HYGROCLIP







The HygroClip combines advanced microprocessor and ASIC technology with a robust plug-in design to offer oem customers these unique features:

- Easy integration into any system: digital input/output, two analog outputs, plus a large choice of connectors, extension cables, and signal adapters
- True 100% interchangeability reduces user maintenance costs and practically eliminates downtime
- Well proven, highest quality sensors: ROTRONIC HYGROMER capacitive humidity Sensor Pt100 1/3 DIN RTD temperature sensor
- Priced for the OEM market



Probes based on the HygroClip technology are 100% interchangeable and include two main subsystems:

The HygroClip Technology

ASIC (Application Specific Integrated Circuit): a custom

designed chip that measures both the capacitive humidity sensor and the Pt100 RTD and converts the measurements into digital counts. The ASIC includes two D/A converters to convert the data from the micro controller into analog output signals **Micro controller / EEPROM**: uses the digital counts generated by the ASIC to compute the value of humidity and temperature and returns the data to the ASIC (analog outputs). The micro controller also sends data to, or receives data from, the digital input / output (DIO). Calibration, linearization, temperature compensation and other sensor data are memorized in the EEPROM.

The HygroClip digital technology offers the following benefits:

Higher Accuracy:

- · Accurate linearization of the sensors over the entire range of measurement
- Multiple calibration points
- Temperature compensation of the humidity sensor over the full operating range

Digital Signal Processing:

- · Potentiometer-free calibration without opening the probe
- Direct use of the digital output results in reliable data transfer and eliminates intermediate analog circuits
- Digital signal has high resolution: up to 0.004%RH and 0.004°C
- Added flexibility for humidity computations such as dew point, networking, data recording, unit conversions, etc.

No Down Time:

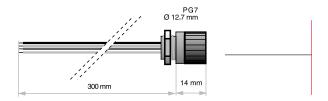
- Each HygroClip probe is 100% interchangeable because calibration and other data are stored in the non-volatile memory of the probe.
- HygroClip probes can be swapped in seconds without any loss of accuracy and without requiring any calibration.
- Products based on the HygroClip do not have to be returned to the factory for routine calibrations or for probe repairs.





Connectors and Signal Converters

ROTRONIC offers several connectors and signal converters which facilitate integration of the HygroClip into any system:



MOC Connector

The MOC is a small bulkhead connector with 30cm (11.8in) wires with tinned ends. The MOC is designed for installation on an enclosure or instrument housing and is available in black (MOC) or in white (MOC3)

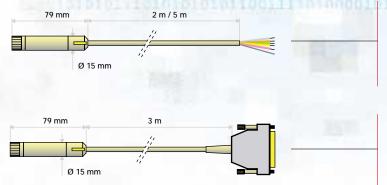
ORDERING DATA	DESCRIPTION
MOC	Bulkhead connector (black) for HygroClip S/30cm wires tinned ends
MOC 3	Bulkhead connector (white) for HygroClip S3/30cm wires tinned ends



MOK Connectors and Signal Converters

The MOK are a series of in-line connectors and signal converters that are supplied with various length of high

quality shielded cable (maximum length depends on model). On the basic models the open cable ends are tinned. The MOK can also be supplied with a variety of connectors. The MOK signal converters are similar to the MOK connector but incorporate a small circuit board. This circuit is used to modify the analog output signals of the HygroClip (refer to code table for standard values) or to convert the digital signal from the HygroClip into RS232 format.



MOK- -XX

In-line connector. Available with 2 or 5 m cable terminated with tinned ends.

MOK-__-XX-___V-_:

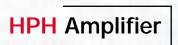
Analog signal converter. Available with 2 or 5 m cable lengths terminated with tinned ends.

MOK-03-WIN

RS232 converter with 3m cable, terminated with a 25-pin SUB D connector. Built-in conversion board for direct connection to a PC serial port. This converter is also used to calibrate the Hygroclip using the HW3 software.

MOK SIGNAL CONVERT	TER TEC	CHNICA	AL DATA												
Output signal	R	Require	d supply*	Maxi	mum c	able lenç	jth								
01 VDC		min. 5.5 VDC		2 m											
05 VDC		min. 10.0 VDC		10 m											
010 VDC		min.15.0 VDC		20 m											
Minimum load: 1 kOhm	/ Volt														
Accuracy: ±1.0%RH	±1.0°	С													
* The maximum supply ve	oltage is	26.5 Vo	olt!												
	Orde	Order codes for the MOK signal voltage converter													
Example	М	0	К -	0	2	-	Χ	Χ	-	0	0	1	V	-	1
Basic type	М	0	K												
Cable lengths			-												
2 m				0	2										
5 m				0	5										
Cable configuration						-									
- with tinned ends							Χ	Χ							
Output signal									-						
01 VDC										0	0	1	V		
05 VDC										0	0	5	V		
010 VDC										0	1	0	V		
Temperature range, °C														-	
0100															1
-30+70															2
-40+60															3





The HPH amplifier allows up to 100m (300ft) of cable between the HygroClip and the receiving device. The analog signals from the HygroClip are transmitted without loss of accuracy thanks to the built-in cable length compensation.

(only for HygroClip S)



HPH TECHNICAL DATA		
	HUMIDITY	TEMPERATURE
Operating limits	0100%	-20+85°C (-4+185°F)
Input signals (HygroClip S)	0100%RH = 01V	$-40+85^{\circ}C = -0.4+0.85V$
Outputs:	10mV/%RH	10mV/°C
	0100 %RH = 01 V	$-40+85^{\circ}C = -0.4+0.85V$
Supply voltage:	3.635VDC	
Dimensions:	180x15mm (7.1 x 0.6 in)	
Accuracy	±0.2%RH	±0.2°C
ORDERING DATA	DESCRIPTION	
HPH-CG02XX	Amplifier, 2 m cable with tinned ends	
HPH-CG05XX	Amplifier, 5 m cable with tinned ends	

Technical Data

		HYGROCLIP S (BLACK)	HYGROCLIP S3 (WHITE)					
Power Supply:		3.550VDC						
Current consumption		<4mA						
Measuring range:	Humidity	0100%RH						
	Temperature	-40+85°C	-40+85°C					
Operating range:		-40+85°C (-40+185°F)						
Accuracy at 23°C:	Humidity	±1.5%RH* (*special ca	alibration on request)					
	Temperature	0.2°C						
Output signal:								
Analog		0100%RH =01V						
		-40+85°C=-0.4+0.85V	-40+60°C=0+1V					
Digital (DIO)		One Wire						
Sampling time		< 0.7s (minimum excitation time 3s)						
Resolution:	Humidity	analog output 0.02% RH/ digital out	analog output 0.02% RH/ digital output 0.004% RH					
	Temperature	analog output 0.06°C/ digital output	analog output 0.06°C/ digital output 0.004° C					
Calibration:		via PC (data retained in EE-Prom)						
Sensor:	Humidity	HYGROMER®-C94						
	Temperature	Pt100 1/3 DIN	Pt100 1/3 DIN					
Analog output load:		>10kOhm						
Max. Cable length:		5 m (15 ft) / with amplifier up to 100	m (300 ft)					
Sensor protection:		Wire mesh filter	Wire mesh filter					
Dimensions:		Total length 100mm (3.94 in), D=15m	Total length 100mm (3.94 in), D=15mm (0.59 in)					
Connection type:		Bayonet cap on mounting connector	Bayonet cap on mounting connector (see accessories)					
Protection grade:		IP65 NEMA 4						
Material, Color:		Polycarbonate, black (Ral 7016)	white					
EMC compatibility (CE):		EN50081-2, EN50082-2						
ORDERING DATA		DESCRIPTION						
HygroClip S		Plug-in probe (black) without matchi	ng connector					
HygroClip S3		Plug-in probe (white) without matchi	Plug-in probe (white) without matching connector					