

# Polysilicon Industry Solution



## Polysilicon Plants use Emerson™ Products for Precise Pressure Control

### *Polysilicon Overview*

Polysilicon is widely used in Integrated Circuit (IC) and Photovoltaic (PV) industries. It is a major material used in making semiconductor chips and solar cells. The semiconductor chips are used for the production of electrical and electronic devices like computers while the solar cells are used to manufacture solar panels that convert solar energy to electricity.

Polysilicon is categorized into two grades: Solar Grade Silicon (SG) which has a silicon content of 99.9999% and Electronic Grade Silicon (EG) which has a silicon content of 99.999999999%.

Market demand for polysilicon has increased due to the use of alternative and more environment-friendly sources of energy. The production of polysilicon has increased to meet the market demand.

### *Polysilicon Manufacturing Process*

The process of manufacturing polysilicon starts with refining its raw material, silica. Silica, found in sand and quartz, is reduced to remove impurities and then purified to produce Metallurgical-Grade Silicon (MGS). The metallic silicon is processed using either the Siemens reactor or Fluidized Bed reactor. Both processes use Trichlorosilane (TCS) undergoing further chemical or physical processes to produce polysilicon.

### *Emerson Process Management Solution*

Fisher® and Tescom® products are widely installed throughout the world's polysilicon plants. Our products are used in many applications, such as feeding gas, gas recovery and ultra high purity pressure control of the reactor. Our expertise and technical knowledge assure you that our products have high reputation for reliability and durability.

# Fisher® and Tescom® Polysilicon Plant Products

## Products

## Description



*95 Series  
Pressure Reducing Regulator*

- Direct-Operated for Fast Pressure Control
- Multi-Purpose - Used in various applications
- Rugged Construction
- Multiple End Connections Available
- Available in Differential Pressure Control, High Temperature and High Pressure Construction
- Easy Maintenance

## Products

## Description



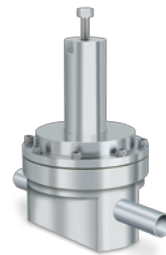
*Type ACE95  
Tank Blanketing Regulator*

- Pilot-Operated for Accurate Pressure Control
- Low Setpoint for Nitrogen Savings
- Easy Installation & Maintenance
- High Sensitivity Provided by Oversized Actuator
- Diagnostic Port for In-Line Analysis
- Stainless Steel Construction



*Type Y690A  
Tank Blanketing Regulator*

- Direct-Operated for Fast Pressure Control
- Compact Construction for Small Tanks and Vessels
- Easy Conversion between Constructions
- Sour Gas Service Capability & Corrosion Resistance
- NPS 1-1/2 and 2 Body Sizes Available in Type Y696



*Tescom® 15 Series Bulk Gas  
Regulator for Hydrogen  
mixing Panels*

- Metal Diaphragm or Bellow sensing element maintains very accurate downstream pressure control at ultra high flow rates
- 316L Stainless Steel bar stock construction for superior corrosion resistance, up to 10 Ra microinch electropolished internal surface finish
- Spring/wrench-adjust or air-actuated compatible with ER3000 Series Electronic Controller



*Type 63EG-98HM  
Backpressure Regulator*

- Pilot-Operated for Accurate Pressure Control
- Versatility in Both Liquid and Gas Service
- NACE Availability
- Fast Speed of Response
- Low Build-up Capability
- Tight Shutoff
- Excellent Overpressure Protection



*Tescom® ER3000 Series  
Electronic Pressure Controller*

- Electropneumatic digital controller
- High precision (0.1% accuracy) device
- Free Software
- Explosion-proof housing available
- Extra analog/digital inputs/ outputs available
- Combine with any air actuated regulator to control a wide range of pressures and flows

### Industrial Regulators

#### Emerson Process Management Regulator Technologies, Inc.

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### Our Global Product Brands:

