

# HANDHELD DEVICES

## HYGROPALM SERIES

The ROTRONIC HygroPalm handheld instrument of the AirChip3000 generation are the perfect instruments for climatic measurements. They are extremely precise and feature many practical functions, but are easy to use.

HygroPalms are adjusted and configured during production and are therefore ready for immediate use. They can be configured for specific applications with user-friendly HW4 software or directly on the keypad. A large range of interchangeable probes enables easy and flexible use, straightforward maintenance and simple calibration.

The HP23 version can be used for the in-situ adjustment of transmitters and for system validation.

See the chapter on HygroClip2 probes on pages 6 - 12 for suitable probes.

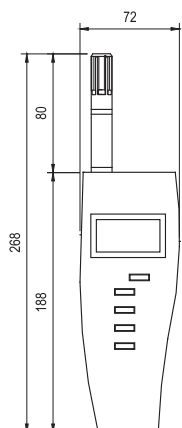
### Applications

For HVAC technicians and inspectors, the pharmaceutical industry, building management systems, the paper industry, research and many others.

### Highlights

- Measures humidity, temperature and dew/frost point
- Calculates absolute humidity
- Range of use 0...100 %rh / -10...60 °C
- UART interface
- Battery charge monitor
- Trend indicator

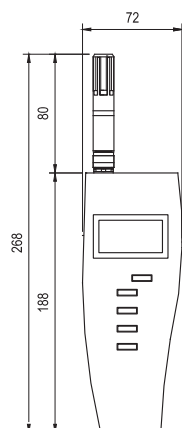




## HYGROPALM21

Order code HP21

- Fixed probe
- Application range: 0...100 %rh / -10...60 °C
- Saves up to 2,000 measurement pairs
- Measures humidity, temperature and calculates dew/frost point
- Polyethylene filter (other filters see page 99)
- Adjustment profile «Standard», factory certificate
- Adjusted at 23 °C and 10, 35, 80 %rh
- Accuracy:  $\pm 1$  %rh /  $\pm 0.2$  K
- Very fast response time thanks to new HygroMer M1R sensor  $\tau_{63} < 3$  s

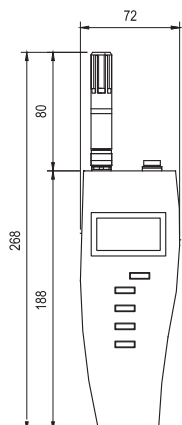


## HYGROPALM22

Order code HP22

Specifications as HP21 plus:

- Interchangeable probes
- Instrument operating range 0...100 %rh / -10...60 °C
- Saves up to 2,000 measurement pairs
- Measurement range 0...100%rh, -100...200 °C (probe-dependent)
- All psychrometric calculations available
- Adapter for Pt100 temperature probes (see page 75)



## HYGROPALM23

Order code HP23

- 2 interchangeable probe inputs
- 2 analogue inputs for 0...1 VDC or 0(4)...20 mA
- 9 V battery, rechargeable option
- All psychrometric calculations available
- Real-time clock with back-up battery
- Probe adjustment direct to dew point reference
- Instrument operating range 0...100 %rh / -10...60 °C
- Measurement range 0...100%rh, -100...200 °C (probe dependent)
- Saves up to 16,000 measurement pairs: every data record contains humidity, temperature, data, time, batch no. and user ID no.
- Remote control function for transmitters
- Mini USB interface for connection to PC

Available from spring 2009

## HANDHELD DEVICES

Specifications HygroPalm series				
Feature	HP21		HP22	HP23
Humidity / Temperature sensor	Hygromer® M3-R Pt100 1/3 DIN		Depending on probe	
Probe type	Integrated		HygroClip®2	HygroClip®2 or analogue
Number of probe inputs	N/A		1	2
Measurement range	0...100 %rh / -10...60 °C		Probe dependent	
Accuracy at 23 ± 5 °C	±1 %rh / ±0.2 K		Depending on probe used (0.8 %rh, 0.1K)	
Reproducibility	<0.02 %rh / 0.01 K			
Long term stability	Better than 1 %rh / year			
Response time humidity sensor t 63	<3 s		Depending on sensor used, <12...<3 s	
Initialization time	<2 s			
Electronics operating range	0...100 %rh / -10...60 °C			
Display resolution	3 decimals			
Display illumination	Yes			
Alarm indicators	Yes			
Battery charge indicator	«Low Battery» indicator			Battery status indicator
Real-time clock with back-up battery	No	No	Yes	
Functions				
Trend indicator	Yes			
Probe adjustment with software	1 point & multi-point %rh & °C, with service cable			
Probe adjustment with keys	1 point %rh & °C		1 point & multi-point %rh & °C	
Probe adjustment with dew point reference	No			Yes
Psychrometric calculations	Dew point		All psychrometric calculations available	
Data logging	2000 %rh/°C measurement pairs			16,000 data records in ASCII mode
Event logging	Yes			
User information	Via service cable & HW4 software			
Device lock (password-protected)	Via service cable & HW4 software			
Sensor diagnostics (drift, status)	Via service cable & HW4 software			
Service information	Scheduled calibration			
Audit trail/Electronic records	Conforms to FDA 21CFR Part 11 and GAMP			
Electrical specifications				
Power supply	9 V battery or rechargeable battery			
Rechargeable battery charge	No			Yes
Current consumption (without backlight)	~5 mA	~6 mA	~10 mA	
Supply for third-party probe	No	No	Yes, battery voltage	
Communication interfaces	Via service cable			Mini USB
Service interface	UART			
Maximum length service cable	5 m			
Mechanical specifications				
Housing material	ABS			
Sensor protection	Polyethylene filter		Depending on probe used	
Dimensions	274 x 72 x 35 mm		196 x 72 x 35 mm	
Weight	Approx. 300 g			
Standards	EN 61000-6-4 & EN 61000-6-2			
FDA / GAMP compatibility, audit trail	Conforms to FDA 21 CFR Part 11 and GAMP4			
IP protection	IP 40			