Ultrasonic flowmeters

SITRANS CONNECTION APP

Operating Instructions - May 2013

SITRANS F

Answers for industry.

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Ultrasonic Flow Meters SITRANS CONNECTION

Operating Instructions

05/2013

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Siemens AG
Industry Sector
Postfach 48 48
90026 NÜRNBERG
GERMANY

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1.1 What is the SITRANS CONNECTION App?

SITRANS CONNECTION is an Apple App Store distributed terminal application for Apple iPhones and iPads that allows users of Siemens SITRANS F-US clamp-on flowmeters to connect to, and control their meter's RS-232 serial ports to communicate directly with the flowmeter menu without the need for cellular service. The user can also establish terminal sessions over WIFI and 3G.

With the SITRANS CONNECTION app, you can perform programming, maintenance, data gathering, and troubleshooting operations directly on your SITRANS F clamp-on flowmeter and you can achieve remote connection over Wifi/3G for technical support assistance!

The SITRANS CONNECTION app has many features including:

- Physical serial access to all SITRANS clamp-on flowmeters with your iPhone or iPad via the C2-RJ45V cable and DB-9 dongle (use of a C2-Lightning adaptor required for iPhone 5)
- Programmable serial configuration supports 300-57600 baud (38400 typical setting for SITRANS communication) selectable parity, selectable flow-control, variable stop bits and either 7 or 8 data bits
- SSHv2, Telnet, and RAW connectivity over WIFI/3G
- VT100, xterm and many other common Terminal emulations
- Encoding support for ASCII, UTF-8 and 17 other major encoding formats, including multibyte characters for non-latin text terminals
- One Tap Secure Session Sharing allows a remote Siemens technical support engineer to view and interact with the iPad/iPhones terminal window
- Tight integration with iPhone/iPad clipboard and cut/copy/paste directly from the terminal window
- Comprehensive logging support, Command Shortcuts, Stored Passwords, Bluetooth Keyboard and many other features.

1.2 SITRANS CONNECTION App Requirement

- iPhone3 + (iOS version 5.1 or later is required)
- iPad1 onwards
- C2-RJ45V serial cable

- RJ45-DB9 dongle (SITRANS meters without DB-9 connector will also require a standard serial cable)
- Wifi/3G connection for sharing session

1.3 Connecting to SITRANS F US Serial Port

Siemens SITRANS clamp on flowmeters utilize several different configurations for their RS-232 port connectivity. Some have DB9 connectors while others have hard-wired or specialized connections. Therefore; while all connections will utilize the C2-RJ45V cable with an RJ45-DB9 dongle; depending on your specific meter type you will need to select one of 2 dongles and possibly an interconnection cable. Siemens offers the standard SITRANS CONNECTION kit (P/N A5E32299674) which includes the C2-RJ45V cable and both a “Null Modem” dongle and a “Straight” dongle (plus a gender changer), this kit provides the basics for connection with any of clamp-on meters. Since not all of our meters are equipped with a DB9 serial port Siemens offers 2 additional connection kits to connect with those that don’t. The table below illustrates each meter variant, its serial port type, and the connection kit.

Table 1- 1 Connectivity Requirements

Meter Type	Serial Port	Dongle Type	Connection Kit
FUP1010 (IP67)	Amphenol	Straight	A5E32299677
FUE1010 (IP65)	Wire Terminal	Straight	A5E32299675
FUE1010 (IP65) with extended Io option[1])	DB9	Null-Modem	A5E32299674
FUE1010 (IP40 portable)	DB9	Null-Modem	A5E32299674
FUG1010 all types	Wire Terminal	Straight	A5E32299675
FUG1010 (Not compact-X) with extended Io option[2,4]	DB9	Null-Modem	A5E32299674
FUH1010 all types	Wire Terminal	Straight	A5E32299675
FUH1010 with extended Io option[3,4]	DB9	Null-Modem	A5E32299674
FUS1010 all types	Wire Terminal	Straight	A5E32299675
FUS1010 with extended Io option[1,4]	DB9	Null-Modem	A5E32299674
FUT1010 all types	DB9	Null-Modem	A5E32299674
FST020	DB9	Null-Modem	A5E32299674

Notes

1. FUS/FUE1010 Extended Io option indicated by “J1B” adder in meter part number
2. FUG1010 Extended Io option indicated by “B” code in 9th digit of meter part number
3. FUH1010 Extended Io option indicated by “C” code in 9th digit of meter part number
4. Extended Io option not available on IP65 compact meters

In addition to the connection kit the SITRANS CONNECTION App P/N A5E33299678 can be purchased from Siemens or downloaded from iTunes App Store.

1.4 Terminal Overview

The picture below illustrates the main SITRANS CONNECTION window (for iPhone) and identifies the major user interface features.

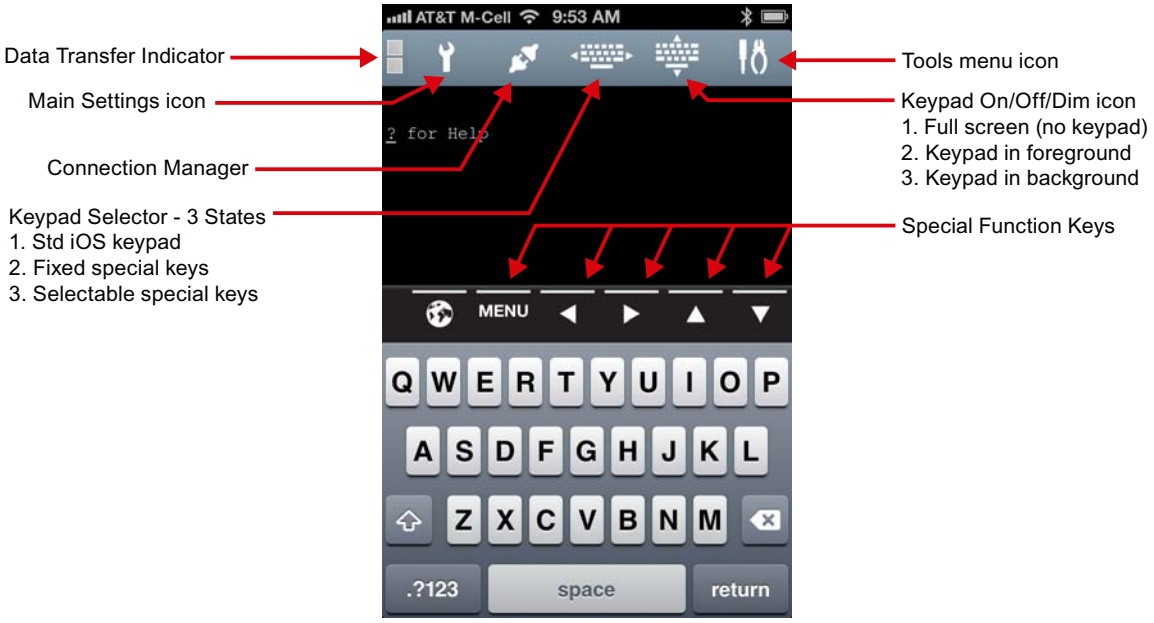


Figure 1-1 Main Settings Window

The Main Settings icon is where most of the app features are configured.

SITRANS CONNECTION Main Settings 2

The Main Settings page is accessible via the icon. This sets the application default settings for all sessions. Some of these defaults can be varied on individual saved connections (see Section 4 - Session Manager).

The App settings cover 5 main areas:

- **Terminal Settings** – functions specific to the terminal window including: linewrap, local echo, scrollback size, and also access to the terminal scripting features.
- **Keyboard Settings** – Settings for how the keyboard behaves (with or without external Bluetooth keyboard running).
- **Serial Settings** – Settings specific to serial connections with the SITRANS flowmeter; baud rate, parity, data & stop bits.
- **SSH Settings** – Features specific to “Secure Shell Connections” (i.e. certificates/keys and authentication methods).
- **Sharing Settings** – Settings requiring configuration in order to share the iOS device terminal window with a remote user via the session server.

The following section details each of these setting areas.

2.1 Terminal Settings

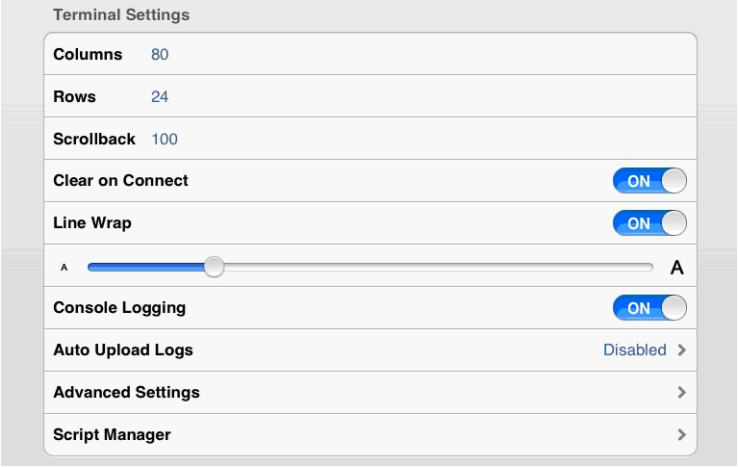


Figure 2-1 Terminal Settings

2.1.1 Columns (Default: 80)

Supports any column width up to 132 characters wide.

2.1.2 Rows (Default: 24)

Supports any number of rows on the screen.

2.1.3 Scrollback (Default: 100)

Number of lines retained by the terminal for review. Setting this above 250 will impact performance on iPhone4 and below. iPad2, iPad3 and iPhone 4WS supports 500 scrollback without impact due to improved hardware specifications.

2.1.4 Clear On Contact

Defines whether the terminal should clear the screen when starting a new connection.

The default is ON

Options:
ON
OFF

2.1.5 LineWrap

Defines whether the terminal should automatically wrap the line to the next line when the output received from the remote device exceeds the column width and no carriage return has been received.

The default is ON

Options:
ON
OFF

2.1.6 Text Size

Sets font size in the terminal window.

Smaller.....Larger

Figure 2-2 Adjusting Text size

2.1.7 Console Logging (Default: Off)

Logs all printable output to file stored on iOS device. The log files can be uploaded to Siemens SITRANS CONNECTION website, or extracted via iTunes. Typically this function is enabled when the user wishes to download a data file from the SITRANS flowmeter. Log upload is performed via the Files section described below.

Options:
ON
OFF

2.1.8 Auto Upload Logs (Default: Off)

Automatically upload log files to remote storage repository (remote server) when the session finishes. Note that this feature will not operate if Wifi/3G connectivity is not available during the session.

Options:
Disabled
Remote Server

Note that to upload logs automatically to the remote server requires that the remote server username/password be configured in the main settings in order to be linked to the SITRANS CONNECTION app.

2.1.9 Advanced Terminal Settings

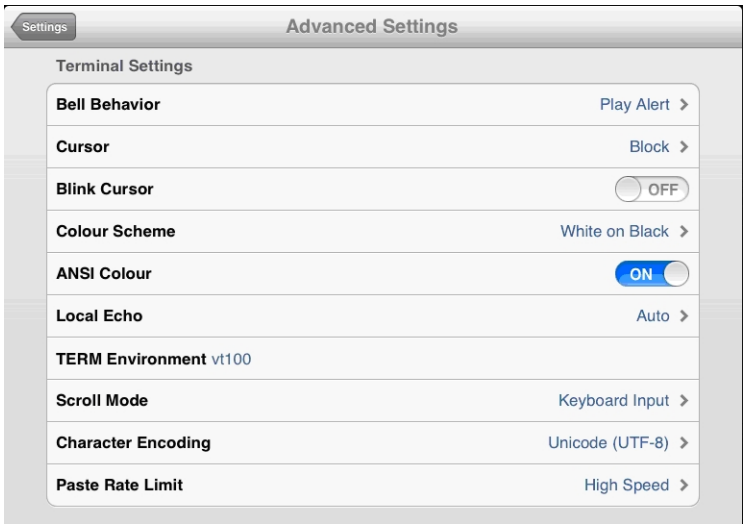


Figure 2-3 Advanced-Settings

- **Bell Behavior**

  Allows the iOS device to create an alert when there is a Terminal event or stay silent.

  Options:
  Play Alert (bell/vibrate phone)
  Do Nothing (silent)

- **Cursor**

  Allow the choice of cursor style – the default is Underline.

  Options:

  - **None**
  - **Outline**
  - **Block**
  - **Vertical line**
  - **Underline**

- **Blink Cursor**

  Set cursor behavior – the default is Off

- **Color Scheme**

  Changes the color scheme of the text and background of the terminal screen.

Options:	
White on Black	White text on Black background
Black on White	Black Text on White background
Green on Black	Green Text on Black background
Rainbow	Helps debugging by coloring different parts of the screen. • Blue: Left and right border • Red: Upper border of the scrollback limit • Black: Active area of the console within the scrollback limit

- **ANSI Color**

  Allows up to 256 colors on terminal window following the ANSI spec for signaling color. The default is ON.

  Options:
  ON
  OFF

- **Local Echo**

  Controls whether the terminal will echo characters entered to the screen locally or rely on the SITRANS flowmeter to echo them. The default is Auto – where the terminal attempts to recognize if remote serial device is echoing characters, and if so disables local echo. The SITRANS flowmeter will echo typed characters therefore the default setting (Auto) is acceptable.

  Options:

  - **Auto**
  - **Force On**
  - **Force Off**

- **Term Environment**

  Indication only, SITRANS CONNECTION is a VT100 terminal.

- **Scroll Mode**

  Defines where the terminal view is positioned. For communication with SITRANS flowmeters the default setting of “Keyboard Input” is recommended.

  Options:

  - **None - use touch screen to move around the terminal and scrollback window**.
  - **Keyboard Input (Default) - pressing any key on keyboard will return the window view to the active cursor position within the terminal window.**
  - **Terminal Activity – any terminal generated activity will center the terminal view to where the terminal activity is being generated.**

- **Character Encoding**

  SITRANS CONNECTION supports 17 different encoding formats. The default is UTF-8 which is the required selection for serial communication with SITRANS flowmeters.

- **Paste Rate Limit**

  When pasting large text files into the terminal window the remote serial device buffer or buffer memory inside the (C2-RJ45V) cable can overflow, producing garbled text.

  SITRANS CONNECTION has a speed control to allow for text from clipboard or scratchpads to be “fed” into the terminal at a slower speed to ensure that the receiving device and C2-RJ45V cable do not overflow their receive buffers.

  Options:

  - **Disabled (Text is sent to active terminal at maximum speed)**
  - **Fast (Text is sent in 512 byte blocks with 1 second pause between blocks)**
  - **Medium (Text is sent in 256 byte blocks with 1 second pause between blocks)**
  - **Slow (Text is sent in 128 byte blocks with 1 second pause between blocks)**

2.2 Keyboard Settings

There are 3 configuration items under the Keyboard Settings section of the main App Settings.

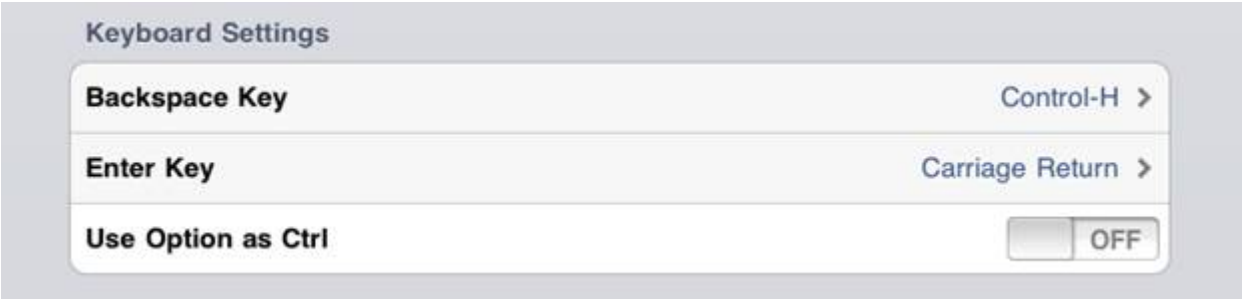


Figure 2-4 Keyboard Settings

Note

It is possible to use the SITRANS CONNECTION app with a Bluetooth keyboard and the settings configured here will have an effect on the keyboard. Further, full Bluetooth keyboard support is not yet implemented as ESC and arrow keys will not work on Bluetooth keyboards.

2.2.1 Backspace Key

The default setting is CTRL-H which is correct for SITRANS flowmeter communication.

Options:
Control-H
Control-? (127)

2.2.2 Enter Key

SITRANS CONNECTION has 3 options for the command that will be sent when the enter key is pressed. By default it sends “Carriage Return” (0x0D) which is the OSX standard. This setting can be changed to Line Feed (0x0A) or both Carriage Return followed by Line Feed (0x0D0A) each time the Enter key is pressed. For SITRANS flowmeters the default setting is correct.

Options:

- **Carriage Return**
- **Line Feed**
- **CR + LF**

2.2.3 Use Option as Ctrl

SITRANS CONNECTION implements a workaround for the control key inoperability on Bluetooth keyboards. If using a Bluetooth keyboard with SITRANS CONNECTION, you can select the “Use Option as Ctrl” to use the Alt/Option key on the keyboard to send CTRL-[key] sequences. The default setting is OFF.

Options:
ON
OFF

2.3 Serial Settings

The SITRANS CONNECTION serial settings allow for the full range of physical serial settings available on the C2-RJ45V cable to be set. When the C2-RJ45V cable is adapted to a DB9 connection, only the pins available on the RJ45V connector can be carried through; e.g. Pin 9 on DB9 connector (ring indicator) cannot be carried. This limitation does not affect communication with SITRANS flowmeters.

The parameters available for each Serial option are described below:

Figure 2-5 Serial Settings

2.3.1 Auto Connect

SITRANS CONNECTION app automatically connects to the physical cable connection (C2-RJ45V or serial) when it’s plugged into the iPhone/iPad/iPod port. This applies whether or not there is an existing Telnet or SSH connection (a new Serial connection will be added to your connection list).

Options:
ON
OFF

2.3.2 Baud Rate

Allows the choice of different baud rates to suit communication with the SITRANS flowmeter. This setting must match the RS-232 configuration of the SITRANS flowmeter; failure to match the Baud rates will result in either no output or garbled screen output. The default Baud rates of the SITRANS flowmeter and the SITRANS CONNECTION app are 9600. The maximum baud rate for the SITRANS meters is 38400. It is recommended to set the SITRANS CONNECTION app and the SITRANS meter to 38400 for fastest communication of data.

Options:

- 1200 Baud
- 2400 Baud
- 4800 Baud
- 9600 Baud
- 19200 Baud
- 38400 Baud
- 57600 Baud
- 115200 Baud

2.3.3 Stop Bits (Default: 1 Stop Bit)

1 stop bit is the standard configuration of the SITRANS flowmeter therefore this setting need not be changed.

Options:
1 Stop Bit
2 Stop Bits

2.3.4 Flow Control

The default setting of Hardware RTS/CTS is suitable for communication with SITRANS flowmeters. If the flow control setting is changed the C2-RJ45V cable must be removed and reinserted to reset its configuration.

Options:

- None
- Hardware (RTS/CTS)
- Hardware (DSR/DTR)
- Software (XON/XOFF)

2.3.5 Parity

The default setting of all SITRANS flowmeters and the SITRANS CONNECTION app is “Odd”. This setting must match the RS-232 configuration of the SITRANS flowmeter; failure to match the parity will result in either no output or garbled screen output.

Options:

- **Off**
- **Odd**
- **Even**

2.3.6 Data Bits

The Data Bits selection default value is 7 in both the SITRANS Flowmeter and the SITRANS CONNECTION app. There should be no need to change this setting however if done it must be changed in both devices otherwise data transmission will not occur properly.

Options:
8 Bits
7 Bits

2.4 SSH Settings

The SSH Settings section is used to determine the default authentication method when password authentication is used, and also allows for the import of “Open SSH” format certificates for use in SSH connections that use certificate based authentication.

2.4.1 Keyboard Auth (SSH)

Allows for interactive keyboard password authentication in addition to the usual SSL security. Not required for SITRANS flowmeter communication. The default method is OFF.

Options:
ON
OFF

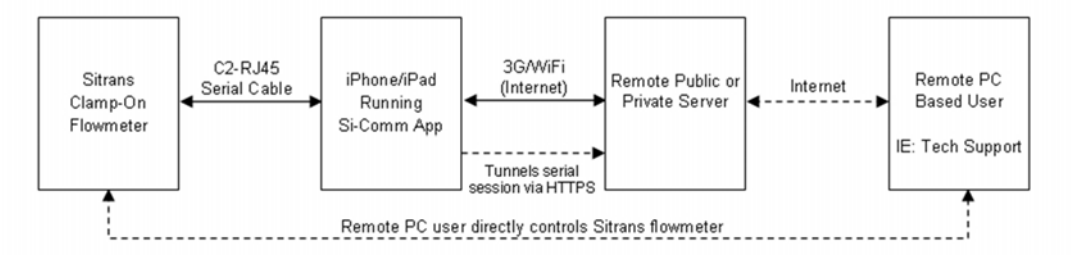
2.4.2 Private Keys

Allows for Private Keys to be imported and used in console sessions. Not required for SITRANS flowmeter communication.

Options:
Existing Key
Import Key

2.5 Shared Settings

SITRANS CONNECTION allows you to share your terminal window(s) with a remote private server monitored by Siemens technical support engineers. Each concurrent terminal session on the iOS device can be shared independently on the Siemens private server website, and made accessible via individual one-time token codes. The drawing below provides a simple overview of how the session sharing feature works:



In order to enable session sharing, the “Sharing Sessions” details must be populated in the App settings.

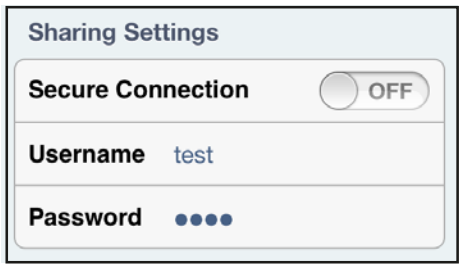


Figure 2-6 Shared Settings

2.5.1 Siemens SITRANS CONNECTION Server

The remote Siemens private server is automatically configured in the iPhone / iPad for session sharing with the Siemens private server. The performance of the end to end terminal may vary dependant on the current load of the server and the latency of both the Apple device and the remote service engineer from the Siemens private server.

2.5.2 Secure Connection (Default: Off)

Use SSL for session sharing for more secure connections. When using a private server the SSL option should only be selected if the Private Server has a valid and publicly trusted (IE: trusted natively by iPhone / iPad) SSL certificate for the entered hostname.

Enabling SSL has a small impact on the remote performance. For maximum responsiveness; where encryption is not required, leave secure connection OFF.

Options:
ON
OFF

2.6 About SITRANS CONNECTION

Figure 2-7 About SITRANS CONNECTION

2.6.1 Version

Version number of the SITRANS CONNECTION App. Updates to SITRANS CONNECTION occur automatically via the “App update process” in the iTunes App store.

2.6.2 Copyright

Year and holder of the copyright. SITRANS CONNECTION is a registered trademark owned by Siemens Industry Inc.

2.6.3 About SITRANS CONNECTION

About SITRANS CONNECTION app – displays version, copyright information, developers, LibSSH2 license and any other licenses for third party software that is incorporated into SITRANS CONNECTION.

Configuring SITRANS Flowmeter to Communicate with SITRANS CONNECTION

3

This section of the user guide will provide the instructions necessary to establish serial communication between an iPhone/iPad and a SITRANS clamp-on flowmeter.

3.1 RS-232 Configuration

3.1.1 SITRANS Flowmeter

1. Access the Meter Facilities/RS-232 Setup Menu.
2. Verify the RS-232 settings shown below match the terminal settings of the SITRANS CONNECTION app shown in paragraph 3.1.2.
3. For maximum speed set the RS-232 parameters in both the SITRANS meter and the SITRANS CONNECTION app as shown and illustrated below.

Baud Rate:	38400
Parity:	Odd
Data Bits:	7
Line Feed:	No
Network ID:	0
RTS Key time:	0.0 Secs

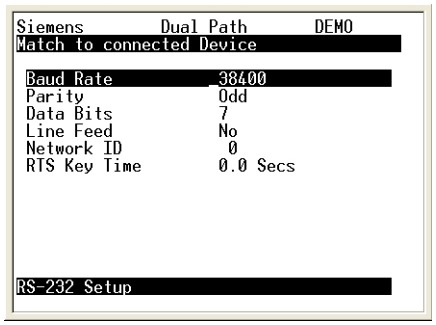


Figure 3-1 RS-232 Setup

3.1.2 iOS Device

Access the settings menu in SITRANS CONNECTION as outlined in Section 2. Configure the serial settings to match the SITRANS flowmeter as listed and illustrated below. The Auto connect feature can be either on or off. These settings (Baud, parity, Data bits) must match the SITRANS flowmeter otherwise communication will not be established.

Baud Rate: 38400

Stop Bits: 1

Flow Control: Hardware (RTS/CTS)

Parity: Odd

Data Bits: 7

Figure 3-2 Serial Settings

3.2 Cable Connections

Refer to the table in paragraph 1.3 to determine the cable requirements for your specific SITRANS flowmeter type. For flowmeters equipped with an integral DB9 connector only the C2-RJ45V cable and the Null modem dongle are needed. For all other flowmeters use the appropriate connection kit listed in Table 1 (paragraph 1.3). This will ensure that you have the correct additional cable to connect with your meter type. Connect the C2-RJ45V cable to the iOS device and connect the flowmeter end (dongle or adaptor cable) to the SITRANS flowmeter RS-232 port.

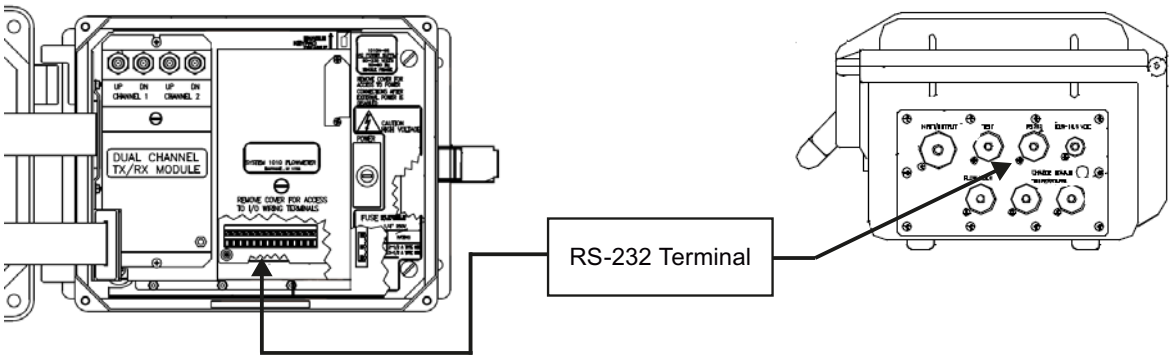


Figure 3-3 RS-232 Connection Points for Meters without DB-9

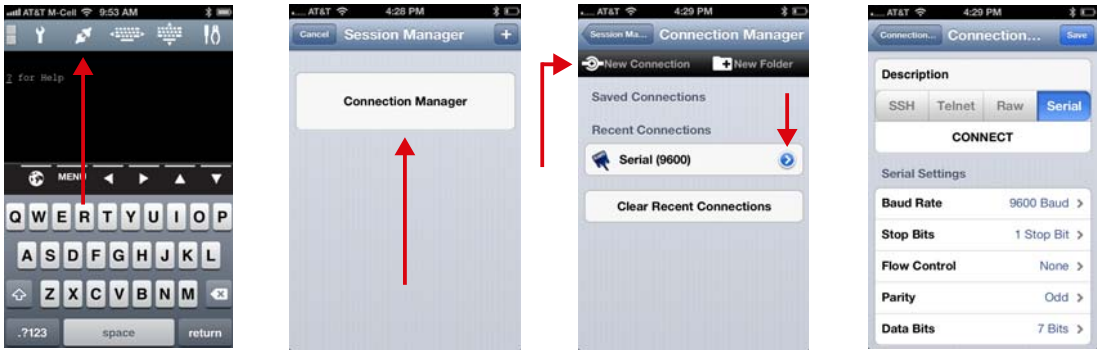
Launching Connections (Session Manager) 4

With the “Auto Connect” feature enabled in the SITRANS CONNECTION settings menu the iOS device will immediately connect with the SITRANS flowmeter (providing the serial configurations of the two devices match as outlined above).

4.1 Session Manager

Alternatively a manual connection can be established by pressing the Connection icon 

This will launch the new connection “Session Manager” screen. SITRANS CONNECTION enables the user to simply elect to connect to the SITRANS flowmeter “manually” or to establish multiple configuration files if they plan to use different serial setups for different situations. They can then use the connection manager to launch a saved or recent (unsaved) connection configuration.
To manually connect to the SITRANS flowmeter follow the steps below:



1. Tap the Connection Icon
2. Tap the Connection Manager
3. Tap the existing (saved or recent) connection or "New Connection"
4. Name your connection and tap "Connect"

Figure 4-1 Session Manager

As can be seen in the sequence above each “connection” in the session manager can have its own specific name and communication options (i.e. baud rate, parity, scrollback, keyboard settings, etc.) which can be varied from the main settings default values via the session serial settings.

In the figure below the Session Manager page shows the active session and also any recently closed sessions that can be restarted. Any live session (shown in blue) can be shared with a remote user by tapping the “Globe” icon. The session can be stopped by tapping the “eject” button.

If a session is stopped or times out, then it still remains visible in the Session Manager until it is deleted via the X button or is restarted via the restart button. See the figure below.

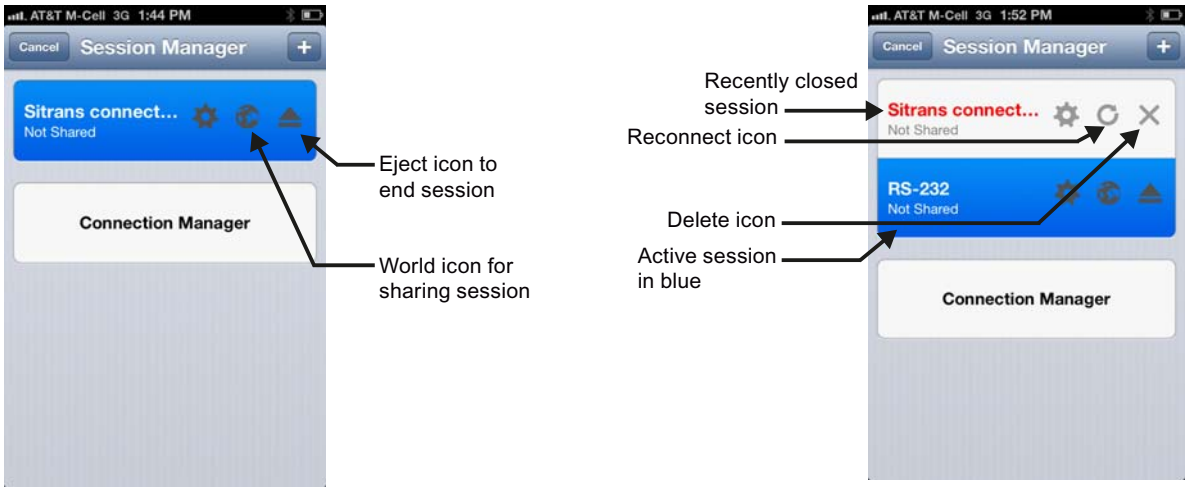


Figure 4-2 Live Session and Live Session & Closed Session

4.2 Quick Connect

Pressing the “+” button on the session manager page (as seen in the figure above) launches the Quick connect screen. This dialog allows for the instant launching of a new serial connection or launching an automatically saved recent connection. Depending on the type of connection, various session parameters (serial communication settings) will need to be completed to ensure compatibility before tapping the connect button.

SITRANS CONNECTION can only maintain a single live Serial connection in the session manager as only one adaptor can be connected; however, it can store multiple instances of serial connections each with different session options (i.e. different baud rates) to make it easy to swap between serial connection templates.

More detailed instruction for use of the connection manager including shared sessions can be found in Section 5 paragraph 5.4.

Figure 4-3 Quick Connect

Communicating with SITRANS Flowmeter 5

Once a connection between the iOS device and the SITRANS flowmeter has been established you have complete control of the flowmeter menu including the ability to fully program the meter, download datalogger, site and signal graph information, and act as a gateway for technical support through “sharing” of you session. This section will review the communication methodology, menu commands and file-download handling. When connected to the SITRANS flowmeter with SITRANS CONNECTION you are effectively in terminal mode; identical to utilizing Siemens “Si-Ware” program in terminal mode but from an iOS device instead of a PC!

5.1 Initial Setup

Setup Procedures

The initial screen you will see once connected will be the “? For Help” response from the flowmeter (see figure below). If you tap the “Return” key this response will continue to occur each time and is indicative of a live connection.

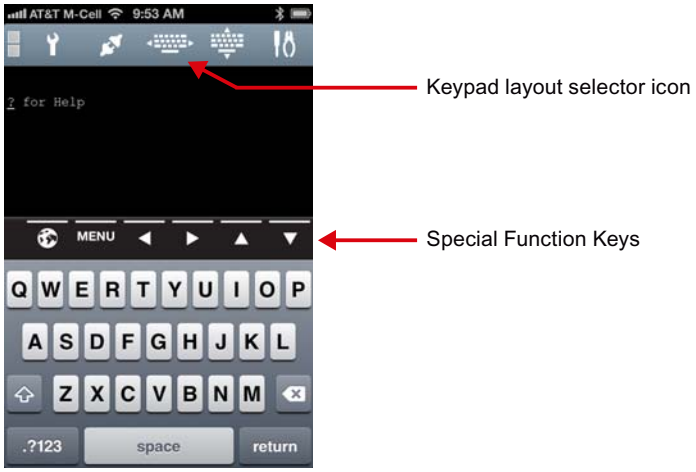


Figure 5-1 Initial Screen

You may now choose to customize how the keypad is configured by tapping the left Keypad icon  to select one of its 3 options. (See figure above.)

Icon Indication	Result
None	Popup bar disappears allowing full visibility
⇧	Fixed selection of special function keys
Custom	User Selectable keys

The default custom screen as shown above is recommended since it provides the user with the 4 arrow keys necessary to navigate the flowmeter menu.

Custom Function Key selection

If desired the function keys can be assigned other commands. To change a function-key assignment simply hold your finger on the icon until the command menu appears (see Figure 5-2 at left) then tap the specific function you wish to assign.

Figure 5-2 Custom Key Selection

Keypad Illumination

In order to make full use of the limited iPhone screen size SITRANS CONNECTION allows the terminal data to overlap the keypad display, which enables viewing of the communication data while still providing access to the keypad. To achieve a suitable balance and contrast between the data and the keypad, the user may wish to adjust the brightness level of the keypad. This adjustment can be found in the settings menu screen as seen in figure 5-3 at left.

Figure 5-3 Keypad Brightness

5.2 Navigating the SITRANS Menu

When the “? For help” response is seen the user may simply type “menu<CR>” to gain access to the SITRANS flowmeter menu, they can then utilize the 4 directional arrow keys to navigate the menu just as with the meter’s keypad. The iOS screen will mimic the flowmeter display screen as you navigate through the menu. Programming of the flowmeter can be carried-out identically to utilizing the flowmeter keypad. Since programming fundamentals are well documented in the SITRANS “Quick Start” and “Operating Instructions" manuals, they will not be replicated in this manual.

Note

If no menu navigation occurs for 30 continuous seconds the connection will time out. Simply type MENU again to re-establish communication. This time period can be extended by typing “menu_N” with “N” representing the number of seconds before time out (e.g. menu 1000)

Figure 5-4 Main Menu Screen

Menu Commands

Navigating the SITRANS menu, programming the meter, and downloading data can be performed with relatively few commands. The table below highlights the most commonly used functions and command sequences. Downloading commands will be covered later in this section.

Command	Function
◄ ► ▲ ▼	Arrow keys move menu cursor one step in the direction indicated
Menu<CR>	Command gives access to meter menu from a blank or initial screen
<Ctrl>L	Hold CTRL key and type “L” to switch from flow display to menu
return <CR>	Return key acts as “Enter” key when programming
Backspace	Backspace key acts as “CLR” key to clear a menu cell
Logger	Forces download of datalogger content

Command	Function
Site (N)	Forces download of site programming data. (N) = channel number
DP_(N)	Forces download of signal graph data. (N) = channel numbers section.

5.3 Downloading Data Files (Console Logging)

A frequently used capability of serial communication with SITRANS flowmeters is the ability to download and save data files. Files available for downloading include the datalogger, the site programming data, and the sensor signal graph. Instructions for capturing these data files to your iOS device appear in the following paragraphs.

5.3.1 Console Logging

The user has the option to log all screen activity when communicating with the SITRANS flowmeter, doing so will automatically create a log file and capture every keystroke. Logging in this fashion would be considered “Session Logging”. This ability can be initiated from the “Logging” tab of the Tools menu by tapping the “Start Logging” icon. Additionally, the created file can then be accessed in the same location. SITRANS CONNECTION will automatically create logging file names with the following convention:

Console_YYYY-MM-DD_HHMMSS.txt

5.3.2 Downloading Files

In lieu of logging all SITRANS CONNECTION activity, the user may find it more beneficial to log only specific data, notably files selected for download; for example the SITRANS datalogger. The user can therefore opt to start and stop logging manually, this can be accomplished in the SITRANS CONNECTION settings menu by selectively turning the “Console Logging” feature on and off. Doing so will create individual files for each download which will also be accessible in the “Logging” tab of the Tools menu and will use the same naming convention.

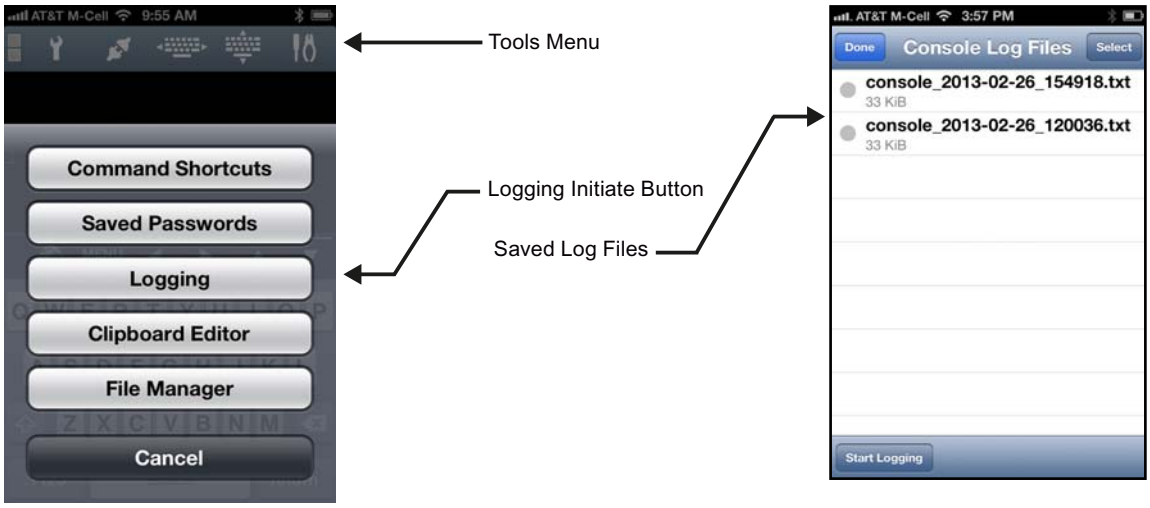


Figure 5-5 Downloading Files

Note

The above image represents the iPhone screen; iPads do not have a Tools icon but rather individual icons representing each of the available functions.

5.4 Connection Manager

As previously discussed, the connection manager is used to create, modify and launch saved connections. Tapping connection manager in the session manager screen will launch connection manager where all saved connections can be administered.
Creating new connections can be done one of 2 ways:

1. Via the connection manager “New Connection” dialog box (discussed in this section).
2. By converting a recent “quick connection” to a saved connection via the blue arrow (give the recent connection a description and then tap save).

5.4.1 Serial

For making serial connections via the C2-RJ45V cable. The following parameters can be configured on a per session basis, all other serial settings are inherited from the Main Settings defaults:

Description: Define a name for this connection

Serial Settings: The baud rate, stop bits, flow control, parity and data bits can be set on a per connection basis. All other settings are globally configured in the Main Settings page.

Terminal Settings: Like all other connections, the terminal settings defines all non-default terminal characteristics for this specific connection.

Keyboard Settings: Like all other connections, the Keyboard settings can override the default Keyboard settings on a per connection basis.

Figure 5-6 Connection Details

5.4.2 Managing Connections in Folders

Connection manager allows for the creation of connections, grouping of connections into subfolders and also for cloning connections and moving them between subfolders. These folders are stored in the SITRANS CONNECTION application's file system area within the iPhone/iPad.

- **Creating and managing folders and sub-folders for connections**

Tap "New Folder" to create a new folder and enter name in dialog box. The folder appears at the top of the saved connections list. Folders can be nested, so to create a subfolder; navigate to the newly created folder by tapping it, then tap the "New Folder" button again.

Figure 5-7 Create Folder

Saved connections can be moved from one folder to another or to the root. To move a connection tap the blue arrow next to a saved connection, scroll to the bottom where there are options to Move (to a) Folder, Clone the Connection or Delete.

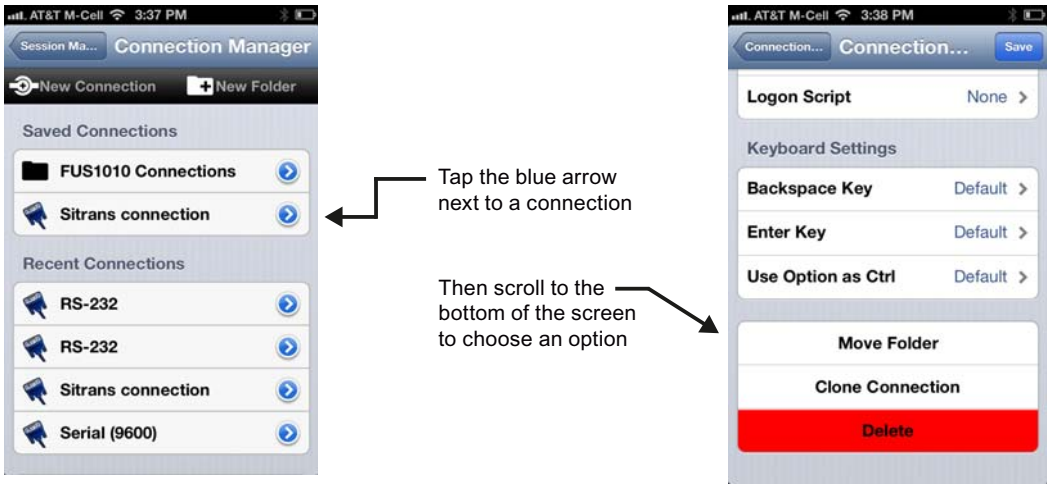


Figure 5-8 File Management

A sub-folder can also be created under another folder with connections in it. Note that if you delete a folder which contains a connection, the connection will be moved to the root folder instead of being deleted together with the folder.

- **Recent connections**

The SITRANS CONNECTION app connection manager presents the 10 most recent connections in the saved connections area. The connections listed in recent connections include quick connections and saved connections. This list can be cleared by tapping the “clear recent connections” button at the very bottom of the list. Alternatively, a recent connection that was made with the “quick connect” method can be saved to the connection manager by tapping the blue arrow, providing a name (description) for the connection and then tapping save. The connection will then appear in the root saved connections folder of the connection manager.

5.5 In Session Options

Once a connection has been established (or attempted to be established) it will appear in the session manager. From this popup the actions that can be performed depend on whether the connection is live (connected - Blue) or closed (disconnected - red).

Figure 5-9 Session Options

	Session Options: Allows for editing of changeable settings while the session is live. For example, changing the terminal width, scrollback, color scheme, etc.
	Share Session: Will share the terminal screen with the configured remote server (Public or Private), and generate a one-time token code. See the session sharing Settings (paragraph 3.5 above) and how to operation below. This icon may be place with the special function keys on the iPhone screen for 1-touch sharing.
	Disconnect Session: Disconnect from the serial cable connection. The session will stay visible in the session manager list of sessions with the 2 options below remaining available.
	Restart Disconnected Session: Attempts to reconnect the session to the SITRANS flowmeter using the serial cable connection.
	Delete: Remove Disconnected Session from Session Manager

5.6 Session Sharing

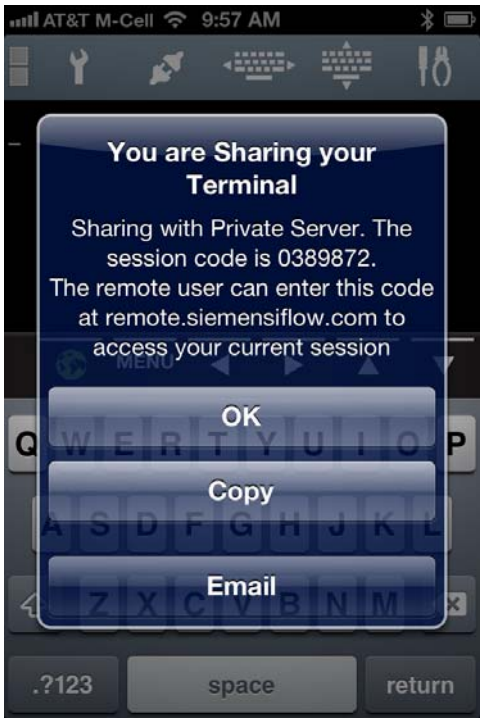


Figure 5-10 Shared Session Notification and Token Code

Tapping the icon will attempt to automatically share the selected terminal session with the Siemens private server to enable a remote technical support engineer to see and interact with the terminal session at the same time. In order to use this feature the settings for session sharing must be configured in the Main Settings page (see Section 2).

Each shared terminal session is dynamically given a one-time token (session) code at the time session sharing is initiated. This code is used to secure access to the users iPad/iPhone and appears automatically in the Siemens private console where the Siemens technical support engineer will have access to it. Additionally the 7-digit token code is published for the user in case there is a need for it.

Only sessions that are shared are visible to technical support.

5.6.1 Establishing a Tech Support Session

If the user requires technical assistance with their SITRANS flowmeter contact should first be established with the nearest tech support center by phone.

- For support in the USA call: 1-800-333-7421

The call center will log your request and application information and establish a service ticket number. A qualified service engineer will respond directly to the user. At that time the shared iOS session can initiate.

Sharing the Serial Connection

Once the notification “You are sharing your terminal” appears, the remote support engineer can access the iOS device using the token code displayed in the notification. If the session code is unavailable to the service engineer for any reason the code can be emailed or copied to clipboard via this notification window.

Table 5- 1 Shared Session Options

Options	Function
OK	Return to the active terminal window.
Copy	Copy the remote access token code to the clipboard so that it can be used in text message or other iOS device message
Email	Email the remote access token code to a recipient with instructions how to connect to the shared session.

Once shared, the token code will also appear in the Session Manager, and the Globe icon will show green.

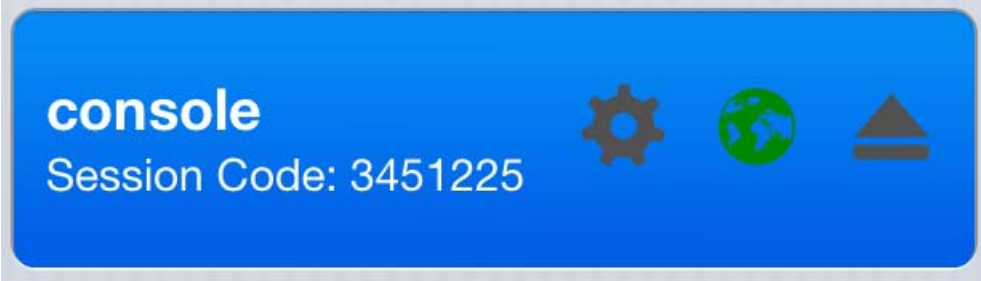


Figure 5-11 Session Token Code

5.6.2 Remote User Access

Remote access to shared terminal sessions is made via the Siemens privately hosted server by a qualified SITRANS technical support engineer. When a session is shared the engineer will have access to it in the Siemens private console server and can simply click the code to directly connect to the shared session.

Both iPad/iPhone user and support engineer can interact with the terminal session at the same time. Note that the support engineer can only interact with the terminal while the SITRANS CONNECTION app is in the foreground on the iPad/iPhone. If SITRANS CONNECTION is in the background, it will still maintain its Serial session for up to 10 minutes, however the engineer will not be able to interact with the session until SITRANS CONNECTION is brought to the iPad/iPhone foreground again.

5.6.3 Stop Sharing Session

To stop sharing an iPad/iPhone terminal session with a support engineer, tap the  button to activate the Session Manager icon overlay, then tap the green Globe icon  for the terminal tab that sharing should be disconnected. The Globe icon will turn grey and the subtitle will change from the token code to say [Not Shared].

Terminal Features

6

This section discusses the following SITRANS CONNECTION terminal features:

- Keyboard popup bars
- Command shortcuts
- Password Shortcuts
- Clipboard Viewer

Keyboard Control

Use the  icon to control the onscreen iPhone/iPad keyboard. Sequential tapping of this icon will cause the keypad to show in the foreground, dim to the background (while remaining active), or hide completely. Hiding the keypad is used to increase screen real estate, especially useful with the iPhone/iPod smaller screen size. The dimmed (Background) keypad allows full use of the limited screen size for viewing the SITRANS flowmeter menu while still enabling utilization of the keypad (see figure below) and the brightness level of the keypad is adjustable in the Settings menu of the SITRANS CONNECTION App.

Keypad in Foreground | Keypad in Background | Full Screen Mode

Figure 6-1 Keypad Presence Settings

SITRANS CONNECTION File System 7

7.1 SITRANS CONNECTION File Types

SITRANS CONNECTION stores files within a portion of the iPad/iPhones file system that is dedicated to the SITRANS CONNECTION App.

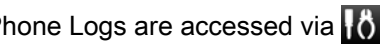
There are 3 types of files that are stored:

- **Log files:** These are SITRANS CONNECTION generated logs for each terminal session that has logging enabled (e.g. Keylogging), or when downloading data files from the SITRANS Flowmeter
- **RSA Keys**: For use in certificate based authentication in SSH. These files are imported via the Main Settings -> Private Key dialog box.
- **Connection files:** These are saved connections visible in the Connection Manager. These files are created either in the SITRANS CONNECTION Connection Manager, imported by SITRANS CONNECTION File Manager or imported via iTunes.

7.2 Log Files

The SITRANS CONNECTION app offers comprehensive logging of individual terminal sessions. Once logging is enabled in the main settings, all printable screen output is captured to a log file.

One log file is created for each session, a new log file is created each time a session is stopped and restarted.

On iPad Logs are accessed via the  button, whereas on iPhone Logs are accessed via  and then “Logging.”

7.2.1 Log File Naming

For connections that are started with the “Quick Connect” method the log file name will be:

Log_YYYY-MM-DD_HHMMSS.txt

For connections that are started from a saved connection in the Connection Manager, the file name will instead be appended with the connection name followed by date. For example:

Server1_YYYY-MM-DD_HHMMSS.txt

7.2.2 Uploading Log files

Log files can be extracted from the iOS device via 3 possible methods:

- Via upload to the users portal page on the Siemens console server
- Via email of individual log files from the iPad/iPhone mail client
- By copying to the clipboard

Navigate to the Log Files page, then tap a log file name. Select one of the 3 upload options.

For upload to the Siemens console server select the “Upload to Website” button.

Access to uploaded logs on the Siemens website is via the Stored Logs button.

Figure 7-1 Uploading Log Files

Troubleshooting

8

This section covers common problems reported by users, typical fixes and work arounds.

8.1 Serial Connectivity Issues

Serial connectivity issues can be divided into 2 types:

- Where SITRANS CONNECTION cannot recognize / communicate with C2-RJ45V cable
- Where SITRANS CONNECTION can recognize C2-RJ45V cable, but no cannot communicate with the SITRANS flowmeter (no menu data on screen)

8.1.1 C2-RJ45V Cable Pinouts

The following drawing shows the standard C2-RJ45V cable pins and what serial signal they send, and also the corresponding pins when the C2-RJ45V-to-DB9 adaptor is used.

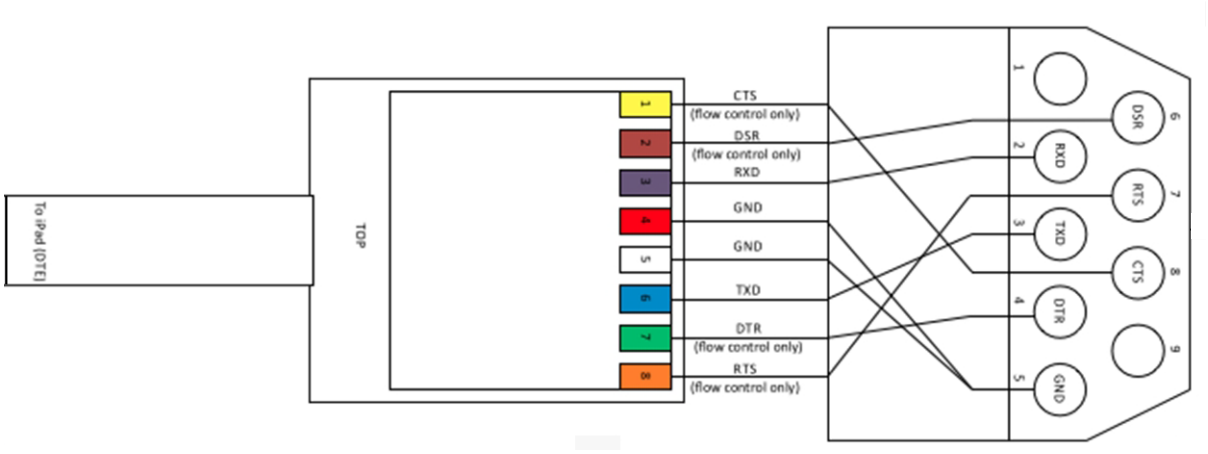


Figure 8-1 C2-RJ45V Cable Pinouts

8.1.2 Console Cable Not Detected

If this error is seen and there is a cable plugged into the iOS device, then check that the iOS device is detecting the cable by going to the iOS devices general settings -> about -> console cable. This will show the cable hardware and firmware detected. SITRANS CONNECTION only works with the C2-RJ45V cable. If you have a C2-RJ45V cable connected but it is not detected by the apple iOS operating system; check that it is seated correctly and/or reinstall the SITRANS CONNECTION app.

8.1.3 Cable detected but no communication

If the cable is detected but no output appears on the screen, the most common reasons are:

- **Baud Rate mismatch** – note that the SITRANS flowmeter and the SITRANS CONNECTION app must both utilize the same baud rate setting. SITRANS flowmeters do not support baud rates above 38400.
- **Flow control is required** - by default it is RTS/CTS. Note disconnect cable from both iPad/iPhone and SITRANS meter after changing Flow Control to reset cable.
- **Dongle type** – SITRANS meters having an onboard DB-9 connector require the use of the “Null Modem” DB-9 Dongle. This reverses the Tx/Rx connections of the C2-RJ45V cable and permits proper communication. If the SITRANS meter in use requires an interconnection cable between the C2-RJ45V cable and the flowmeter (all non-DB-9 connections) the standard dongle must be used otherwise the null modem connection will be defeated. Both dongle types are included in the SITRANS CONNECTION connection kit, be sure to use the proper dongle for your meter.
- **Cable needs to be reset** – the C2-RJ45V cable has active electronics in it. Occasionally it needs to be reset by removing BOTH ends of the cable from iPhone/iPad and SITRANS flowmeter, and then reconnecting it first to the flowmeter device end.
- **Meter Reset** – It is not uncommon when changes are made to the settings in SITRANS CONNECTION, or if the app is accidentally switched off, that communication with the flowmeter cannot be re-established. Turn the meter off and back on again to re-establish communication.
- **Time-Out** – If communication between SITRANS CONNECTION app and the SITRANS flowmeter is inactive for more than 30 seconds (no commands sent), the app screen will go blank. Type "menu” to reconnect with the flowmeter and continue your session. The time-out period can be lengthened by typing “menu_N” with N = number of seconds.

8.2 Session Sharing Issues

If Session Sharing to the Siemens console server fails or if a “Failed to connect / read from remote control server” message is observed:

- Check your internet connection (can you browse in mobile safari to an internet page?)
- Check Session Sharing settings configurations defined in Main Settings -> Session Sharing are correct (see Section 5.6).
- If everything is correctly configured, try again – depending on latency the first attempt to connect can fail due to the underlying encryption key exchange taking too long.
- If having problems with the Siemens server contact the server administrator.

Get more information

www.siemens.com/flow

Siemens Industry, Inc.
Industry Automation Division
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