



White Paper

Title: Field Calibration Recommendations for Bridge EGA Analyzers

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Field Calibration for EGA.docx

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Technical Overview:

The Bridge Exhaust Gas Analyzers use a mix of technologies to make gas measurement. NDIR (Non-Dispersive InfraRed) technology is used to measure CO, HC, and CO₂. Chemical Sensors are used to measure O₂ and NO_x. The NDIR technology is temperature compensated, and has shown itself to be very time-stable. It will not require recalibration in the field unless the measurement altitude is changed by more than 3,000 ft from the calibration point.

Chemical sensors are additionally temperature and time unstable, and will require more frequent calibration to maintain accuracy. The O₂ sensor is calibrated on ambient air (which has a very stable amount of O₂ in it) whenever the analyzer is Zeroed – every ½ hour. Due to the ready availability of O₂ calibration gas – the O₂ channel never has to be calibrated.

The only gas channel which uses a chemical sensor that does not have a readily available source of calibration gas is the NO_x channel in the Model 900503. This sensor degrades in NO_x sensitivity at 5% to 10% per year – so it will require recalibration in the field at 6 month intervals to stay within the +/- 5% analyzer accuracy specification.

Field Calibration Recommendations:

Recommended Periodic Field Calibration Interval:

Series	CO	HC	CO ₂	O ₂	NO
9003	None	None			
9004	None	None	None	None	
9005	None	None	None	None	6 Months

NOTE:

While there is no intrinsic need to recalibrate the analyzers above – certain agencies stipulate annual calibration certification as good manufacturing practice. To aid the

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customers in meeting this standard of practice, Bridge offers annual calibration and certification service on an as-needed basis. Contact Bridge for current prices and to arrange this service.

Initial Calibration for High Altitude Use:

The analyzer is pre-calibrated at the factory in such a way that it will be within the accuracy specifications given for the full temperature range up to an altitude of 3,000ft above seal level. At altitudes above 3,000 ft, it is recommended that the customer perform an initial field calibration for all gases at the altitude of use. Once this initial on-site calibration is performed, the analyzer can be operated for +/- 1,500 ft altitude change and will still remain within specification.

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