

APPLICATION NOTE

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Rotameters and Solar Silicon Wafer production

Industry: Solar Silicon Wafers
Product: Rotameter Flow Meters

Introduction

One of the major prohibitive factors for expanding solar power in the market place is the high cost. The primary cost drivers in solar cell marketing are materials and manufacturing processes. Most solar cells in use today use silicon as the semiconductor that enables the photoelectric effect within the solar cell. Silicon is abundant but also expensive and in high demand as the solar and electronics industries compete for global supplies. There is now a cost effective process in use to extract the pure silicon needed for solar cells using less energy and reduced cost. This process is called the Fluidized Bed Reactor

Application

In the Fluidized Bed Reactor, a raw silicon ore is introduced in a gaseous state. Large amounts of preheated hydrogen or helium are introduced creating a reaction that causes the pure silicon to be released and captured on seed particles that grow to become large super pure silicon spheres. Because of variances of the raw material coming into the reactor constant human attention is required. Operators need a large easy to read local flow indicator to maintain the correct flow rates needed for the process.

Solution

Because of their 6" large bold display and the optional 4-20 ma transmitter with digital display, Yokogawa's RAMC Rotameter were chosen to be the best fit for the required operation of the reactor. Operators could easily see the changes in gas flows needed to maintain proper operation. The optional transmitter with the 4-20 ma or pulse output gives direct feedback to an operator in a control room. Additionally, the RAMC has both FM and ATEX intrinsically safe certifications for use in possible explosive atmospheres.

Solar Silicon Facilities

To assist you in locating these silicon wafer opportunities in your area, below is a link that lists all the refinement plants in the United States.

<http://www.enfsolar.com/directory/material/polysilicon>



Featured Products

RAMC

- Durable and reliable flowmeter
- Ranges in size from ½" to 6 inches
- Connections are NPT or Flanged (other fittings are available upon request)
- FM for US and Canada / ATEX intrinsically Safe
- Large Easy to read 6" dial
- Used in all industries from Power Generation to pharmaceuticals
- Easy to install with low maintenance
- 4-20 ma and pulse output
- LCD Display
- Totalizer
- Can be used on Liquids, Gases or Steam
- Local indicator without additional power supply
- Cost effective



RAKD

- All wetted parts and indicator housing made of Stainless Steel (Other materials upon request)
- Light, guided floats resulting in low pressure loss and stable float movement
- Easy to read display
- Available with a 4-20ma output and limit switches
- ATEX intrinsically Safe
- Available with adjustable needle valve
- Available with pressure controller
- Ideal for Purge meter applications
- Used extensively in corrosive tank level applications
- Temperature range -25°C to 250°C

