TM500 Flow Meter Procurement Specification

1. The flow meter shall operate on the Constant Delta Temperature (Constant ΔT) thermal mass principal.
2. A DigiSense™ sensor shall be standard.
3. The Gas-Mix® menu shall offer pre-programmed and field selectable gases and gas mixtures.
4. The flow meter shall include TM-CAL calibration validation feature that verifies the meter is operating accurately.
5. The flow meter shall include a standard Data Logger for 40 24-hour daily totals; 7+ year history of alarm/event logs.
6. The flow meter shall have a built-in display of flow rate, flow total, temperature, and elapsed time. The read-out shall utilize a backlit LCD display consisting of two lines each 16 characters.
7. A 4-key keypad shall be employed for user programming. Input parameters shall be protected by use of a password. Nonvolatile memory shall retain totalizer and user parameters for over seven (7) years.
8. Two 4-20mA outputs shall be included; one output for flow rate and a HART communication option; a second output is programmable for flow rate or process temperature. A pulse output shall also be included.
9. The flow meter shall have a built-in microprocessor allowing field programmability of the 4mA setting, 20mA setting, pulse output setting, pipe diameter, zero flow cutoff, standard temperature and pressure (STP), and alarm settings.
10. The flow meter shall be compliant with agency approvals from CE, FM/FMc, ATEX, IECEx, and UKEX for use in potentially explosive atmospheres.
11. The flow meter shall measure gas flow over a range of 15-60,000 standard feet per minute. Sensor response time shall be 0.8 seconds (one time constant).
12. Operating process temperature shall be in the range of -40F to 250F.
13. Flow measurement accuracy shall be +/-1.0 percent of reading plus +/-0.2 percent of full scale for actual-gas calibrations, and +/-1.5 percent of reading plus +/-0.5 percent of full scale for gas correlation calibrations. Repeatability shall be +/-0.2 percent of full scale.
14. All wetted parts are to be a 316 stainless steel all welded design. Other alloys shall optionally be available for inline flow bodies.
15. All electronics shall be mounted in a NEMA 4X enclosure. Input power shall be 12-24VDC or 100-240VAC, 50-60 Hz.
16. The flow meter shall be available in insertion, inline, and remote styles.
17. USB serial communication port shall be standard; the following communication options shall also be available: RS485 Modbus RTU and HART.
18. The manufacturer shall provide an NIST-traceable calibration certificate for the instrument.
19. The instrument shall be the TM500, manufactured by Sierra Instruments (www.sierrainstruments.com).

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