

Lightning Industries Solar Compressor with Smart Control



The Lightning 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, lightweight aluminum enclosure, 125 PSI outlet pressure, 5 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 set points for compressor on and off switching.

During normal operation, the unit will turn on when tank pressure drops to 100 PSI and off when it rises to 125 PSI (these set points 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. 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 which is 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.

LIGHTNING INDUSTRIES

With over 28 years experience in gas well surface equipment, pneumatics, and electronic safety shutdown systems Lightning Industries is ready to meet all your equipment requirements.

CONTROL PANNEL MESSAGES

During normal mode of operation, one of the following messages will be displayed:

- Power Switch OFF Charging, Volts: 'x'
- Power Switch OFF Charged, Volts: 'x'
- Compressor OFF, Volts: 'x', PSI 'x' Start 'x'
- Compressor ON Volts: 'x', PSI 'x', Target 'x'
- Low Battery Shutdown Batt Volts: 'x'

SAFETY AND EASE OF OPERATIONS

The Lightning Solar Compressors are designed to maximize safety, reduce maintenance cost, and requires minimal operator training.



For more information on any of our products or services please contact a sales representative at:

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or email us at

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Please visit us on the Web at:

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