



GEM2 Master Specification

Basis of Design: GloTech's GEM2 Series Inline Electromagnetic Flow Meter. Manufacturers approved to bid, subject to compliance with requirements include:

- a. Insert additional manufacturer's pre-approved to bid.

Description: Provide an inline electromagnetic flowmeter complete with wet calibrated flow-measuring element, transmitter, visual display, ANSI Class 150 or 300 mounting flanges, and a calibration certificate from an ISO/IEC 17025: 2017-accredited facility.

Application Range: This contractor shall be responsible for selecting the flowmeter options submitted based on the application. Flowmeter shall be constructed, calibrated, and scaled for the intended application in terms of pipe size and material, installation requirements, expected flow rate, ambient conditions, and fluid characteristics which include but are not limited to pressure, temperature, conductivity, viscosity, and pH.

Sensing Technology: Electromagnetic velocity-measuring element.

Design: Electromagnetic sensing element shall utilize a minimum of two metal electrodes to measure the average flow velocity. Electrode material shall be 316L stainless steel or manufacturer-approved alternative to be selected based on the operating temperature and pH of the fluid.

Construction: Flowmeter shall consist of epoxy-painted carbon steel outer body, 304 stainless steel flow tube, and inner liner to be selected based on operating fluid temperature and pH.

Transmitter Enclosure: Transmitter enclosure shall be die-cast aluminum with powder-coated exterior, IP68 rated.

Connectivity: Each flowmeter shall support Bluetooth-enabled communication from any iOS or Android device through a password-protected mobile app. Remote communication shall allow for remote parameter configuration and over-the-air firmware updates.

Display: Main screen shall consist of a three-line backlit dot matrix. Display showcase flow totalizer and instantaneous flow rate showcased as 8-digit values with a dynamic decimal point and user-configurable units, flow direction, and battery status.

Reporting and Communication: Each flowmeter shall support communication via analog (4-20mA), digital (pulse output), and serial (Modbus RS485, Sensus) protocols for integration with telemetry systems via a data cable. A built-in data logger shall record key operational data locally, which shall be accessible wirelessly via Bluetooth.



Maximum Pressure Rating: This shall be configurable depending on the application. 290 psig typical or 580 psig for heavier-duty installations.

Maximum Temperature Rating: This shall be configurable depending on the application. 130°F typical or 230°F for hot-fluid installations.

End Connections for NPS 2" to 24": This shall be configurable depending on the application. ANSI B16.5 Class 150 flange typical or Class 300 for heavier-duty installations.

End Connections for NPS 26" and Larger: This shall be configurable depending on the application. ANSI B16.47 Series B typical or Series A for heavier-duty installations.

Flow Range: Flow-measuring element and transmitter shall cover operating range of equipment or system served.

Accuracy: Flowmeter shall provide calibrated outputs directly from the transmitter throughout the operating range with the accuracy stated as follows:

- a. $\pm 0.5\%$ for fluid velocity from 1.6 to 33 ft/sec.
- b. $\pm 1.0\%$ for fluid velocity < 1.6 ft/sec.

Calibration: Each flowmeter shall undergo wet calibration within the expected operating range, calibrated against an authoritative gravimetric standard traceable to international standards in accordance with ISO/IEC 17025: 2017. A calibration certificate shall be included with each unit, providing calibration data points and associated uncertainty. The meter shall be designed to maintain its accuracy without the need for recalibration after installation. However, if recalibration is required by the customer, they may contact the manufacturer for assistance.

Warranty: Each flowmeter shall be covered by the manufacturer's two-year warranty.