
DATA AND CONNECTIVITY IN PRODUCT ENGINEERING

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Masen Intro

Mr. Mark Masen is a Mechanical Engineer and has worked at Maxitrol Company for 20 years. Maxitrol Company is an American manufacturer of electronic gas modulation systems, gas pressure regulators and control valves, gas safety devices and gas filters. Maxitrol has facilities located in Michigan, Germany and the UK. Mr. Masen is currently the Director of Research and Development where he oversees product development and new product applications for the Company worldwide. During his time at Maxitrol he has been granted several design patents for gas flow control elements and gas-fired systems.

INTRODUCTION

- **Prevalence Of Connected Devices**
 - Widely adopted in society
 - Changes to workflow and techniques
- **Value Of Information**
 - Perception of safety and control
 - Improve decision-making
 - Increase sophistication
- **Effects Of Data And Connectivity On System Design**
 - Maintain coherence
 - Enable future modification
 - Connected appliances can be controlled appliances

DRIVERS FOR DATA AND CONNECTIVITY

- **Technology Costs**
 - uC-based hardware
 - Value proposition
- **Customer Requirements**
 - Lower operating costs
 - Energy and building management system compatibility/integration
 - Remote access and fleet management
- **Regulatory/Utility Requirements**
 - Smart grid-associated requirements
- **Value Proposition**
 - Low technology costs and high customer value

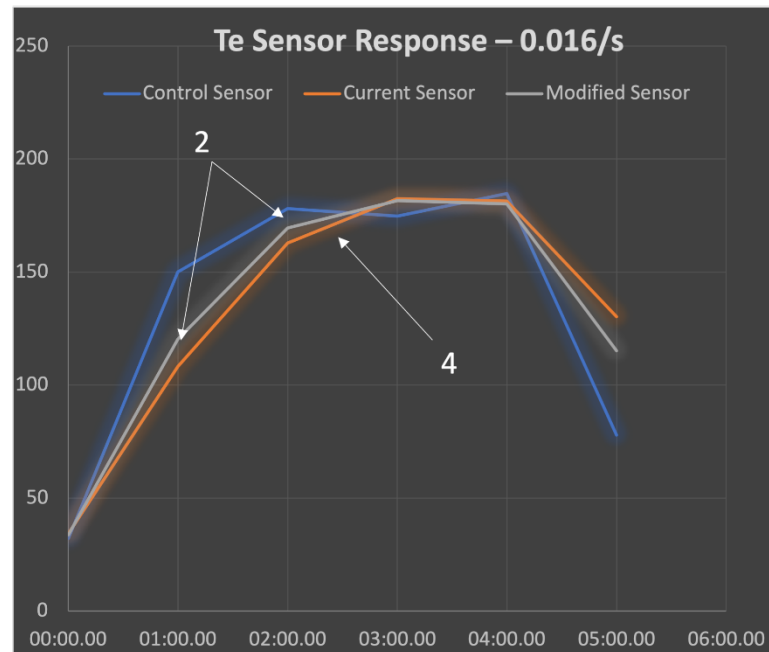
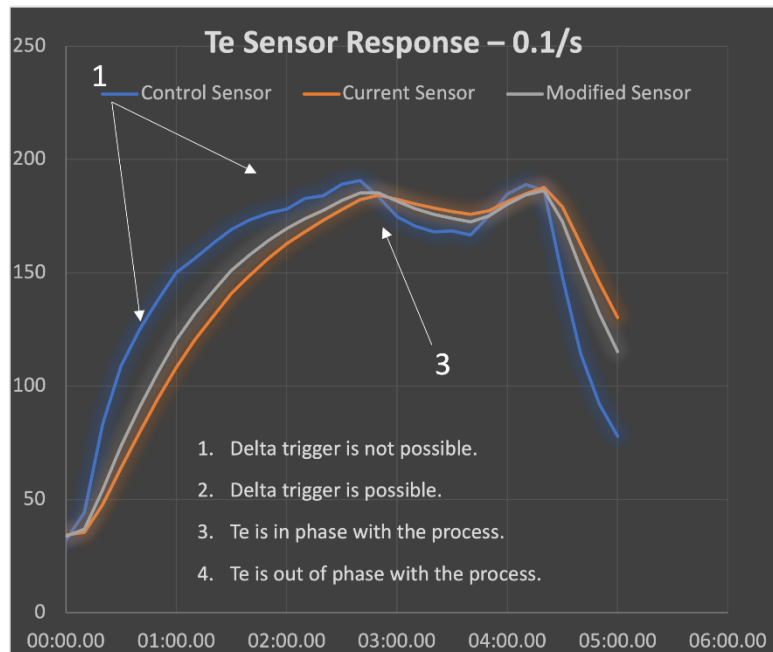
THE GRAMMAR OF DATA

- **What Is Data?**
 - Aggregate data is created
 - Data disposal
- **Who Wants Data?**
 - First-Party (OEM, customer, installer/technician)
 - Third-Party (competitor, government/regulatory, utilities)
- **Why Is Data Important?**
 - Warranty, facility management, setup/calibration
 - Market insight
- **How Is Data Managed?**
 - Local or “cloud” storage
 - Remote access and analysis
 - Ownership and liability
 - Privacy

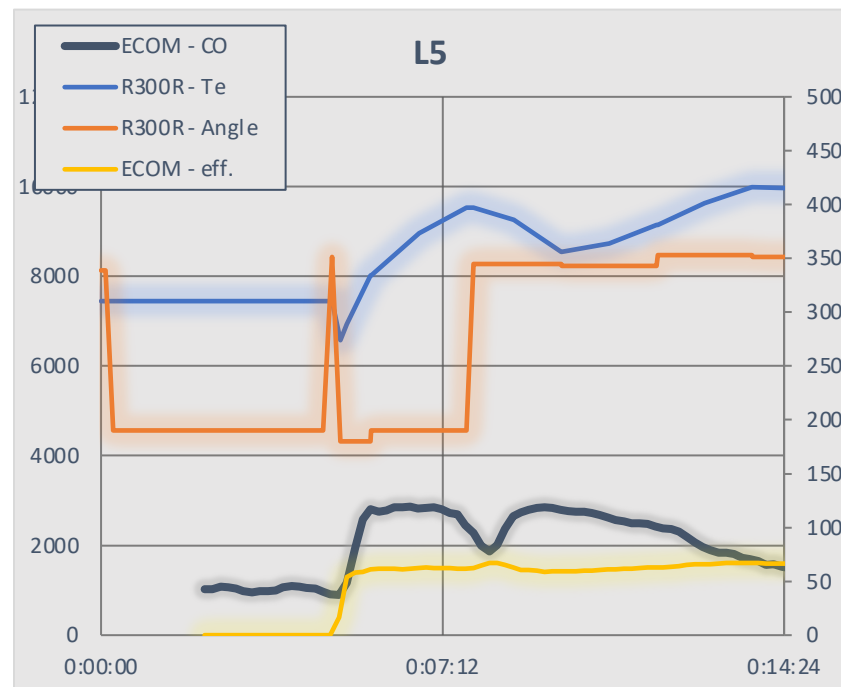
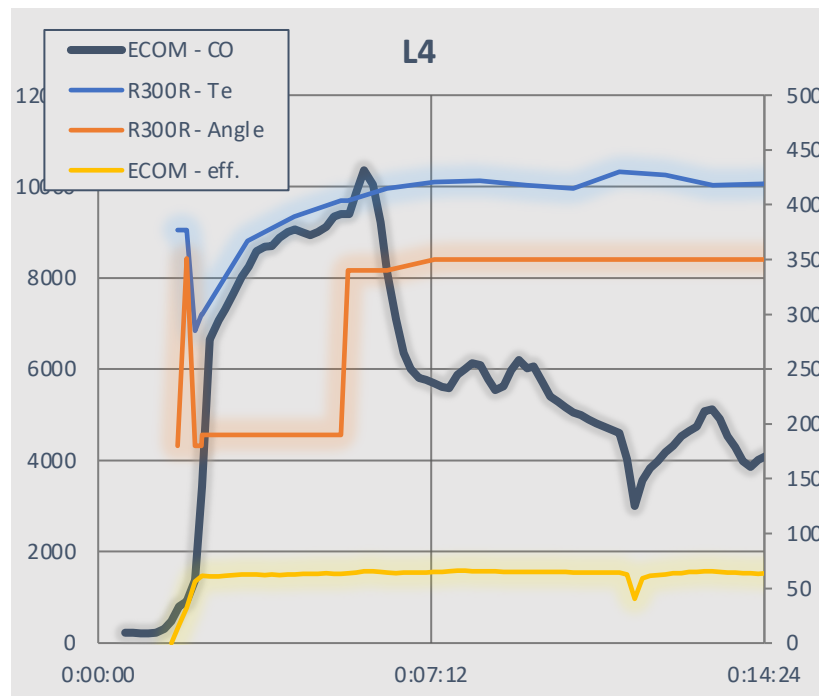
PRACTICAL USE OF DATA IN CONTROLS

- **Aggregate Data Is A New Data**
 - Applied to process control
 - Requires control
- **Analysis Of Aggregate Data**
 - Enables new approaches and applications of sensors
 - Cost savings and improved reliability
- **Disposition Of Data**

PRACTICAL DATA – TRANSFORM SENSOR BEHAVIOR



PRACTICAL DATA – AGGREGATE DATA CALCULUS



THANKS FOR LISTENING

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