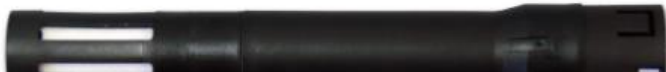# nSens…makes sense

Introduction to nSens sensors

nSens is the Novasina term for our **digital sensor**, containing a sensing element and calibration data in one unit to directly calculate the precise result of the measured value.
Output and interface is by "nBus", a Novasina designed digital communication.

nSens probes can be connected to any compatible device, after initial configuration, a later exchange is easily possible without reconfiguration or rewiring.

Sensing element	**Digital unit containing** Factory and user calibration Serial number & Identification Performs calculation

nSens interface
IP 67 connection for compatible transmitters, cables and loggers

nSens is designed for plug and play. In case of recalibration or exchange (e.g. failure, damage) just unplug sensor and plug-in a new sensor. No need to reconfigure or rewire the complete system.

Available nSens:

Humidity&Temp: Electrolytic	Humidity & Temp Electrolytic, heated	Humidity & Temperature Capacitive	Temperature measurement
nSens-HT-ENS	nSens-HT-ENH	nSens-HT-CSS	nSens-T-NBS
Range 0-100% **Highest accuracy 0.5%** Drift free measurement	Range 0-100% **Heated element**	Range 20-80% Accuracy 2%	Range -20 to +80°C Accuracy +/-0.1K
High end Sensor	for condensing application, outdoor …	Ideal for comfort climate, HVAC	Temperature only

Future development: nSens-CO2, nSens-dP… (2019)

Transmitter for control and monitoring systems:

These transmitters provide analogue signals such as mA or Volt output. Loop and range can be programmed freely at any time.

Intended for customers with existing control and monitoring systems (any brand or make) with analogue input modules.

All nSens can be connected to any of these transmitters. A change to another nSens probe is possible at any time !

nLink-AnalogEC	nLink-AnalogIP	Quantadat Quantadat RL (with Relays)
Input: 1 nSens Output: 2 Analogue Signals 0/4-20 mA or 0/2-10 V	Input: 1 nSens Output: 2 Analogue Signals 0/4-20 mA or 0/2-10 V	Input: 1-4 nSens Output: 4 Analogue Signals 0/4-20 mA or 0/2-10 V Relays optional
Installation in electrical cabinets on mounting rails. Programmable with USB or NFC App (Android) Requires nSens cables (available up to 100 Metres)	**IP67 protection**, Installation anywhere possible. Programmable with USB or NFC App (Android) nSens connected directly on the housing or with nSens cables (up to 100 Metres)	**Multisensor transmitter with LCD screen,** programming directly on transmitter. IP54 protection Requires nSens cables (available up to 100 Metres)

Installation and upgrade example 1:

nSens-HT-CSS with nLink AnalogEC and 10-meter sensor cable. Low cost solution for humidity and temperature.

If the customer requires, at a later time, higher accuracy he can replace nSens-HT-CSS against nSens-HT-ENS. No reprogramming required, cable and transmitter remains.

Installation and upgrade example 2:

nSens-HT-CSS with nLink AnalogIP and 10M sensor cable.

Customer requires on site display: Replace nLink AnalogIP against Quantadat. Cable and sensor remain in place.

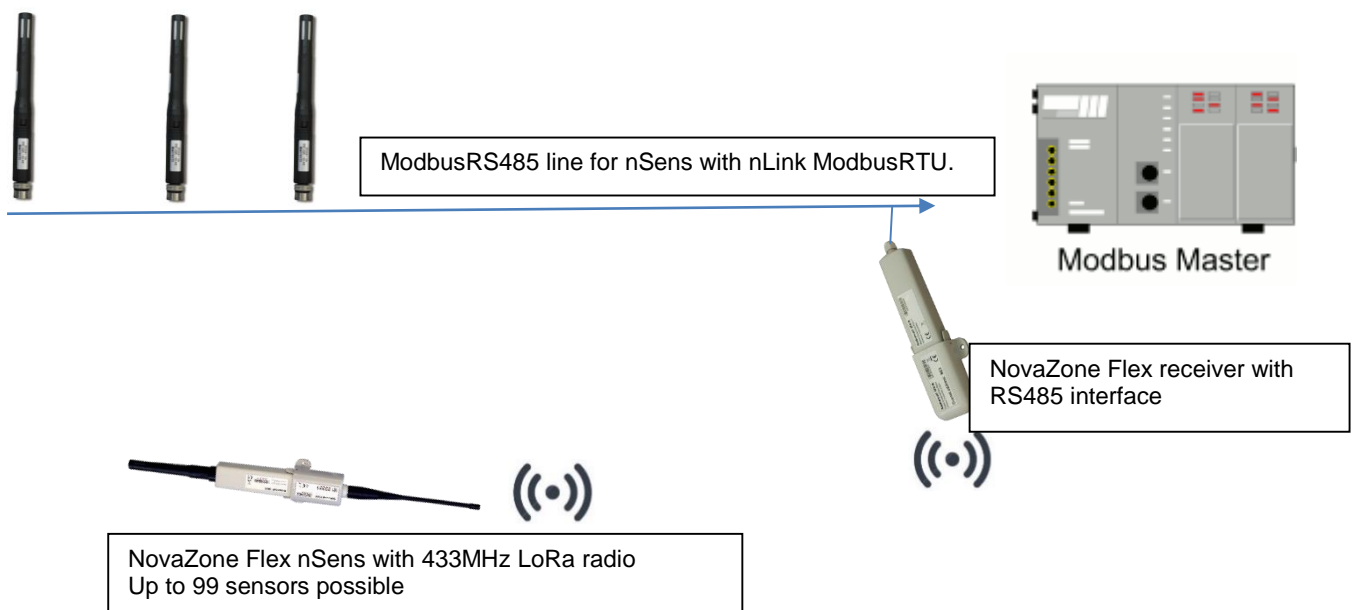# Modbus Transmitter for control and monitoring systems:

These adapters provide digital ModbusRTU communication. Baud rate and ID can be freely programmed.

Ideal for customers with existing control and monitoring systems (any brand or make) with ModbusRTU input modules.

nLink-Modbus	NovaZone Flex-nSens	nLink ModbusTCP (Q1/19)
Input: 1 nSens Output: 1 Modbus RTU (RS485)	Input: 1 nSens Output: LoRa 433MHz radio module (wireless)	Input: 1 nSens Output: 1 Modbus TCP
Adapter for Modbus RTU (RS485) Networks Each nSens requires 1 adapter	Requires NovaZone RS485 module for Modbus Integration.	PoE Configuration through Webinteraface, RJ45/TCP/IP

Installation example for Modbus:

Applicable for all nSens probes. Modbus wiring, length and number of devices depend on the local structure. Refer to Modbus.org and available guidelines.

ModbusRS485 line for nSens with nLink ModbusRTU.

Modbus Master

NovaZone Flex receiver with RS485 interface

NovaZone Flex nSens with 433MHz LoRa radio
Up to 99 sensors possible

Standalone Options / Windows PC

nLink-USB	nLink-UMB	UMB units:
Input: 1 nSens Output: USB connection with 2 meter cable for PC	Input: 1 nSens Output: 1 UMB Bus (for Datalog30 & ClimMate)	**ClimMate handheld** reference measurement **Datalog30:** Long term datalogger for up to 4 nSens
For calibration together with nSoft-Cal	Adapter required for ClimMate handheld and Datalog30 datalogger.	

nSens Cables
Required to connecting nSens probes to transmitters.

nSens cable with end sleeves	nSens cable **extensions**	Modbus cable
Connects nSens with analogue Transmitters Quantadat and nLink Analog.	Extension cable between any connector and nSens. Also compatible with NovaZone Flex, Modbus, UMB.	Only for nLink Modbus with M12 screwhead Connects nLink analog to Modbus main line.
260 1080 nSens-cable 5m **260 1079** nSens-cable 10m **260 1078** nSens-cable 30m **260 1225** nSens-cable 60m **260 1226** nSens-cable 100m	**260 1136** nSens Extension 5m **260 1201** nSens Extension 2m	**260 1135** Buskabel 2 Meter **260 1349** Buskabel 10 Meter

Other humidity & temperature products:

HygroMaxx S/R/M	**Remain available** Capacitive measurement with built in LCD screen Analogue signals (mA or V).	Ideal for comfort climate control. Configuration and calibration directly on transmitter.
StatMaxx S/R/M	**Remain available** Capacitive measurement with built in LCD screen. Relay Contacts UMB Bus	Ideal for comfort climate control. Configuration and calibration directly on transmitter.
HygroGuard30 **Climalog30** **Datalog30**	**Remain available** Capacitive measurement with built-in sensors and LCD screen.	Ideal for long term surveillance/data logging. Easy to use PC software

HygroDat100	Phased out: Sensors and filter cap remain available for exchange and repairs. .	
Older HygroDat Older Hygroguard HygroMate ms1	Phased out No spare parts available anymore, repair not possible	