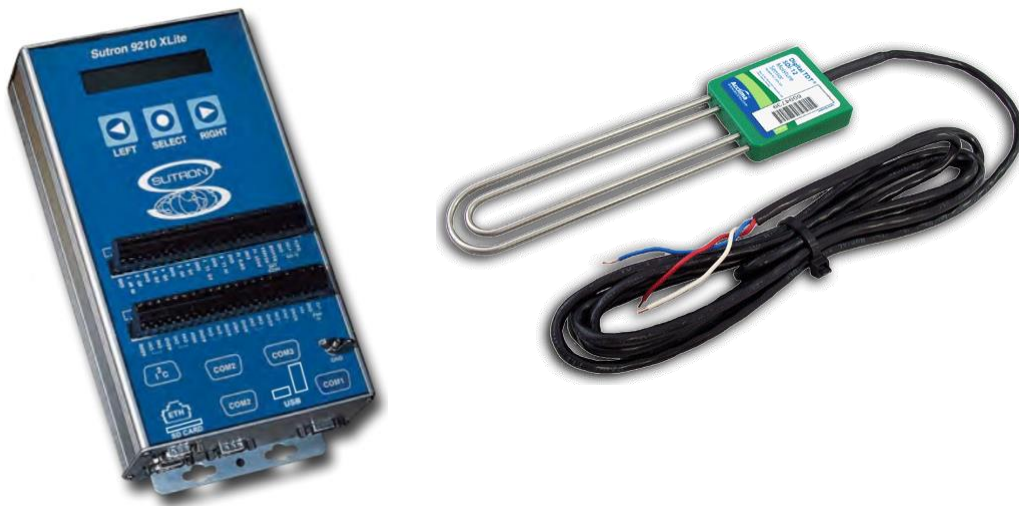




INTEGRATION GUIDE

Soil Moisture/Temperature Sensor with 9210 Datalogger Series

Soil Moisture/Temperature Sensor with 9210 Datalogger Series



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Introduction

The soil moisture/temperature sensor is one of Sutron's most commonly used sensors for Agro-met stations. This guide will describe the proper method of connecting the sensor with the 9210 datalogger. This will apply to all dataloggers in the 9210 series. The configuration of the software will be the same for the Xpert datalogger series, but the wiring diagrams will be different. The sensor communicates via the SDI-12 protocol and can interface with any of Sutron's dataloggers.

Part Number

ACC-SEN-SDI

Precision Soil Moisture and Temperature Sensor, SDI-12



Mounting Solutions

This sensor requires no additional mounting hardware. The sensor is designed to be placed directly in the ground without a mounting apparatus. For more information on the correct method of installation see the operations and maintenance manual.

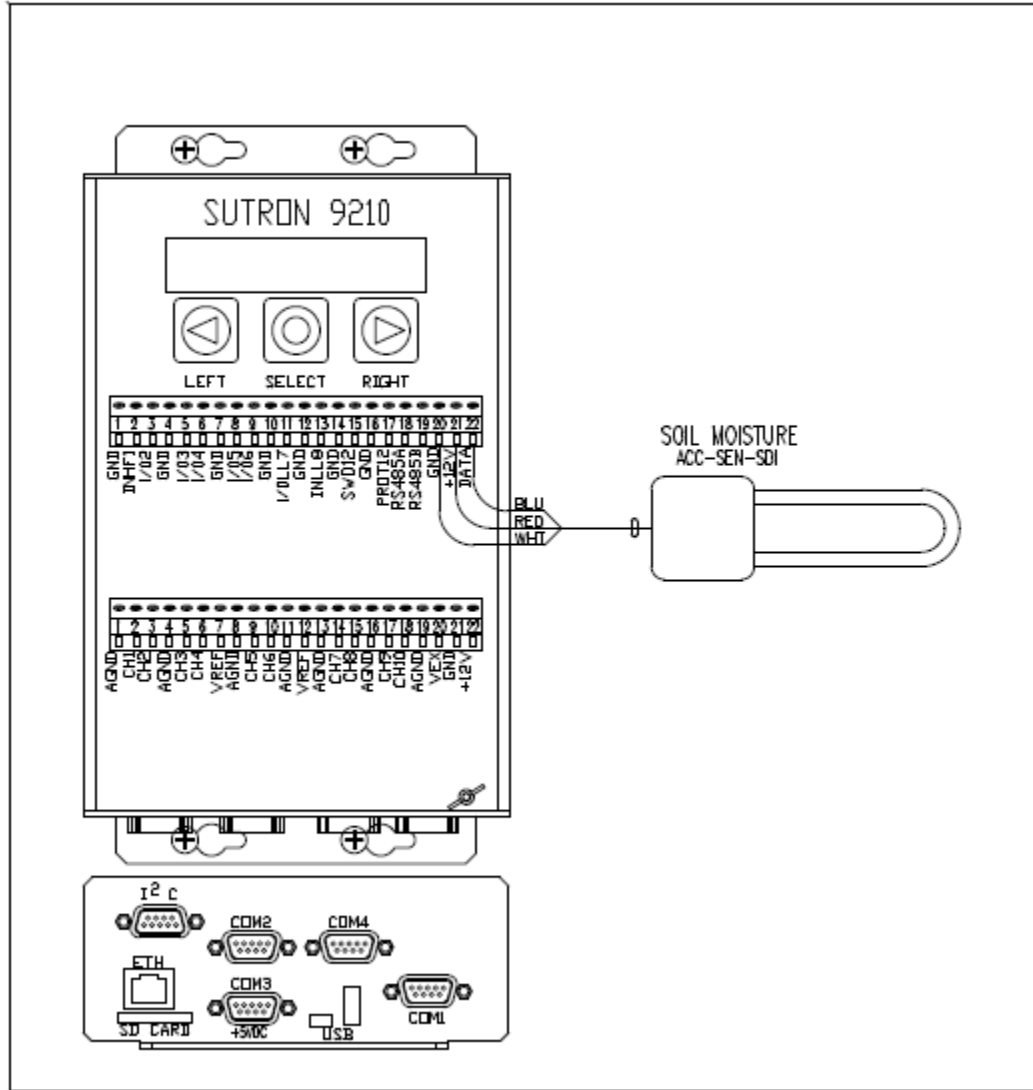


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Wiring Diagram

Physically connecting the soil monitoring sensor to the datalogger requires an SDI-12 connection. Typically, the logger will be encased in an enclosure with pass through glands or military spec connectors. The software configuration shown below depicts this wiring scheme.



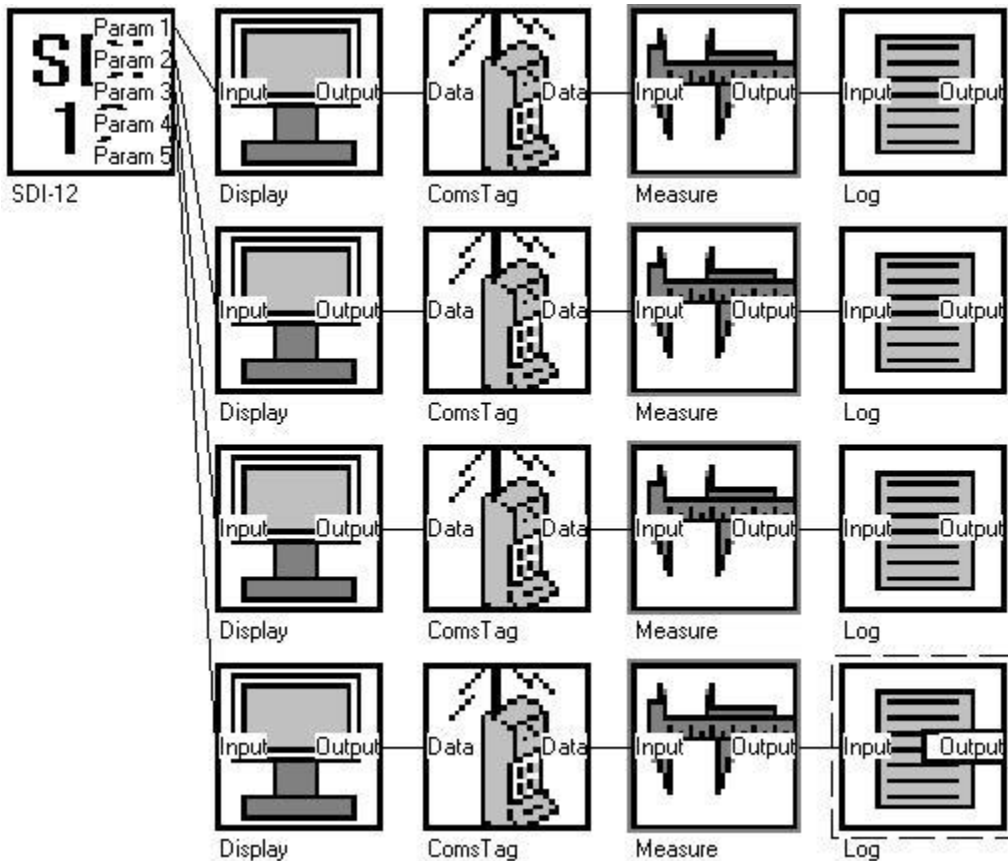


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Common Configurations

The 9210 utilizes a graphical setup in order to configure the sensors that are connected. The graphical setup is a series of blocks connected to depict a diagram showing how the data is managed. A typical series of blocks would be an Input, Display, Coms Tag, Measurement, and then a Log block. With this series the sensor would be measured based on the parameters of the input block, then the value would be visible on the front display of the logger, the data tab in the graphical setup would be updated, the measurement interval is defined, and then the value is logged in the log file. Alarms can also be added to the data management series by placing an alarm block before the Coms Tag block. For more detail on how to program a 9210, use the 9210 Operations and Maintenance Manual. The descriptions below will provide a concise description of common measurement setup for the soil monitoring sensor measured every 15 minutes.





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This screenshot shows the configuration for two sensors, SM and ST. The windows are arranged as follows:

- SDI Properties (SM):** Address: 0, Command: M, Slope: 1, Offset: 0, Units: (empty).
- Display Properties (SM):** Label: SM, Right Digits: 2.
- Display Properties (ST):** Label: ST, Right Digits: 2.
- Coms Tag Properties (SM):** Name: SM, Prefix: <None>, Suffix: <None>, Right Digits: 2, View on Data tab: checked.
- Coms Tag Properties (ST):** Name: ST, Prefix: <None>, Suffix: <None>, Right Digits: 2, View on Data tab: checked.
- Measure Properties (SM):** Time: 00:00:00, Interval: 00:15:00.
- Measure Properties (ST):** Time: 00:00:00, Interval: 00:15:00.
- Log Properties (SM):** Log Name: \\Flash Disk\SSP.LOG, Sensor Name: SM, Precision (right digits): 2, Log scheduled time: checked.
- Log Properties (ST):** Log Name: \\Flash Disk\SSP.LOG, Sensor Name: ST, Precision (right digits): 2, Log scheduled time: checked.

This screenshot shows the configuration for two sensors, SP and EC. The windows are arranged as follows:

- Display Properties (SP):** Label: SP, Right Digits: 2.
- Display Properties (EC):** Label: EC, Right Digits: 2.
- Coms Tag Properties (SP):** Name: SP, Prefix: <None>, Suffix: <None>, Right Digits: 2, View on Data tab: checked.
- Coms Tag Properties (EC):** Name: EC, Prefix: <None>, Suffix: <None>, Right Digits: 2, View on Data tab: checked.
- Measure Properties (SP):** Time: 00:00:00, Interval: 00:15:00.
- Measure Properties (EC):** Time: 00:00:00, Interval: 00:15:00.
- Log Properties (SP):** Log Name: \\Flash Disk\SSP.LOG, Sensor Name: SP, Precision (right digits): 2, Log scheduled time: checked.
- Log Properties (EC):** Log Name: \\Flash Disk\SSP.LOG, Sensor Name: EC, Precision (right digits): 2, Log scheduled time: checked.



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Summary

This guide has described the detailed options of the soil monitoring sensor as well as how to connect it to the 9210 datalogger. If you have any questions about this integration guide, or if additional guidance is needed getting started or troubleshooting then please contact Sutron's Integrated Systems Division at 703-406-2800.