



## Technical data sheet TDS0048



### PREMIER RANGE OF INFRARED GAS SENSORS



The Premier range of gas sensors covers two basic types, hydrocarbon and carbon dioxide. Within these ranges there are numerous options for target gas and concentration. The hydrocarbon sensors can be characterised for a specific gas type. In this instance, the sensor output will be linearised and temperature compensated for the gas specified. In addition to the target gas, the hydrocarbon sensors will respond to a wide range of other gasses. Using cross-reference data, it is possible to measure gasses other than the target gas. *Users should be aware, however, that the sensor will still respond to gasses other than the cross-referred gas.*

The cross-reference values are intended to provide an approximate indication of gas concentration, the accuracy of these readings will not be as high as the accuracy obtained when measuring the target gas. In addition, there will be errors introduced when measuring cross-referred gasses at temperatures away from normal ambient temperature. Nonetheless, it can be very useful to exploit this aspect of the sensor's behaviour.

The following table provides a list of the gasses for which the Premier sensor has been characterised. In addition, the table lists the gasses for which cross-reference data is available. Note that some gasses can be cross-referred using a linear factor, others require non-linear factors. Data is available for the non-linear relationships. The sensor can also be characterised for gases other than those listed here, contact Dynamant for more details. Refer to Technical Data Sheet TDS0050 for additional information on the cross-referral of hydrocarbon sensors.

Technical Data Sheet TDS0016 provides information on the sensor's predicted response to a wide range of gasses.

The full range of Technical Data Sheets and Application Notes can be found on the Dynamant website at [www.dynamant.com](http://www.dynamant.com)



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## PREMIER HYDROCARBON SENSORS

GAS TYPE	SENSOR RANGE	COMMENTS
METHANE	0 – 5% volume	Fully characterised for methane.
METHANE	0 – 100% volume	Fully characterised for methane
METHANE	0 – 100% volume	High resolution version measures methane from 0 to 100% volume with resolution of 0.01 % for 0-10% methane and 0.1% for 10-100% volume.
PROPANE	0 – 2% volume	Fully characterised for propane. Cross-reference factors available for: Butane, Pentane, Hexane, Ethanol, Ethylene, Propylene, Ethane, Cyclopentane, Isopropanol, Methanol, Toluene, Acetone, Methyl ethyl ketone (MEK) and Xylene , see Note 1
PROPANE	0 – 100% volume	Fully characterised for propane
PROPYLENE	0 – 2% volume	Fully characterised for propylene
BUTANE	0 – 2% volume	Fully characterised for butane
PENTANE	0 – 2% volume	Fully characterised for pentane
HEXANE	0 – 1% volume	Sensor output linearised for hexane, see Note 1
ETHYLENE	0 – 3% volume	Sensor output linearised for ethylene, see Note 1
ETHANE	0 – 3% volume	Fully characterised for ethane
ETHYLENE OXIDE	0 – 3% volume	Fully characterised for ethylene oxide
ETHANOL	0 – 5% volume	Sensor output linearised for ethanol, see Note 1
METHYL BROMIDE	0 – 25,000 ppm	Sensor output linearised for methyl bromide, see Note 1

Notes:

- 1 Temperature performance may vary from the specifications on the hydrocarbon sensor data sheets. Refer to data sheet TDS0050 on the Dynament website for further information.
- 2 “Fully characterised” sensors provide an output that has been linearised and temperature compensated for the target gas.

### PREMIER CARBON DIOXIDE SENSORS

GAS TYPE	SENSOR RANGE	RESOLUTION
CARBON DIOXIDE	0 – 500 ppm	10 ppm from 0 to 250 ppm, then 20 ppm up to FSD
CARBON DIOXIDE	0 – 1000 ppm	20 ppm from 0 to 500 ppm, then 40 ppm up to FSD
CARBON DIOXIDE	0 – 2000 ppm	50 ppm from 0 to 1000 ppm, then 100 ppm up to FSD
CARBON DIOXIDE	0 – 5000 ppm	50 ppm from 0 to 2500 ppm, then 100 ppm up to FSD
CARBON DIOXIDE	0 – 10,000 ppm	100 ppm from 0 to 5000 ppm, then 200 ppm up to FSD
CARBON DIOXIDE	0 – 2% volume	0.025% vol from 0 to 1% vol, then 0.05% vol up to FSD
CARBON DIOXIDE	0 – 5% volume	0.025% vol from 0 to 2.5% vol, then 0.05% vol up to FSD
CARBON DIOXIDE	0 – 100% volume	0.5% vol from 0 to 50% vol, then 1% vol up to FSD

### PREMIER DUAL GAS SENSORS

GAS TYPES	SENSOR RANGES	COMMENTS
<b>METHANE AND CARBON DIOXIDE</b>	0 – 100% volume methane and 0-5% volume CO2	<b>Methane</b> resolution from 0 to 100% volume: 0.01 % for 0-10% methane and 0.1% for 10-100% volume. <b>Carbon dioxide</b> resolution 0.01% Digital output only