

Specification Datasheet - 8010050

JFD Ltd.
DB200381 Oxygen Sensor



v1.2
30th August 2017

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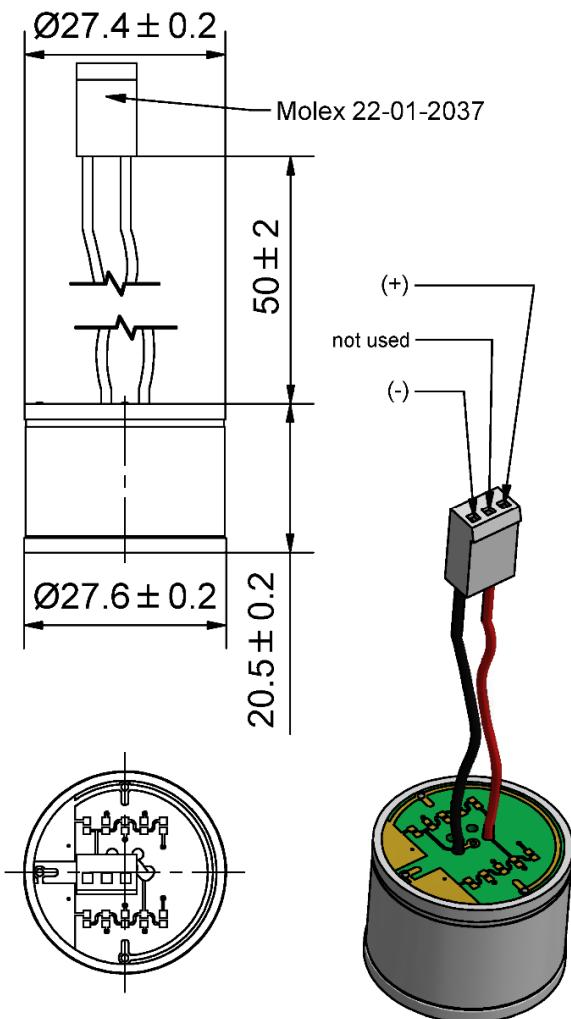
Specifications

| VST part number | 8010050 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|----------------------|----------------------------|-----------------------|-----|--|-----|----|---|--|--|------|---|---|--|-------------------|------|-----|----|--|--|------|-----|----|--|-----------------|------|------|-----|--|-----------------------|
| OEM model number | DB200381 Oxygen Sensor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Output in ambient air | 6.5 – 9.0 mV | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Electrical output | 30 to 60 μ A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Output connector | Flying leads with 3 pin female connector - Molex 22-01-2037 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Input | Open input – see drawing and images | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Input O ring | Not applicable | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Range | 0 – 100% oxygen | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pressure range | 600 to 2500 mbar | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Repeatability | <1% volume oxygen at constant temperature and pressure | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Linearity error | 0.1 to 1.0 bar < 3% relative 0.1 to 2.5 bar < 5% relative (at $ppO_2 > 1.0$ bar after 1-hour equilibration time) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Accuracy at constant temperature, pressure and humidity | <p>Accuracy – Within + / - 3% of reading (or ± 5 mBar oxygen, whichever is greater) up to specified range, when calibrated using 100% oxygen at known atmospheric pressure and 25°C</p> <p>Acceptable limits are</p> <table> <thead> <tr> <th>mBar pO₂</th> <th>Error mBar pO₂</th> <th>Min</th> <th>Max</th> <th></th> </tr> </thead> <tbody> <tr> <td>209</td> <td>-4</td> <td>4</td> <td></td> <td></td> </tr> <tr> <td>1000</td> <td>0</td> <td>0</td> <td></td> <td>Calibration point</td> </tr> <tr> <td>1500</td> <td>-30</td> <td>30</td> <td></td> <td></td> </tr> <tr> <td>2000</td> <td>-75</td> <td>75</td> <td></td> <td>Specified range</td> </tr> <tr> <td>2300</td> <td>-100</td> <td>100</td> <td></td> <td>Over-range capability</td> </tr> </tbody> </table> <p>Hysteresis after use at high pressure according to accuracy specification (within + / - 3% of reading)</p> | mBar pO ₂ | Error mBar pO ₂ | Min | Max | | 209 | -4 | 4 | | | 1000 | 0 | 0 | | Calibration point | 1500 | -30 | 30 | | | 2000 | -75 | 75 | | Specified range | 2300 | -100 | 100 | | Over-range capability |
| mBar pO ₂ | Error mBar pO ₂ | Min | Max | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 209 | -4 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1000 | 0 | 0 | | Calibration point | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1500 | -30 | 30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2000 | -75 | 75 | | Specified range | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2300 | -100 | 100 | | Over-range capability | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Warm up time | < 30 minutes after sensor installed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Zero offset voltage | < 0.5% oxygen reading in 100% nitrogen @ 25°C after 36 seconds | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cross interference | <0.5% volume oxygen response to 5% CO ₂ balance N ₂ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Response time | < 5 s for 90% of final value. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operating humidity | 0 – 99% R.H. (non-condensing). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Influence of humidity | - 0.03% relative per % R.H. at 25 °C. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Influence of mechanical shock | < 1% after fall from 1m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Operating temperature range | 0 – 50 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Storage temperature | -20 to +50 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Recommended storage temperature | +5 to +15 °C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Temperature compensation | Integrated NTC network | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Temperature compensation error | 0 °C to 50 °C, 5% relative error | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nominal sensor life | 500,000 % oxygen hours | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Typical sensor life | 20 to 24 months from date of invoice (including shelf life). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Long term output drift | < 1% volume oxygen per month, typically < -15% over sensor lifetime. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shelf life | 24 months | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Load required | ≥10 K Ohms | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | |
|---|--|
| Input - membrane protection grille | No |
| Input - hydrophobic membrane | Yes |
| Conformal coating on PCB | Yes |
| Pressure equalization - PCB | Yes |
| Pressure equalization - output cap | None |
| Weight (approximate) | 28 g |
| Flow diverter | No |
| Packaging | Gas barrier bag |
| Warranty period | 12 months from date of sales invoice |
| Application specific components | Low/non-magnetic components utilized: Cathode, internal wiring. Suitability and QA assessment carried out by JFD. |

All specifications are applicable at standard conditions: **1013 mbar, 25°C dry ambient air**

Drawings/images



Labelling

Oxygen sensor label 90.0mm x 15.0mm

White vinyl label, text & graphics - black



JFD Ltd.
Enterprise Drive
Westhill,
Aberdeen
AB32 6TQ
United Kingdom

Oxygen Sensor

P/N: DB200381



2017-07

S/N: 123456



Gas barrier bag label 63.5mm x 46.6mm

White label, text & graphics – black



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2017-07



S/N 123456



This oxygen sensor contains caustic liquid, in case of leakage avoid contact with eyes and skin. Do not puncture or staple this bag. Do not remove the oxygen sensor from this bag until ready to use. Depending upon the ambient conditions the oxygen sensor may require 30 minutes to reach signal stability after installation.