

Functional Safety

XNX and Safety Integrity Level



Overview

SIL levels, in accordance with IEC 61508, are achieved through a rigorous development process that includes product design testing, failure analysis and documentation of both hardware and software conducted by an independent third party agency. The chart below shows the Honeywell Analytics SIL product offerings with their associated calculated values for: Safe Failure Fraction (SFF), Average Probability of Failure on Demand (PFD_{avg}), Probability of Failure per Hour (PFH) and the Test Reports.

Honeywell Analytics' Products

Components	SIL Level	SFF (%) *	PFD_{avg}	PFH (1/h)	Test Reports **
XNX Toxic Gas Detector	SIL 2	97.1	2.63×10^{-3}	3.26×10^{-7}	TÜV 968/EZ 319.02/09, exida HON 10/05-027 R001 V3
XNX Oxygen Detector	SIL 2	98.1	1.80×10^{-3}	2.62×10^{-7}	TÜV 968/EZ 319.02/09, exida HON 10/05-027 R001 V3
XNX Catalytic Bead Combustible Gas Detector	SIL 2	99.0	4.80×10^{-4}	1.12×10^{-7}	TÜV 968/EZ 319.02/09, TÜV 969/EL 678.00/10
XNX Infrared Combustible Gas Detector (w/Searchpoint Optima Plus)	SIL 2	94.4	7.62×10^{-4}	1.74×10^{-7}	TÜV 968/EZ 319.02/09, exida Zel 03/12-25 R002
XNX Open-path Infrared Combustible Gas Detector (w/Searchline Excel)	SIL 2	92.0	9.20×10^{-4}	2.10×10^{-7}	TÜV 968/EZ 319.02/09, exida Zel 04/08-13 R001
Standalone Searchpoint Optima Plus	SIL 2	94.4	4.9×10^{-4}	1.12×10^{-7}	exida Zel 03/12-25 R002
Standalone Searchline Excel	SIL 2	92.0	6.5×10^{-4}	1.48×10^{-7}	exida Zel 04/08-13 R001

* The functional safety parameters of Honeywell Analytics gas detectors utilizing the XNX Universal Transmitter and sensor were calculated by TÜV or exida per IEC 61508. Calculation data is available upon request. Using these parameters and table 3 of IEC 61508, the maximum SIL capability for Honeywell Analytics gas detectors is SIL 2. The SFF of the XNX transmitter is 98% and the associated SFF of the sensor is listed in the SFF column.

** The proof test interval for all Honeywell Analytics products is one year.