

DIAPHRAGM FAILURE DETECTOR

(for 1-1/2" Metallic Diaphragm Pumps with Cast Iron or Stainless Steel center bodies)



**READ THIS MANUAL CAREFULLY BEFORE INSTALLING,
OPERATING OR SERVICING THIS EQUIPMENT.**

It is the responsibility of the employer to place this information in the hands of the operator. Keep for future reference.

SENSOR DATA

Protection	IP66
Output Type	DPDT Relay
Current Voltage	125 VAC maximum
	30 VDC maximum
Contact Switching Power	60 Watts maximum
Sensor Type	Electro-Optic
Sensor Material	Polysulfone

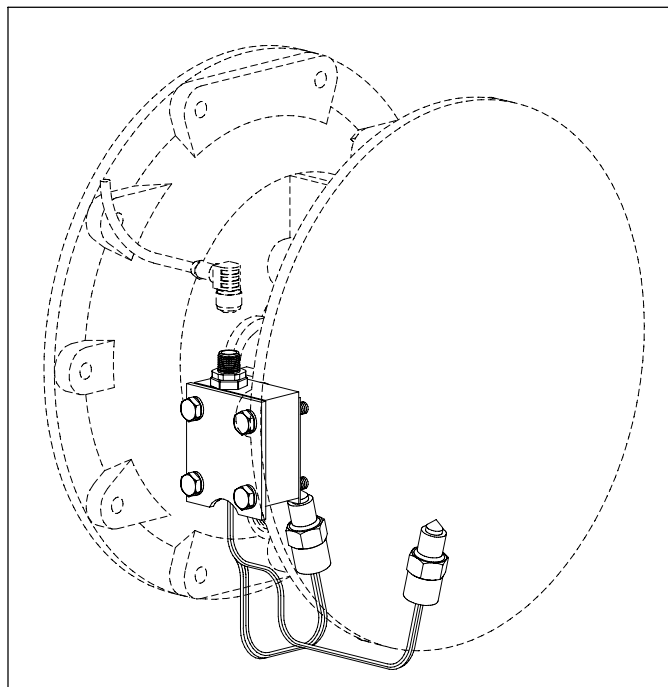
GENERAL DESCRIPTION

An ARO diaphragm pump equipped with the ARO Diaphragm Failure Detector warns of a diaphragm failure by sensing the presence of liquid in the air chamber of the pump.

This system uses a liquid sensor in each of the two air chambers and a control enclosure assembly mounted on the pump. The enclosure assembly contains circuitry with a latching DPDT relay. The relay can control various valves or warning devices and will stay latched until reset by the user.

OPERATING INSTRUCTIONS

1. Supply the enclosure assembly with 24 V DC between Brown (V+) and Blue (V-).
2. Connect the output device (valve, buzzer, light, etc.) to the normally open or normally closed terminal from the relay through the 5-pin connector.
3. Operate the pump as a standard diaphragm pump (refer to the operator's manual for diaphragm pumps).
4. If the relay latches, check for diaphragm failure or matter build-up on the sensors. **WARNING: Resetting of the relay will occur if the power is shut off and turned back on.**
5. If needed, replace the damaged diaphragm.
6. To clean the sensors, remove plate (93707-1) and gaskets (4) from the enclosure (5) by removing the four cap screws (2). Disconnect each sensor (1) from the circuit board. Clean the prism of the sensor with a mild detergent or water. **WARNING: Chlorinated hydrocarbons MUST NOT BE USED for cleaning.** See note in 9 below.
7. Reassemble by reconnecting the sensors (1) and attaching enclosure (5), gaskets (4) and plate (93707-1) to the pump. Apply PTFE tape or #80725 Permatex to each sensor and torque the sensors (1) to NO MORE THAN 120 in. lbs (13.56 Nm).
8. To reset the system, disconnect and then reconnect the power supply.
9. Note: Clean the sensors every 1,000,000 cycles or every 3 months of use.



INSTALLATION AND WARNINGS

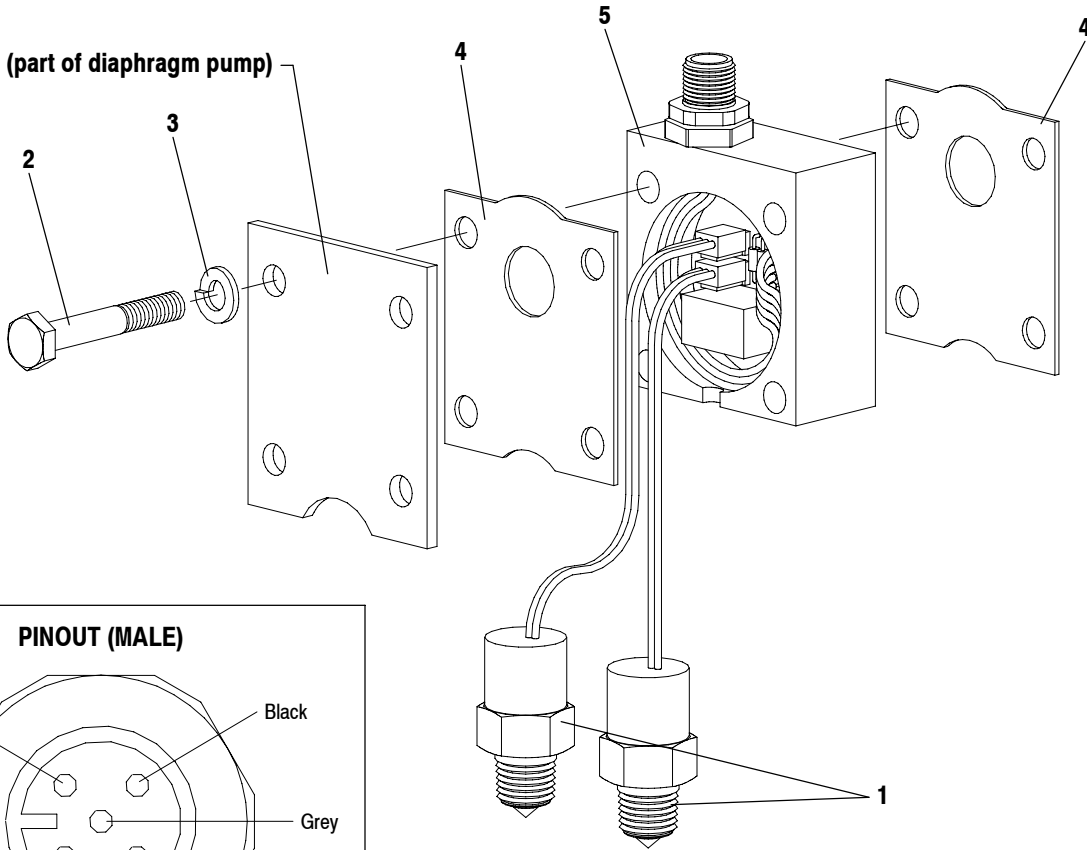
NOTE: The power supply cable is not furnished with the unit and must be supplied by the customer.

ALL WIRING MUST COMPLY WITH ALL LOCAL AND / OR NATIONAL ELECTRICAL CODES.

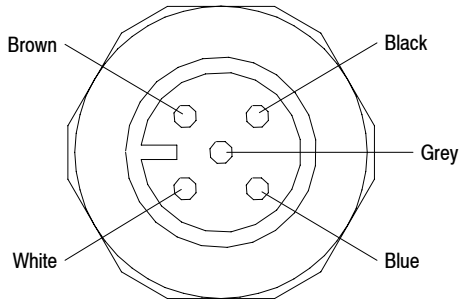
- Electrical codes that apply must be strictly adhered to; failure to do so may lead to shock hazard or serious injury.
- Some local electrical codes may require the installation of rigid conduit.
- The diaphragm failure detector must be installed by a qualified electrician in compliance with all national, state and local codes and regulations to reduce the risk of electrical shock or other serious injury during installation and operation.
- Ingersoll-Rand / ARO is not responsible for accidents resulting from improper installation of components or hardware.
- No electrical power should be in the system at the time the cover is removed.

SENSOR PARTS LIST

93707-1 Plate (part of diaphragm pump)



PINOUT (MALE)



- Grey - Normally Closed, Output
- Black - Normally Open, Output
- Blue - Power In (-)
- Brown - Power In (+)
- White - Relay Common

PARTS LIST

Item	Description (size)	Qty	Part No.
1	Sensor	(2)	96270
2	Cap Screw (1/4" - 20 x 1-3/4")	(4)	Y6-48-T
3	Lock Washer (1/4")	(4)	Y14-416-T
4	Gasket	(2)	92004
5	Enclosure Assembly	(1)	94726
Equipment Not Included			
	Command Cable (2 meters long)	(1)	94720-2
	Command Cable (4 meters long)	(1)	94720-4

SCHEMATIC DRAWING

