

Remote Calibration Transmitters

Model 500/1K, 2K, 8K

SPECIFICATION DATA

The Model 500 Stand Alone combustible gas sensor/transmitter system has been designed for direct interface into a computer, programmable controller or remote terminal unit without first going through a control module. Det-Tronics also offers the 1K/2K/8K transmitter for a complete system. Both the Model 500 and K series transmitters operate from 24 vdc with a linear 4 to 20 milliampere output signal.

Periodic calibration is required on all catalytic bead type sensors. In most gas detection systems, this calibration procedure requires two people – one at the sensor location to apply the test gas and one at the controller location to make the zero and span adjustments. Also, because of the different locations of the sensors and controllers, some form of two way communication is required; as well as de-activation of the alarm circuits to avoid alarms during calibration.

Det-Tronics has a feature called Remote Calibration, which allows one person to calibrate a sensor at the sensor location with no adjustments required at the controller. This eliminates one person from the calibration procedure, the use of two way communications and the need to deactivate the alarm circuit. This is accomplished by Det-Tronics Remote Calibration Transmitter, which is an electronic circuit housed in the junction box at the sensor location. It contains the zero and span adjustments required for calibration, as well as a connection for a digital calibration meter. This remote calibration meter is inserted into the connector during calibration to provide a digital readout of the gas concentration being applied to the sensor. It also shorts the signal going back to the controller, which deactivates the alarm circuit. Also only one sensor is taken off line during calibration. The balance of the safety system is still in operation to provide continuous security.

A feature called SENSITIVITY CHECK is available with the digital calibration meter. This feature provides the operator with a means of measuring the remaining sensor life by reading the direct millivolt signal of the sensor during calibration. Once calibration has been accomplished, the meter is removed and the junction box cover refitted – that is all.

In situations where the sensor is mounted at an inaccessible point, the transmitter can be separated from the sensor by a distance of up to 400 feet. This is done by the Transmitter/Sensor Separation kit,



which allows the Remote Calibration Transmitter to be easily accessible for zero and span adjustments while the sensor is in an inaccessible location. (A Technical Note explaining the details of this feature is available upon request.)

FEATURES

- One-person calibration.
- Eliminates need for two way communication and use of handheld walkie-talkies.
- Only one sensor taken off-line, no need to deactivate alarms.
- The transmitter is designed and manufactured with MIL-SPEC components for low drift over temperature extremes.
- Plug in modular unit for ease of installation and replacement.
- Sensitivity Check – the digital display on the Remote Calibration Meter provides a direct millivolt reading of sensor life.
- Linear Output Signal – 4 to 20 milliampere output signal is equal to 0 to 100% LFL. Can be used for computer interface.
- Gold plated corrosion inhibiting contacts and keyed connectors simplify maintenance and installation.

SPECIFICATIONS

TRANSMITTER

STORAGE TEMPERATURE RANGE—
-55°C to +100°C (-67°F to +212°F).

OPERATING TEMPERATURE RANGE—
-40°C to +85°C (-40°F to +185°F).

ZERO SHIFT W/TEMP.—
(at max. gain) 0.02% LFL/°C

GAIN SHIFT W/TEMP.—
0.01% LFL/°C

OPERATING VOLTAGE RANGE—
17 to 28 vdc.

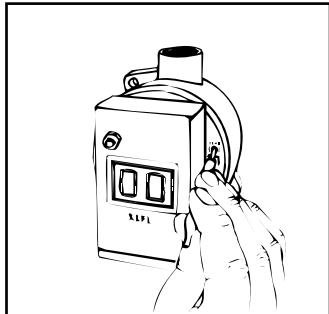
POWER CONSUMPTION—
(with sensor) 1.5 watts.

POWER SUPPLY CURRENT—
70 milliamperes.

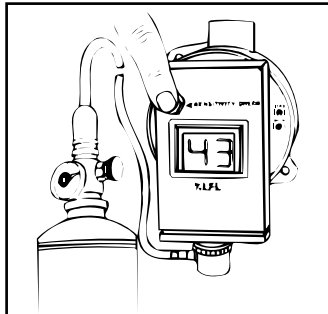
OUTPUT CURRENT—
Range 0 to 26 milliamperes,
Nominal 4 to 20 milliamperes
(equal to 0 to 100% LFL).

SIGNAL OUTPUT LOAD RESISTANCE—
(RSIGNAL LOOP) 100 to 500 ohms.

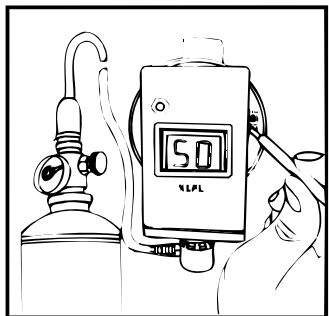
OUTPUT SIGNAL DURING CALIBRATION—
3.4 milliamperes typical (no gas).



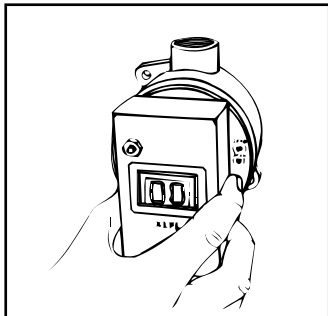
1. Set zero.



2. Apply calibration gas.
Check sensor sensitivity.



3. Set span.



4. Remove calibration gas.
When %LFL reading is
below alarm level, calibra-
tion meter can be removed.

SENSOR

STORAGE TEMPERATURE—
-55°C to +125°C (-67°F to +257°F).

AMBIENT OPERATING TEMPERATURE—
-40°C to +85°C (-40°F to +185°F).

RESPONSE TIME*—
Less than 20 seconds to reach 90% of full scale read-
ing with methane (in still air).

RECOVERY TIME*—
Less than 30 seconds after exposure to pure
methane.

SENSOR LIFE—
2 to 3 years expected.

CALIBRATION CYCLE—
60 to 90 days.

LINEARITY*—
±5% linearity for all combustible gases.

**For additional information contact the factory for tech-
nical notes, article reprints and tests on specific gases.*

ORDERING INFORMATION

Model 500 Remote Calibration Transmitter	226673
1K/2K/8K Remote Calibration Transmitter	226585
Digital Remote Calibration Meter	226616
Combustible Sensor	225006
Poison Resistant Combustible Sensor	226530
Sensor Junction Box with Connector Board	226555
Calibration Adjustment Screwdriver	225333
Transmitter/Sensor Separation Kit	226365
Model 500 Instruction Manual	95-8340
Calibration Kit (Specify Gas)	225130



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