



SmartCyclone®

Wireless sensor technology

Our SmartCyclone technology is part of a closed-circuit grinding process optimisation solution, with special focus on cyclone performance, using proprietary process sensors and advanced control software.

Our controller collects data from sensors wirelessly. This means that you do not have to run cables to the cyclones or worry about wiring during cyclone maintenance. A wireless system gives the added benefit of having less that can go wrong and being quick and inexpensive to install.

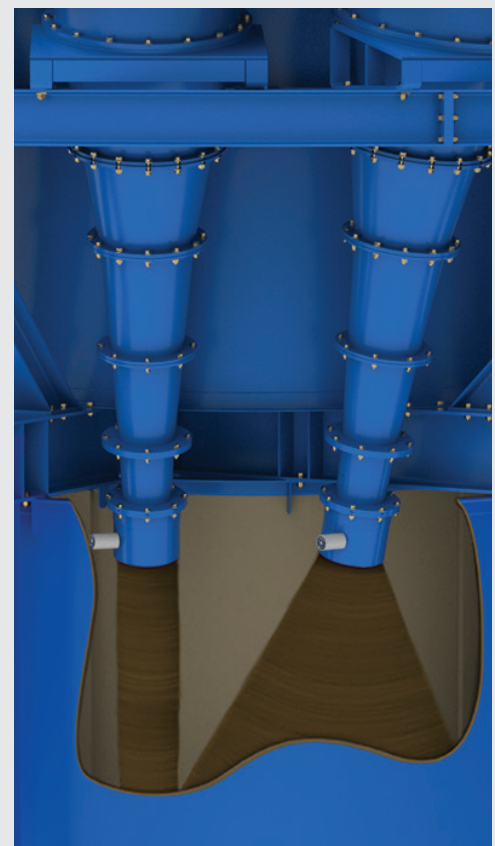
With one central controller that communicates with up to 16 roping sensors and 16 wear sensors, the system eliminates the outdated model of creating a separate node for each cyclone.

Sensor wireless technology and automation offers new opportunities for productivity

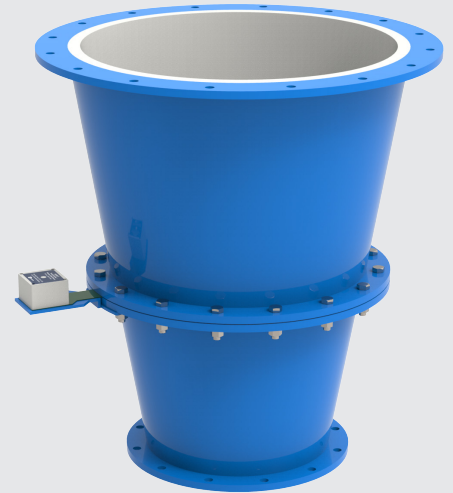
SmartCyclone system	
Communication between controller and sensors	802.15.4 wireless operating in the international 2.4GHz band. Each controller can gather data from up to 16 roping and 16 wear sensors. User selectable RF channels allow operation of up to 15 controllers simultaneously.
Communication between controller and PC in control room	Ethernet
Digital output from SmartCyclone PC to DCS	OPC via Ethernet (other options available to accommodate older systems)
Video output from SmartCyclone PC	Dedicated HMI
Cyclone size range	Any size from the KREBS® product line
Data logging capability	Yes
Storage temperature	-40 to 85°C (-40 to 185°F)



Wireless Roping Sensor	
Installation location	Cyclone underflow (recommended): mounted to SmartCyclone-enabled splash skirt. Cyclone overflow: attached to mounting clamp on overflow pipe.
Mounting style	M10 threaded stud on sensor screws onto a Smart Cyclone enabled splash skirt, or a clamp on the overflow pipe width 15mm open-end wrench.
Measurement rate	Every second
Update rate	Every 5 seconds
Power requirement	Specialized lithium primary battery for long life over a wide temperature range. Battery voltage reading is sent with every data transmission. Battery has a nominal one year life and is field replaceable.
Operating Temperature	-30 to +70C (-22 to 158°F)
Environmental protection	Nema 4X, IP67



Wireless wear sensor	
Installation location	At bottom of apex or between any two cone segments
Mounting style	Bolts between flanges
Update rate	User-selectable rate (every minute, hour, or day)
Power requirement	Specialized lithium primary battery for long life over a wide temperature range. Battery voltage reading is sent with every data transmission. Battery has a one year life and is field replaceable.
Operating temperature	-30 to +70C (-22 to 158°F)
Environmental protection	Nema 4X, IP67



Controller with wireless handheld	
Communications with SmartCyclone data system in control room	Cat 5, Cat5e or Cat 6 Ethernet cable. Wireless and optical Ethernet is also available.
Number of sensors per controller	Up to 16 roping sensors and 16 wear sensors simultaneously
Syncing with sensors	Controller's battery operated handheld unit undocks from main enclosure for syncing with installed sensors. Handheld unit includes a battery status indicator and recharges when docked.
Power requirement	85-264 VAC, 47-63 Hz, 0.5A maximum input current at full load
Operating Temperature	-20 to 70°C (-4 to 158°F)
Environmental protection	Nema 4X, IP66



We introduced wired SmartCyclone technology more than 10 years ago. With our upgraded wireless SmartCyclone system, installation is greatly simplified and maintenance is quicker and easier due to the elimination of cables. To facilitate SmartCyclone installation, we offer technical support via on site field service personnel, video conferencing, telephone communication and written instructions.

On a typical cyclone cluster, basic hardware installation can be completed in a day, sometimes without taking the cyclones offline. Operators quickly learn how to interpret and act on the SmartCyclone signals. Our experts assist in setting initial user defined warning and alarm values, allowing the plant to improve control of the cyclones and maximise value in the process.

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