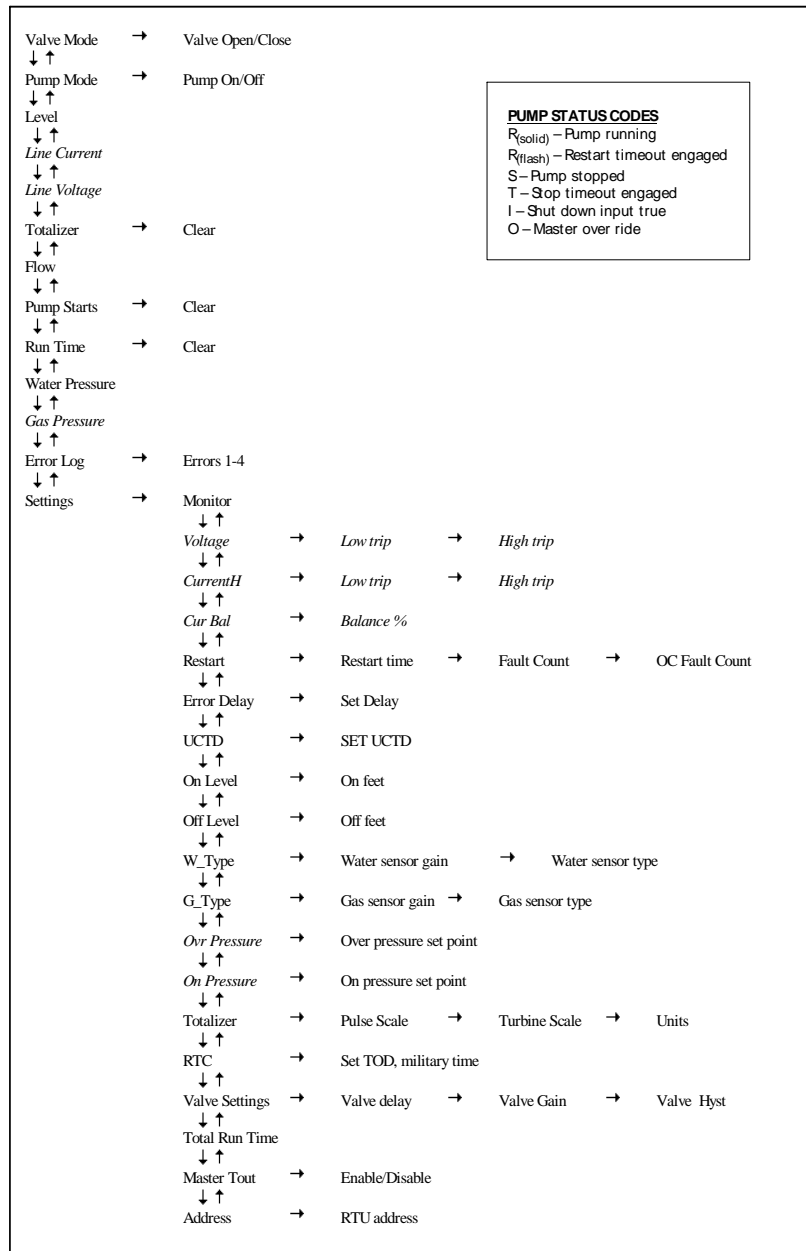


SCREEN FUNCTION MAP



FUNCTION DESCRIPTIONS

Valve Mode:

Controls gas valve manual/auto setting

Setting valve in *Auto* mode enables valve control from water level. *Manual* mode forces valve to desired fixed On/Off position.

Control Mode:

Controls pump manual/auto/timed/cycle setting

Auto mode enables pump on/off control from water level. It is recommended that control be left in *Auto* mode for normal operation. In manual mode set the Hz to run at. In timed mode, set the timer in settings.

Well Level:

Displays well level and pump status

Pump status is displayed on this screen along with well level which is the fluid level in the well. See reverse side for pump status codes.

MOT Current:

Average line/motor current

Line Voltage:

Average line/motor voltage

Drive Freq:

Frequency the drive/motor is running at

PR Speed:

Polish rod RPM

Torque:

Motor torque in % value

Totalizer:

Running total gals/bbls pumped

Represents average accumulated fluid volume in 24 hour period. This totalizer is re-settable by pressing the "right arrow" button.

P-DAY:

Total gal/bbls pumped previous day

Flow:

Water flow rate gpm/bpd

Represents the fluid flow that the well is producing and can be set as gpm or bpd.

Pump Starts:

Number of times pump has started

This counter is re-settable by pressing the "right arrow" button.

Run Time:

Pump run hours

It is the amount of time that the unit run since it has been installed. This timer is re-settable by pressing the "right arrow" button.

***Note: Some functions may not be available in all controls.**

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GAS FLOW:	Gas flow in MCFD This is the amount of gas flow in millions cubic feet per day.		The third parameter sets the maximum number of under current restarts that may be attempted. Setting this parameter to 25 places the under current restart in <i>Auto</i> mode. The final parameter screen allows clearing of the error log and fault counters.
Water Pressure:	Down hole sensor reading PSIG This is the fluid column pressure on fluid level sensor.		
Gas Pressure:	Gas sensor pressure reading PSIG This represents the pressure reading at the well.	Error Delay:	Delay timer before fault trip can occur Set this parameter to change the delay before any error occurs. This parameter effects all errors with the exception of under current error. The under current error delay is fixed at 3 x Error Delay.
Error Log:	Displays last four(4) errors Press the "right or left arrow" button's to view the entire log. The final parameter clears all log and fault counters.	UCTD:	Time to restart after under current Once an under current has happened, the control will restart after the amount of time is this parameter.
Setting:	Sets controller into settings mode Press the " <i>right arrow</i> " button to enter the setting menu.	Stop Timer:	Normal stop delay timer If for any reason the pump is stopped, error or otherwise, this timer can be used to delay the pump restart. Setting the stop timer to zero, disables the stop timeout function. In this case the motor stop timer is fixed at 30 seconds, indicated by "7" in pump status.
Monitor:	Sets controller into monitor mode Press the " <i>left arrow</i> " button the return to the monitor screens.	On Level:	Water level set point Parameter to set the desired well level control point.
Voltage:	High and Low voltage trip points Press the " <i>right</i> " arrow button to change the high and low voltage limits. Once the desired parameter is displayed, the " <i>up and down</i> " button(s) change the set point.	Off Level:	Pump shut down level Water level where the pump will turn off.
Current:	High and low current trip points Press the " <i>right</i> " arrow button to change the high and low current limits. Once the desired parameter is displayed, the " <i>up and down</i> " button(s) change the set point.	Flow Point:	Flow point in gpm
Current Bal:	Current unbalance trip point This parameter sets the maximum % the motor currents can be unbalanced before causing a phase loss error. Use the " <i>right</i> " button to enter the setting screen, the " <i>up and down</i> " buttons to set the parameter.	Current Limit:	High and low current trip points Press the " <i>right</i> " arrow button to change the high and low current limits. Once the desired parameter is displayed, the " <i>up and down</i> " button(s) change the set point.
Restart:	Time to restart after trip has occurred Several settings are made from this heading. The first parameter to the right is the restart time. This is the time before a restart will occur after a fault happens. This time excludes an under current fault. (See UCTD). The second parameter sets the maximum number of faults that can occur before the pump is locked out. Setting this value to 25 (<i>Auto</i>) means that there is no limit on the number of restart attempts.	Water Sensor:	Water sensor type Parameter for water sensor type and range Right arrow over to set the sensor psi Right arrow over again to set the sensor type
		Gas Sensor:	Gas sensor type Parameter for gas sensor type and range. Right arrow over to set the sensor psi Right arrow over again to set the sensor type
		Over Pressure:	Over pressure trip point Parameter to set gas over pressure pump turn off point. Right arrow over to set.

On Pressure:	Restart pressure set point Once a gas over pressure has happened, this parameter sets the point where the pump can start again once gas pressure decreases.	Pump Timer:	Sets the pump in Timer mode Arrow right to set the on time and again to set the off time, this is military time. To disable this timer the on and off time must be set for the same times
Totalizer:	Non–resettable water totalizer Odometer type water flow counter and totalizer Setup functions. The first parameter under this menu item is the <i>Pulse Scale</i> . The pulses from the turbine interface are divided by the pulse scale. The second parameter is the <i>Turbine Scale</i> . The flow rate and totalizer registers are multiplied by this parameter. The last setting is for displaying either barrels or gallons.	Time of day:	Real time clock Enter time based on military time.
RTC:	Real time clock Enter time based on military time.	JOG:	Turn on to jog the motor
Valve Setting:	Set up water valve control Setup for automatic water valve control. The first parameter is the Valve Delay setting. This parameter controls how often the valve is commanded to make an adjustment. The Valve Gain parameter controls how large of an adjustment is made once each valve delay has elapsed. The hysteresis parameter sets up a dead band around the level control point. Half the hysteresis value is above the control level point and half is below.	Mater Time Out:	Master time out function If this function is “ <i>enabled</i> ”, the control must receive communication or be polled from some external host within 15 minutes. If this polling does not take place, the pump will turn off until the controller is polled at which time the cycle will restart.
Total Run Time:	Non–resettable run timer	Address:	RTU address Communication address setting for external devices such as Total Flow, Radio etc. Right arrow over to set.
PR Ratio:	Polish rod ratio		
Speed Limits:	Set the min/ max speed in Hz Arrow right once to set the min speed and once again to set the max speed		
Stop Timer:	Normal stop delay timer If for any reason the pump is stopped, error or otherwise, this timer can be used to delay the pump restart. Setting the stop timer to zero, disables the stop timeout function. In this case the motor stop timer is fixed at 30 seconds, indicated by “7” in pump status.		
UC Restart:	Time to restart after under current Once an under current has happened, the control will restart after the amount of time in this parameter.		

EXAMPLES

Turbine Scale setup: For turbine meter having a calibration tag giving 10286.56 pulses/gallon:

$$\text{Pulse Scale} = \frac{10286.56}{325} = 31.65 \quad ; \text{ use 31 for Pulse Count}$$

Then the Turbine Scale will be,

$$\text{Turbine Scale} = \frac{325 \times 31}{10286.56} = \frac{10075}{10286.56} = 0.979$$

Set the Pulse Count to 0031 and the Turbine Scale to 0979.

Valve driver set up: For Valve Delay set to 60 seconds, valve gain set to 0100(1.00), and valve hysteresis set to 10 feet. This means that there is a 5 foot level above and below the control level set point where no valve action will take place. Assuming level is outside this range, every 60 seconds the valve position will update. Also assume the valve should move for 1 second at the current water level and 0100 gain setting. If the gain is changed to 0200(2.00), the valve will move for 2 seconds. Likewise, a gain setting of 0050 will cause the valve to move ½ second. The amount of time the valve moves depends on how close the water level is to the control set point. The closer it gets, the smaller the moves.