



Installation and use of FiveStar® Ammonia (NH₃) Sensor (P/N 10012286)

Retain this instruction sheet with your FiveStar Alarm Instruction manuals for future reference.

General Information

The FiveStar Alarm Ammonia Sensor helps provide an indication of exposure to toxic ammonia gas. Unlike many other FiveStar sensors, chemicals in the Ammonia Sensor are actively consumed through exposure to ammonia gas; therefore, Ammonia Sensor life is limited by continuous exposure to ammonia. In addition, to maintain internal chemistry stability, the sensor must be installed in a "biased" position ("TOX 3" only) in the FiveStar Alarm.

The FiveStar Ammonia Sensor also exhibits a strong response to hydrogen sulfide and chlorine. Exposures to these gases will further reduce the expected life of the Ammonia Sensor. Therefore, it is *not* recommended that the Ammonia Sensor be used in an environment where it will be exposed regularly to high concentrations of these two gases.

Installation Instructions

- Instruments with serial number prefixes between "A0" and "F1" must be returned to the factory for electronic reconfiguration to support the sensor bias.
- For instruments with serial number prefixes of "G0" or higher, remove jumper and insert sensor (FIGURE 1).

NOTE: Allow sensor to stabilize for approximately 1 to 2 hours in the instrument, with battery pack attached, prior to calibrating; otherwise, unstable zero and span readings may result.

Technical Data	
RANGE	0 to 100 ppm
RESOLUTION	1 ppm
RESPONSE TIME	t ₉₀ = 15 seconds t ₉₅ = 45 seconds
TEMPERATURE RANGE	-20 to +50°C

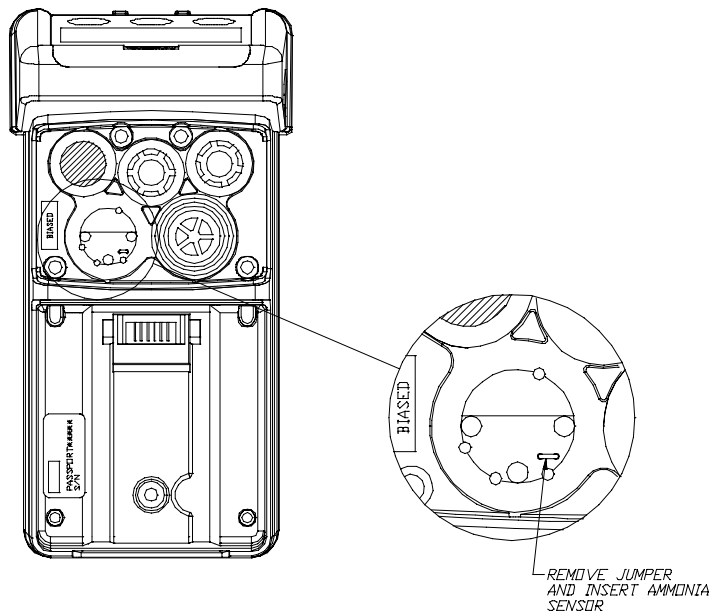


Figure 1. Removing the Jumper

FiveStar NH₃ Sensor Temperature Behavior

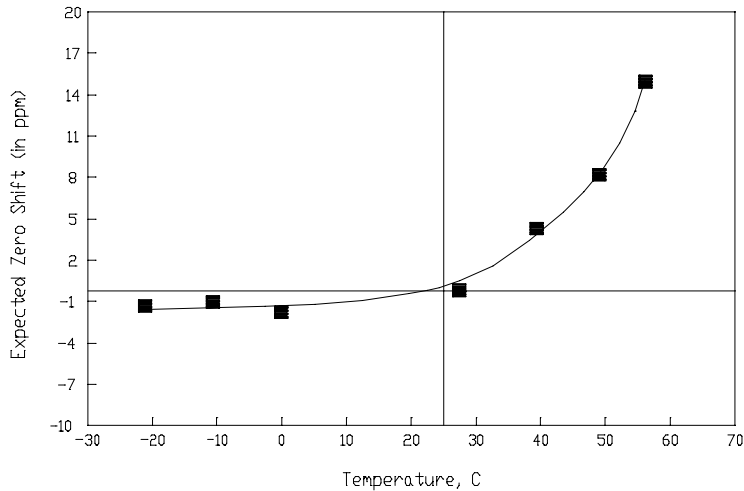


Figure 2. Zero Stability

Zero Stability

The zero reading of the FiveStar Alarm Ammonia Sensor may experience some small amount of drift with changes in ambient temperature (FIGURE 2).

It is recommended that a Fresh Air Setup be performed at the temperature of use if the area to be monitored is significantly different from that of the location where the instrument was last zeroed (FIGURE 2).

Span Stability

The accuracy of measurement for the FiveStar Ammonia Sensor is given for the short-term presence of ammonia gas. Due to the electrochemical reaction in the sensor, its measurement sensitivity may decrease with continuous exposure to ammonia gas.

After prolonged exposure to ammonia concentrations much above 50 ppm, the FiveStar Alarm will indicate a decreased concentration reading. For lower concentrations of ammonia gas, the change in the measuring signal will be less.

After prolonged exposure to high ammonia concentrations, the FiveStar may temporarily read "down" on the ammonia channel.

Cross-Sensitivity Data

GAS	CONCENTRATION (PPM)	SENSOR RESPONSE (PPM)
CARBON MONOXIDE	100	0
ETHANOL	100	(approx.) -1
ETHYLENE	100	0
HYDROGEN	100	0
HYDROGEN CYANIDE	100	(approx.) 3
HYDROGEN SULFIDE	100	(approx.) 206
CHLORINE	100	(approx.) -192
METHANE	100	0
NITRIC OXIDE	100	(approx.) 6
NITROGEN DIOXIDE	100	(approx.) -83
SULFUR DIOXIDE	100	(approx.) 12

Warranty Statement

MSA warrants to the purchaser that this sensor will be free from faulty workmanship for a period of two years, provided it is maintained and used in accordance with MSA's instructions. MSA shall be released from all obligations under this warranty in the event modifications are made or if the warranty claim results from physical abuse or misuse of the product.

Refer to the FiveStar Alarm Instruction Manual (P/N 710436) for additional instrument warranty information.