

# DSG-SoLID Magnet Controls Meeting Minutes

**Date:** July 28, 2021

**Time:** 11:00 – 12:00

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

## **1. Power requirements for instrumentation**

*Pablo Campero*

1. Reviewed questions posted in the meeting minutes from July 21
2. Reviewed table with current supply required for each device

## **2. Generating new drawings**

*Mary Ann Antonioli and Pablo Campero*

1. A00000-16-03-0312 *PLC Relay Module, Remote B, Slot 2 Wiring Diagram*

## **3. Modification for drawings in progress**

*Mary Ann Antonioli and Pablo Campero*

1. A00000-16-03-0262 *JTV Motor Drives Wiring Diagram*
  - Changing colors for wires shown
  - Modifying connection nodes used for relay and contact connections
2. A00000-16-03- 0305 *PLC Relay Module, Remote A, Slot 5 Wiring Diagram*
3. A00000-16-03-0350 *Power Supply Terminal Strips*
  - Need to confirm number and ampacity of circuit breakers required to protect 24 VDC and 5 VDC power supply circuits
4. A00000-16-03-0100 *Instrumentation Control Panel - Rear Layout*

## **4. Cables for SoLID magnet instrumentation**

*Pablo Campero, Brian Eng, and Marc McMullen*

1. Updated *Cable List* spreadsheet
  - Added PR links for each procured cable
  - Added cable storage location for each cable
  - Added basic specifications required for cable to connect to the following:
    - Motor Drive signals from PLC-TS to PLC-TB (for heat exchanger valves)
    - Temperature sensors signals from 5 VDC power supply to Dataforth backplane
2. Reviewing voltage input specifications of Dataforth signal conditioning modules that will be used for voltage tap readout
  - Reviewed transient input protection rating code ANSI/IEEE C37.90.1. in ANSI-IEEE standard issued on 2002
    - The specifications show a fast transient with a 4 kV spike with a rise of 5 ns and a period of 400 us
    - The magnet peak voltage is 350 VDC with a decay time of 52 s according to the *Oxford Instruments Manual*
    - Based on code issued in 2002, the Dataforth signal conditioning module would be protected, but will need to check the most current standard issued
3. Cable (rated for 600 V) to connect voltage tap signal readouts from the terminal strip to the Dataforth signal conditioning module will be received by the end of July

4. Ordered cables 351-09 to 351-18, 505-04, 505-05, 312-01, 312-02, 301-02, 261-01 and 261-02
  - Cable 261-01 connects macro sensors output or transmitter (EBV8) to 12-position switch (for local readout of valve position)
  - Cable 261-02 connects macro sensor output voltage to 12-position switch
  - Cable 301-02 connects PLC Terminal strip to key switch
  - Cable 312-01 connects PLC terminal strip to PLC terminal block terminals
  - Cable 312-02 connects PLC terminal strip to MCR relay terminals
  - Cables 351-09 to 351-18, 505-04, and 505-05 connects terminal strip to MCR connector for contacts
5. Need to order ferrules for single and multi-connections, and ferrule crimp