

# Dataloggers

Long term recording of humidity and temperature measurements is essential in many production, storage, transportation, display and test applications. They provide valuable information on the levels and variation of humidity and temperature which can have a significant impact on people, materials and objects.

The ROTRONIC range of data loggers and recorders are highly accurate and stable, but are easy to use and maintain. Configuration and programming can easily be performed by any operator, with user-friendly software or integrated keypads. Data can be presented in a graphical or statistical format. A wide range of interchangeable probes means simple maintenance and application flexibility.

### Key features

- Compact stand alone modules
- Measurement display
- Accuracy and Long Term Stability
- Interchangeable sensor module
- Wide range of probes
- Robust IP65 housing with shock protection
- Battery powered
- Custom mounting hardware
- Large memory
- User-friendly Software
- Validated software FDA CFR 21 part 11

### Your benefits

- Easy to install and flexible
- Easy observation of current values & alarms
- Reliable data and reduced maintenance
- Easy calibration & maintenance
- One logger – many applications
- Suitable for industrial use.
- No installation costs and can be easily relocated
- Professional installation
- Long term recording up to one year
- Easy to learn and use
- High quality assurance



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# Datalogger Applications



Store rooms and warehouses



Museums, libraries & art galleries



Clean rooms



Controlled environments & cabinets



Production areas



Transportation

# HygroLog and HygroLog D

## Humidity and Temperature logger for digital HygroClip® probes.

The HygroLog data logger uses the HygroClip range of digital probes for long term recording of humidity and temperature conditions. By using the digital signal output from the HygroClip probes, measurement precision is optimised with no signal loss over extended cable lengths and no external interference can influence measured values. Calibration data is maintained within the probe, which means there is no need to calibrate the whole system, and probes can be interchanged in seconds. In conjunction with the HW3 software, the HygroLog can be supplied with full validation documentation.



### HygroLog

Self contained data logger for HygroClip® digital probes

**Key features:**

- Stores up to 2 x 5000 values for humidity and temperature
- Digital signal processing for maximum accuracy
- Logging interval from 15 seconds to 2 hours
- Standard alkaline batteries used
- Operating modes selectable: Start/stop or loop mode
- Operating range Logger: 0...100 %rh; -30 ...70°C (Battery-dependent; with alkaline batteries -10...50°C)
- Measuring range Probes: -50...200°C, probe dependent

Order code:  
**HygroLog** (probe must be ordered separately)



### HygroLog D

Humidity and Temperature data logger with LCD display for HygroClip® digital probes

**Key features:**

- Stores up to 2 x 5000 values for humidity and temperature
- Digital signal processing for maximum accuracy
- Logging interval from 15 seconds to 2 hours
- Standard alkaline batteries used
- Operating modes selectable: Start/stop or loop mode
- Operating range Logger: 0...100 %rh; -10 ...50°C (Battery-dependent; with alkaline batteries -10...50°C)
- Operating range -50...200°C (probe dependent)
- Visual alarm indicators on LCD for temperature & humidity
- Battery status display
- Status display saving / busy

Order code:  
**HygroLog-D** (probe must be ordered separately)

### Software HW3 and Data Cable (FDA CFR 21 Part 11)

The validated multilingual software HW3 is used for programming the loggers as well as to retrieve data. Data may be displayed in a table or graph form. A language editor gives the user the possibility to translate the text into his own language. Psychrometric calculations such as dewpoint may also be performed within the software, and the option to show these values on the graphic is also included. Calculations may be executed by using a pressure constant or, depending on the instruments connected, dynamically with a pressure probe. As the software can also be used with the full ROTRONIC product range, it offers a variety of other features, such as sending e-mails in case of alarms, data archiving, etc. Of course, measurement data can also be exported to MS Office applications. For extended description see section HW3 software.

Order code:  
**HygroData HL**



## Feature Overview

Highly precise and stable humidity and temperature sensors

Robust IP65 enclosure

**Interchangeable probes**  
Calibration can be updated, or the range of application changed by the simple connection of a different probe. See next page for available options.

Integrated LC display  
Includes battery status and alarm indicators

10000 point integrated memory

Connection socket for probe or PC interface cable

Programmable measurement interval  
15 seconds to 2 hours

Wall mounting bracket with option to connect mains power adapter

User replaceable batteries



# HygroClip probes for HygroLog Datalogger

A range of probes for different applications are available for the HygroLog Dataloggers. All probes are based on the digital HygroClip technology, and can be interchanged within seconds without need for recalibration. With special adaptor cables, even probes designed for transmitters may be used.



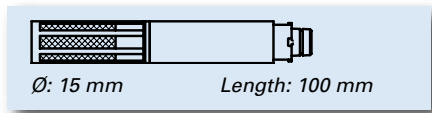
## HygroClip S/S1

Standard sensor module for humidity and temperature. A wire mesh filter provides sensor protection against dust and high air velocity. Dimensions Ø15 x 100 mm. IP rating: IP65

HygroClip S1 is a specially calibrated and certified to provide measurement accuracy of ±1 %rh.

Measurement range: -40...85 °C, 0...100% rh  
 Accuracy (S1): ±1.0 %rh, ±0.2 K (at 23 °C)  
 Accuracy: ±1.5 %rh, ±0.3 K (at 23 °C)

Order code:  
**HygroClip S1**  
**HygroClip S**

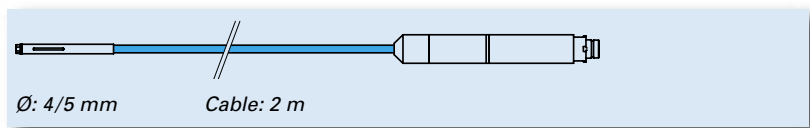


## HygroClip SC04 / SC05

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

Measurement range: -40...100 °C, 0...100% rh  
 Accuracy: ±1.5 %rh, ±0.3 K (at 23 °C)

Order code:  
**HygroClip SC04**      4 mmØ probe  
**HygroClip SC05**      5 mmØ probe

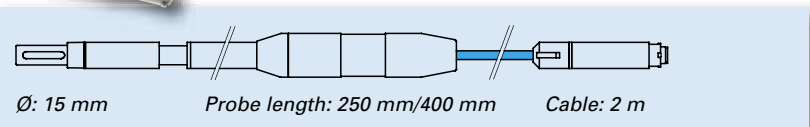


## HygroClip HK 25 /HK40

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

Measurement range: HK25: -50...150 °C, 0...100% rh  
 HK40: -50...200 °C, 0...100% rh  
 Accuracy: ±1.5 %rh, ±0.3 K (at 23 °C)

Order code:  
**HygroClip HK25**      (250 mm, max. 150 °C)  
**HygroClip HK40**      (400 mm, max. 200 °C)

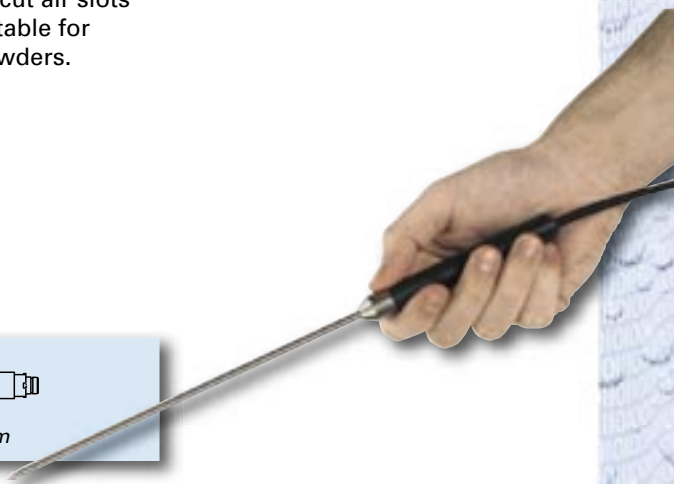
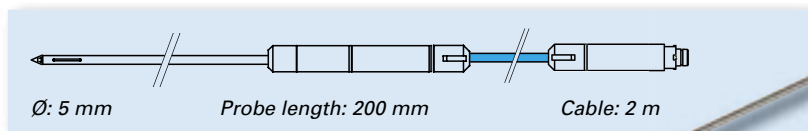


## HygroClip SP05

Fast response 5 mm diameter insertion probe with laser cut air slots for bulk goods such as corn, wheat, & 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: ±1.5 %rh, ±0.3 K (at 23 °C)

Order code:  
**HygroClip SP05**

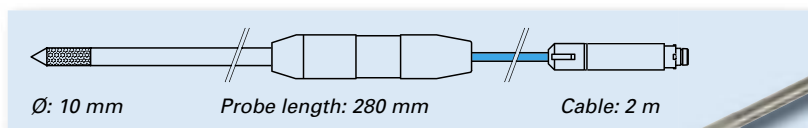


## HygroClip HP28

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

Measurement range: -40...85 °C, 0...100% rh  
Accuracy: ±1.5% rh, ±0.3 K (at 23 °C)

Order code:  
**HygroClip HP28**

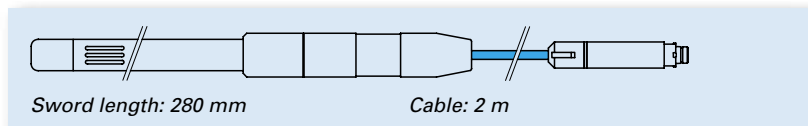


## HygroClip HS28 Sword Probe

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

Measuring range: -40...85 °C, 0... 100 %rh  
Accuracy: ±1.5 %rh, ±0.3 K (at 23 °C)

Order code:  
**HygroClip HS28**



# Agent-D Series

## Agent-D Series Humidity and temperature logger

The Agent-D series is a versatile family of data-loggers with integrated LC display for the measurement of humidity and temperature with both integrated and cable mounted sensors. Measurement ranges and logging interval can be configured with easy-to-use Windows software, or via the integrated keypad. A special version is available for hazardous areas (Zone 1). All versions feature a 64000 point memory, user replaceable batteries and the operating range of the logger is -35...55 °C / 0...100 %rh. Measurement range depends on the probe configuration. (see Probes for Agent-D-NT & PT Series)



### Agent-D-HT2

#### 2-channel humidity and temperature logger

- Integrated probe for temperature / humidity Agent-D-Clip-S
- Optional remote probe for humidity and temperature
- Measuring range with:
  - integrated probe: -35...55 °C / 0...100 %rh
  - remote probe: -35...70 °C / 0...100 %rh
  - high temp. remote probe: -35...110 °C / 0...100 %rh
- Single digital input for monitoring doors etc (switch status)

Order code:

- Agent-D-HT2** included probe Agent-D-Clip-S
- Agent-D-HT2-EX** (for EX-Zone 1) included probe Agent-D-Clip-S



### Agent-D-NT3

#### 3-channel temperature logger with NTC probes

- 1 integrated NTC temperature sensor
- 2 external NTC probes connected by D-sub-15 plug
- Measuring range: -50...140 °C

Order code:

- Agent-D-NT3**
- Agent-D-NT3-EX** (for EX-Zone 1)



### Agent-D-PT4

#### 4 channel temperature logger for Pt100 probes

- Integrated keypad
- Pt100 probe 4 wire connection, Lemo or D-sub connector
- Measuring range: -200...550 °C
- Single digital input for monitoring doors etc (switch status)

Order code:

- Agent-D-PT4**

**Probe must be ordered separately, see page 22.**

## Feature Overview



Digital display for measured value, date, time and alarm (displayable down to -20°C)

Display test

Alarm-reset, measuring values and alarm scroll via keypad

Memory for 64,000 measurement values

Results may be printed directly without a PC

**Choice of sensors:**  
Humidity/temperature combined  
or Temperature  
only see page 22 and 23

External start (devices without keypad only),

Replaceable, commercially available batteries



# Agent-D Probes



## Agent-D-HT2 Probes

**Combined standard probe for temperature & humidity**  
 Measuring range: -35...70°C / 0...100 %rh  
 High temperature probe: -35...110°C  
 Refurbished (standard) probe

Order code:  
**Agent-D-Clip S** Standard probe  
**Agent-D-Clip H** High temperature probe Agent-D-Clip H (with Agent-D-D12 only)  
**Agent-D-Clip R** Refurbished standard probe

## Probes for Agent-D-NT & PT Series

Temperature probe	Specification	Probe	Order code		
			1 probe Lemo Plug	1 probe D-sub Plug	2 probe D-sub Plug
<b>Universal probe</b> 	-50...140°C Cable length: 2 m T max. Cable: 140°C	NTC	<b>AC3010-NL</b>	<b>AC3010-ND1</b>	<b>AC3010-ND2</b>
	-80...260°C Cable length: 4 m T max. Cable: 140°C	Pt100	<b>AC3163-PL</b>		
<b>Miniature bead probe</b> 	-50...140°C Cable length: 2 m T max. Cable: 140°C	NTC	<b>AC3055-NL</b>	<b>AC3055-ND1</b>	<b>AC3055-ND2</b>
<b>Surface probe</b> 	-50...140°C Cable length: 2 m T max. Cable: 140°C	NTC	<b>AC3041-NL</b>	<b>AC3041-ND1</b>	
<b>Plug-in probe</b> 	-35...55°C	NTC Pt100	<b>AC3060-NL</b> <b>AC3160-PL</b>		
<b>Robust universal probe</b> 	-50...140°C Cable length: 10 m T max. Cable: 140°C	NTC	<b>AC3090-NL</b>		
<b>Flexible universal probe</b> 	-200...350°C Cable length: 5 m T max. Cable: 140°C	Pt100	<b>AC3165-PL</b>		
<b>High temperature probe</b> 	-80...500°C Cable length: 4 m T max. Cable: 250°C	Pt100	<b>AC3162 - PL</b>		

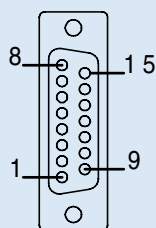
## Agent-D Series

### Electrical connections

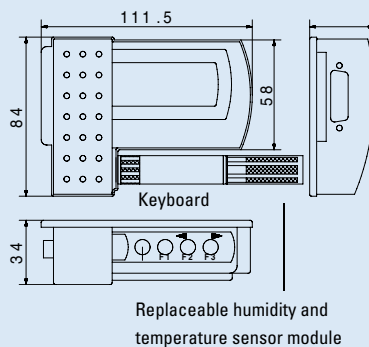
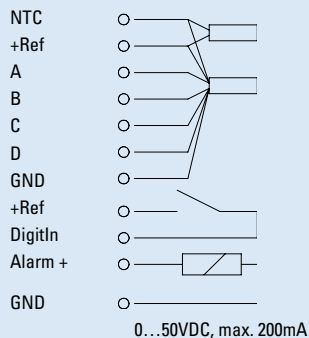
### Electrical diagrams

### Dimensional diagrams

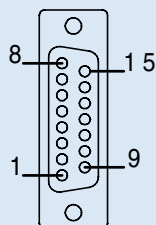
#### Agent-D-HT2



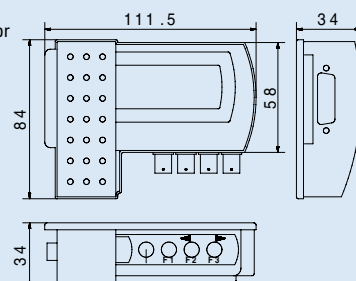
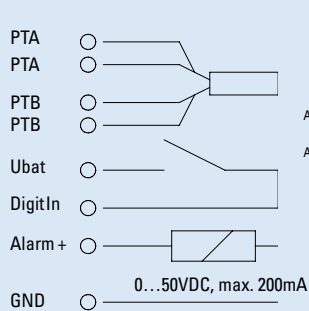
8	GND	15	RxD
7	TxD	14	Busy
6	+ Ref.	13	NTC1
5	A1	12	NTC2
4	A2	11	D1, 2
3	B1	10	DigitIn
2	B2	9	Alarm
1	C1, 2		



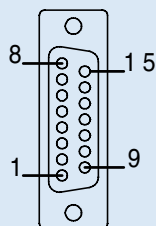
#### Agent-D-PT4



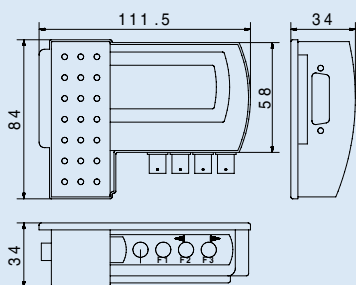
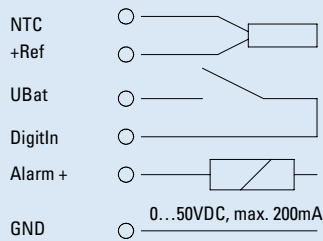
8	GND	15	RxD
7	TxD	14	Busy
6	Ubat	13	A2
5	A1	12	A2
4	A1	11	B 2
3	B1	10	DigitIn
2	B1	9	Alarm
1	B2		



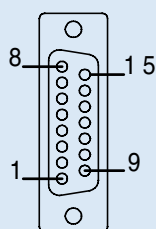
#### Agent-D-NT4



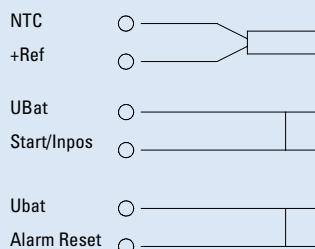
8	GND	15	RxD
7	TxD	14	Busy
6	NTC2	13	Res.
5	+Ref	12	DigitIn1
4	NTC4	11	Ubat
3	NTC3	10	DigitIn2
2	+Ref	9	Alarm
1	NTC1		



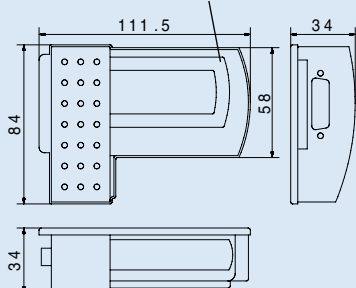
#### Agent-D-NT3



8	GND	15	RxD
7	TxD	14	Busy
6	NTC2	13	Res.
5	+Ref	12	Start/Inpos
4	Res	11	Ubat
3	NTC3	10	Alarm Reset
2	+Ref	9	Alarm
1	NTC1		



NTC sensor integrated in logger housing



# Accessories



## For HygroLog

### Wall Mounting Bracket and Anti Theft Device

Wall mounting bracket with integrated power supply connector, suitable for AC1207 adaptor. May be combined with Anti Theft Device AC1005.  
 The HygroLog-IPH is fixed on a flat surface together with the securing plate by two screws. A steel rod with a padlock secures the logger in place. (Delivered without padlock)

- Order code:  
**HygroLog-IPH** Wall mounting bracket  
**AC1207** AC Adaptor  
**AC1005** Anti Theft Device



### Extension Cables and Adaptors

For applications in high temperatures or in ducts, etc. where the logger housing may not be located in directly. Available in 2 lengths:

- Order code:  
**MOK-01-DAT05** 1m  
**MOK-02-DAT05** 2m  
**12.02.1086** USB Adapter  
**T7-03-DAT05** Adaptor for industrial probes



### Impact Protection HygroLog-SP

The impact protection HygroLog-SP may be a welcome accessory in cases where the logger is exposed to shocks, vibrations and harsh environmental conditions. It protects the logger, thus saving you money in the long run.

- Order code:  
**HygroLog-SP**

## For Agent-Series

### Protocol Printer

Thermo printer with serial interface for print-outs of the logged data



- Order Code:  
**Agent-D-Print** Printer  
**Agent-D-DataP** Data cable printer  
**Agent-D-Data** Data cable PC/Logger

### Probe Cables

Extension cable for 1 or 2 Agent-D-Clip probes Agent D-HT2, for D-Sub connector. Lengths: 2 and 5 m

- Order code:  
**Agent-D-D12** 2 m / 1 Probe  
**Agent-D-D22** 2 m / 2 Probes  
**Agent-D-D15** 5 m / 1 Probe  
**Agent-D-D25** 5 m / 2 Probes

### Various

- Order code:  
**Agent-D-SW** Application Software multilingual  
**Agent-D-SW-UP** Software Update  
**Agent-D-IPH** Mounting bracket  
**Agent-D-IPH-L** Mounting bracket lockable  
**Agent-D-AL** Connector plug with screw terminals  
**Agent-D-Bat** Lithium battery for Agent-D



# Technical Data

Series	HygroLog	HygroLog D	Agent-D-HT2	Agent-D-NT3	Agent-D-PT4
Humidity sensor	HygroClip-S probe with HYGROMER® AC-1		C 94	N/A	N/A
Temperature sensor	Pt100 1/3 DIN		NTC	NTC	Pt100

## Operating ranges

Humidity	0...100 %rh		0...100 %rh		
Temperature			-35...55 °C		
- with alkaline battery	-10...50 °C				
- with special batteries	-30...70 °C	-10...50 °C			

## Measuring ranges

Humidity	= Operating range of probe	0...100 %rh	N/A	
Temperature	= Operating range of probe	-50...140 °C	-200...550 °C	
Accuracy at 23°C	±1.5 %rh / ±0.3 K			
Output signal	RS232			
Reproducibility	< 0.5 %rh / <0.1 K			

## Power supply

Batteries	3 x 1.5 V AA -AM3-LR6		1 x Lithium 3.6 V	
External supply voltage	8...20 VDC (Optional)		None	
Battery life (interval dependent)	ca. 1 year	ca. 1/2 year	1.5...2 year (depending on interval)	
Sensor protection	Wire Mesh Filter		N/A	
Housing material	ABS			
IP-Protection rating	IP65		IP63	
Ex-Zone certified	no		optional, order code Agent-D----EX	
Memory	5 000 records or 10000 measurements		32 000 records or 64 000 measurements	
Memory interval	15 seconds up to 120 minutes		1 second up to 180 minutes	
Memory modes	loop or start/stop			
Alarm indicators	yes			
Dimensions	140 x 85 x 25 mm		110 x 85 x 35 mm	
Weight	ca. 200 g		ca. 160 g	

## PC system requirements

PC	Pentium 233 MHz, or better
Monitor	VGA
RAM	min. 64 MB
Operating system	Windows 95/98/2000/NT or better

## Dimensional Diagrams

### HygroLog D

### Agent D

