



CGS500 CAT & CGS500IR Combustible Gas Transmitters

CGS500 Catalytic Transmitter

The CGS500 combustible gas sensor has been designed to measure concentrations of combustible gases in the range 0-100% LEL. The CGS500 is fitted in an EEx e certified junction box.

Each sensor contains two thermo-catalytic beads. Combustible gases will oxidise on the surface of the active bead while the reference bead compensates for changes in temperature, pressure etc. Each bead consists of a coil of fine platinum wire surrounded by an alumina based substrate containing a catalyst.

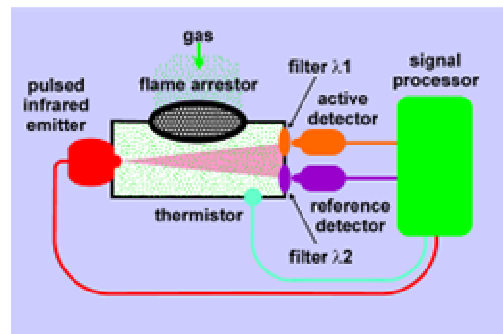
An electric current is passed through the bead which raises the temperature to a level where oxidation will occur. The catalyst reduces the temperature at which oxidation occurs, thus prolonging the life of the bead and resulting in much lower power consumption.



CGS500 IR NDIR Transmitter

The CGS500 – IR is a non dispersive infra-red sensor designed to replace thermocatalytic gas sensors for monitoring hydrocarbon gases in the range of 0-100% LEL housed in an EEx e certified junction box.

The sensor uses advanced miniaturised NDIR technology combined with surface mount microprocessor and firmware technology. A pulsed infra-red source emits a broad spectrum infra-red beam within an optical cavity. The system measures the absorption of IR energy as it passes through a gas sample. Different gases have clearly defined absorption characteristics, their concentration can be determined by their absorption of IR radiation at the wavelength determined by filter lambda 1 in the diagram opposite. To compensate for interfering factors filter lambda 2 isolates another wavelength which is used to measure the total transmission through the optical cavity and is not affected by the gas being monitored. By comparing the IR energy reaching each of the 2 detectors, the concentration of the gas sample can be determined.



Specialists in Safety: Gas Detection

Total Protection (UK) Limited

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CGS500 Features

- Temperature compensated
- Low drift
- Improved poison resistance
- Long life
- Fast response time
- Rugged stainless steel sensor
- Detects combustible gases and solvents
- Many accessories available
- Certified ATEX II 2 G EExd IIC T6

CGS 500 IR Features

- Temperature compensated
- Low drift
- Not affected by catalytic poisons
- Sensor MTBF of 10 years
- Fast response time
- Rugged stainless steel sensor
- Detects most hydrocarbons
- Many accessories available
- Certified ATEX II 2 G EExd IIC T6

Technical Specifications

CGS500 Catalytic Specifications

| | |
|---|--|
| Operating Voltage | 2.05V |
| Operating Current | 300mA |
| Detection Range | 0-100% LEL |
| T90 Response Time | Typically <15 seconds |
| Stabilisation Time | 1 minute |
| Preconditioning Time | 1 Hour |
| Operating Temperature Range | -40°C to +40°C |
| Mounting Thread | M25 X 1.5mm |
| Accessory Thread | M42 X 1.5mm |
| Weight | 700g (junction box and sensor) |
| Size of junction box (excluding sensor) | 75mm X 80mm X 58mm |
| Electromagnetic Conformance (EMC) | Complies with EN50081 and EN50082 |
| ATEX certification | EExd IIC T6 (Certificate No. BAS00ATEX2246X) |

CGS500 IR Specifications

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|---|--|
| Operating Voltage | 3.05V |
| Operating Current | 300mA |
| Detection Range | 0-100% LEL |
| T90 Response Time | Typically <30 seconds |
| Stabilisation Time | 1 minute (1 hour preconditioning required) |
| Preconditioning Time | 1 Hour |
| Operating Temperature Range | -40°C to +40°C |
| Mounting Thread | M25 X 1.5mm |
| Accessory Thread | M42 X 1.5mm |
| Weight | 720g (junction box and sensor) |
| Size of junction box (excluding sensor) | 75mm X 80mm X 58mm |
| Electromagnetic Conformance (EMC) | Complies with EN50081 and EN50082 |
| ATEX certification | EExd IIC T6 (Certificate No. BAS00ATEX2246X) |

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