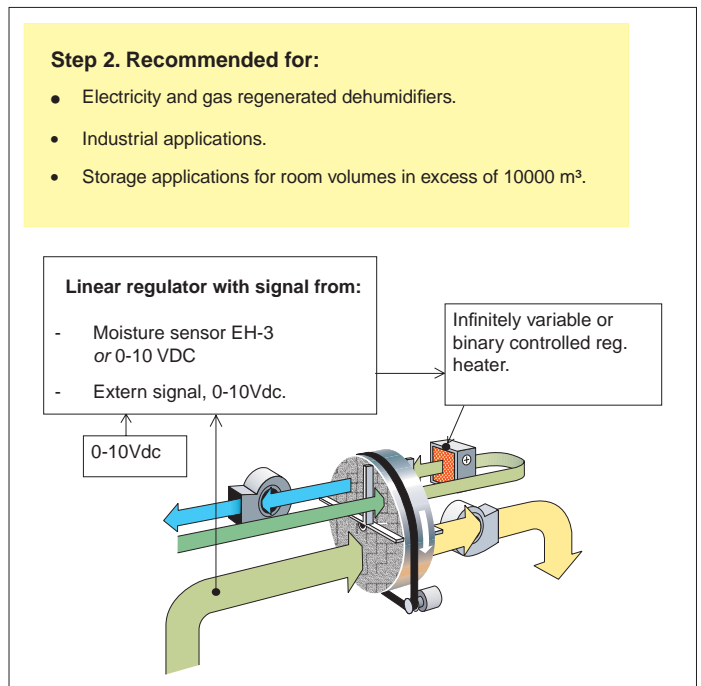
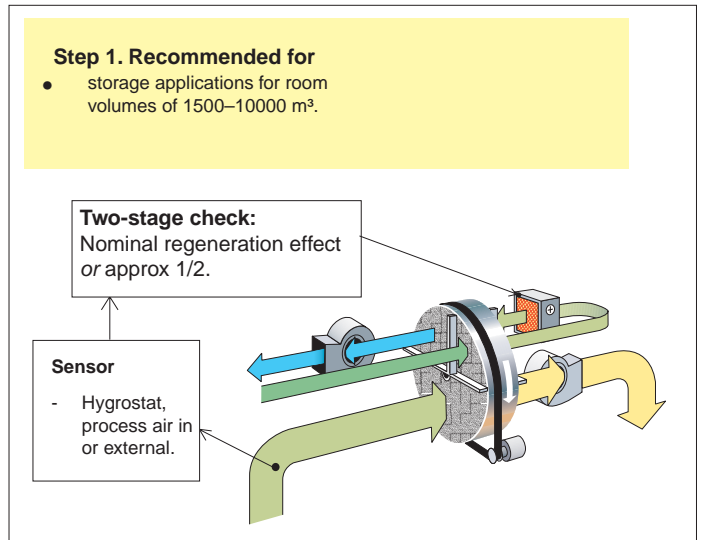
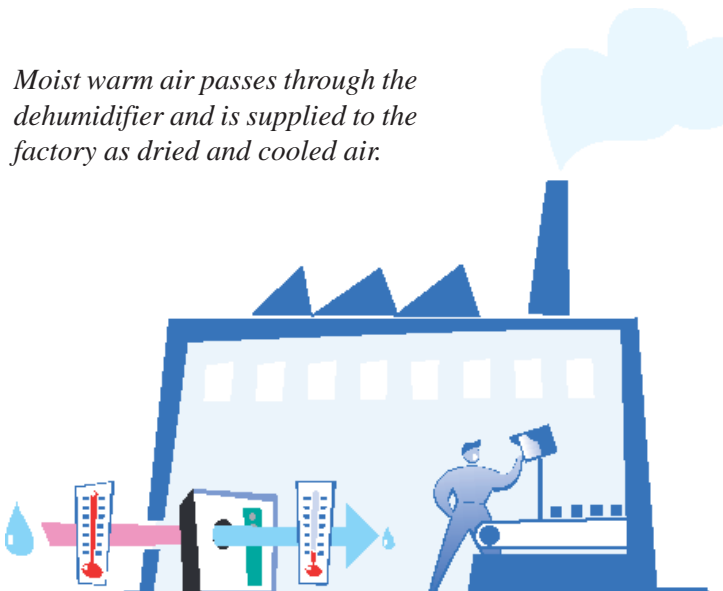
The system regulates the dehumidification capacity from around 20% up to 100%. Wet air flow, rotation rate of the rotor (in some cases) and the heater's power output are regulated in parallel, resulting in better utilisation of energy compared with simply regulating the heater. A moisture sensor controls the wet air flow and, in some cases, the rotor speed, via a regulator. The regeneration temperature is maintained at a high level which ensures more efficient dehumidification.

Alternatively, the dehumidifier can be controlled by an external regulator which emits a 0-10 V signal to the dehumidifier.

## Temperature control

DST is also able to offer temperature control. By integrating output temperature control in the dehumidification process, it is possible to reduce the total amount of energy used due to the fact that the moisture and temperature parameters work together. Cooling-coil batteries are built into the process part of the dehumidifier. DST is able to offer both DX cooling and batteries for cooling water.

*Moist warm air passes through the dehumidifier and is supplied to the factory as dried and cooled air.*



## Hygrostats

All dehumidifiers from Seibu Giken DST AB can be supplied with hygrostats connected either via a fixed cable or using a connector. The hygrostat either switches off the entire dehumidifier (on/off) or just the regeneration heater and wet air fan (on/vent).

### Elektronisk hygrostat EH 3

The advantage of DST's electronic hygrostat is that it never needs calibration.

**Two closing contacts.** Used for checking two-stage air dehumidifiers or for controlling various air dehumidification units.

**Analogue outputs.** Two VDC or mA outputs, select source from the PI regulator or one of the four parameters.

**PI-regulator.** Used for stage 2-3 energy saving.

**Sensor.** Capacitive sensor from Honeywell, accuracy  $\pm 2\%$  RH for the entire measurement range 0-100% RH. Replacing the sensor is easy. Every sensor comes with a calibration report.



### The EH-3 regulates and monitors:

- relative humidity, % RH
- absolute humidity, g/kg
- dewpoint, °Cdp
- temperature, °C / K / °F

## Electromechanical hygrostats

Pilot duty rating 250 V, 10 A. DST recommends that electromechanical hygrostats should always be calibrated after installation, and then annually.



HR1- DH with  $\pm 4\%$  RH accuracy

HMH and HMH2 with  $\pm 3\%$  RH accuracy

### Seibu Giken DST

Seibu Giken DST AB is a Swedish company, founded in 1985. We are now a leading international supplier of desiccant dehumidifiers. DST is currently represented in over 40 countries throughout the world. DST has been a subsidiary of Japanese company Seibu Giken Co Ltd since 1993. Seibu Giken Co manufactures dehumidifier rotors, VOC rotors, heat exchangers and more.



Seibu Giken Co headoffice, Fukuoka, Japan.

Find out more at [www.dst-sg.com](http://www.dst-sg.com)  
or at [www.seibu-giken.co.jp](http://www.seibu-giken.co.jp)

Seibu Giken DST AB  
is certified according to  
ISO 9001.



### Seibu Giken DST AB

Avestagatan 33, 163 53 Spånga, Sverige

Tel: +46 (0)8 445 77 20

Fax: +46 (0)8 445 77 39

[www.dst-sg.com](http://www.dst-sg.com)

[info@dst-sg.com](mailto:info@dst-sg.com)

### Representative: