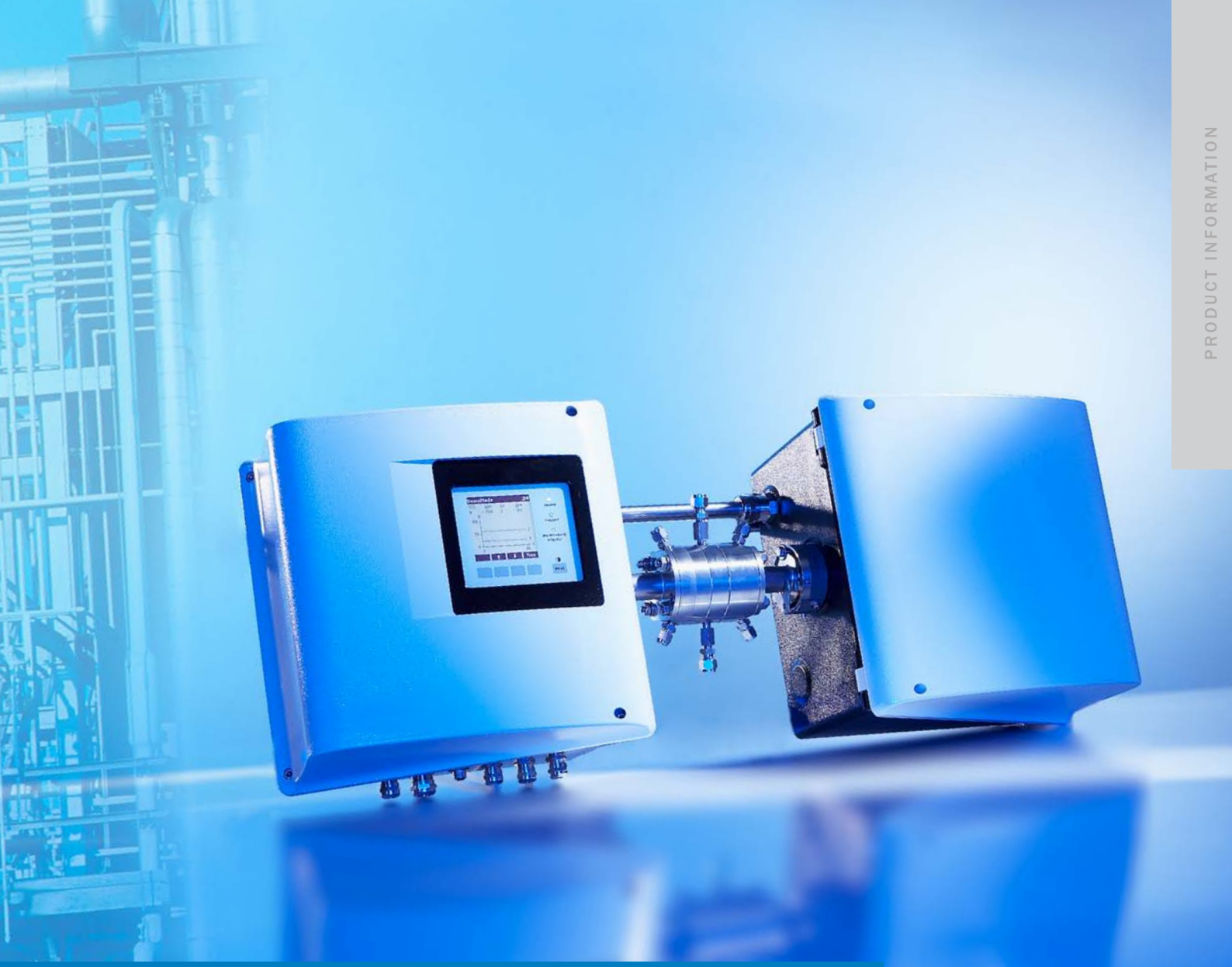
PRODUCT INFORMATION



MCS300P
Multicomponent Analysis System

Process monitoring in gases or liquids as well as raw gas monitoring in combustion plants

SICK
Sensor Intelligence.

MCS300P
Effective, photometric process monitoring
Simultaneous measurement for up to 6 components

AREAS OF APPLICATION

- In production plants in the chemical industry e. g.
  - Isocyanate, polycarbonate
  - Vinyl chloride (PVC)
  - Acrylic acid, adipic acid and hydrocyanic acid
- Raw gas measurement to control exhaust gas cleaning plants
  - Waste incineration plants
  - Multifuel furnace plants

PROCESS MONITORING

- Measurement in gaseous and liquid media
- Detection of all IR and VIS active components
- Process cuvettes with integrated protection devices, for example using purge gases, double seals for measuring areas with media contact, non-corroding materials, high pressure resistance, tightness check using helium leak test
- Variable measuring ranges from very low (ppm) to high (% by volume) concentrations
- Monitoring toxic and combustible mixtures
- Optimized correction for up to 6 cross-sensitivity variables

RAW GAS MONITORING

- Typical measuring components: HCl, SO_2, H_2O as well as O_2
- Other IR active measuring components, for example CO, NO, NO_2, NH_3
- Proven sample cuvettes to monitor corrosive, aggressive flue gases
- Robust system with hot measurement technique for trouble-free detection of very high raw gas concentrations
- Very reliable in use - even for high acid dew points
- Short reaction times (≤ 1 min.)

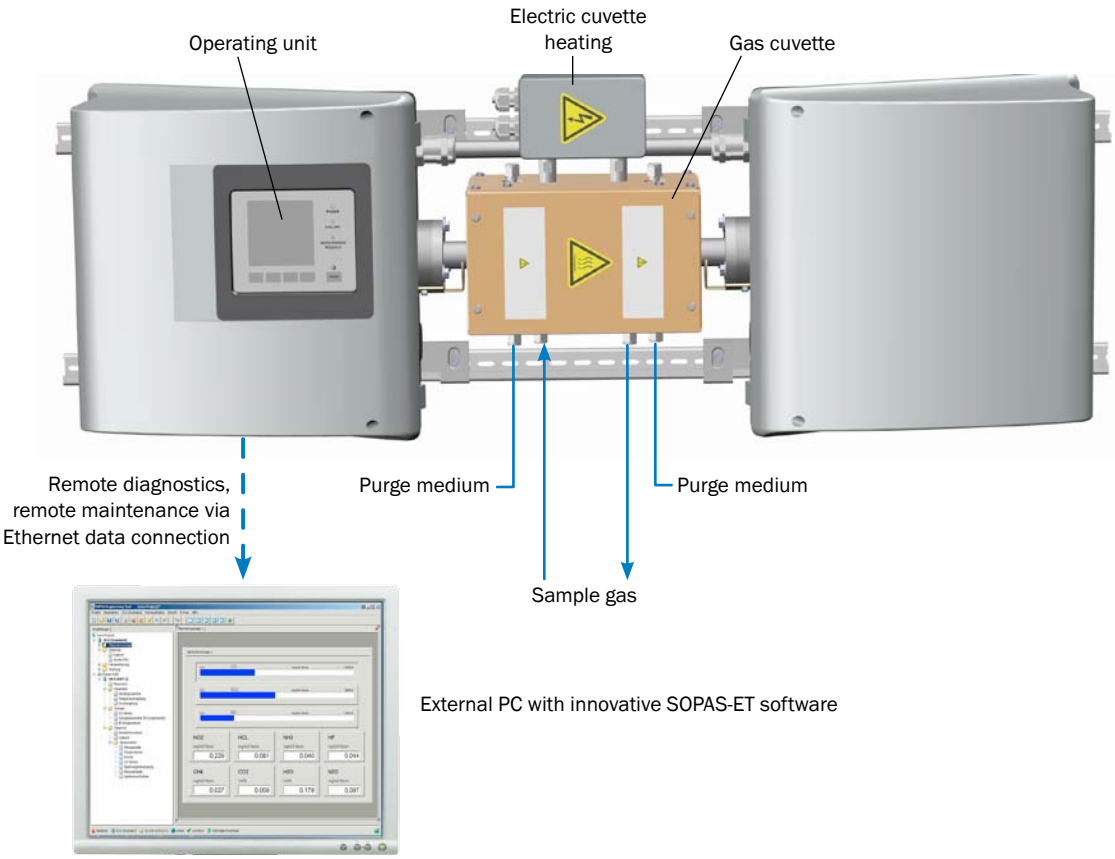
TRENDSETTING ANALYSIS TECHNOLOGY

- Adjusting filter wheel (option):
  - Adjustment without expensive test gases
  - Automatic checking
- 2 filter wheels for interference and gas filters (up to 6 components)
- For hazardous areas:
  - Measurement of combustible mixtures
  - Usage of an electrically heated sample cuvette
- Innovative software SOPAS-ET for
  - Direct access and data storage using a PC
  - Complete system control, remote control and diagnostics
- Modern communication protocols, for example Modbus, TCP/IP, OPC

PERFORMANCE FEATURES

- Extractive multicomponent analysis systems with up to 6 measuring components plus O_2 sensor
- Process cuvettes for rugged industrial use
  - Working pressure up to 60 bar (870 psi)
  - Cuvette temperatures up to 200 °C (390 °F)
- Integration of external variables, for example pressure, temperature, throughflow for display and as correction variables
- Automatic sample point switching
- Detailed Device Logbook
- Multilingual User menus
- Very robust measuring system with low maintenance effort and therefore extremely favorable operating costs
- Tailored solutions for your demands
- Modern I/O module system for integration in existing customer networks
- Automatic and manual adjustment
  - With internal adjusting filter
  - Using test gas feeding

PROCESS ANALYZER LAYOUT WITH GAS CUVETTE



NON-DISPERSIVE PHOTOMETER PRINCIPLE

The MCS300P is a non-dispersive process photometer. The radiation source transmits light through the sample cuvette. Interference and gas filters swiveled into the beam path on filter wheels then screen the selected measuring wave lengths. The detector positioned behind receives the sequential measuring and reference beams. When the measuring filter is swiveled in, the signal depends on the concentration of the substance being measured in the cuvette and a signal is created independent of the concentration when the reference filter is swiveled in. The MCS300P uses appropriate calculations with both signals to determine the absorbance value which is more or less independent of changes to the optical characteristics of the photometer. This means: High long-term stability and measured value reproducibility. After correction of any possible disturbance variables,the determined absorbance is converted to a concentration value using the linearization function.

Technical Data	MCS300P
Measuring Parameters	
Measuring components	All IR/NIR/VIS active gases and liquids, simultaneously up to 6 components, for example: CO, CO_2, NO, NO_2, N_2O, HCl, NH_3, H_2O, hydrocarbons, Cl_2; Reads in and processes up to 4 external sensors such as oxygen, pressure, temperature
Measuring ranges	Lowest ppm range up to high % by volume
Reaction time (t_{90})	Approx. 30 ... 120 s, specific to plant and components, adjustable
Measuring Conditions	
Medium temperature	+50 °C ... +200 °C (+120 ... 390 °F)
Medium pressure	0.8 ... 60 bar (11.g ... 870 psi)
Ambient Conditions	
Ambient temperature	+5 ... +40 °C (40 ... 104 °F)
Ambient pressure	900 ... 1100 hPa (13.5 ... 15.95 psi)
Approvals	
Compliances	• CE, EMC Directive 2004/108/EC • Low-voltage Directive 2006/95/EC
Degree of protection	• Housing: IP 65 • Cuvette: IP 20
Inputs, Outputs, Interfaces	
Analog output module[1)]	2 outputs: 0/4 ... 22 mA, electrically isolated; 500 Ω max. load
Analog input module[1)]	2 inputs: 0/4 ... 22 mA, electrically isolated; 100 Ω input resistance
Digital input module[1)]	4 inputs: Contact open; potential-free
Digital outputs[1)]	• 2 outputs, power relay, electrically isolated • 3 outputs, potential-free
Interfaces	• RS232 (9 poles) • RS422/485 • Ethernet
Bus protocol	• TCP/IP via Ethernet • PROFIBUS via RS422/485 (option) • Modbus via RS422/485 (option) • OPC
General Information	
System components	• Gas sampling system • Heated sample gas line, liquid pre-thermostat • Sample point switching • Sample handling • Process analyzer – Sample cuvettes with optical path lengths from 0.01 up to 75 cm – Cuvette and seal materials adapted to the application – Cuvettes with flush chambers to measure toxic and corrosive sample media
Operation	Integrated operating unit on the analyzer, 2 operating levels for users and technicians (password); application-specific working cycle to control system components
Adjustment	Automatable check cycle for zero and reference point monitoring Internal adjusting filter wheel (option)

[1)] Modules depend on the application

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