

SECTION 16217

FLOAT SWITCH LEVEL DETECTORS

PART 1 GENERAL

1.01 SCOPE

- A. The contractor shall furnish and install all float switches as shown on the drawings and as required for a complete and properly operating system.

1.02 REFERENCES

- A. NFPA® 820 – Standard for Fire Protection in Wastewater Treatment and Collection Facilities 2012 Edition

PART 2 PRODUCTS

2.01 FLOAT SWITCHES, TRANSCIVERS AND POWER SUPPLY

- A. The floats shall use fiber optic cable to transmit a beam of light from a transmitter in the control panel to the float where the beam makes and breaks depending on the tilt of the float. The receiver in the control panel shall detect the presence or absence of light and operate a relay in the receiver. The float shall have no electrical components or metallic wires that could cause arcs and sparks in an explosive atmosphere.
- B. The float switch shall be mercury and lead free and shall be made of all safe, recyclable materials. The float switch housing shall be polypropylene. It shall be a simple robust device designed for many years of dependable service. The transceivers (transmitter and receiver combination) shall be dual din rail mounted units capable of connection to 2 floats. Provide one transceiver for every one float. The fiber optic cable shall be custom made for the float and shall consist of dual plastic fibers with an overall specially blended sheath for flexibility. No special tools or experience shall be required for connection of the optical cable to the transceivers. The cable shall be connected and sealed at the float housing using a double seal method that will prevent water from entering the float even if the outer sheath is damaged. The float color shall be two-tone with the lighter color on the dome for easier viewing underwater when tilted up. The float switch shall have a warranty of 5 years.
- C. The transceivers shall operate in ambient temperatures of –15 to +130F (-25 to +55C). The transceivers shall operate at 12 VDC and shall be protected against accidental polarity reversal. The system shall operate in the visible and infrared light region with wavelengths between 400 and 1200 nm. The output relays in the receivers shall have the capability of being connected normally open or normally closed. The transceivers shall have a green led power-on light and red led lights on each channel indicating that the light beam is being received – float tilted up. The transceivers shall power-on through snap-

together connection to float switch power supply. The floats shall operate in liquid temperatures of +32 to +130F (0 to +55C). The floats shall have an ambient air standby operating temperature rating of -15 to +155C (-25 to +70C). The transceivers shall be UL rated and have a warranty of 3 years.

- D. The float switch power supply shall have an operating voltage of 120VAC in and 12VDC out to each linked transceiver. One power supply shall have the capabilities of linking up to 5 transceivers. The power supply shall be UL Rated.
- E. The float switches, light link transceivers, and light link power supply shall be from the Opti-Float® Mini level detection system by Cox Research and Technology, Inc., Baton Rouge, La. The light link transceiver shall be model MINI-TR3, the power supply shall be model MINI-PS2 and the float switch shall be model MINI-F.

2.02 FLOAT CABLE EXTENSIONS

- A. The sheathed float cable shall be brought from the wet well to an above ground junction box. Inside of the junction box, splices to the float cable shall be made to individual fibers, which shall be installed in conduit to the control panel. Splices shall be made with vendor supplied plastic splices. Splices shall use thumbscrews and shall not require special skills or polishing. The individual fibers shall be identical to the fibers that are in the sheathed cable. The individual fibers shall be a clear plastic optical fiber with a polyethylene sheath.

PART 3 EXECUTION

3.01 INSTALLATION

- A. The contractor shall install the float switches and accessories in accordance with the manufacturers instructions and as shown on the drawings.

3.02 STORAGE

- A. All equipment shall be stored in a weather protected location.

END OF SECTION