



HALF-DAY TECHNICAL SEMINAR

Designing Gas Box for Advance Applications and Safety

Thursday, October 27, 2011 • 8:30AM – 12:00PM • Owens Design, Fremont, CA

Introduction:

Gas box design has evolved from NPT fittings with Teflon tape to welded tubing and VCR fittings to surface mount with no tubes and fittings. With semiconductor industry's shrinking technology nodes to sub 10nm, the demand for advancement in gas panel technology is much needed. MFC flow rates below 1sccm need to be less than 1% accurate of set point, not only at the MFC, but at the exit of the gas channels. There are many variables that will influence and challenge gas panel designs, considerations such as gas types, pressure sensitivity, back pressure, slug flow, discrete flow pulses, gas mixing, in-line verification, systems pressures and temperatures just to list a few. All of these factors have to be thought through to design a gas panel that achieves system performance and meeting cost targets. Dan Mudd and Chris Davis will be here from Dakota System to talk about their experiences in designing gas boxes for advance applications.

Certainly, regardless of the type of technology, safety is always a concern for gas box designs. To address gas box safety regulations, we have invited two compliance experts from Intertek to talk about regulatory codes and their experiences in certifying gas boxes.

Who should attend?

- Engineering Management
- Software and Control Engineers
- Design Engineers
- Program and Product Managers
- Equipment End Users
- Manufacturing Engineers
- Product Managers

Time: 8:30AM to 9:00AM
Complimentary Continental Breakfast

9:00AM to 12:00PM
Presentations

Place: Owens Design Inc.
47427 Fremont Blvd. Fremont
CA 94538

RSVP: Jack Yao
jyao@owensdesign.com
510-580-0128

Due to the popularity of our seminars, space will be limited. Please RSVP early.

Seminar Agenda:

Part 1: Advanced Gas Box Design
(Speakers Chris Davis and Dan Mudd)

Part 2: Gas Box Safety
(Speakers Joe Barsky and Russ McDonald)

- Regulations and Terminology
- Best Engineering Practices
- Safety Controls are not "Customer Options"
- EHS considerations when buying used equipment

Part 3: Implementation of Gas Box Interlocks

(Speaker Ania Zemlerub)

- Discuss the science underlying programmable hardware safety solutions for semiconductor equipment
- Express metrics to judge overall system safety and compare traditional hardware implementation of safety logic with user configurable solution
- At the end of the session the participants will have the ability to make an educated decision which

design option is more suitable for their next safety interlocking system

Presenters:

Dan Mudd

In May of this year Dan joined Dakota Systems as its Chief Technology Officer. Dan has served in Engineering Management positions for the past 20+ years. During this time, he has focused primarily on the heartbeat of the gas and fluid delivery system in the design and manufacturing of Mass Flow Controllers. This development and design has led to well over 50 US, and International patents and more than five patent applications in process. Previous to Dakota Systems, Daniel held the position of Vice President of Advanced Technology for Horiba Semiconductor Division. Dan Received his BSME from University of Missouri-Rolla in 1973 and his MSEM in 1979.

Chris Davis

Chris received his BSChE from the University of Massachusetts-Lowell in 1984. Chris has more than 27 years of high technology industry experience, including the development, design, patent and introduction to the market of the all metal gas filters and pressure based mass flow controllers used in leading edge processes today. Prior to joining Dakota Systems in 2010, Chris was the VP of sales for HoribaSTEC and a Founder and CEO of Fugacity.

Presenters Continued

Joseph B. Barsky, MS, CIH

Joe is a certified industrial hygienist with over 28 years of semiconductor experience with IBM, Apple Computer, LSI Logic, Lam Research and many more through consultation with Intertek and others. Prior to joining Intertek, he helped with the Deepwater Horizon Oil Spill response in the Gulf supporting Florida and Alabama cleanup efforts. Joe has a MS degree in Environmental Health from the University of Cincinnati, College of Medicine and his BA in Ecology from Rutgers College. He is a past-president of the American Society of Safety Engineers-Greater San Jose Chapter and has several publications and patents.

Russell McDonald, Product Safety Engineer

Russ is a product safety engineer with over 32 years of semiconductor experience with Seagate Technology, Intertek GS3 Testing Services and other third party evaluators. Prior to becoming a third party evaluator he was a research and development engineer with Seagate Technology for 25 years. Responsibilities included researching state of the art design manufacturing techniques and the development of equipment to meet the industry's technology advancements. Russ has vast experience in compliance, transferring, installing, training, and support of semiconductor equipment throughout the US, SE Asia, China, and Europe.

Ania Zemlerub, Product Manager MKS Instruments

I hold the position of Product Manager for Control group in MKS Instruments, a leading provider of equipment for semiconductor OEM's, for the last 5 years. I started my career with MKS Instruments 11 years ago as a design engineer for control platforms. Prior to MKS I was employed in various engineering and technical service positions in IDF (Israel Defense Forces). I hold an Electrical Engineering degree from Tel Aviv University.

This seminar is complimentary to our customers and Guests

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