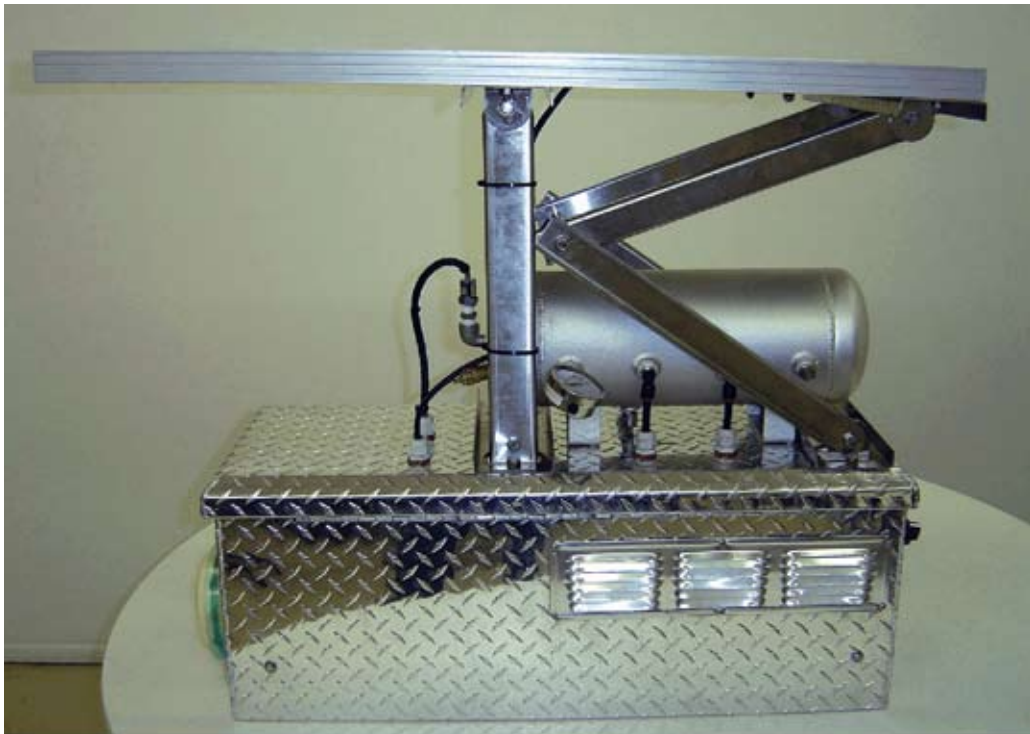




HLR Controls Super Duty Solar Air Compressor with Smart Control





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The Solar Compressor with Smart Control was conceived in response to a growing demand in the Oil and Gas production industry for a safe, reliable, portable, self-contained, easy to use supply gas source. Use of compressed air instead of produced gas for controls has several advantages including less wasted sellable gas, elimination of problems from wet gas and condensate, and longer controls life. Another added advantage is the elimination of hazardous area creation everywhere methane and/or H2S is used for supply gas.

The heart of the unit is a maintenance free 12 volt air compressor with 45 watts of solar power and a maintenance free sealed gel battery. Features include an attractive, light weight aluminum enclosure 125 PSI outlet pressure, 3 gallons of on-board compressed air storage, and completely automatic operation. The programmed on-board electronic controller performs all control functions including compressor operation, battery monitoring, charging and "floating", low battery shutdown, alarm indication, and operator status messages. It also keeps track of compressor on/off cycles and has an hour meter. The menu system includes user adjustable setpoints for compressor on and off switching. Controller memory is non-volatile which prevents memory loss during periods of storage.

Installation requires a minimum of steps: Orient the unit with the solar panel facing South; set the angle of the solar panel (15 degrees plus latitude from horizontal); connect supply out to the 1/4" NPT port provided; turn on the power switch and allow a few minutes for the unit to pressure up. A gauge is provided on the holding tank for pressure monitoring. A bleed valve is also provided for draining of condensed water in the tank in humid installations.

During normal operation, the unit will turn on when tank pressure drops to 100 PSI and off when it rises to 125 PSI (these setpoints are adjustable through the controller). A pressure relief valve is provided which activates at 150 PSI. A pressure transmitter mounted to the tank relays pressure information to the controller which turns the compressor on or off based on this data. During any normal mode of operation, one of the following messages will be displayed:

1. Power Switch Turned OFF, Charging, Volts: **.**
2. Power Switch Turned OFF, Battery Charged, Volts: **.**
3. Compressor OFF, Volts: **.**, PSI ***, Start ***
4. Compressor ON, Volts: **.**, PSI ***, Targt ***
5. Low Battery Shutdown, Batt Volts: **.**



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The first 2 messages will be displayed only if the power switch is OFF and solar power is available for charging; otherwise the controller will be powered down and the display will be blank. This feature allows charging when available but protects against battery drain; the unit draws no power when turned off except as provided by the solar panel.

Deep discharge of the battery, which would decrease battery life, is prevented by a low battery shutdown circuit with a flashing indicator at the top end of the solar panel. The compressor ceases operation when battery voltage level falls below 11.5 Volts, with automatic resumption of normal operation when it rises above 12.5 Volts. The battery charge circuit is always active when sunlight is available regardless of the power switch position; therefore the unit will keep its battery charged any time the solar panel is exposed to sunlight. The allowable duty cycle of the base unit is one pump-up-cycle (approximately 30 seconds of run time) every 30 minutes, or about 2% duty. This duty cycle assumes 4 hours average of full sunlight per day, a conservative number in most of the continental U.S. At the duty cycle listed, the unit has approximately 9 days of reserve power available for uninterrupted operation during cloudy weather. **More duty and reserve capacity can be added through the installation of one or more modular solar/battery accessory units and tanks.**

As with any solar powered device, power and load management are critical to reliable operation. In addition to load testing for proper duty cycle calculation, it is very important to maintain a supply gas system free of leaks. A good test of the integrity of supply gas lines is to turn off all loads then allow the compressor unit to pump up to full pressure. A supply gas system without leaks should not bleed down more than 2 PSI in a 30 minute test.

GPS - Theft Tracking available.

You have special needs? HLR has design and fabrication facilities.

PATENT PENDING



Frequently Asked Questions

Q. How long does it take to charge the battery?
A. 4 hours of good sunlight or 45 minutes with a battery charger.

Q. What is the capacity of the battery?
A. See chart below.

Q. Is the compressor a dry compressor?
A. Yes

Q. Can the air tank be purged?
A. Yes, by installing an automatic valve, additional cost \$60.00

Q. Does the enclosure meet the NEMA 4 code?
A. No, however it can be fabricated to meet said code, with additional cost.

Q. Maximum capacity of the air tank?
A. 200 psi

Q. Can the smart control set the compressor higher than 125 psi?
A. Yes, up to 150 psi - a smart control feature.

Q. What is the AMP draw on the compressor?
A. 40 amps

Q. What is the output of the compressor ? (Cubic Feet / Minute) - CFM
A. 4

Q. What is the expected life of the battery?
A. 3 years

Q. Can a GPS system be installed?
A. Yes

Q. Does the computer system provide an administrative report?
A. Yes

Q. How long does it take to pressurize tank from 0 psi to 125 psi?
A. 90 seconds

Q. What in-house test have you performed?
A. Bled tank at a constant 90 psi and it ran for one and half hour before it killed the battery.
A. Cycled tank from 100 psi to 125 psi - 224 times before it depleats to controlled level

Q. Can solar panel be installed remotely?
A. Yes

Q. What size actuators will it close?
A. Per Bettis technician, 10,12,13 & 15 inch

