Datalogger Intro

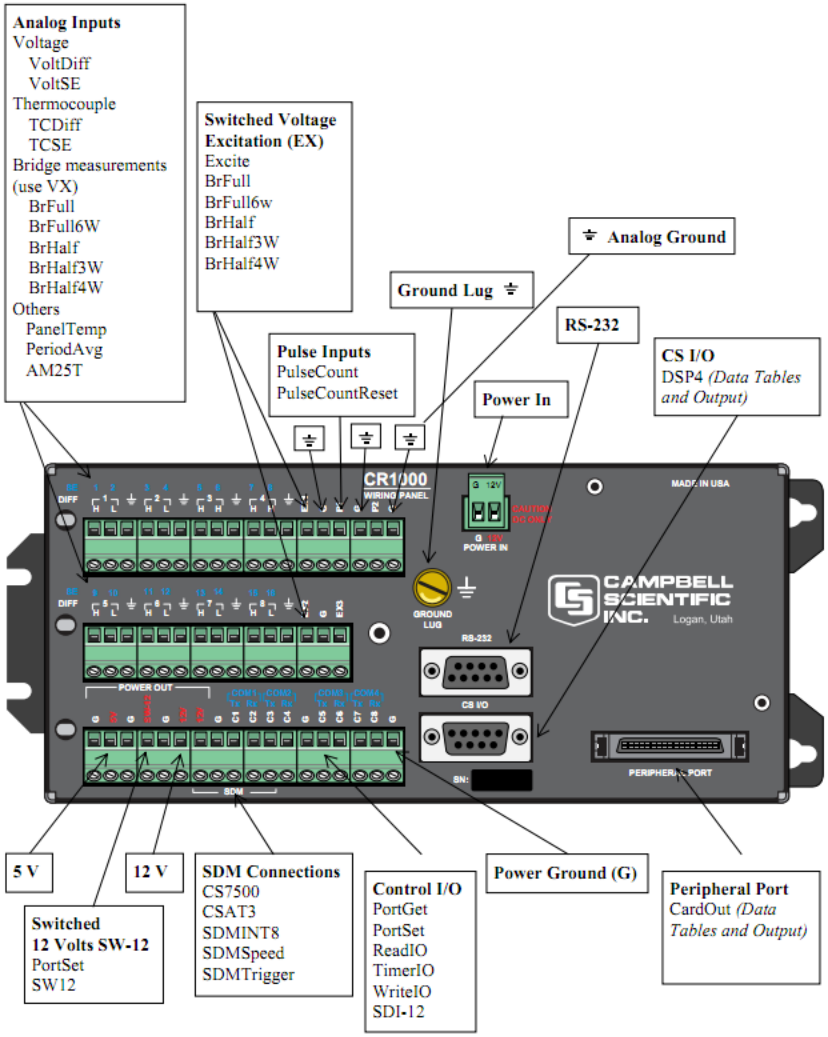
Spring 2013

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 measureable electrical properties by:
  - Outputting a voltage,
  - Changing resistance,
  - Outputting a pules, or
  - Changing states
- Dataloggers can measure almost any senor 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
BrHalf3W
BrHalf4W
Others
PanelTemp
PeriodAvg
AM25T
Switched Voltage Excitation (EX)
Excite
BrFull
BrFull6w
BrHalf
BrHalf3W
BrHalf4W
Pulse Inputs
PulseCount
PulseCountReset
Analog Ground
Ground Lug
RS-232
CS I/O
DSP4 (Data Tables and Output)
Power In
CR1000
WIRING PANEL
MADE IN USA
POWER IN
GROUND LUG
CAMPBELL SCIENTIFIC INC.
Logan, Utah
RS-232
CS I/O
POWER OUT
SDM
PERIPHERAL PORT
5 V
12 V
Switched 12 Volts SW-12
PortSet
SW12
SDM Connections
CS7500
CSAT3
SDMINT8
SDMSpeed
SDMTrigger
Control I/O
PortGet
PortSet
ReadIO
TimerIO
WriteIO
SDI-12
Power Ground (G)
Peripheral Port
CardOut (Data Tables and Output)

Channel Options

- Differential or Single Ended (SE)

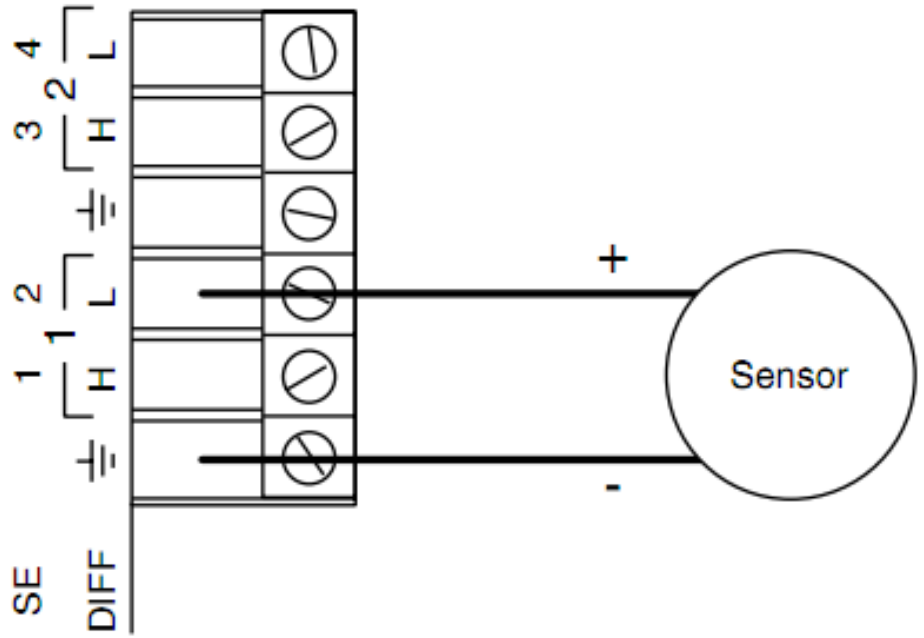
- Differential measurement
  - Uses the H (high) and L (low) inputs.
  - Measures the voltage on the H input with respect to the voltage on the L input.

- 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