



Em-452

Multi-Body, Anti-Surge Compressor Controller

The Em-452 series Multi-Body Anti-Surge Controller is a Profibus network-attached compressor controller system. This module incorporates Petrotech's field-proven configurable anti-surge control algorithm into a small controller that is easily attached to any SIMATIC® Series 300 or 400 Master Controller via the Profibus communications protocol. At the beginning of the I/O scan, the Em-452 updates instrument inputs and sequencing commands issued by the Master Controller, processes the anti-surge protection algorithms and updates the output signal in about 25 milliseconds.



Petrotech Anti-Surge Control

The Petrotech algorithms provide consistent and accurate surge compressor protection across a wide range of process gas conditions, resulting in optimum anti-surge protection and elimination of unnecessary recycling.

Petrotech's advanced anti-surge protection algorithms automatically compensate for varying molecular weights, temperature, pressure, compressibility and rotational speed.

The Em-452's configurable software is based upon Petrotech's experience gained in providing thousands of compressor control systems spanning 40 years.

Em-452 Features

- Fully Integrated Functionality
- Up to Three Compressor Bodies
- Proven Network Interface
- Separate Controller for Fast Processing
- Optional Capacity Control
- Optional Performance Calculations
- Optional Load Sharing Control
- Optional Stand-alone Display

The System

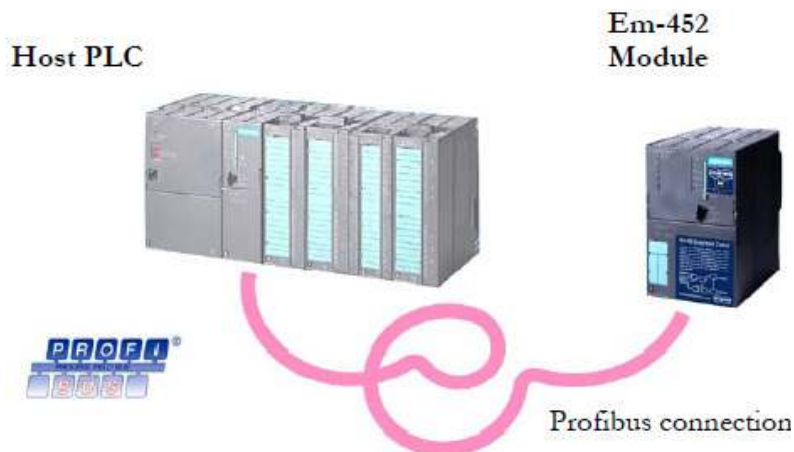
The Em-452 module incorporates anti-surge protection, capacity control and load sharing programs into a space saving device. The Em-452 module reacts to rapidly changing pressures and flow rates to prevent surge, limit recycle losses and maintain process stability.

Module configuration includes provisions for variable guide vanes, molecular weights and suction or discharge flow measurements. In addition, the system provides selectable Auto/Manual/Safe-Manual recycle valve control, self-recalibration in response to surge events and Purge/Run-Up/Rundown sequencing coordination.

The Em-452 module is equipped with the anti-surge protection for a multi-body (recycle loop) compressor and integral recycle transfer control. Options for this module include capacity control, performance calculations and multi-compressor load sharing controls.

The **Em-452** module makes adding a full-functioning Petrotech multi-body compressor anti-surge control to a PLC-based controller as easy as connecting a network cable.

The Em-452 Multi-Body, Anti-Surge Compressor Controller



The System - continued

Load sharing control provides a common percentage command to compressors operating on common discharge headers. An Em-452 module is required for each compressor to be load share controlled. An optional Human Machine Interface (HMI) color touch-screen display with preloaded screens is available to provide a quick operator interface for the system.

For single-body compressor loop, Petrotech also offers the companion to the Em-452, the Em-451. This module incorporates additional applications to process a single-body compressor train.

Petrotech provides a full range of products and services for rotating machinery. We provide integrated control systems for gas, hydro and steam turbines, generators, compressors, pumps, reciprocating engines and all associated auxiliary systems. Also installation, startup, and commissioning services for a full turnkey solution.

For more information about Petrotech's products and services, visit our website at www.petrotechinc.com.



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