

Signal Manager Plus

Implements all CBM Control Functions

The Geotech Signal Manager plus is a pump motor controller designed specifically to optimize gas production from coal bed methane wells. It incorporates all functions that would normally be included in the well control panel, including motor protection features. It is fully programmable. It can be monitored and programmed remotely.

The SM+ is designed to control and protect 3 phase AC motors, from 2 to 90 amps (1 to 50 HP), running at up to 480 VAC (delta). It has a built in soft starter, programmable to ramp power up and down over an interval as long as 30 seconds. It has current transformers and voltage sense circuitry to continuously monitor all three phases. Fault conditions include over/under voltage, over/under current, voltage imbalance, current imbalance, and ground fault. These parameters can be set to detect motor jam, pump dry, power line problems, and other faults. Number of restart attempts following fault and minimum cycle time can be programmed. All of the above electrical conditions can be displayed, along with instantaneous power and power factor.

The fault detect digital filter time constant can be programmed (short time for fast acting, long time to not react to noise and transients). The displayed parameters digital filter can also be programmed (short time to show instantaneous conditions, long time to show average conditions). The motor can be run manually with the HOA switch.

Water depth is determined from a down well pressure sensor and an optional manifold (gas) sensor, to correct for high gas pressure and variations in atmospheric pressure. At user defined water levels, the motor is switched on and off using the built in soft start/stop unit. If the unit is operated remotely, an optional software package allows water level to be programmed to follow a user defined time profile.

Remote monitoring and control is accomplished with an RS232/485 interface, or an optional radio SCADA unit. With the RS485 interface, up to 99 SM+'s can be connected together on one serial bus, and monitored or programmed from one computer.

Water and gas flow and totalizer functions are included. The flow meter inputs accept any of the common output formats (turbine or digital pulse).

The SM+ has a real time clock, allowing total pump time on to be recorded, along with the time and date of the most recent motor faults. The total number of motor starts is recorded, along with the time and date of the most recent.

The SM+ has an auxiliary relay which can be used to control a gas blower. The blower can be set to run continuously, or switched on and off based on gas pressure and/or gas flow.



Geotech Signal Manager Plus

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Signal Manager Plus

FEATURES

- Down well and manifold pressure sensor inputs accept 4-20mA, 0-5V, 0-10V.
- Controls pump motor up to 3 phase 480 V, 50 HP, circuit breaker and contactor
- Flow meter and totalizer accept digital pulse or turbine (10 mV) inputs
- 5 amp 120 VAC auxiliary circuit breaker to power flow meters, etc.
- Motor protection includes over/under current, over/under voltage, ground fault, selectable number of restart attempts following fault, delay to restart following fault, voltage/current phase imbalance
- Pump motor soft start, programmable ramp up/down times
- Pump motor on/off manual override
- 2 x 20 character backlit wide temperature range LCD display
- 16 button numeric keypad
- Menu driven display, selectable indication of water level, manifold pressure, motor voltage, current, phase, power factor, flow rates and totalizer values, and all settings
- Password access to change settings
- Controls blower up to 50HP , 480 VAC 3 Ø, blower on/off pressure and flow set points
- Real time clock: total time pump on, time of most recent faults
- Microprocessor controlled, settings in non-volatile memory
- All observable display values can be remotely monitored via serial interface
- All settable keypad values can be remotely set via serial interface
- Surface pressure limiter
- 2 relays
- 2 three phase 90 amp contactors
- Water level (pressure) can be displayed in PSI or feet
- With manifold pressure sensor connected, shows differential pressure (true water level)

SPECIFICATIONS

Input circuit breaker	180 amp, 480 VAC, 3 Ø
Pump motor contactor	90 amp, 480 VAC, 3 Ø
Blower motor contactor	90 amp, 480 VAC, 3 Ø
Auxiliary circuit breaker	5 amp, 120 VAC, 1 Ø
Pump motor circuit breaker	Up to 90 amp
Blower motor circuit breaker	Up to 90 amp
Soft start ramp up/down time	0 - 30 seconds
Pressure sensor analog input accuracy	+/- .25%
Unit size	12" x 16" x 6"
Unit weight	35 lbs
Flow meter inputs	Digital, OC, turbine (10 mV)
Operating temperature range	-20 - 70°C
Storage temperature range	-40 - 85°C
Motor voltage sense	+/- 1%
Motor current sense	+/- .5 A +/- 3% FS
Serial interface	RS232/485

CALL GEOTECH TODAY (800) 833-7958

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