



Flotation Cells - Mineral Processing

Technology for the mining industry

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Challenge / Solution

Froth flotation is an important concentration process in mining. This method is used to separate any two different particles. A flotation plant consists of the reaction vessel with inlet and outlet, the aeration unit, a dosing unit for chemicals, the scraper, the floating layer, and the receiving tank for the separated material.

The flotation cell is aerated and stirred to create bubbles. This is used to keep the solid particles in suspension in the pulp. The mineral particles attach themselves to the bubbles and rise to the surface. Here they form a froth blanket that contains the mineral as a concentrate.

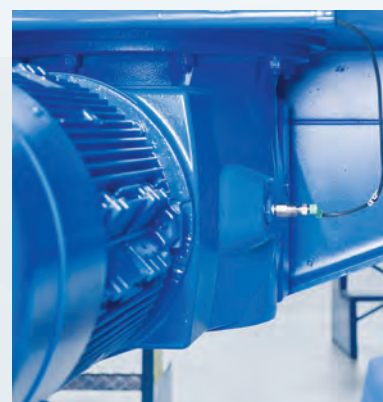
The froth concentrate passes over the wash in the flotation cell and is then pumped to the concentrate thickener. Often, several flotation cells are coupled one after the other to form flotation banks, resulting in an ore concentrate with a higher metal content.



How to reduce complex and expensive wiring?

Long installation distances for processes and signals require expensive bulk wiring. The installation system AS-Interface minimizes the installation time and assures cost reduction. The AS-Interface system provides full diagnostics and easy maintenance.

The simple, very stable, and proven technology enables sensors to simultaneously transmit diagnostic information to the PLC and to higher-level IT infrastructures. Its modular structure and flexible connection technology ensure easy integration into any system. A two-wire flat cable transmits data and energy, eliminating thus complex parallel wiring.



How to monitor the condition of hydraulic pumps and motors?

How to monitor the condition of hydraulic pumps and motors? Condition monitoring can prevent catastrophic failures. Monitoring your equipment's condition will allow you to stop the motor and pump set already in the early stages of a failure.

Early detection means you may protect your assets from damaging beyond repair and prevent failures that could cause unwanted injuries. The monitoring of bearing wear, unbalance, misalignment, cavitation and running hours allows you to perform proactive maintenance rather than reactive maintenance.



Pressure, flow and temperature control

The flotation cell is ventilated to create bubbles. This process must be constantly monitored, as it depends on a certain flow, pressure, and temperature.

This is where the sensors from ifm, such as the SA4100, come in. This sensor can measure the flow and temperature at the same time.



Product	Qty	Description
AC1421	1	EtherNet AS-i Master
AC1258	1	AS-i Power Supply
DN4012	4	24V DC Power Supply
E74200	2	AS-i flat cable yellow – TPE – 100m
E74210	1	AS-i flat cable black – TPE – 100m
AC2381	8	AS-i push button module red / green
E75354	8	FC splitter for push button module
EVC718	8	Patch cable for speed monitor – 1m
DI6001	8	Speed monitor
EVC018	8	Patch cable for speed monitor – 2m
AC5224	8	Active AS-i module for speed sensor
VTV122	8	Vibration sensor for tube extruder motor
TS2229	8	Bolt-on sensor for tube extruder motor
TP3231	8	Converter PT100
EVC018	8	Patch cable for vibration monitor – 2m
AC5222	4	Active AS-i module for vibration / temperature sensor
AC5233	4	Active AS-i module for flotation motor
SA4100	16	Flow sensor for air / water / temperature control
AC5222	8	Active AS-i module for air / water sensor
EVC018	16	Patch cable for air / water / temperature sensor – 2m
O1D100	8	Optical distance sensor swimming plate
EVC018	8	Patch cable for optical distance sensor – 2m
AC5224	8	Active AS-i module for swimming plate



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