

Safety and Reliability at Work

ABB's new gas sampling system SCK for cement kiln exit

The SCK is the new kiln gas exit sampling system from ABB, a market leader in gas analysis for cement applications. It is the proven solution for the rough environmental conditions at the rotary kiln exit, where it can be installed outdoors, thanks to the protective covers. The development of the SCK is based on ABB's experience gained from more than 500 delivered systems worldwide. The well known former ACK system will now be replaced by a combination of the new sampling system SCK plus the gas analysis system ACX.

The SCK system will be delivered completely preassembled to the installation site. A few ready-made bundled cables and mounting parts significantly reduces the installation time and the risk of incorrect mounting.

The SCK consists of three modules:

- Probe retractor with pneumatic motor and chain driven, water-cooled probe
- Control unit with industrial controller and menu-driven touch panel operation
- Cooling unit with speed-controlled heat exchanger and cooling water circulation pump

The retractor with its pneumatic chain drive carries the gas sampling probe in a double beam construction. While the probe can be completely retracted, an integrated pneumatically driven oven flap closes the sampling opening, thus preventing hot and toxic gases that could cause hazard to operators and machinery to exhaust from the oven. A complete top cover protects the moving parts from dust. Due to the design of the retractor, the tip of the probe is available for inspection and cleaning purposes at all times. ABB is the only supplier on the market that can offer two different water cooled probes for the kiln application:

Probe H is preferred where extremely hard encrustations are to be expected. The pneumatically driven plunger, which is welded on the filter tip, mechanically breaks the encrustations at the probe gas entry without interruption of the measurement.

Probe 60S is the choice for kilns where extremely hard encrustations are not expected. Different from other probes on the market, the tip of Probe 60S has a de-dusting effect, which reduces the dust entering into the sample.

The SCK controller unit includes an industrial controller and is operated by a menu-driven touch panel. The controller handles all probe manipulation like back purge, removing the probe and monitors all critical states like the temperature of the cooling water. The controller is completely menu driven for easy commissioning and configuration of cleaning cycles, limit values, periodical sampling according to the operators needs, without any complicated PLC programming. Program sequences can be displayed to easily follow the SCK's routines. The operator has remote control of the SCK system via Profibus connection, enabling retraction, insertion and back purging of the probe. Moreover the control unit offers remote diagnosis through standard Ethernet connection. In case that no Ethernet is available, all relevant data can be downloaded via an USB stick and send to your ABB partner.



Cooling of the sample probe is mandatory due to the prevailing conditions. ABB's cooling system uses a closed water circuit for safe and environmental friendly cooling. Analog sensors continuously monitor water flow, temperature and pressure. This gives the operator in the control room complete control of the system conditions.

The SCK can be ordered separately as a high sophisticated sampling system to existing gas analysis or combined ideally with the ACX system to form a complete solution from ABB.

ABB (www.abb.com) is a leader in power and automation technologies that enable utility and industry customers to improve their performance while lowering environmental impact. The ABB Group of companies operates in around 100 countries and employs more than 120,000 people.

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