

VESDA SENSEPOINT XCL - LARGE BORE O₂ ALARM LEVEL ADJUSTMENT - HELIUM RICH ATMOSPHERE APPLICATION NOTE



VESDA SENSEPOINT XCL - LARGE BORE

Contents

1	Scope.....	2
2	Adjusting O ₂ Alarm Level	2

1 Scope

This document provides guidelines for setting VESDA Sensepoint XCL – Large Bore Oxygen (O₂) alarm levels to detect depleted oxygen concentration levels in the presence of significant Helium gas concentration in the atmosphere e.g. spill or leak of Helium liquid in Magnetic Resonance Imaging (MRI) room.

2 Adjusting O₂ Alarm Level

The VESDA Sensepoint XCL – Large Bore Oxygen sensor is a diffusion type sensor and in the presence of Helium gas in the atmosphere will report a higher Oxygen value than the actual concentration present.

The high reading is caused because Helium promotes enhanced transport of Oxygen molecules through the capillary diffusion barrier membrane. The sensor is not actually detecting Helium; it simply sees an artificially high level of Oxygen due to Helium enabling more Oxygen molecules to enter the sensor.

The following graph shows the actual and displayed Oxygen concentrations at concentrations of Helium up to 11% by volume in air.

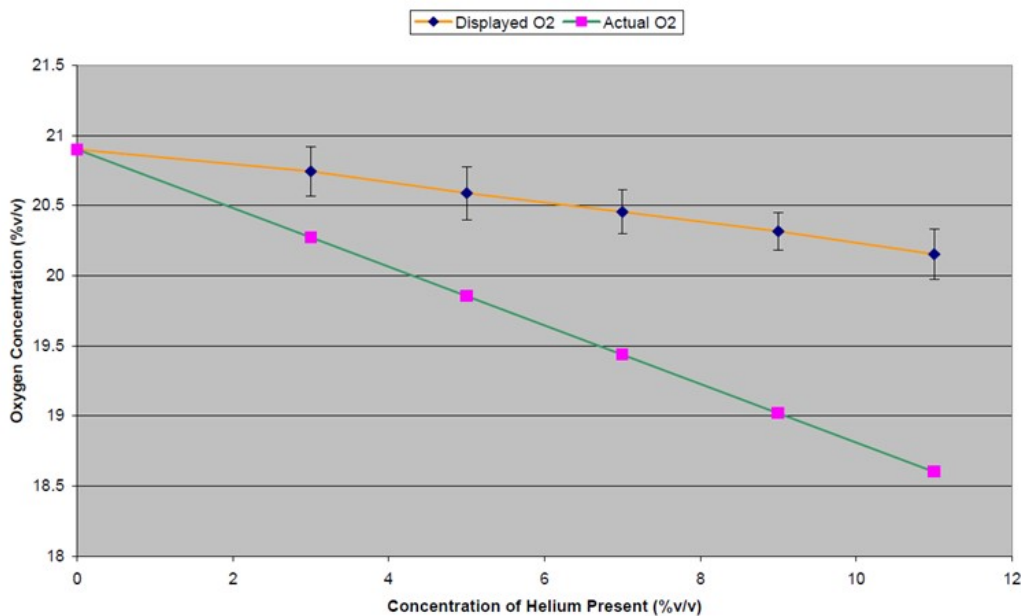


Figure 1: Oxygen Concentration (Actual, Displayed) in Helium Rich Atmosphere

Example:

At a concentration of 9% v/v Helium in the atmosphere, the VESDA Sensepoint XCL Oxygen detector will read a ~20.3% v/v Oxygen concentration even though the true level of Oxygen present would be 19% v/v.

Considering this example, setting the VESDA Sensepoint XCL Oxygen alarm level to 20.3% v/v will correspond to 19% v/v actual Oxygen concentration in the atmosphere.