

# HygroDat 100-EC

The standard for precise humidity and temperature measurement in industrial processes



## General Information

Novasina is one of the leading companies for precise relative humidity and temperature measurement. Thanks to an intense and efficient research and development in air humidity and water activity measurement, Novasina's own built sensors offer an extraordinary values in accuracy, long term stability as well as robustness. Such measurement sensors are the heart of the measuring system that has been built especially for industrial application.

The versatile HygroDat 100-EC detects by a remote sensor the actual relative air humidity and temperature value and converts them into an analogue or digital signal. The very performing micro processor enables as well the calculation and output of other climate parameters such as dew point, enthalpy, mixing ration etc.. The whole system has been built with an open system architecture what makes it very flexible.

For the first time ever, the HygroDat 100-EC offers the possibility to measure the relative humidity using two

different measurement principles. For it, depending on the application, 5 different sensor types are available.

A clearly arranged 2 line LC-Display as well as an intuitive menu complete the system. The ergonomic design allows an employment even under difficult conditions.

### Fast, robust, accurate

Thanks to the continuous development of measurement sensors, Novasina is able to offer high precision measuring instruments with outstanding technical features at attractive price levels. The sensors can be installed up to 30m respectively 100m, depending on the version, from the transmitter. For testing and adjustment purposes, the well-proven Novasina SC humidity standards, based on saturated salt solutions can be used.

Various, easy to call functions support the service and mounting personnel during their work.

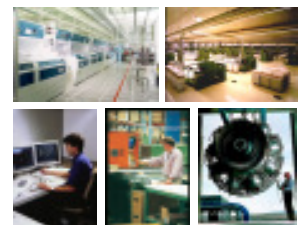
The complete system can be calibrated and adjusted on site up to 5 humidity points.

## Main Features

- Highest accuracy
- Highest repeatability
- Easy installation, starting up and service
- Menu driven service tools
- 5 different remote probes for various applications
- 2 configurable analogue output signals
- 2 line LC-Display  
SI units US / ISO
- Climate parameter calculation functions: dew point, enthalpy, mixing ratio
- 5 point humidity calibration
- Fieldbus CAN or RS-232 data interface
- Calibration alarm for quality insurance

## Applications

- Industrial HVAC plants
- Clean rooms, pharmaceutical-, chemical- and semicon industry
- Health care (hospitals)
- Paper- and textile industry
- Meteorological data acquisition
- Archives, museums, warehouses, cultural protection, agriculture
- Combustion-process control
- Drying processes



### Transmitter

- HygroDat 100/24V with polycarbonate housing
- HygroDat 100/230V with polycarbonate housing
- HygroDat 100/24V with aluminium housing
- HygroDat 100/230V with aluminium housing

### Article No.

- 111 6930**
- 111 6931**
- 111 6932**
- 111 6933**

### Sensor probe ( E = electrolytic )

- E-Sensor with **polycarbonate** shaft
- E-Sensor with **stainless steel** shaft
- Novasina humidity measuring cell (electrolytic)

### Type

- HIA-11.....13**
- HIS-11.....13**
- CC - 1**

### Sensor probe ( C = digital capacitive )

- C-Sensor with **polycarbonate** shaft
- C-Sensor with **stainless steel** shaft
- C-Sensor with **stainless steel** shaft (high temperature)
- Novasina humidity measuring cell (dig. capacitive)

### Type

- HIC-11.....13**
- HICS-11.....13**
- HICH-11.....13**
- DCC - 1**

# Specifications

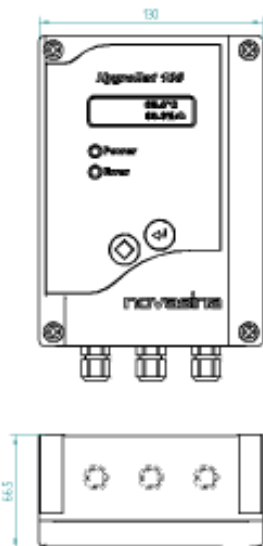
Type	HygroDat 100-EC	
Physical measurement principle	Electrolytical humidity measurement	Capacitive humidity measurement
Measurement range : humidity	6%...100% RH (w.saturation protect.)	0...100% RH
Measurement range : temperature	-20 ... +80°C / -4.....176°F	-40 ... +120°C / -40.....248 °F
Measurement range : dew point	-40 ... +60°C / -40.....140°F	-40 ... +60°C / -40.....140°F
Measurement range : spec. enthalpy	0.. 166KJ/kg / +8..... 79 btu/lb	0.. 166KJ/kg / +8..... 79 btu/lb
Measurement range : mixing ratio	0 ... 49 g/kg / 0.....343 grn/lb	0 ... 49 g/kg / 0.....343 grn/lb
Basic accuracy : temperature	+/- 0.2K ( 0.....50°C )	+/- 0.2K ( 0.....50°C )
Basic accuracy : humidity	+/- 0.5% RH (at 25°C & 5 p.cal.SAL-SC)	+/- 2% RH (at 25°C & 5 p.cal.SAL-SC)
Basis resolution : ( RH / T )	0.1% RH / 0.1K	0.1% RH / 0.1K
Typical repeatability : ( RH / T )	< 0.3% RH / <0.1K	< 1.0% RH / <0.1K
Operating temp. : Transmitter	-0 ... 50° C / 14 ....140°F	-0 ... 50° C / 14 ....140°F
Operating temp. : Sensor probe	-20 ... 80° C / -4 .... 176°F	-40 ... 120° C / -40 ... 248°F
Power supply	16 ... 30V AC / 15... 40V DC or	90 ... 260V AC ( 50/60Hz )
Power consumption	3.5 VA AC / 3.0 W DC or	3.5 VA AC
Electromagnetic compatibility	EN 50081-2 / EN61000-3-2/-3 / EN 50082-1/-2	
IP-protect. / shock / safety regul. / vibration	IP 65 / IEC 68-2-6 / IEC 61010-1 / IEC 68-2-6	
Analogue output signals (configurable & adjustable for PLC / DDC )	Voltage : 0 ... 10 VDC / 2 .... 10 VDC (at load >= 10k Ohm) Current : 0 ... 20 mA / 4 .... 20 mA (at load <= 500 Ohm)	
Digital interface	Fieldbus : CAN 20 k .... 500 kBaud / Protocol : based CANopen Serial : RS-232 ASCII Protocolstring (PC-Tool "Novalog 32")	
Storage temperature : Transmitter	-10 ... 60° C / 32 ....122°F ( not condensing )	
Storage temperature : Sensor probe	-10 ... 60° C / 32 ....122°F ( not condensing )	

## E - Accessories :

		Article-No.
E-sensor ( 1.5m cable )	HIA -11 L=100 mm	111 7245
E-sensor ( 10 m cable )	HIA -12 L=100 mm	111 7247
E-sensor ( 20 m cable )	HIA -13 L=100 mm	111 6934
Metal web filter with "Cellgard"	MF-1	111 1018
Sinter filter	SF-1	110 7330
Metal web filter w. acitve carbon AF-1		111 3675
Protection cap w. "Cellgard filter" CF-1		110 7355
Mounting flange for duct mounting		111 5343
Mounting flange for wall mounting		111 7360
E-sensor ( 1.5m cable )	HIS -11 L=160 mm	111 7532
E-sensor ( 10m cable )	HIS -12 L=160 mm	111 7533
E-Sensor ( 20m cable )	HIS -13 L=160 mm	111 7534
E-Sensor ( 20m cable )	HIS -23 L=310 mm	111 6652
Metal web filter with "Cellgard"	TS-1	111 7524
Sinter filter	SS-1	110 7183
Metal web filter w. active carbon AS-1		111 7525
Mounting flange for duct mounting		111 7538
Mounting flange for wall mounting		111 7588

## C - Accessories :

		Article-No.
C-sensor ( 1.5-30m cable )	HIC -1x L=100 mm	111 9578
Metal web filter with "Cellgard"	MF-1	111 1018
Sinter filter	SF-1	110 7330
Metal web filter with active carbon AF-1		111 3675
Protection cap with "Cellgard" filter CF-1		110 7355
Mounting flange for duct mounting		111 5343
Mounting flange for wall mounting		111 7360
C-sensor ( 1.5-30m cable )	HICS -1x L=160 mm	111 9575
C-sensor ( 1.5-30m cable )	HICS -2x L=310 mm	111 9558
C-sensor ( 1.5-30m cable )	HICH -1x L=160 mm	111 9580
Metal web filter with "Cellgard"	TS-1	111 7524
Sinter filter	SS-1	110 7183
Metal web filter with active carbon AS-1		111 7525
Electric-installation box for C-sensors (high temp.)		111 9586
Mounting flange for duct mounting		111 7538
Mounting flange for wall mounting		111 7588



Version : "PC"  
Polycarbonate housing



Version : "AL"  
Aluminium housing

