rotronic

Humidity news

issue 1/2000

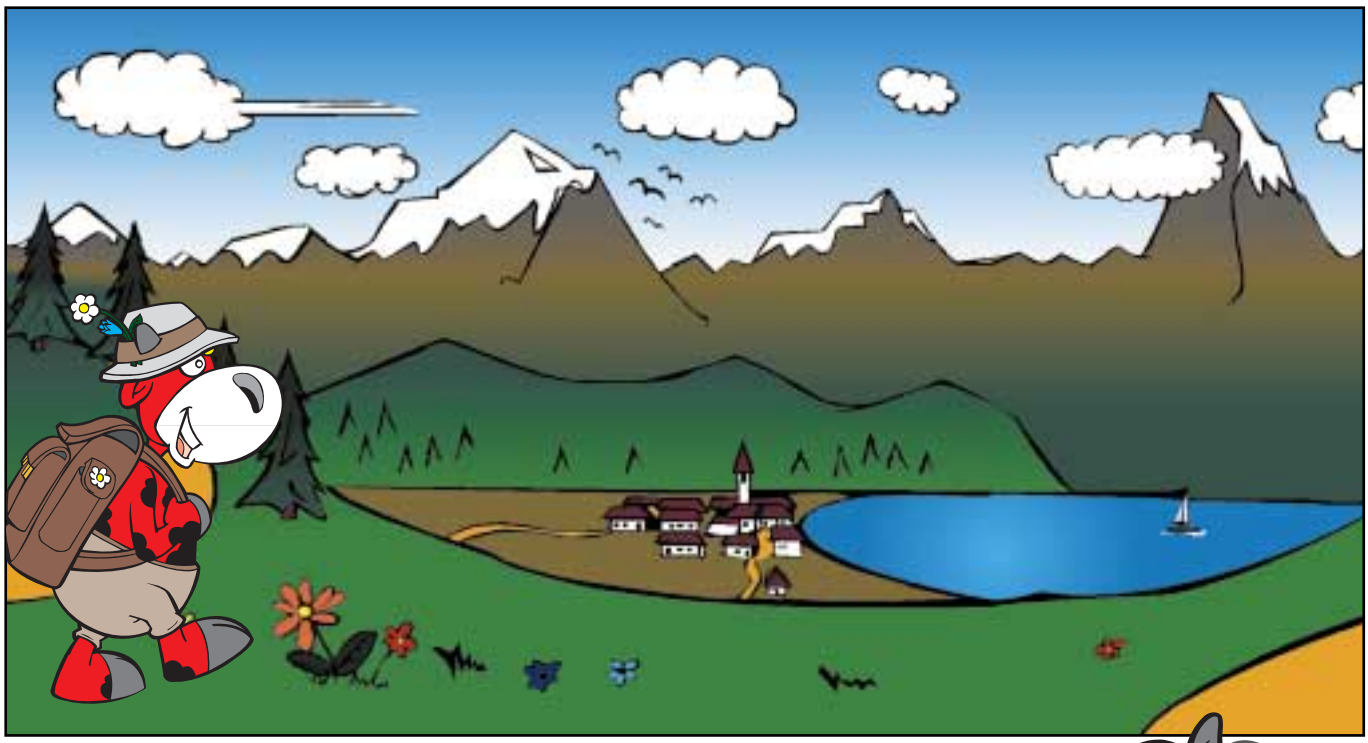
Introducing
ROLINA

Millenium Catalogue!

Car Industry counts on ROTRONIC transmitters!

ROTRONIC works with France Telecom

Main Theme
HYGROCLIP Concept



ROLINA'S WORLD!

ROLINAS is the new mascot of the ROTRONIC group. Her friendly smile and helpful guidance symbolise the ROTRONIC philosophy of innovation and customer service. Throughout our catalogues, exhibition stands and sales presentations ROLINA introduces you to new products, features and special offers.

Later in our humidity news, there is a competition where you have the chance to win one of four life size ROLINAS which are sure to delight children of all ages!

Look out for ROLINA for the very latest news and products!

NEW MILLENIUM NEW CATALOGUE

The new ROTRONIC catalogue 2000/2001 is now available. With nearly 200 pages, it's our largest catalogue yet, and includes the extensive range of products currently available from ROTRONIC.

Several new products are included for the first time, including the NEW IMA-transmitter series, the NEW Agent-D data-loggers with displays, the complete HygroClip range, and much more.

The catalogue provides full technical descriptions and order codes, as well as every conceivable accessory, which ensures that you have a single reference point for the full ROTRONIC product range.

THE HYGROCLIP CONCEPT

Contents

What is the HygroClip?
The HygroClip is a measurement module for % relative humidity and temperature.

What makes the HygroClip so special?
High measurement performance at low cost. 100% Interchangeability with 'plug and go' technology. The HygroClip is one of the first commercially available products to feature a custom ASIC (Application Specific Integrated Circuit) specifically designed for humidity and temperature measurement. The HygroClip is the most exciting, innovative, and significant introduction to the ROTRONIC product range since the Hygromer C80 capacitive %rh sensor in 1980.

What are key benefits of the HygroClip to the user?
Measurement precision and wide operating range at low cost. When calibration or maintenance is required, a new or reconditioned module can be fitted in seconds. Interchangeability within applications. Reduced maintenance and spare parts costs.

How is the HygroClip used ?
As a stand alone sensing module with analogue and digital outputs. Integrated into products such as portable instruments, data-loggers, transmitters, or meteorological probes.

More detailed explanation
As described above, the HygroClip is a digitally based relative humidity and temperature measurement module. ROTRONIC have over 30 years of experience in the development, production and calibration of %rh instruments, and all this experience has been „packed" into the HygroClip.

Our objective has first and foremost been to develop more and more precise measurement instruments, and the application of digital technology gave us the opportunity to improve our instrumentation technology still further. The precision of %rh measurement instruments is dependant on many factors, these include operating temperature, drift, hysteresis/repeatability, thermal characteristics, adjustment and calibration. All of these factors in combination determine the precision of measurement, and the HygroClip offers two key advantages in minimising their effect.

Firstly, the sensors and associated circuitry are contained in one small module; this means that the measured value is defined internally as a robust signal before connection to transmission or display equipment. The measurement and thermal characteristics are therefore easier to define, and error correction more consistent.

Secondly, the digital signal processing technology not only provides more options in the provision of error correction, but also provides scope for more flexibility than analogue circuitry and much faster integration of upgrades or developments.

The end result is a compact, high performance measurement module with precisely defined specifications and capability, which can be applied in a wide variety of applications with predictable results.

MULTI TALENTED IMA–TRANSMITTER

IMA Series Transmitter takes the Pressure!

Key Features:

- Dewpoint, enthalpy, mixing-ratio, wet-bulb or absolute humidity measurement
- Pressure input and compensation for highly precise calculated values
- Temperature measurement and compensation as standard
- User configuration of measurement ranges and output signals
- Digital display (and keypad) as standard

% relative humidity(%rh) is the most common unit of measurement when humidity is measured, and %rh instruments offer an ideal combination of performance and cost for a large proportion of commercial and industrial applications.

There are however some situations where an application requires a different unit of measurement, such as dewpoint, enthalpy or mixing ratio. For example, dewpoint temperature is essential when trying to prevent condensation, and enthalpy (kj/kg) is an important parameter in energy management applications. The chemical industry often needs to know the mixing ratio (g/kg) of a gas.

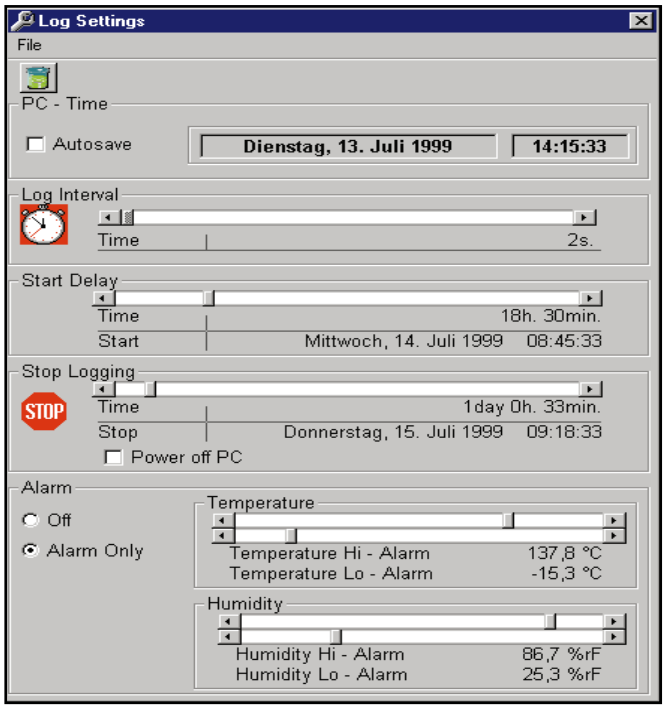
Instruments specifically designed for the measurement of these specialist values are often more expensive or complicated to use than the equivalent %rh instrument. So, in recent years, %rh instruments have increasingly featured microprocessor based electronics which perform calculation of alternative units of measurement, from the input values of %rh and temperature.

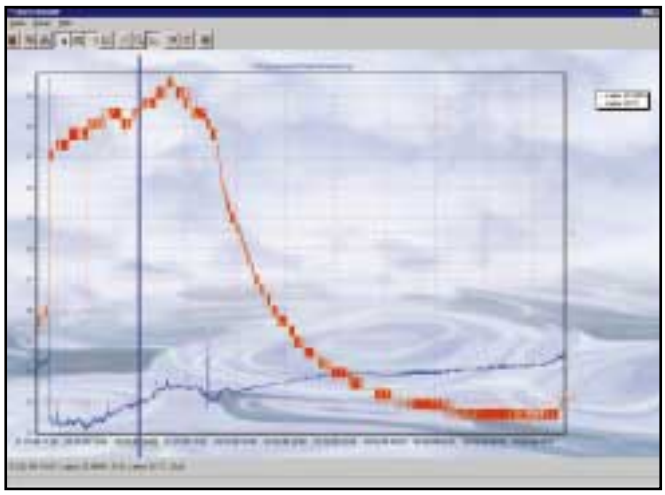
One problem with these 'calculated' humidity variables, is that a number of them are pressure dependant, and when pressure deviates from the default ambient value of 1013.25 mbar/hPa, the output variable can be incorrect.

The new ROTRONIC IMA series solves this problem by incorporating pressure compensation. A fixed pressure value which forms the basis of calculations can be manually set by the user, or for applications where pressures varies significantly, a barometric pressure sensor can be connected.

The IMA Series also features as standard a front panel LC display and key pad, which enables the user to manually set the measured value and output range. Measuring ranges are 0...100%rh,-50...+200°C, and 0...2000 mbar/hPa with an optional barometric pressure sensor. Full technical information can be found on page 90 of our current catalogue, or visit www.rotronic-humidity.com

NEW HW3 UNIVERSAL SOFTWARE





FOR ROTRONIC-INSTRUMENTS

ROTRONIC has developed a universal software package which is compatible with all ROTRONIC products with RS232 output, such as the A1H, HygroLog, MOK-WIN, BTRS1, and I-3000H. It is created using industry-standard Visual Designer Modules which offer a familiar Windows operating environment for user friendly operation.

Features include:

- Graphing module for display of logged data, as well as online measurements. On screen limits (min/max) can be set to show when deviations from user defined limits have been exceeded.
- Alarm events can activate audible & visual alarms, and send Email or SMS messages.
- Data Acquisition of measured values is no problem. Instruments with an RS232 output can be connect to the PC with HW3 software. Data-logger data can be down-loaded, displayed and stored.
- User configuration of instruments, data-loggers and calculation functions can be performed with HW3. Measuring ranges, start, stop, log interval, and alarm settings can easily be set.
- Pyschrometric Calculations such as dew-point, wet-bulb, mixing ratio, absolute humidity and enthalpy can be performed on or offline within HW3. Calculations are based on WMO formulae.
- Calibration and set-up is easily handled through HW3. Automatic instrument and com port detection, DDE (Dynamic Data Exchange) functions, calibration report generation and user information(logo) input functions are all easily handled by HW3.

NEW MODULAR HUMIDITY AND TEMPERATURE DATA LOGGER

A new modular data logger, the HygroLog, for measuring and recording humidity and temperature has been introduced by ROTRONIC. Based on the unique ASIC based HygroClip measurement system, the HygroLog has an extensive list of features and benefits for the user.

The HygroClip probe provides accuracies of (1.5%rh and (0.3°C, measuring ranges of 0...100%rh and (-20...+70°C), contains all measurement & calibration data, and can be immediately replaced by the user in a matter of seconds. This ensures that high operational precision, simplified maintenance, and calibration are achievable by all users, without the need for expensive calibration equipment or training.

10 000 measurement values (5000 x %rh & °C) are stored within the internal memory of the HygroLog, these can be transferred to any PC using ROTRONIC HW3 software.
(see page 5)

The HygroLog is suitable for measuring climatic conditions in applications such as warehousing, production areas, transportation, offices, clean rooms, leisure centres, commercial centres, museums, and art galleries.

At the following exhibitions you find a ROTRONIC stand:

DRUPA
18.–31.05.2000
Germany, Duesseldorf

ACHEMA
22.–27.05.2000
Germany, Frankfurt

IFT
11.–14.06.2000
USA, Texas

ITM 2000
07. – 11.06.2000
Malaysia, Kuala Lumpur

ISA 2000
20. – 23.06.2000
Malaysia, Kuala Lumpur

NEPCON 2000
20. – 23.06.2000
Malaysia, Penang

ISA
21.– 24.08.2000
USA, New Orleans

Messtechnik Austria
27. – 28.09.2000
Austria, Vienna

Instalexpo Fair
06. – 09.09.2000
Poland, Warsaw

STI 2
19. – 22.09.2000
Belgium, Brussels

ROMCONTROLA
09. – 14.10.2000
Romania, Bucharest

Pollutec
17. – 20.10.2000
France, Lyon

Foodex of Korean Society of Food Science + Technologie
03. – 04.11.2000
Korea, Seoul

Messcomp
05. – 07.11.2000
Germany, Wiesbaden

Bias
07. – 11.11.2000
Italy, Milan

KEMIA 2000
15. – 17.11.2000
Finland, Helsinki

28th. Scientific Instruments Shows Japan 2000
28.11. – 01.12.2000
Japan, Tokyo

CLASSIC SWORD HYGROMETER IS REVISED

The ROTRONIC Hygromer GTS Sword Hygrometer has been used throughout the paper and print industry for over 20 years. Its robust construction, high performance, and low cost, have made it the industry standard for paper stack Equilibrium Relative Humidity (ERH) and temperature measurement.

By popular demand, rotronic have introduced a new version of the GTS to meet current European standards, and to further enhance measurement performance. Precision has been improved to +/- 1.5% ERH over the range 15...90% ERH, with temperature at +/- 0.3°C. Power management has been improved with the addition of an automatic power-off function and „state-of-the-art" circuit design.

Popular features such as the robust red high visibility ABS housing, front panel offset adjustment potentiometer, direct user calibration, and selectable display remain. The aluminum blade provides excellent strength whilst keeping thermal mass low, a major benefit to temperature, and therefore ERH, equilibrium times.

ROTRONIC's design, development, and production is accredited to ISO9001, and in addition, rotronic are accredited as an SCS National standard laboratory.

AUTOMOTIVE TEST CHAMBER FEATURES ROTRONIC-TRANSMITTERN

Performance surpasses expectation!

Clive Hurley Environmental Engineering are one of the world's leading manufacturers of environmental test chambers. A recent installation at the UK's leading independent automotive development centre, LTC, featured a ROTRONIC I-2000 industrial humidity and temperature transmitter.

Traditionally, Clive Hurley's have employed wet and dry bulb psychrometry for humidity measurement duties, but because of the wide operating range of the LTC chamber, a ROTRONIC I-2000 transmitter was installed.

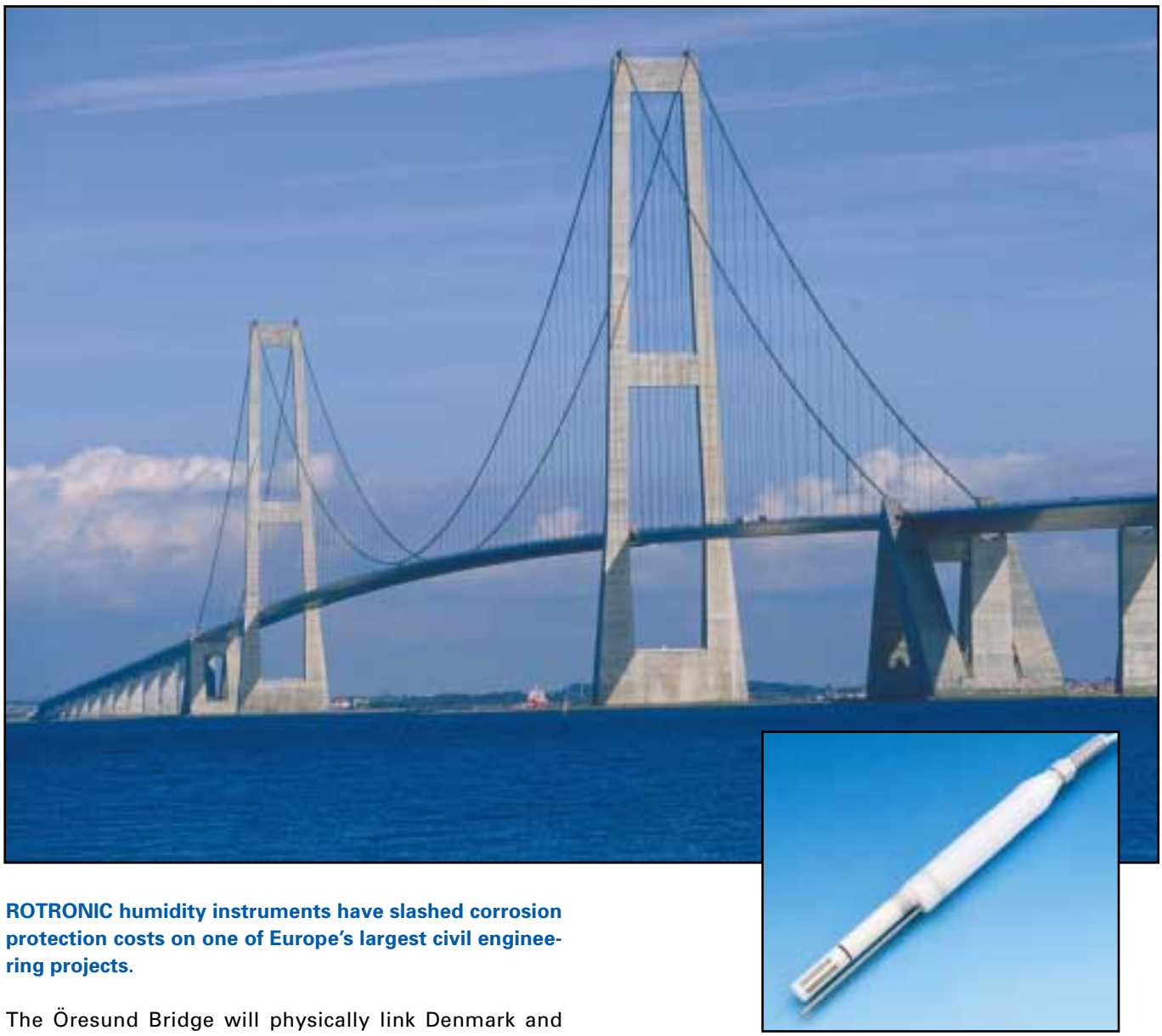
Andrew Hurley, Director commented:

„Obviously above 100°C and below 0°C, wet and dry bulb humidity measurement is not practical, and our customer needed to know the humidity value over the chambers full working range. The ROTRONIC I-2000 offered the widest available temperature range, so it naturally became our preferred choice. Once installed, we were really impressed with the accuracy, stability, and response times it provided."

The LTC test chamber is designed to cope with vehicles up to the size of a truck tractor unit, with internal dimensions of 3.3 x 4.3 x 6.3 length, and a load capacity of 8 tonnes! The temperature range is -40...+120°C, with a humidity capability of up to 99%rh over the temperature range of 10...70°C. In addition, full solar capabilities are incorporated, so that an extensive range of 'real world' conditions can be reproduced. One company who have already made use of the LTC chamber are sports car manufacturer TVR (shown in picture).

The ROTRONIC I-2000 transmitters are available in a wide range of configurations to suit almost any application. Maximum measurement ranges are 0...100%rh and –50...+200°C, with operational exposure to -75°C not affecting the sensors. The probe of the I-2000 can be seen at the top/rear of the chamber.

ROTRONIC HUMIDITY MEASUREMENT SLASHES ÖRESUND BRIDGE MAINTENANCE COSTS



ROTRONIC humidity instruments have slashed corrosion protection costs on one of Europe's largest civil engineering projects.

The Öresund Bridge will physically link Denmark and Sweden for the first time. Most of the major construction is now complete, including the weight bearing support structure, comprising steel girders which feature a new corrosion protection system being monitored by ROTRONIC humidity instruments.

With an internal volume of over 120,000 cubic metres, cost-effective corrosion protection was critical within the hollow girders, and so nine Munters air dryers have been installed to keep relative humidity below a level where corrosion of the steel can occur. The dryers are controlled by a series of ROTRONIC MP400 probes, whose wide operating range and excellent long-term stability are essential to the correct operation of the system.

Stig Fristad, Project Leader at Munters says, „Experience from a similar project on the Högakusten Bridge in Sweden showed that over several years, the cost of running the air-dryers is approximately 1% of the cost of traditional corrosion protection schemes. The accuracy and stability of the ROTRONIC sensors is an important factor in keeping humidity levels, and therefore energy consumption, under control."

There are in total 18 MP400 installed in this application, 16 are used for the control of the air-dryers, 2 are used purely for monitoring purposes, the measurement data can be viewed by both the Danish and Swedish authorities.

FRANCE TELECOM

France Telecom now use the ROTRONIC FH series with HygroClip sensor module for all their telephone exchanges throughout France, over 1000 installations! The FH series was specified because of the significant energy and maintenance savings their accuracy and design helps to achieve.

Why?

Modern telephone exchange buildings are full of the very latest electronic and computing technology to maintain the high speed communications and connection reliability we all expect from today's telecommunication systems. These high-technology installations need a carefully regulated environment for the best reliability. Air conditioning systems controlling humidity and temperature (HVAC) are therefore used to protect this equipment, and the sensors used are often low-cost and low-quality. This creates a big demand for maintenance engineers to calibrate and replace the sensors to keep measurement performance high, and also to keep energy usage to a minimum. The installation of high quality ROTRONIC sensors solves both these problems:

Maintenance.....

FH series transmitter feature the HygroClip sensor module. The high quality %rh sensor is more stable than low cost HVAC products, so needs less maintenance and calibration. When calibration or repair is required, the HygroClip can easily and quickly be replaced, so that system downtime and engineers time on-site can be limited to a few minutes.

Energy Conservation....

The humidity should be within 30...70 %rh. If the humidity is lower than 30 %rh, the telecommunication system's electronic circuits, computers etc. have a higher risk of break down because of electrostatic problems. If the humidity is higher then 70 %rh, the equipment has a higher risk of failure because of corrosion & short circuits. This means that just above 30%rh the air is humidified, and at just below 70%rh they start to dry the air. Such systems typically require 40kW power.

Imagine:

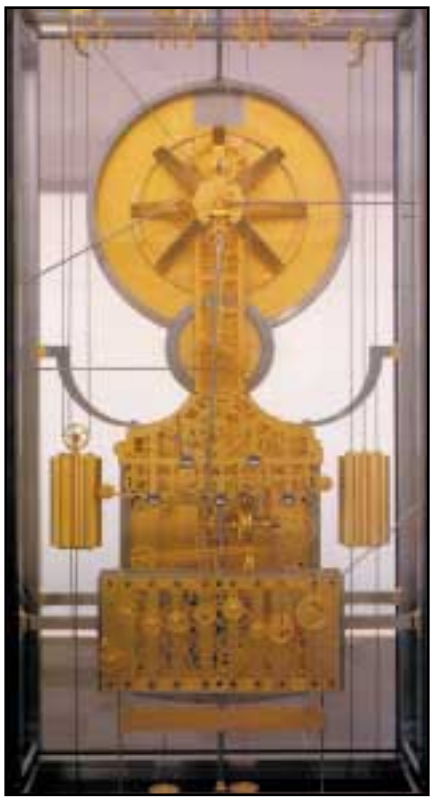
If the humidity control system runs 1 hour more than necessary because of sensor errors, 40kWh of energy is wasted.

Calculation:

40 kWh x 1000 telephone exchanges = 40 000 kWh per day

If you project over a year, this represents a huge waste of money, energy and most importantly more pollution of the environment.

France Telecom has chosen the FH series duct and wall mounting transmitters. The adjustment of the HygroClip, the interchangeable concept and the measurement accuracy were the main reasons why France Telecom chose ROTRONIC.



JENS OLSENS WORLDWATCH IN COPENHAGEN

Jens Olsens worldwatch on Copenhagens city hall is known by most Danish people and internationally as a unique astrological monumental clock. The clock consists of 15,448 parts in 12 mechanisms. Apart from the time around the world, the clock shows the time of each sun rise and sun set, the year, the weekday, the date, the month, the sun & moon rotations, and the planets movements.

Renovation necessary

Jens Olsens worldwatch was started in 1955 and was functional until 1995, when the clock was disassembled. It was stated that the mechanisms had become inaccurate and it was that a thorough renovation was necessary. The display case that held the clock partly protects the works against dirt and environmental conditions. But it was obvious that this protection was inadequate.

Several of the mechanisms were affected by corrosion, which prevented correctly operation. After two years of intense work the APS finished the renovations in 1997.

Munters dehumidifier ensures conditions

It was examined how you could best protect this valuable work from the airs destructive effects. Since the main problem was corrosion caused by high humidity. The choice was dry air preservation by the means of an absorption dehumidifier from Munters. A dehumidifier type ML180 was built in with the rooms ventilation system to ensure the air condition in the showcase is kept constant. The showcase receives a constant 25 m^3/h volume of air at 18°C and a relative humidity of 40% rh. The dehumidifier is controlled with the ventilation system through a CTS system. To prevent air from the outside from entering the showcase an elevated pressure is maintained in the showcase. The showcase is equipped with ROTRONIC humidity and temperature sensors in each side of the clock box. By keeping the relative humidity at only 40% rh corrosion is prevented. The clocks stable operation after the renovation is expected to continue for many many years since the delicate mechanisms is no longer affected by the surrounding air.

Munters Leading dry air supplier

Munters who are internationally a leading supplier of dry air solutions has delivered dehumidifier systems for many similar conservation purposes and is a well known name within, among others, museums around the world. Many storage rooms, depots, and warehouses are today equipped with Munters absorption dehumidifiers. When even at low temperatures it ensures good and dry storage conditions for valuable items. Munters in addition supplies to among others the process industry where production environments are dependent on a constant and low humidity year around.

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ROLINA QUIZ!

1. How long has the GTS Sword Hygrometer been used in the paper industry?

   ❑ For over 10 years
   ❑ For over 20 years
   ❑ For over 30 years

2. Öresund bridge links which countries

   ❑ Denmark and Sweden
   ❑ Finland and Estonia

3. The Hygrolog internal memory stores how many data points?

   ❑ 100 measurements
   ❑ 1.000 measurements
   ❑ 10.000 measurements

4. The world watch in Copenhagen has

   ❑ 7 mechanisms and 11.348 parts
   ❑ 12 mechanisms and 15.448 parts
   ❑ 24 mechanisms and 18.939 parts

Yes, I want to win!

Name: _____

Company: _____

Address: _____

_____

_____

Fax your answers to:

Fax: +41–1–837 00 73