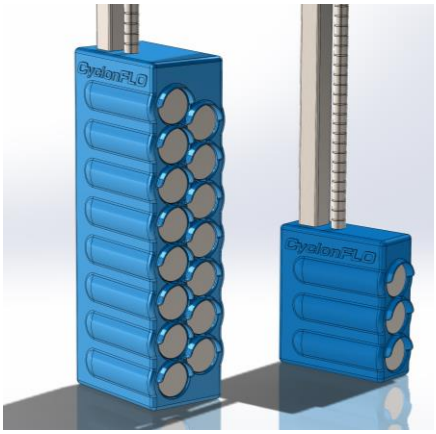
CyclonFLO Datasheet
Suspended Solids Transmitter



The **CyclonFLO** range of Suspended Solids transmitters are designed for the more difficult measurement environments where wear rate to housings maybe an issue. Applications in the Grinding area of Mining Concentrators, example Ball Mill Outfeed, SAG Mill Outfeed, Overflow measurement of Solids Concentration in Cyclones, Tailings Solids Concentration measurement, are some of the operating services it can be used on.



Principle of Operation

CyclonFLO uses high powered acoustic signals to measure the Solids Concentration % in the slurry by monitoring the Acoustic Impedance changes. The main advantage in using acoustics is that it is not affected by changes in ore characteristics (like background radiation) in the reading. At the same time the measurement takes place the transducers using a phenomenon called "rarefaction" to remove all scale build-up, Clay (Arcilla) and residue from the operating diaphragms.

CyclonFLO Acoustic Arrays are available in a number of transducer sizes to provide a solution to all operating process temperature ranges (Ball Mill Outfeed, SAG Mill Outfeed) and sample time speeds. The simplicity of design provides for easy installation, minimal maintenance support and a long service life, when compared to Concentrate sample analysers.

FloLevel Technologies™

Features

- Self-cleaning transducers
- No periodic calibration requirements
- High sample rates
- Will operate with all Minerals

Primary Application Uses:

The **CyclonFLO** suspended solids transmitter has been designed specifically for the tough service of the Grinding area of a Mining Concentrator. It has been designed for new applications or to be retrofit installed in existing applications where improved feedback of Solids Concentration % will allow further automation and optimisation for Water Addition control for Ball Mill outfeed, SAG Mill outfeed, Rod Mill outfeed, Overflow Measurement of Cyclones, Tailings Measurement. It can be used to control the solids concentration % feed in the Header tank for Flotation Cell circuits by controlling Water Addition/Water Dilution. This is important to all Flotation Rougher circuits, especially **self-aspirated cells** that heavily depend on a solids concentration of less than 45% for optimised recovery efficiency.
When ore characteristics effect the accuracy of the standard Nuclear gamma density transmitters because of background radiation, the acoustic **CyclonFLO transmitter** is not affected, because the Acoustic Impedance effect is the same for any particle concentration and therefore solids density accuracy and repeatability remain stable.

Specifications

Maximum Array Size: 6000mm

Bracket/Flange Mount:
316 Stainless Steel 12-00" ANSI Flange

Array Housing Materials:
ABS, 316SS, Urethane

Cable Length: 15 metres (50 feet)

Process Temperature:
-20 Deg C to 60 Deg C

Controller

Controller Enclosure: 316 Stainless Steel

Supply Voltage: 80 – 265Vac 50/60Hz

Current Consumption: <5 amps

Outputs: (a) ModBus, ProfiBus PA, Foundation FieldBus
(b) 12 x 4-20Ma isolated analog, 500Ohm @ 24Vdc

Display: 3.5" Colour HDMI

Controller Temp Range:
-20 Deg C to 70 Deg C

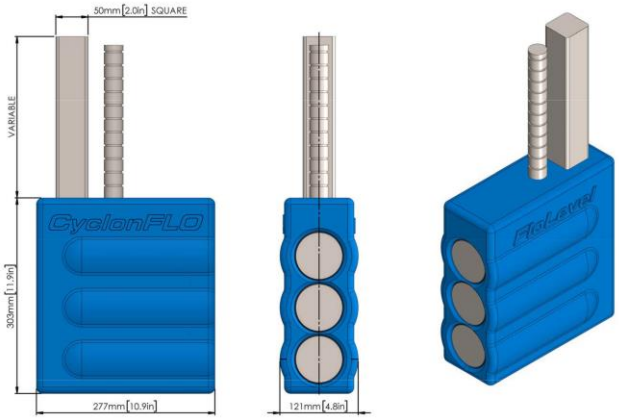
Typical sample time Update: 40 seconds

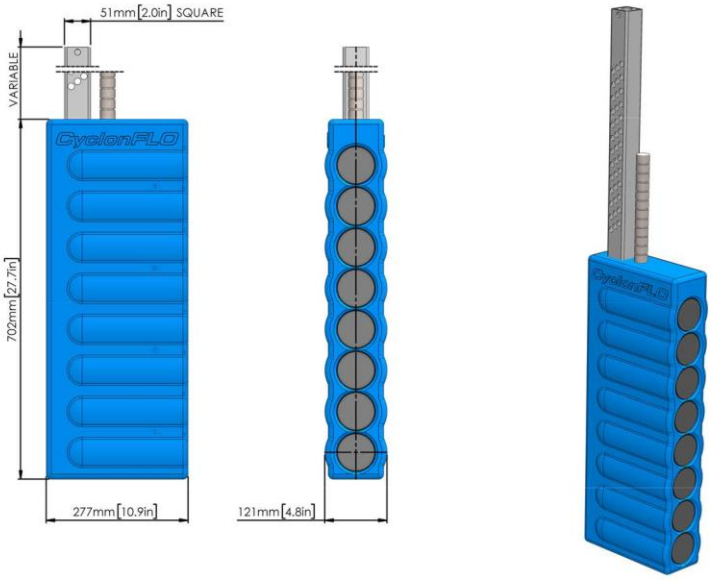
Conduit Entries: 6 x 20mm (6 x 0.75")

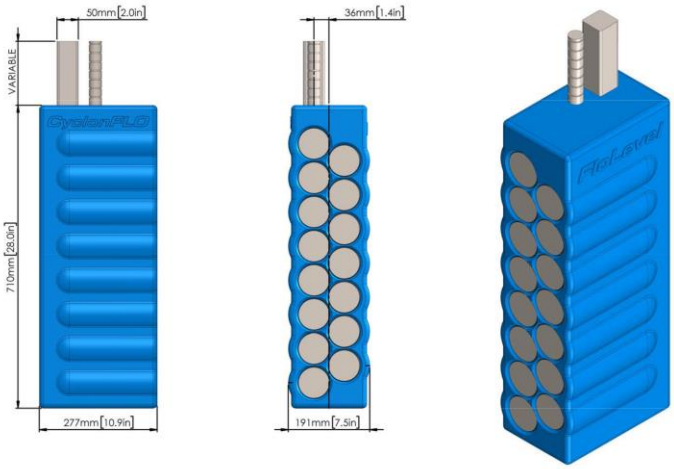
Weights: Array 3000mm = 150Kgs
Controller = 30Kgs



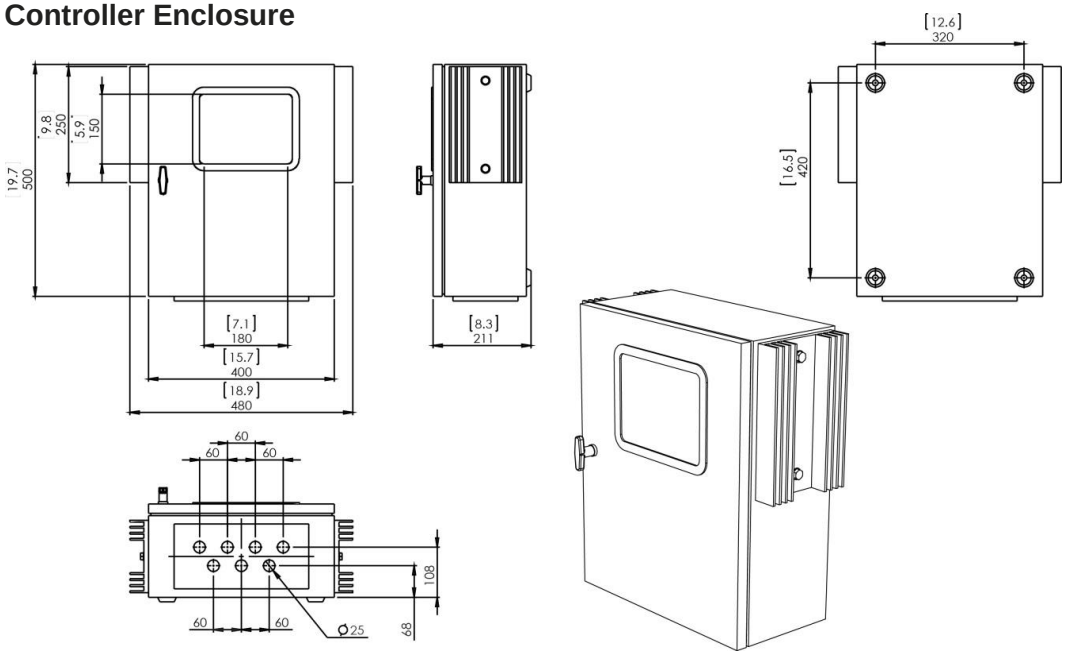
Drawings



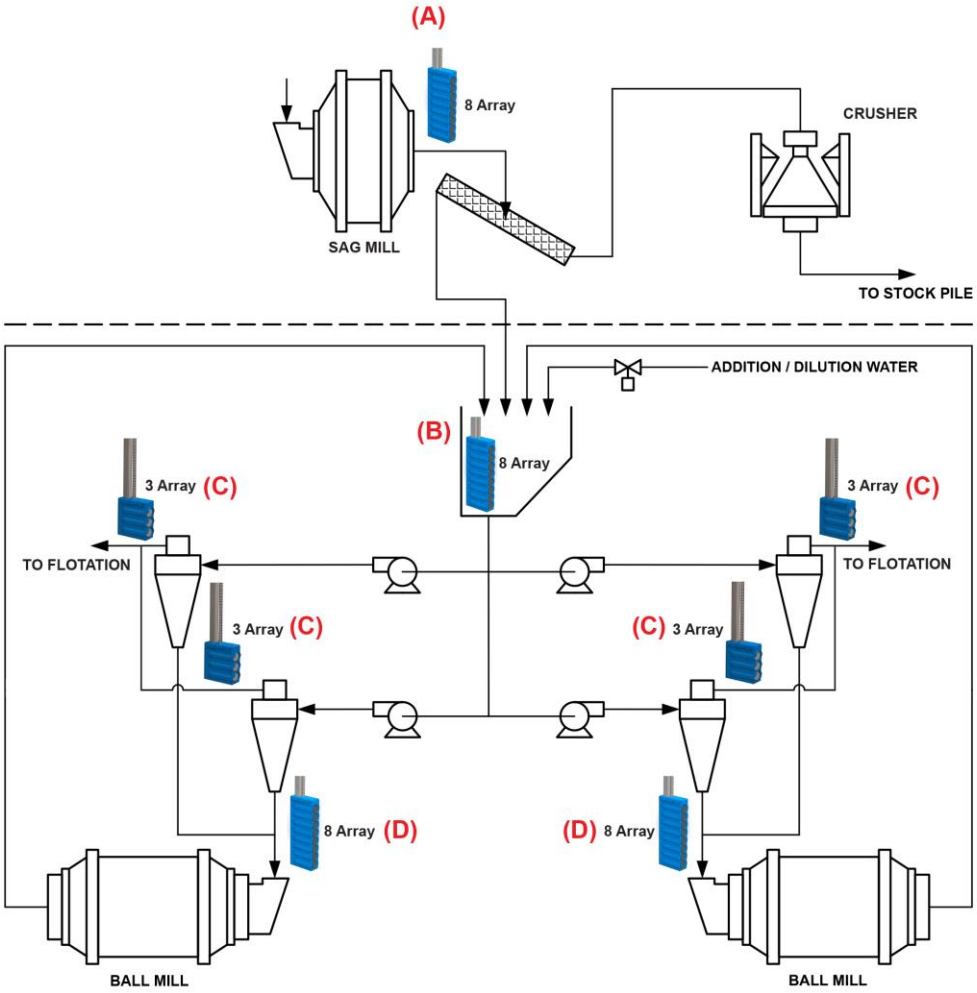




Controller Enclosure



Grinding Flowchart - CyclonFLO



A. **SAG Mill Outfeed:** CyclonFLO Array 8 for measuring the Suspended Solids Concentration %. Used for supplementary control of Water Addition to the SAG Mill.
B. **Surge Tank:** CyclonFLO Array 8 used for measuring the Suspended Solids Concentration %. Used for controlling Water Dilution/Addition to the Surge Tank Slurry that feeds the infeed of the Cyclones.
C. **Cyclone Overflow:** CyclonFLO Array 3 for measuring the Suspended Solids Concentration %. Used for controlling Water Addition in Rougher Flotation Cell circuits, Header Tanks, etc.
D. **Cyclone Underflow:** CyclonFLO Array 8 for measuring the Suspended Solids Concentration %. Used for controlling Water Addition in Infeed to Ball Mill.
E. **Tailings Launder:** CyclonFLO Array 8 for measuring the Suspended Solids Concentration %. Used for monitoring the Tailings Launder Solids Density after the Tailings Thickener. Special bracket requirement.

Part Numbers: CyclonFLO

Product	Control Range = CR	Flange Position Dist = FP	Range	Array Transducer Housing Material	Power Supply	Outputs	Cable Length	Flange Type for Mounting Bracket
		Above control range					Interface Array to Controller	
FLC	300 mm = 1 600 mm = 2 600 mm = 3 (High resolution)	1000 mm = 1 2000 mm = 2 Custom = X	0-100% = 1	ABS = 1 Urethane = 2	90-265Vac 50/60Hz @10Amp	1x4-20Ma = 1 Foundation Fieldbus = 2 Profibus PA = 3 Modbus = 4	15 m = 15 Other (m) = X	12.00” = 1 ANSI Special = 2

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