Service Engineers (A)

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Date 11/12/80

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Office MSD Technical Services
New York

Subject: 19 DH Machines, Cold Condensing Water Applications FER 79-1

1.0 PURPOSE

To transmit instructions for adding a ΔP switch to 19DH units used for subject applications.

2.0 MACHINES AFFECTED

All 19DH machines used for subject applications, or when the same condition is encountered on other 19DH applications.

3.0 INFORMATION

When a 19DH machine is started with cold condensing water (entering wate temperature less than 60°F), refrigerant may accumulate in the condenser and starve the cooler, causing the cooler low temperature switch to cut out. Nuisance trip-outs at start-up can be prevented by adding a ΔP switch that senses cooler pressure and closes the guide vanes before the refrigerant temperature drops below the low temperature setpoint.

The thermoswitch (set for $\approx$ 60°F) permits full-load operation at design suction pressures below 18" Hg. Once the temperature of the condenser water has increased sufficiently to permit the chiller to operate withou stacking, the thermoswitch closes, bypassing the ΔP switch.

4.0 MATERIALS REQUIRED FOR 19DH, R-11 UNITS ONLY

1 - ΔP Switch, Mercoid Part No. DA-31-3, Range #2, Operating Range 0-30" Hg Vacuum, Minimum On-Off Differential, 2" Hg. (Purchase from Merco Corp.)
- Sufficient wire to connect circuit to control panel.
1 - Thermoswitch, Part No. HH22AG-106.
1 - Thermowell, Part No. HL79MZ-001, for use with ΔP switch. (Can also l purchased locally.)

5.0 CALIBRATION

5.1 Mercoid ΔP Switch
Calibrate switch to open at 18" Hg and to close at 16" Hg vacuum.

5.2 Thermoswitch
Calibrate switch in temperature bath to close at 60°F and to open at $\approx$55°F (switch has a 3-10° adjustable differential). Check for repeatability.

FILE: Controls and Wiring

6.0 INSTALLATION AND COSTS

Materials will cost about $150, and labor will require one to two days.

The switches can be mounted anywhere on or in the control panel.

Wire the ΔP switch in series with the K2 relay coil, Terminal 31, and the guide vane close oil pressure switch (see Fig. 2.)

Install the thermowell and thermoswitch bulb in the entering condensing water line. Wire the thermoswitch in parallel, using Switch Terminals R and W:

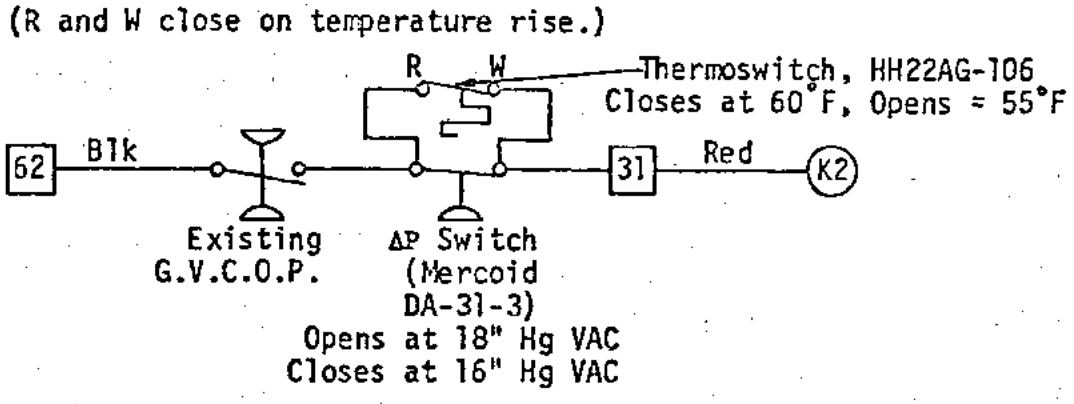

Fig. 1. Revised Wiring Diagram

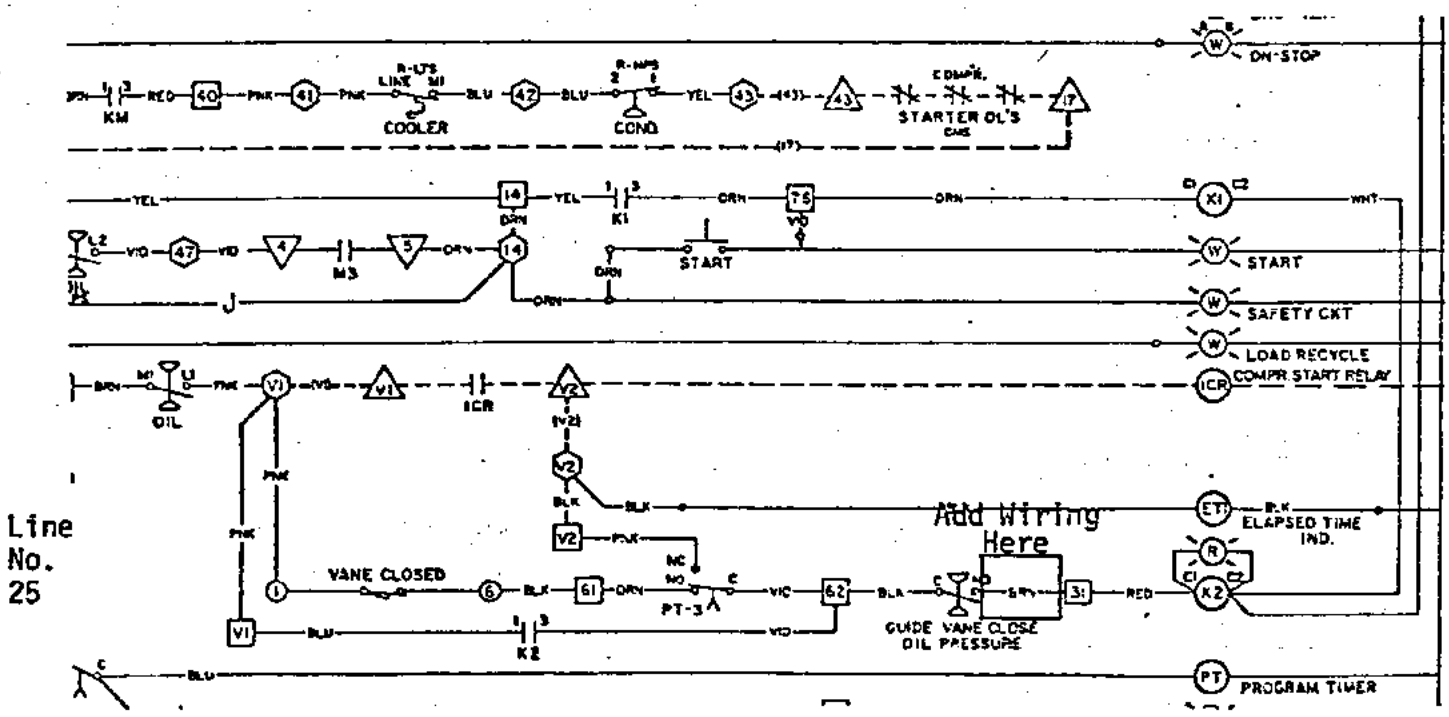

Fig. 2. Original Wiring Diagram