



## Technical datasheet

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one central controller that communicates with up to 16 roping sensors and 16 wear sensors, the system eliminates the outdated model of creating a separate node for each cyclone.

### Key benefits

- Stabilized cyclone operation
- Less process downtime
- Improved process stability
- Increased production capacity
- Monitor wear components

# Sensor wireless technology and automation offers new opportunities for productivity

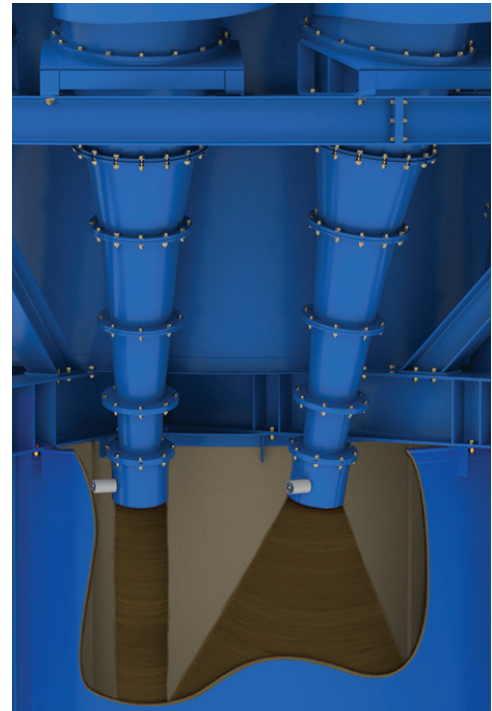
## SmartCyclone system

<b>Communication between controller and sensors</b>	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.
<b>Communication between controller and PC in control room</b>	Ethernet
<b>Digital output from SmartCyclone PC to DCS</b>	OPC via Ethernet (other options available to accommodate older systems)
<b>Video output from SmartCyclone PC</b>	Dedicated HMI
<b>Cyclone size range</b>	Any size from the KREBS® product line
<b>Data logging capability</b>	Yes
<b>Storage temperature</b>	-40 to 85°C (-40 to 185°F)



## Wireless Roping Sensor

<b>Installation location</b>	Cyclone underflow (recommended): mounted to SmartCyclone-enabled splash skirt. Cyclone overflow: attached to mounting clamp on overflow pipe.
<b>Mounting style</b>	M10 threaded stud on sensor screws onto a Smart Cyclone enabled splash skirt, or a clamp on the overflow pipe with 15mm open-end wrench.
<b>Measurement rate</b>	Every second
<b>Update rate</b>	Every 5 seconds
<b>Power requirement</b>	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.
<b>Operating Temperature</b>	-30 to +70C (-22 to 158°F)
<b>Environmental protection</b>	Nema 4X, IP67



Wireless wear sensor	
<b>Installation location</b>	At bottom of apex or between any two cone segments
<b>Mounting style</b>	Bolts between flanges
<b>Update rate</b>	User-selectable rate (every minute, hour, or day)
<b>Power requirement</b>	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.
<b>Operating temperature</b>	-30 to +70C (-22 to 158°F)
<b>Environmental protection</b>	Nema 4X, IP67



Controller with wireless handheld	
<b>Communications with SmartCyclone data system in control room</b>	Cat 5, Cat5e or Cat 6 Ethernet cable. Wireless and optical Ethernet is also available.
<b>Number of sensors per controller</b>	Up to 16 roping sensors and 16 wear sensors simultaneously
<b>Syncing with sensors</b>	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.
<b>Power requirement</b>	85-264 VAC, 47-63 Hz, 0.5A maximum input current at full load
<b>Operating Temperature</b>	-20 to 70°C (-4 to 158°F)
<b>Environmental protection</b>	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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