Leak Detection/Moisture Sensors Identification

ABSTRACT

All HOMA pumps are provided with standard oil chamber moisture sensors to detect water intrusion. Additionally, depending on the model, pumps may be equipped with one or more moisture sensors installed in either the motor and/or junction chamber of the pump. These sensors must be wired correctly in order to function properly, so it is important to understand what sensors are installed on the pump and where they are.

BACKGROUND

Three different styles of seal probe are used depending on the pump model and installation location:

The external seal probe must be installed on-site, and is threaded into the oil chamber drain plug.

It is wired to S1 & S2

This internal seal probe is installed at the factory and monitors both the oil chamber and the motor housing, using the pump casing as a ground for each leg.

It is wired with both S1 and S5 to ground

This internal seal probe is installed at the factory and may monitor the oil chamber, or the junction chamber.

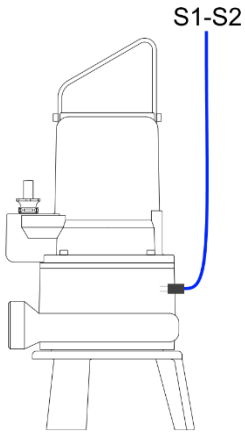
It is wired to S1 & S2 in the oil chamber, and S3 & S4 in the junction chamber

CONNECTION CHART

Cable Identification Marker(s)	Moisture Monitor
S1-S2	Dual wire oil chamber (External and Internal)
S1-Ground	Single wire oil chamber (Non-FM A-Series)
S3-S4	Dual wire junction chamber (F,G,H motor)
S5-Ground	Single wire motor chamber (Non-FM A-Series)
S5-S6	Dual wire motor chamber (Optional A-Series)
S7-S8	Float switch motor chamber (Optional A-Series

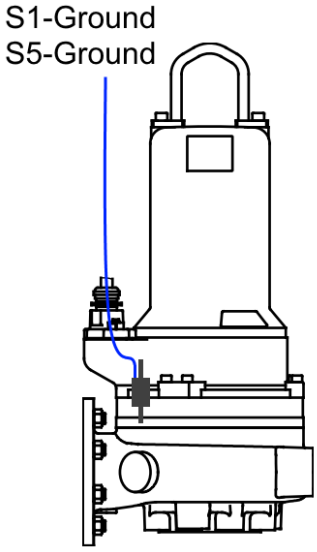
PROCEDURE

First, identify what cables from the pump you have on hand. If you have an external seal probe, it will have a long, blue cable and be separate from the pump cables. It is a dual wire seal probe that completes both legs of the circuit on S1 & S2. This probe must be wired as a complete circuit.

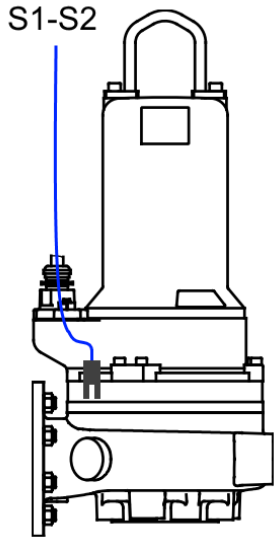


If you have any internal seal probe, it will have leads in one of the pump cables. In order to determine which internal seal probe is installed, check whether or not the pump is FM-approved explosion proof. If it is an explosion proof model, it will have “FM” at the end of the model number. If the pump is an A-Series model (AMX, AMS, AV(X), AK(X)), it is also important to determine which motor frame size the pump is. This is given by a letter D, T, P, F, G, or H in the model number.

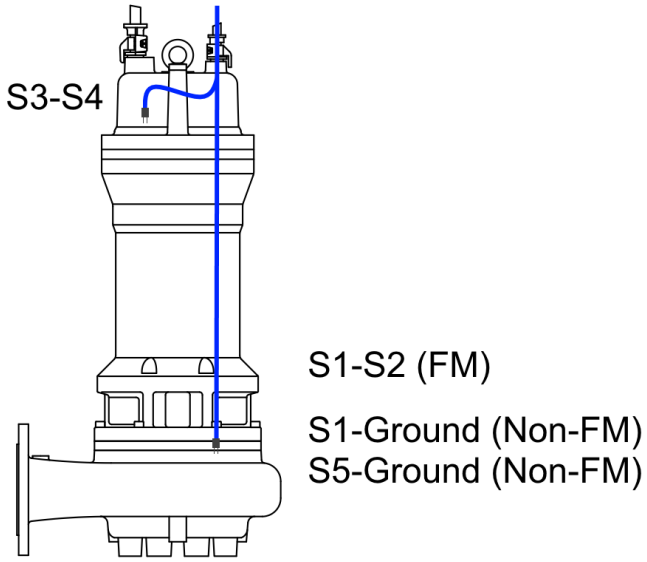
For non-explosion proof pumps, the internal seal probe monitors both the oil chamber, and the motor chamber on S1 & S5 respectively. Each circuit is completed to ground through the pump casing when water intrusion is detected. When wiring these probes, do not wire them to one another, wire both of them to ground.



For explosion proof pumps, the internal seal probe only monitors the oil chamber, using a dual wire seal probe that completes both legs of the circuit on S1 & S2. This probe must be wired as a complete circuit.



If the pump is an F, G, or H motor frame, there will be an additional dual wire seal probe in the motor cap junction chamber. This is wired as S3 & S4. The oil chamber monitor should be wired as above, depending on if the model is explosion proof.



If the pump is equipped with an optional dual wire motor chamber seal monitor, it will be wired as S5 & S6.

For motors larger than an H frame (roughly over 200 horsepower), consult factory for assistance in wiring.