

SPARTANPRO™ MINING SOLUTIONS

For more than 10 years, Spartan Controls' Process Solutions group has been helping mining customers get more for less out of their processes through the application of advanced process control (APC). By stabilizing and continuously optimizing the most challenging and complex processes in the industry, APC achieves proven operational benefits that include:

- *Increased Throughput*
- *Increased Product Recovery*
- *Increased Process Stability*
- *Improved Consistency of Operation*
- *Increased Energy Efficiency*
- *Reduced Cost of Operation*
- *Reduced Risk of Trips & Failures*
- *Reduced Upsets to Downstream Processes*

Mineral processing facilities are challenging to operate and control. Feed grade and sizing changes can cause significant upsets; solid and slurry streams can be challenging to measure, let alone control; and critical equipment is easily damaged. The lack of insight into the process often leads to over-cautious operation, significant losses in recovery, and a general lack of automation.

*The SpartanPRO™ library of mineral processing solutions has been developed and tested in these live, harsh environments to effectively automate challenging processes and deliver real financial improvements. Our solutions cover a wide range of the complex unit operations commonly used in mineral processing operations in Western Canada. Customers using our solutions have realized net, measured benefits including **throughput increases of up to 8%; energy consumption reductions of up to 8%; and recovery rate increases of up to 6%.***

*Our library of solutions is designed to integrate seamlessly with existing operational philosophies, graphics and control strategies. If a DeltaV DCS is on site, the high-powered APC tools directly embedded in DeltaV can be fully leveraged, so no third-party software or hardware is required. With **typical payback periods of 1-12 months**, these solutions tackle some of the biggest challenges on site today to bring your operation to the next level.*



Grinding Circuit

SpartanPRO™ SAG	<i>Increase SAG mill throughput capacity by up to 8%, reduce specific energy, and minimize risk of trips & failures with features including particle size adjustment, dynamic load optimization, impact location control & more.</i>
SpartanPRO™ SAG Feed	<i>Optimize multi-conveyor setups by coordinating feed from stock pile locations. Significantly improves temporary SAG upset handling.</i>
SpartanPRO™ Ball Mill	<i>Improve slurry density control & consistency through upset conditions, stabilizing feed to cyclones and increasing overall product recovery.</i>
SpartanPRO™ Cyclone	<i>Improve cyclone recovery while minimizing issues such as roping and plugging, providing downstream processes with improved feed stability.</i>

Flotation Circuit

SpartanPRO™ Flotation	<i>Improve flotation cell recovery and throughput capacity by up to 5% by stabilizing froth levels, froth formation and froth pull rates.</i>
SpartanPRO™ Thickener	<i>Improve thickener recovery by up to 5% and reduce tailings by stabilizing bed depth and controlling rise rate while also protecting critical equipment.</i>
SpartanPRO™ pH	<i>Reduce chemical consumption by up to 15% while improving recovery and maintaining stable separation with Spartan's advanced pH control strategy.</i>

Other Mining Solutions

SpartanPRO™ Pump Box	<i>Improve overall mill stability by using available inventory to prevent upstream process upsets from impacting downstream units. Underrated impact on net product recovery, plant stability, and energy consumption.</i>
SpartanPRO™ Rotary Dryer	<i>Reduce dryer energy consumption by up to 10% by effectively controlling product heating intensity and distribution.</i>

For further information, contact your local Spartan office.

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