

Calibration Issues with R-47V when used on Acutronic Fabian Vent

The results below are from an Envitec OOM204 sensor running successfully on an Acutronic Fabian ventilator and were provided by Paul Derman at Southmead Hospital.

OXY1 and OXY2 are Fabian reference values displayed in the calibration screen: they correspond to approximately the millivolt output multiplied by 14.

Acutronic have stated that the maximum output acceptable for a sensor is 62mV in 100% oxygen, which, by calculation is 12.99mV in air. The upper limit of the R-47V specification is 13mV. Whilst within specification, a calibration failure appears to be caused by a difference between the outputs of the 2 cathodes.

An Inspiration Healthcare service engineer reports that the Envitec sensors supplied by Acutronic usually give OXY reference values in 100% oxygen within 10 of each other from each cathode, which corresponds to a difference of 0.2mv in air.

Calibration Gas	pins 2&3		pins 1&2		Difference mV
	OXY1	mV	OXY2	MV	
Vent running from cold					
Air	187	13.3	185	13.1	0.2
Oxygen	866	61.8	875	62.6	0.8
Vent running for over 7 hours					
Air	187	13.3	184	13.1	0.2
Oxygen	871	62.9	876	62.2	0.7

The above data shows that sensors with a difference of 0.2mV between cathodes can pass calibration. Using Q.A. data from sensors returned to us by Inspiration Healthcare, we found that sensors with a 0.3mV difference or higher will fail.

Serial No.	Output 1 mV	Output 2 mV	Difference mV	Calibration result*
V01027	11.74	11.04	0.34	Fail
V01033	11.73	11.41	0.32	Fail
V01035	11.93	12.45	0.52	Fail
V01032	12.01	11.96	0.05	Pass

*The pass or fail result was reported by Inspiration Healthcare during the field-service of an Acutronic Fabian in a UK hospital.