

# DSG-GEM R&D Meeting Minutes

**Date: November 9, 2020**

**Time: 11:00 – 12:00**

*Attendees: Peter Bonneau, Aaron Brown, Pablo Campero, Brian Eng, George Jacobs, Tyler Lemon, Marc McMullen, and Amrit Yegneswaran*

## 1. Reviewed prototype Gas Flow Sensor chassis

1.1. Marc McMullen gave a presentation on the prototype Gas Flow Sensor chassis design

1.2. Suggestions were made for design changes

1.2.1. Accommodate a wire management channel, requiring 2–2.5” of space for the channel to route cables, Fig. 1

1.2.2. Modify back panel to locate input RJ-11 connectors to sides of back panel, Fig. 2

1.2.3. Tyler Lemon will change the design by repositioning the area of the Gas Flow Sensor boards towards the chassis front, where there is currently 4.5” of space available, increasing current space of 1.125” between the Gas Flow Sensor boards’ area and the multiplexer board’s area

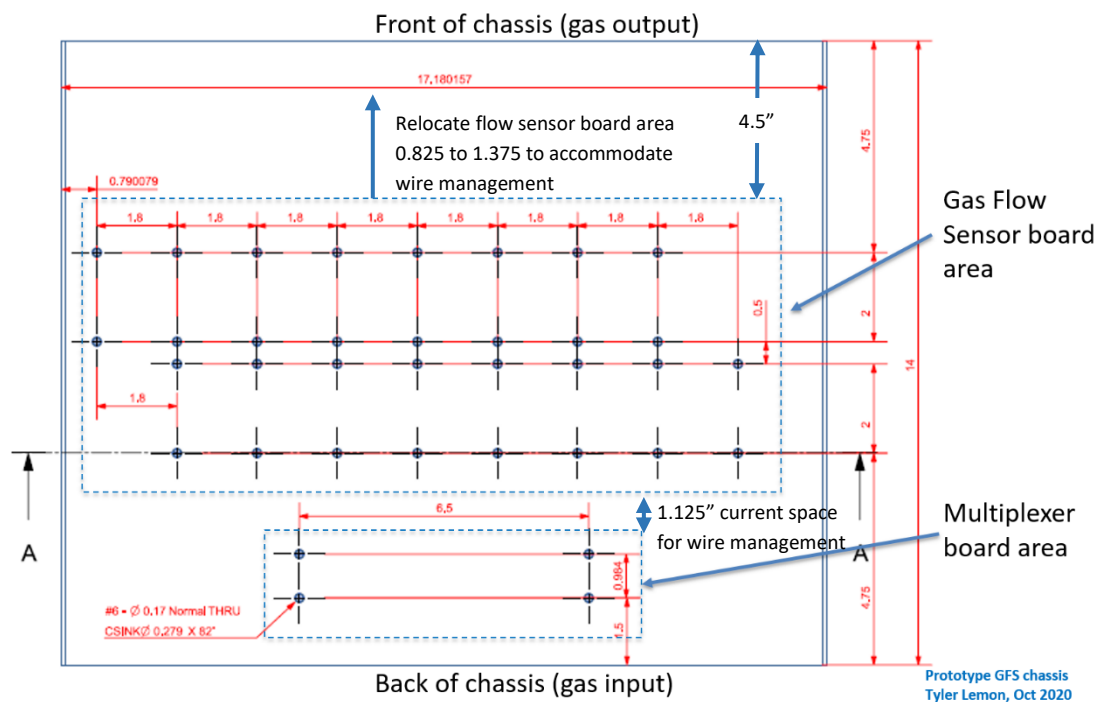
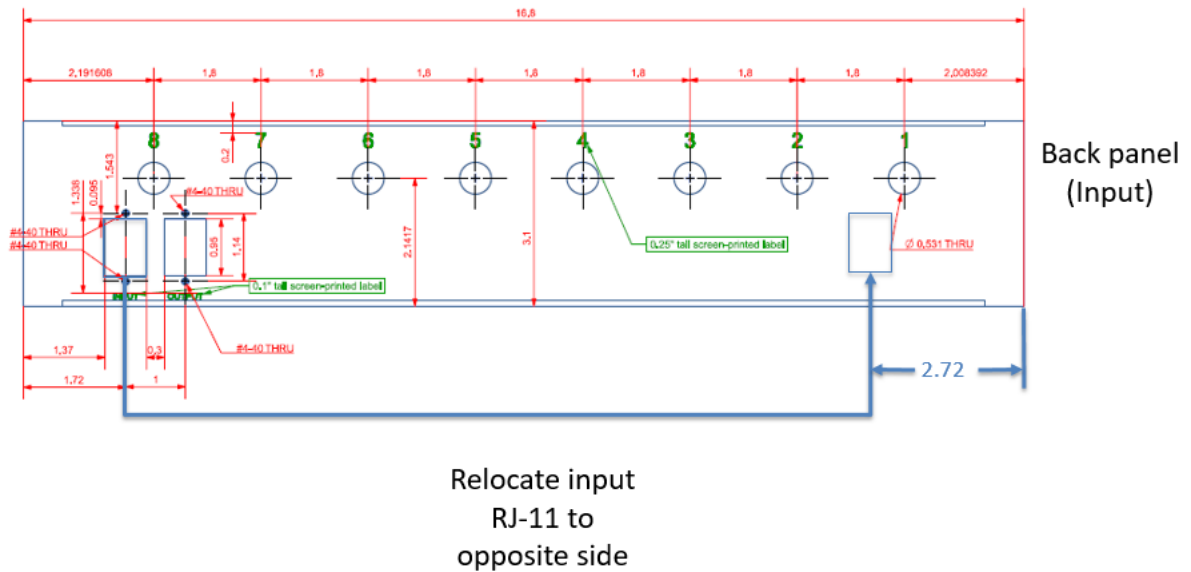


Figure 1 Bottom panel of the Gas Flow Sensor chassis showing the flow sensor board area and multiplexer board area



Prototype GFS chassis  
Tyler Lemon, Oct 2020

Figure 2. Rear panel of the prototype Gas Flow Sensor chassis design with relocation of input RJ-11 connector

2. Cardinal Machine is modifying two BUD project boxes to Tyler Lemon's design specifications for the exhaust Gas Flow Sensor and Multiplexer enclosures
  - 2.1. Expected delivery is this week; will be tested to ensure the Gas Flow Sensor and the Multiplexer boards will fit
3. Discussed mounting positions of GEM gas distribution component racks for both Super BigBite and BigBite supply systems
  - 3.1. Tyler Lemon will modify the rack models by adjusting rack depth to 36" and moving the manifold panels to the same side as the flow meter valve/regulator panels
4. Software development by Marc McMullen
  - 4.1. Modifying the flow readback Python code to handle issues with the I<sup>2</sup>C bus that halts the program if a gas flow sensor is broken or disconnected
  - 4.2. Modifying the process variable database to reflect modifications to the Python code by adding a channel status Boolean input record for each channel
  - 4.3. Modifying the flow readback display in CSS Phoebus by adding a gas flow sensor status indicator that will be green if the sensor is good and yellow if the sensor is malfunctioning
5. Hall A has not responded to George Jacobs request to leak test the prototype regulator panel
  - 5.1. DSG will inquire about the leak test in the next monthly meeting with Hall A (11/20)
6. Marc McMullen presented a diagram requested by Amrit Yegneswaran of gas flow components for one channel, with pressure limits for each component
  - 6.1. George Jacobs stated the use of a 75-psi relief valve in the prototype system will prevent the relief valve from leaking during testing of the prototype regulator and flow meter valve panels. During operational use, the system will use a 25-psi relief valve

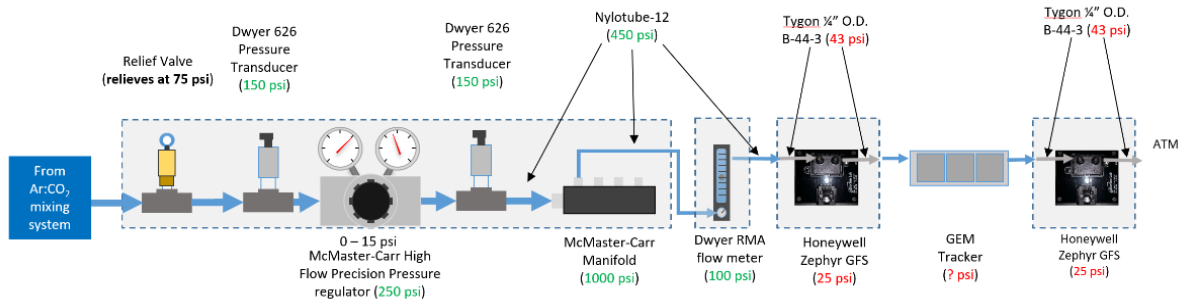


Figure 3 Single channel gas flow path for prototype GEM gas distribution system