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IC Pump Station Model 8

Functional description and installation instructions

To start: When "powered up" (power first turned on to the IC Pump Station control unit) one will see:

MODEL8 OFF, SUSPEND OR 0-XXX PSI XXX.

OFF means that the control unit is off. Press Auto/Off to start.

SUSPEND means that the pressure sensor is disconnected and the control unit output will be off.

0-XXX PSI XXX with the first XXX representing the full scale pressure range in PSI that the control unit is calibrated for and the second XXX representing the water system pressure.

MODE OF OPERATION

When the system pressure falls below the "LOW TRIG ON" level the pump will turn on and speed up or slow down (or turn off if needed) to maintain the desired "TARGET" pressure.

Definition of terms: "Turn off" means shut the pump off on high pressure and allow the pump to turn on when the pressure falls. "Safety shutoff" means that the pump will shut off and will not turn on again until "reset" by pressing the AUTO/OFF key to turn the control unit off and pressing the AUTO/OFF key again to turn it on.

ADJUSTMENTS

PRESS ADVANCE>

LOW TRIG ON XXX where XXX represents the low pressure turn on level. When the system pressure falls below this level the pump, after delays for stability, will turn on.

PRESS ADVANCE>

TARGET XXX where XXX represents the desired pressure to be maintained when the pump is running. This is achieved by speeding up or slowing down the pump motor to adjust the system pressure.

PRESS ADVANCE>

LO PRES SAFE XXX where XXX the low pressure turn on level. When the system pressure falls below this level the pump, after delays for stability, will turn on.

PRESS ADVANCE>

HI PRES SAFE XXX where XXX the high pressure shut off level. When the system pressure exceeds this value the pump will shut off after a brief delay for stability. If not used increase this number above the high limit value and it will be ignored.

PRESS ADVANCE>

MIN OFF TIME XXX where XXX is the time in seconds that the pump will stay off before it re-starts. The allows the water “wave action” to subside and provides stability.

PRESS ADVANCE>

P1 HOURS XXXX where XXXX is the number of hours the pump has been on pumping water. To reset to zero press the down arrow/reset key.

PRESS ADVANCE>

P1 CYCLES XXXX where XXXX is the total number of on-off cycles that the pump as performed. To reset to zero press the down arrow/reset key.

PRESS ADVANCE>

P1 HI LIMIT XXX where XXX is the full scale value of the pressure transducer.

PRESS ADVANCE>

The control unit adjustments “circles back” to the MAIN display

THE FOLLOWING PANELS ARE ONLY ACCESSABLE IN THE CONFIGURATION MODE. TO ACCESS THE CONFIGURATION MODE WHILE IN THE MAIN DISPLAY (THE DISPLAY SHOWING THE SYSTEM PRESSURE) PRESS AND HOLD THE "DOWN ARROW" RESET/NO KEY FOR AT LEAST 8 SECONDS CONTINUOUSLY. WHEN THE "DASH" "-" IN THE 0-XXX PSI CHANGES TO A RIGHT ARROW ">" THEN IT IS IN THE CONFIGURATION MODE AND ADDITIONAL DISPLAY PANELS ARE ACCESSED AND ADDITIONAL ADJUSTMENTS CAN BE MADE.

PRESS ADVANCE>

P1 C XX XXX XX These are the pressure reading calibration constants. The XXX XX are reference numbers while the last XX is the value that will show on the display. Pressing the DOWN ARROW will increase the value shown on the display and pressing the UP ARROW will decrease that value. Normally one uses a "known good" mechanical pressure gauge to set this calibration constant. This feature also allows the use of a wide variety of pressure ranges which can be changed in the field.

PRESS ADVANCE>

P1 LS TIME XX is the low safety shutoff time. The XX value represents the time in seconds that the system pressure is below the LO PRES SAFE value that the control unit waits before performing a safety shutdown. Press UP ARROW key to increase this value and DOWN ARROW key to decrease this value.

PRESS ADVANCE>

DACD MAX XX XXX Where XX is the current output voltage signal (typically going to control a variable frequency drive) and XXX is the maximum voltage allowed when the VFD is running. To extract the output voltage from this value use the formula VOUT = 0.0032 X VoltVal X 10 where VoltVal represents the XX in the display. Example: if VoltVal = 100 then 0.0032 X 100 X 10 = 3.22 volts output. Press the UP ARROW key to increase this value and the DOWN ARROW key to decrease this value.

PRESS ADVANCE>

DACD MIN XX XXX Where XX is the current output voltage signal (typically going to control a variable frequency drive) and XXX is the minimum voltage allowed when the VFD is running. To extract the output voltage from this value use the formula VOUT = 0.0032 X VoltVal X 10 where VoltVal represents the XX in the display. Example: if VoltVal = 100 then 0.0032 X 100 X 10 = 3.22 volts output. Press the UP ARROW key to increase this value and the DOWN ARROW key to decrease this value.

PRESS ADVANCE>

Slow ramp DN XX Where XX represents the ramp down timing delay. The larger this value the slower the pump speed deceleration. Press the UP ARROW key to increase this value and the DOWN ARROW key to decrease this value.

PRESS ADVANCE>

Slow ramp UP XX Where XX represents the ramp up timing delay. The larger this value the slower the ramp acceleration. Press the UP ARROW key to increase this value and the DOWN ARROW key to decrease this value.

PRESS ADVANCE>

P2C C XXXXXX XX NOT USED

PRESS ADVANCE>

XX ANTI-OSC XX Where XX and XX are both advisory data and provides no adjustments. When the system pressure crosses (either up or down) the LO PRES ON value the software takes the OSC PREVENT value and “loads” it into the first XX. This value decrements (subtracts one from the value) each second and does not allow the pump to start until it equals zero. This greatly reduces unnecessary pump cycling.

PRESS ADVANCE>

OSC PREVENT XX Where XX represents the time in seconds the pump waits to start after detecting the system pressure crossing the low pressure on value. The higher this value the longer the start delay. Press the UP ARROW key to increase this value and the DOWN ARROW key to decrease this value.

PRESS ADVANCE>

TAR=SYS XX XX Where XX is shut down time in minutes. This operation is controlled by the FLOAT GRAD/IMED selection. When IMED is selected that means immediate shutdown when a FLOAT condition is detected. In this case if the Target value equals the System pressure value this count down timer is started. When it reaches zero it shuts down the pump which will restart if the pressure falls below the LO PRES TRIG value. This is used to prevent a FLOAT condition where the pump is running but no water is flowing which could result in pump/system damage. Press the UP ARROW key to increase this value and the DOWN ARROW key to decrease this value.

PRESS ADVANCE>

FLOAT D XX XXX XX Where XX is shut down time in seconds. This operation is controlled by the FLOAT GRAD/IMED selection. When GRAD is selected that means gradual shutdown when a FLOAT condition is detected. In this case if the Target value equals the System pressure value this count down timer is started. When it reaches zero five (5) times it shuts down the pump which will restart if the pressure falls below the LO PRES TRIG value. The larger the "D" value the longer it will take for the pump to shut down. This is used to prevent a FLOAT condition where the pump is running but no water is flowing which could result in pump/system damage. Press the UP ARROW key to increase this value and the DOWN ARROW key to decrease this value.

PRESS ADVANCE>

FLOAT GRAD/IMED When GRAD is selected a gradual pressure shut down will be in effect. When IMED is selected an immediate shutdown will be in effect. Press UP ARROW to toggle between GRAD and IMED selections.

PRESS ADVANCE>

Circles back TO MAIN DISPLAY