

Z ChemGear™ LTM

FLOTATION LEVEL MONITORING PROBE

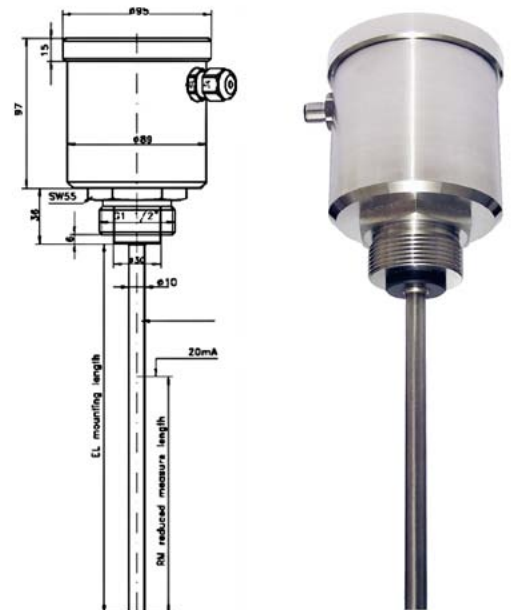
- > Accurate pulp level monitoring, effectively finds the pulp-froth interface
- > Conductive working principle, instead of capacitive that is affected by froth buildup
- > 1% measurement accuracy
- > 1% measurement linearity
- > Near instantaneous measurements (100mS)
- > Extremely stable operation
- > Easy to understand and use

- > No moving parts
- > Little maintenance is required on the system, much less than conventional systems
- > Instrument rating is IP 69K so very impervious to water, slurry and dust
- > Easy to use mounting hardware
- > Less hardware to install and manage
- > Complete 316ss rod and 304ss head construction materials

PRODUCT EXPLANATION

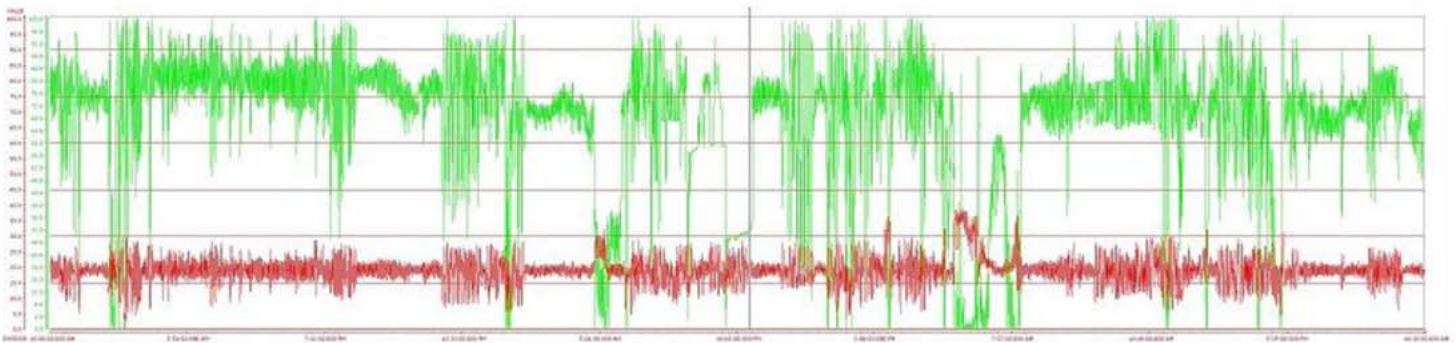
The LTM conductive probe is the latest innovation for effective and efficient pulp level monitoring. The LTM probes provide economic, operational and maintenance benefits in a wide range of challenging situations. In flotation, the LTM probe provides enhanced pulp level monitoring resulting in improved level control, resulting in significant economic returns from higher recoveries and concentrate grade.

LTM probes provide vastly improved pulp level monitoring, particularly in flotation cells, banks and sumps where pulp levels can be monitored much more precisely and thus provide much greater process control. These probes are unaffected by the froth rheological properties which affect ultrasonic capacitive and pressure differential devices. Further, pulp level control by indirect measurement of froth velocity measurement can limit cell control; in fact integrated, a much more precise pulp level measurement can enhance process controls with froth cameras.



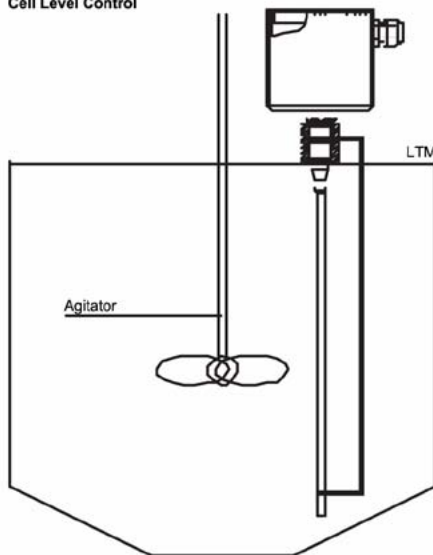
OPERATIONAL COMPARISON

A 1 hour strip chart example provided below from an actual operation demonstrates typical LTM measurement stability vs. a typical ultrasonic-float ball target measuring assembly. The LTM probe was installed as a 'follower' (red trend line) and not tied into the pulp level control scheme, just provided level monitoring for comparison. The ultrasonic trend line is in green. Note that at approximately 30 and 45 minutes into the monitoring period, the target striker plate became stuck, causing the dart valves to close raising the pulp level. The LTM probe effectively monitored this pulp level change.



Also, note the harmonics on the LTM level probe is much lower which means less system 'noise'. Despite the ultrasonic signal being damped by signal updates every three seconds, there was vastly greater system signal noise vs. the level probe that sends an updated signal every 01. seconds.

Cell Level Control



Specification		
Process Connection	Thread	G1 1/2" at the sensor
Materials	head/thread connection isolator rod	SS303, (1.4305) 89 mm dia./WW 55 mm PA6 GF30 stainless steel (1.4404) SS316L 10 mm dia.
Temperature Ranges	ambient process high temp. version	0 - 50 °C -10 - 100 °C -10 - 150 °C 30 min max
Accuracy		≤ 1.0 %
Linearity		≤ 1.0 %
Electrical connection	cable entry cable connection supply voltage	PG (M16x1.5) M12 plug-in SS303 (1.4305) 18...36 V DC
Output	analog resistive load	4 - 20 MA, 500 Ω Max
Empty signal	output	4 mA
Current consumption	depends on rod length and diameter	250 mA max.
Type of protection		IP69K with M12- plug