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# DRM Technic

Suppliers of Gas Analysis Equipment

**BA6000-O2 Paramagnetic  
Analyser - Single Gas**

## BA6000-O2 PARAMAGNETIC OXYGEN ANALYSER

The BA6000 Oxygen Gas Analyser is specified for applications involving high levels of vibration, reactive gas mixtures or applications which would corrode a traditional paramagnetic sensor. The analyser is impervious to the effects of vibration due to its measurement cell which contains no moving parts.



### FEATURES

**Quick Response Time | Low Long-Term Drift | Automatic Range Calibration | RS 485 Serial Interface  
0/2/4 to 20 mA Output | Several Standard Low Ranges Available, such as 0.5%, 2.0% or 5.0% O<sub>2</sub>**

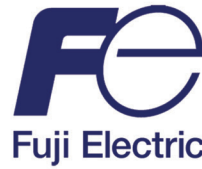
### SPECIFICATIONS (OXYGEN ONLY)

Product No.	BA6000-O2
No. of Measurement Ranges	4, Internally and Externally Switchable; Autoranging is Also Possible
Measurement Range	0.5/2/5% v/v O <sub>2</sub> to 100% v/v O <sub>2</sub>
Display	LCD with LED Backlighting and Contrast Control; Softkeys, Numeric Keypad and Function Keys
Dimensions   Weight	177mm x 483mm x 476mm (4U)   20 kg (approx.)
Power Supply	AC 100 to 120 V, 48 to 63 Hz (related range: 90 V to 132 V) AC 200 to 240 C, 48 to 63 Hz (related range: 180 V to 264 V)
Power Consumption	35 VA (approx.)
Dead Space   Dead Time	8.5 ml   0.5 ... 2.5 sec (depending on application)
Sample Gas Pressure	0.5 to 1.5 bar for Analysers with Hose; 0.5 to 3 bar for Analysers with Piping
Sample Gas Flow	20 to 60 l/h (0.3 to 1 l/min)
Sample Gas Temp.	0 to 50 °C
Sample Gas Humidity	< 90% RH
Warm-up Time	< 30 min at Room Temperature
Zero Drift	< 0.5%   3 Months of Lowest Range
Repeatability	< 1% of Respective Measurement Ranges
Analogue Output   Serial No.	0/2/4 to 20 mA   RS485
Protection Degree	IP 20 (EN 60529)
Optional	Auto Calibration Board

CONTACT US: DRM Technic, 15C Raleigh Hall Industrial Estate, Stafford, Staffordshire, ST21 6JL



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## DESIGN & CHARACTERISTICS

### Display and Control Panel

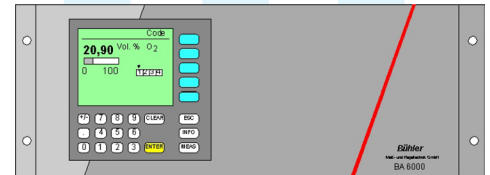
- Large LCD, displays: Measured Value; Status Line; Measurement Ranges
- Permanent LED Backlighting
- Cleanable Membrane Keyboard
- Menu Based Operation for: Settings; Test Functions; Calibration
- User Help in Plain Text
- Graphic Display of Concentration Trends; Adjustable Time Intervals

### Housing

- 19" 4U Units for Hinged Bays / Cabinets
- Front Panel Movable for Servicing
- Internal Pressure Sensor
- Internal Gas Paths: FPM; Titanium
- Measurement Cell: SS; Tantalum
- Inlet/Outlet Connections: 6mm; 1/4"

### Interfaces

- RS485 Serial



### Inputs/Outputs

- Six Binary Inputs, Freely Configurable
- Six Relay Outputs, Freely Configurable
- Two Analog Inputs, Freely Configurable
- Optional Extension for Additional Binary Inputs & Relay Outputs

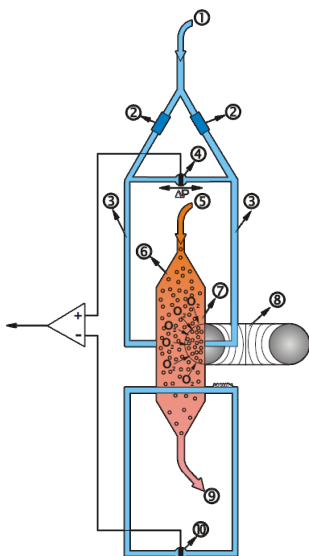
## REFERENCE GAS TABLE

Measurement Range	Recommended Reference Gases	Reference Gases Pressure	Remarks
0 to ...%v/v O <sub>2</sub>	N <sub>2</sub>	29 to 58 psi above sample gas pressure (max. 72.5 psi absolute)	The reference gas flow sets automatically to 5 ... 10 ml/min (up to 20 ml/min when also flowing through compensation branch)
To 100% v/v O <sub>2</sub> (suppressed zero with full-scale value 100% v/v O <sub>2</sub> )	O <sub>2</sub>		
Around 21% (suppresses zero with 21% v/v O <sub>2</sub> within the span)	Air	1.45 psi with respect to sample gas pressure which may vary by max. ± 0.73 psi compared to atmospheric pressure	

## MODE OF OPERATION

The BA6000 works through paramagnetic measurement. When two gases with different oxygen concentrations meet in a magnetic field, a pressure difference is produced between them. In the BA6000, one gas is a reference gas (1) while the other is a sample gas (5). The reference gas is led into the sample chamber (6) through two channels (3), one of which meets the sample gas within the area of a pulsating magnetic field (7). Because the two channels are connected, the pressure (which is proportional to the oxygen concentration) causes a flow between them. This flow is converted into an electrical signal by a microflow sensor (4).

Because the flow sensor is located in the reference gas stream, the measurement is not influenced by thermal conductivity, specific heat or internal friction of the sample gas. This also provides a high corrosion resistance because the flow sensor is not exposed to the sample gas. The sample chamber is part of the sample path and has a small volume. The microflow sensor thus responds quickly, resulting in the BA6000's short response time.



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