

# Clean Coal Technology Industry Solution



## Coal Plants Utilize Fisher® Regulators for Precise Pressure Control

### *Clean Coal Technology Industry Overview*

Coal is an abundant, reliable, and inexpensive source of energy, but it does have some technical limitations. Coal is not suitable for use in some applications such as transportation and it produces a range of environmental pollutants when burned. In recent years, several clean coal technologies have been developed to help reduce the environmental pollution caused by burning coal and make coal more energy-efficient. Among these, coal gasification and coal liquefaction are the most popular technologies to date.

### *Common Clean Coal Technologies*

**Coal gasification** is considered one of the most versatile and cleanest ways to convert coal into an alternative and cleaner form of energy. In gasification, coal is broken down to its basic chemical constituents rather than directly burned. The resulting syngas (a gas mixture made up of carbon monoxide, hydrogen, and other gaseous compounds) can be used as a fuel source or as an intermediate for the production of other chemicals.

**Coal liquefaction** converts solid coal to synthetic oil to supplement natural sources of petroleum. This well-developed technology

requires coal to be in contact with hydrogen in the presence of a catalyst at high temperatures. Coal liquefaction can either be direct as described previously or indirect. Indirect coal liquefaction consists of two stages: gasification to produce coal gas and subsequent conversion of the gas to liquid via the Fischer-Tropsch process.

Products derived from coal through these clean coal technologies can be used as fuel for transportation vehicles and electricity generation, and as raw materials to other valuable products. These recent developments in the clean coal industry can also help ease the burden of oil production and import.

### *Emerson Process Management Solution*

Emerson Process Management Regulator Technologies is the market leader in the field of pressure control with a history of over a hundred years. With more than 100 product families, Fisher® regulators are widely used to control various fluids, including gas, liquid, and steam.

We take an active part in the clean coal industry by offering a variety of products and expert process solutions. Pressure Reducing and Tank Blanketing Valves are available for pressure controls for tanks and pressure vessels used in the coal gasification and liquefaction processes.



[www.fisherregulators.com](http://www.fisherregulators.com)



# Recommended Fisher® Regulators Applicable for Clean Coal Technologies

## Pressure Reducing

- Direct-Operated
- Multi-Purpose - Can be Used for All Process Media
- Rugged Construction
- Multiple End Connections Available
- Available in Differential Pressure Control, High Temperature, and High Pressure Optional Constructions
- Easy Maintenance



**95 Series**

## Relief / Backpressure

- Direct-Operated
- Multi-Purpose - Can be Used for All Process Media
- Excellent Fluid Compatibility
- Close, Stable Regulation
- Available in Differential Pressure Control, High Temperature, and High Pressure Optional Constructions
- Easy Maintenance



**98 Series**

## Pressure Reducing

- Pilot-Operated
- NPS 1 through 12 x 6 (DN 25 through 300 x 150) Body Sizes Available
- Quick Change Trim Package
- Optional Noise Abatement Trim
- No Atmospheric Bleed
- In-Service Travel Inspection
- Easy Top Entry In-line Maintenance



**Type 1098-EGR**

## Tank Blanketing

- Direct-Operated for Economic Pressure Control
- Compact Construction for Small Tanks and Vessels
- Easy Conversion Between Constructions
- Sour Gas Service Capability and Corrosion Resistant
- NPS 1-1/2 and 2 (DN 40 and 50) Body Sizes Available with Type Y696



**Type Y690A**

### Industrial Regulators

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

USA - Headquarters  
McKinney, Texas 75069-1872 USA  
Tel: 1-800-558-5853  
Outside U.S. 1-972-548-3574

Asia-Pacific  
Shanghai, China 201206  
Tel: +86 21 2892 9000

Europe  
Bologna, Italy 40013  
Tel: +39 051 4190611

Middle East and Africa  
Dubai, United Arab Emirates  
Tel: +971 4 811 8100

For further information, visit [www.fisherregulators.com](http://www.fisherregulators.com)

### Our Global Product Brand:



D351881X012 © 2010 Emerson Process Management Regulator Technologies, Inc. All rights reserved. Printed in the U.S.A. and China. 05/10 Fisher, Emerson Process Management, and the Emerson Process Management design are marks of one of the Emerson Process Management group of companies. All other marks are the property of their respective owners.