Catalytic Sensor for SmartMaxII

Assembly Design
The Catalytic Sensor for SmartMaxII employs the same, reliable field-proven catalytic sensor used in all Control Instruments catalytic systems. The assembly differs only in that it includes sealed electronics that enable the sensor to be used with the SmartMaxII controller.

Sensor Design
The Catalytic Sensor consists of two matched, heated elements arranged in a Wheatstone bridge, one catalytically active and one inert. The active element is sensitive to all flammable gases, while the inert one compensates for ambient temperature and pressure changes and physical properties of the sample gas. The presence of flammable gas causes the active element to catalytically oxidize the gas and the resultant thermal reaction is displayed in terms of 0-100% Lower Flammable Limit (LFL) on the SmartMaxII controller.

Construction
The sensor can be constructed of either aluminum or stainless steel. The optional stainless steel design is resistant to highly corrosive elements, salt atmospheres and is durable in high temperature conditions.

The replaceable sensor element mounts into its explosion-proof junction box. A sensor collar protects the sensor from environmental conditions and also provides a port for calibration. The sensor utilizes a flame arrestor that provides safety while allowing the flammable gas to diffuse quickly into the detecting element.

The standard junction box is rated Class I, Division 1, Groups A, B, C, D for hazardous areas. The sensor is also available in a duct mount assembly that mounts directly on a duct. The duct-mount is rated for Class 1, Division 1, Group D hazardous areas.

Sampling System
The sensor relies on diffusion for sampling. In the diffusion mode the sensor detects a flammable gas by direct sampling of the atmosphere through the sensor flame arrestor.

Performance
The Catalytic Sensor is designed for uniformly dependable performance under a wide range of operating conditions. The sensor has a proprietary design that gives it superior tolerance to a wide range of poisons and inhibitors.

The sensor elements used in this assembly (part numbers SNR321 and SNR334) have been tested and are tolerant to tetraethyl lead, Hexamethyldisilizane (HMDS), trichloroethane, RTV sealant and hydrogen sulfide.

Factory Tested as a Complete System
The sensor is completely factory assembled, calibrated and tested with its control monitor prior to shipment.