Datalogger Intro

Spring 2013
Datalogger

- Main goal: take measurements and store data files.
- Dataloggers are only one part of a data acquisition system.
  - Suitable, reliable sensors and reliable data retrieval.
- Suitable sensors transduce environmental change into measurable electrical properties by:
  - Outputting a voltage,
  - Changing resistance,
  - Outputting a pulses, or
  - Changing states
- Dataloggers can measure almost any sensor with an electrical response.
CR-1000 and CR-5000
CR-1000

- Analog Inputs
  - Voltage
  - VoltDiff
  - VoltSE
  - Thermocouple
  - TCDiff
  - TCSE
  - Bridge measurements (use VX)
  - BrFull
  - BrFull6W
  - BrHalf
  - BrHal3W
  - BrHalf4W
  - Others
  - PanelTemp
  - PeriodAvg
  - AM25T

- Switched Voltage Excitation (EX)
  - Excite
  - BrFull
  - BrFull6W
  - BrHalf
  - BrHal3W
  - BrHalf4W

- Power In

- Ground Lugs

- Analog Ground

- Pulse Inputs
  - PulseCount
  - PulseCountReset

- RS-232

- CS I/O
  - DSP4 (Data Tables and Outputs)

- SDM Connections
  - CS7500
  - CSA13
  - SDMM118
  - SDMSpeed
  - SDMTrigger

- Control I/O
  - PortGet
  - PortSet
  - ReadIO
  - TimerIO
  - WriteIO
  - SDIO12

- Peripheral Port
  - CareOut (Data Tables and Outputs)

- 5 V
- 12 V

- Switched 12 Volts SW-12
- PortSet
- SW12

- Power Ground (G)
Channel Options

• Differential or Single Ended (SE)

• Differential measurement
  – Uses the H (high) and L (low) inputs.
  – Measures the voltage on the H input with respect to the voltage on the L input.

• Single Ended (SE)
  – Labeled SE on logger panel.
  – Measures the voltage on the single channel with respect to the analog ground.

• Grounds
  – Analog grounds (ground symbols): intended for use with instrument measurements.
  – G (Power grounds): intended for return currents from 5 V, SW 12 V, and 12V outputs.
    • Keeps return currents from flowing through and corrupting analog measurements.
Single-Ended Channel

Sensor Wired to Single-Ended Channel #2
Differential

Sensor Wired to Differential Channel #1