



HERCULES[®]

— A SENNECA COMPANY —

OPERATOR TROUBLESHOOTING GUIDE

ABOUT THE TROUBLESHOOTING GUIDE

This document is provided for the use of qualified operator installers. The installer should familiarize themselves with this guide Options **BEFORE** starting troubleshooting.



WARNINGS

1. This symbol indicates a potentially hazardous situation, which if not avoided, may result in injury to personnel and/or damage to equipment.
2. Do not disconnect or connect wires or connectors while power is applied to the unit.
3. **VERIFY that the AC supply voltage and the voltage selection wire in the unit are the same BEFORE the power is connected. Failure to do so may cause equipment failure and personal injury.**
4. If the operator has both AC and battery back-up powered **BOTH** power sources must be disconnected to fully power down the equipment.
5. Under **NO** circumstances can any field modification be made to the equipment. Failure to observe this may result in personal injury, electrical shock, improper operation and damage to the equipment and **WILL VOID THE WARRANTY.**

TROUBLESHOOTING

Input Status

Definition

Input status is accessible from the main menu without a password. For each input, it displays the programmed activation (no activation displays “Not used” for the activation number).

However the input can still be tested and indicates the status of the input.

The status of the input is either open or closed, and indicates whether there is a short (closed) between the two contacts of that input or whether it is open; meaning no connection present between the two contacts of that input.

The display for each input is updated in real time, such that an action to close or open the contact will be displayed immediately.

Note: The change of state of some activations may result in an action such as opening or closing a door system. If this is the case the input status screen will change to the appropriate screen message corresponding to the action triggered.

Use

- Press the **UP** or **DOWN** button until the display reads “Input Status”
- Press **ENTER**. Display should read “In1, the activation number, input status”.
- Press the **“UP”** or **“DOWN”** button to display additional inputs. To exit, press the **“UP”** or **“DOWN”** button until “Exit” is displayed.
- Press **ENTER**.

Activation Number	What it does	Expect rest state of the circuit	Notes
Act1	Safety (prevents and interrupts closing)	Normally closed	
Act2	Open (opens door)	Normally open	
Act3	Safety (prevents and interrupts closing)	Normally open	
Act4	X	X	Similar to Act2
Act5	Closes (closes the door)	Normally open	
Act6	Opens the door (when closed), closes the door (when open)	Normally open	
Act7	Partial open	Normally open	
Act8	Stop	Normally closed	Screen will display “emergency stop when activated”



Note: If the close delay timer is active, the input status tool may not be used. In order to determine if a peripheral is interfering with operation an installer may use a voltage meter.

To determine if a circuit from a peripheral is either Open or Closed a voltage may be measure on the corresponding input. A measurement of 0 VDC indicates a closed circuit, and a measurement of 11 to 12VDC indicates an open circuit. Record these values prior to turning off power so that they may be checked against the chart above to determine possible issues.

Sensor Status

Sensor status is accessible from the main menu without a password.

The sensor status value is used to indicate the correctness of the positional information being received from the motor by the controller. Information transferred with a high rate of error will result in improper operation.

Information is passed through the “C” connector. Sensor status values are used to identify loss or corruption of this information. Loss of information can occur from:

- a) a broken wire on the “C” connector
- b) damage to a motor sensor (done at time of installation), by connecting a voltage to one of the sensors
- c) A loose connection

Corruption of information can occur from:

- a) Incorrectly wiring C2, C3, and C4 (mixing up the connections)
- b) Running the motor power wires and sensors wires in the same conduit for more than 20” without grounding the shield of the sensor wires.

Note: A separate conduit is best for long distances, if that is not possible, then grounding the shield of the sensor wires at one end can reduce the interference from the motor wires

To check sensor status:

- In the main screen press the **UP** or **DOWN** button until the LCD reads “sensor status”

Note: Record the value (the value is reset after power loss)

- Open or close the door
- Using the **UP** or **DOWN** buttons, exit the screen for sensor status and then go to “sensor status” to refresh the value (leaving the screen and then returning updates the value).

Record the value.

Note: Any value higher than 3 indicates sensor errors.

- If you are unable to operate the door, unplug the “H” connector to remove any possible braking from the motor and force movement in the motor by pulling up or down on the door itself. Movement of around 1ft. to 2 ft. should be sufficient to show if there are sensor errors.

Common Display (LCD) error messages

> Open obstruction:

This is a velocity check, if the system can-not move a pre-defined distance in a pre-defined amount of time during the open cycle or during opening movement the motor stops moving

Fix:

- Each operator has a specific range of power and similar operators may be able to be used in many different applications, however it is important to review the sprocket guide and door speed/weight.
- Check for mechanical binding, the “calibrate now” command from the main screen is a great tool to assist in this action as that power level was used to set up the door initially (if this is not a new installation) and the door should be able to travel freely through the track using this option.
- Wiring can also be a source of issue, as a connection error for the phase wiring (to the “H” connector) will prevent movement, so will a bad connection or connection error to the “C” connector (see sensor status document for additional information).

> Core flip error:

Sudden changes in direction or movement (when using manual calibrate) can result in this error

Fix:

- Power down the system for 20 seconds after the screen goes blank and power back on

> Calibration error:

This is an error due to incorrect calibration and/or creating a door size that is smaller than the minimum door size accepted by the operator.

Fix:

- Power down the system for 20 seconds. After the screen goes blank power back on and re-attempt calibration. If the error persists check sensor status.

> Zero Fault error:

If auto calibration is being used, and the operator is allowed to continue movement in either the open or close direction beyond the maximum size that the operator allows this error will appear.

Fix:

- Check sprockets/belt/chain and confirm that movement in the motor results in movement in the door such that the door will contact an end stop (or a leaf of a door as with bi-parting doors) and be is able to apply force to the end stop without moving it (such that the door will stop), without slipping of the motor or door shaft within the sprocket.

> Emergency stop:

This is the result of pressing the stop button

Fix:

- If multiple stop buttons are being wired to one input ensure that they are wired in series (not parallel) as the connection is normally closed
- Check wiring on the stop button, as it is expecting a normally closed contact (see the input status section for further information)

> C3 (is displayed momentarily during the close cycle, followed by the door reversing to a full open):

This is a result of the internal obstruction sensing. The obstruction sensing values are likely too low.

Fix:

- See the Obstruction Sensing section of the Manual

Parameter adjustments for field related issues

> Door is closing and reversing for no apparent reason.

Fix:

- Eliminate any peripheral devices that may be causing the reversal Input status can be used.
 - Eliminate any binding or mechanical issues with the door.
1. If obstruction sensing is active please refer to the Obstruction sensing document for how to make adjustments.
 2. Also note that as part of seasonal maintenance the system should be re-calibrated to take into account any changes that may have occurred to the mechanical system of the door due to wear or extreme temperature changes.

> Door is closing, but not fully and not reversing. When it opens it opens to the correct position.

Fix:

- The close crawl region is a “grey area” where the door may stop if an obstruction of any type prevents further movement towards the full close position.

If there is no physical obstruction or binding preventing a full close, then increase the speed of the close crawl region to a maximum value of 60, and increase the close crawl torque to a higher value. This will provide more power in that region.

> The door is opening, but not closing and I am using a single button (activation 6) to perform this operation.

Fix:

- Reduce the Open Crawl Gap to a value of 11 or 12



When testing a door for any binding or during seasonal maintenance, the use of the “calibrate now” function to run the door through the full length of track provides a great check for any mechanical changes in the door.

Notes:

- **New installations**

> Lack of motor movement is usually due to wiring errors

1. Check motor power connections by un-plugging the “H” connector and measuring resistance off of the screws on the “H” plug (using a meter) between H2 and H3, H2 and H4, H3 and H4 (all values should be around 0.3 ohms).
2. Next eliminate sensor wiring as a source of issue by following the test outlined in the sensor status section of the debugging section

- **Pre-existing installations:**

- > **An operator stuck in the full open position**

- This is likely due to (external) peripheral interference or loss of power

- > **An operator stuck in the full close position**

This is likely due to:

- Power loss
 - Malfunction open activation
 - Door balance issue

- > **An operator stuck in the full close position**

This is likely due to:

- A hardware jam (binding)
 - Loss of power
 - Door balance issue



Hercules Doors
11502 Century Blvd, Cincinnati, OH
45246 Phone 800.543.4455

E-Mail: hercules@senneca.com

www.herculesdoors.com