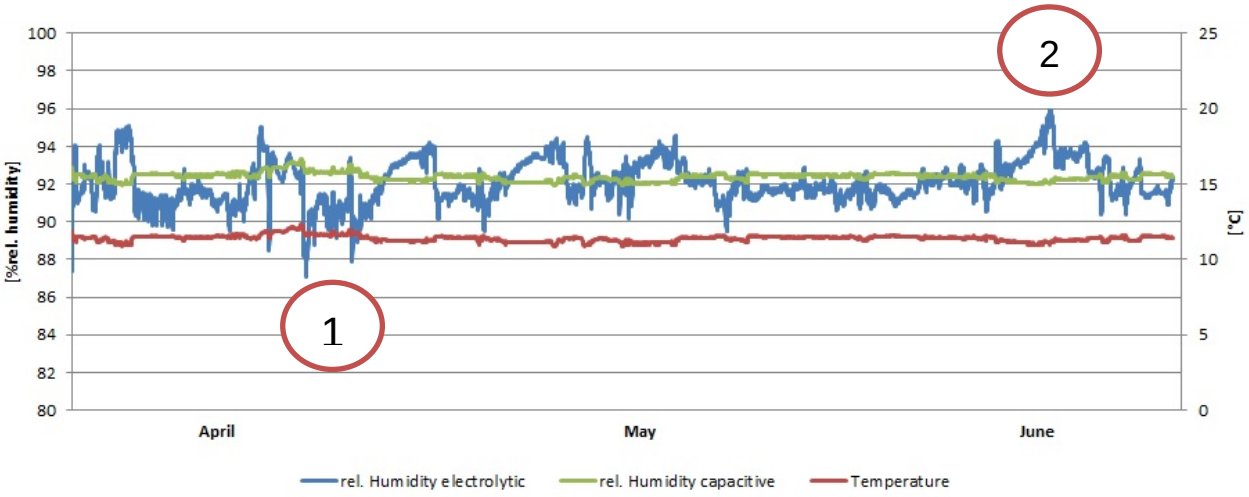
Humidity measurement in cheese ripening cellars (93%RH)

The challenge
The storage of the individual ripening process is a fundamental part of cheese production. Climatic conditions such as temperature and relative humidity are among the most important parameters, which are responsible for taste and appearance of the cheese wheels.

Depending on the cheese type, capacitive relative humidity sensors manifest large drift effects after a few days or weeks. Due to saturation influence caused by high air humidity, such sensor types are subject to slow reaction or no reaction at all and therefore they cannot be relied upon to detect the true values.
The air contamination by ammonia, for example, which is outgassing during the ripening process, can further influence the measuring element negatively.
Capacitive sensors of various manufacturers and design as well as polymer-thread sensors show the same behaviour.

Best alternative & solution
In the ripening cellar of a large Swiss cheese producer, Novasina probes type **nSens-HT** were installed for 3 months to monitor the climatic conditions. These are based on the resistive-electrolytic measurement principle, which, contrary to other measurement principles, is not subject to the saturation problem and allows fast and reliable response times.



Peaks (1) and (2) originated from problems with the humidification/dehumidification installation, which was not detected by the building technology.

There were no measurement deviations during the observation time with all 4 Novasina probes. All 4 probes show the same values. Reference measurements confirm the values. The installed standard probe (polymer thread) stayed stable at 95% RH, where neither temperature nor humidity oscillations were detected.

An accurate analysis of the Novasina sensors after the 3 months did not show any measurement deviations or traces of corrosion.

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The Art of Precision Measurement

Conclusion high humidity measurement

- Reliable measurement at >85%RH
- Climatic variations are detected correctly
- Sensor element remains robust and stable
- No negative influence by contaminants (ammonia or similar)

Installationsmöglichkeiten: Technische Daten

Humidity measurement nSens-HT-ENS

Measurement principle	Electrolytic-resistive, ideal for high humidity
Measurement range Humidity Temperature	0 to 100% RH -20 to +80°C
Measurement accuracy Humidity Temperature	**± 0.5% RH** **±0.1K**
Operating temperature	-20 to +80°C

Transmitter QuantaDat (for process measurement & control integration)

Article no.	260 1087 / 260 1161
Display	Graphic display with LED backlight
Dimensions	150*165*54mm, IP54
Power supply	24V +/- 15% AC or DC (galvanic isolated)
Operating temperature	0 to +50°C, 0 to 95%RH (non-condensing)
Interfaces	4 scalable analogue outputs, current 0/4..20mA or voltage 0/2..10V.
External probes connectivity	up to 4 nSens-HT or nSens-T with cable lengths up to 100m

Data logger system Datalog30 (for monitoring / data logging)

Article no.	260 0868
Display	3 line LCD with alarm status indication, date and time
Dimensions	166*78*32mm, 250g
Power supply	USB or 4xAA LR6 batteries
Operating temperature	-20 to +50°C, 0 to 95%RH (non-condensing)
Interfaces	USB, LAN (Ethernet TCP/IP, DHCP managed), UMB Bus
Data storage memory	3.2milion data points measurement- and storage interval are configurable
External probe connectivity	up to 4 nSens probes via UMB-Bus, 2 further probes via analogue interface

Further technical specifications can be found on the product specific data sheets.
Technical data are not binding and can change without prior notice.

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