COMPRESSOR-PACK VRU

COMPRESSOR-PACK

The Compressor-Pack VRU is specially designed to work in conjunction with Vapor Recovery Unit Compressors. The VRU recovers the low pressure vapors from the production tanks, as well as the heater treater, and then compresses those vapors to be introduced into the gas stream, upstream of the sales meter. The Compressor-Pack VRU's first responsibility is to monitor all of the process variables for alarms and shutdowns. It then controls the VRU to maintain the process variables within the operational parameters. In the simple control version the Compressor-Pack VRU utilizes a PID control loop that interfaces with the compressor motor variable speed drive to maintain the VRU inlet pressure within a pressure window, (Setpoints from Operator Interface or SCADA) by varying the speed of the VRU compressor motor. The complex control version also controls the VRU's tank inlet PCV (process control valve) position and the VRU bypass PCV position by means of pressure transmitters, PID control loops, analog outputs and I/P transducers.

There are three base Compressor-Pack models to support a variety of Compressor types from small wellhead compressors to large multiple stage compressors. Custom designs are available that support your particular application.

The Compressor-Pack works with both gas and electric driven units. Gas driven units can be configured to have all the controls necessary for start-up from the local control panel. Electric driven units can be configured for auto-start after power failure. First-out shutdown history is stored and the last 10 shutdowns are saved. Automatic loading/unloading is based on current loads. Suction pressure control is supported.

The Compressor-Pack can retrieve data from up to twelve remote wells and six sales stations, connecting through local spread spectrum radios.

Features for the Compressor-Pack VRU
- Local configurable shutdown settings for critical shutdown conditions
- Local configurable alarm settings for critical alarm conditions
- All alarms and shutdowns are displayed locally
- Configurable control settings from local interface
- Real-time data display for local user interface
- Collected data can be retrieved via Modbus protocol using either RS232 or Ethernet communications connecting to a Host SCADA System

Custom Compressor-Pack Solutions Available – Contact Insight Technical Services, Inc. to specify a custom solution.

Common Compressor-Pack Specifications:
Compressor-Pack is built on a 32 bit PLC Platform with the Following Specifications
- Multiple COM Port, RS232/RS485 Serial Ports, 2 wire half duplex or 4 wire full/half duplex.
- Serial Protocols Modbus RTU, Modbus ASCII, DNP3, DF1, PPP.
- Ethernet Port Protocols Modbus TCP, Modbus RTU in UDP, Modbus ASCII in UDP, DNP in TCP, DNP in UDP.
- Supports wireless Spread Spectrum radio at 900MHz and 2.4GHz links for remote I/O.
- Environment 5% RH to 95% RH, non-condensing, –40°C (–40°F) to 70°C (158°F).
- Some Compressor-Pack Models are UL Certified.
- Nema 4X Enclosure, Suitable for use in Class I, Division 2, Groups A, B, C and D Hazardous Locations
- Systems can be ordered with 120 VAC, 24 VDC, 12 VDC. Charging systems. Solar calculations available per region.
- Spread Spectrum and Licensed Radios available upon request as specified.

Insight Technical Services, Inc. is a UL508A and a UL698A Certified Manufacturing Facility.

Compressor-Pack 100
The Compressor-Pack 100 is designed for single stage compressors and small wellhead compressor locations. It can be used on reciprocals, liquid ring, sliding, vein, or screw compressors.

Compressor-Pack 200
The Compressor-Pack 200 is designed for large multi-stage compressors. It provides full capability to monitor and operate a large three stage compressor, monitoring all operations and alarms of the compressor while providing critical shutdowns and alarms.

Compressor-Pack VRU
The Compressor-Pack VRU is specially designed for to work in conjunction with Vapor Recovery Unit Compressors.

COMPRESSOR-PACK 100

The Compressor-Pack 100 is designed for single stage compressors and small wellhead compressor locations. It can be used on reciprocal, liquid ring, sliding, vein, or screw compressors. It provides full capability to monitor and operate these compressors monitoring all operations and alarms of the compressor while providing critical shutdowns and alarms. This is provided through a local color interface that connects to the SCADAPack PLC master. Additional I/O is provided for other local information such as gas engine data, H2S, or O2 concentrations data, where applicable.

Features for the Compressor-Pack 100
- Local user interface is a 6 or 8 inch color touchscreen
- Local configurable shutdown settings for critical shutdown conditions
- Local configurable alarm settings for critical alarm conditions
- All alarms and shutdowns are displayed locally
- Controls for Local and Remote Well Start/Stops
- Configurable control settings from local interface
- Real-time data display for local user interface
- Collected data can be retrieved via Modbus protocol using either RS232 or Ethernet communications connecting to a Host SCADA System

Compressor-Pack 100 I/O Parameters
- Engine Oil Pressure and Temperature
- Engine Water Temperature
- Jacket Water Pressure and Temperature
- Auxiliary Water Pressure and Temperature
- Engine Intake Manifold Pressure & Temperatures
- Engine Exhaust Manifold Temperature
- Engine Oil Pre and Post Filter Pressure and Diff Pressure
- Engine Oil Pre and Post Catalytic Converter Temps
- Engine RPM
- Compressor First, Second and Discharge Pressures
- Compressor First, Second and Discharge Temperature
- Compressor Oil Pressure and Temperature
- Compressor Oil Pre & Post Filter Diff Pressures
- Compressor Water Temperature
- Compressor Bearing Temperatures
- Oil/Gas Discharge Temperatures
- Gearbox Oil Pressure and Temperature.
- Wellhead Pressure and Differential Pressure
- Suction Pressure and Temperature
- Suction Scrubber Pressure and Differential Pressure
- Suction Header Pressure
- Fuel Gas Scrubber Pressure
- Discharge Pressure
- Discharge Scrubber Pressure and Differential Pressure
- Discharge Pre and Post After-Cooler Temperatures
- H2S Concentrations
- Motor Amperages
- Vibration Alarms
- Vibration Accelerometer Sensors
- Ambient Temperature
- Storage Battery and Charger Voltages
- PLC Backup Battery Voltage
- Connection for O2 Concentration Sensor

Compressor-Pack 100 Controls
- Local and Remote Start and Stop
- Auto Restart after Power Resumption (Electric)
- Configurable Loading Solenoid Setpoints
- Suction Pressure by Engine Speed Control
- Fuel Shut-Off Valve Control
- Starter Solenoid Control
- Manual/Auto Sliding Valve Control

6 Custody Sales Stations
- Sales Station Updated every 60 Seconds
- Communications Timestamp

Cooling Fan Controls
- Local and Remote Start and Stop
- Primary and Secondary Temperature Setpoints
- Multiple Process Value Choices for Primary/Secondary Control

12 Remote Wellhead I/O Monitors
- Tubing and Casing Pressures
- Solar Charger and Battery Voltages
- Communications Time Stamp

First-Out Shutdowns
- 10 Previous Shutdown History
- Cause and Timestamp

COMPRESSOR-PACK 200

The Compressor-Pack 200 is designed for large multi-stage compressors. It provides full capability to monitor and operate a large three stage compressor, monitoring all operations and alarms of the compressor while providing critical shutdowns and alarms. This is provided through a large local color interface that connects to the SCADAPack PLC master. Additional I/O is provided for local safety systems such as O2, Methane, Fire, alarms, or ESD safety systems.

Features for the Compressor-Pack 200
- Local user interface is a 6 or 8 inch color touchscreen.
- Local configurable shutdown settings for critical shutdown conditions
- Local configurable alarm settings for critical alarm conditions
- All alarms and shutdowns are displayed locally
- Configurable control settings from local interface
- Real-time data display for local user interface
- Collected data can be retrieved via Modbus protocol using either RS232 or Ethernet communications connecting to a Host SCADA System

Compressor-Pack 200 I/O Parameters
- Engine Oil Pressure and Temperature
- Engine Water Temperature
- Jacket Water Pressure and Temperature
- Auxiliary Water Pressure and Temperature
- Engine Intake Manifold Pressure & Temperatures
- Engine Exhaust Manifold Temperature
- Engine Oil Pre and Post Filter Pressure and Diff Pressure
- Engine Oil Pre and Post Catalytic Converter Temps
- Engine RPM
- Compressor First, Second and Discharge Pressures
- Compressor First, Second and Discharge Temperature
- Compressor Oil Pressure and Temperature
- Compressor Oil Pre & Post Filter Diff Pressures
- Compressor Water Temperature
- Compressor Bearing Temperatures
- Oil/Gas Discharge Temperatures
- Gearbox Oil Pressure and Temperature.
- Wellhead Pressure and Differential Pressure
- Suction Pressure and Temperature
- Suction Scrubber Pressure and Differential Pressure
- Suction Header Pressure
- Fuel Gas Scrubber Pressure
- Discharge Pressure
- Discharge Scrubber Pressure and Differential Pressure
- Discharge Pre and Post After-Cooler Temperatures
- H2S Concentrations
- Motor Amperages
- Vibration Alarms
- Vibration Accelerometer Sensors
- Ambient Temperature
- Storage Battery and Charger Voltages
- PLC Backup Battery Voltage
- Connection for O2 Concentration Sensor

Compressor-Pack 200 Controls
- Local and Remote Start and Stop
- Auto Restart after Power Resumption (Electric)
- Configurable Loading Solenoid Setpoints
- Suction Pressure by Engine Speed Control
- Fuel Shut-Off Valve Control
- Starter Solenoid Control
- Manual/Auto Sliding Valve Control

6 Custody Sales Stations
- Sales Station Updated every 60 Seconds
- Communications Timestamp

Cooling Fan Controls
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