

1.0 Scope

- 1.1 The system shall collect and store level, temperature, and time data.
- 1.2 The sensor shall fit inside 1-inch, schedule 40 and schedule 80 PVC casing or larger.
- 1.3 The system shall be able to network up to 32 sensors, which can be controlled from one location.
- 1.4 The system shall accommodate a combined cable run of up to 2000 feet.
- 1.5 The system shall use MODBUS® RTU interface protocol.

2.0 Sensor/Datalogger Design

- 2.1 The sensor/datalogger shall measure and record level, temperature, and time.
- 2.2 Level measurements shall be accurate to $\pm 0.05\%$ FS at 20° C ($\pm 0.10\%$ FS at 0 to 40° C).
- 2.3 The sensor/datalogger shall have non-volatile memory with the ability to collect at least 50,000 records of level, temperature, and time.
- 2.4 The sensor/datalogger shall be able to record once per second.
- 2.5 The sensor/datalogger shall be available in an absolute pressure version.
- 2.6 All level readings shall be compensated for variation in fluid temperature.
- 2.7 The sensor/datalogger shall have a replaceable battery and have a battery life of 4.5 years at a logging interval of 15 minutes.
- 2.8 The sensor shall monitor remaining battery life.
- 2.9 The sensor shall be no larger than 0.875" in diameter and no longer than 6.6 inches.
- 2.10 The sensor shall be available with or without user attachable cable

3.0 Software Design

- 3.1 The software shall be capable of communicating with the sensor or sensor network via a USB port at 38.4K Baud.
- 3.2 The software shall display real time readings from the sensor.
- 3.3 The software shall be able to create and save test schedules and send these test schedules to the sensor/datalogger.
- 3.4 The software shall upload and save test data from the sensor/datalogger.
- 3.5 The software shall display uploaded test data.
- 3.6 The software shall export test data to a format easily accessed by common Windows® based spreadsheets and databases.
- 3.7 The software shall control up to 32 sensors/dataloggers.
- 3.8 The software shall include a barometric compensation utility.

4.0 Cable Assembly Design

- 4.1 The cable shall be polyurethane or ETFE.
- 4.2 The cable shall be user attachable and detachable without opening the sensor housing.
- 4.3 The cable shall be continuous with no splices.
- 4.4 The cable connection at the sensor shall be waterproof up to a level of at least 1300 feet to prevent leakage of fluid inside the sensor housing.

Acceptable sensors shall be Seametrics LevelSCOUT or approved equal.