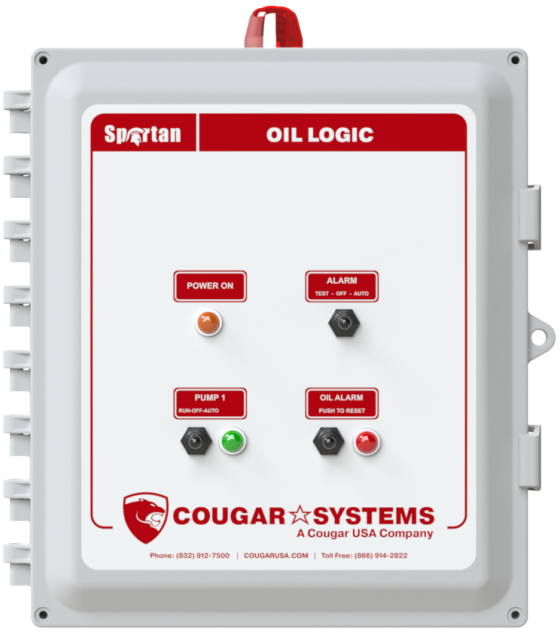
Installation and Operation Manual

Oil Logic



Spartan

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Safety Instructions

Read this manual carefully to learn how to safely install and operate your pump. Throughout this manual there are a number of SAFETY HAZARDS that must be read and adhered to in order to prevent possible personal injury and/or damage to the equipment.

Three keywords, “DANGER” ,“WARNING”, and “CAUTION”, are used to indicate the potential severity of the hazard, and are preceded by a SAFETY ALERT SYMBOL. Failure to follow the safety-related instructions may result in a safety hazard.

DANGER Indicates an imminently hazardous situation which, if not avoided, WILL result in serious injury or death.

WARNING Indicates a potentially hazardous situation which, if not avoided,

Could result in serious injury or death.

CAUTION Indicates a potentially hazardous situation which, if not avoided,

May result in minor or moderate injury.

THOROUGHLY REVIEW ALL INSTRUCTIONS AND WARNINGS PRIOR TO PERFORMING ANY WORK ON THIS PUMP.

Introduction:

Because panel installations are seldom identical, this manual cannot possibly provide detailed instructions and precautions for each specific application. Therefore, it is the responsibility and the duty of all personnel involved in the installation, operation and maintenance of the equipment to ensure that applications not addressed in this manual are performed only after establishing that neither operator safety nor panel integrity are compromised by the installation.

Pre-Installation Check:

Open all cartons and inspect for shipping damage. Report any damage to your supplier or shipping carrier immediately. Always verify that the panel nameplate Voltage, Phase, and HP ratings as well as Amps rating on panel match your pumps and power supply. Warranty does not cover damage caused by connecting panels to an incorrect power source (i.e., voltage and phase).

Installation:

Electrical connections are to be made by a qualified electrician in accordance with the National Electrical Code (NEC) or the Canadian Electrical Code, as well all national, state and local codes. Code questions should be directed to your local electrical inspector. Failure to follow electrical codes and OSHA safety standards may result in personal injury or equipment damage. Failure to follow manufacturer’s installation instructions may result in electrical shock, fire hazard, personal injury or death, damaged equipment, provide unsatisfactory performance, and may void the manufacturer’s warranty.

Motor must have a properly sized starter with a properly sized heater to provide overload and under voltage protection unless motor meets following two conditions: single phase and motor horsepower is 1HP or less. Motors that satisfy these two conditions have built-in thermal overload protection.

Operating personnel should be trained in the operation of the pump and any associated system.

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SYSTEM INSTALLATION

Power Wiring

Mount the control panel vertically on a wall or other solid structure. Connect 120 VAC supply to "L1" and "N".

Sensor wiring - Panel

The sensor assembly wires should be installed in a separate dry conduit. Do not run sensor wires together in a conduit with power supply wires! The sensor wires come with the assembly. The wires are 5-conductor cable and come numbered. Connect the sensor wires to the control panel as follows:

- Terminal 1 - (#1 wire) High level float
- Terminal 2 - (#2 wire) Common
- Terminal 3 - (#3 wire) Pump On probe
- Terminal 4 - (#4 wire) Pump Off probe
- Terminal 5 - (#5 wire) Pump Reference probe

Auxiliary Alarm Wiring

Connect the auxiliary alarm wires as follow:

- Terminal 6 & 7 – BAS Oil Present Alarm
- Terminal 8 & 9 – BAS High Water Alarm
- Terminal 10 & 11 – BAS General Alarm

All wiring shall be in accordance with the National Electrical Code.

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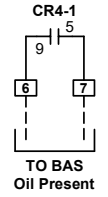
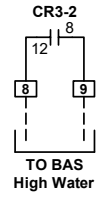
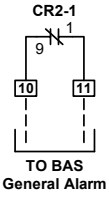
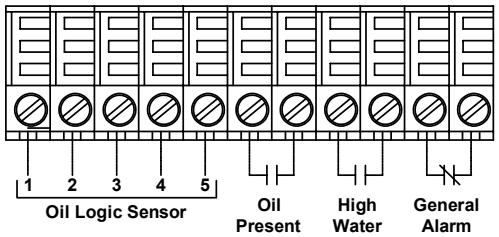
CONTROLS DIAGRAM

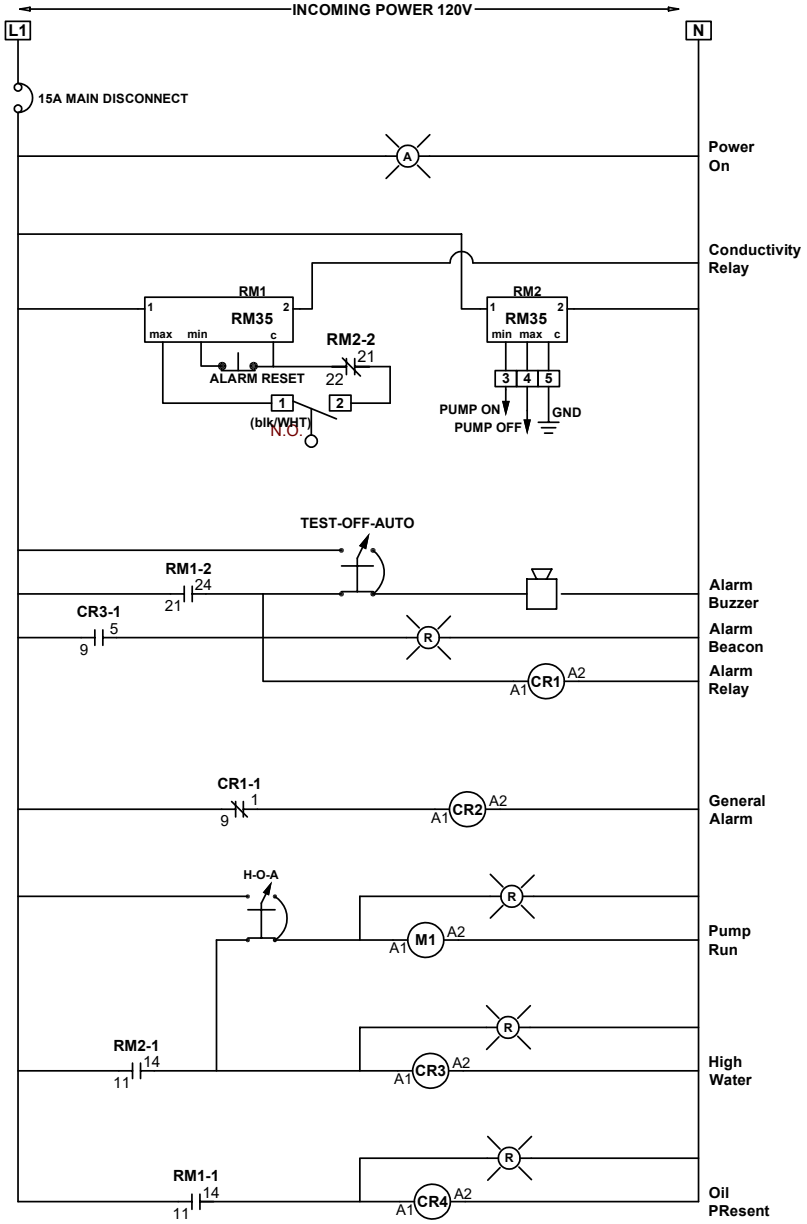
Standard Simplex Oil Logic system.
See *sensor details* in page 7 of Submittal.
See *Sequence of Operation* in IOM.
Adder Options Available.





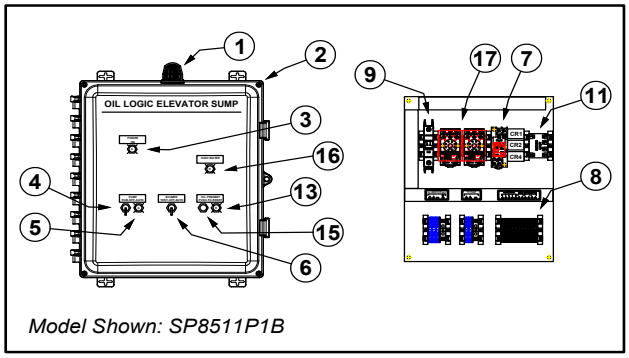






Panel Components

1. Alarm Beacon
2. TYPE 4X Poly Enclosure
3. Power On Indicator
4. Pump Run Indicator
5. Pump Selector switch
6. Alarm Selector switch
7. Control Relay
8. Terminal block s trip
9. Main Disconnect
10. Alarm Horn
11. Pump Contactor
12. Motor Starter Combo Circuit Breaker/overload
13. Oil Present Alarm indicator
14. 120vac Fused Control Transformer (3PH only)
15. Oil Present Reset pushbutton
16. High Water Alarm Indicator
17. Conductivity Relay



Model Shown: SP8511P1B

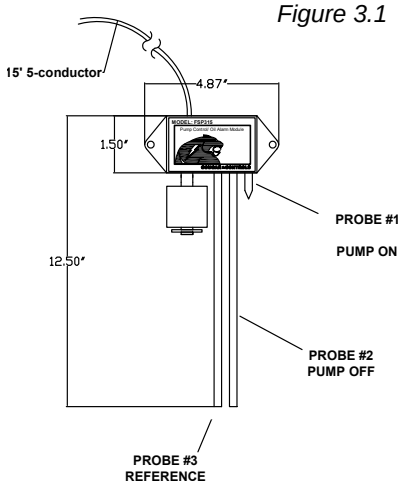
Figure 2.1

Sequence Of Operation

Pumping and Water Alarm:

When the water level begin to rise and submerge both probe #2 and Probe #3, (2) long Stainless Steel rods, nothing will occur until the water level reaches probe #1, short and pointed rod,the "Water Present" alarm will sound and the pump will be called to run. As the pump continues to lower the water level below past probe #2 and probe #3, (2) long Stainless Steel rods, the pump will stop and the "Water Present" alarm will clear.

Figure 3.1



Oil Alarm:

In the event the Float switch is lifted for 2-5 seconds and no conductivity is sensed between probe #1, probe #2, and probe #3, then an "Oil Present" alarm will sound. Probe #1, short pointed rod, is calibrated to the level of the float switch activation point. The combination of the Float rising and the presence of a conductive fluid, or not, is what produces the Oil Alarm. This alarm has a manual reset. If the non-conductive level falls off the float switch, the "Oil Present" alarm will continue to be active until the "Oil Reset" pushbutton is physically pressed.

The Oil Alarm does not prevent the operation of the pump or the "Water Present" alarm indication. If the level continues to increase and the oil layer is pierced, once probe #1, the pointed probe, makes contact with water, the pump will operate and the "Water Present" will sound.

NOTE: The coating nature of oil does demand that if the sensor is submerged in OIL it will require cleaning. The float needs to move freely and the probes need to be clear of any residual oil.

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Sensor Detail

Oil Logic Sensor Assembly standard configuariton. The standard 5-conductor cable length comes as 15ft. Longer cable lengths are available upon request. Sensor Assembly in detail *see figure 4.1*. *Figure 4.2* shows sensor assembly and tank detail.

Model: FSP315
Float: Buna N
Stem: Brass
Conductivity Probes: Stainless Steel
Cable: 15' 5-conductor, oil resistant

Option Lengths

- **30ft Cable Length**
- **50ft Cable Length**
- **75ft Cable Length**
- **100ft Cable length**
- **Custom Length**

Figure 4.1

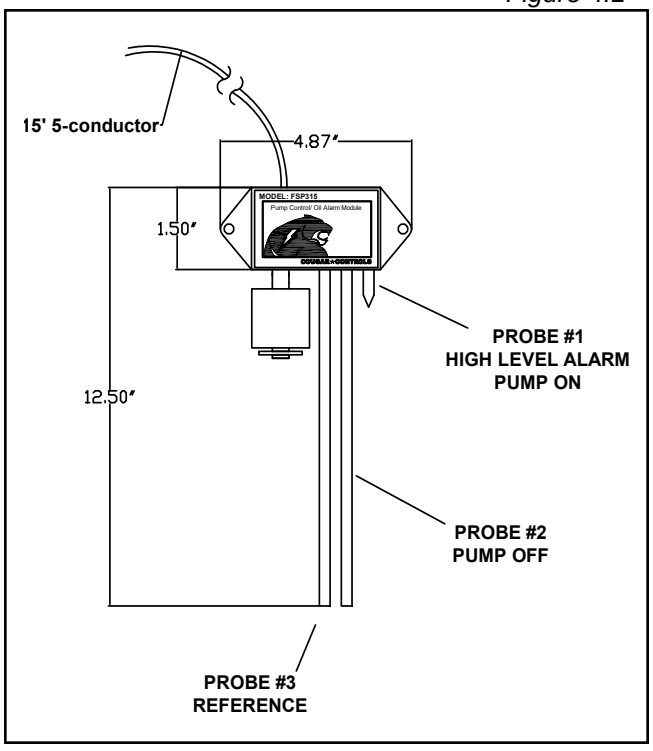
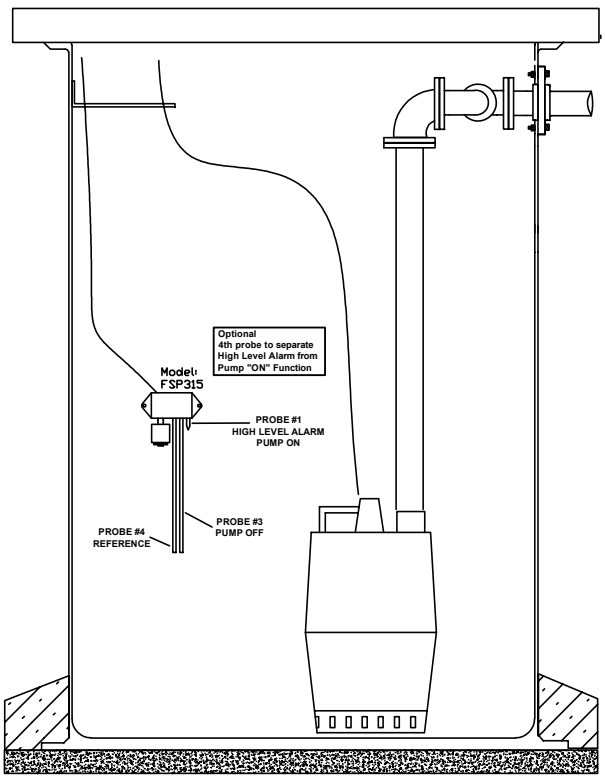


Figure 4.2



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Field Penetration

*** URGENT ***
ANY FIELD PENETRATIONS IN LOCATIONS OTHER THEN FACTORY AUTHORIZED AREAS WILL ***VOID MANUFACTURERS WARRANTY*** OF ALL INTERNAL COMPONENTS.

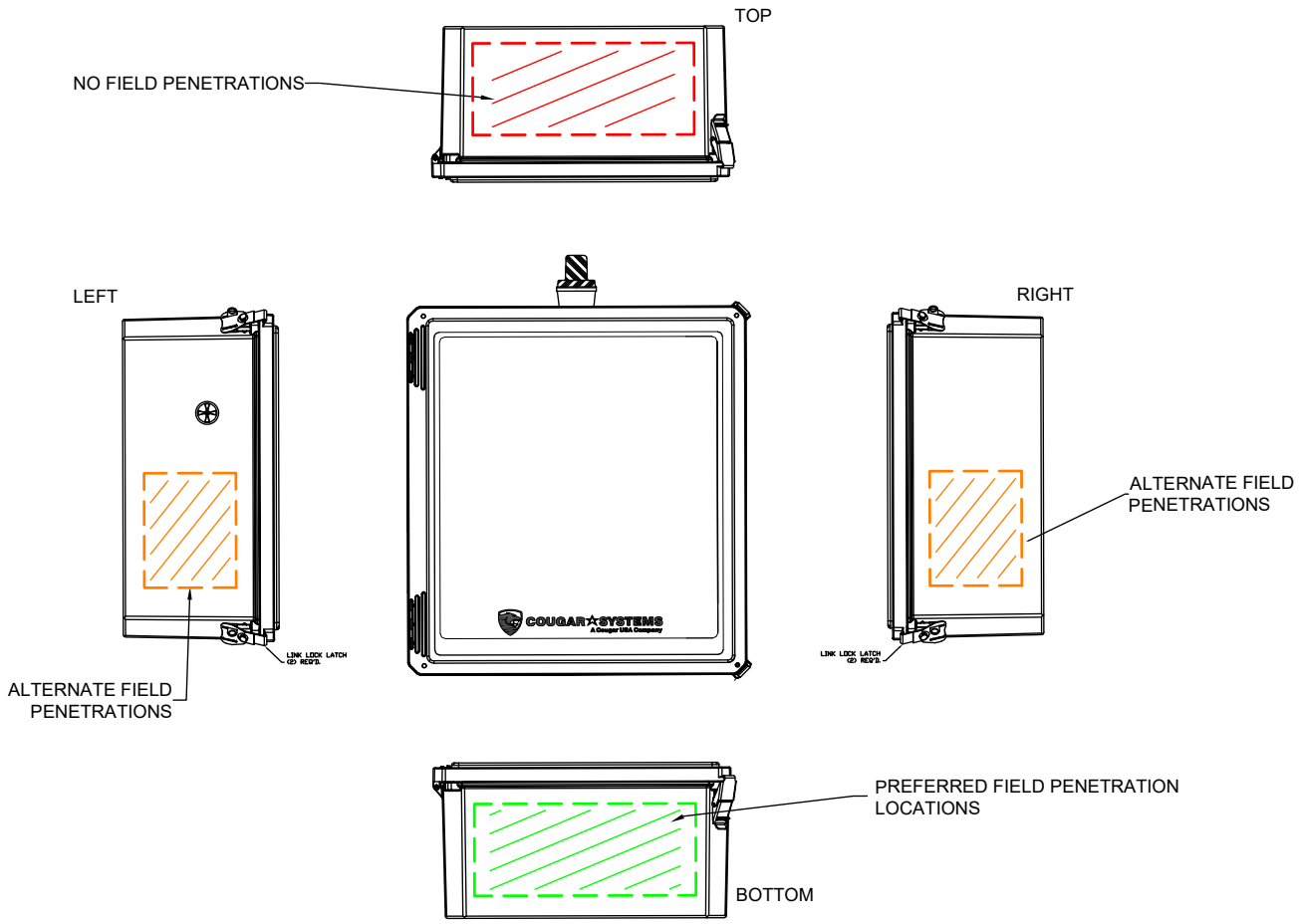

Figure 5.1

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