

Vantis™ Wall/Rack Controller



Wall/Rack Controller



Remote Operator Pendant (ROP)

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Visit the Motion Control Systems web page at jrclancy.com for more information.

Note: Please read and understand these instructions before proceeding.

Note: If you need additional information, contact Wenger Corporation using the information below.

Important User Information

General

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In no event will Wenger Corporation be liable for technical or editorial omissions made herein, nor for direct, indirect, special, incidental, or consequential damages resulting from the use or defect of these instructions. The manufacturer reserves the right to change this product at any time.

The information in this document is not intended to cover all possible conditions and situations that might occur. The end user must exercise caution and common sense when assembling or installing Wenger Corporation products. If any questions or problems arise, call Wenger Corporation - Syracuse Operations at (800) 836-1885 or +1-315-451-3440 worldwide.

Manufacturer

The Vantis™ Wall/Rack Controller is manufactured by:

Wenger Corporation - Syracuse Operations
7041 Interstate Island Road
Syracuse, NY 13209
(800) 836-1885 • +1 (315) 451-3440
jrclancy.com

Product Use Requirements

- Installation of this equipment must comply with local building codes.
- Equipment must be installed according to manufacturer's installation drawings. Individual component information is listed in the bill of materials of these drawings.
- Motorized hoists must be inspected by qualified personnel every year, or more frequently depending on patterns of use as well as local, state, and federal laws. Do not install in locations that prohibit access to the machinery or prevents removal of any machine covers.
- J.R. Clancy hoists are designed for indoor use only in buildings with temperatures between 50° and 100° F (10° and 38°C).
- Do not expose machines to rain, extreme humidity or condensing moisture
- The recommended working load and duty cycle of each machine is marked on the identification label on the controls enclosure. Do not exceed.
- The hoist machinery must be protected from oil, dust and other contaminants.
- Installation of J.R. Clancy hoists must be coordinated with the location of loft blocks as well as electrical power and control devices. Installation must be designed by a qualified person.
- J.R. Clancy hoists are pre-programmed at the factory with set and channel numbers. These numbers are marked on the machine and marked at the power and control receptacles. Machines must be installed so that the channel and set numbers on the hoist match the channel and set numbers on the receptacle. These are also shown on the installation drawings.
- Proof of inspection is required to activate and maintain the warranty period for this product.

Warranty

Warranty information is available at jrclancy.com.

Important User Information (continued)

NOTICE

In accordance with OSHA Standard 29 CFR 1926.550, ANSI/ESTA Standard E 1.47-2020 (where applicable), and the terms of Wenger Corporation's warranty, a qualified rigging firm must perform yearly inspections and correct any deficiencies discovered. These firms have personnel who are trained to spot present hazards and many "potential" hazards.

A routine maintenance and inspection schedule must be established and followed, with appropriate records maintained. Routine maintenance prolongs the useful life of equipment and keeps it operating at peak efficiency for the easiest and quietest possible operation.

Safety Overview

Anyone entering a building with public access has reason to expect that he or she is safe from harm by the building itself and by the equipment and activities within the building. It is the legal responsibility of the owner and designated manager to ensure that this expectation is met.

It is the responsibility of the owner to hire and train competent people. A competent person is defined as one who can identify existing and predictable hazards in the workplace and who has the authority to take prompt corrective action to eliminate those hazards. It is the further responsibility of the owner and designated manager to provide a safe working environment for all employees, including proper equipment, training on the use of equipment, and written procedures for its use and maintenance. It is also important to keep all unauthorized and/or untrained personnel from the working areas of the stage.

Before operating any stage equipment, operators must be given the necessary training and must then work only under the direction of qualified supervisors.

Operators of the equipment must:

- Learn the feel, sound, and smell of equipment to immediately sense when something is not correct
- Study the capacities and capabilities of each system and its components.
- Thoroughly learn and practice the proper operating procedures.
- Ask questions about the current condition of equipment which may affect proper operation, or which could be affected by its operation before attempting to run the system.

For example, is anything fouling the equipment or in the path of its intended travel?

Any problem noticed during setup or operation of the stage equipment should be corrected immediately.

⚠ WARNING

***Improper use of rigging equipment can result in serious injury.
Do not operate without proper training and authorization.
Do not use rigging equipment for lifting people.***

Safety Precautions

Throughout this document you may find cautions and warnings which are defined as follows:

- **WARNING:** Failure to follow the instruction could result in serious injury or damage to property.
- **CAUTION:** Failure to follow the instruction could result in minor injury or damage to property.

Read all of these safety instructions before assembly or use.

CAUTION

Make sure anyone assembling, installing or using this product has read and understands these instructions.

CAUTION

Failure to comply with Warnings and Cautions in this document or on the equipment can result in damage to property or serious injury.

WARNING

A competent person must be present and available whenever any operation or maintenance procedures are performed on any system.

A "competent person" is defined as one who is capable of identifying existing and predictable hazards in the surroundings or working conditions, which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

WARNING

Improper installation or maintenance can cause the load to fall.

- *Hoisting machines impose significant loads on the structure to which they are attached. The installer is responsible for verifying that an engineer or other qualified person has determined that this structure can withstand the loads.*
- *Equipment must be installed by qualified personnel.*
- *Do not substitute or modify components provided with this equipment.*
- *Do not exceed the total capacity of the hoist. It varies by model and is marked plainly on the identification label.*
- *Do not exceed working load limit (WLL) on any one wire rope.*
- *Do not lift or support people or animals with hoists.*

WARNING

Moving parts can cut or crush.

- *Keep body parts away from machinery in motion.*
- *Remove power source before working on machinery.*
- *Machines with moving parts within 106" (2692 mm) vertically from the floor and less than 60" (1524 mm) horizontally from a safety barrier must be fitted with machine covers.*

DANGER

Electrocution Hazard.

- *Remove power source before opening electrical panels.*
- *Electrical equipment must be installed by qualified electricians.*
- *Any changes to the system must be reviewed by a factory authorized system representative.*

Introduction

The line of Vantis automated rigging controllers and consoles offer a higher level of safety, control, precision, and intuitive operation to your theatre. Vantis puts that capability right where you need it.

Variable speed control, multiple targets per machine, unlimited presets, and load sensing capability are some of the features available and accessible on the touchscreen. The simple, powerful, intuitive interface makes it easy to control your stage machinery. You can easily program new presets and then tailor permissions on each for a new level of security that protects your equipment and users.

Position Vantis just off stage when not in use for convenience and security.

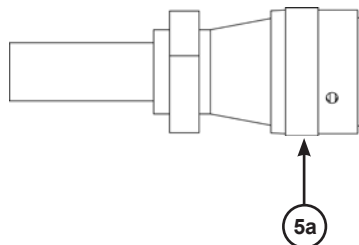
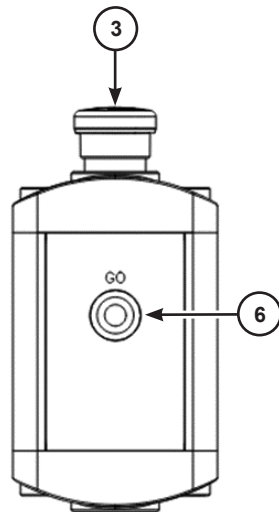
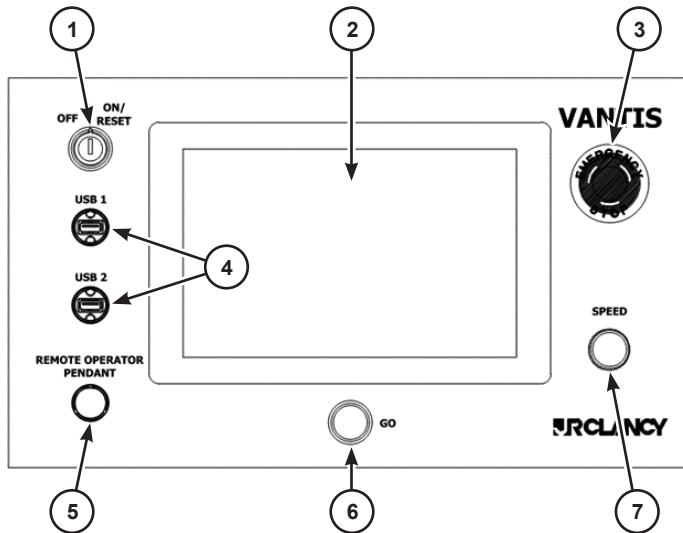
System Overview

The system includes a touch-screen, fixed-speed and/ or variable-speed motorized hoists, travelers, and other motorized equipment. In addition to moving equipment, the system permits the operator to record and recall targeted positions. In variable-speed applications, the operator may also control the unit's speed.

The motor for each unit is connected to electronic motor controls. These connections may include wiring to the motor, motor brake, limit switches, and encoder and load cells. The electronic motor controls for each machine may be housed in an individual starter cabinet or grouped together in larger cabinets called motor control cabinets (MCCs). For more information on your unique motorized system refer to the project specific drawings for your space.

The electronic motor controls are connected through network wiring to an Automated Rigging Control Cabinet (ARCC) which houses a programmable logic controller (PLC). The PLC is a dedicated-purpose industrial computer. The PLC gathers data from the electronic motor controls and issues commands to them. The ARCC also contains power supply for the system power and Emergency Stop (E-Stop) system. In wall-mount systems, the system control panel is located on the face of the logic cabinet. Control receptacles may be located on the ARCC or at a remote location.

Hardware Identification



1. Key Switch

- Turning the key clockwise will turn on the central cabinet as well as the Vantis Wall Controller
- Turning the key clockwise, after the system is on, sends a fault reset request to the E-Stop System and all machines
- Turning the key counterclockwise shuts down the system.
- The key switch is spring loaded and will return to center when released.

2. Screen

- Display touch screen of the unit.
- Used to select machines, direction, targets, and options.
- Press and hold on certain buttons for additional capabilities.

3. Emergency Stop (E-Stop) Operator

- When pressed, engages the E-Stop System which stops all current machine motion and disables further initiation of motion. When engaged the E-Stop Operator will illuminate red and flash on and off consistently. When any E-Stop Operator is engaged in the system all other E-Stop Operators will illuminate red and remain illuminated without flashing. If there is a different system-wide alert the E-Stop Operators will flash an alert code referenced later in this document.
- To release, turn as indicated by the arrows on the face of the operator and allow it to pop out.

4. USB Ports

- Easily accessible for the addition of a mouse or keyboard
- USB drives can be utilized to save log files for troubleshooting.

5. Remote Operator Pendant (ROP) Port

- Mates with the VANTIS ROP plug (5a)

6. "Go" Button / Hold To Run

- Used to send the Go command. Requires the user to hold the button down to continue motion (i.e. Hold To Run).
 - o Green – Indicates system is in a "ready" state and the E-Stop System is NOT engaged.
 - o Red – Indicates the E-Stop System is engaged.
 - o Yellow – Indicates a main system alert. This will flash the appropriate system-wide alert code referenced later in this document.

7. Wheel

- Used to adjust speed of a variable speed machine as well as
- In the setup menu the wheel can be used to navigate/select items on the touch screen. Pressing the wheel down allows selection of an item.

Additional System Components

Automated Rigging Control Cabinet (ARCC)

The system Automated Rigging Control Cabinet (ARCC) contains the Emergency Stop System and system PLC. The PLC is an industrial-grade dedicated-purpose computer whose task is to gather and store system critical data and service requests from the console touchscreen and other control devices. The PLC communicates with the machine controllers via PROFINET, a high-speed data communication system developed to provide reliable and accurate control of factory automation systems.

The ARCC includes the system low voltage power supply, associated fusing and switching.
The Control Port is wired back to the ARCC.

Emergency Stop (E-Stop) System

The Emergency Stop (E-Stop) system is operated through latching mushroom-head E-Stop Operators in the control system which are located, as specified, throughout the venue. The E-Stop buttons are part of an overall safety system; pushing any of the buttons will engage the E-Stop System.

Pressing an E-Stop Operator engages the E-Stop System which stops all current motion and disables further initiation of motion. In all fixed speed machines, motor power is removed in each starter cabinet or MCC and the brakes are immediately applied. Variable-speed machines will initiate a controlled rapid deceleration, apply brakes, and are then placed in a safe state using their integral safety system. Pressing the E-Stop Operator will also signal the PLC that an E-Stop condition exists. The E-Stop Operator that is pressed will flash, while the rest of the E-Stop Operators will illuminate continuously. The E-Stop Operators latch when pressed. To release, turn as indicated by the arrows on the face of the operator and allow it to pop out.

Motor Starters

Each machine includes a starter which contains circuit protection and electronic motor control devices. In variable-speed units, each starter includes a variable frequency drive. Each starter takes in data from an encoder, limits and load cell, provides motor power and brake release signals, and communicates with the PLC. The variable frequency drives incorporate motor protection functions, including overload sensing, and provide fault status information. Fixed-speed starters include an additional PLC and a reversing contactor/starter with circuit and motor overload protection.

Limit Switches

End-of travel limits

Each machine is equipped with end-of-travel limit switches. End-of-travel limits are classified by their function, either as normal limits or overtravel limits. The normal limits stop motion in one direction but permit motion in the opposite direction. Each normal limit is paired with an overtravel limit; striking an overtravel limit will cut control power to the starter, preventing all motion of the machine.

Striking an overtravel limit is not a normal situation!

A careful inspection of the machine must be conducted to determine the reason an overtravel limit switch was activated. A specific maintenance procedure is required to clear this condition. In a Vantis System, a maintenance pendant is also used to clear an overtravel condition. See the Vantis Maintenance Pendant Controller Operating Instructions.

Both normal limits and overtravel limits are tied into the machine control in all modes of operation, whether operating from the main control system or from any maintenance controls on the motor control or starter cabinet.

Limit switch types

Limit switch functions can be accomplished with either rotary or direct-struck limit switches. Rotary limit switches are mechanically coupled to the drive mechanism of a machine. Each rotary limit switch has four elements (up overtravel, up, down, and down overtravel) that rotate in unison, utilizing a cam to engage a switch. Direct-struck limit switches are struck by a component of the driven mechanism (e.g., a moving drum flange, a striker mounted to the counterweight arbor, cable clew or lift guide).

Software Limits

Software limits in Vantis systems provide an additional layer of protection by preventing machines from reaching mechanical limit switches. They serve as a third level of safety to help avoid collisions or contact with obstructions during operation. These are typically put in place at commissioning by an authorized controls technician.

System Operation

Turning the Vantis System On

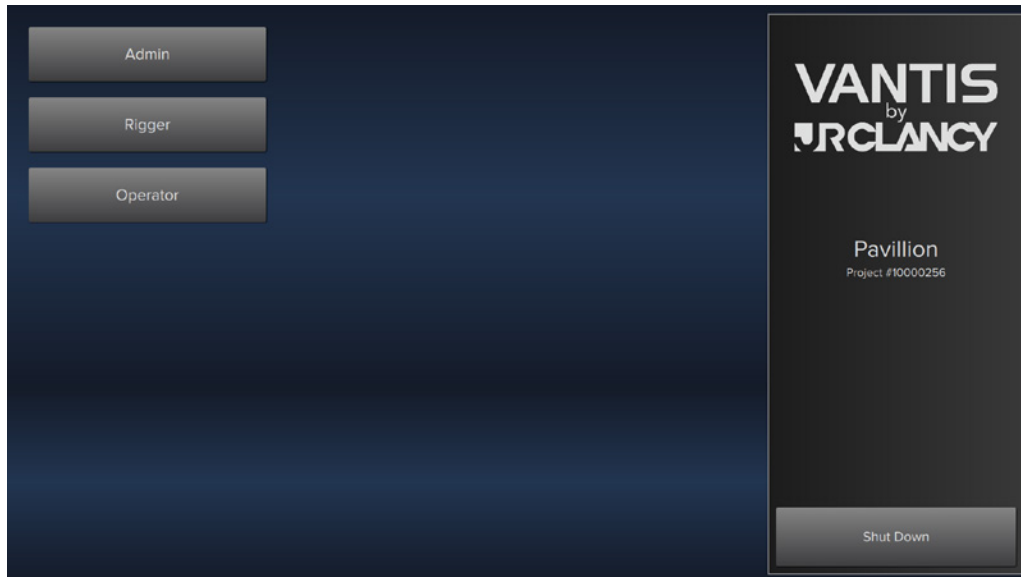
The Vantis System is turned on and off by a spring-loaded key switch on the face of the Wall/Rack Controller. Turning the key clockwise and releasing will turn on the ARCC as well as the Vantis Wall/Rack Controller.

Turning the key clockwise and releasing after the system is on, sends a fault reset request to the E-Stop System and all machines.

For instructions on logging out and shutting down the system, see "Logging out and Shutting Down the System" on page 24.

Signing In

When the system is fully loaded the sign on screen will appear with log in options for Admin, Rigger, Operator and any user made profiles.



Sign-In Screen

Here the operator can select their User Level and enter their five (5) digit pin. The User Levels are as follows.

Operator – The Operator level is the most limited in access and can only run machines to Target or in Jog Mode.

Rigger – The Rigger level has some advanced access over the Operator. In addition to the same access as the User level, the Rigger can also record Targets, Presets, Groups, perform the Load Learn and Travel Adjust functions.

Admin – The Admin is the highest level of end-user access. The Admin can perform all functions of the Rigger as well as change pins, enable or disable machines, and rename axes. The Admin can also create additional User Levels tailored to their space's needs.

Wenger Corporation and J.R. Clancy recommends the owner/operator create user specific pins for their system. This prevents other operators with similar systems to gain access to user profiles they should avoid.

Setting up user specific pins is referenced on page 30. Write new user specific pins down in a secure place where they will not be lost. The final page of these instructions can be utilized for this purpose.

System Operation (continued)

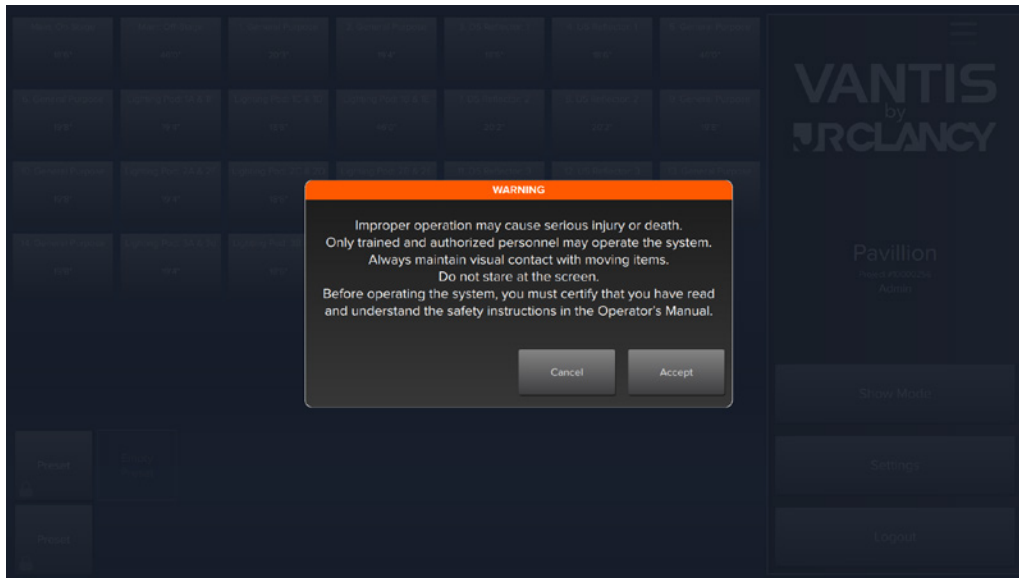
Signing In (continued)

Operator Responsibility Page

After a successful log in, a warning screen will appear informing the user of the dangers of using the equipment as well as their responsibility to be trained in the use of the system before operating.

The user then has two options:

- "Accept" – proceeds to the main screen.
- "Cancel" – returns to the log-in screen.



System Operation (continued)

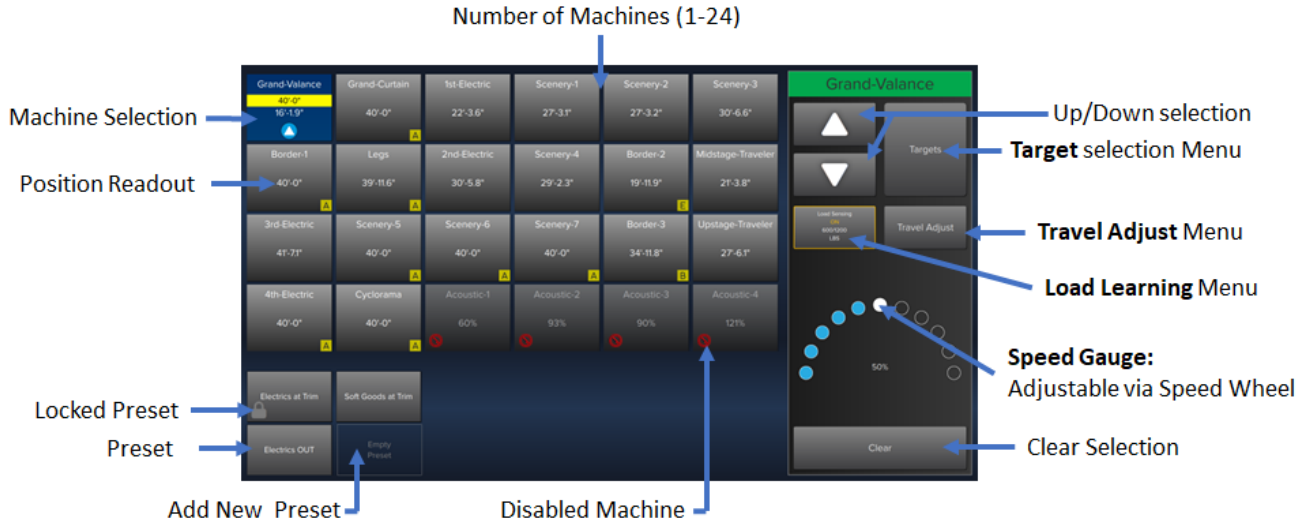
Main Screen

The Main Screen is the first page displayed after logging in to the Vantis Control System.

On the right is a display that allows the user to enter Show Mode, enter Settings or logout when a machine is not selected and the ability to select a direction, access Targets, Load Learning/Sensing and Travel Adjust when a machine is selected.

For variable speed machines, a speed gauge will appear on the lower right portion of the screen and is adjustable by engaging the wheel.

The bottom of the Main Screen has space for Presets to appear once they have been created.



System Operation (continued)

Main Screen (continued)

Machine Selection

When a machine is selected on the touch screen it will turn Blue to signify that it has been selected. A machine can be deselected by touching it again or touching the Clear button on the bottom right.

When a single machine is selected, its name will be displayed on the top right of the screen. If the selected machine is a hoist, the direction tiles will point in the up/down direction. If the machine is a traveler, the direction tiles will change from up/down to open/close.

Multiple machines of the same machine type may be selected by pressing multiple machine tiles in sequence. See "Machine Types (Categories)" on page 19 for more information.

Movement Selection

When a machine and a target are selected, an indicator will appear at the bottom center of the machine's tile. The shape and color of the icon in the movement indicator reflects the motion that machine will perform.

Up/Open will display as Blue and Down/Close will display as Green. The target position will also display in a Yellow banner on the machine tile. Below the Yellow banner will be the machine's current position.

Note: For banners this is typically shown as a percentage vs an actual position measurement.



Once a machine and target/direction are selected, the user need only press and hold the Go button. Once the Go button is pressed, the machine will move towards the target highlighted in Yellow and will not stop until it reaches the target position, unless the Go button is released.

If the machine has variable speed control, the speed will adjust according to how far the wheel is spun, either clockwise to increase speed or counter-clockwise to decrease speed. Note that the dots will change color every 5%, with white indicating 5% and Blue indicating 10%. Additionally, the wheel can override the speed of a machine in a targeted move when engaged after the Go button is pressed and held.

NOTICE

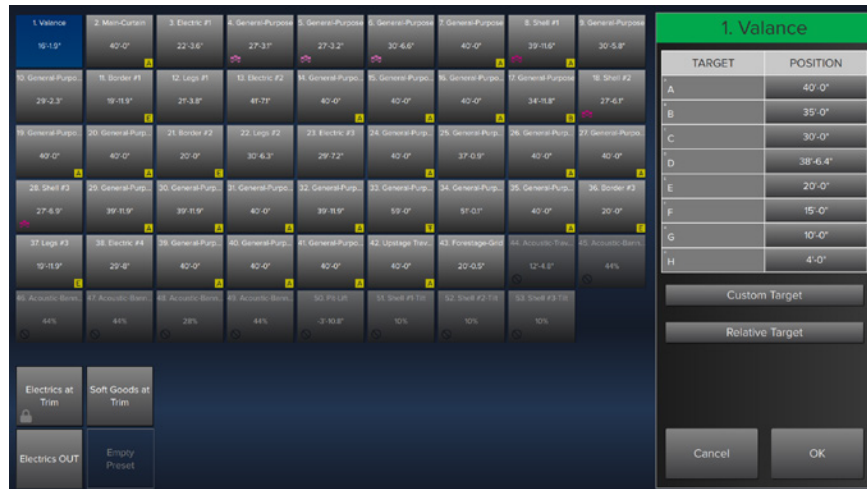
Systems equipped with a Vantis Remote Operator Pendant (ROP) offer the added benefit of allowing the operator to select machines via the touchscreen and move to a better vantage point before pressing the Go button on the ROP. The Go button must be held throughout the duration of the move in order to continue motion.

System Operation (continued)

Main Screen (continued)

Targets

In addition to moving to the Soft Upper and Soft Lower Limits, a machine can have up to eight (8) recorded targets labeled A-H. Users can select these targets by pressing the letters on the right side of the main screen after choosing Targets. Once a target is selected, and the Ok button is pressed, users can activate the HTR, press the Go button, and the machines will move to their designated positions.



Target Indicator

Upon reaching the target, the Target Indicator will be displayed on the lower right-hand side of the machine tile within a Yellow square. If a machine concludes its movement at a factory soft upper or lower limit, the Target Indicator will exhibit a directional arrow instead of a letter. Pressing and holding a letter allows users to alter the Target name on the Target menu screen, although the Target Indicator on the bottom right will retain the original Target letter.

Recording a Target

To record a Target, hold and select the position data next to the intended target letter in the Target menu, then manually type in the target data or update with a machine's current position, factory soft upper or lower limits. Users can also utilize the custom target option for one time moves and relative target option to move a machine to a location relative to the machines current position (ie 1' up/down or 5% in/out).

Note: if a user types in a target that is outside the current soft limits, the actual value entered will revert to the nearest soft limit.

Custom Target

To create a one time use Target, select Custom Target.

Relative Target

To create a one time use Target that moves the machine a certain distance from its current location (ex 6" higher or 2' lower), select Relative Target.

Note: You can go directly to Custom/Relative Target selection after selecting a machine then pressing and holding the Target button.

Multi-Target Move

To move multiple machines to targets, select the machines you would like to move and select Target. The Multi Target pop up will then appear, showing Targets A-H for each machine. User can choose which machine goes to which prerecorded Targets or type in a custom Target where needed. Users can also change pre-recorded Targets in the Multi-Target window by pressing and holding the target value. Remove machines by pressing their names in the left hand column.



System Operation (continued)

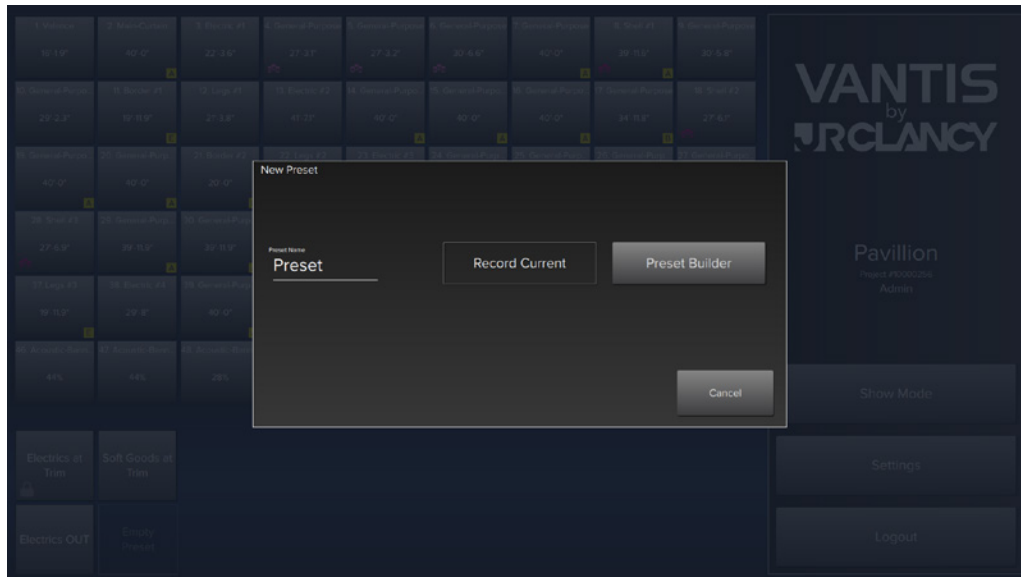
Main Screen (continued)

Presets

Presets allow a user to do a prerecorded Multi Target move with the press of single button.

Recording a Preset

To record a Preset, choose machines and then select the Empty Preset tile located on the bottom of the screen. A prompt will appear, requesting the Preset's name and whether the user wants to use the machines' current positions or enter the Preset Builder. If the selected machines are at their intended targets, the user only needs to choose "Record Current".



Preset Builder

If a user wishes to add or adjust machines within a current preset, they can enter the Preset Builder.

This page will resemble the Multi Target pop-up displayed under Targets. From this interface, the user simply needs to add machines by selecting from their prerecorded targets, and/or manually inputting custom targets. Remove machines by selecting them in the left hand column.



Preset Builder will default to showing only the machines that are currently in the Preset. Toggled "View All" to access all available machines.

System Operation (continued)

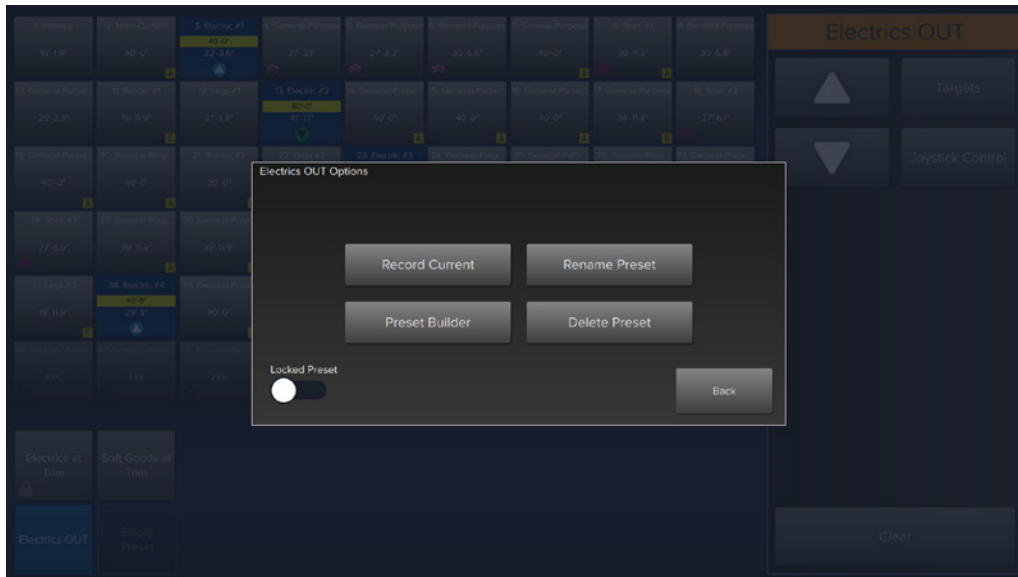
Main Screen (continued)

Presets (continued)

Recording a Preset (continued)

Preset Options

To remove, rename, or modify a current preset, press and hold the respective preset to display Preset Options.



Preset Navigation

When the number of preset tiles expands to fill the entire bottom of the screen, it will begin to conceal presets before and after the current selection. To navigate existing previews for viewing, editing, or executing, users can simply swipe left or right to locate the desired preset.

Locked Presets

It's important to be aware that certain presets may be locked during commissioning, indicated by a lock icon on the bottom left of their tile. These locked presets cannot be unlocked for tuning or safety reasons and are typically set by the Theatrical or Acoustic Consultant. If there is a need to unlock a preset for any reason, users should contact the J.R. Clancy Controls Department.

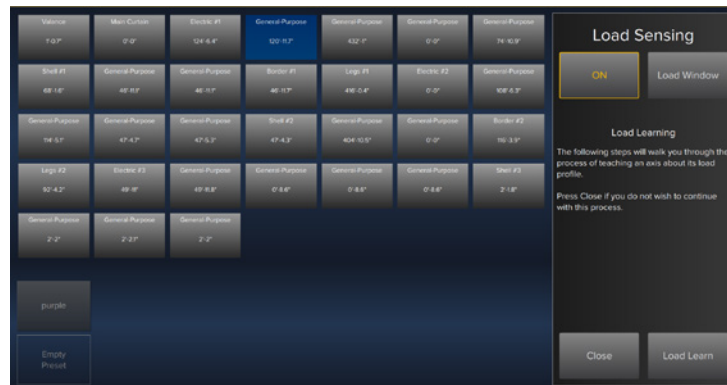


System Operation (continued)

Main Screen (continued)

Load Learning

Load Learning is a programmable function that allows the operator to utilize the load sensor on a machine to record the maximum and minimum load that it experiences throughout travel during its learning period. The Load Learning function can be accessed by the Rigger and Admin levels and can be turned off by Admin level or above.



Load Learning is accessible by selecting a Machine then selecting Load Sensing from the menu on the right of the screen. Once selected, the controller will take the user through the Load Learning process, prompting the selected machine to go through its entire travel so that it can create a load window for the weight currently on the machine.

Note: Only machines with load sensing can utilize this function.

Load Learning requires the machine to be under load; it cannot be performed while unloaded.

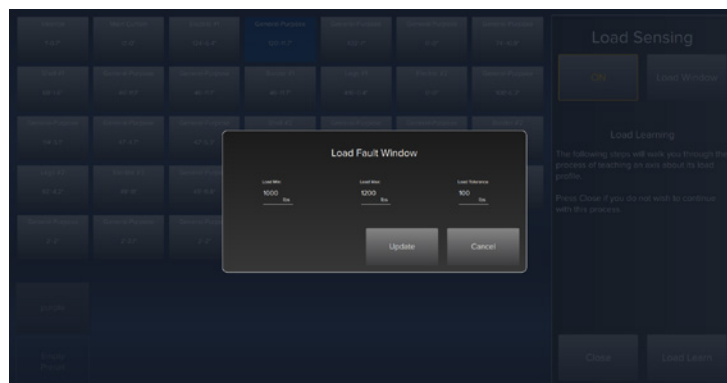
If the load window is no longer needed or requires adjustment, navigate to the Load Sensing menu on the right side of the screen and set Load Sensing to Off. Adjust the weight on the machine as needed, then return to the Load Sensing menu and turn Load Sensing back On.

Complete the procedure to learn a new load window, which will overwrite the previous one.

To manually adjust the load window, select the Load Window button in the top-right corner of the screen. From there, you can enter the maximum and minimum load values the system can hoist before triggering a load fault. You may also set a load tolerance, which allows the system to operate within a specified range outside of the load window. This helps minimize nuisance fault trips.

Note: Running a Load Learn will erase any manually configured load window settings.

If you run a Load Learn, you'll need to re-enter any adjustments.



NOTICE

Load Learning should never be used in place of safe operating practices. Load windows are calculated to reduce the risk of equipment damage by tightening capacity thresholds, but they are not designed as protection against injury.

System Operation (continued)

Main Screen (continued)

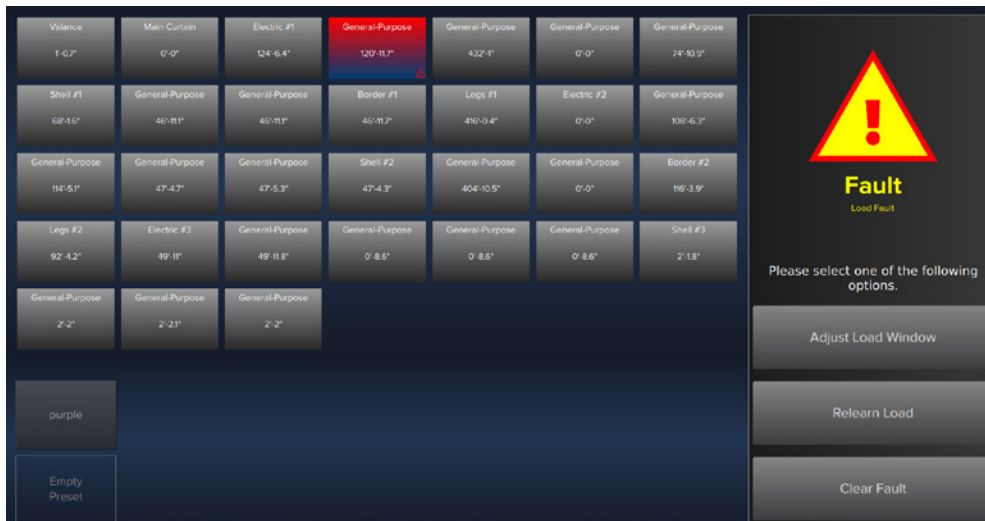
Load and Other Faults

In the event the machine falls out of its load window either by landing on the stage or running into an obstruction, the machine will go into a Load Fault. During a Load Fault, the machine's tile will turn red and show the "⚠" symbol in the bottom right corner.



Navigating a Load Fault

To reset a load fault, select the faulted machine, and the controller will guide the user through its removal. Initially, the user will be prompted to eliminate the condition that caused the fault. Subsequently, the fault condition on the machine will be removed. In cases where the user didn't witness the cause of the fault and is unable to rectify it, they have the option to either increase the load window and/or go through the load learning process again.



Resettings Faults

It's important to note that the "⚠" icon will appear on a machine regardless of the fault. To identify the current fault, users simply need to select the machine. If the fault is resettable, the user can follow the on-screen prompts, use the key switch at the port or desk, or utilize the mobile's reset button to reset the fault.

If a fault persists after a reset or cannot be reset, users must contact the J.R. Clancy Service Department, providing the fault name or number, and the J.R. Clancy Controls Team will assist in assessing the issue.

System Operation (continued)

Main Screen (continued)

Travel Adjust

Travel adjust is a feature that enables a user to implement a temporary soft limit on a machine. This proves particularly useful for machines lifting scenery, preventing collisions with the stage floor or potential snagging on elements above.

To add a Travel Adjust, choose a machine and select Travel Adjust from the menu on the right-hand side of the screen. Enter the travel adjustment either by utilizing the current position of the machine or manually entering a position. Activate the travel adjust in the intended direction, and it will remain active until turned off.



It is important to note, after adding a Travel Adjust, some prerecorded Targets may appear in red, indicating that they are no longer achievable with the current Travel Adjust in place.

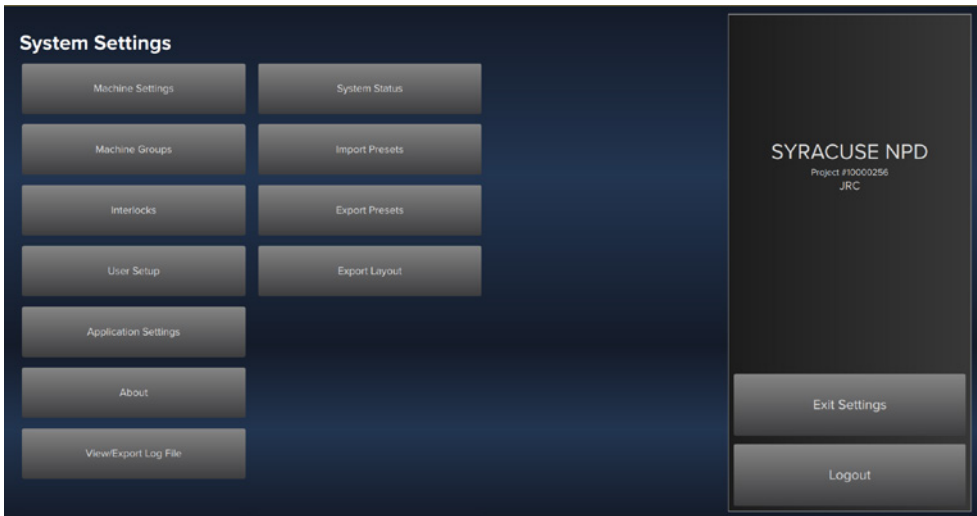
Likewise, machines in a Preset or Cue will be unable to reach targets beyond the travel adjustment until the travel adjustment is disabled.

Target Indicators, typically displaying arrows for soft limits, will now indicate when a machine is positioned on a new Travel Adjusted soft limit.

System Operation (continued)

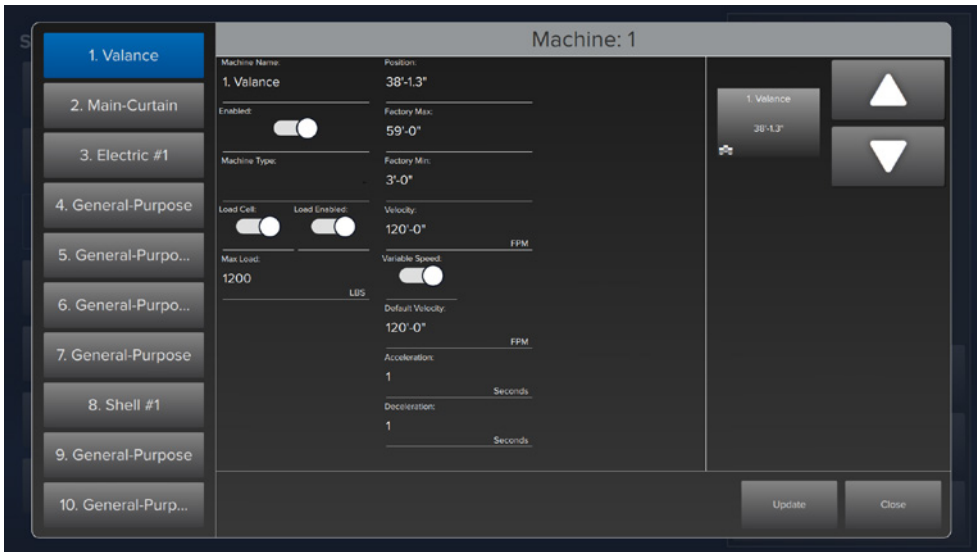
Settings

Upon entering settings, the user has access to several options:



Machine Settings

Machine settings provide users with the capability to name machines, enable/disable machines, set the machine type, and enable/disable the load cell if applicable.



Machine Name

While it's recommended to set machine names before commissioning, an Admin user retains the flexibility to modify names to align with show-specific line set schedules as needed.

Enable/Disable Machine

If a machine becomes damaged or unusable, the user has the option to disable the machine until it can be serviced. Disabled machines will appear in Gray with a symbol on the bottom left corner of their tile, and they will not be selectable until re-enabled. As a reminder, users can also enable and disable machines in Show Mode.

System Operation (continued)

Settings (continued)

Machine Settings (continued)

Machine Types (Categories)

Machine types or categories serve as a method to classify and restrict certain machines to operate together. For example, all overhead hoists can be categorized under "hoist," while acoustic banners can fall under "banner." When a machine categorized as "hoist" is selected to move from the Main Screen, a machine categorized as "banner" becomes unselectable, preventing it from moving. Only machines with a shared type can move simultaneously, allowing the user to focus solely on those specified machines. This proves helpful, especially when "hoists" are positioned over the stage, and "banners" are in the front of the house. Machine categories are project-specific and should be discussed prior to commissioning, as they are not user-editable options.

Position

Position should be confirmed and entered by the installer once all elements, such as a curtain or batten, have been attached to a machine and the encoder has been calibrated. If the position of a machine is inaccurate, contact the J.R. Clancy Service Department for assistance.

Max Load

Max load should be established before commissioning and should be based on the limits of use for each machine. It is not a user-editable option.

Acceleration/Deceleration

Standard acceleration and deceleration should be configured before commissioning and should be consistent among all variable speed machines within the same machine style. It is not a user-editable option.

Max/Default Velocity

Max velocity should be established before commissioning and should be based on the limits of use for each machine. Default velocity should be set at 50% of max velocity and remain consistent among all variable speed machines within the same machine category. It is not a user-editable option.

Factory Max/Min

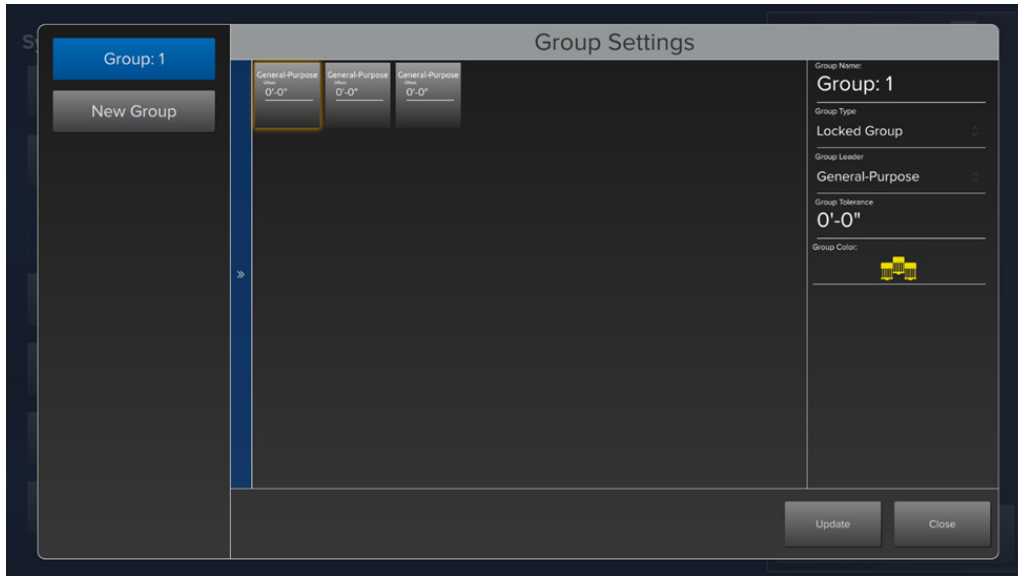
The Factory Soft Maximum and Soft Minimum limit values are determined by the installer based on the limits of use for the space. Typical factory soft limits are set at 3 inches from the nearest hard mechanical limit. This is not a user-editable option.

System Operation (continued)

Settings (continued)

Machine Groups

Groups allow users to either positionally lock multiple machines together or programmatically link them to halt movement in the event of a fault.



Once a selection of machines has been grouped, the user can assign a unique name and color to the group. Users then have two types of groups to choose from:

Fixed Group

A fixed group allows a predetermined number of machines to travel and fault together within a specified tolerance. In other words, when one machine in the group is selected, the entire group of machines is selected and moves together. When this group type is selected, a machine needs to be designated as the leader. Each other machine in the group will then base their movement on that machine and will trigger a Group Tolerance Fault should they fall behind or move ahead of the designated leader. The tolerance, or how far a machine can stray from the leader, can be adjusted from the menu on the right.

It's important to note that grouping machines with different speeds in a Fixed Group is not advisable, as the difference in speed will cause the machines to consistently go into a fault by consistently pushing beyond the group's tolerance. As such, this group type is best suited for fixed speed applications.

Fault Group

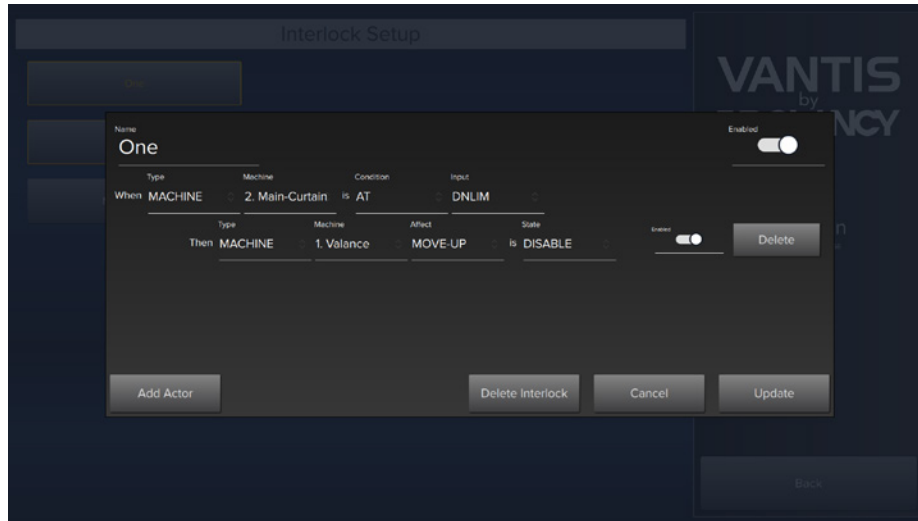
A fault group enables machines to move independently within a group of machines. However, if one machine within the group experiences any type of fault, all the machines in the group will also fault. This setup is useful for applications such as chain motors that may not share the same speed or position but are collectively lifting a single load.

System Operation (continued)

Settings (continued)

Interlocks

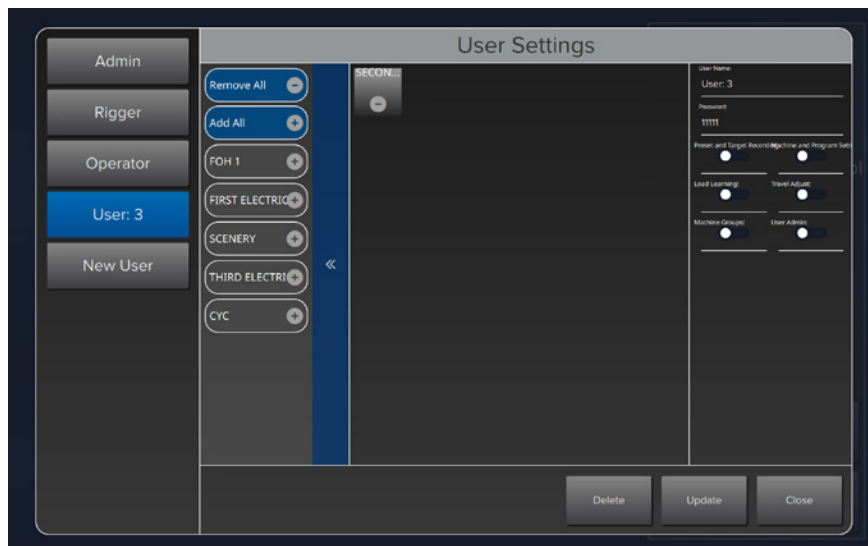
INTERLOCKS are a series of if/then statements that can be configured to ensure additional safe operation and prevent collisions within a specified space. For example, "When Machine "2. Main-Curtain" is AT DNLIM (down limit), Then Machine "1. Valance" MOVE-UP (Upward Movement) is Disabled".



Interlocks serve as a valuable tool for consultants to establish rules of engagement for a system and are generally configured during commissioning. Users do not have access to creating or adjusting interlocks.

User Setup

In USER SETUP, an admin user can change passwords to the standard logins as well as add additional unique users logins and permissions. For users without access to User Setup, they can still change custom names and passwords.



To change a password, choose either a standard or New User, select the current password displayed on the menu on the right of the screen. Enter the new password and then select "update" or "close" to exit.

To create a New User, select "New User" below the standard users on the left side of the screen.

Here, modify the name, password, and permissions as needed. Users can specify the machines the custom user can access and grant or deny various permissions, such as Preset and Target recording, access to Machine and Program Settings, Load Learning, Travel Adjust, Machine Groups, Show Mode and/or Edits, or even provide temporary administrative access.

System Operation (continued)

Settings (continued)

Application Settings

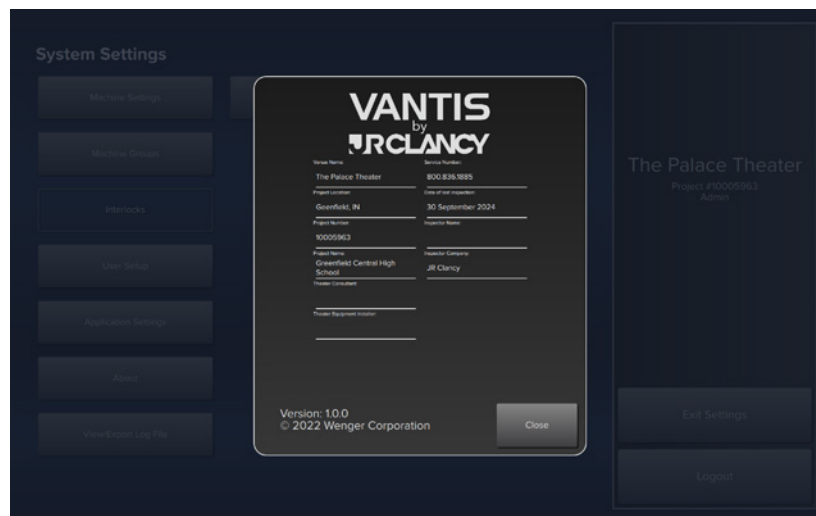
In Application Settings, admin users have the capability to alter the units of measurement for position or load on the main screen and adjust screen brightness. The admin can also choose to display a warning message instead of the Vantis logo on the main screen.



Console ID and the Max number of machines are configured during commissioning and are not available at the user level for adjustment.

About

The About section provides the user with information about their specific system, including the venue's current name, project location, project number and name at Wenger Corporation, theater consultant (if applicable), equipment installer, Wenger service number, date of the last inspection, inspector name, and company.



Admin users can modify their venue name as needed, but they do not have access to changing other information on the About page. Inspectors receive special admin login passwords enabling them to update the inspection date and add their information to the About page. In accordance with ANSI E1.47 Standards, Recommended Guidelines for Entertainment Rigging System Inspections, users are required to have their motorized system inspected annually.

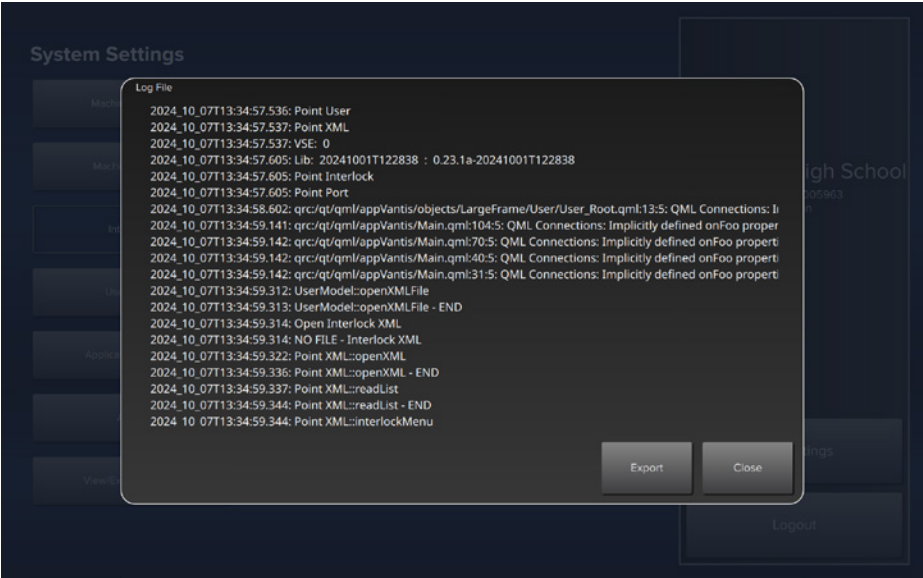
It's essential to note that as the date approaches within a month of the last inspection, the system will begin to remind the user to schedule an inspection at each system startup.

System Operation (continued)

Settings (continued)

View/Export Log

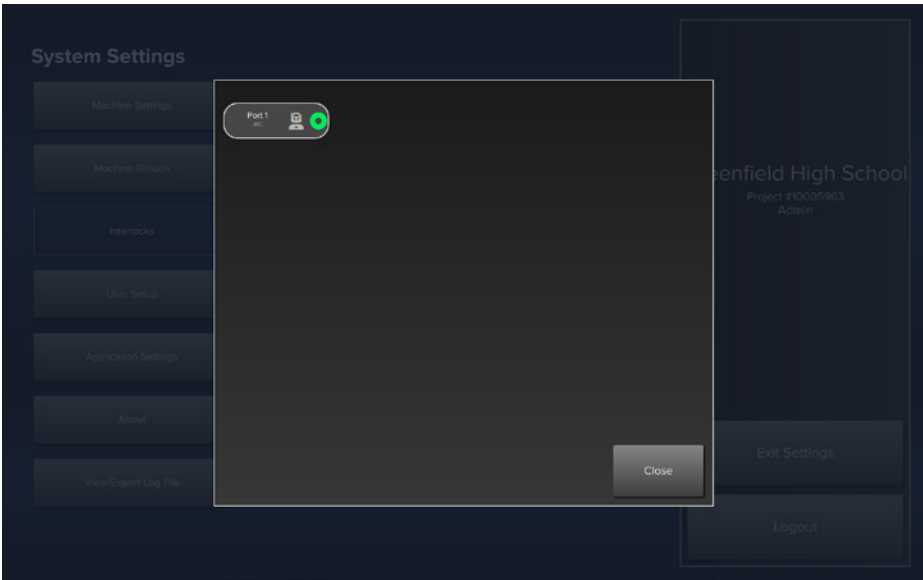
If users encounter any issues, they should contact the J.R. Clancy Controls department for assistance. To aid in troubleshooting, a controls engineer may request the user to insert a USB device, export the log file, and then email it for further analysis.



System Status

If a system features Station Identification, active ports and E-Stops can be viewed under System Status in Settings.

Pressed E-Stops will appear as red , while E-Stops that are not pressed will appear as Green .



An administrator can rename any port or E-Stop by pressing and holding its corresponding tile.

NOTICE

Short names of the console-driven port and any active E-Stops will also be displayed on the right-hand side of the screen during use.

System Operation (continued)

Logging Out and Shutting Down the System

It is important that users Logout and press the E-Stop when stepping away from the console. To log out, select the Logout tile at the bottom right of the screen. The Status Screen will prompt, "Are you sure you want to log out?" with options to cancel or select Yes. Selecting Yes will return the user to the Sign In screen, while canceling will return them to the last selected screen.

To power off the system, select the Shut Down tile at the bottom right of the Log In screen or turn the key at the Wall/Rack or control port to the off position and release. This will initiate a controlled shutdown, which takes about 10 seconds. During shutdown, the E-Stop Operators in the system will display an alert (5 quick flashes followed by a pause).

Glossary

Machine: A mechanically, electrically, or electronically operated device for performing a task.

Motor: A rotating machine that transforms electrical energy into mechanical energy.

Hoist: A machine used to raise or lower a suspended load in a vertical direction.

Traveler: A machine used to pull or push a suspended load in a horizontal direction.

Encoder: A sensor that converts physical motion to an electrical signal that can be read by a control system. In a hoisting application, these are typically rotary encoders which are attached to a motor/drum shaft. Encoder systems are commonly employed to provide position data.

Limits

Software (Soft) Limit: A programmed reference position that prevents further movement in a particular direction of travel and commonly should be set to stop movement before the normal hard limit. In a hoisting application, these are commonly referred to as the Soft Upper Limit (SUL) for the out-trim, and Soft Lower Limit (SLL) for the in-trim. Note, as there exist machines that do not utilize position reporting, it is possible to have a machine that does not have soft limits. In this case the normal hard limits set the allowable travel.

Hard Limit: A physical switch or sensor that prevents further movement in a particular direction of travel.

- **Normal:** First of two typical pairs of hard limits set to the end of travel of the machine in a direction. When a normal limit is encountered, the machine is still allowed to travel in the opposite direction.
- **Overtravel:** Second of two typical pairs of hard limits set as a back-up in the event of failure of the normal limit. When a machine encounters an overtravel limit, the machine is disabled from movement in any direction and local action must be taken to determine why the machine failed to stop at both the soft and/or normal limits.

While most applications have pairs of normal and overtravel limits (one pair for up/out/open, and one pair for down/in/close), there are cases where no overtravel limits are present. On J.R. Clancy machines, instructions regarding the setting of its particular style of limits are included with the machine

Fault: The state of an item characterized by inability to perform a required function. Must be cleared in order to continue to run a machine.

Starter Cabinet: Control cabinet located within easy reach of the machine motor that contains any and all controls specific wiring for one machine.

Motor Control Cabinet (MCC): Control cabinet that contains a centralized group of controls specific wiring for multiple machines. Typically located within sight of all machines it contains.

Load Sensing: A function of a controls system that utilizes a sensor on a machine to measure how much weight it's currently handling. If a machine with load sensing exceeds its rated capacity, upward movement will be disabled and an over-capacity condition will be reported in Vantis Controls System. See Appendix 1 on the following page for details.

Load Learning: A function that allows an operator to utilize the Load Sensor on a machine to record the maximum and minimum loads that it experiences throughout its full range of travel.

Emergency Stop (E-Stop): Operator that immediately stops all fixed speed motors in the system by removing the motor power in each starter cabinet or MCC; variable-speed motors will initiate a controlled rapid deceleration and then are put in a safe state using their integral safety system. Pressing the E-Stop Operator will also signal the PLC that an E-Stop condition exists.

Appendix I: Troubleshooting

All troubleshooting information is obtained from the main screen. If there is a general, system wide fault, all movement will cease, all machines will be deselected, and the machine selection tiles will be replaced by a large red rectangle containing the text "System Fault". The detected fault will then be described in the status area (the center of the screen). See the chart below for the descriptions of faults.

If there is not a system wide fault, and a machine fails to operate, first check the machine's status by selecting it on the Main Screen. The status will show in the center of the screen, below the machine's name. These status messages are outlined in the table below.

System Status Messages

Fault	Description	Resolution
COMM FAULT	Pendant has lost communication with the ARCC.	Check network cabling for damage.
INTERLOCK	System has been restricted from movement by an interlock device.	
E-Stop	Emergency Stop (E-Stop) System is engaged.	Find and release the pressed E-Stop Operator. Verify that all unused control ports have their shunt-plug installed and latched.
COMM FAULT	Machine is offline.	Check machine has power and network cable is connected/ undamaged.
LOCAL	Machine is in local mode/ under local control.	Remove Maintenance Pendant from starter cabinet/ MCC or switch starter/mcc from local control mode.
DN LIMIT	Machine will not move down.	Machine is on its lower soft or hard limit.
UP LIMIT	Machine will not move up.	Machine is on its upper soft or hard limit.
OVR TRAV	Machine has struck an overtravel limit and will not move in either direction	Inspect unit, refer to machine's manual regarding recovering from an overtravel.
MTR FLT	Motor Controller Fault (Generic)	Attempt controller reset using the control port keyswitch. If the problem does not clear, or re-occurs, either refer to the machine's manual or record what was attempted and contact Wenger Corporation.
MTR FLT:XX	Motor Controller Fault (with code)	A more specific motor controller fault. Some motor controllers can return more specific information regarding their fault status. Make note of the fault number and attempt to resolve in the same fashion as the generic motor fault described above.
LD-U	Underload Fault	Machine detected a load value below what was experienced after a load learn. Downward movement is disabled. Press the machine's selection tile for options on how to resolve the fault.
LD-O	Overload Fault	Machine detected a load value above what was experienced after a load learn. Upward movement is disabled. Press the machine's selection tile for options on how to resolve the fault.
LD-C	Load Capacity Fault	Machine detected a load above the machine's rated capacity. Upward movement is disabled until the load on the machine is below capacity.

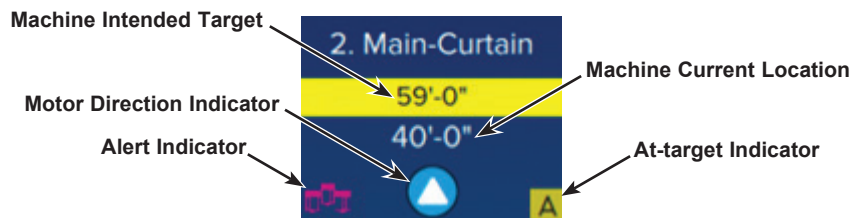
Appendix I: Troubleshooting (continued)

E-Stop Operator Flash Codes

Lamp	Meaning
Off	E-Stop System is not engaged.
On — Steady	An E-Stop Operator is engaged.
Flashing On-Off	This E-Stop Operator is engaged.
Flashing twice-pause	Communication lost between Controller and system PLC.
Flashing 5-pause	System is shutting down.

If an issue cannot be resolved using the steps outlined in either this manual or a machine's specific manual, contact Wenger Corporation using the information at the beginning of this document.

Appendix II: Icons and Symbols



Machine Selection	
Valance 16'-1.9"	Blue indicates a machine is selected and can be given a target to move
Electric #1 22'-3.6"	Gray indicates a machine is not selected and cannot be given a target to move
AR-A1.A 37'-3.2" 	Dark Gray with or without a  or  icon indicates the machine is disabled and cannot be selected or move

Movement Indicators	
	The Blue arrow indicates a Machine has a target selected and is prepared to move up
	The Green arrow indicates Machine has a target selected and is prepared to move down
	The Blue arrows pointing out indicate a Curtain Machine has a target selected and is prepared to open
	The Green arrows pointing in indicate a Curtain Machine has a target selected and is prepared to close

Appendix II: Icons and Symbols (continued)

At-target Indicators	
	An arrow pointing up in a Yellow box indicates a Machine is at Upper Factory Soft Limit
	An arrow pointing down in a Yellow box indicates a Machine is at Lower Factory Soft Limit
	Arrows pointing out in a Yellow box indicate a Curtain Machine is at Open Factory Soft Limit
	Arrows pointing in that are in a Yellow box indicate a Curtain Machine is at Closed Factory Soft Limit
	Arrows in an orange box indicates a Machine is at a Hard Limit
	A letter (corresponding with A-H) indicates a Machine is at a recorded target
	This symbol indicates a travel adjust is active
	When an arrow on the icon is highlighted Yellow, the machine at a Travel Adjust Soft Limit

Alert Indicators	
	Machine is part of a group; Machines in the same group will share the same color (Color is at the discretion of the user)
	Curtain Pocket Door Icon  indicates the door is moving  indicates the door is open  indicates the door is reading as both open and closed  indicates the door is reading as neither open or closed  indicates a fault Note: The icon will disappear if the door is closed
	Machine selection/movement is prevented by an Interlock
	Machine is disabled and cannot be moved or selected
	Machine is experiencing a fault

User Specific PINs

Wenger Corporation recommends the owner/operator create user specific PINs for their system. This prevents other operators from similar systems to gain access to user profiles they should not have access to.

Remove this page from this manual and store in a safe place.

In the event that PINs are lost and need to be reset, contact Wenger Corporation.

Operator — (default PIN: 11111) — NEW PIN.

Rigger — (default PIN: 22222) — NEW PIN.

Admin — (default PIN: 33333) — NEW PIN.

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