

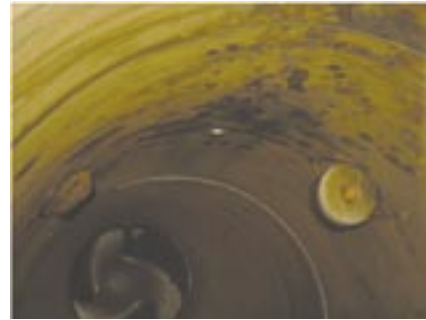


PROCESS ANALYSERS

# IN-LINE ANALYSERS FOR MINERALS PROCESSING

## AL-6337, slurry liquor phase density refractometer

- Used primarily in Alumina plants for caustic concentration monitoring and control.
- Refractive Index measures the LIQUID PHASE DENSITY of a slurry and ignores the suspended solids (unlike nuclear density gauges).
- Refractive Index has a very high bias towards caustic and a low bias towards alumina.
- Used in conjunction with temperature and conductivity, provides very accurate A/C / Molar ratio measurement for control of digestion feed and sweetening.
- Designed for installation DIRECTLY IN MAIN PROCESS LINE.
- **Current installation points around alumina plants are:**  
Digester feed (Mill discharge), spent liquor, digester blow off, flash tank prior to sweetening, settler feed, washer Caustic to mud lakes, SRUF (waste balance tank Caustic), Neutralisation Caustic (feed forward for acid neutralisation), seed wash, filtrate caustic, precipitation feed (prism wash system required). Sulphuric acid depletion in descale systems.



## AL-6340-DCIK, in-line steel / ceramic conductivity sensor

- Used primarily in Alumina plants for determination of A/C and or Alumina content in digestion.
- Conductivity has a very high bias towards alumina and a low bias towards caustic.
- Used in conjunction with temperature and refractive index , provides very accurate A/C / Molar ratio measurement for control of digestion feed and sweetening.
- Designed for pipes larger than 6" diameter. DIRECTLY IN MAIN PROCESS LINE
- Designed to replace the need for side-streams / sample lines.
- 316ss, carbon steel or exotic steel outer casing.
- PSZ Ceramic core.
- Rated to ANSI class 150, 300 and 600# to 280 deg C.
- **Current installation points around alumina plants are:**
- Digester blow off, spent liquor.



### AL-6340

Inline real time monitoring or slurry conductivity. Rugged sensor designed specifically for the Alumina Industry. Flexible communications and reputable calibration procedure.

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## Fixed position clarity probes

- Light attenuation probes for in line or fixed immersion in tanks.
- Various sensor materials designed to repel scale. Including NXT75, polypropylene, ptfе.
- Various path lengths to cover 1 mg/litre through number of grams per litre sensitivity.
- Rated to 120 deg C
- Silver tinned copper cable - military spec.
- Standard air and water washing systems available.
- **Current installations include:**
- Tailings thickener overflow turbidity.
- Precipitation tank overflow suspended solids.
- Seed thickener overflow suspended solids.



## In-line moisture meter

- Capacitance technology that penetrates deep into the product to provide true average of total moisture, not just surface moisture.
- **Current Installations include:**
- Bauxite feed to ball / rod mills
- Calciner feed
- Coal feed to boiler



## AL-6410 / AL-6420 SmartDiver, mud diver

- Rugged open system design designed specifically for high scale environments.
- Various probe types offered, light attenuation, sound attenuation and conductivity.
- Provides accurate clarity (solids to overflow), settling zone (interface) and heavy mud ( to 300 gpl)
- Provides tank profile (depth Vs suspended solids) Can be set to dive specifically to provide clarity-only measurement.
- One or two probe systems available. This ensures high accuracy for clarity AND heavy mud measurements and provides some level of redundancy for interface and light mud measurements.
- Sensor washes each dive in rugged wash bay.
- All stainless steel external parts.
- Cable thick and strong but flexible. Used in elevator systems.
- Analogue outputs and serial bus outputs standard.
- Allen Bradley Micrologix for easy configuration.
- PV300 for site data entry (tank height, speed etc) PV6 out optioner.
- Can operate independently of the plant DCS or can be integrated into DCS logic for dive control.
- Remote communications via GSM modem standard.
- Data logging in-built and can be accessed remotely.
- **Current Installations include:**
- CCD and washers in alumina and Nickel plants.
- Tailings thickeners in Gold mines.
- Clarifiers / thickeners in alumina plants, high scale, high temperature.



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PROCESS ANALYSERS

# ANALYSERS UNDER DEVELOPMENT FOR MINERALS PROCESSING

**Precision Light and Air are a research and development instrumentation manufacturer. Our products are developed specifically for the minerals processing industry and as such are designed and manufactured to meet the demands of this arduous environment.**

We pride ourselves in our ability to identify problems, explore alternatives and to pioneer solutions.

By partnering closely with clients in the early stages of development we can provide solutions that are specific to a clients requirements.

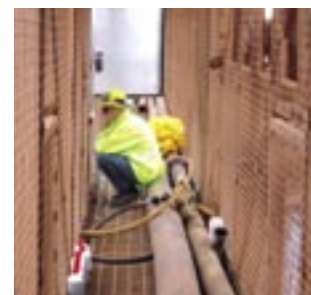
A positive 'can-do' attitude from a team of industry leading designers, technicians and engineers have produced an impressive array of successful projects.

## **Products under development:**

- Settling rate analyser for alumina plants using no valves and no voids to allow scale formation.
- pH for high scale slurry environments like neutralisation.
- Compact mud diver. Lower cost, easier to install.
- Non-nuclear slurry density measurements for underflow density and general process control.
- High temperature sound velocity devices for liquid phase density measurements beyond the temperature capabilities of the AL-6337 refractometer.



*"SmartDiver, rugged open system design specifically for high scale environments."*



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