

COMPRESSOR-PACK



The Compressor-Pack is designed in three models to support a variety of Compressor types from small wellhead compressors to large multiple stage compressors.

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. With local Spread Spectrum radios, the Compressor-Pack can retrieve data from up to 12 remote wellheads and 6 sales stations



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

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. 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.

- Local user interface is a 6 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 Differential Pressure
- Engine Oil Pre and Post Catalytic Converter Temperatures
- Engine RPM
- Compressor First, Second and Discharge Pressures
- Compressor First, Second and Discharge Temperature
- Compressor Oil Pressure and Temperature
- Compressor Oil Pre and Post Filter Pressures and Differential 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 Shutdowns
- Shutdown Cause and Timestamp with each stored Shutdown

COMPRESSOR-PACK

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.

- Local user interface is a 6 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 Differential Pressure
- Engine Oil Pre and Post Catalytic Converter Temperatures
- Engine RPM
- Compressor First, Second and Discharge Pressures
- Compressor First, Second and Discharge Temp
- Compressor Oil Pressure and Temperature
- Compressor Oil Pre and Post Filter Pressures and Differential 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

- Local and Remote Start and Stop
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First-Out Shutdowns

- 10 Previous Shutdowns
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Compressor-Pack VRU

The Compressor-Pack VRU is specially designed for to work in conjunction with a Vapor Recovery Unit Compressors. The VRU recovers the low pressure vapors from the production tanks (and sometimes the heater treater) 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 meet 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.

- 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 the SCADA-Pack PLC Platform with the following Specifications
32-bit CMOS microcontroller, Non Volatile RAM CMOS RAM with lithium battery retains contents for 2 years with no power
Serial Port COM1 Configurable RS-232 or RS-485, 2 wire half duplex or 4 wire full/half duplex
Serial Ports COM2, COM4 • RS-232, DTE, 8 pin modular jack, full or half duplex with RTS/CTS control
Serial Port COM3 Located on 5604 I/O module. Same specifications as COM2 and COM4
Baud Rates COM1, COM2, COM4 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600 and 115200
Baud Rate COM3 1200, 2400, 4800, 9600, 19200, 38400, 57600 and 115200
Serial Protocols Modbus RTU, Modbus ASCII, DNP3, DF1, PPP
Ethernet Port RJ45, 10BaseT
Network Protocols IP: ARP, TCP, TFTP, UDP, ICMP
Ethernet Port Protocols Modbus TCP, Modbus RTU in UDP, Modbus ASCII in UDP, DNP in TCP, DNP in UDP
Wireless1 Spread spectrum radio at 900MHz2 and 2.4GHz2
Environment 5% RH to 95% RH, non-condensing, -40°C (-40°F) to 70°C (158°F)
Power Input 11 - 30 VDC, 4.3W typical (10.8W full I/O capacity in use)

Base Compressor-Pack Models are UL Certified, Insight Technical Services, Inc. is a UL Certified Manufacturing Facility
Nema 4X Enclosure, Suitable for use in Class I, Division 2, Groups A, B, C and D Hazardous Locations
Systems can be ordered, 120 VAC, 24 VDC, 12 VDC. Charging systems available. Solar calculations available per region
Spread Spectrum and Licensed Radios available upon request as specified

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