

Introduction

Measurement of humidity and temperature is very important in many production, storage, transportation and test applications. Many processes can only be performed, or goods correctly stored, if humidity and temperature conditions are within a specific range. Materials and products may not behave correctly, or can even degrade, if climatic conditions are incorrect.

ROTRONIC handheld instruments are the perfect tool for spot checks, which must be the first step in defining ambient conditions and solving humidity or moisture related problems.

Our handheld instruments are highly accurate, and include many useful features, yet they are easy to use and maintain. Configuration and calibration is carried out in the factory, so they are ready for immediate use on delivery. Certain models offer the facility to change the instrument's configuration to suit specific application needs, either with user friendly software, or the integrated keypad. A range of interchangeable probes means application flexibility, simple maintenance and convenient calibration.

Key Features

- Accuracy and long term stability
- Interchangeable digital sensor modules
- Wide range of digital probes
- Ergonomic and modern instruments
- Large display with good contrast
- HOLD Function
- Battery powered

Your Benefits

- Reliable data and less frequent calibration
- Simple calibration and maintenance
- One instrument – many applications
- Comfortable to use and handle
- Clear observation of measured values
- To capture measured values
- Suitable for use anywhere

Section contents



HygroPalm Handheld Instruments for HygroClip probes

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- Interchangeable probes
- Large easy-to-read display
- Optional Docking Station
- Temperature adaptors for Pt100 probes
- RS232 Interface



HygroClip Probes for HygroPalm Handhelds

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- Wide range of options to suit any application
- 0...100 %rh, -50...200 °C
- 100 % interchangeable without adjustment



Instruments for the Paper Industry

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- Sword probe for paper stacks
- Sets in practical carry cases
- Plate probe



Accessories and Sets of HygroPalm Instruments

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- Complete equipment for measuring and calibration
- Handy cases
- Connecting cables

Handheld Applications



Building Management /HVAC

Accurate and reliable thermo-hygrometers are needed to verify correct system performance during commissioning. The ability of ROTRONIC handhelds to be calibrated on-site and their high accuracy predestine ROTRONIC instruments for this kind of applications.



Climatic Test Cabinets

Many products are tested over a variety of climatic conditions. The exceptionally wide measuring range of the ROTRONIC handheld units means these test conditions can be easily checked.



Paper Industry

The first ROTRONIC products were developed for the paper industry, and today we have the largest world-wide sales of sword hygrometers for paper stack ERH measurement.



Health and Fitness Centres, Hospitals, Classrooms

In public areas it is especially important to maintain correct humidity values to minimise health risks.



Research

Many research tests must have the humidity conditions defined for the results to be accepted or considered to be reliable.



Museums, Libraries and Art Galleries

Conservation applications require dependable measurements and low cost of ownership. ROTRONIC handhelds have been a mainstay in this market for three decades.



Warehouses and Storage

Many products need to be stored in certain conditions to remain in good condition.



Industrial Process Monitoring

The maximum measurement temperature of 200 °C and the robust design of our probes means that even the most difficult process application can be checked with a ROTRONIC handheld.

HygroPalm Series

Humidity and Temperature Display Instrument for digital HygroClip®, Probes

HygroPalm represents a new generation of portable humidity/temperature instruments, utilising the very latest digital technology. The advantage of digital technology is clear; highest precision is assured as a result of digital signal processing and data transmission in a digital format, which means that signal loss over extended cable lengths and external interference cannot influence measured values. Calibration data is maintained within the probe itself, which means there is no need to calibrate the whole system when a probe change is required, and probes for different applications can be fitted in seconds.

The HygroPalm 0 is a value engineered instrument designed to be cost effective, yet still provide high measurement performance. By removing some of the more advanced HygroPalm features such as probe interchangeability and external interface connections, the HygroPalm 0 is the perfect entry level instrument, yet maintains the core ROTRONIC values of high precision and excellent long term stability. Essential functionality such as dew point/wet bulb computation, keypad calibration adjustment and battery recharging options are retained to make the HygroPalm 0 the ideal balance of performance and price. HygroPalm 1, 2 and 3 feature interchangeable probes. New probes for changing measurement tasks can be installed in seconds.



HygroPalm 0

Key features:

- Cost effective instrument
- 0...100 %rh, -10...60 °C
- Integrated probe
- Standard alkaline batteries or chargeable batteries used
- Display of dew point or wet bulb temperature
- One-point calibration with keypad
- Optional docking station for battery recharging
- Large clear LC-display

Order Code:
HygroPalm 0



HygroPalm 1

The instrument has the same features as HygroPalm 0, but features interchangeable probes and additional functions:

Key features:

- Service interface for HygroFlex transmitters
- One-point adjustment with keypad
- Measurement range -50...200 °C (probe dependent)

Order Code:
HygroPalm 1 (probe must be ordered separately)



HygroPalm 2

Key features:

- All functions of HygroPalm 1
- Second probe input %rh and °C
- Multiple point probe adjustment
- RS232 PC interface
- Calculation of various psychrometric parameters
- Formula Editor for customer specific calculations

Order Code:
HygroPalm 2 (probe must be ordered separately)



HygroPalm 3

Key features:

- All functions of HygroPalm 2
- Universal input for pressure, air speed etc.
- Dynamic pressure compensation for calculations (requires pressure probe)
- Bi-directional interface for HygroFlex transmitters

Order Code:
HygroPalm 3 (probe must be ordered separately)

HygroPalm

HygroPalm Feature Overview



HygroClip Probes for HygroPalm

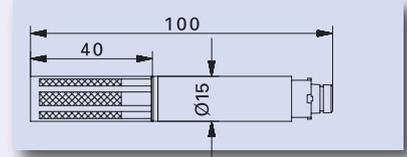
A range of probes for different applications are available for the HygroPalm instruments. All probes are based on digital HygroClip technology, and can be interchanged within seconds without the need for recalibration. With special adaptor cables, even probes designed for Industrial applications can be used (see pages 27 and 119).



HygroClip S/S1

Standard probe for humidity and temperature.
A wire mesh filter provides sensor protection against dust and high air velocity. Dimensions $\varnothing 15 \times 100$ mm.
IP rating: IP65
Measurement range: $-40 \dots 85$ °C, $0 \dots 100$ %rh
Accuracy: Standard: ± 1 %rh, ± 0.3 K (at 23 ± 5 °C)
S1: ± 0.6 %rh, ± 0.2 K (at 23 ± 5 °C)
Output: ROV analogue and DIO digital signal

Order Code:
HygroClip S Standard probe with factory adjustment certificate
HygroClip S1 High accuracy probe with SCS certificate

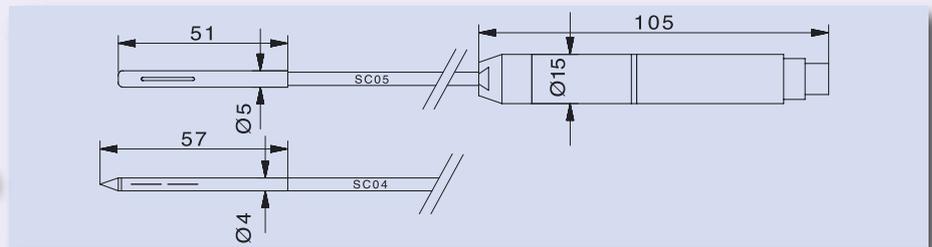


HygroClip SC04 / SC05

4 or 5 mm diameter cable mounted probes for humidity and temperature measurements in small spaces such as product and packaging testing, concrete, electronic test and climatic chambers. Cable length 2m

Measurement range: $-40 \dots 100$ °C, $0 \dots 100$ %rh
Accuracy: ± 1.5 %rh, ± 0.3 K (at 23 ± 5 °C)
Output: ROV analogue and DIO digital signal
Recommended application range: $-40 \dots 40$ °C: $0 \dots 99$ %rh / $40 \dots 100$ °C: $0 \dots 70$ %rh

Order Code:
HygroClip SC04 $\varnothing 4 \times 2000$ mm cable probe
HygroClip SC05 $\varnothing 5 \times 2000$ mm cable probe

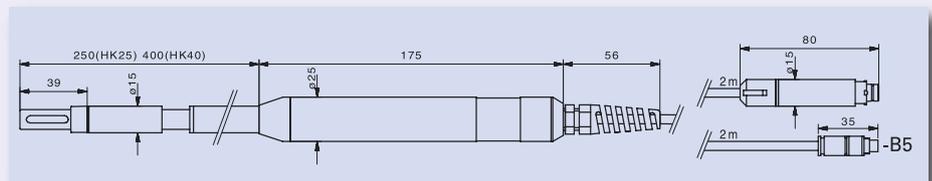


HygroClip HK 25 / HK40

High temperature probe for measurements in ducts, dryers, climatic chambers etc. Probe length 250 or 400 mm.

Measurement range: HK25: $-50 \dots 150$ °C, $0 \dots 100$ %rh
HK40: $-50 \dots 200$ °C, $0 \dots 100$ % rh
Accuracy: ± 1 %rh, ± 0.3 K (at 23 ± 5 °C)
Output: ROV analogue and DIO digital signal
Wire mesh filter: Included. Other filters must be ordered separately! See page 114.

Order Code:
HygroClip HK 25 (250 mm probe, max. 150 °C, standard)
HygroClip HK40 (400 mm probe, max. 200 °C, standard)
HygroClip HK 25-B5 With Binder 5-pin connector
HygroClip HK40-B5 With Binder 5-pin connector



HygroClip Probes for HygroPalm

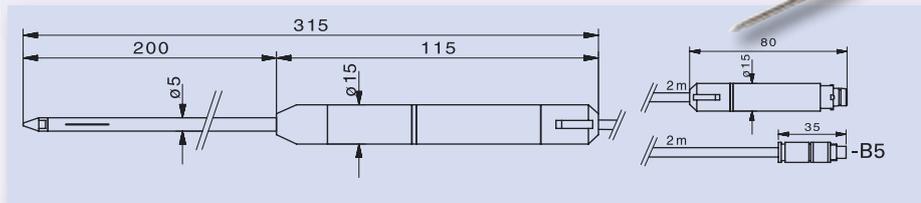
HygroClip SP05

Fast response 5 mm diameter insertion probe with laser cut air slots, suitable for use bulk goods such as corn, wheat and granules. Also suitable for measurements in concrete and brick. Not suitable for powders. Probe length 200 mm.

Measurement range: -40...85 °C, 0...100 %rh,
Accuracy: ±1 %rh, ±0.3 K (at 23 ±5 °C)
Output: ROV analogue and DIO digital signal

Order Code:

HygroClip SP05 Standard probe
HygroClip SP05-B5 with Binder 5-pin connector



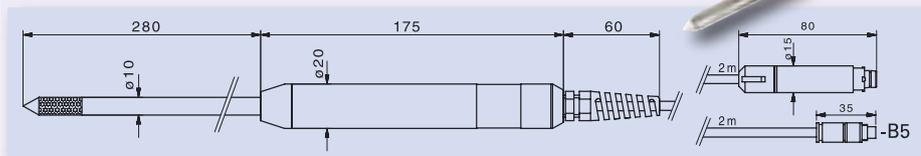
HygroClip HP28

Robust 10 mm diameter tubular probe for measurements in bulk products such as powders and granules. Probe length 280 mm, 2m cable, steel sinter filter.

Measurement range: -40...85 °C, 0...100 %rh
Accuracy: ±1 %rh, ±0.3 K (at 23 ±5 °C)
Output: ROV analogue and DIO digital signal

Order Code:

HygroClip HP28 Standard
HygroClip HP28-B5 with Binder 5-pin connector



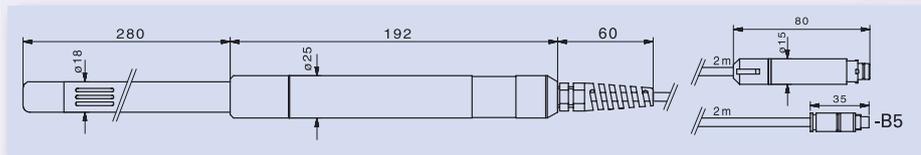
HygroClip HS28 Sword Probe

For measurements in paper stacks and rolls. Lightweight, yet robust aluminium blade for fast temperature and humidity equilibrium. Sword blade 280 x 18 x 4 mm,

Measuring range: -40...85 °C, 0... 100 %rh
Accuracy: ±1 %rh, ±0.3 K (at 23 ±5 °C)
Output: ROV analogue and DIO digital signal

Order Code:

HygroClip HS28 Standard
HygroClip HS28-B5 with Binder 5-pin connector



S1 for paper stack measurement

Another classic design which we retain thanks to continuing demand from our customers:

- Sword probe for equilibrium relative humidity and temperature
- Adjustable probe position
- Large, clear display
- Simple operation
- Hold function
- Auto power off
- Battery status indicator
- Battery or accumulator operation
- Temperature display in °C or °F

Order Code:

S1 Handheld instrument with integrated sword probe
AC1115 Carry case for the S1



Plate probe for on-line ERH measurement on paper webs

Complementary to the handheld instruments for the paper industry, ROTRONIC also manufacture a unique on-line ERH measurement probe, which can be used either with a handheld instrument or with a transmitter.



Key Features

- On-line measurement of equilibrium humidity
- Continuous operation
- Temperature compensated
- Combined %rh °C measurement
- Compatible software for data logging

Your Benefits

- Enables on-line control of production process
- Minimises further work for quality control
- Accurate measurement at temperature variations
- Both values available simultaneously
- Independent data for analysis and reporting

Detailed information for this probe may be found in the Transmitter section of this catalogue (see page 42)

Docking Station for HygroPalm instruments

PalmDock Docking Station

- Benchtop docking station designed for use with all HygroPalm models with RS232* PC interface and power connection (with external power adaptor).
- HygroPalm 1 does not feature an RS232 interface.

Order Code:

PD 1 PalmDock without lock
PD 2 PalmDock with lock
PalmDock-1 with HW3 Software* and data cable, without lock
PalmDock-2 with HW3 Software, data cable, and lock
AC1207 Power adaptor

* Further information in the chapter HW3 Software



Handheld Accessories and Sets

Measuring instruments often need to be transported to site, or from building to building. Handheld measurement sets package together the most commonly used standard equipment and accessories. Carry cases are also useful for storing instruments, and help to maintain long-term stability by protecting the units from mechanical damage or contamination when being transported or stored.



HygroPalm 1-Set:

- HygroPalm 1 handheld instrument
- HygroClip S probe
- Calibration device ER-15, suitable for HygroClip S
- Humidity standards EA50-SCS (5 ampoules 50 %rh with SCS certificate)
- Robust carrying case AC1116
- Suitable for facilities managers, HVAC technicians, surveyors.

Order Code:

HygroPalm 1-Set



HygroPalm 3-Set-PC:

- HygroPalm 3 handheld instrument
- HygroClip S probe
- Calibration device ER-15, fitting for HygroClip S
- Humidity standard EA50-SCS (5 ampoules 50 %rh with SCS certificate)
- Robust carrying case AC1116
- Software HW3
- Data cable AC1622
- Suitable for: Users who want to record measured values and calibrate their probes using a PC

Order Code:

HygroPalm 3-Set-PC



Temperature adaptors for Pt100 probes

Using these adaptors, the HygroPalm can accept Pt100 probes either in probe input 1 using the TH100-DAT05, or via probe input 2 (where fitted) using TH100-B5 (standard Binder connector) see page 93 for a range of compatible Pt100 probes.

Order Code:

HygroClip TH100-DAT05 for HygroPalm 1, 2 and 3, probe input 1
HygroClip TH100-B5 for HygroPalm 2 and 3, probe input 2



Air velocity probe Mini Air6

Mini Air 6 can be connected to the HygroPalm 3 as well as to compatible data loggers and industrial transmitters

Measuring range: 0.3 - 20 m/s
Temperature range: -10...+80 °C
Output signal: 0.03...2.0 V = 0...20 m/s
Head-Size: Ø 22 x 28 mm
Probe length 175 mm, cable length 5 m

Order code:

MiniAir6 Mini 20M-S

Other air velocity probes are available on request.



Technical Data Summary

Technical Data						
Features	HygroPalm 0 / 1	HygroPalm 2	HygroPalm 3	S1	GTS	
Humidity sensor Hygromer®	HygroClip S probes with Hygromer®, AC-1 Sensor (except HygroPalm 0: fixed probe, non-interchangeable)			Hygromer® AC-1		
Temperature sensor	Pt 100 1/3 DIN					
Probe connections (combined %rh/ °C)	1	2		Integrated probe		
Signal input	1 digital	2 digital	2 digital or 4 analogue ROV*	No third party probe input		
Input for 3rd party probe	No		0...2.5 V	No		
Supply for 3rd party probe				9V / 10 mA		
RS232 Interface	No	Yes		No		
Display	3-line alphanumeric LCD			%rh 3 digit LCD °C. 3 ½ digit LCD	3-digit LCD (%rh or °C)	
Display units	% rh, °C, °F, calculated parameters		Selectable	% rh, °C, °F	% rh, °C, °F	
Display in Aw	No		Yes	No		
Resolution	0.1 %rh / 0.1 °C, calculated parameters 0.01					
Probe adjustment						
1 point %rh, °C	By Keypad	By Keypad or HW3 software		By potentiometer		
4 point %rh, 2 point °C	No	By Keypad or HW3 software		No		
3-point %rh, T min/T max	N/A			35 / 80 / 10 %	N/A	
2-point %rh, T min /T max	N/A			N/A	35 / 80 %	
Calculation & unit display						
Dew point and wet bulb temperature	Yes			No		
Full psychrometric calculation	No	Yes		No		
Pressure compensation of calculated values	No	Manually with software/ constant	Dynamically with probe input and manual	No		
Formula Editor	No	Yes		No		
Remote Transmitter Interface						
Transmitter adjustment	No			Yes	No	
Adjustment against reference probe	No	Yes		No		
Transmitter measurement display	HygroPalm 1 only	Yes		No		
Transmitter status display	No	Yes		No		
Specifications						
Operating ranges (electronics)	0...100 %rh, non condensing / -10...+60 °C				0...100 %rh -10...50 °C	
Measuring ranges (probes)	Probe dependent 0...100 % rh / -50...200 °C			5...99.9 % rh -25...75 °C	5...99.9 %rh -10...50 °C	
Accuracy at 23 °C**	Accuracy of probe			±1.5 %rh / ±0.3 K(±2.5 <15 %>90 %)		
Reproducibility	< 0.5 %rh / <0.1K					
Long term Stability	< 1 % rh /Year					
Power Supply						
9 V PP3 alkaline battery	Yes					
9 V rechargeable battery	Yes			No	Yes	
External supply voltage 8...20 VDC	Yes. Charge via docking station			No	No	
Type of enclosure/ IP Rating	IP 50					
Housing material	ABS					
Dimensions in mm	195 x 70 x 35			190 x 63 x 26	420 x 70 x 40	
Weight (approx.)	300 g			350 g	400 g	
Dimensional Diagrams	HygroPalm 0	HygroPalm 1,2,3		S1	GTS	

* ROV = 0...1 V = 0...100 %rh /
-0.40 V...+0.85 V = -40...+85 °C
** HygroPalm 0:
= ±1 %rh / ±0.3 K (at 23 ±5 °C)