



Example of products : Moisture analyzer of medical gases

Dear customers,

we have the pleasure to introduce to you products of the development and manufacturing Company SENSORIKA aimed at the field of humidity and temperature of gases and liquids measurement.

Sensors

Our products are based on quality capacitive polymer humidity sensors for relative humidity or oxide dielectric moisture sensors for dew/frost point and platinum temperature sensors .

This enables us to manufacture pick-ups and probes for measuring of basic hygrometric values and specialized instruments for absolute humidity interpretation so as dew/frost point for any application range.

Probes

For quality measurements there are sensors with a very short response of t_{90} grade used in the pick-ups and probes. That means about 2sec at oxide dew/frost point sensors and about 10sec at polymer relative humidity sensors and resistance temperature sensors. These responses are influenced also by temperature and humidity delayed action of the sensor cover and additionally by thermal conductivity of the probe body material. Sensor covers can be chosen alternatively in closed form made of pressed stainless steel or sintered bronze or of polyamide with low thermal delayed action. The base of the dew/frost point sensors is made of stainless steel 316.

Probe tubes are made of thermally stable polypropylene Ø20mm as a rule or of stainless steel Ø18mm on request.

Capacitance values of the humidity sensor and resistance values of the temperature sensor are transmitted inside of the probe by means of a hybride integrated circuit into periode changes of output probe sinals.

Transmitter electronic

Probe output signal is processed according to a programme by a microprocessor transmitter into outgoing data signals (RS 232C / RS 485) or contingent further into analogue signals (0 ... 5/10V or 0/4 ... 20mA) in forms corresponding the values measured. Other demanded hygrometric values (by sensors for RH) so as dew point temperature or mixing ratio and absolute humidity are calculated from the two basic measured values (RH & T).

The advantage of the microprocessor processing of the input information already in the first processing step is the possibility of conforming to the individual customer's demands by adapting the programme only.

The transmitters can be scaled by programme.

Galvanic separation of the outgoing signals from the outside supply voltage is a matter-of-course at the HUMISTAR™ sensor system. This eliminates problems with earth loops and industrial interference.

The transmitters generate active signals and will be connected by 4 or 6 wires (two wires for supply by 9 to 40V DC, one wire for signal ground (GND) and other wires according to the number of active output channels).

The electronics of the Transmitter family is mounted into a shock-proof ABS plastic box, housing IP 65.

Production and assembling

There is a thorough incoming goods check system of parts purchased from certified subcontractors preceding the HUMISTAR™ production. Transmitters and probes undergo another system of inter-operation checks on assembling. Completed instruments are finally inspected and tested in our calibration laboratory.

Any calibration starts with temperature.

Transmitters with their probes are adjusted for maximum deviation of $\pm 0.3^{\circ}\text{C}$ from the calibration standard for the 0°C and 100°C points.

Relative humidity calibration with aid of a humidity generator is made as a rule in 51 points of relative humidity (0 to 95%RH) with maximum deviation of $\pm 1\%\text{RH}$.

Sensors of the dew/frost point are calibrated as a rule in 51 points of moisture standard range from -80 to $+20^{\circ}\text{CDP}$ with maximum deviation of $\pm 2^{\circ}\text{C}$ of dewpoint.

The precision of transmitters calibration is guaranteed by our certified calibration equipment derived from the British (National Physical Laboratory, London) and American (National Institute for Standards & Technology, Washington, D.C.) national humidity standards and in addition by comparing the measuring humidity etalons between our own and the Czech Metrologic Institute laboratories.

Application possibilities of the HUMISTAR™ sensor systém

Application advantages of the sensors used in the HUMISTAR™ system are in their qualities:

- resistance against condensation
- long-termed time stability
- heat-humidity resistance
- accuracy
- robust design
- chemical resistance
- radiation resistance
- reliability in operation

The SENSORIKA Ltd. Co. is fully at your disposal for solving problems of humidity (moisture) and temperature measurement in your processes.

We wish you lot of benefit in using the HUMISTAR™ sensor system in operation.

E-mail : sensorika@volny.cz

CZ-147 00 Prague 4, V Zátíší 74/4, CZECHIA

<http://www.sensorika.cz>

Tel./fax : +420 241 727 122