

Chapter 1, General Information and Applications

The ZGARD S Sensors are designed to detect the presence of Carbon Monoxide, Nitrogen Dioxide and Combustibles in air.

The ZGARD DS is a Dual Sensor in one enclosure designed to detect the presence of Carbon Monoxide and Nitrogen Dioxide in air. Depending on the type of sensor used, electrochemical, solid-state metal oxide or catalytic bead technology is employed. Each generates a representative output signal proportional to the calibrated operating range.

The ZGARD S & DS sensors are available with two output versions, a 4-20mA analog output or an addressable RS485 digital signal. The ZGARD S & DS, RS485 version is specifically designed to

operate with any MSA ZGARD C 485 or CXII Controller, operating as a system. The ZGARD S & DS with 4-20mA output can be installed as a stand-alone sensor typically integrated with common commercial equipment including PLC, DCS or Building Environmental Automation Systems or operate with any ZGARD C Controller.

TABLE 1-1 shows distinctive features of the ZGARD S & DS Sensors and is a quick guide for determining the operating features of each sensor. The performance of any ZGARD S & DS Sensor depends on the appropriate and strategic placement within a guarded area. Gas sensors should be strategically placed closest to the areas where the target gases or vapors might occur in the atmosphere.

Table 1-1. ZGARD S & DS Sensors

	CARBON MONOXIDE (SS)	CARBON MONOXIDE (EC)	NITROGEN DIOXIDE (EC)	COMBUSTIBLE (LEL)
Principal of Operation	MOS, Metal Oxide Semiconductor	Electrochemical	Electrochemical	Catalytic Sensor
Accuracy at STP	+/- 10% Full Scale	+/- 5% Full Scale	+/- 10% Full Scale	+/- 5% Full Scale
Operating Range	0-100 ppm OR 0-200 ppm	0-100 ppm OR 0-200 ppm	0-10 ppm	0-100% LEL
Zero Deadband	17 ppm	1 ppm	0.1 ppm	1% LEL
Output	4-20mA OR RS485 Network	4-20mA OR RS485 Network	4-20mA OR RS485 Network	4-20mA OR RS485 Network
Operating Temperature	0° to 40°C	-20° to 40°C	0° to 40°C	-20° to 40°C
Storage Temperature	-10° to 50°C	-20° to 50°C	-10° to 50°C	-20° to 50°C
Humidity	25 to 95% RH	0 to 95% RH	0 to 95% RH	0 to 95% RH
Altitude	0 to 6562 Feet / 0-2000 Meter			
SENSOR ENCLOSURE				
ZGARD S Enclosure	Powder-coated metal double-gang connection box			
Dimensions	5.5" H (140 mm) x 5.5" W (140 mm) x 2.2" D (56 mm)			
Weight	0.45kg (1.00 lbs.)			
ZGARD DS Enclosure	Polycarbonate			
Dimensions	7.0" H (178 mm) x 10.5" W (267 mm) x 4.5" D (114 mm)			
Weight	1.1kg (2.45 lbs.)			