

HygroClip Introduction

What is the HygroClip?

The HygroClip® is a high quality probe for the measurement of humidity and temperature.

It is used in a wide range of applications including handheld instruments, data-loggers and transmitters. It provides digital and analogue output signals for both temperature and humidity. The humidity is measured in the range of 0...100% rh, corresponding to 0...1V; the temperature between either -40...85°C = -0.4...0.85 V, or -40...60°C = 0...1V. The two versions are distinguishable by different colours of the housing material. The digital one-wire data signal is ideally suited for OEM applications. The probes may be adjusted digitally by either software or handheld instruments. Calibration data is stored in an EE-Prom. Thus, the probes may be used in any ROTRONIC display instrument or transmitter and even in OEM instruments without the need for on-site adjustment. ROTRONIC offers an exchange service for the HygroClip probes. Every refurbished HygroClip comes with a new sensor, fully calibrated and with a factory certificate. Make use of the experience of ROTRONIC, and the revolutionary advantage of exchangeability. Being the first supplier in the world-wide market, we already satisfied the needs of thousands of customers. In continuous contact with our customers, we expand the advantages of the products to the benefit of our customers.

Key features

- Simple replacement within seconds
- No on-site adjustment necessary
- Global availability from stock
- Digital output signal
- Analogue interface
- Wide range of supply voltage

Your benefits

- Negligible down-time; reduction of servicing costs
- No specific knowledge required
- Available from your local dealer
- High accuracy and interchange ability
- Also suitable for analogue display instruments
- Suitable for almost every OEM instrument

OEM applications and advantages

The availability of digital and analogue output signals and the wide supply voltage range of 3.5 to 50 VDC makes the HygroClip suitable for a wide variety of applications. The application range of 0...100 %rh and -40 to 85°C is unique.

HygroClip S is the standard-type. However, ROTRONIC is capable of manufacturing customized types according to your requirements. The HygroClip is ideally suited as an integral part of complete humidity and temperature measurement systems, such as:

- Display devices
- Process control applications
- Multi channel data loggers
- Handheld instruments
- High precision climate control
- Electronic cabinets
- Incubators and environmental chambers
- Fermentation chambers
- EDP applications
- Gas detection systems & portable instrumentation
- Air-conditioned containers



Section contains

HygroClip Probe

- ✓ Standard HygroClip S
- ✓ HygroClip S3 for meteorological applications
- ✓ Accessories for HygroClip probes

HygroClip

Feature Overview

Universal probe for various applications

Replaceable sensor protection filter

Very small size-suitable for many application

Body filled with resin to avoid condensation

IP-65 protection

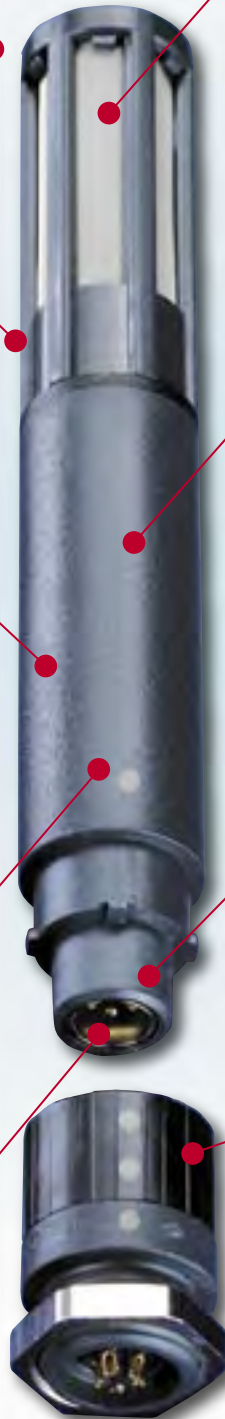
Analogue and digital interfaces

Available for standard and meteorological application

Sockets with locking

3.5...50 VDC Supply voltage

OEM-types available



HygroClip S and Accessories



HygroClip S, HygroClip S3

- 100% interchangeable
- 1 digital output and 2 analogue outputs
- ROTRONIC Hygromer humidity sensor 0...100 %rh
- Accuracy ± 1.5 %rh
- Long-term stability better than 1 %rh/year
- High precision Pt100 temperature sensor
- HygroClip S3 (white) temperature range of 0...1V for $-40...60$ °C

Order code:

HygroClip S	(anthracite) $-40...85$ °C = $-0.4...0.85$ V
HygroClip S3	(white) $-40...60$ °C = 0...1 V
HygroClip R	(standard, refurbished)
HygroClip R3	(white, refurbished)

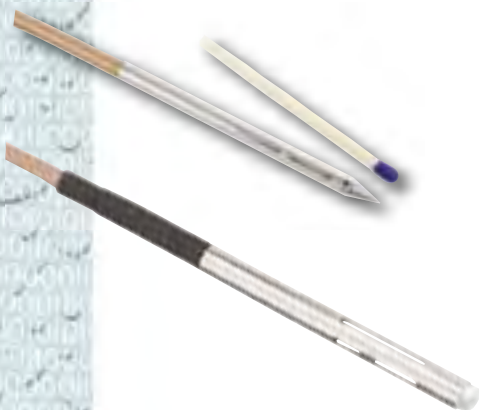


MOC, MOC3

- Mounting connector for HygroClip S
- 30 cm connecting wires
- Mounting hole 12.7 mm diameter or PG7 thread
- HygroClip connector with bayonet locking ring
- MOC3 in white for HygroClip S3

Order code:

MOC	(anthracite)
MOC3	(white)



HygroClip SC04 / SC05

- HygroClip S with miniature cable probe:
Length = 51 mm, diameter = 4/5 mm, length of probe cable = 2 m
- 100% interchangeable
- 1 digital and 2 analogue outputs
- ROTRONIC Hygromer humidity probe 0...100 %rh
- Accuracy ± 1.5 %rh / ± 0.3 K
- Long-term stability less than 1 %rh drift per year
- Temperature sensor Pt100 1/3 DIN
- Probe operating temperature -30 °C...100 °C

Order code:

HygroClip SC04	4 mm \varnothing probe
HygroClip SC05	5 mm \varnothing probe



MOK, MOK3

Passive extension cables for HygroClip S and S3 (no electronics)

- 1...5 m connection cable with stripped wires
- 5 pin connector or DAT05 connection to extend cable length

Active adapter: with integrated amplifier

- Ranges 0...1V, 0...2,5V, 0...5V, 0...10V at 0...100 %rh and, for example $-40...60$ °C
- Length of connection cable up to 20 m
- MOK3 in white for HygroClip S3

Order codes:

see next page

HygroClip S and Accessories

Order codes passive MOK adaptors

Order codes passive adaptors	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Standard type (anthracite)	M	O	K	-											
White housing				3-											
Cable length: 1 m					0	1									
2 m					0	2									
5 m					0	5									
Stripped wires								-	X	X					
Binder 5 pin connector									B	5					
DAT05 connector (HygroClip-plug)									D	A	T	0	5		

Order codes active adaptors	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Remarks
Anthracite housing (Standard type)	M	O	K	-												
White housing				3-												
Cable length: 1 m					0	1										
2 m					0	2										
5 m					0	5										
10 m					1	0										
20 m					2	0										
Stripped wires								X	X							
Output signal																Max. cable length:
0...1 V (min. supply 5.5 V)									-	0	0	1	V			2 m
0...2.5 V (min. supply 5.5 V)										0	2	5	V			5 m
0...5 V (min. supply 10 V)										0	0	5	V			10 m
0...10 V (min. supply 15 V)										0	1	0	V			20 m
Temperature range														-		
0...100°C (not possible for MOK3-XX)																1
-30...70°C (not possible for MOK3-XX)																2
-40...60°C																3
Load: 1 kΩ/V																

HygroWin

- Probe for direct connection to a PC
- Measuring range 0...100 %rh, -40...85°C
- Accuracy ±3 %rh, ±0.5 K
- Comprehensive software with data storage
- Low cost

Order code:

HygroWin

MOK-WIN

- Adapter cable for direct connection of HygroClip S to your PC
- Cable lengths: 1 m, 2 m, 5 m
- Comprehensive software with data storage

Order code:

MOK-01-WIN (with 1 m cable)

MOK-02-WIN (with 2 m cable)

MOK-05-WIN (with 5 m cable)

Note: HygroClip probe must be ordered separately

Reference HygroClips

Reference HygroClips generate a fixed value for temperature und humidity in digital format. As the accuracy of digital values is absolute, the user can calibrate the system with them.

Order code:

HygroClip-S-35RH/15C simulates 35% rh and 15°C (others on request)

HygroClip-S-65RH/25C simulates 65% rh and 25°C



HygroClip S and Accessories

HPH Signal Booster

- Allows cable lengths up to 99 m
- Cable length compensation, therefore no measuring errors when using long cables
- ROV interface (10 mV/%rh, 10 mV/°C, 0 %rh, 0°C = 0V)

Ordering information HPH

Order code	Description
HPH-CG05B5	Booster, 5 m connecting cable with Binder 5 pin connector
HPH-CG99B5	Booster, conn. cable up to 99m selectable, Binder 5 pin conn.
HPH-CG05XX	Booster, 5 m connecting cable, stripped wires
HPH-CG99XX	Booster, connecting cable up to 99m selectable, stripped wires

Technical data of the HPH signal booster

Outputs	Humidity	0...100 %rh = 0...1 V
	Temperature	-40...85°C = 0.4...0.85 V
Cable length		5...99 m
Cable compensation		Up to 99 m
Connecting cable		Open terminations or 5 pin connector

HygroClip Technical data, Order Information

Supply voltage	HygroClip	3.5...50 VDC
Current consumption	HygroClip	Ca. 4 mA
Operating range	Humidity /Temperature	0...100 %rh / -40...85°C
Accuracy at 23 °C	Humidity /Temperature	±1.5 %rh / ±0.3 K
Output signals	HygroClip S	Humidity /Temperature 0...100 %rh = 0...1V / -40...85°C = -0.4...0.85V
	HygroClip S3	Humidity /Temperature 0...100 %rh = 0...1V / -40...60°C = 0...1V
Digital output signal		One Wire DIO
Start up time		2.7 s first measurement; 0.7 s subsequent
Resolution:	Humidity	100 %rh / 12 bit analogue, 16 bit digital
	Temperature	250 °C/12 bit analogue, 16 bit digital
Adjustment		Via PC (EE-Prom) or compatible instrument
Sensors Humidity / Temperature		Hygromer AC-1 / Pt100 1/3 DIN
Output load		>10 kOhm
Cable length		max. 5 m
Sensor protection		Wire filter (max. 20 m/s)
Dimensions with MOC		100 x 15 mm
Type of enclosure		IP65
Colour	HygroClip S	Anthracite RAL 7016
	HygroClip S3	White

Pin and colour configuration MOC, MOK, MOK-WIN

MOC, stripped wires		MOK B5 Plug		HPH B5 Plug		MOK-WIN	
Term	Wire colour	Pin	Wire colour	Pin	Wire colour	Term	D-sub 25 plug
+VDC	Green	2	Green	2	Green	TXD	2
GND	Black	3	Grey and Blue	3	Grey	RXD	3
Shield (GND)	N/C	3	Shield		N/C	RTS	4
Temperature	Brown	1		1	Brown	SG	7
Humidity	White	5		5	White	DTR	20
DIO Signal	Red	4	Yellow				
Compensation	N/A	N/A	N/A	4	Yellow		

Dimensional Diagrams

HygroClip

Pin	Colour	Function
1	brown	Temperature
2	green	+VDC
3	black	GND
4	yellow	DIO
5	white	rel. humidity

HPH Signal Booster

Pin	Colour	Function
1	brown	Temperature
2	green	+VDC
3	grey	GND
4	yellow	Compensation
5	white	rel. humidity