

# HYGROPALM



## HANDHELD INSTRUMENT FOR EVERY APPLICATION.

INTRODUCING AIRCHIP DIGITAL TECHNOLOGY.

### INNOVATION IN HUMIDITY AND TEMPERATURE MEASUREMENT

- Relative humidity and temperature measurement
- Dew Point and other psychrometric calculations
- Outstanding accuracy and repeatability
- Auto-diagnostics and automatic correction
- Highest-possible measuring accuracy



**rotronic**  
MEASUREMENT SOLUTIONS

## SPECIFY THE BEST: HYGROPALM ADVANTAGES AT A GLANCE.

The HygroPalm2-series is the latest development in handheld measuring instruments for relative humidity, temperature and dew point. Based on AirChip3000 technology, this indicator achieves a degree of accuracy not seen before.

In combination with advances in sensor technology and integration, the HygroPalm2-series provides superb precision and state-of-the-art functionality, taking humidity and temperature measurement to a whole new level of performance and reliability ( $< 0.8\% \text{rh} / 0.1 \text{K}$ ).

### Integral or interchangeable probe

- The HygroPalm21 has an integral probe and the HygroPalm22 is used with an interchangeable probe

### Easy to read display

- Clear, backlit graphic display for easy reading



TECHNOLOGY

### AirChip3000

- Compensates humidity and temperature over 30,000 reference points
- Dew/frost point calculation
- Sensor auto-diagnostics and automatic correction
- Active alarming and information
- ASIC (Application Specific Integrated Circuit), micro-controller and EEPROM on one chip

### Tried-and-tested housing

- Ergonomic and robust ABS housing with rubber grip for secure handling



## APPLICATIONS.

The HygroPalm2-series (with integrated or interchangeable probes) is ideal for all applications where exact measurement of humidity and temperature is of decisive importance, e.g. the food and pharmaceutical industries, printing and paper industries, many trades, the sciences, meteorology, agricultural sector, climatology, etc. There is hardly a field today in which these parameters may be ignored. It is ultimately the measuring task at hand that defines the HygroPalm instrument that best meets your needs.



Museums,  
art galleries



Food industry



HVAC / Building  
management



Paper industry



Healthcare,  
the sciences

## PROBES FOR HYGROPALM22.

Whether you need a simple climate probe for measuring ambient conditions or a more sophisticated cable probe for high temperature and other special applications, we can provide you with the ideal HygroClip2 probe to suit your requirements. All HygroClip2 probes can be individually calibrated and adjusted to increase measurement precision where you need it the most. This capability is exactly what makes every probe in the product range a high-end solution for your application.

### Standard Climate Probes

Probes with maximum accuracy, for all climatic measurements, operating range -40...100 °C



### High Temperature Probes

Hand-held probes for applications to 200 °C  
Probe length 250 and 400 mm Ø15 mm



### Miniature Probes

4 and 5 mm probes for measurements in confined spaces such as packaging etc. and for building material tests



### Sword Probes

Sword probes for measurements in paper, cardboard and textile stacks



An up-to-date overview of our extensive range of accessories such as cables, filters, sets, software and calibration equipment as well as further information on the HygroPalm21/22 is available on our web site [www.rotronic.com](http://www.rotronic.com).

## TECHNICAL INFORMATION.

### Factory Adjustment.

Three different adjustment profiles are available from the factory for the HygroClip2; this means that measuring accuracy can be matched to the application need. The custom adjustment profile consists of 20 humidity values at 3 temperatures to ensure optimum performance over a required working range. The data is stored on the AirChip and can be retrieved later for audit purposes.

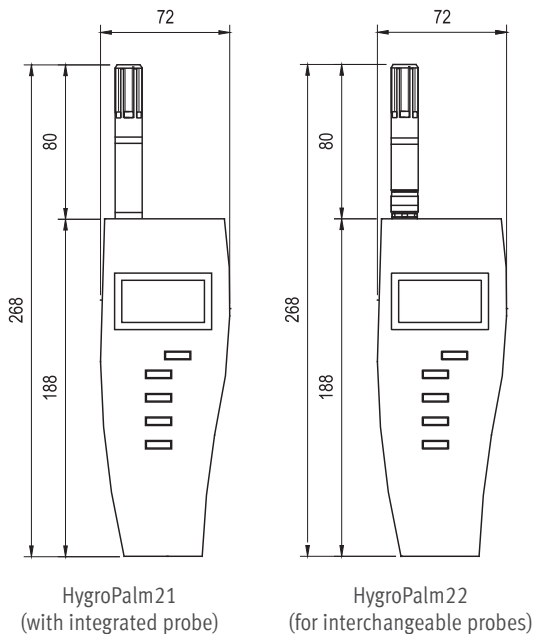
### Sensor Diagnostics.

The intelligence of AirChip3000 technology enables advanced sensor diagnostics. Should the sensors deviate from factory defined parameters, measurement values can be compensated automatically and a digital alarm triggered on the display.

### Data Logging and Alarm Generation.

Up to 2,000 measurement values can be stored in the HygroPalm21 or in the HygroClip2 probe used with the HygroPalm22 the user is able to configure the measurement interval, set alarm limits, scale the output signal and download data using optional ROTRONIC HW4 software.

	HP21	HP22
No. of probe inputs / Probe type	Integrated sensors	1/HygroClip2®
Humidity sensor	Hygromer® IN-1	Depends on probe
Temperature sensor	Pt100 1/3 Class B	Depends on probe
Probe cable extension	N/A	Passive: max. 5 m, active 100 m
Accuracy at 23±5 °C	± 1.0 %rh / ± 0.2 K	Depending on probe & adjustment profile
Resolution AirChip3000	< 0.02 %rh / 0.01 K	
Long-term stability humidity sensor	<1 %rh / year	
Response time τ63	<3 seconds	Depends on probe
Start-up time	Typically 3 seconds	
Measurement range	-10...60 °C / 0...100 %rh	-50...200 °C
Electronics operating range	-10...60 °C / 0...100 %rh	
Display type	Graphic display, backlit, Parameters configurable	
Trend indicator	Yes	
Power supply	9 V battery / mains adaptor	
Power consumption	Typically 4mA with backlight off	
Battery indicator	Low battery indicator	
Firmware update	Possible via HW4 software	
Sensor diagnostics (drift, state)	Programmable, default: off	
Sensor protection	Polyethylene filter	Depends on probe
Max. air velocity at probe	20 m/sec	Depends on probe
Probe adjustment from the keypad	1-point offset	Multipoint
Probe adjustment with HW4 software	Humidity: Multi point, Temperature 2 point	
Data logging 2000 data point memory	internal	in probe
Psychrometric calculations	Dew point	All available
PC interface	Via ROTRONIC Interface cable, HW4 compatible	
Dataprocessing with HW4	Graphs, statistics, analyses, qualification etc.	
Audit Trail & Electronic Records	FDA-CFR21 Part 11 / GAMP compliance	
Housing material / weight	ABS / approx. 210g	
Standards	CE-compliant, 2007/108/EG	
IP & fire protection rating	IP40 / complies with UL94-HB	



Interested in further information (special applications, order codes)?

A complete and up-to-date overview of the HygroPalm21/22 series is available on our web site [www.rotronic.com](http://www.rotronic.com).

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MEASUREMENT SOLUTIONS

ROTRONIC AG, Grindelstrasse 6, CH - 8303 Bassersdorf, Tel. +41 44 838 11 11, Fax +41 44 838 14 83, [www.rotronic.ch](http://www.rotronic.ch)  
 ROTRONIC Instruments (UK) Ltd, Crompton Fields, Crompton Way, Crawley, West Sussex, RH10 9EE, UK, Phone +44 (0)1293 571000, Fax +44 (0)1293 571008, [www.rotronic.co.uk](http://www.rotronic.co.uk)  
 ROTRONIC Instrument Corp, 135 Engineers Road, Hauppauge, NY 11788, USA, Phone, +1 631 427-3898, Fax, +1 631 427-3902, [www.rotronic-usa.com](http://www.rotronic-usa.com)  
 ROTRONIC Instruments Pte. Ltd., 1003 Bukit Merah Central, #06-31 Inno Centre, Singapore 159836, Phone +65 6376 2107, Fax +65 6376 4439, [www.rotronic.sg](http://www.rotronic.sg)

HANDHELD FOR HUMIDITY AND TEMPERATURE

# HYGROPALM23



TECHNOLOGY

## THE PERFECT HANDHELD INSTRUMENT AND CALIBRATOR FOR CLIMATIC MEASUREMENTS.

INTRODUCING AIRCHIP DIGITAL TECHNOLOGY.

### INNOVATION IN HUMIDITY AND TEMPERATURE MEASUREMENT

- Highest-possible measuring accuracy
- Ensures measurement reproducibility
- Relative humidity and temperature measurement and calculated psychrometric values
- Two interchangeable probe inputs, digital or analog
- 20,000 data point memory with real-time clock
- Data capture of 250 data points each for up to 8 defined locations
- Probe adjustment with dew point reference
- Battery status indicator and recharging function



**rotronic**

LEADING IN HUMIDITY MEASUREMENT



# HYGROPALM23

## SPECIFY THE BEST: HYGROPALM ADVANTAGES AT A GLANCE.

The HygroPalm23-series is the latest development in handheld measuring instruments for relative humidity, temperature and dew point. Based on AirChip3000 technology, this indicator achieves a degree of accuracy not seen before.

In combination with advances in sensor technology and integration, the HygroPalm2-series provides superb precision and state-of-the-art functionality, taking humidity and temperature measurement to a whole new level of performance and reliability ( $\ll 0.8\% \text{rh} / 0.1 \text{ K}$ ).

### Flexible choice of probes

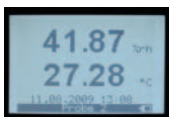
- The HygroPalm23 can be fitted with interchangeable probes
- Has 2 probe inputs
- Connection of HygroClip2 or analog probes possible
- No adjustment required for HygroClip2 probes

### Interface

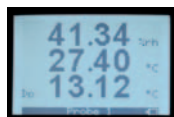
- Easy and quick access to service connector possible
- Mini USB interface available
- Offers extended calibration and calculation functions
- Remote connection to HygroClip2 transmitters

### Practical display

- The clear, backlit graphic display is easy to read and the simple menu navigation quickly provides fast access to all the information available
- Trend indication of values
- Saves measurements (capture logging) and allows display of all values
- Battery status indicator
- Display resolution to 3 decimal places
- Various display formats available



Standard



3-line



Large

### Tried-and-tested housing

- Ergonomic and robust ABS housing with rubber grip for secure handling
- IP 40 protection

### Battery/Rechargeable battery compartment

- Battery or rechargeable battery holder with lock
- The battery powers third party probe (max. 5 V)
- Includes recharging function



## APPLICATIONS.

The HygroPalm23 is ideal for all applications where precise measurement of humidity and temperature is required e.g. the food and pharmaceutical industries, printing and paper industries, the sciences, meteorology, agriculture, climatology and many more. There is hardly a field in which these parameters may be ignored. It is ultimately the measuring task at hand that defines the HygroPalm instrument and probe that best meets your needs.



Museums,  
art galleries



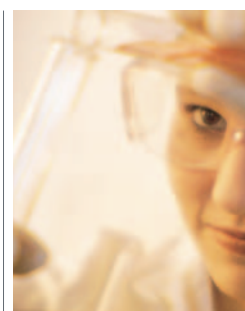
Food industry



HVAC / Building  
management



Paper industry



Healthcare,  
the sciences

## PROBES FOR HYGROPALM23.

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### Standard Climate Probes

Probes with maximum accuracy, for all climatic measurements, operating range -40...100 °C, 0...100 %rh



### High Temperature Probes

Hand-held probes for applications to 200 °C  
Probe length 250 and 400 mm Ø15 mm



### Miniature Probes

4 and 5 mm probes for measurements in confined spaces such as packaging etc. and for building material tests



### Analog Probes

Connect analog probes for the measurement of wind velocity, pressure etc.



An up-to-date overview of our extensive range of accessories such as cables, filters, sets, software and calibration equipment as well as further information on the HygroPalm23 is available on our web site [www.rotronic-humidity.com](http://www.rotronic-humidity.com).

## TECHNICAL INFORMATION.

### Data Logging.

View historical data. The values stored in the instrument can be displayed graphically with the optional software HW4. You can define the storage intervals, the alarm limits, the type of alarm generated (analog or digital probes), the scaling and much more. The HygroPalm23 can therefore be integrated in any application.

### Data Capture.

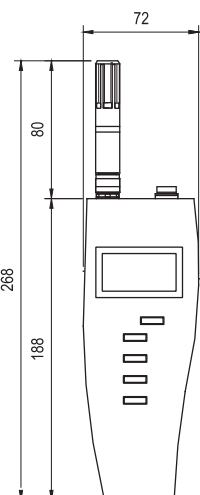
The handheld instrument HP23 offers you the possibility to record up to 8x250 data points. This data, including time stamp, can be called up individually, thereby providing perfect room surveillance. Thanks to this function, the handheld instrument is ideal for everyday use.

### Adjustment.

There are three different adjustment profiles for measurement accuracy available as options. With the top version the instrument is adjusted at 20 humidity values and three different temperatures. A further advantage of this version: the data are stored on the AirChip and can therefore be used for audits.

### Sensor Diagnostics.

The intelligence of AirChip3000 technology enables advanced sensor diagnostics. Should the sensors deviate from factory defined parameters, the measured values are compensated electronically. You can select whether the values are to be compensated and whether an alarm is to be given.



### Analog Probe Input

Socket (instrument):  
The numbers are given for illustration purposes only and are not marked on the socket.

- 1) RXD UART digital probe
- 2) GND (digital and power)
- 3) V+: digital probes: 3.3 VDC nominal, analog probes: max. 5.0 VDC, 10 mA
- 4) AGND (analog ground)
- 5) Not used
- 6) One-channel analog probe signal: +0.0 to 3.3 VDC
- 7) TXD UART digital probe

### Accessories

Order no.: A-02XX

Description: Cable adapter 2m, with open ends for analog probe connection

	HP23
No. of probe inputs	2 (HygroClip2 or analog)
Humidity sensor	Depends on probe
Temperature sensor	Depends on probe
Accuracy at 23 ±5 °C	Depends on probe used (±0.8 %rh / ±0.1 K)
Long-term stability humidity sensor	< 1 %rh / year
Response time τ63	Depends on probe
Start-up time	Typically < 3 s
Measurement range	Depends on probe
Electronics operating range	0...100 %rh / -10...60 °C
Display type	Graphic display, backlight, parameters configurable, 3 decimal places
Alarm indicator	Yes
Real-time clock	Yes, with backup battery
Trend indicator	Yes
Power supply	9 V block battery or rechargeable battery
Power consumption	Typically 10 mA with backlight off
Power for 3rd-party probes	Yes, battery voltage
Battery indicator	Yes, low status indicator
Firmware upgrade	Yes, via HW4 software
Sensor diagnostics (drift, state)	Programmable, default: off
Filter	Depends on probe
Max. air velocity at sensor	Depends on probe
Humidity / Temperature adjustment from keyboard	Yes, 1-point or multipoint temperature and humidity adjustment
Humidity / Temperature adjustment via dew point reference	Yes, temperature 2-point / humidity max. 100 points
Adjustment with software	1-point & multipoint (%rh / °C), with service cable
Data logging memory function	20,000 data points (2 x 10,000 data point pairs)
Psychrometric calculations	Dew point, wet-bulb temperature, mixing ratio, enthalpy, water vapor content, water vapor density
Event logging	Yes
Interface	Mini USB
Device lock	Via service cable & HW4 software
Data processing with HW4	Graphs, statistics, analyses, qualification, etc.
Max. length service cable	5 m
Housing material / weight	ABS / approx. 300 g
Dimensions	196 x 72 x 35 mm
Standards	CE-compliant 2007 / 108 / EC
Audit trail & electronic records	FDA-CFR21 Part 11 / GAMP compliance
IP & fire protection rating	IP 40 / Complies with UL94-HB

Change over now to the HygroClip2 probes with integrated AirChip3000 technology for your temperature and humidity measurements. You can find detailed information about our probes at [www.rotronic-humidity.com](http://www.rotronic-humidity.com). We would also be happy to advise you in person or on the phone.

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LEADING IN HUMIDITY MEASUREMENT

ROTRONIC AG, Grindelstrasse 6, CH - 8303 Bassersdorf, Tel. +41 44 838 11 11, Fax +41 44 836 44 24, [www.rotronic.ch](http://www.rotronic.ch)  
ROTRONIC Instruments (UK) Ltd, Crompton Fields, Crompton Way, Crawley, West Sussex, RH10 9EE, UK, Phone +44 (0)1293 571000, Fax +44 (0)1293 571008, [www.rotronic.co.uk](http://www.rotronic.co.uk)  
ROTRONIC Instrument Corp, 135 Engineers Road, Hauppauge, NY 11788, USA, Phone, +1 631 427-3898, Fax, +1 631 427-3902, [www.rotronic-usa.com](http://www.rotronic-usa.com)