



Mine Safety Appliances
 1000 Cranberry Woods Drive
 Cranberry Township, PA 16066

Certificate of Compliance to IEC

FM Approvals
Certifies herewith that the

Gassonic Observer i
 (Safety Manual [MANOBSAFETY])

Complies with the relevant requirements of standards listed below:

Standards	Description	Compliance
IEC 61508-1:2010	Functional Safety of Electronic/Electrical/Programmable Electronic Safety-Related Systems- General Requirements	Part 1
IEC 61508-2:2010	Functional Safety of Electronic/Electrical/Programmable Electronic Safety-Related Systems	Part 2
IEC 61508-3:2010	Functional Safety of Electronic/Electrical/Programmable Electronic Safety-Related Systems- Software Requirements	Part 3

And therefore

**IS DECLARED "FIT FOR USE" IN A
 Low Demand SAFETY APPLICATION**

Model Observer i	SIL	HFT	SFF	PFD	λ_s	λ_{DD}	λ_{DU}
Analog Out Source	3	0	99.3%	3.23×10^{-4}	6.52×10^{-6}	3.77×10^{-6}	7.04×10^{-8}
Analog Out Sink	3	0	99.3%	3.25×10^{-4}	6.57×10^{-6}	3.87×10^{-6}	7.08×10^{-8}
Relay Out	2	0	97.28%	1.32×10^{-3}	6.62×10^{-6}	4.0×10^{-6}	2.97×10^{-7}

*This certificate is subject to conditions of use presented in FM Approval Report
 Project ID # 3048799, RR201536*



J.E. Marquedant
 James E. Marquedant
 Manager - Electrical Systems
 FM Approvals
 1151 Boston-Providence Turnpike,
 Norwood MA, 02062 USA

26 June 2015

 Date