

BATTERY-PACK



Battery-Pack 300

The Battery-Pack 300 has the ability to have satellite wells connect to it using the Starter-Pack units. There is support for up to six wells. This can be wells that are equipped with up to four electric powered rod beam pumping units, and/or two wells that are equipped with a gas powered rod beam pumping unit, and/or one well that is equipped with a hydraulic pumping unit. Each well can also have local tanks, and there is support for collecting wellhead pressures, temperatures, control pumps and valves, as well as other local on-site control capability.

- Support for 4 *Starter-Pack EPU* Units (Electric Pumping Units)
- Support for 2 *Starter-Pack GPU* Units (Gas Pumping Units)
- Support for 1 *Starter-Pack HPU* Unit (Hydraulic Pumping Unit)



Common Battery-Pack Specifications:

Battery-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).
- 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.

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

⊕ See the Starter-Pack Brochure for more information pertaining to its operation, or call for more information.

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

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BATTERY-PACK



The Battery-Pack provides autonomous local and/or remote control of Oil and Water Tank Battery installations. It is designed to work at Wellhead, Central Tank Battery Facilities, or Multi-Well Pad Installations. The Battery-Pack is designed in three base models as well as customized models that best suit your needs.

All Battery-Pack models are designed with an all weather protected, local user control interface. Displays can vary from simple line displays up to full color touch interface displays.

All Battery-Packs are Class1, Div2 Classification rating with intrinsically safe circuit extensions for Class 1, Div1 connections to the tank level sensors. UL Certification is available.

Battery-Pack 100

Multi-well tank monitoring using wireless I/O. Support for up to 32 tanks, using either the Accu-Tech or OleumTech wireless tank level solutions. Supports four local wireless gas flow measurement runs.

Battery-Pack 200

Designed for Wellhead Tank Battery Monitoring. 2 Oil and 2 Water Tanks and all on-site wellhead controls and alarms for pumps and other facilities. Can interface and control Lufkin POCs.

Battery-Pack 300

Our Flagship Controller, designed to work from the Wellhead to the Tank Battery. Base model Supports 6 Oil, 4 Water Tanks, and all on-site wellhead controls and alarms for pumps and other facilities. Can interface with remote wells using the *Starter-Pack* interfacing to any wellhead scenario.



insight technical services, inc.



Battery-Pack 100

The Battery-Pack 100 is designed for tank monitoring using wireless I/O. It can be scaled from a single tank up to 32 remote tanks using a variety of different wireless remote I/O solutions. The Battery-Pack 100 continually communicates to each tank level device. The Battery-Pack 100 can send shutdown commands to groups of devices based on received information from the received Tank level/temperature information. These devices can be well valves, mainline valves, pump off controllers, plungers or other devices capable of receiving Modbus commands. The Battery-Pack 100 is designed to work primarily with two wireless solutions, the OleumTech and the Accu-Tech wireless tank level sensors. These are the two leading wireless tank level measurement companies on the market today. ITSI provides these products as an integrated part of the Battery-Pack 100 solution. Additionally there are other wireless I/O devices that can interface into this unit for pressures and temperatures, as well as on site controls as may be needed.

- Local user interface via 3.5" Color LCD Touchscreen Display.
- Supports multiple tank level wireless I/O solutions.
- Support for up to 32 remote tanks or other wireless remote devices.
- Security features programmed into unit, including alarms and shutdown options for local and remote devices such as pumping units, compressors, well shut in, and valves.
- 8 Shutdown Groups.
- Support for Multiple Meter Runs, which can be sales meters, check meters, etc.
- Register programming for local user interface display.
- Real-time data display for local user interface.
- Collected data can be retrieved via Modbus protocol using either RS232 or Ethernet communications.

Battery-Pack 200

The Battery-Pack 200 is designed for smaller tank battery facilities that are typically located at a well location. The Battery-Pack 200 is limited to 2 oil tanks and 2 water tanks, however it has full capabilities for monitoring and controlling the well location and tank battery, providing alarms, shutdowns, and on locations controls. The Battery-Pack 200 can interface to a Lufkin POC and provide automated control for high tank level shutdowns in the event of a high tank level and provide alarms and real-time data to a Host SCADA system. Additional alarms and shutdowns are provided for other on location facilities.

- 2 Tank Levels
- 1 Casing Pressure
- 1 Circulating Pump
- 1 Heater Treater
- Supports Electric and Gas driven Pump Off Controller (POC) installations.
- 2 Saltwater Tanks
- 1 Line Heater
- 1 Saltwater Pump
- Support for up to 1 local meter run
- 1 Tubing Pressure
- 2 Separators
- 1 Chemical Pump

Battery-Pack 300

The base Battery-Pack 300 is designed for large tank battery facilities that have satellite wells that feed into the local tank battery. The local tank battery can also have a well on site. The Battery-Pack 300 can also be used in multi-well horizontal "PAD" configurations where many wells are drilled on one large well site with a single group of tanks that are produced into.

The Battery-Pack 300 can run stand alone as a single large tank battery monitoring box, but it is also designed and programmed to work in conjunction with the ITSI Starter-Pack, which is located at a remote well, to providing remote control of the wellhead itself. The Battery-Pack 300 and the Starter-Pack communicate to each other using Modbus communications typically using spread spectrum radios providing each other with information of which they been pre-programmed to do. It provides support for six remote Starter-Packs per Battery-Pack.

Available Tank Battery Information

- 6 Oil Tank Level
- 2 Separator Pressures
- 4 Lead Line Pressures
- 4 Chemical Pump Flow Rates
- Local Casing Pressure
- 4 Saltwater Tanks
- 1 Heater Treater Pressure and Temperature
- 2 Circulating Pump Pressures, and Flow Rates
- Local Tubing Pressure and Flow Rate
- 4 Lead Line Pressures

Available EPU Information

- Local Engine Fuel Pressure
- Local Engine Water Temperature
- Engine Speed
- Local Engine Oil and Pressure and Temperature
- Local Engine Exhaust Temperature

Other Available Information

- PLC Battery Voltage, Storage Battery Voltage, Charge Voltage and Current, PLC Clock Information, and Ambient Temperature.

Features for both the Battery-Pack 200 and Battery-Pack 300

- Base user interface is a 6 inch color touchscreen. Other screen options available.
- Security features programmed into unit, providing alarms and shutdowns for all critical points.
- 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.
- Heartbeat interface for fulltime safety with Starter-Pack to assure communications is always monitored between the two devices (Battery-Pack 300 Specific).
- Supports Electric and Gas driven Pump Off Controller (POC) installations.