

# LSS

## Solid-State Gas Sensor for Ventilation



(optional GM-JR readout shown)



Manning Systems new LSS Linear Solid-State Sensor is an effective, low-cost gas sensing device designed to give a linear output of gas concentration levels for ventilation control. Best applications include carbon monoxide sensing in parking garages and on docks to sense vehicle exhaust, hydrogen monitoring in battery charging areas, and refrigerant (R-22) detection in chiller rooms.

**T**he LSS is a three-wire solid-state remote sensor and has a linear 4/20 mA output. It can be monitored by any Manning Systems readout or tied directly to a PLC giving ppm indication of gas concentration.

With the addition of the RP Relay Plug output device, the LSS becomes a control device with internal adjustable trip level and relay output. The RP Relay Plug terminates the 4/20 mA output, converting the sensor to a relay output device.

The GM-JR Readout (as shown) can be installed in the LSS sensor housing providing a 20-segment LED bargraph of

gas concentration and a local relay output. It can be configured to allow the 4/20 mA signal to pass through to a PLC or terminate the signal at the readout for a stand-alone sensor/readout combination.

Although these sensors are not gas specific, they are more selective than many other solid-state sensors available today providing an economical solution to non-gas specific ventilation applications. This sensor uses a porous metal oxide with catalyst that is heated by a small internal heater and exhibits a large decrease in resistance when exposed to the target gas.

Gas specific sensing is usually considered to be one of the first requirements for gas detection, however, in a ventilation application, it can be an advantage that the sensor has broad spectrum characteristics and will sense a number of gases. For personnel protection, any gas that will trip the sensor should be diluted and discharged from the area by ventilation.

The LSS is housed in a hinged heavy-duty #16 gauge steel, NEMA 1 gasketed enclosure. It is designed for use in non-hazardous areas.

### Applications

**Battery Charging Rooms – hydrogen**

**Chiller Rooms – R-22**

**Parking Garages – carbon monoxide**

### Key Features

**Three-wire 4/20 mA output (linear)**

**Built-in fault circuitry**

**Available for R-22, H<sub>2</sub>, or CO**

**Rugged #16 gauge steel gasketed enclosure**

**Allows wiring runs up to 1500' with #18/3 conductor shielded cable**

**Can be used with all Manning Systems Readout/Alarm units, or Relay Plug**

**Sensor will react to smoke and other products of combustion, such as overheated wiring insulation and motor windings**



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Manning Systems, Inc. provides a complete line of industrial quality Gas Alarm Monitoring Systems for equipment rooms, refrigerated spaces, storage facilities, laboratories and process areas.

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## Specifications

### System Specifications

#### Electrical Power:

24 VDC regulated, 250 mA

#### Output:

Linear 4/20 mA output, maximum 250 ohm impedance

#### Cable Recommendation:

Three-conductor #18 AWG, stranded shielded cable with drain wire, all enclosed in a vinyl jacket (Belden #8770 or equal)

#### Cable Length to Sensor:

1,500' maximum

#### Unit Enclosure:

NEMA 1, gasketed, #16 gauge steel.

Special enclosure available for NEMA 4, low temperatures, etc.

NOTE: The standard LSS is for use in non-classified areas only.

### Sensor Specifications

#### Type:

Broad spectrum solid-state gas sensor

#### Measurable Gases:

Carbon monoxide (CO), R-22, hydrogen (H<sub>2</sub>)

#### Method of Detection:

Solid-state

#### Humidity:

5-95% RH (non-condensing)

Modifications available for more severe conditions

#### Operating Ambient Temperatures:

-10°F to 120°F (-23°C to 49°C)

#### Storage Temperatures:

-40°F to 140°F (-40°C to 60°C)

#### Gas Sampling:

Diffusion

#### Weight:

3 pounds

#### Dimensions:

6" high x 4" wide x 3.5" deep

#### Sensing Ranges:

Hydrogen 0-2,000 ppm

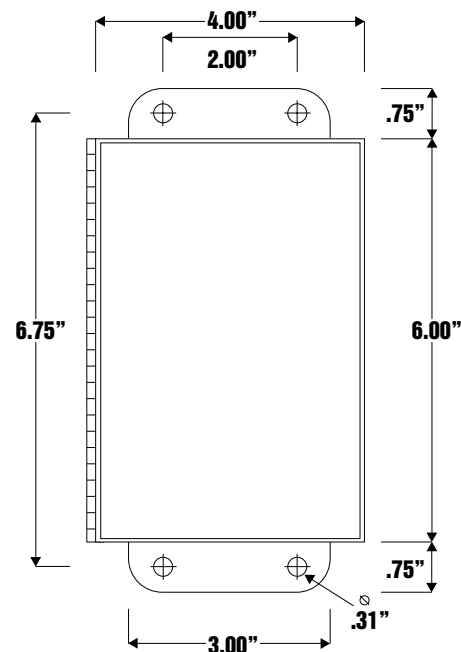
R-22 0-3,000 ppm

Carbon Monoxide 0-200 ppm

#### Specifications subject to change without notice.

Sold per Manning Systems standard Limited Warranty.

## Dimensions



**Calibration Gas Kits** are always available from Manning Systems to maintain and verify the highest level of total system performance.

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