

Electric Power Substation SCADA Application



Installation and Configuration Procedure

Introduction

The following procedure provides step-by-step instructions to install and configure the Electric Power Substation SCADA Application on a host computer. This application allows control and supervision of an electric power substation implemented using modules Circuit Breakers and Disconnecting Switches 1 and 2, Models 3783-0 and 3783-A, respectively. The procedure steps should be performed in the order they appear. Administrator rights are required to perform the procedure.

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Procedure

1. **Installation of SIMATIC WinCC Runtime Advanced** Insert the *Siemens SIMATIC WinCC Runtime Advanced* DVD-ROM in the host computer then launch the installation of SIMATIC WinCC Runtime Advanced. SIMATIC WinCC Runtime Advanced is required to run the Electric Power Substation SCADA Application.
2. Follow the on-screen instructions. At some point during the installation, you will be asked to transfer a license key for SIMATIC WinCC Runtime Advanced to the host computer. This license key is a file located on a USB key provided with the *Siemens SIMATIC WinCC Runtime Advanced* DVD-ROM.

Note: *If the transfer of the license key fails when installing SIMATIC Win CC Runtime Advanced, skip the license key transfer and continue to follow the on-screen instructions to complete the installation procedure. Then, with the USB key still connected to the host computer, start the Automation License Manager by double clicking the corresponding icon on the host computer's desktop. Use the Automation License Manager to transfer license "WinCC RT Advanced (128) " from the USB key to a drive (e.g., drive C:) in the host computer. Close the Automation License Manager.*

Note: *If, for any reason, SIMATIC Win CC Runtime Advanced needs to be uninstalled, make sure that you transfer the license key back to the USB key provided with the Siemens SIMATIC WinCC Runtime Advanced DVD-ROM. Otherwise, the license could be permanently lost in the event the host computer is reformatted.*

3. **Installation of LVDAC-EMS** Insert the *Festo LVDAC-EMS* DVD-ROM in the host computer. This DVD-ROM is included with module Data Acquisition and Control Interface (DACI), Model 9063. LVDAC-EMS is a software that allows voltage and current measurements using the DACI module.

Note: *The LVDAC-EMS installation files can also be downloaded from the Festo Didactic web site (www.labvolt.com).*

4. Launch the installation of LVDAC-EMS then follow the on-screen instructions.
5. **Installation of the Electric Power Substation SCADA Application** Insert the *Festo Electric Power Substation SCADA Application* DVD-ROM in the host computer. This

DVD-ROM is included with module Circuit Breakers and Disconnecting Switches 1, Model 3783-0.

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Note: *The installation files of the Electric Power Substation SCADA Application can also be downloaded from the Festo Didactic web site (www.labvolt.com).*

6. Launch the installation of the Electric Power Substation SCADA Application then follow the on-screen instructions.
7. **Configuration of the 9063 DAI OPC server** The 9063 DAI OPC server allows values of voltage and current measured using the DAI module to be transferred to the Electric Power Substation SCADA Application for display purpose. To work, the 9063 DAI OPC server requires the Software Development Kit (SDK) function to be activated in the DAI module (Model 9063). Check that the SDK function, Model 9069-9, is activated in your DAI module (this information appears on a label affixed to the DAI module). If so, go to the next step. Otherwise, contact your Festo representative.
8. Connect the 24 V ac power supply to the DAI module. Turn the 24 V ac power supply on.
9. Connect the DAI module to a USB port of the host computer. The USB drivers for the DAI module should be installed automatically.
10. Open folder C:\Program Files (x86)\Festo Didactic\Electric Power Substation SCADA\OPC Server 9063. Run file UaServerConfigHelperNet4.exe **as an administrator** (right click filename then click *Run as Administrator*).
11. Click *Browse*, open folder C:\Program Files (x86)\Festo Didactic\Electric Power Substation SCADA\OPC Server 9063, select file uaPLUSx86.Net4.exe, and click *Open*.
12. Click *Create UA Configuration* then click *Yes* when asked to overwrite the existing UA configuration file.
13. Click *Edit UA Configuration*.
14. Click *Certificates* then click *Create*.
15. Click *OK* then click *Save and Close*.
16. Click *Done*.
17. Open folder C:\Program Files (x86)\Festo Didactic\Electric Power Substation SCADA\Discovery Server. Run file CreateServiceForDS.bat. Follow the on-screen instructions.
18. Open folder C:\Program Files (x86)\Festo Didactic\Electric Power Substation SCADA\OPC Server 9063. Run file CreateServiceForOPCServer.bat. Follow the on-screen instructions.

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19. **Installation and configuration of the USB-to-Ethernet adapter** Locate the USB-to-Ethernet adapter that is included with the DC Power Supply / Ethernet Switch, Model 8824.
20. Install the drivers for the USB-to-Ethernet adapter by following the instructions provided with the adapter.
21. On the host computer, set the properties of the USB-to-Ethernet adapter so that it operates with the following fixed IP address: 192.168.001.003. Set the subnet mask to 255.255.255.000.
22. Access the Control Panel of the host computer then open the PG/PC Interface dialog box.
23. Select "access point name.TCPIP.1 as the Interface Parameter Assignment Used (e.g., select ASIX AX88179 USB 3.0 to Gigabit Ethernet Adapter.TCPIP.1).
24. Click *OK* to close the PG/PC Interface dialog box.
25. **Configuration of user rights** To be able to start (run) the Electric Power Substation SCADA Application without the need to have administrator rights, any user must be part of the *Siemens TIA Engineer* group. Perform the following steps to add users and/or user groups to the *Siemens TIA Engineer* group.
26. Access the Control Panel of the host computer.
27. Display all items in the Control Panel as small icons by selecting *Small icons* in the *View by:* list.
28. Click *User Accounts*.
29. Click *Manage User Accounts*. The *User Accounts* window should open. Select the *Advanced* tab in this window.
30. In the *Advanced user management* section, click *Advanced*. The *lusrmgr - [Local Users and Groups (Local)]* window should open.
31. Double click *Groups* in this window.
32. Double click the *Siemens TIA Engineer* group. The *Siemens TIA Engineer Properties* window should open. This window displays the identifiers of the users and user groups that are already part of the *Siemens TIA Engineer* group.

Note: *The identifier of a user or a user group has the following structure: domain name\user name or user group name (e.g., SchoolXYZ\JohnSmith, SchoolXYZ\Class101, etc.).*
33. In the *Siemens TIA Engineer Properties* window, click *Add*. The *Select Users, Computers, Service Accounts, or Groups* window should open.

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34. In the *Select Users, Computers, Service Accounts, or Groups* window, click *Advanced* then click *Object Types*. The *Object Types* window should open.
35. Make sure that object types *Users* and *Groups* are selected in the *Object Types* window then click *OK*.
36. In the *Select Users, Computers, Service Accounts, or Groups* window, click *Locations*. The *Locations* window should open. Select the domain name (location) of the users and/or user groups that you wish to add to the *Siemens TIA Engineer* group then click *OK* to close the *Locations* window.
37. In the *Select Users, Computers, Service Accounts, or Groups* window, click *Find Now*. The names of all users and user groups in the domain selected above should display in the *Search results:* area of the window. If too many user names and user group names are displayed in the *Search result:* area, you can refine your search using the *Common Queries* tools available in the *Select Users, Computers, Service Accounts, or Groups* window.
38. In the *Search results:* area, select the names of the users and/or user groups that you wish to add to the *Siemens TIA Engineer* group.
Note: *You can select multiples names by holding the Ctrl key depressed while clicking each name in the "Search results:" area.*
39. Click the *OK* button. The names of the users and/or user groups that you selected should be displayed in the *Enter the object names to select:* area of the *Select Users, Computers, Service Accounts, or Groups* window.
40. Click *OK*. The identifier (domain name\user name or user group name) of each user or user group that you selected should be displayed in the *Members:* area of the *Siemens TIA Engineer Properties* window.
41. Click *OK* to close the *Siemens TIA Engineer Properties* window.
42. If you wish to add other users or user groups to the *Siemens TIA Engineer* group, repeat steps 32 to 41 of the procedure.
43. When you are done adding users and/or user groups to the *Siemens TIA Engineer* group, close all Control Panel windows that are still open.
44. End of procedure

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