Overview of MOVI Electronics
4:40 10 min

Micro-Orifice Volatilization Impactor (MOVI).

Reddy Yatavelli & Joel Thornton, AS&T 2010

ToF CIMS Deliveries with the MOVI

- CU/Jimenez
- UNC/Surratt
- EPA/Offenberg
- Toronto/Abbatt
- 3 systems to China (Hefei, Nanjing, Fudan)
- Julich

Multiple MOVI control systems needed
What is required to control the MOVI

New MOVI Process

Based on UW work

Felipe Lopez-Hilfiker

MOVI Control Box and Connected Components

Computer

EyeOn Control software

ToF MS

Temp Controllers

Heater power distribution

User I/O

RH/T sensor

MFCs

Water pump

AutoValves

Fans/solenoids

MOVI Control Box

Sept, 2012
Heat isolation of MOVI Collector

Water System  Felipe - UW

Some notes on water system:
- Conductance limiting 1/8" tubes (keep in mind for pump)
- HOT exiting water (need heat sink on water reservoir)
- Water System must be vented away from instrument
- House air needs to be ready for a large flow for purge
- Need to force water to ambient to keep post at near ambient

Prototype MOVI Control Box

Front and rear panels

Two prototypes built and ready for testing/integration
New MOVI Control box has been designed and is being fabricated

2U 19” rack box

Completed Prototype MOVI Control Box
2U 19” rack mount, 13” deep
**Analog and Digital User interface**

- 8 analog inputs (+/-10V)
- 4 analog outputs (0-10V)
- 8 digital lines (configurable as inputs or outputs)
- 2 mechanical relays

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**IMR/CDC Pressure Regulation Scheme**

- Sample Flow
- CIMS Front end
- IMR Pirani Gauge
- Solenoid Valve Controller
- 70-100 mBar
- Pressure signal
- Leak from atm.

*builds off our existing controllers*
*does not require an additional pressure gauge*
https://sites.google.com/site/citofms/

MOVI-CIMS support site maintained by Harald and Joel

MOVIT Control Box Manual
Should get combined with EyeOn

Summary

• Two prototypes built and bench tested.
• EyeOn software development on-going.
• First delivery planned for early 2013 to Toronto Abbatt group.