CONVIRON®

ARGUS HMI

OPERATOR'S MANUAL
Software Version 1.00.00

269100R00

ARGUS HMI

OPERATOR'S MANUAL

PLEASE READ THESE INSTRUCTIONS CAREFULLY AND COMPLETELY BEFORE OPERATING.

PREFACE

Welcome to the ARGUS HMI Operator's Manual. This manual has been developed to assist with the daily operation and is provided to all clients who have purchased a chamber(s) using the ARGUS HMI.

This manual is written in a straightforward and minimally technical style and is designed to provide sufficient detail for the majority of chamber configurations, including a structured format that provides step-by-step instructions. Clients will find sufficient detail for a typical installation including figures, diagrams, and graphics to operate the chamber without issue. However, given that many installations are specific to each facility and that facilities may have unique requirements, additional information or assistance from Conviron may be required. In such cases, contact information is provided on the inside front cover, on page iii and on the rear cover.

This equipment is only to be used by authorized personnel – that is, personnel who have been trained on the proper use of the equipment and who have read this manual.

WEEE and RoHS Compliance Statements

CONVIRON is committed to meeting all requirements of the WEEE directive (2012/19/EU).

Products labeled with the WEEE symbol (a crossed out "waste bin") indicate that the final user should not discard this product along with other household waste, but that it must be collected and treated separately.

Please contact Conviron, or your Conviron distributor, for proper handling and disposal instructions.

CONVIRON is committed to meeting all requirements of the RoHS directive (2011/65/EU). The RoHS directive requires that manufacturers eliminate or minimize the use of lead, mercury, hexavalent chromium, cadmium, polybromated biphenyls and polybromated biphenyl ethers in electrical and electronic equipment sold in the EU after July 1, 2006.

Document Conventions

Wherever possible, textual descriptions are accompanied by screen captures or images of the touch screen elements used by the software to assist the reader in understanding the material. However, due to the wide number of variations in specific installations, the images of the screens used in this manual may differ slightly from the actual configuration.

Italicized text is used to introduce instructions.

Conviron maintains a policy of continual improvement and reserves the right to change the product without prior notice. Therefore, the images used throughout this manual may differ slightly from the actual configuration due to updates and product changes.

CONVIRON®

SERVICE & TECHNICAL SUPPORT

Before contacting Conviron, please check the following:

- Read this document, *ARGUS HMI Operator's Manual* and the accompanying controller and chamber manuals in their entirety.
- If you are having a problem using your controller(s), pay particular attention to the relevant section and the pertinent information in these manuals, and use the information to diagnose and correct the problem. If the problem persists and/or you require additional assistance please collect the following information prior to contacting Conviron:
  - The system description, including the customer ID, product name, controller, and software version(s). Refer to the System Information section on page 8-2 to access this information.
  - A description of the problem.
  - A description of what you were doing before the problem occurred.

Head Office
Technical Services
Conviron
590 Berry St.
Winnipeg, Manitoba,
Canada R3H 0R9

Conviron Technical Services

	North America	**Europe**	**China**
Toll free	+1.800.363.6451	+44.(0).800.032.6422	
Telephone	+1.204.786.6451	+44.(0).1638.781.731	+86.133.6182.3229
Fax	+1.204.786.7736	+44.1638.741.112	
Email	info@conviron.com	service@conviron.eu	ali@conviron.com

Please visit www.conviron.com for global service contact information.

PRECAUTIONS

The equipment is intended to be installed, operated, maintained, and serviced by only trained personnel, according to the instructions and precautions described in the manuals provided by Conviron.

Symbol Identification

The following symbols are used throughout this manual and/or on the equipment to draw your attention to important warnings, guidelines and product information.

Symbol	Description
	The "**HAZARD WARNING**" symbol is used whenever a hazard exists which could cause personal injury or potential equipment damage, and requires correct procedures/practices for prevention.
	The "**IMPORTANT INFORMATION**" symbol is used to identify operating procedures which must be followed to ensure smooth and efficient equipment operation.
	The **"PLEASE NOTE"** symbol is used to draw attention to additional information to which may assist in the operation of the equipment.
	The "**ELECTRICAL SHOCK/ELECTROCUTION**" symbol is used to identify a source of potentially dangerous electrical current.
	The "**PROTECTIVE EARTH-GROUND-MANDATORY ACTION**" symbol is used to identify the protective earth connection.

CONVIRON®

TABLE OF CONTENTS

CONVIRON®

LIST OF FIGURES

LIST OF TABLES

CONVIRON®

1   INTRODUCTION TO THE ARGUS HMI

The display (Figure 1-1) provides the interface to the control system using a backlit LED touch screen. The layout and function of the display was developed to be intuitive for the user and provides access to a vast array of interactive options and display features.

The backlit screen makes the information easy to read. Icons and information fields are touch-activated and initiate a controller action when tapped with a finger, or the stylus.
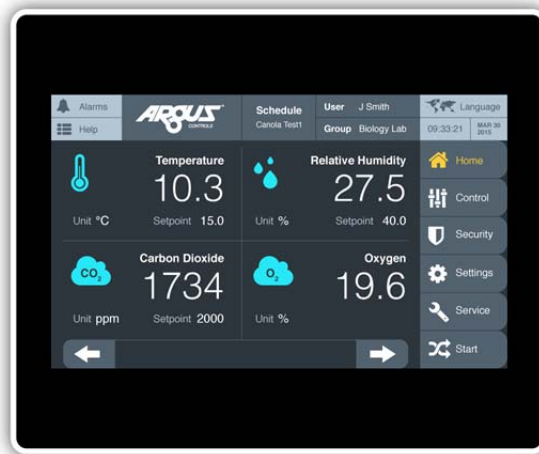
Figure 1-1   Touchscreen Display

Do not touch the screen with sharp or pointed objects, such as ball-point pens. Only use the stylus provided, or your finger. The use of sharp or pointed objects on the display screen may damage the screen and void the warranty.

1.1   Features

The display provides access to the controller and has the following features;

- Seven inch, color touch-screen LCD
- Multilingual capable, with English and Spanish languages
- General alarm notification in color
- Real-time clock with battery backup
- User management configurable for up to 50 users who can belong to any of the five available groups (Admin, Guest, User, Unauthorized, Service, and Factory)
- One schedule with up to 16 user-entered time-lines
- Real-time trend graph
- I/O status

1.1.1 Software

The software is installed into the display screen by Conviron prior to shipping and interacts with the chamber control system. Like other software products, the display software carries a version number. Refer to the System Information section on page 8-2 to access this information.

1.1.2 Screen Navigation and Data Entry

Navigation is accomplished through the use of graphical elements in the form of tabs, buttons, sliders and switches. Data entry is provided by fillable data fields using onscreen numeric and alphanumeric keyboards, and drop-down lists. Icons are used throughout as state indicators.

Table 1-1 describes these features at a glance.

Table 1-1   Terms and Definitions

Element	Description
Home	Main Menu Tabs – located along the right edge of the display and used to access the primary screen groups.
Date/Time	Secondary Menu Tabs – located along the bottom edge of the display and used to navigate between the various pages of a screen group.
OK	Screen Button – located throughout the various screens and used to
(slider)	Sliders – used as a control of gradient functions
(switch)	Switches – two or three position switches used to turn a function on or off.
2015 yyyy	Fields – green colored fields are used to identify area where either numerical or textual information can be entered.
(thermometer icon)	Icons – used throughout as a visual indicator for a process or function.

CONVIRON®

2   STARTING THE CHAMBER FOR THE FIRST TIME

This section provides start-up instructions for a chamber equipped with the ARGUS HMI and sufficient information to get the chamber operating. Refer to the supplied controller and chamber manuals for more detailed information.

> Operate your equipment for a few days before introducing any plant material to acquaint yourself with the equipment's operation and to ensure the equipment meets the requirements for your experiments.

2.1   Turning the Display On

The ARGUS HMI ships from Conviron with the latest software installed and with the control system configured for each specific customer application. When the chamber is turned on, the Initial Screen is displayed. The example shown in Figure 2-1 is for a chamber configured to use Argus Titan II control system.

Figure 2-1   Initial Screen

When the software is loaded, the Home Screen is displayed (Figure 2-2).
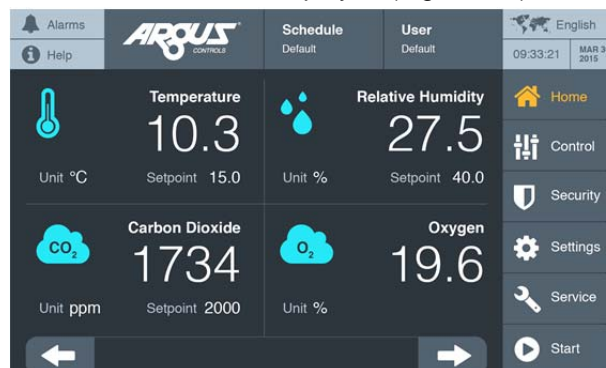

Figure 2-2   Home Screen Example

2.2　Setting the Time and Date

During the initial start-up it is required to check the date and time to ensure the settings are correct. Refer to the Date & Time section, starting on page 7-1, for complete instructions to change the date or time settings, if required.

Generally, these steps are required the first time the control system is used, and then only if the parameters require changing. These steps will also be required after a battery replacement.

2.3　Setting User and Administrator Logins

It is recommended to set up user and administrator logins before proceeding. These parameters are not critical to the initial basic chamber set-up and are not required for the user to begin using the chamber.

> The user of the HMI has no control over any permissions settings. All permission and access settings are fixed by Conviron.
>
> The administrator can create and edit existing user information and assign these users to pre-defined groups.
>
> For information, refer to the Security Screen section, starting on page 6-1.

CONVIRON®

3 SCREEN LAYOUT

Figure 3-1 shows the screen layout of the display. Information is displayed on the screen the four main areas. The Home Screen is used in this example.
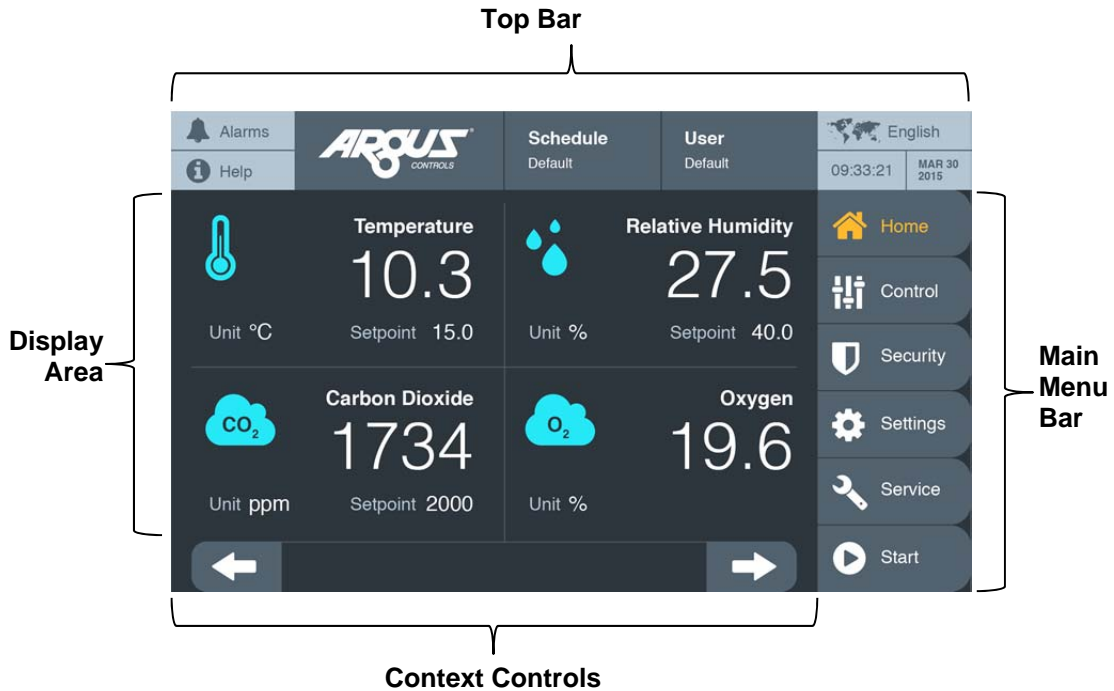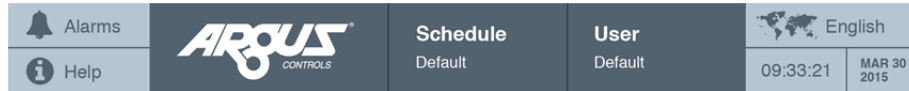

Figure 3-1   Screen Layout

3.1   Top Bar
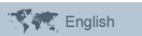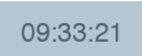
The Top Bar (Figure 3-2) is always present, and displays the same group of information regardless of the screen showing.

Figure 3-2   Top Bar

Table 3-1 lists the elements of the Top Bar and their functions.

Table 3-1   Top Bar Description

Element	Function
Alarms	Displays the current state of general alarm. Refer to the General Alarm section, starting on page 3-4, for more information.
Help	Displays the context sensitive Help system.
ARGUS	Displays the name of the control system. Refer to the System Information section, starting on page 8-2, for more information.
Schedule Default	Displays the user defined schedule name. Refer to the Control Screen section, starting on page 5-1, for more information.
User Default	Displays which user is currently logged into the system. Refer to the Switch User section, starting on page 6-7, for more information.
English	Display which language is currently loaded for use. It is a shortcut to the Language selections on the Settings Screen. Refer to the Language section, starting on page 7-4, for more information.
09:33:21 MAR 30 2015	Displays the current date and time settings. Refer to the Date & Time section, starting on page 7-1, to adjust the date or time.

CƟNVIRON®

3.2 Main Menu Bar

The ARGUS HMI uses five primary screen groups to interact with the various features of the control system, all of which are accessed through the Main Menu Bar along the right edge of the screen.

Tap the tab to display the specific settings or data. The icon and text on the tab changes color to indicate the active tab.

Table 3-2 lists the Main Menu Bar tabs and their functions.

Table 3-2   Main Menu Bar Description

Tab	Function
Home	Home Screen – the primary page and starting point for navigating through the display screens. Refer to the Home Screen section, starting on page 4-1, for more information.
Control	Control Screen – used to set and adjust programs and schedules. Refer to the Control Screen section, starting on page 5-1, for more information.
Security	Security Screen – used to log in and out for basic users and for administrators to set user rights. User management data transfer to and from external devices is also accessed through the Security Screen. Refer to the Security Screen section, starting on page 6-1, for more information.
Settings	Settings Screen – used to adjust date & time, screen preference, display language, network, and memory settings. Refer to Settings Screen section, starting on page 7-1, for more information.
Service	Service Screen – used to display customer, control system, and software version information. A service level password is required to adjust these settings. Refer to the Service Screen section, starting on page 8-1, for more information.
Start / Stop	Schedule Start/Stop – used to start a schedule after adjustments to the schedule are complete and to stop a running schedule. The icon will change to Stop and change color when a schedule is running. Refer to the Schedule Start/Stop section, starting on page 5-2, for more information.

3.3 Context Controls

The context controls are specific to the currently displayed screen. For example, on the Home Screen the context controls are scroll bars (Figure 3-3) to scroll through the various schedule information. However, when the Settings Screen is displayed, the context controls are horizontal tabs to access the other screens of the settings group (Figure 3-4).

Figure 3-3	**Home Screen Scroll Bar**

Figure 3-4	**Settings Screen Options**

3.4 Display Area

The display area shows information specific to individual screens. For example, on the Home Screen, the display area shows a snapshot view of the available schedules (Figure 3-5). However, on the Security Screen, the display area shows user information, log in and out, and user management data transfer areas (Figure 3-6).
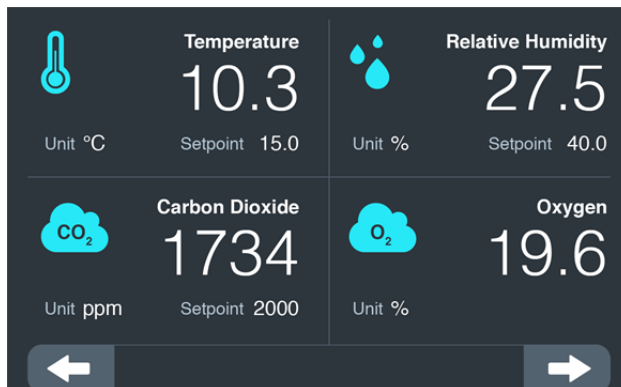
Figure 3-5	**Home Screen Display Area Example**
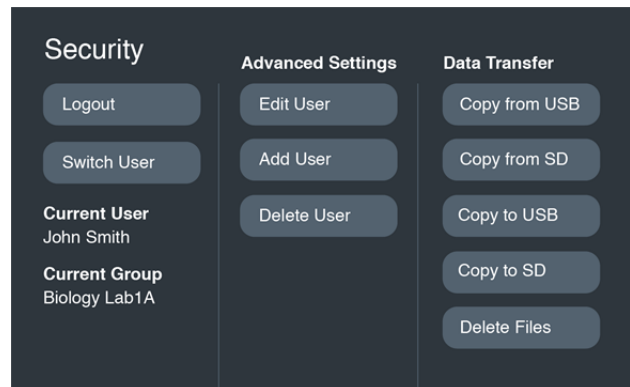
Figure 3-6	**Security Screen Display Area Example**

3.5 General Alarm

The alarm area of the Top Menu Bar shows the general alarm condition.

Default		Dark grey text on a light grey background.
Alarm		Dark grey text on a flashing orange background. Tap the flashing alarm to display a message relating to the alarm. Refer to the control PC for a complete description of the alarm condition.

CONVIRON®

4   HOME SCREEN

The Home Screen (Figure 4-1) essentially acts as the starting point for navigation through the various screens, and is the first screen shown after the software has loaded.

Before starting an experiment in the chamber it is necessary to become familiar with the Home Screen.
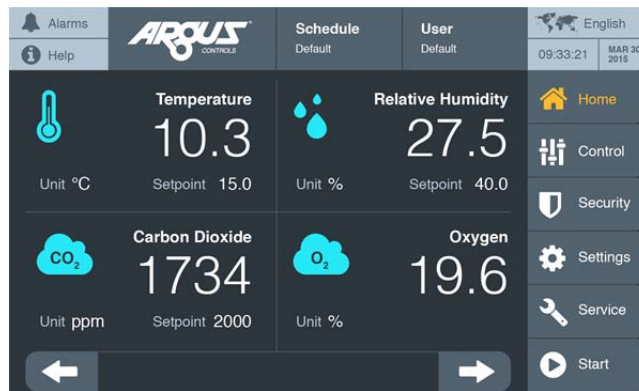
Figure 4-1   Home Screen Example

4.1   Display Area

The display area of the Home Screen shows information in real-time for the processes and monitors. Processes have setpoint that are controlled environmental parameters within the chamber. Monitors are not controlled environmental parameters. Figure 4-2 describes the information displayed. Refer to the included controller manual for more information on processes and setpoints.
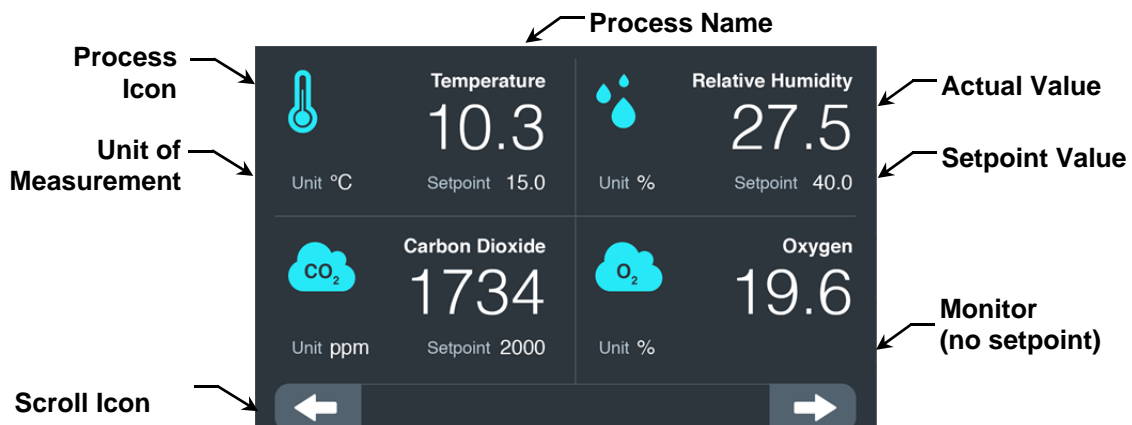
Figure 4-2   Display Area

4.2 Trend Graph

A trend graph for any process is available from the Home Screen. Tap on the process icon of the Home Screen to display the relevant graph in real-time. To see a history trend graph of each process, refer to the control PC.

Figure 4-3   Relative Humidity Trend Graph Example

4.2.1 Navigation Tabs

Navigation around the trend graph screen is accomplished using the tabs along the right side and bottom of the screen. Table 4-1 lists the tabs and their functions.

Table 4-1   Trend Graph Navigation Tabs

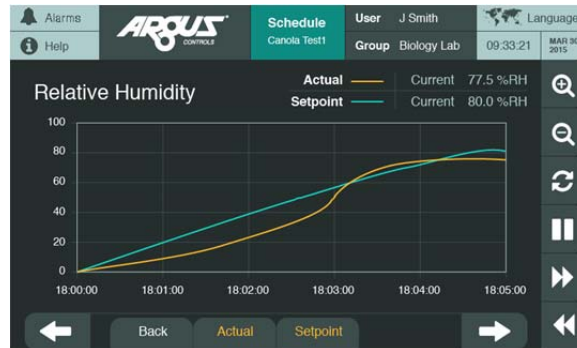| Icon	Function
Zoom In	Zoom In - Tap the Zoom In tab to zoom into the time line.
Zoom Out	Zoom Out - Tap the Zoom Out tab to zoom out of the time line.
Refresh	Refresh – Tap the Refresh tab to return to the default view.
Pause	Pause – Tap the Pause tab to stop scrolling.
Move Right	Move Right – Tap the Move Right tab to scroll the graph to the right.
Move Left	Move Left – Tap the Move Left tab to scroll the graph to the left.
Right Arrow	Right Arrow – Tap the right arrow tab to display the next trend graph.
Left Arrow	Left Arrow – Tap the left arrow tab to display the previous trend graph.
Back	Back – Tap the Back tab to return to the Home Screen.
Actual	Actual - Tap the Actual tab to toggle the displayed actual curve on or off.
SetPoint	Setpoint – Tap the SetPoint tab to toggle the displayed setpoint curve on or off.

CONVIRON®

5 CONTROL SCREEN

The Control Screen is used to set up and adjust setpoints on a schedule. Up to 16 timelines, each consisting of up to eight individual processes, can be set up and displayed.

Refer to the included controller manual for detailed information on how a schedule works.

Figure 5-1 **Schedule Example**

To set up a schedule:

1.   **HH 00**   Tap the entry field under the hour column to set the schedule duration in hours. A field limited keypad (Figure 5-2) opens to enter the data. Tap the keypad to enter the hours.
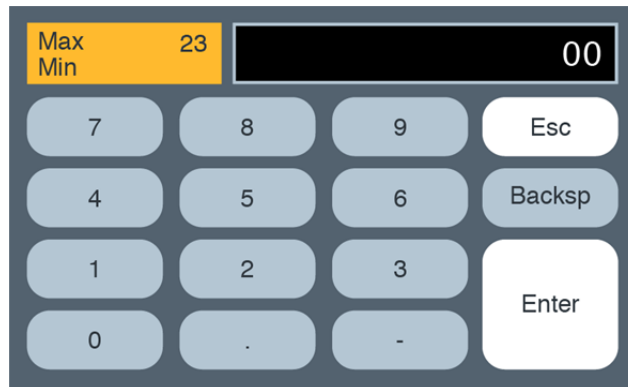

Figure 5-2 **Field Limited Keypad Example**

> The keypad shown in Figure 5-2 is specific to the data field that was used to access it and entry is limited by the data field. In this case, the keypad is limited from 00 to 23 hours, and the associated minute field is limited to from 00 to 59 minutes.
>
> Field limited keypads are used throughout the control system. Any entry outside of the limit for the particular field will produce no action and will keep the original value.

2. **MM 00**   Tap the entry field under the minute column to set the schedule duration in minutes.

3. **Function Before Dusk**   Continue accessing the remaining fields and entering data until the schedule is complete. In some case, a drop-down list provides selectable options.
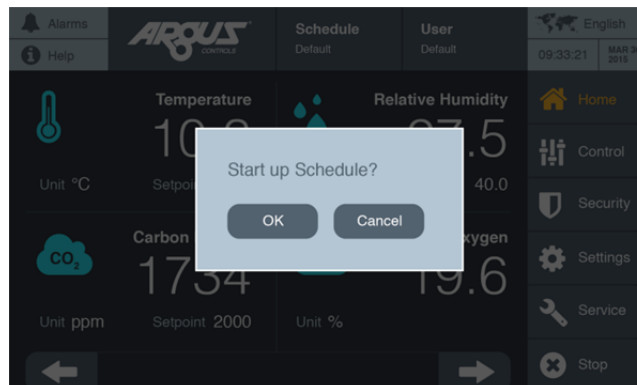
5.1   Schedule Start/Stop

The schedule area of the Top Menu Bar shows whether or not a schedule is running. Schedules are turned on or off using the Start/Stop tab on the Main Menu Bar at the right side of the display.

Refer to the Control Screen section, starting on page 5-1, for more information on setting up and adjusting schedules.

To start a schedule:

1. **▶ Start**   Tap the Start tab. A dialogue box will appear to confirm or cancel the selection (Figure 5-3).

Figure 5-3   Start Schedule Confirmation Dialogue Box Example

2. **OK**   Tap the OK button to start the schedule.
   Cancel   Or
   Tap the Cancel button to return to the underlying screen.

CONVIRON®

When a schedule is running, the text of the Start tab will change to Stop (Figure 5-4) and the schedule area of the Top Menu Bar will change color and slowly flash (Figure 5-5).

Not Running   Running

| Figure 5-4 | Start/Stop Icons | Figure 5-5 | Schedule Icon |

To stop a schedule:

1.   Tap the Stop tab on the Main Menu Bar at the right side of the display. A dialogue box will appear to confirm or cancel the selection (Figure 5-6).
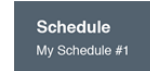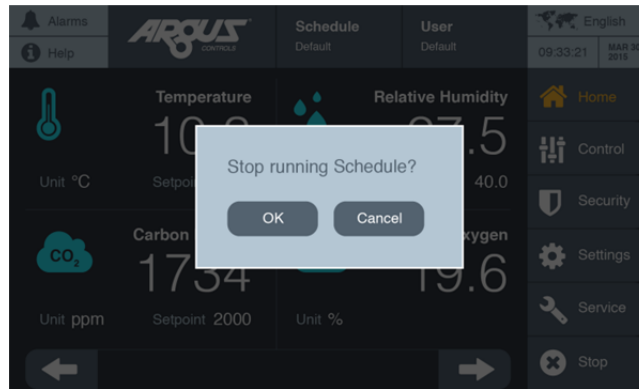

Figure 5-6   Stop Schedule Confirmation Dialogue Box Example

2.   Tap the OK button stop the schedule.
Or
Tap the Cancel button to return to the underlying screen.

6 SECURITY SCREEN

The system has security features to manage the levels of access for all system users. This feature requires all users to be set-up with the appropriate access, as determined by the facility manager or the security administrator. Once access levels are established users are required to log in to ensure that process and schedule modifications are made only by authorized personnel. The administrator can override all users and can access all levels, with the exception of features set at the factory group.

6.1 Group Access Levels

ARGUS HMI security levels are established by assigning users to predefined groups. Table 6-1 through to Table 6-4 list the groups' access, arranged according the pages and features available through the Main Menu Bar.

<p align="center">Table 6-1   Home and Control Page Group Access Levels</p>

	Home		Control		
	Process/Monitor		Program	Schedule	Alarm
	Zone Boxes	Trend Graphs	Edit Setpoint	Edit Schedule	General Alarm
Administrator	∅	∅	✓	✓	✓
Guest	∅	∅	✓	✓	✓
Unauthorized	∅	∅	✓	✓	✓
User	∅	∅	✓	✓	✓
Service	∅	∅	✓	✓	✓
Factory	∅	∅	✓	✓	✓
Default	∅	∅	✓	✓	✓

✓ Full Access   ∅ Read Only   X No Access

Table 6-2   Security Page Group Access Levels

	Security				
	Daily User Access		User Info Management	User Data Management	
	Login	Logout Switch User	Add Edit Delete	Data Transfer	Delete Files
Administrator	✓	✓	✓	✓	✓
Guest	✓	✓	X	X	X
Unauthorized	✓	✓	X	X	X
User	✓	✓	X	X	X
Service	✓	✓	X	X	X
Factory	✓	✓	✓	✓	✓
Default	✓	X	X	X	X

✓ Full Access   ∅ Read Only   X No Access

Table 6-3   Settings Page Group Access

	Settings				
	Date & Time	Screen	Language	Network	Memory
Administrator	✓	✓	✓	∅	∅
Guest	✓	✓	✓	∅	∅
Unauthorized	✓	✓	✓	∅	∅
User	✓	✓	✓	∅	∅
Service	✓	✓	✓	∅	∅
Factory	✓	✓	✓	∅	∅
Default	✓	✓	✓	∅	∅

✓ Full Access   ∅ Read Only   X No Access

CONVIRON®

Table 6-4   Service Page and Schedule Group Access

	Service				Schedule	
	Inputs	Outputs	Context Menu	Sys Info	Start	Stop
Administrator	∅	✓	✓	∅	✓	✓
Guest	∅	∅	X	∅	✓	✓
Unauthorized	∅	∅	X	∅	✓	✓
User	∅	∅	X	∅	✓	✓
Service	∅	✓	X	∅	✓	✓
Factory	∅	✓	✓	∅	✓	✓
Default	∅	∅	X	∅	✓	✓

✓ Full Access   ∅ Read Only   X No Access

The system is shipped with group set to Default, which will allow any user to start the chamber and become familiar with the chamber controls without the use of a password. The factory default settings may be adequate for use in a facility with a small number of users where user management is not required.

> ⚠ Conviron recommends that a security administrator be assigned to administer the user management files and that security features be added as soon as possible.
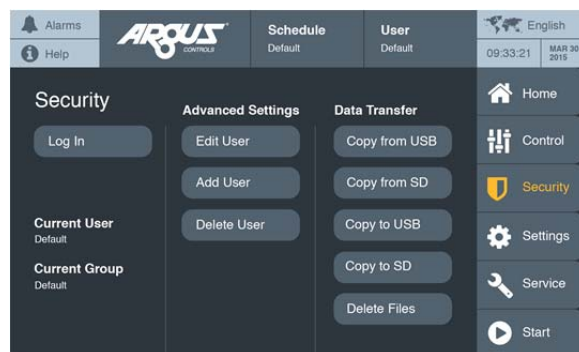
6.2 Log In or Out

Conviron recommends that each user log in through the Security Screen before operating the system, and to log out when finished.
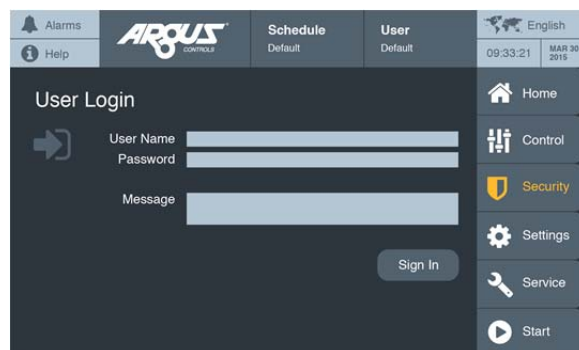
6.2.1 Log In

To log into the system:

1. [Security]   Tap the Security tab on the Main Menu Bar at the right side of the display. The Security Screen opens (Figure 6-1).

Figure 6-1   **Pre-Log In Security Screen**

2. [Log In]   Tap the Log In button. The Sign In screen opens (Figure 6-2).

Figure 6-2   **User Log In Screen Example**

3. [User Name]   Tap the User Name field to enter the user name. A keyboard (Figure 6-3) appears on the screen to enter the required information.

CONVIRON®

Figure 6-3   Keyboard Example

4. John Smith   Enter the required user name information, using capitals and special characters as required.

Use the CapsLock or Shift keys to toggle between upper and lower case modes. The key will change color and letters will change to reflect the current mode.

Use the AltGr key to access various special characters.

Use the Esc key to cancel entering data with the keyboard.

5. Enter   Tap the Enter key move to the password field.

6. qwerty123   Repeat steps 3 to 5 using the password field to enter the user password.

Enter the required password, using capitals and special characters as required.

If either the user name or the user password is mistyped or invalid, a message will display in the message array reminding the user to enter correct information.

7. Sign In   Tap the Sign In button to accept the user name and password information.

6.2.2   Log Out

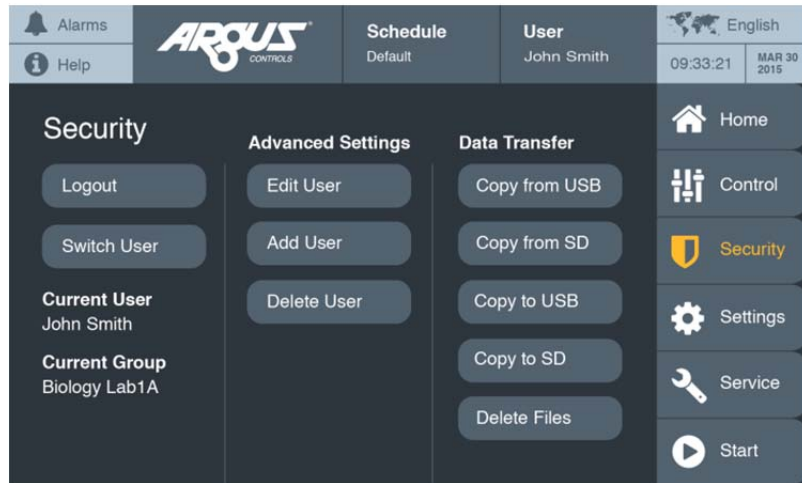1. [Security]   Tap the Security tab on the Main Menu Bar at the right side of the display. The Security Screen opens (Figure 6-4).

Figure 6-4   Log Out Security Screen

2. [Logout]   Tap the Log Out button to log out of the system.

> The user name and group information will change to "Default" when no user is logged into the system.
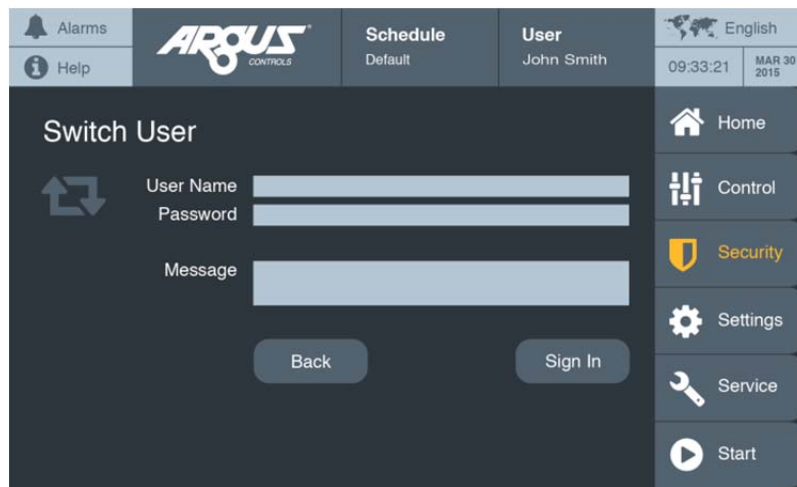
CONVIRON®

6.3   Switch User

The Switch User feature is not available until at least one user logs in.

To switch users:

1. **Security**   Tap the Security tab on the Top Menu Bar. The Security Screen opens (Figure 6-1).

2. **Switch User**   Tap the Switch User button. The Switch User Screen opens (Figure 6-5).

Figure 6-5   Switch User Screen

3. **User Name** Jannette Smythe   Tap the User Name field and use the keyboard to enter the new user information.

4. **Password** qwerty12321   Tap the Password field and use the keyboard to enter the new user password.

5. **Sign In**   Tap the Sign In button to accept the new user name and password information.

   Back   Or
   Tap the Back button to return to the Security Screen.

6.4   Advanced Settings

The Advanced Settings area of the Security Screen, shown highlighted in Figure 6-6, allows a designated administrator to adjust existing user profiles, or add or delete user profiles.

> ⚠️ Operators with user level security access can see the Advanced Settings buttons, but cannot access or change the settings.
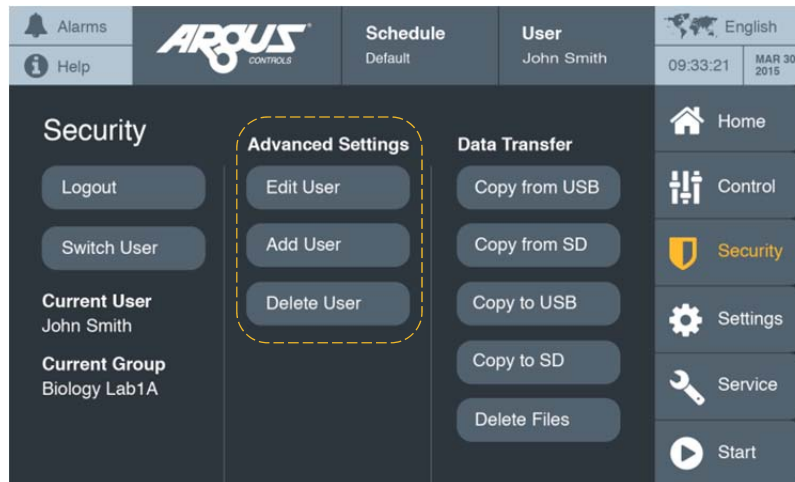

**Figure 6-6   Security Screen – Advanced Settings**

6.4.1   Edit User

The Edit User button allows a designated administrator to change the following default settings for existing user profiles:

- Assign a user to a group
- Define whether or not a password must contain numbers
- Define whether or not a password must contain special characters
- Define whether or not a user must change the initial password
- Define whether or not a log off time is enabled
- Define the period of inactivity before the system automatically logs off

To edit existing user information:

1. [Security]   Tap the Security tab on the Top Menu Bar. The Security Screen opens (Figure 6-1).

2. [Edit User]   Tap the Edit User button. The User Editor Screen opens (Figure 6-7).

CONVIRON®
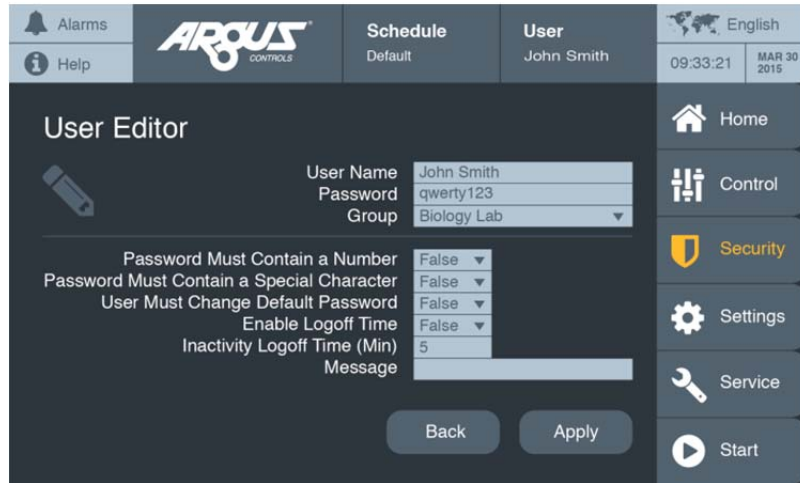
Figure 6-7   Edit User Screen Example

3.   ▼   Tap the arrow icon at the right edge of the field box to access a drop-down list specific to that field.

Fields without a drop-down arrow will display the keyboard (Figure 6-3) when tapped.

4.   True ▼   Tap the new information from the drop-down list to select it.

5.   Continue accessing and adjusting user information, as required.

6.   Apply   Tap the Apply button to accept the new information.

                Or

        Back   Tap the Back button to return to the Security Screen.

6.4.2   Change User Password

All passwords can be changed by a designated administrator through the User Editor screen on the Security Screen.

6.4.3   Add User
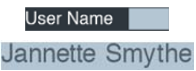
The Add User section allows a designated administrator to add a new user profile to the system.

   To add a new user:

1.   Security   Tap the Security tab on the Top Menu Bar. The Security Screen opens (Figure 6-1).

2.   Add User   Tap the Add User button. The Add User Screen opens (Figure 6-8).

CONVIRON®
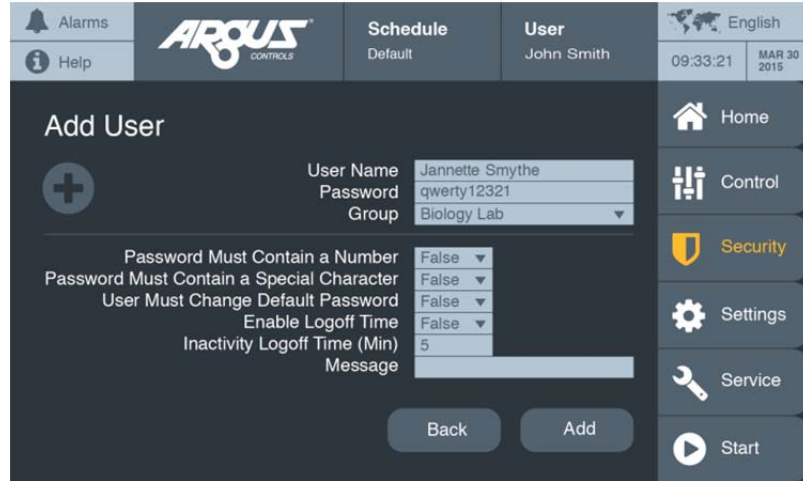
Figure 6-8   Add User Example

3.	User Name Jannette Smythe	Tap the User Name field and use the keyboard to enter the new user information.
4.	Password qwerty12321	Tap the Password field and use the keyboard to enter the new user password.
5.	▼	Tap the arrow icon at the right edge of the field box to access a drop-down list specific to that field. Fields without a drop-down arrow will display the keyboard (Figure 6-3) when tapped.
6.	True ▼	Tap the new information from the drop-down list to select it.
7.	Add Back	Tap the Add button to accept the new user information. Or Tap the Back button return to the Security Screen.

6.4.4 Delete User

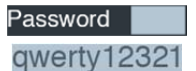The delete user section allows a designated administrator to delete a user profile, or a group profile from the system.

To delete a user:

1.	Security	Tap the Security tab on the Top Menu Bar. The Security Screen opens (Figure 6-1).
2.	Delete User	Tap the Delete User button. The Delete User Screen opens (Figure 6-9).
3.	▼	Tap the arrow icon at the right edge of the field box to access a drop-down list of users.

CONVIRON®

4. Jannette Smythe   Tap the user name to select the user from the list.

5. Delete   Tap the Delete button to delete the user information.
Or

Cancel   Tap the Cancel button to cancel the deleting the user information and return to the Security Screen.
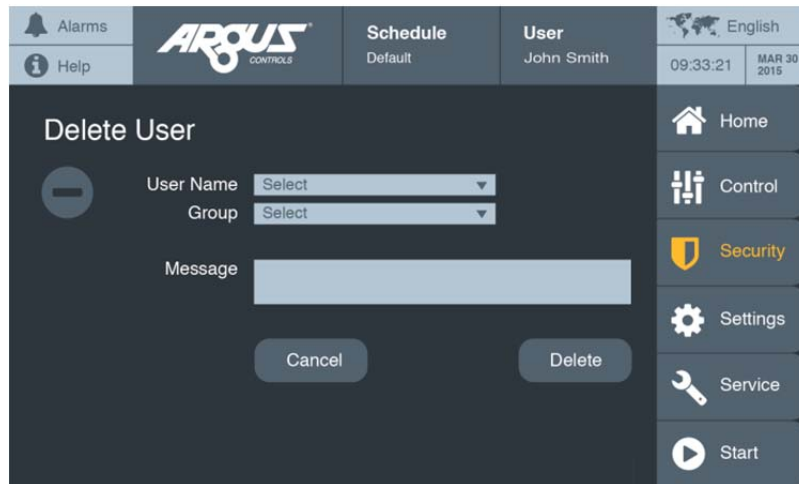
Figure 6-9   Delete User

6.4.5   Delete a Group

The delete user section allows a designated administrator to delete a group profile from the system.

To delete a group:

1. Security   Tap the Security tab on the Top Menu Bar. The Security Screen opens (Figure 6-1).

2. Delete User   Tap the Delete User button. The Delete User Screen opens (Figure 6-9).

3. ▼   Tap the arrow icon at the right edge of the field box to access a drop-down list of groups.

4. Group Biology Lab   Tap the group name to select the group from the list.

5. Delete   Tap the Delete button to delete the group.
Or

Cancel   Tap the Cancel button to cancel and return to the Security Screen.

6.5   User Management Data Transfer

The User Management Data Transfer area of the Security Screen, shown highlighted in Figure 6-10, allows a designated administrator to transfer user management data to and from the system and to delete files, as required.

Once the user management files are set up on a chamber, copying the user management files from the first chamber onto a USB stick and then copying them from the USB stick onto the remaining chambers in the facility ensures that all users have the same access to all chambers.

> Operators with user level security access can see the icons, but cannot transfer data or change the settings.

- Copy From USB
- Copy From SD Card
- Copy To USB
- Copy To SD Card
- Delete Files

> The Delete Files button will erase all user management data and return the system to factory default settings.
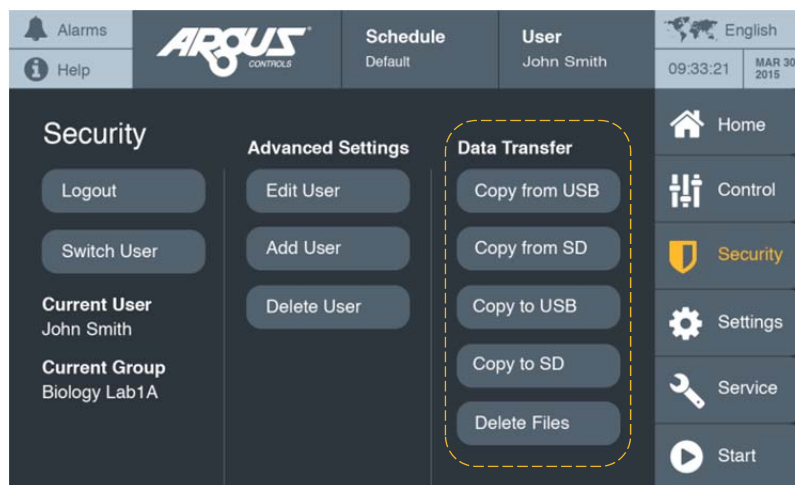
Figure 6-10   Security Screen – Data Transfer

CONVIRON®

7   SETTINGS SCREEN

The Settings Screen provides access to system level settings and adjustments. The following sub-screens are accessed by tapping the relevant tab at the bottom of the Settings Screen.

- Date & Time
- Screen
- Language
- Network
- Memory

7.1   Date & Time

The date and time set-up and adjustments are accessed from the Settings Screen.
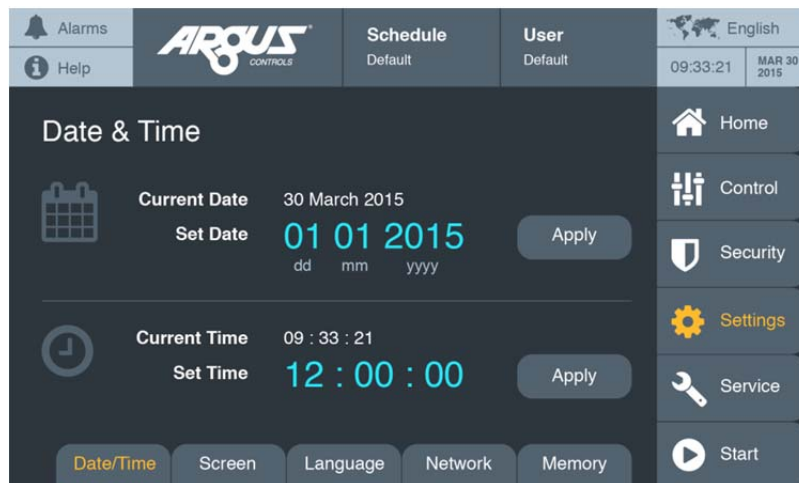
Figure 7-1   Date & Time Settings Screen Example

Date and time settings are essential to the chamber experiment and it is recommended that these setting be reviewed daily to prevent experimental error.

The date is displayed numerically in day-month-year format (dd-mm-yyyy).

The time is displayed in a 24-hour format (00:00:00).

To change the date and time settings:

1. **Settings**   Tap the Settings tab on the Main Menu Bar at the right side of the display. The Date and Time Settings Screen (Figure 7-1) opens.

2. **01 dd**   Tap the Day field to set the day. A keypad (Figure 7-2) appears to enter the day.

Figure 7-2   **Keypad Date Example**

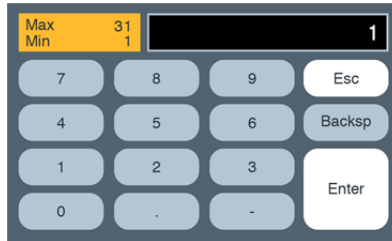> The keypad shown in Figure 7-2 is specific to the data field that was used to access it and data field reflects the performance capability of the chamber. In this case, the keypad is limited between a maximum of 31 days and a minimum of 1 day.
>
> Field limited keypads are used throughout the control system. Any entry outside of the performance capability of the chamber will not be accepted, or will produce a message reminding the operator to enter data within the displayed range.

3. **01 dd**   Enter the day value and tap Enter on the keypad to accept the entry.

4. **01 mm** & **2015 yyyy**   Repeat to set the remaining date values for the month and year fields.

5. **Apply**   Tap the APPLY button on the Date & Time Settings Screen to accept the new date.

6. **12:00:00**   Follow the same steps to set the Time values.

All values entered are in real time. Ensure that the time and date are correct to ensure proper experiment processing.

> The second field is not settable. It will restart at 00 seconds whenever the time is adjusted.

CONVIRON®

7.2   Screen Settings

The Screen Settings tab provides adjustments to the display brightness and the touchpad feedback sound.
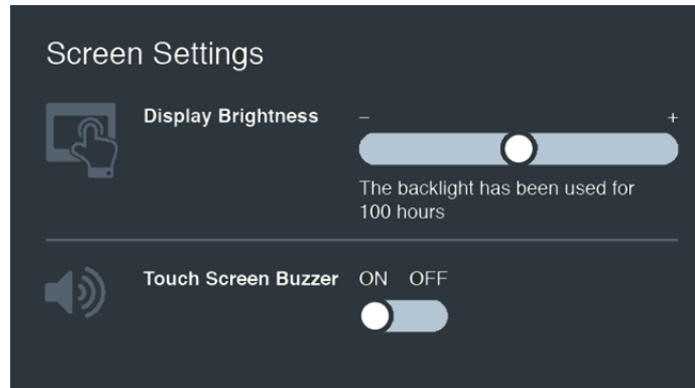
Figure 7-3   **Screen Settings Display Area**

To adjust the display brightness:

  Tap anywhere on the slider icon to change the brightness.

To turn the touchpad feedback sound On or Off:

  Tap anywhere on the slider icon to turn the feedback sound On or Off.

7.3   Language

The Language tab sets the display screen language. Simply tap the new language to change the screen display.
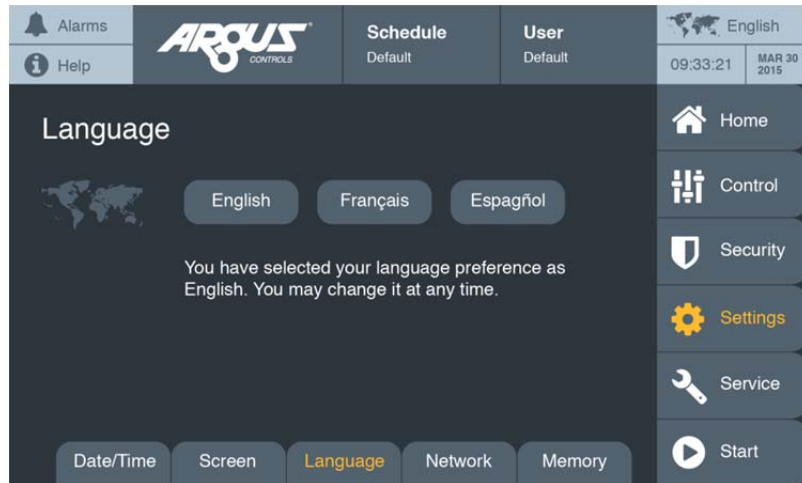
Figure 7-4   Language Screen Example

7.4   Network

The Network tab displays the network and communication status.
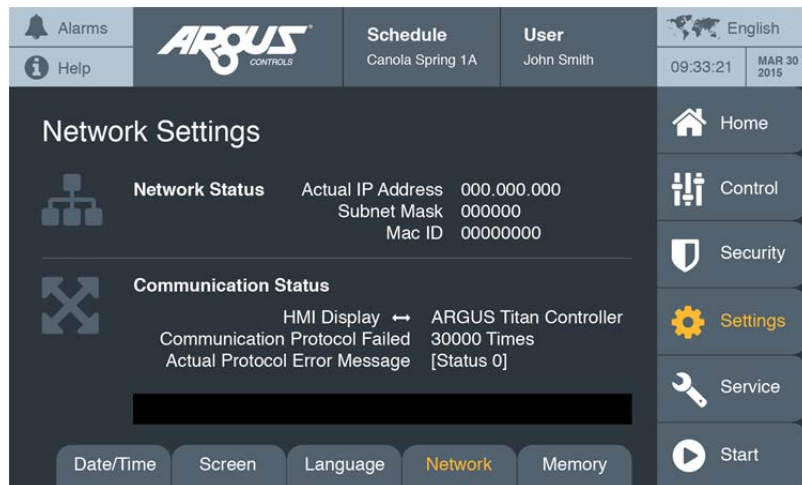
Figure 7-5   Network Screen Example

7.5   Memory

The Memory tab displays the status of the various connected memory devices.
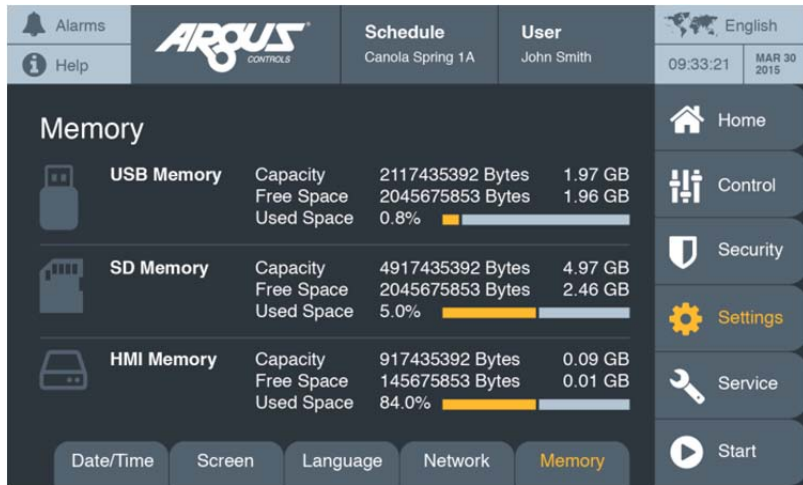
Figure 7-6   Memory Screen Example

8   SERVICE SCREEN

> Do not make changes to the IO values while a schedule is running.
> Consult the supplied control manual for detailed information.
> Only qualified service personnel have access to change the IO values.

> A service level password is required to make adjustments through the Service Screen.
> The various settings are read-only for user and administrator level passwords.

The Service Screen is primarily for use by authorized service personnel, but users and administrators can access the screen for information.

Service personnel can adjust the number of analog and digital inputs and outputs and troubleshoot system communications through this screen.

8.1   Inputs

Figure 8-1   Service Screen, Inputs Example

8.2   Outputs

Figure 8-2   Service Screen, Outputs Example

8.3   System Information

The Sys Info tab displays customer, control system, and software version information. This information is important when placing a service call to Conviron.

Figure 8-3   Service Screen, System Information Example

CONVIRON®

9 MAINTENANCE

Under normal use the touchscreen will require no maintenance other than regular cleaning.

Use the provided stylus on the touchscreen to avoid fingerprints and smudges on the screen.

9.1 Cleaning the Touchscreen

When cleaning the touchscreen, the following is recommended:
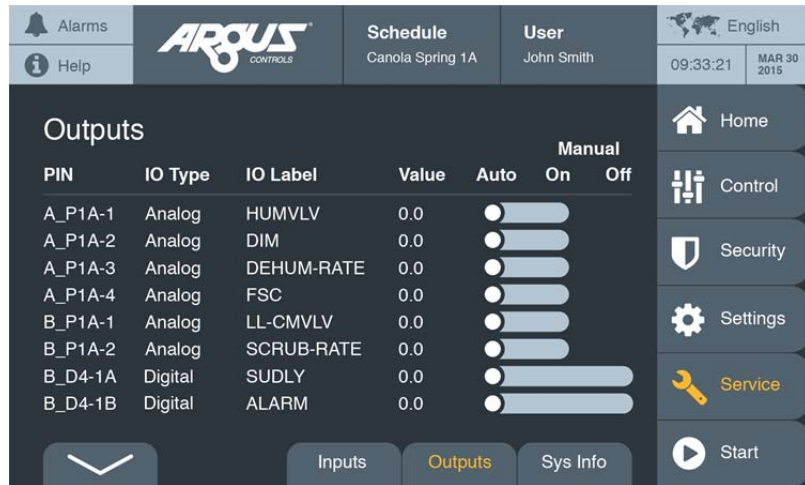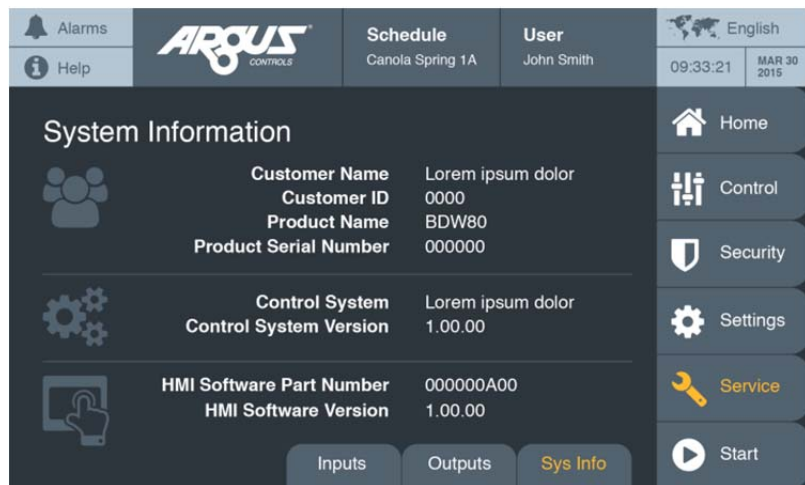
- Use only paper towels, or clean, soft, lint-free cotton or micro-fiber cloths to clean the touchscreen. They are unlikely to scratch the polycarbonate surface of the touchscreen.
- Do not use corrosive chemicals, aggressive detergents, or solutions containing ammonia, such as commercial glass cleaner to clean the touchscreen. Chemical solutions will cause hazing of the polycarbonate surface of the touchscreen.
- Do not pour or spray any liquid directly onto the touchscreen.

> ⚠ Liquids could come into contact with live electrical circuits and pose an electrocution hazard.

To clean the touchscreen;

1. Turn off the system before cleaning the touchscreen.
2. Gently wipe away any visible dust and dirt as if you were dusting.
3. Gently wipe the screen with a slightly damp cloth to remove stubborn fingerprints or smudges, if required. Use filtered or bottled water, and spray or moisten the cloth. Wring the cloth until it is only slightly damp before cleaning the touchscreen.
4. Use a 50/50 mixture of isopropyl alcohol and filtered or bottled water to remove any fertilizer or pesticide residue from the touchscreen, if required.

> ⚠ Use a commercially available monitor cleaning wipes to remove stubborn fingerprints and smudges, if so desired.

5. Allow the surface and surrounding area to dry thoroughly before turning the system on.

10   TECHNICAL SPECIFICATIONS

The Technical Specifications section lists many of the technical details of the touchscreen. Contact Conviron if more information is required.

10.1   Environmental Conditions

Temperature Range for operation	-20°C to 60°C
Temperature Range for storage	-20°C to 70°C
Humidity Range (for storage or operation)	5 to 85% RH, non-condensing
Protection Rating	IP65 front, IP20 rear
Degree of Pollution	Degree II
Compliance Rating	European EMC and LVD directives, UL certification

Operation at low temperatures may cause a visible decline in the response speed of the display. This should be considered normal and does not indicate a malfunction.

Avoid the following environmental conditions:

- exposure to direct sunlight – this may accelerate the ageing process of the front protection film
- temperature and humidity higher than the stated operating data
- large and rapid fluctuations in the room temperature
- strong magnetic and/or radio frequency interference, avoid installation near transmitting antennae
- strong vibrations or physical shocks
- environments where explosives or mixes of flammable gases are present
- exposure to aggressive and polluting atmospheres, such as sulfur or ammonia fumes, saline mist, or smoke, that cause corrosion and/or oxidation
- exposure to corrosive or oxidizing dust
- exposure to water

10.2   System Resources

Operating System	Microsoft Windows CE 6.0
User Memory	128 MB Flash
RAM	256 MB DDR2
CPU	ARM

10.3   Display Screen

Screen Type	TFT LCD
Resolution	800 x 480 pixels, WVGA mode
Display Area	7" diagonal, 16/9 aspect ratio
Colors	64,000
Backlighting	LED
Brightness Adjustment	Yes
Viewing Angles	Bottom – 50°, Top, Left, & Right – 60°
Minimum Contrast	250 (φ=0°)
Response Time	10 to 16 milliseconds
Color Temperature	White (φ=0°) x=0.249÷0.349, y=0.278÷0.378
Uniformity (min.)	70%
Brightness (min.)	180 cd/m^2

10.4   Electrical

Power Supply	24VAC (-15%...+10%), 50…60Hz max. 1.2A (24…27VA)
Power Input	12W (0.5mm minimum power cable cross-section) 0.95A at 24VDC (max.)
Fuse	Automatic
Weight	Approximately 1 kg
Battery	Non-rechargeable, lithium, model BR2330
Software Class	A
Resistance to Heat & Fire	Category D
Immunity to Voltage Surges	Category II
Insulation Class	Class III, to incorporate in Class I or III devices

CONVIRON®

10.5   Abbreviations

Table 10-1 list the abbreviations used throughout the manual.

Table 10-1   Abbreviations

Term	Definition
°C	Celsius degree
A	Ampere
ARM	Advanced RISC Machines
cd/m^2	Candelas per square metre
CO_2	Carbon dioxide
DDR2	Double Data Rate memory module, 2nd specification
EMC	Electromagnet Compatibility
Gb	Gigabyte
HMI	Human Machine Interface
Hz	Hertz
IO	Input/Output
IP	Internet Protocol
IP65 or IP20	Ingress Protection rating
kg	kilogram
LED	Light Emitting Diode
LVD	Low Voltage Directive
Mac ID	Media Access Control identifier
MB	Megabyte
O_2	Oxygen
ppm	parts per million
φ	Greek letter phi – used to describe the variable of the viewing angle.
%RH	Relative Humidity, the amount of water vapor in the air expressed as a percentage of the maximum amount the air could hold at the temperature.
RISC	Reduced Instructions Set Computer
SD card	Secure Digital nonvolatile memory card
TFT LCD	Thin Film Transistor Liquid Crystal Display
UL	Underwriters Laboratory
USB	Universal Serial Bus

Term	Definition
VA	Volt – Ampere
VAC	Alternating current voltage
VDC	Direct current voltage
W	Watt
Window CE 6.0	Windows Embedded Compact Edition, version 6.0
WVGA	Wide Video Graphic Array

CONVIRON®

CONVIRON®

ISO9001

269100R00, April 2015