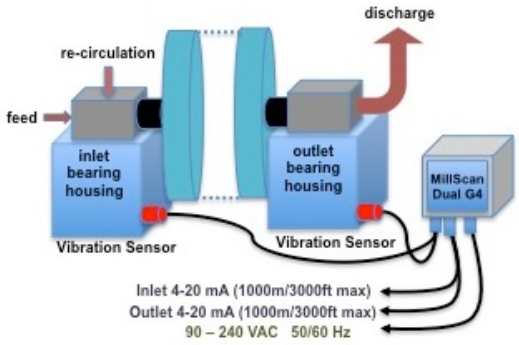
MillScan Dual G4

All Digital Mill Vibration Fill Level Measurement

From over fifteen years of experience in mill production optimization and over three hundred sales of earlier generation MillScan systems, we have created a new fourth generation (G4) product that is extremely easy to install and calibrate.

MillScan Dual G4 is based on a custom application specific integrated circuit (ASIC) consisting of the latest digital signal processing techniques available. The G4 yields two highly accurate mill fill level 4-20mA output signals from the inlet and outlet where either can be selected to run the mill in automated loop control or greatly assist control room operators in manual control.



Dual G4 Typical Set-up

System Components

The Dual G4 consists of a main unit and two custom vibration sensors. The vibration sensors are ***magnetically mounted*** on each bearing housing enclosure at each end of the mill. One vibration sensor cable is 10 meters (~30 ft.) long and the other is 30 meters (~100 ft.) long. All cables are shielded.

The main unit requires AC power (100-220 VAC, 50/60 Hz) and has a 4-20mA output that corresponds to the mill fill level for each inlet & outlet sensor.

An optional mill shell based sensor can also be added if the acoustic coupling of vibration on a particular bearing housing has been found to be inconsistent. This usually only arises when a bearing oil has great fluctuations in temperature or pressure. In this case it is actually best to fix the bearing issue first and then use the bearing housing mounted sensor.

Fixed Position Vibration Sensor

Features

- Precise mill fill level measurement that can be used to increase the ROI of your existing mill.
- Zero crosstalk from adjacent (nearby) mills.
- All digital system, no component drift, not affected by temperature, dust or dirt as is the case in typical mic based systems.
- 4-20mA output for traditional automated loop control in the production control room.
- 3X resolution when compared to microphone based systems.
- Fast and easy installation that typically can be performed in less than two hours and does not require mill shutdown.
- A quick calibration procedure that can be perfomred in less than 5 minutes per sensor when the mill is operating under normal conditions. i.e. The mill is filled to a level that is used in normal 'day to day' production.
- Signal sensitivity changes can be made very quickly without re-calibrating the unit.

MAXIMIZE EFFICIENCY

Maximize your grinding circuit efficiency & minimize damage to the liners by keeping your mill more full.

MINIMIZE DOWNTIME

Real-time knowledge of how much material is presently in your mill. Near instantaneous warning of potential blockages should they occur.

MAINTENANCE FREE

Once the main unit and sensor have been installed, there are no maintenance issues to worry about. The vibration sensor and main unit are dust, water and oil proof, IP67 rated.

FOR MORE INFORMATION

Karl Gugel, Technical Sales
karl@digitalcontrollab.com
or
Stephen Forguson, Tech Sales
stephen@digitalcontrollab.com

DIGITAL CONTROL LAB

Pricast

C/ Caballero 79 7ª planta
08014 Barcelona - España

Tel: +34 93 439 03 13
Fax: +34 93 419 87 71

Email: pricast.controlsystems@pricast.es

www.pricast.es

EASY TO INSTALL

Three cables: Power and two 4-20 mA shielded twisted pairs.

EASY TO CALIBRATE

Simple push-button sequences on the G4 main board allow callibration to take just a few minutes instead of competitor's complicated painful hours.

EASY TO INTEGRATE

The MillScan Dual G4 can be easily integrated into the Mill process control system allowing the user to fine tune the process operation.

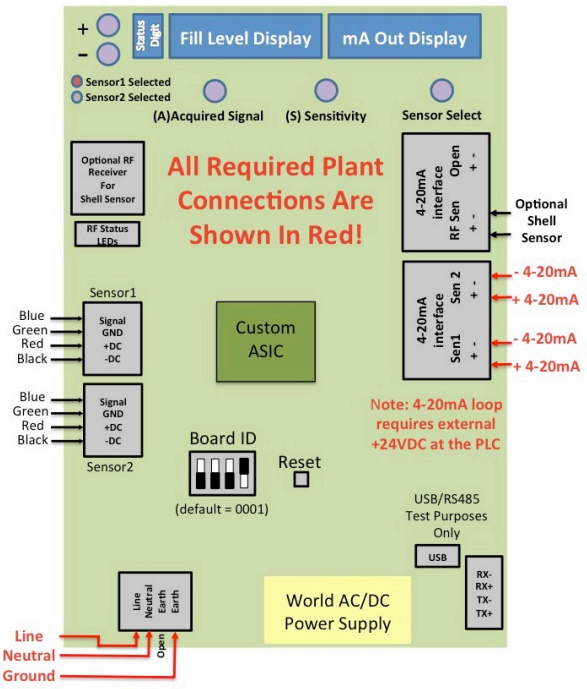
REALTIME DISPLAY

Both the fill level percent and corresponding 4-20mA output are displayed via large segment displays on the main unit board.

SERVICES AVAILABLE

Technical Support
Installation and Setup
Application Support
PID Tuning

Millscan Dual G4 – Wiring Diagram



Wiring/Calibration

At commissioning time, three cables are required for the G4 main unit. The first is AC power, which is typical 100-220 VAC 50/60 Hz. The second and third are two conductor, shielded 4-20mA output cables. These are attached between the main unit and PLC in the electrical MCC room for the inlet & outlet sensors.

4mA output corresponds to a 0% fill level in the mill and 20mA corresponds to a 100% fill level.

After installation is complete, calibration can proceed and consists of the following steps performed at the main unit for each inlet/outlet sensor:

1. Estimate the present fill level in your mill.
2. Acquire a signal at the estimated fill level.
3. Save to the main unit.

The entire process takes typically less than 5 minutes and requires no computer attachment.

We then observe trends in the control room and adjust signal sensitivity as necessary. The sensitivity adjustment takes only a couple minutes, and like calibration, it is a simple button sequence in the main unit.

Because of the installation and calibration simplicity, a manual is provided but is not required. Instead, a single sheet is used for both installation and calibration. It is located inside the main unit door.

System Specifications

- Power Supply: 115/230 VAC 50/60 Hz, 0.5 Amp
- Operating Temperature: -10 to 70 °C
- Main Unit Enclosure: NEMA4 , 12 x 10 x 5 inches
- Sensor Enclosure: IP65, 3 x 3 x 3 inches
- Sensors Cable Length: 10 meter (30 ft.)
  - provided by Digital Control Lab
- 4-20 mA Cable: 1000 meter (3000 ft.) maximum
  - must be provided by the plan

DIGITAL CONTROL LAB

Pricast

C/ Caballero 79 7ª planta
08014 Barcelona - España

Tel: +34 93 439 03 13
Fax: +34 93 419 87 71

Email: pricast.controlsystems@pricast.es

www.pricast.es