USER MANUAL

STEP TECHNOLOGY REFERANCE GUIDE
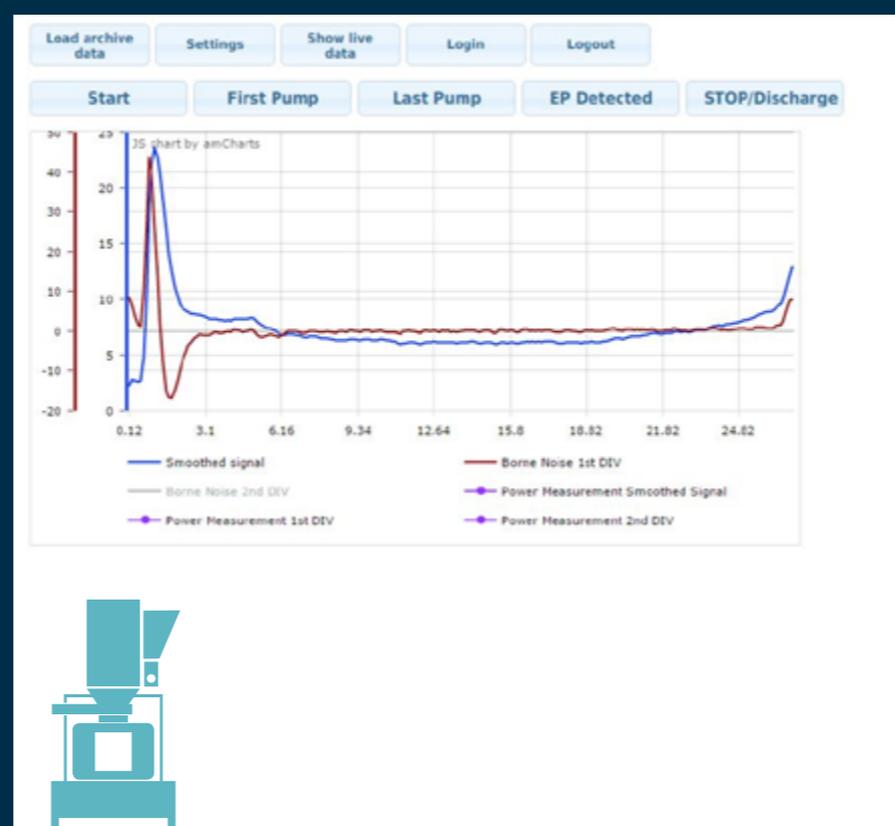
MENU

Legal & Safety

Introduction
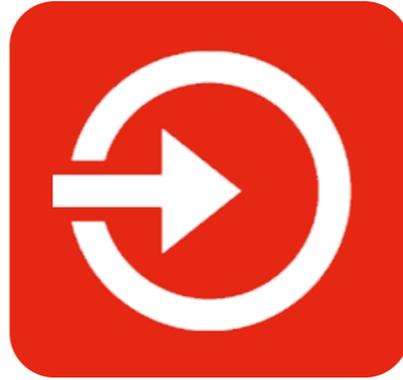
Login

Main - Home

Settings

Edit

**Variables**

Alarms

Configuration

Diagnostics

Pictograms

I/O
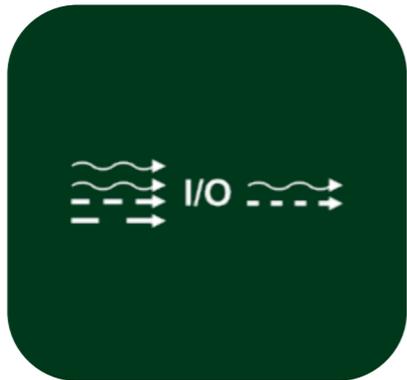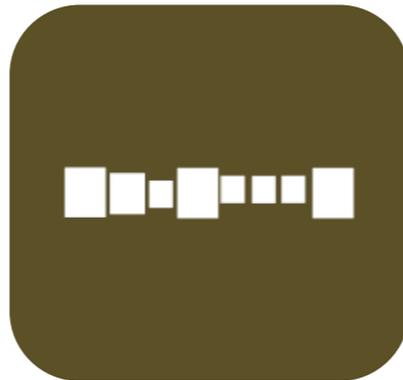
Sequencers

Reports

Trends

LEGAL & SAFETY

This manual contains technical information regarding Bayer SeedGrowth™ Equipment. Please read and understand these instructions completely before proceeding to install and operate the equipment. Bayer reserves the right to change specifications, models, components, or materials at any time without notice. For additional equipment information contact us at 1.800.634.6738. Please have this manual available when contacting Bayer.

Always use caution and common sense when working with any chemical. Read the product label and SDS carefully and follow their instructions exactly as described.

Optimal operating conditions for this piece of equipment requires an ambient temperature 32° F to +104° F (0° C to +40° C), relative humidity less than 90% (minimum condensation). Make necessary provisions to protect this piece of equipment against excessive dust, particles containing iron, moisture and against corrosive and explosive gases.

Our technical information is based on extensive testing and is, to the best of our current knowledge, true and accurate but given without warranty as the conditions of use and storage are beyond our control. Variables, such as humidity, temperature, change in seed size or variety and viscosity of chemical products can all affect the accuracy of the chemical application and seed coverage. To ensure the desired application rate and optimum seed coverage, check the calibration periodically throughout the day, and make adjustments as needed.

Any person who is involved in the installation or periodic maintenance of this equipment should be suitably skilled or instructed and supervised using a safe system of work. Isolate the treater before removing guards for maintenance.

⚠ EXPOSURE CONTROL

Always use caution and common sense when working with chemicals. Read the product label and SDS carefully and follow their instructions exactly as described. The following Personal Protective Equipment (PPE) recommendations and best practices help promote safe use in seed treatment.

Note: Exposure Control signs and labels conform to the requirements of ANSI Z535.4 or ISO 3864.

Wear protective clothing

Wear disposable or reusable coveralls with long sleeves.

Hand protection required

Wear chemical-resistant gloves.

Wear rubber boots

Wear chemical resistant rubber boots.

Labels

Label recommendations and directions for handling must be followed, including treatment procedure (use of sticker) as well as the safety requirements.

Treatment products

Keep products in a locked room that has been approved for crop protection products.

Wear a mask

Wear respiratory protection.

Eye protection required

Wear protective eyewear.

Calibration

Seed treatment equipment must be checked and calibrated regularly to ensure accurate and safe application.

Clean seed

Use well cleaned seed to avoid creation of polluted dust that will contaminate the machine, treating facility, workers, farmers and the environment during sowing.

Cleaning

Use a vacuum to clean machines. Avoid using compressed air for cleaning.

Laundry

Wash soiled reusable clothing separately. Workers must take a shower after each shift.

Empty containers

Non-returnable empty containers must be triple rinsed before they can be disposed. For others the recommendation of the producer must be followed.

Spillage

Spillage must be avoided; it must be thoroughly cleaned up to avoid contaminating the environment and waterways.

Maintenance

Keep machinery clean between treating sessions.

⚠️ REFERENCE SYMBOLS

Symbols and signal words are used to identify the level of hazard and help avoid personal injury.

Note: Safety signs and labels conform to the requirements of ANSI Z535.4 or ISO 3864.

Shock Hazard

Alerts that dangerous voltage may be present.

Warning

Alerts that a hazard may cause serious injury or death.

Caution

Alerts that a hazard may cause minor or moderate injury.

Hand crush - moving parts

Alerts crushing is possible.

Pinch point

Keep hands away from pinch points.

Rotating shaft

Do not wear loose clothing around turning parts.

Disconnect

Disconnect to de-energize before opening.

Use guards

Keep guards in place. Do not remove during operation.

Lifting

Requires two people to safely lift an item.

Lift points

Requires the use of proper rigging and lifting techniques based on the lift plan.

Center of gravity

Indicates the center of gravity of the machine to help assist when rigging and lifting.

Tools

Required tools for installation and maintenance.

Parts

Required parts for installation and maintenance.

Tip

Calls attention to special information.

Note

Emphasizes general information worthy of attention.

Example

Provides a problem or exercise that illustrates a method or principle.

PICTOGRAMS
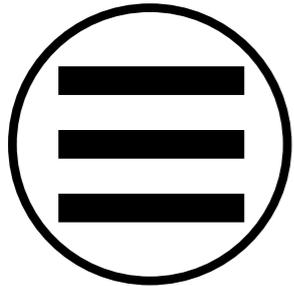
Menu
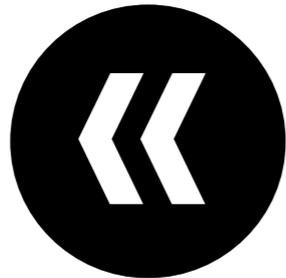
Previous

Advance
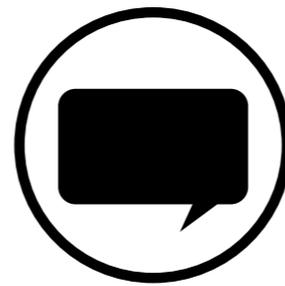
Introduction

Login

Main - Home
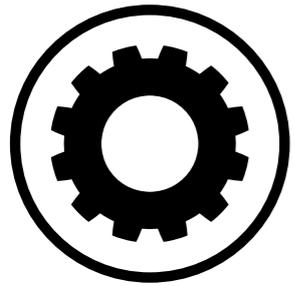
Settings

Edit

Variables

Alarms
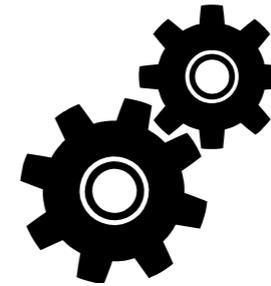
Configuration

Diagnostics

I/O
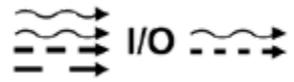
Sequencers

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Like

INTRODUCTION

MENU Button

Displayed on all screens in this location.

Touch to navigate to the **MAIN MENU Screen**

| MENU | MAIN MENU | DEFAULT |

STEP TECHNOLOGY

DEFAULT

Indicates the level of login (default/user, supervisor, technician). Displays on all screens in this location.

MAIN Button

Touch to navigate to the **MAIN Screen**

MAIN

LOGIN Button

Touch to navigate to the **LOGIN Screen**

LOGIN

TREND Button

Touch to navigate to the **TREND Screen**

TREND

LOAD SETTINGS Button

Touch to navigate to the **LOAD SETTINGS Screen**

LOAD SETTINGS

DIAGNOSTICS Button

Touch to navigate to the **DIAGNOSTICS Screen**

DIAGNOSTICS

BAYER

CONFIGURATION Button

Touch to navigate to the **CONFIGURATION Screen**

CONFIGURATION

ALARMS Button

Touch to navigate to the **ALARMS Screen**

ALARMS

REPORTS Button

Touch to navigate to the **REPORTS Screen**

REPORTS

MAIN MENU Screen

When the power panel is turned ON, the PLC will boot up the **STEP TECHNOLOGY** application programme. Auto login displays the **MAIN MENU Screen** (shown above) on the HMI touch panel. The **MAIN MENU Screen** is the HMI navigation screen. The **MENU** button (shown above, top left corner) displays in this location on all screens, which allows users to return to the **MAIN MENU Screen** at anytime.

This is an interactive PDF, designed to replicate how the actual HMI touch panel functions.

Step 1: Touch each button above to navigate to each screen and learn details of functionality. Touch the **MENU** button on each screen to return to this page in this manual.

LOGIN
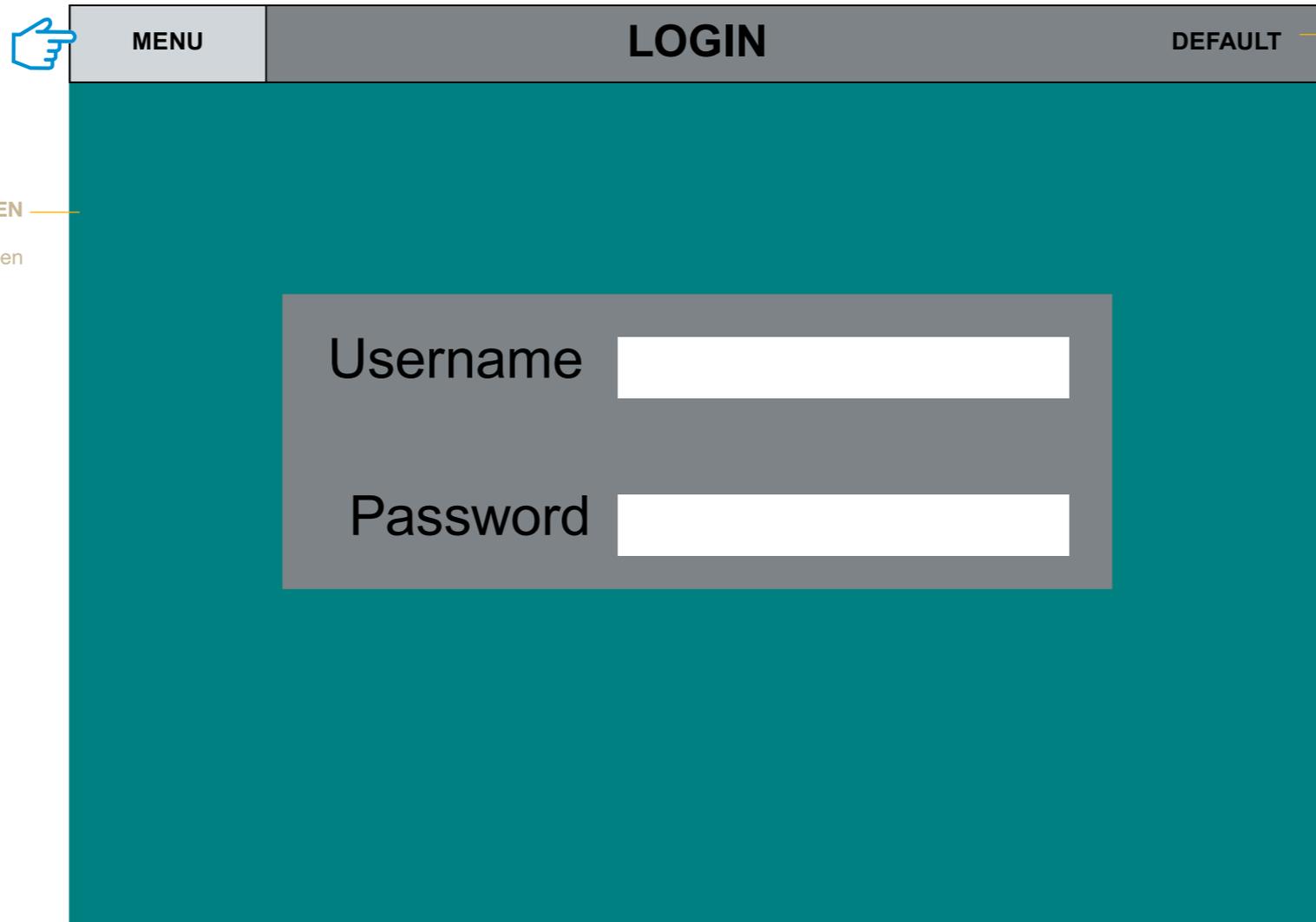
Username

Password

LOGIN SCREEN

Displays a system generated login screen

DEFAULT

Indicates the level of login (default/user, supervisor, technician) based on login status.

Name changes when users log in with a different Username and Password.

Displays on all screens in this location.

LOGIN Screen

Three levels of login are Default (User), Supervisor and Technician.

Step 1: Touch the **Username** text field: a keyboard pop-up opens. Enter a username and touch **OK**; the keyboard pop-up closes.

Step 2: Touch the **Password** text field: a keyboard pop-up opens. Enter a password and touch **OK**; the keyboard pop-up closes.

Step 3: Touch the **MENU** button top left of screen: navigates to the **MAIN MENU** screen.

ALGORITHM

Text field displays which algorithm has been selected on the LOAD SETTINGS screen

SETTING

Text field displays which setting has been selected on the LOAD SETTINGS screen

BATCH START Button

Automatically turns green when BaySTEP detects the batch starts

FIRST PUMP ON Button

Automatically turns green when BaySTEP detects the first pump turns on

LAST PUMP OFF Button

Automatically turns green when BaySTEP detects the last pump turns off

END POINT DETECTED Button

Automatically turns green when BaySTEP detects the end point

BOWL DISCHARGE Button

Automatically turns green when BaySTEP detects the bowl discharge

DEVICE Buttons

When MANUAL mode has been selected on the LOAD SETTINGS Screen, users will touch each button manually to enable each device in a sequence of events

MENU	MAIN	DEFAULT

ALGORITHM: ▭   MODE: ▭   EDIT SETTINGS

SETTING: ▭   OUTPUT: ▭

BATCH START   ENABLE BaySTEP   DISABLE BaySTEP

FIRST PUMP ON   BaySTEP MESSAGE: ▭

LAST PUMP OFF

BATCH START | FIRST PUMP "ON" | LAST PUMP "OFF" | END POINT DETECTED | BOWL DISCHARGE

END POINT DETECTED

BOWL DISCHARGE

MODE

Text field displays AUTO or MANUAL mode as selected on the LOAD SETTINGS Screen

EDIT SETTINGS Button

Touch to navigate to EDIT SETTINGS Screen pg 8

OUTPUT

Text field displays BaySTEP as ENABLED or DISABLED selected on the LOAD SETTINGS Screen

DISABLE BaySTEP Button

Touch to disable BaySTEP display

ENABLE BaySTEP Button

Touch to enable BaySTEP display

BaySTEP Message Field

Displays a message in the text field, generated from the status table

Device Indicators

Display on the progress panel as they are enabled in a sequence of events

Progress Bar

Displays on the progress panel to indicate the sequence of events

Arbitrary Indicators

Indicators of when in the sequence of events each device is active

MAIN Screen

Step 1: The **MAIN screen** displays a visual of the BaySTEP progress in the sequence of events.

Step 2: Touch the **MENU** button top left of screen: navigates to the **MAIN MENU** screen.

LOAD SETTINGS

MENU	LOAD SETTINGS	DEFAULT

ALGORITHMS

▶ **STEP 1**
STEP 2
STEP 3
STEP 4
STEP 5

SETTINGS

▶ **Setting 1**

ALGORITHMS

Use the UP or DOWN arrows to select from five STEP algorithms

SETTINGS

Use the UP or DOWN arrows to select from ten STEP settings

MODE OF OPERATION

AUTO   MANUAL

BaySTEP OUTPUT

ENABLE   DISABLE

AUTO/MANUAL Buttons

Touch one to select operating STEP in either AUTO or MANUAL Mode

ENABLE/DISABLE Buttons

Touch one to enable or disable the STEP output

LOAD SETTINGS Button

Touch to load the settings selected

LOAD SETTINGS   CANCEL

CANCEL Button

Touch to cancel the settings selected

LOAD SETTINGS Screen

Step 1: Touch the **MENU** button top left of screen: navigates to the **MAIN MENU** screen.

EDIT SETTINGS

ALGORITHMS

▶ STEP 1
STEP 2
STEP 3
STEP 4
STEP 5

SETTINGS

▶ Setting 1

SETTING 1

Setting 1 (previously selected on the **LOAD SETTINGS Screen**) automatically populates in this text box

NAME: SETTING ^{1}

P^0	P^1	P^2	P^3	P^4
15.000	2.000	20.000	4.000	0.000

P^5	P^6	P^7	P^8	P^9
0.000	0.000	0.000	0.000	0.000

P0-P9 Setting Variables:
First select the Algorithm (1-5) and the Settings (1-10)...

Each Setting (1-10) has ten associated setting variables (P0-P9)...

Touch each Setting Variable button (P0-P9): a pop-up window displays details generated from the status table (shown on next page 9)

SAVE SETTING	SAVE AS SETTING	SHIFT UP	SHIFT DOWN	INSERT SETTING	DELETE SETTING	CLEAR SETTING

EDIT SETTINGS Screen

Use the buttons along the bottom of **EDIT SETTINGS Screen** to Save the setting selected, Save the setting as a different name (than Setting 1 for example), Shift Up/Down the list of Settings (like using the UP/Down arrows), Insert a setting number such as 9 in place of 1, Delete a setting listed above and Clear the setting selected.

Step 1: Touch each setting variable for details.

Step 2: Touch the **MENU** button top left of screen: navigates to the **MAIN MENU** screen.

VARIABLE DETAILS

P0
Window for looking for the Threshold value
- Seconds after the first application
- Approximately equal to the dosing time

P4
Not used

P8
Not used

P1
Move the End Point Time
- A multiplier of the Threshold value

P5
Not used

P9
Not used

P2
Mixing time for the Batch
- In Seconds

P6
Not used

P3
Minimum rate of change for the noise signal

P7
Not used

ALARMS

Alarms

displays alarm details generated from the status table.

MENU	ALARMS	DEFAULT

| Alarm time	Message

ACKNOWLEDGE

ALARMS Screen

Touch the message displayed on the screen above, then touch the **Acknowledge Button** to clear the message from the **ALARMS Screen.**

Step 1: Touch the **MENU** button top left of screen: navigates to the **MAIN MENU** screen.

CONFIGURATION

TREATER INTERFACE

| ETHERNET	HARDWIRED

SHUTDOWN APPLICATION
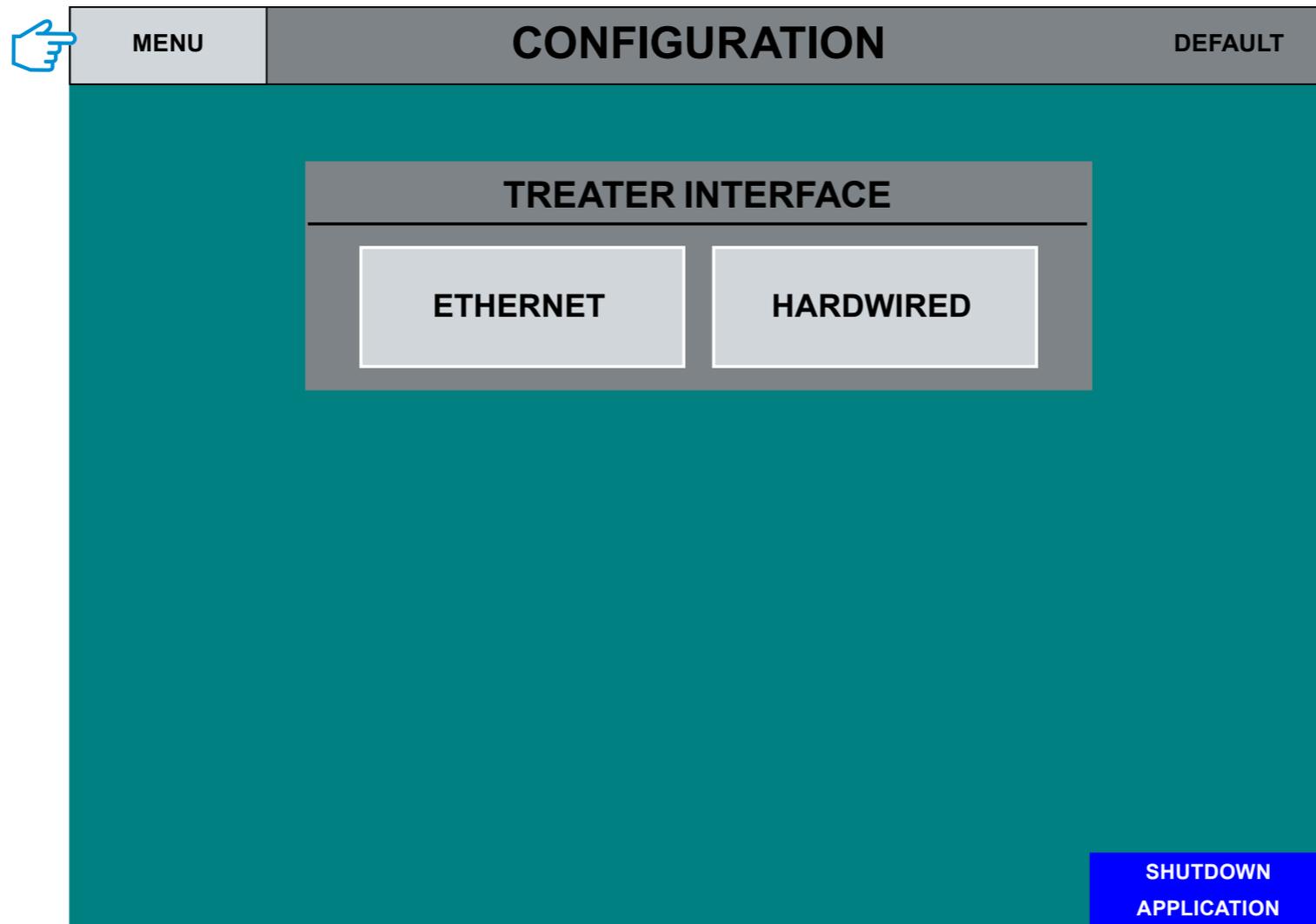
CONFIGURATION Screen

Step 1: Select how the treater machine will interface with the application: either via Ethernet connection or Hardwired into the control panel.

Step 2: Touch the **MENU** button top left of screen: navigates to the **MAIN MENU** screen.

DIAGNOSTICS

MENU	DIAGNOSTICS	DEFAULT
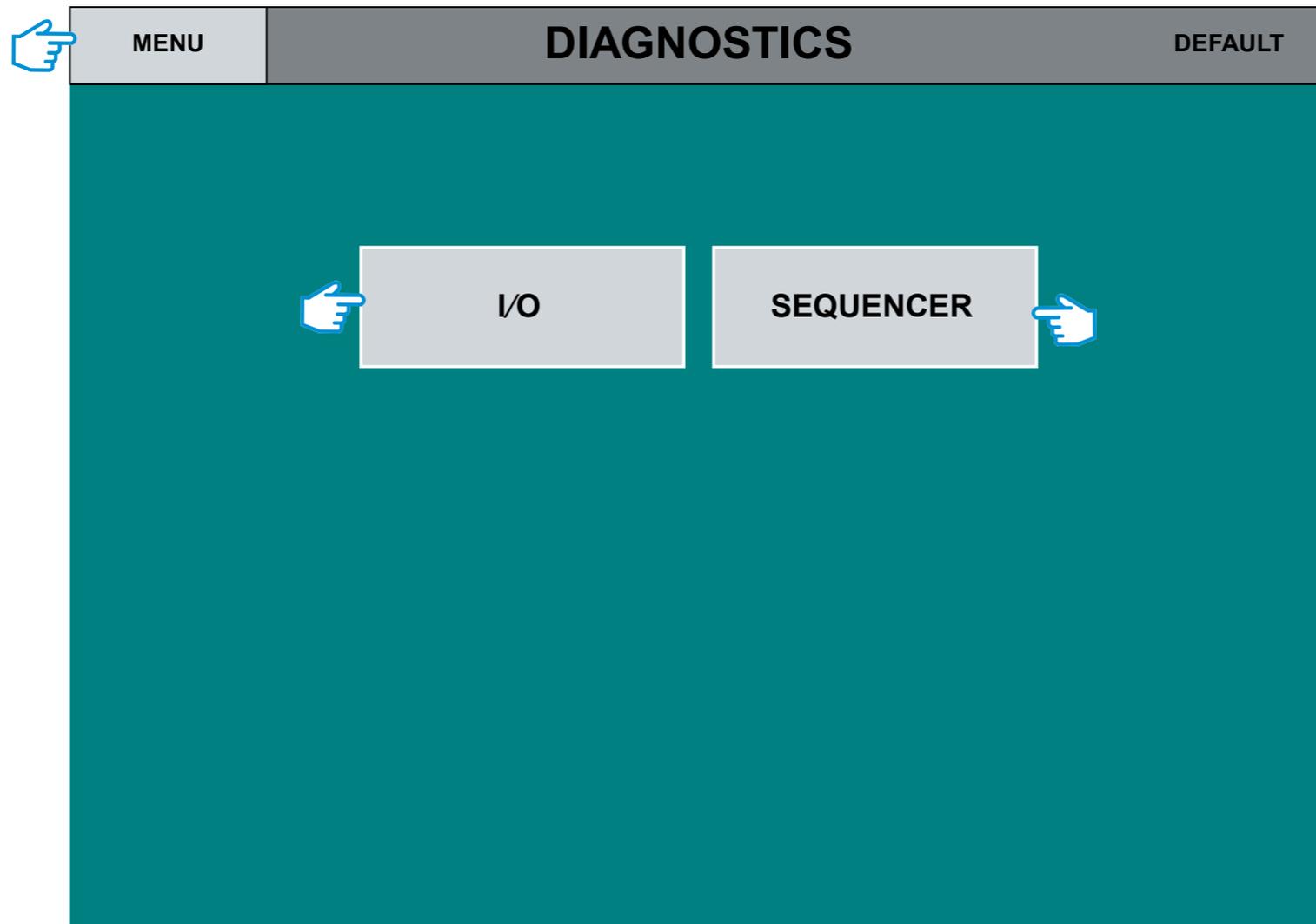
I/O	SEQUENCER

DIAGNOSTICS Screen

Step 1: Touch to select either **I/O** or **SEQUENCER**...

• Touch the **I/O** button: navigates to page 13...

• Touch the **SEQUENCER** button: navigates to page 14...

Step 2: Touch the **MENU** button top left of screen: navigates to the **MAIN MENU** screen.
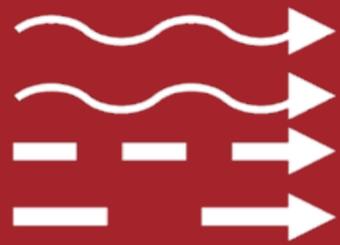
I/O STATUS

MENU | **I/O STATUS** | DEFAULT

ANALOG INPUT

STEP SIGNAL `2`

DIGITAL INPUTS (ETHERNET)

○ BATCH START
○ PUMPS RUNNING
○ BOWL DISCHARGE
○ BATCH CANCELLED
○ TREATER HEARTBEAT

DIGITAL OUTPUTS (ETHERNET)

○ READY TO START
○ END POINT DETECTED
○ BaySTEP HEARTBEAT

I/O Screen

A display screen used for diagnostics and trouble shooting.

Step 1: Touch the **MENU** button top left of screen: navigates to the **MAIN MENU** screen.

MENU	SEQUENCER STATUS	DEFAULT

SEQUENCER STEP NUMBERS

STEP 1   100

STEP 2   100

STEP 3   100

STEP 4   100

STEP 5   100
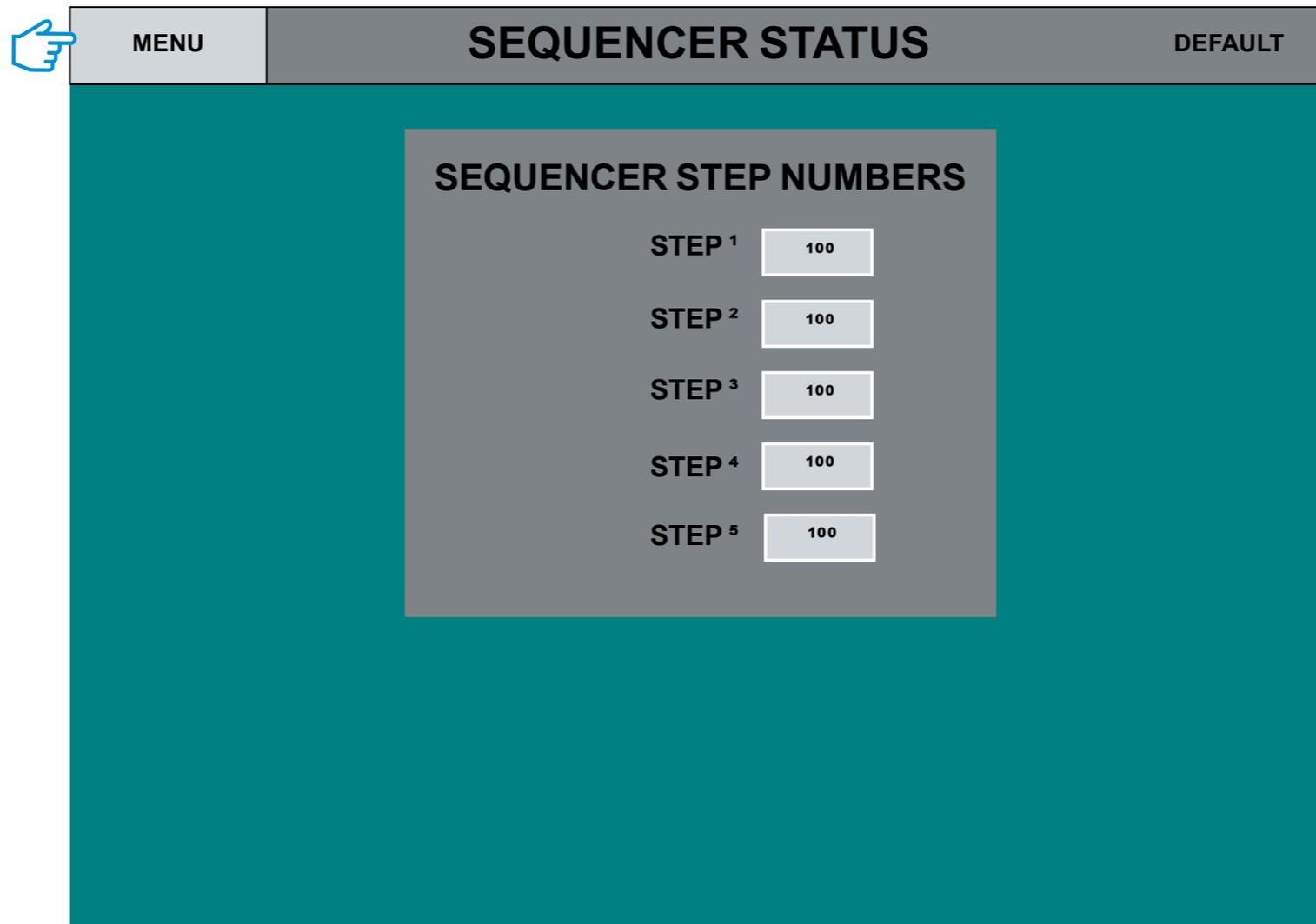
SEQUENCER Screen

A display screen used for diagnostics and trouble shooting.

Step 1: Touch the **MENU** button top left of screen: navigates to the **MAIN MENU** screen.

REPORTS

To transfer files: Drag from one storage location to the other.

PanelView Storage: **USB Storage:**

- 2017_02_03_01_0000.CSV
- 2017_02_03_04_0023.
- CSV 2017_02_03_07_0001.
- CSV 2017_02_03_12_0003.
- CSV 2017_02_03_01_0024.CSV
- 2017_02_03_01_0100.CSV

REPORTS Screen

After selecting a report (or reports), touch the right facing arrow to transfer the files to the USB side. Files may be transferred back to the repository side..

Step 1: Touch the **MENU** button top left of screen: navigates to the **MAIN MENU** screen.

TRENDS
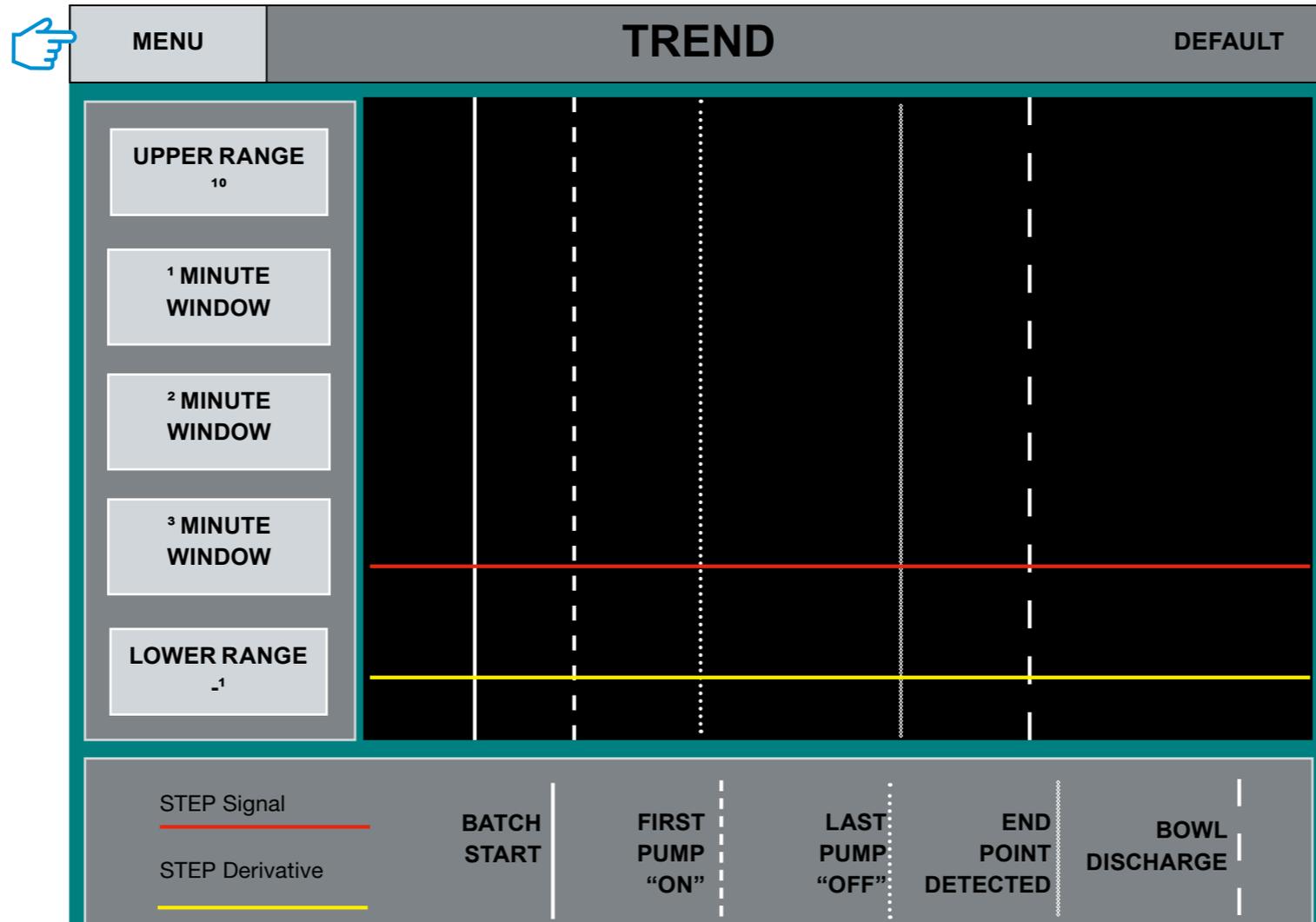
TRENDS Screen

A display screen used for diagnostics and trouble shooting. Buttons on the left hand side are configurable. Touch to change the parameters.

Step 1: Touch the **MENU** button top left of screen: navigates to the **MAIN MENU** screen.
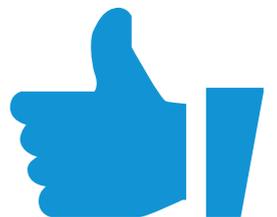
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