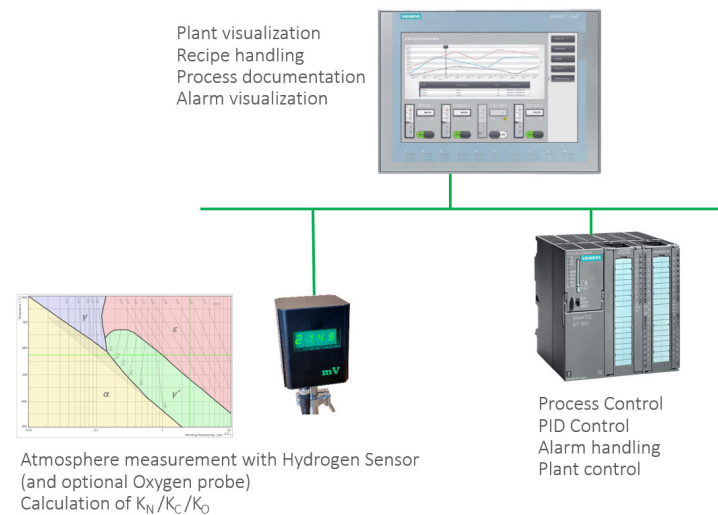# H2S *Hydrogen Sensor*

for Nitriding– and Nitrocarburizing processes

- Measurement principle: Thermal Conductivity

- Measurement block temperature: 100 °C
  to avoid Ammonium Carbonate Precipitation and
  Condensation

- Measurement range: 0 … 100 % H2:N2

- Accuracy: +/- 0.5 % of measurement
  +/- 0.25 % of end value
  independent of ambient temperature influence
  (heated measuring electronics)

- max. environment temperature : 75 °C

- Process connection: KF16

- Sample gas transport: based on local pressure
  differences

- vacuum-tight construction for pressures down to 10^{-5} mbar, suitable for systems that can be
  evacuated

- measuring pressure range 50 mbar - 10 bar absolute pressure

- Power supply: 24V DC, max. 2 A

- Analogue output: 0/4 … 20 mA

- Digital output: 24V; 0,25 A (Ready for operation or Error)

- Network connection with Modbus/TCP and MQTT protocol, Configuration via
  integrated Webserver

- Display: LED 4 digits

- Electrical connection : 1 x M12 (Supply, Analogue output, Digital output), RJ45 (Network)

- Optional Software Module for Calculation of Atmosphere Potentials K_N / K_C / K_O

Made
in
Germany

Example: Nitriding furnace with K_N / K_C / K_O Control

Plant visualization
Recipe handling
Process documentation
Alarm visualization

Process Control
PID Control
Alarm handling
Plant control

Atmosphere measurement with Hydrogen Sensor
(and optional Oxygen probe)
Calculation of K_N/K_C/K_O

The system visualization, editing of the recipes, the process documentation and the visualization of faults are made available on the control panel.

The process control, the PID control of temperatures, atmospheric values such as K_N, K_C and K_O etc., the fault processing as well as the complete system control is carried out on the system PLC.

The complete calculation of the furnace atmosphere and the atmosphere parameters K_N, K_C and K_O takes place in the sensor module. This also generates graphics of the Lehrer diagram and the Kunze diagram, which are made available via the integrated web server. These graphics can be transferred to the control panel without further programming.

Lehrer diagram in Nitriding

Kunze diagram in Nitrocarburizing