

# HYGROCLIP

# HYGROCLIP<sup>®</sup>

## Humidity goes Digital



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<sup>®</sup> capacitive humidity Sensor Pt100 1/3 DIN RTD temperature sensor
- Priced for the OEM market

# rotronic<sup>®</sup>

LEADING IN HUMIDITY MEASUREMENT

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

**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 Technology

### 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.

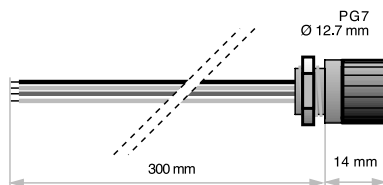
#### No Down Time:

- 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





## HPH Amplifier

(only for HygroClip S)

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.



HPH TECHNICAL DATA		
	HUMIDITY	TEMPERATURE
Operating limits	0...100%	-20...+85°C (-4...+185°F)
Input signals (HygroClip S)	0...100%RH = 0...1V	-40...+85°C = -0.4...+0.85V
Outputs:	10mV/%RH	10mV/°C
	0...100 %RH = 0...1 V	-40...+85°C = -0.4...+0.85V
Supply voltage:	3.6...35VDC	
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:		3.5...50VDC	
Current consumption		<4mA	
Measuring range:	Humidity	0...100%RH	
	Temperature	-40...+85°C	
Operating range:		-40...+85°C (-40...+185°F)	
Accuracy at 23°C:	Humidity	±1.5%RH*	(*special calibration on request)
	Temperature	0.2°C	
Output signal:			
Analog		0...100%RH = 0...1V -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 output 0.004% RH	
	Temperature	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	
Analog output load:		>10kOhm	
Max. Cable length:		5 m (15 ft) / with amplifier up to 100 m (300 ft)	
Sensor protection:		Wire mesh filter	
Dimensions:		Total length 100mm (3.94 in), D=15mm (0.59 in)	
Connection type:		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 matching connector	
HygroClip S3		Plug-in probe (white) without matching connector	