



SCP3000 Gas Sampling System for Kiln Inlets

Measurement under harsh conditions
Process gas analysis at the kiln inlet

Optimized Kiln Inlet Analysis using the Innovative Gas Sampling System from SICK

Burning alternative fuels in lieu of gas, oil or coal has a significant impact on the process gas analysis of cement clinker production. Process gas monitoring at the kiln inlet is not a task for the average gas analyzer. SICK's MCS300P Hot Wet multi-component analysis system, combined with the SCP3000 gas sampling system offers a reliable system for kiln inlet measurements as well as

for optimizing fuel consumption and production quality. To fulfill the customer application requirements, the SCP3000 with self-cleaning functions is designed as a modular system. This solution from SICK for kiln inlet analysis allows future modifications to meet changing measurement requirements and offers reliable results with minimum maintenance.

AVAILABILITY AND RELIABILITY

- High operational availability and functional reliability due to effective **anti-stick and blow back system** to prevent blocking by deposits
- Self-test functions to protect components against power, coolant or compressed air malfunction
- Pneumatic or electric emergency retraction of the probe in case of loss of compressed air or power

COMPACT DESIGN, HIGH GRADE COMPONENTS

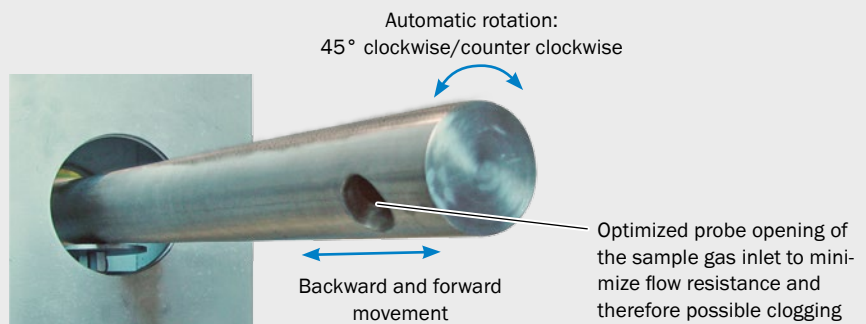
- For gas temperatures of up to 1,400 °C (2,550 °F)
- For very high dust loads up to 2,000 g/m³
- Effective shock blower to prevent any blockage on the probe inlet
- Rotating unit to remove backing of deposits

EASY INSTALLATION, REDUCED COSTS

- Minimum installation requirements
- Reduced maintenance costs: up to 100 hours per year due to the self-test functions: automatic purging, cleaning of probe and filter
- Automatic monitoring and remote control functions of the complete system via PLC
- Touch screen with intuitive menus for easiest use
- System approved for harsh process conditions

Anti-stick and Probe Cleaning System

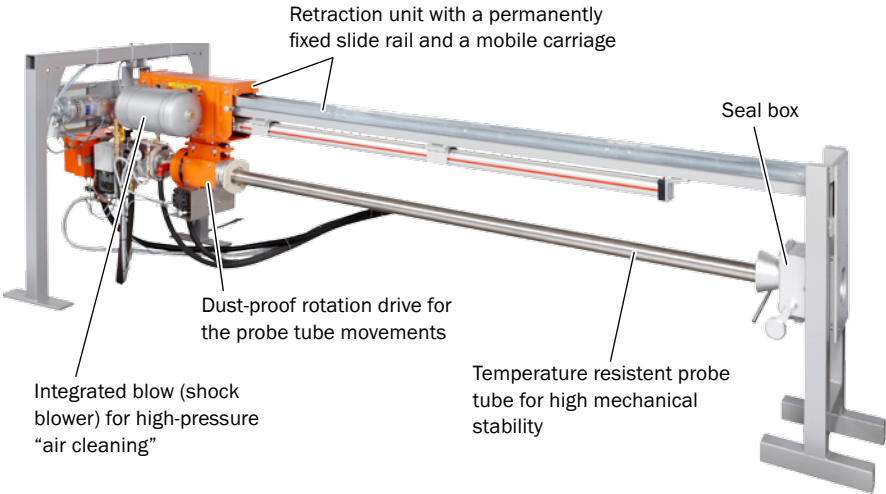
The probe performs cyclic movements (freely selectable intervals) of the probe tube: 45° clockwise and counter clockwise rotation plus backward and forward movement. This movement shakes off dust and raw material deposits on the tube surface and thus prevents build-up of the deposits. High pressure blow back ("air shocks") with up to 10 bar (145 psi) protects the probe opening against any plugging. The purging procedure with compressed air cleans the entire gas path (from the filter along the probe length).





SCP3000 SYSTEM COMPONENTS

Gas Sampling Probe



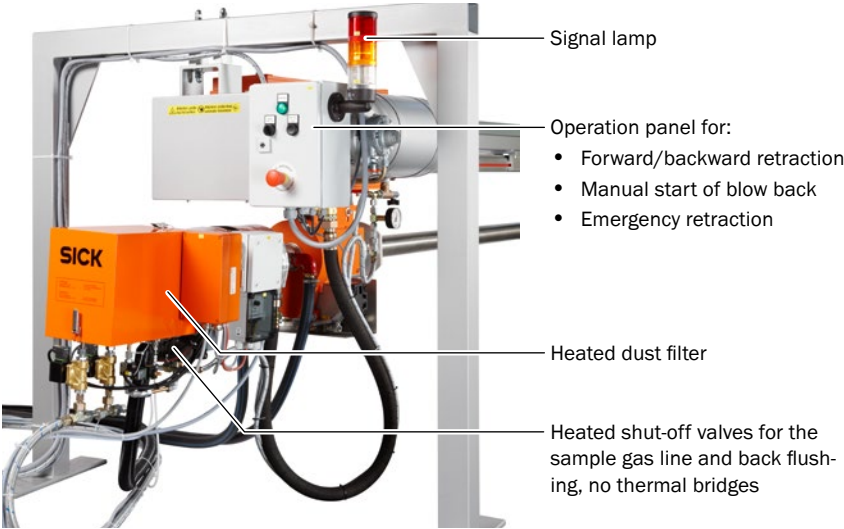
Control Unit

All functions and signals are monitored and processed centrally by a controller system and indicated on a touch screen display. Easy use and parameter setting in plain language require no programming skills.



Dust Filter and On-Site Operation Panel

The dust filter is temperature controlled at 180 °C (355 °F) to prevent deposits forming. The optimized design allows quick and easy maintenance. The purging of the filter ensures long maintenance free service life.



Compact Cooling unit

The maintenance free cooling unit comprises a water/water or air/water tubular heat exchanger. The closed cooling water circuit through the probe is permanently controlled by temperature, pressure and flow sensors. All parameters are always monitored to prevent damage.



Water/water cooler shown

8009846/2010-11 - 3M - Subject to change without notice

Technical Data		SCP3000
Measurement parameter		
Measuring components of the analysis system	Up to 6 components plus oxygen (e.g. CO, NO, HCl, SO ₂ , CO ₂ , NH ₃ , O ₂)	
Sampling conditions		
Process gas temperature	Up to max. 1,400 °C (2,550 °F)	
Ambient conditions		
Ambient temperature	-20 ... +55 °C (-4 ... +130 °F)	
System		
Probe	<ul style="list-style-type: none"> • Length: 3.0 m (9.9 ft), 3.5 m (11.5 ft), 4.0 m (13.1 ft) • Material: stainless steel (1.4841) • Retraction: 1,000 kg (2,205 lb) retraction force • Retraction length: 2,300 ... 3,300 mm (7.6 ... 10.8 ft) • Compressed air: 6 ... 8 bar¹⁾ (87 ... 116 psi¹⁾) • Sample gas: 6/8 mm Swagelock, heated sample gas line • Dust filter: 0.1 µm glass filter; temperature regulated, selectable from 0 ... 220 °C (32 ... 425 °F) 	
Cooling unit	<ul style="list-style-type: none"> • Type: water/water or air/water • Coolant inlet temp.: < 40 °C (< 104 °F) • Coolant outlet temp.: < 75 °C (< 165 °F) • Water flow consumption: 3 ... 5 m³/h at max. 30 °C/86 °F (for water/water type) • Air flow: 174 m³/h at max. 30 °C/86 °F (for air/water type) • Cooling capacity: 70 kW • Primary and secondary circuit: continuous monitoring of temperatures, pressures and flow 	
Approval		
Conformities	<ul style="list-style-type: none"> • EN 15267-3, EN 14181 • EN 60204-1 	
Protection class	IP 44 (rotation drive)	
Electrical safety	CE	
Interfaces		
Controller system		
Analog outputs	Option: 0/4 ... 22 mA, 500 Ω max. load	
Analog inputs	Max.: 16: 4 ... 20 mA, 100 Ω input resistance	
Digital outputs	Max. 26: 24 V DC; 0.5/1 A	
Digital inputs	Max. 36: contact open; potential-free	
Interfaces	Ethernet	
Bus protocol	<ul style="list-style-type: none"> • PROFINET version or • Modbus version 	
General		
Operation	<ul style="list-style-type: none"> • Automatically: via controller system • Manually: on-site operation panel • Probe cleaning: free parameter settings 	

¹⁾ Purified compressed air, free of oil, dust and water according to ISO 8573-1: 2001