

The new and improved TLC-VST2 is a compact, programmable level controller. It will automatically start, stop and alternate up to three pumps to precisely monitor and maintain fluid levels.

You can drive the TLC-VST2 with a level signal provided by a pressure transducer, submersible transducer such as the TLC SLT-318 Submersible Transducer (see page D-170), an ultrasonic transducer or any current or voltage input. When used as the heart of a level control system, the TLC-VST2 displays the three and 1/2 digit reading on its backlit yellow-green LCD display. In addition a multiple segment bargraph displays the wetwell level along with pump and alarm indicators.

Programming the TLC-VST2 is a simple three step password protected process. The operator selects the Program menu and chooses the setpoint which will then be reviewed, set or re-set. Easy to follow menus allow the operator to change pump start and stop setpoints, alarm setpoints and alternation (auto or manual). A Simulation mode is provided to test the system and a Monitor function to view the inputs and outputs. The entire programming sequence takes only a few seconds to complete.

The TLC-VST2 is provided with two RS-232 ports which support remote master-slave MODBUS protocol, or be connected to a modem to view real time data on a remote PC.



#### SPECIFICATIONS

##### POWER:

- 24V DC

##### INPUT OPTIONS:

- 4-20mA (7) (500-ohm load)
- 0-10V DC (>100k ohm)
- Dry contact (16)

##### DISPLAY:

- STN LCD 128 x 64 Pixels
- LED backlight
- 24 Keys

##### DIMENSIONS:

- 7.25"w X 6.10"h X 3.25"d

##### DEPTH BEHIND PANEL:

- 3.25" max.

##### PANEL CUTOUT:

- 5.4" x 4.8"

##### COMMUNICATIONS:

- 2 - RS232 ports Std
- 1 - CANBUS port
- Supports MODBUS protocol

##### OUTPUTS:

- SPST relay (1 amp max inductive, 5 amp resistive 24vDC 230V AC):
- 3 pumps
- 2 alarms

##### LINEARITY:

- 12 bit Successive approximation
- ± 0.1%

##### ENVIRONMENTAL RATING:

- NEMA 4 / IP65

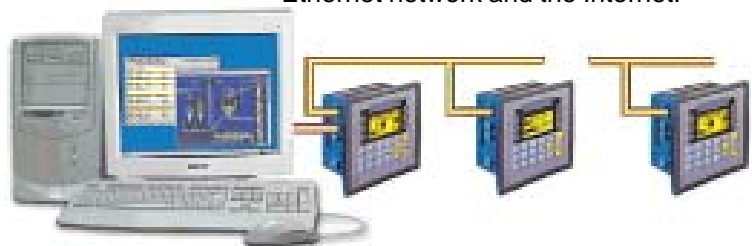
##### ENVIRONMENTAL TEMPERATURE:

- 0 to 50 degrees C.

##### DISPLAY RANGE: 0-99.9

#### NETWORKING via RS485/RS232

Master-Slave communications. Supports MODBUS protocol. Easily connection to an Ethernet network and the Internet.



BULLETIN D-155

## **ENGINEER'S SPECIFICATIONS FOR TLC-VST2 PROGRAMMABLE CONTROLLER**

The control system shall be a solid state integrated unit. Accurate measurement of the liquid level in the wet well shall be made by a submersible transducer, ultrasonic transducer or incorporated with a bubbler system.

The pressure transducer shall convert the reflected pressure into an analog signal. The controller shall convert this into a digital circuit for driving a 8192 pixel STN LCD display with high brightness LED backlight and pump control logic.

The controller shall have three start/stop pump control contacts, and high and low alarm contacts. The scaled 4-20mA outputs shall control a variable speed drive over wet well zones or maintain a constant level. On power failure the controller shall program the pumps to avoid power surges by staggering them to start in ten second intervals.

It shall be possible to mix variable speed pump with constant speed pumps. For example, a system could consist of one variable speed pump and two constant speed backup on high demand pumps. The alternator can be programmed to alternate only the lag and standby constant speed pumps. The variable speed pump could then be programmed as the constant lead pump.

All adjustments shall be programmed from the keyboard without the use of any special tools. The microprocessor shall automatically scale the analog outputs to respond to the programming data. During alternation, the proper analog output shall be directed to the right pumps so that no external switching relays or signal expanders are necessary.

The front panel of the digital controller shall provide a convenient operator interface for observation of status and programming. The three inch LCD display shall show pump and alarm status. A multi segment bargraph shall graphically display wetwell levels and indicate trigger points for pump start and stop setpoints as well as alarm points. The LCD display shall also indicate the condition of the called for and alarm outputs. Additional menus shall provide operational information. Programming shall be accomplished by easy to follow password protected menus. The program shall be retained even upon power failure. A "simulate" menu shall allow simulating of the level to verify the pump and alarm operating points.

The controller shall include two RS232 ports with an optional RS485 port. Communications shall support MODBUS protocol, Master-Slave, OPC/DDE server to enable data exchange with any Windows-based application. The controller and shall include CANbus networking to integrate up to 63 controllers into an efficient high-speed network.

The controller shall be provided in a NEMA 4 \ IP65 (front) inclosure, 7.3" wide x 6.2" high with a maximum depth of 2.5". Operation shall be on 24vdc power. Operating temperature 0 to 50 degrees C with relative humidity 5% to 95% non-condensing.