# **XPM601**

### Paramagnetic Oxygen Analyzer for safe operation of electrolyzers

A hazardous area-certified paramagnetic analyzer designed for monitoring oxygen in green hydrogen generated through electrolysis. The paramagnetic measurement technology is known for measurement accuracy and sensitivity while being very stable and having a long sensor life. The XPM601 is certified for use in hazardous areas through UKCA, ATEX, IECEx and cQPSus.



#### **Highlights**

- Measurement range from 0 to 5 % O<sub>2</sub> in H<sub>2</sub>
- Accuracy of < ±0.1 % O<sub>2</sub> full scale
- Low cost of ownership due to minimal maintenance
- Through-glass display allows operation and calibration without hot works permit
- Analog and digital outputs available for 2 x 4...20 mA outputs and Modbus RTU over RS485 as standard
- XPM601 can be supplied meeting the requirements of IEC 61508 (SIL2 Capable)
- ATEX, IECEx, UKCA & cQPSus certified

### **Applications**

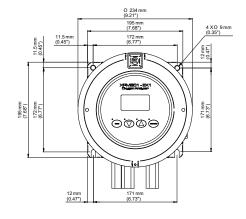
- Accurate measurement of O<sub>2</sub> in H<sub>2</sub> in process conditions
- · Safe operation of electrolyzer
- Monitor electrolyzer generation performance
- · Determine hydrogen purity

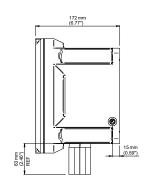


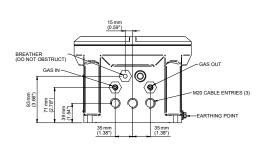
Performance Specifications	
Measurement Technology	Paramagnetic oxygen analyzer
Gas	Non-condensing sample with particles $<$ 5 $\mu m$
Measurement Range	Up to 5 % O <sub>2</sub>
Display Resolution	0.01 %
Accuracy	< ±0.1 % O <sub>2</sub>
Repeatability	< ±0.012 % O <sub>2</sub>
Linearity	< ±0.1 % O <sub>2</sub>
Zero Stability	±0.25 % of range per month
Range Stability	±0.25 % of range per month
Sample Flow Rate	100 ml/min (0.25 scfh)
Sample Pressure	0.33 barg (4.78 psig)
Sample Temperature	A constant temperature of +5+55 °C (+41+131 °F)
Background Gas	Analyzer is calibrated in the background gas of H <sub>2</sub>
Electrical Specifications	
Analog Inputs	1 off mA input for an external sensor (can be displayed on the screen) 1 off mA input to act as an active compensation for the process conditions
Analog Outputs	2 off 420 mA outputs (powered with 24V excitation voltage)
Alarms	2 off single pole changeover (SPCO) relays for $\mathrm{O}_2$ concentration (250 V, 5 A max)
Digital Communications	Modbus RTU over RS485
Power Supply	24 V DC, 1.5 A max
Operating Conditions	
Ambient Temperature	+5+60 °C (+41+140 °F) +5+50 °C (+41+122 °F) cQPSus
Atmospheric Pressure	750 mbar1250 mbar
Mechanical Specifications	
Warm-up Time	< 25 minutes
Stabilization Time	5 minutes
Wetted Materials	316 stainless steel, Viton 'O' ring, borosilicate glass, Electroless Nickel, platinum, platinum/iridium alloy
Gas Connection	1/8" NPT (female)
Ingress Protection	IP66, NEMA 4X
Hazardous Area Classification	
ATEX/UKCA *	II 2 G D, Ex db IIB +H2 T6 Gb, Ex tb IIIC T85 °C Db IP66
IECEx *	Ex db IIB +H2 T6 Gb, Ex tb IIIC T85 °C Db IP66
cQPSus **	Class I, Division 1, Groups B,C & D T6, Class II, Division 1 Groups E, F & G Class I, Zone 1 AEx db IIB+H2 T6 Gb / Ex db IIB+H2 T6 Gb Zone 21, AEx tb IIC T85°C Db / Ex tb IIC T85°C Db

<sup>\*</sup> Maximum temperature rating for ATEX/UKCA and IECEx Ta = -15 °C...+60 °C \*\* Maximum temperature rating for cQPSus Ta = -15 °C...+50 °C

## **Product Dimensions**







Michell Instruments adopts a continuous development programme which sometimes necessitates specification changes without notice. Issue no: XPM601\_99983\_V1\_EN\_0324

