SAMPLE SPECIFICATIONS

A transit-time ultrasonic microprocessor-based flow/velocity meter shall be installed at the location on the plan in accordance with the manufacturer's recommendation. The flowmeter shall be programmed for a pipe size of _____ inches with a pipe material consisting of _____. The flowmeter shall be scaled to a maximum flow of _____(max. flow and engineering units). The transit-time ultrasonic unit shall have the following features.

Enclosure: IP66/NEMA 4X (optional: Explosionproof, Class I, Groups C&D, Class II, Groups E, F, & G, Divisions 1&2.

Power: 100/240 VAC 50/60 Hz to 12-24 VDC @300mA with surge suppression and fuse.

Outputs: 4-20 mA isolation into 1000 ohms, monitored to detect open circuits, with RFI and gas discharge surge protection and two fuses.

Relays: Three optional elays rated at 3.0A @ 120VAC / 24VDC. The relays must be assignable by the front panel keyboard for up to two set points, loss of signal, 4-20 loop or contact integrator.

Datalogger: There shall be a datalogger integral to the electronics. The datalogger shall have non-volatile flash memory with a storage capacity of 32768 records. Software shall be supplied for downloading the data. The logged data for total flow shall have the capability of being displayed in a graph form.

RS-232: There shall be an RS-232 serial port of 1200-38400 baud, Modbus RTU protocol.

RS-485: There shall be an RS-485 serial port optically isolation, Modbus RTU protocol.

Inputs: Two 4-20mA optically isolated.

Electronics: The display for the electronics must be a 128 x 64 graphic display with the ability to control the backlighting (On or Off) from the front panel keypad and also adjust the contrast. The meter must employ a menu-driven programming style of data entry. All programming functions, data entry and collection shall be initiated by the display and the 16-button keypad. Standard pipe tables shall be stored in the firmware. The unit shall compute all flow calculation using IEEE 754 single floating-point precision. The electronics shall be able to accept up to three pairs of velocity sensors for multi-path operations.

Clamp-on Sensors: There shall be _____ (one, two or three) pairs of strap-on sensors installed on the pipe(s). The sensors shall be installed per the manufacturer's recommendation. The sensors shall be corrosion resistant and be supplied with 50 ft. of cable, 1000 ft. maximum cable runs allowed. Splices shall be made waterproof. All mounting hardware for the sensors shall be provided.

Hot shot Wetted Sensors: There shall be _____ (one, two or three) pairs of hotshot style wetter sensors and valve assemblies installed on the pipe(s). The sensors shall be installed per the manufacturer's recommendation. The sensors shall be constructed of PVC materials and supplied with 50 ft. of cable, 1000 ft. maximum cable runs allowed. Splices shall be made waterproof. Valve assemblies shall be provided with each hotshot sensor.

Spool and Sensors: There shall be a fabricated spool installed in the pipe section per the manufacturer's recommendations. The spool size shall be _____ (inches) and shall consist of a _____(C/S, S/S) body, _____ (AWWA, CID, ANSI, RF) flanges have a laying length of _____inches. The sensors shall be made of Ultem® and be supplied with 50 ft. of cable, 500 ft. maximum cable runs allowed. Splices shall be made waterproof. All mounting hardware for the sensors shall be provided.

Sensor cables shall be run in a dedicated conduit.

Warranty: The electronics and sensors shall carry a 18 month warranty.

The unit shall be Model 4000 as manufactured by Eastech Flow Controls, Tulsa OK or equal.

EASTECH

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