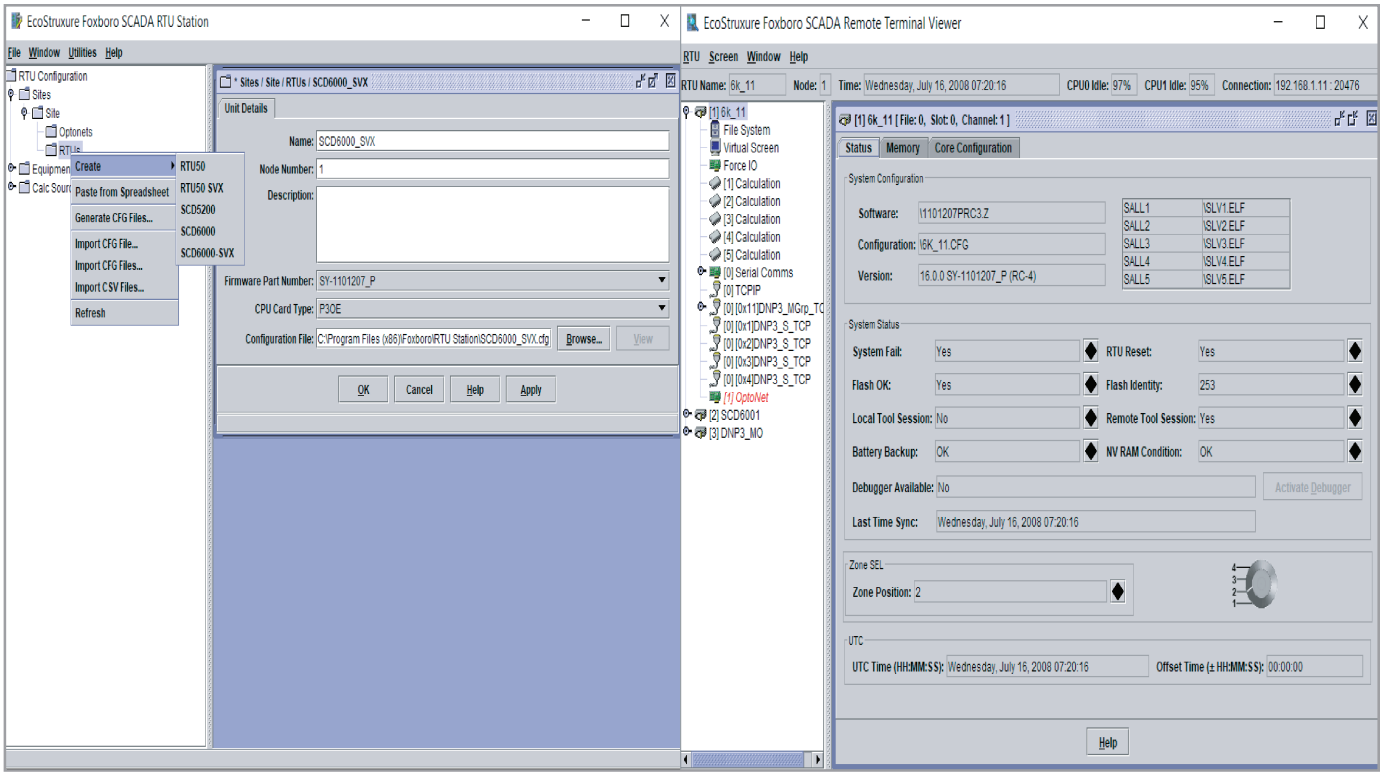
Foxboro™ SCADA

RTU Station, RTV, and RTU Connect Secure Software

PSS 41S-2S6KSWR

Product Specification

April 2024



Legal Information

The information provided in this document contains general descriptions, technical characteristics and/or recommendations related to products/solutions.

This document is not intended as a substitute for a detailed study or operational and site-specific development or schematic plan. It is not to be used for determining suitability or reliability of the products/solutions for specific user applications. It is the duty of any such user to perform or have any professional expert of its choice (integrator, specifier or the like) perform the appropriate and comprehensive risk analysis, evaluation and testing of the products/solutions with respect to the relevant specific application or use thereof.

Overview

EcoStruxure™ Foxboro™ SCADA Remote Terminal Unit (RTU) Suite is a set of remote configuring and diagnostic tool for distributed industrial automation networks. The software in RTU Suite is used by the technical staff and system engineers to configure and maintain the network of Foxboro SCADA remote devices. These devices are used as data concentrators, gateways, and substation controllers by large to medium-scale industries. The Foxboro SCADA SCD6000 can also be used as EcoStruxure Electrodynamic Controllers in Foxboro DCS systems as part of EcoStruxure Power and Process Control Systems (see EcoStruxure™ Electrodynamic Controller™ Product Specification (PSS 41S-2EDC)) and as an Automatic Transfer Switch (ATS).

RTU Suite provides features to configure and maintain the Foxboro SCADA remote devices and RTU50 unit locally or remotely through controlling stations connected through OptoNet or TCP/IP based communication channels. The distributed processing architecture of the software allows for efficient configuring and maintaining of RTU, regardless of its size.

The software in RTU Suite for configuring, managing, and maintaining the Foxboro SCADA remote devices and RTU50 are:

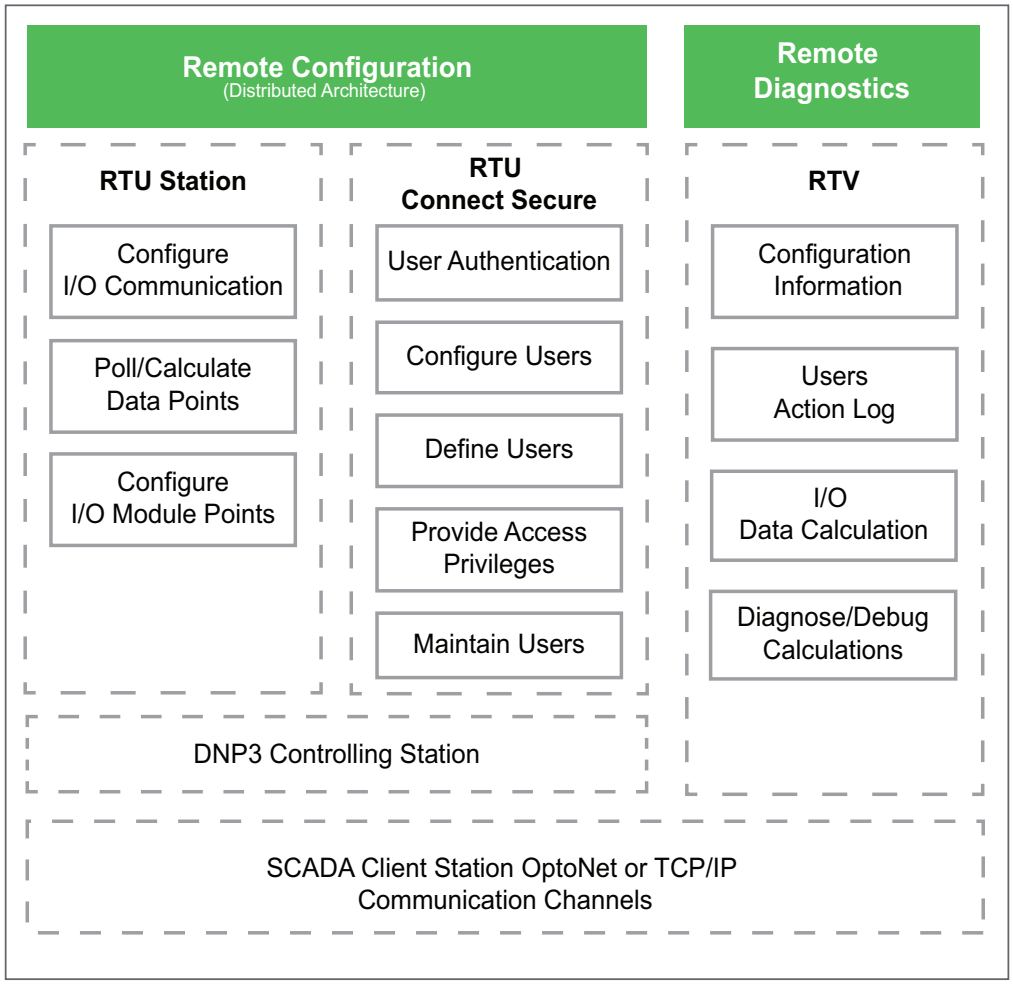
- **EcoStruxure Foxboro SCADA Remote Terminal Unit (RTU) Station**

  RTU Station is used to configure the overall system, including the availability and relationships between the hardware. RTU Station uses an RTU configuration definition for all I/O communication and calculation data points. RTU polls all the I/O modules for data according to the configuration definition and updates the RTU database.

- **EcoStruxure Foxboro SCADA Remote Terminal Viewer (RTV)**

  RTV is used for diagnosing and analyzing Foxboro SCADA remote devices and RTU50. It allows you to have real-time insight into the operation and configuration of an RTU. RTV displays a summary of active firmware, configuration and calculation, and system diagnostics-related information. It manages users and their logs that record diagnostic user actions.

Figure 1 - RTU Station, RTV, and RTU Connect Secure Software



EcoStruxure Foxboro SCADA RTU Connect Secure

RTU Connect Secure is a security configuration software to centrally manage the user authentication in Foxboro SCADA remote devices and RTU50. The software helps prevent unauthorized access to RTU from RTV. RTU Connect Secure uses a database server to configure and maintain user credentials and generates a security configuration profile for each RTU node. Using the security configuration profile, RTU Connect Secure provides a password-based authentication mechanism that helps prevent unauthorized access.

Insensitive Terms Replaced in this Document

We have replaced these terms in this document. However, the product's user interface and ordering information might still use old terms.

Old Term	New Term
Modbus Master	Modbus Client
Modbus Slave	Modbus Server
DNP3 Master	DNP3 Controlling Station
DNP3 Slave	DNP3 Outstation
IEC 60870-5-104 Master	IEC 60870-5-104 Controlling Station

Old Term	New Term
IEC 60870-5-104 Slave	IEC 60870-5-104 Controlled Station
Modbus TCP Master	Modbus TCP Client
Slave	Server

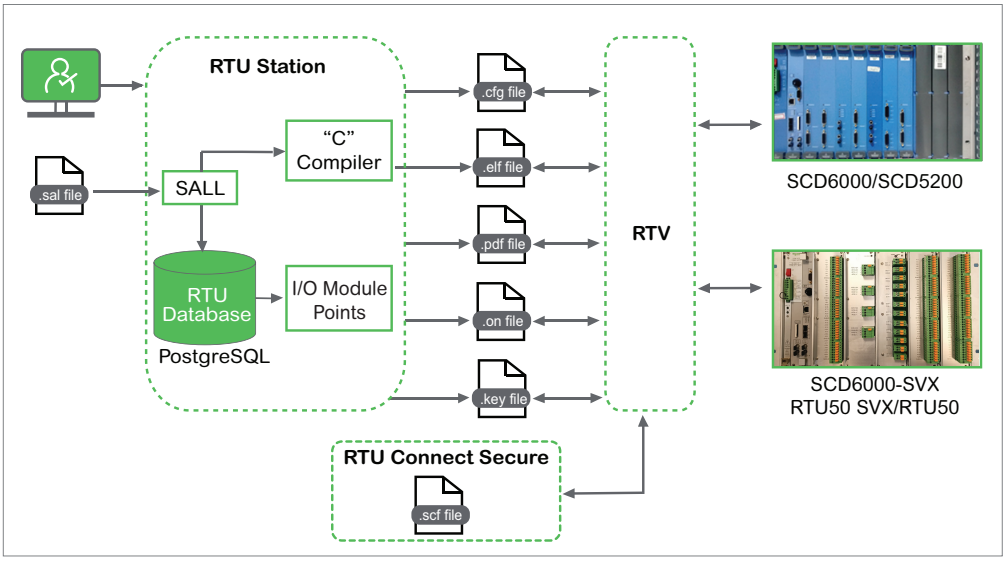
RTU Station

RTU Station is a Windows-based software that allows the configuration of field I/O and communication assignments to the RTU. RTU Station works mostly offline with support for the online configuration of a set of key parameters. RTU Station supports general data entry, editing, and access to an offline database through an easy-to-use user interface.

RTU Station generates an RTU configuration definition (.cfg file) for all I/O communication and calculation data points. Load this .cfg file into the RTU Flash File System through RTV. When RTU is online, all input modules are polled for data, which is processed according to the configuration definition and is used to update the RTU database.

This image shows an example of the communication network between RTU Station, RTV, and RTU Connect Secure.

Figure 2 - RTU Station Configuration Workflow Example



Features

RTU Station functions vary depending on how the software is configured for the target controller.

User Interface

- Provides user-friendly navigation with menus and tree-type functional display. Includes online Help that is easily accessible and context-sensitive.
- Allows you to enter data, edit and configure modules (protocols, cards, calculations, and so on) by their defined parameters using menus. Uses Windows credentials to identify I/O cards and all I/O points by a user-assigned name and not by index numbers.
- Offers database backup utility by using the User Authentication window.
- Offers States View configuration for Electrodynamic Controller.

- Identifies all I/O points by a user-assigned name, not by index numbers. Allows configuration of standalone and OptoNet network-based multiple RTUs and Electrodynamic Controllers.
- Duplicates Intelligent Electronic Device (IEDs) and saves time with the IED copy-paste feature.
- Configures active and standby Electrodynamic Controllers for high availability configurations.

File Configuration

RTU Station uses or generates files shown in table Supported File Types, page 9. With RTU Station, you can:

- Import:
  - .csv files for communication protocols, such as Modbus TCP
  - .cfg files to populate the configuration database
  - .csv files for database configuration export and import
  - .cfg files for all the RTUs in an OptoNet or all standalone RTUs at a site and Electrodynamic Controllers in simplex (.cfg) or high availability configurations (.cfg and hsb.cfg for active and standby controllers)
  - .cid files for IEC 61850 protocol configurations
  - Commit files from System Definition for Electrodynamic Controller configurations on a Foxboro™ Distributed Control System (DCS)
  - .xml and .scd files for standard IEC 61850 Substation Configuration Language (.scd and .cid)
- Create Online Configuration file (.on file) to reconfigure parameters in protocols without restarting RTUs.

  NOTE: This feature is not supported for SCD5200 and RTU50 RTUs.
- Configure DNP3 SAv2 and SAv5 parameters and create users file (.key file) to configure users, roles, and keys (for SCD6000and SCD6000-SVX only).
- Edit or create .icd files for configuring SCD6000, SCD6000-SVX, or Electrodynamic Controller as an IEC 61850 server that complies with the IEC 61850 Ed 1.0 or Ed 2.1 standards using the IEC 61850 Control Adapter.
- Retrieve the value of physical and virtual points mapped to different server protocols (configured in a standalone RTU or RTUs in an OptoNet network) using Protocol List Mapping (.csv file).
- Configure and compile Intrinsic Database Functions (IDF) and State and Logic Language (SALL) calculations for RTUs or Electrodynamic Controllers in simplex configurations.
- Complete SALL calculations by linking the calculation source .sal files to the .cfg file. RTU Station creates calculated database points that are defined in the linked .sal files. It also provides access to a text editor for editing .sal files and configures and compiles IDF and SALL calculations.
- Create and export a .cid file if IEC 61850 devices are included in the configuration.
- Create and export .xml configuration files to configure States View for Foxboro DCS Control HMI (StateView.xml) and DCS blocks in Foxboro DCS Control Editors (DCSExport.xml) (for Electrodynamic Controllers only).
- Create .iid files to configure primary and backup Electrodynamic Controllers.

Network Support

- Provides a single connection to access OptoNet nodes and support RTV connectivity through Foxboro SCADA Client Station serial and TCP/IP communication channels using DNP3 File Transfer Agent Service.
- Supports Electrodynamic Controller configuration on the Foxboro DCS Control Network.
- Supports time synchronization using external time from Simple Network Time Protocol (SNTP) servers.
- Allows continuous run-time operations such as communication and I/O data collection of the Foxboro SCADA remote device, independent of the connection to RTV using TCP/IP or serial communication channels.
- Supports the 32DI/4AI Type 3 card configuration to:
  - Reject pulses with widths ranging from 2 ms to 25 ms using a Programmable Debouncing Filter.
  - Ignore pulses when chatter recovery time is active using Chatter Recovery Time.
- Supports Automatic Transfer Switch (ATS) functionality when SCD6000/SCD6000-SVX is used with RTU 3 Phase Digital Transducer Modules and SALL-based configuration. This ATS function monitors voltage, frequency, and phase of the electrical networks and sends signals to the circuit breaker switching control application.
- Provides support to configure in 16-bit or 32-bit packed input and output point format, and supports up to 245 SALL compilations.
- Supports point-to-point testing by enabling you to force input point types (DI, DISOE, AI, FPAI, and Packedin) in the Point Detail window using the RTV application for point-to-point testing.
- Packedin and Packedout supports Modbus and IEC 61850 protocols.
- Allows an offset timestamp configuration that can be applied to timestamps received by RTU through the SNTP or PTP mechanisms.
- Provides option to retain IED Service IN/OUT status during RTU reset/power cycle by assigning non-volatile behavior for service control/status points.
- Supports these IEC 61850 Editions when configuring it as an IEC 61850 Client, Server, Client/Server, and GOOSE Publisher/Subscriber.
  - IEC 61850 Ed 1.0 and 2.1 for server
  - IEC 61850 Ed 1.0, 2.0, and 2.1 for client

NOTE:

- RTU Station can be used to configure existing SCD5200 and RTU50 RTUs, except IsaGRAF instances that are no longer supported. IsaGRAF3 project calculations used by the RTU50 and SCD5200 have to be implemented using any equivalent SALL or IDF equations.
- IsaGRAF3 project calculations used by the RTU50 and SCD5200 have to be implemented using any equivalent SALL or IDF equations for SCD6000/SCD6000-SVX/RTU50 SVX.
- RTU Station allows for the subsequent re-export and upload of files into the existing SCD5200 and RTU50 RTUs. The existing SCD5200 text file programs that are compatible with SALL, IDF, and IEC 61850 SCL languages can be imported and compiled with the new configuration tool.

Protocol Support

- Provides support for configuring the Electrobus Expansion for SCD6000 and SCD6000-SVX.
- Provides the capability to create clones for bulk Modbus configurations by creating bulk protocol elements. It also supports six-digit address range for Modbus TCP Client, and provides the capability to map the bulk Modbus addresses to the IEC 61850 server data attributes using the Bulk Engineering wizard.
- Provides support to configure the SCD6000 and SCD6000-SVX dual-core for DNP3 Controlling Station, DNP3 Outstation, IEC 61850 Client, IEC 61850 Server, IEC 104 Controlling Station, IEC 104 Controlled Station, Modbus Client, and Modbus Server protocols.

  NOTE: Electrodynamic Controller applications support IEC 61850 and Modbus protocols.
- Supports inverting control values in the control points of the Conitel Slave and IEC 61850 Server protocols.

For more information, see *EcoStruxure™ Foxboro™ SCADA RTU Station (Foxboro SCADA Remote Devices and RTU50) User's Guide* (B0780DQ).

Supported File Types

Table 1 - Files Supported by RTU Station

File Type	Function	Input/Output
.cfg	Configuration File	Input/Output
hsb.cfg	Configuration file for standby Electrodynamic Controllers in a high availability configuration	Input/Output
.cid	Configured IED Description (for IEC 61850)	Input/Output
.cnx	Connection File	Input
.csv	Comma Separated Values	Input/Output
.elf	SALL Logic Executable File	Output
.icd	IED Capability Description File	Input
.iid	Instantiated IED Description File	Output
.isa	IsaGraF Logic Source File	Input
.key	Key for DNP3/IEC 104 Secure Authentication	Output
.map	It provides mapping to RTU database points	Output
.on	Online Configuration File	Output
hsb.on	Online Configuration File for backup Electrodynamic Controllers in a high availability configuration	Output
.pdf	Protocol Definition File	Output
.pem	Public Key for DNP3 Secure Authentication	Input/Output
.riaf	This is a readable format of the configuration files	Output
.sal	SALL Logic Source File	Input

Table 1 - Files Supported by RTU Station (Continued)

File Type	Function	Input/Output
.scd	Substation Configuration Description (for IEC 61850)	Input
.scf	Security File	Input/Ouput
.xml	Configuration File	Input/Output
.z	Firmware File	Input
Commit file	Configuration file from System Definition v3.7 or later for Electrodynamic Controllers on the control network	Input

RTV

RTV is a Windows-based diagnostic and remote file management software. It provides authenticated and authorized access, and deploys applications to manage RTUs from local and remote locations. RTV can connect to multiple RTU controllers. It presents a real time view of the operation of each RTU through a user interface.

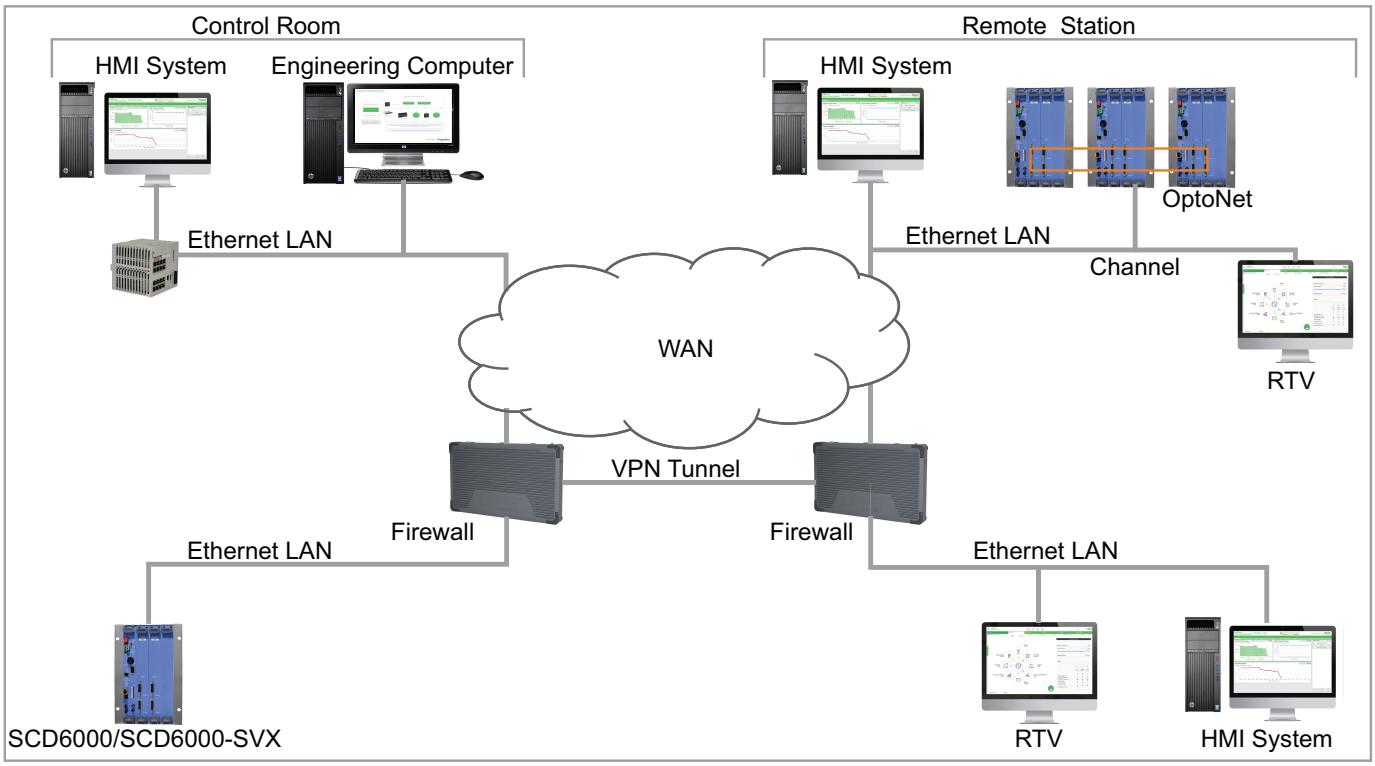
RTV communication interfaces use TCP/IP protocols for local and wide area networks. RTV uploads, downloads, and displays device configurations, including firmware and calculations. Many RTV windows are dynamically updated with I/O and calculation data. Other RTV windows display information on dynamic communications and raw communication packets, and provide communications diagnostics.

RTV connects to RTU by:

- Computers connected to channels
- On-site computers connected to local area network
- Remote Windows computers connected to local and wide area networks
- Remote computers connected to VPN tunnel if the RTV is outside the trusted host boundaries

NOTE: The SCD6000, SCD6000-SVX, and RTU50 SVX inherit the functionality of the compact SCD5200 and provide more dynamic RAM to achieve higher performance. All the functionalities added to SCD6000 from SY-1101207_P and later apply to SCD6000-SVX as well.

Figure 3 - RTV to RTU Communication Options



Features

RTV operates with RTU Station and RTU Connect Secure to manage the uploading and downloading of files. RTV functions vary depending on how the software is configured for the target controller.

User Interface

- Provides menu navigation. The menu lists high-level functions, including connect, disconnect, set remote device time/date, and resetting the remote device.
- Allows remote configuration, selection and activation of firmware, downloads or uploads firmware and calculation files.
- Bulk transfer multiple files from multiple RTUs connected on the OptoNet or TCP/IP network. Displays the connection status, system time and date, and node number and CPU activity for the current OptoNet node.
- Displays the processor type and speed, initial memory allocation, and selected firmware. (Displays up to 245 files.)
- Displays configuration summary, system status, and zone selection details. The configuration summary of the active firmware, configuration and calculation file names, the name and size of the active calculations, and system diagnostics including memory allocation, flash file status, connected diagnostic sessions, and configuration items.
- Displays input/output point detail (status and analog values) and module health points.
- Displays communication configuration, also enables and displays diagnostics for communications protocols.
- Displays the "System Use Notification" message in the User Authentication Window.
- Displays the status of SALL calculations and their variables.
- Displays Electrodynamic Controllers configuration, also enables and displays diagnostics for Electrodynamic Controller protocols.
- Displays the runtime status of the Electrodynamic Controller in simplex or high availability configurations.
- Allows you to open multiple sessions in parallel to view details of active and standby Electrodynamic Controllers in high availability configurations.
- Supports online upgrades, which allow you to update the firmware and configuration files in Electrodynamic Controllers in high availability configurations without affecting system operations.

Authentication and Diagnostics

- Diagnoses and debugs calculations
- Provides user authentication features when the .scf file is configured in the RTU:
  - Password-based authentication for RTV connection to help prevent unauthorized access to the RTU
  - Three user roles to access the RTU
  - Log of 500 most recent user actions in the .csv file, with these details:
    - Time stamp and activity
    - Component/module/protocol name
    - Severity of the event (high/medium/low)
    - Outcome of the event
- Manages users and their logs that record the diagnostic user actions, such as log in, log out, control operations, file operations, restarts, and so on.
- Supports trapping and display of transmitted and received messages of many protocols.
- Provides the option for superusers to force (update/modify) the hardwired and soft input points (analog and digital) with the user-defined value.

- When the service state points of the IED's are configured as non-volatile, the state (in-service or out-of-service) retains after the power recycle.

NOTE:

- RTU with firmware version SY-1101207_L and later supports trusted host feature for RTU connection through RTV and allows communication only to the trusted hosts (up to 8, unless configured to “Trust All”) using IP address white lists. You can modify the trusted host IPs in online configuration mode.
- The user authentication feature is available in RTV revision SY-1101212_A and later versions when used with:
  - SCD6000 firmware revision SY-1101207_A and later
  - SCD6000-SVX firmware revision SY-1101207_P and later
  - RTU50 SVX firmware revision SY-1101207_A up to SY-1101207_C1
  - SCD5200 and RTU50 firmware revision SY-1101205_A and later
  - Electrodynamic Controller firmware revision SY-101207_Q and later for simplex configurations and SY-101207_R and later for high availability configurations
- The user authentication feature is configured using the Foxboro SCADA RTU Connect Secure, revision SY-1101209_A or later.

For more information, see *EcoStruxure™ Foxboro™ SCADA Remote Terminal Viewer (Foxboro SCADA Remote Devices and RTU50) User’s Guide* (B0780DY).

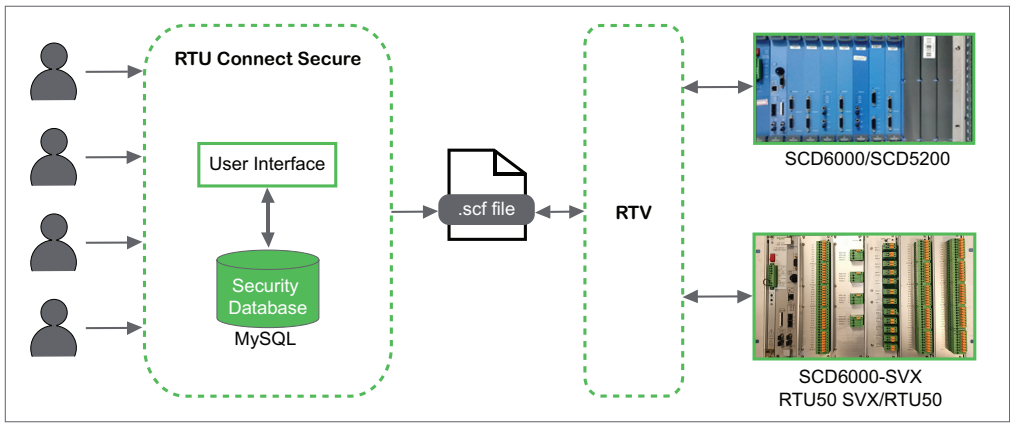
RTU Connect Secure

RTU Connect Secure is a Windows-based security configuration software that helps centrally manage user authentication in Foxboro SCADA remote devices and RTU50.

RTU Connect Secure uses the MySQL Database Server as the backend database to configure and maintain user credentials. This database server requires authentication from RTU Connect Secure to access the data.

RTU Connect Secure generates a Security Configuration File (.scf) for each RTU node. The .scf file contains the System Use Notification information, user name, user ID, and privilege level of each user. You can download the .scf file into the RTU using RTV. You can restrict RTU Connect Secure to only those users who oversee and administer security. The password-based authentication mechanism helps to prevent unauthorized access to the RTU from RTV.

Figure 4 - RTU Connect Secure Block Diagram



Features

RTU Connect Secure functions vary depending on how the software is configured for the target controller.

- Configures and displays user authentication of standalone RTUs or OptoNet networks of multiple RTUs and Electrodynamic Controllers in simplex or high availability configurations.
- Allows Windows credentials to access, and to enable or disable the user authentication from RTU Connect Secure.
- Allows timeout period (15 to 480 minutes) configuration to perform user authentication from RTU Connect Secure.
- Provides three levels of access privilege to assigned users.
- Provides a database backup and restore facility for the User Authentication configuration database.
- Imports and exports the .scf files to populate the user authentication configuration database.
- Stores and restores configured data from a single backup file.
- Edits or modifies the System Use Notification information displayed in the RTV while connecting to an RTU in the User Authentication Window.

For more information, see *EcoStruxure™ Foxboro™ SCADA RTU Connect Secure (Foxboro SCADA Remote Devices and RTU50) User's Guide* (B0780DP).

System Requirements

RTU Connect Secure and the software applications in RTU Suite are compatible with:

- Microsoft® Windows® 10 (64-bit)
- Microsoft Windows Server® 2016 (64-bit)
- 2 GB RAM
- 1 GB hard disk space for installation files

Firmware Compatibility

NOTE: Firmware version R is applicable to Electrodynamic Controllers only. It does not support standard RTU configurations.

Table 2 - Supported Firmware Versions

RTU	Supported Firmware Versions
SCD6000	SY-1101207 with compatible bootstrap firmware
SCD6000-SVX	SY-1101207_P and later with compatible bootstrap firmware
RTU50 SVX	SY-1101207_A, SY-1101207_B, or SY-1101207_C1 with compatible bootstrap firmware
SCD5200 and RTU50	SY-1101205 or SY-1101155 Rev K and later with compatible bootstrap firmware
Electrodynamic Controller[a]	• Simplex configurations: SY-1101207_Q and later • High availability configurations: SY-1101207_R and later
Automatic Transfer Switch[a]	For SCD6000 SY-1101207_R1 and later with compatible firmware (SY-1037595_F)
(a) These are created using SCD6000 components.	

Hardware Module Support

NOTE: The .csv file import support applies to RTU Station.

Table 3 - Hardware Modules Supported by RTU Station and RTV

Part Number	Subsystem	SCD5200/RTU50	SCD6000	SCD6000-SVX	RTU50 SVX	Electrodynamic Controller	File (.csv) Import Support
AC Transducer Modules							
SY-0399142	3 Phase AC Transducer Module 5 Amp Module Assembly	Yes	Yes	Yes	Yes	No	No
SY-0399142R	3 Phase AC Transducer Module 5 Amp Module Assembly (RoHS)	Yes	Yes	Yes	Yes	No	No
SY-0399140	3 Phase AC Transducer Module 1 Amp Module Assembly	Yes	Yes	Yes	Yes	No	No
SY-0399140R	3 Phase AC Transducer Module 1 Amp Module Assembly (RoHS)	Yes	Yes	Yes	Yes	No	No
Multiple I/O Modules							
SY-0399095	Multi Input Output Module 129V 8 Mini Pilot Relay	Yes	Yes	Yes	Yes	No	Yes
SY-0399095R	Multi Input Output Module 129V 8 Mini Pilot Relay (RoHS)	Yes	Yes	Yes	Yes	Yes	Yes
SY-0399094	Multi Input Output Module 48V 8 Mini Pilot Relay	Yes	Yes	Yes	Yes	No	Yes
SY-0399094R	Multi Input Output Module 48V 8 Mini Pilot Relay (RoHS)	Yes	Yes	Yes	Yes	Yes	Yes
SY-0399088	Multi Input Output Module 24V 8 Mini Pilot Relay	Yes	Yes	Yes	Yes	No	Yes
SY-0399088R	Multi Input Output Module 24V 8 Mini Pilot Relay (RoHS)	Yes	Yes	Yes	Yes	No	Yes
SY-0399097	Multi Input Output Module 129V 6 Paired Pilot Relay	Yes	Yes	Yes	Yes	No	Yes
SY-0399097R	Multi Input Output Module 129V 6 Paired Pilot Relay (RoHS)	Yes	Yes	Yes	Yes	No	Yes

Table 3 - Hardware Modules Supported by RTU Station and RTV (Continued)

Part Number	Subsystem	SCD5200/RTU50	SCD6000	SCD6000-SVX	RTU50 SVX	Electrodynamic Controller	File (.csv) Import Support
SY-0399096	Multi Input Output Module 48V 6 Paired Pilot Relay	Yes	Yes	Yes	Yes	No	Yes
SY-0399096R	Multi Input Output Module 48V 6 Paired Pilot Relay (RoHS)	Yes	Yes	Yes	Yes	No	Yes
SY-0399089	Multi Input Output Module 24V 6 Paired Pilot Relay	Yes	Yes	Yes	Yes	No	Yes
SY-0399089R	Multi Input Output Module 24V 6 Paired Pilot Relay (RoHS)	Yes	Yes	Yes	Yes	No	Yes
Analog Input Module							
SY-0399071R [(a)]	SCD6000-IOX 20 Channel Analog Input Module (Isolated) (1 kV) (RoHS)	Yes	Yes	Yes	Yes	No	No
SY-0399085	20 Channel Analog Input Module (Isolated)	Yes	Yes	Yes	Yes	No	No
SY-0399085R	20 Channel Analog Input Module (Isolated) (RoHS)	Yes	Yes	Yes	Yes	No	No
Analog/Digital Input Modules							
SY-0399160	4 Analog/32 Digital Input Module (24 V to 129 V)	Yes	Yes	Yes	Yes	No	Yes
SY-0399160R	4 Analog/32 Digital Input Module (24 V to 129 V) (RoHS)	Yes	Yes	Yes	Yes	No	Yes
SY-0399161R [(a)]	SCD6000-IOX 4 Analog/32 Digital Input (RoHS)	Yes	Yes	Yes	Yes	No	Yes
SY-0399222	4 Analog/32 Digital Input Module (24 V to 129 V) Deep Wiring Channel Module	Yes	Yes	Yes	Yes	No	Yes
SY-0399222R	4 Analog/32 Digital Input Module (24 V to 129 V) Deep Wiring Channel Module (RoHS)	Yes	Yes	Yes	Yes	No	Yes
SY-60399037R [(a)(b)]	SCD6000-IOX 4 Analog/32 Digital Input Type 3 (RoHS)	Yes	Yes	Yes	Yes	No	Yes

Table 3 - Hardware Modules Supported by RTU Station and RTV (Continued)

Part Number	Subsystem	SCD5200/RTU50	SCD6000	SCD6000-SVX	RTU50 SVX	Electrodynamic Controller	File (.csv) Import Support
SY-60399035R[a][b]	4 Analog/32 Digital Input Type 3 (RoHS)	Yes	Yes	Yes	Yes	No	Yes
SY-60399011R[a][b]	4 Analog/32 Digital Input Type 3 (Deep Wiring) (RoHS)	Yes	Yes	Yes	Yes	No	Yes
Digital Output Modules							
SY-0399008R[b]	SCD6000-IOX 12 Digital Output Pilot Relay Module (RoHS)	Yes	Yes	Yes	Yes	No	Yes
SY-0399086	12 Pilot Relay Digital Output Module	Yes	Yes	Yes	Yes	No	Yes
SY-0399086R	12 Pilot Relay Digital Output Module (RoHS)	Yes	Yes	Yes	Yes	No	Yes
SY-0399087	12 Magnetically Latched Relay Digital Output Module	Yes	Yes	Yes	Yes	No	Yes
SY-0399087R	12 Magnetically Latched Relay Digital Output Module (RoHS)	Yes	Yes	Yes	Yes	No	Yes
SY-0399136	8 Digital Output 10 Amp Module	Yes	Yes	Yes	Yes	No	Yes
SY-0399136R	8 Digital Output 10 Amp Module (RoHS)	Yes	Yes	Yes	Yes	No	Yes
Analog Output Modules							
SY-0399084	4 Channel Analog Output Module	Yes	Yes	Yes	Yes	No	No
SY-0399084R	4 Channel Analog Output Module (RoHS)	Yes	Yes	Yes	Yes	Yes, simplex configu-rations only	No
SY-0399012R[a]	SCD6000-IOX 4 Channel Analog Output Module (RoHS)	Yes	Yes	Yes	Yes	No	No
SY-60399016R[c]	4 Channel Analog Output Module for Electrodynamic Controllers	No	No	No	No	Yes	No
Small Form-Factor Pluggable (SFP) Module							

Table 3 - Hardware Modules Supported by RTU Station and RTV (Continued)

Part Number	Subsystem	SCD5200/RTU50	SCD6000	SCD6000-SVX	RTU50 SVX	Electrodynamic Controller	File (.csv) Import Support
SY-6038090	100Base-FX SFP Module	No	No	No	No	Yes	NA
SY-6034085	10/100Base-T SFP	No	Yes	Yes	No	No	NA
SY-6038038	100Base-FX	No	Yes	Yes	No	No	NA
Processor Modules							
SY-0399143	SCD5200 CPU OptoNet Power Supply Ethernet (COPE) Module	Yes	NA	NA	NA	No	NA
SY-0399144	SCD5200 CPU OptoNet Ethernet (COE) Module	Yes	NA	NA	NA	No	NA
SY-0399151	SCD5200 CPU OptoNet Ethernet (COE) Module with 64 MB SDRAM	Yes	NA	NA	NA	No	NA
SY-0399152	SCD5200 CPU OptoNet Power Supply Ethernet (COPE) Module with 64 MB SDRAM	Yes	NA	NA	NA	No	NA
SY-60399001R	SCD6000 CPU OptoNet Power Supply Ethernet (COPE) Module (RoHS)	NA	Yes	NA	No	No	NA
SY-60399002R	SCD6000 CPU OptoNet Ethernet (COE) Module (RoHS)	NA	Yes	NA	No	No	NA
SY-60399003R	RTU50 SVX CPU OptoNet Ethernet Module (RoHS)	NA	NA	NA	Yes	No	NA
SY-60399008R	SCD6000 COPE Type II Module (RoHS)	NA	Yes	NA	No	Yes	NA
SY-60399009R	SCD6000 CPU Type II Module (RoHS)	NA	Yes	NA	No	Yes	NA
SY-60399010R	SCD6000-SVX COPE	No	No	Yes	Yes	No	NA
SY-60399012R	SCD6000-SVX CPU Type II Module (RoHS)	No	No	Yes	Yes	No	NA
8 Channel Serial Modules							
SY-0399132	8 CH Serial Module RS-485/ RS-232	Yes	Yes	Yes	Yes	No	No

Table 3 - Hardware Modules Supported by RTU Station and RTV (Continued)

Part Number	Subsystem	SCD5200/RTU50	SCD6000	SCD6000-SVX	RTU50 SVX	Electrodynamic Controller	File (.csv) Import Support
SY-0399132R	8 CH Serial Module RS-485/ RS-232 (RoHS)	Yes	Yes	Yes	Yes	No	No
Dual Communication Modules							
SY-0399073R	SCD6000-IOX RTU Dual Communications Board Glass Optical IEC 103 Slave Module (RoHS)	Yes	Yes	Yes	Yes	No	NA
SY-0399122(d)	DCB DNP Glass Optical supporting DNP3 Master/ Slave	Yes	Yes	Yes	Yes	No	NA
SY-0399122R(d)	DCB DNP Glass Optical supporting DNP3 Master/ Slave (RoHS)	Yes	Yes	Yes	Yes	No	NA
SY-0399127	DCB IEC 60870-5-103 Glass Optical supporting IEC 60870-5-103 Master	Yes	Yes	Yes	Yes	No	NA
SY-0399127R	DCB IEC 60870-5-103 Glass Optical supporting IEC 60870-5-103 Master (RoHS)	Yes	Yes	Yes	Yes	No	NA
SY-0399163(d)	DCB DNP V.11 supporting DNP3 Master/Slave	Yes	Yes	Yes	Yes	No	NA
SY-0399163R(d)	DCB DNP V.11 supporting DNP3 Master/Slave (RoHS)	Yes	Yes	Yes	Yes	No	NA
SY-0399192	Communication Module V.28 Conitel C2020/C2025 Master/Slave, C300/C3000 Slave	Yes	Yes	Yes	Yes	No	NA
SY-0399192R	Communication Module V.28 Conitel C2020/C2025 Master/Slave, C300/C3000 Slave (RoHS)	Yes	Yes	Yes	Yes	No	NA
SY-0399194(d)	Communication Module V.28 DNP3 Master/Slave	Yes	Yes	Yes	Yes	No	NA
SY-0399194R(d)	Communication Module V.28 DNP3 Master/Slave (RoHS)	Yes	Yes	Yes	Yes	No	NA
SY-0399195R	SCD6000-IOX RTU Dual Communications Board V.28 IEC 60870-5-101 Slave Module (RoHS)	Yes	Yes	Yes	Yes	No	NA

Table 3 - Hardware Modules Supported by RTU Station and RTV (Continued)

Part Number	Subsystem	SCD5200/RTU50	SCD6000	SCD6000-SVX	RTU50 SVX	Electrodynamic Controller	File (.csv) Import Support
SY-0399196	Communication Module V.28 IEC 60870-5-101 Slave	Yes	Yes	Yes	Yes	No	NA
SY-0399196R	Communication Module V.28 IEC 60870-5-101 Slave (RoHS)	Yes	Yes	Yes	Yes	No	NA
SY-0399197R	SCD6000-IOX RTU Dual Communications Board V.28 WISP+ Master/Slave Module (RoHS)	Yes	No	No	Yes	No	NA
SY-0399198	Communication Module V.28 WISP+ Master/Slave	Yes	No	No	Yes	No	NA
SY-0399198R	Communication Module V.28 WISP+ Master/Slave (RoHS)	Yes	No	No	Yes	No	NA
SY-0399224[(d)]	Communication Module V.11 DNP3 Master/Slave (Ignore DCD)	Yes	Yes	Yes	Yes	No	NA
SY-0399224R[(d)]	Communication Module V.11 DNP3 Master/Slave (Ignore DCD) (RoHS)	Yes	Yes	Yes	Yes	No	NA
SY-0399225R[(e)]	SCD6000 Communication Module V.11 DNP3 Master/ Slave Type 2 (RoHS)	No	Yes	Yes	No	No	NA
SY-0399226R[(e)]	SCD6000 Communication Module V.28 DNP3 Master/ Slave Type 2(RoHS)	No	Yes	Yes	No	No	NA
SY-0399227R[(e)]	SCD6000 Communication Module Glass Optical DNP3 Master/Slave Type 2 (RoHS)	No	Yes	Yes	No	No	NA
SY-0399228R[(e)]	SCD6000-IOX Dual Communications Module V.28 DNP3 (Without link layer) Firmware Module (RoHS)	No	Yes	Yes	No	No	NA
SY-0399229R[(e)]	SCD6000-IOX Dual Communications Module Glass Optical DNP3 (Without link layer) Firmware Module (RoHS)	No	Yes	Yes	No	No	NA
SY-0399230R[(e)]	SCD6000-IOX Dual Communications Module V.11 DNP3 (Without link	No	Yes	Yes	No	No	NA

Table 3 - Hardware Modules Supported by RTU Station and RTV (Continued)

Part Number	Subsystem	SCD5200/RTU50	SCD6000	SCD6000-SVX	RTU50 SVX	Electrodynamic Controller	File (.csv) Import Support
	layer) Firmware Module (RoHS)						
SY-60399036R (f)	SCD6000 Communication Module V.28 IEC 60870-5-101 Master (RoHS)	No	Yes	Yes	No	No	NA
SY-60399038R (f)	SCD6000-IOX Dual Communications Module V.28 DCB IEC 101 Master Module (RoHS)	No	Yes	Yes	No	No	NA
Electrobus Expansion Modules							
SY-60399004R (g)	SCD6000 Electrobus Upper IO Expansion Module	No	Yes	No	No	No	NA
SY-60399005R (g)	SCD6000 Electrobus Lower IO Expansion Module	No	Yes	No	No	No	NA
SY-60399007R	RTU50/RTU50 SVX Electrobus Lower Expansion Module Type II	Yes	No	Yes	Yes	No	NA
SY-1025072	RTU50/RTU50 SVX Electrobus Upper End Expansion Module	Yes	No	Yes	Yes	No	NA
SY-1025073	RTU50/RTU50 SVX Electrobus Lower End Expansion Module	Yes	No	Yes	Yes	No	NA

(a) These modules occupy two I/O slots when plugged into SCD5200/SCD6000 chassis.

(b) These modules support SCD6000/SCD6000-SVX firmware version SY-1101207_P and later.

(c) For more information on this module and its modes of operation, see *EcoStruxure™ Electrodynamic Controller* Product Specification (PSS 41S-2EDC).

(d) These modules support SCD6000/RTU50 SVX firmware version SY-1101207_A up to SY-1101207_C.

(e) These modules support SCD6000 firmware version SY-1101207_D and later, and SCD6000-SVX firmware version SY-1101207_P and later.

(f) These modules support SCD6000 firmware version SY-1101207_K and later, and SCD6000-SVX firmware version SY-1101207_P and later.

(g) These modules support SCD6000 firmware version SY-1101207_F and later.

Communication Protocols Support

Table 4 - Communication Protocols Supported by RTU Station and RTV

Subsystem	RTU Station and RTV Support					File (.csv) Import Support		
	SCD5200	SCD6000	SCD6000-SVX	RTU50 SVX	Electrodynamic Controller	SCD5200 and RTU50	SCD6000, SCD6000-SVX	Electrodynamic Controller
C2025 Conitel Master	Yes	Yes	Yes	Yes	No	Yes	Yes	No
C2025 Conitel Slave	Yes	Yes	Yes	Yes	No	Yes	Yes	No
C300 Conitel Slave	Yes	No	No	No	No	Yes	No	No
DNP3 Controlling Station[a]	Yes	Yes	Yes	Yes	No	Yes	Yes	No
DNP3 Outstation[a]	Yes	Yes	Yes	Yes	No	Yes	Yes	No
IEC 60870-5-101 Master[b]	Yes	Yes	Yes	Yes	No	No	No	No
IEC 60870-5-101 Slave	Yes	Yes	Yes	Yes	No	No	No	No
IEC 60870-5-103 Master	Yes	Yes	Yes	Yes	No	Yes	Yes	No
IEC 60870-5-104 Controlled Station[c]	Yes	Yes	Yes	Yes	No	No	No	No
IEC 60870-5-104 Controlling Station[c]	No	Yes	Yes	No	No	No	No	No
IEC 61850 Client / GOOSE Subscriber	Yes	Yes	Yes	Yes	Yes	No	No	Yes
IEC 61850 Server / GOOSE Publisher	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Modbus Client	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Modbus Server[d]	Yes	Yes	Yes	Yes	No	No	Yes	No
OptoNet	Yes	Yes	Yes	Yes	No	No	No	No[f]
SNTP Client	Yes	Yes	Yes	Yes	Yes	NA	NA	Yes
SNTP Server	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
SNTP Client and Server	No	Yes	Yes	No	Yes	No	No	Yes
PTP Master[e]	No	Yes	Yes	No	No	No	No	No
PTP Slave[e]	No	Yes	Yes	No	No	No	No	No
TCP/IP	Yes	Yes	Yes	Yes	Yes	NA	NA	Yes
WISP Master	Yes	No	No	No	No	No	No	No

Table 4 - Communication Protocols Supported by RTU Station and RTV (Continued)

Subsystem	RTU Station and RTV Support					File (.csv) Import Support		
	SCD5200	SCD6000	SCD6000-SVX	RTU50 SVX	Electrodynamic Controller	SCD5200 and RTU50	SCD6000, SCD6000-SVX	Electrodynamic Controller
WISP Slave	Yes	No	No	No	No	No	No	No

(a) SCD6000 (SY-1101207_D or later) and SCD6000-SVX (SY-1101207_P or later) supports DNP3 Secure Authentication (SAv2 and SAv5).

(b) IEC 101 Master Support on V.28 DCB Module is provided from firmware SY-1101207 Revision G or later and SCD6000-SVX from firmware SY-1101207_P or later.

(c) IEC 104 Secure Authentication (SA) is supported in SCD6000 module firmware SY-1101207 Revision G or later and SCD6000-SVX from firmware SY-1101207_P or later.

(d) Modbus Server Support on TCP/IP is provided from firmware SY-1101207 Revision K or later and SCD6000-SVX from firmware SY-1101207_P or later.

(e) Precision Time Protocol (PTP) is supported in SCD6000 module firmware SY-1101207 Revision M or later and SCD6000-SVX from firmware SY-1101207_P or later.

(f) The Electrodynamic Controller in high availability configurations uses the OptoNet connection for communication and data synchronization between the active and standby controllers.

Ordering Information

When ordering with this information in BuyAutomation, you receive the software and firmware versions included in the last full release.

Part Number	Description
SY-1101208	RTU Suite that consists of: • SCD6000/SCD6000-SVX firmware (includes utilities) • Foxboro SCADA SCD5200/RTU50 firmware (includes utilities) • Foxboro SCADA RTU Station • Foxboro SCADA RTV • Electrodynamic Controller firmware
SY-1101209	Foxboro SCADA RTU Connect Secure

Related Documents

Document Number	Document Name
B0780DW	*EcoStruxure™ Foxboro™ SCADA SCD6000 Hardware User's Guide*
B0780DQ	*EcoStruxure™ Foxboro™ SCADA RTU Station (Foxboro SCADA Remote Devices and RTU50) User's Guide*
B0780DY	*EcoStruxure™ Foxboro™ SCADA Remote Terminal Viewer (Foxboro SCADA Remote Devices and RTU50) User's Guide*
B0780EQ	*EcoStruxure™ Foxboro™ SCADA SCD6000-SVX and RTU50 SVX Hardware User's Guide*
B0780DP	*EcoStruxure™ Foxboro™ SCADA RTU Connect Secure (Foxboro SCADA Remote Devices and RTU50) User's Guide*
B0780EV	*EcoStruxure™ Foxboro™ SCADA SCD6000 and SCD6000-SVX Installation Guide*
B0700JB	*EcoStruxure™ Foxboro™ DCS Electrodynamic Controller User's Guide*
PSS 41S-2EDC	*EcoStruxure™ Electrodynamic Controller*
PSS 41H-8S6KMOD	*EcoStruxure™ Foxboro™ SCADA SCD6000 and SCD6000-SVX Power Supply, I/O, and Communication Modules*
PSS 41H-8S6KAOV	*EcoStruxure™ Foxboro™ SCADA SCD6000 RTU Architectural Overview*

⚠ **WARNING**: This product can expose you to chemicals including lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.p65warnings.ca.gov/.

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As standards, specifications, and design change from time to time, please ask for confirmation of the information given in this publication.

PSS 41S-2S6KSWR, Rev E