TRUTH HARDWARE
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TECH NOTE #8

SENTRY 2000® MOTORIZED WINDOW SYSTEM: Solutions To Common Installation Problems

Telephone calls from installers have identified some common problems being encountered during installation. This Tech Note explains the problems, why the problems are occurring and a solution for the problem. Tech notes are intended to keep distribution channel members informed of technical issues and field service issues surrounding the Sentry 2000® motorized window system. Please feel free to share these Bulletins with everyone in your distribution channel.

Wiring With Power On

We have had a number of calls from installers in the field stating that the motor control module supplied with the kit is faulty. Common symptoms are "I wired everything like it says in the instructions but when I hit the switch nothing happens." What the installer has done wrong in most cases is wire the motor system up while the power is on. This is commonly referred to as "wiring hot". Since the motor system is low voltage, installers know there is no electrical shock risk once the transformer is wired to 110 volts. This becomes a problem for the motorized window system, however, because of how the microprocessor in the switch works. The first job of the motor control module is to determine how many and what type of motors are to be controlled (operator or lock motors). To accomplish this, the microprocessor sends a signal out immediately upon power up to determine this information. The problem comes in when the system is wired up hot because the motors have not yet been connected to the motor control module so the microprocessor thinks there are no motors to control. The solution to this problem is to instruct the installer to turn the power off, wait a few seconds then turn the power back on.

Wiring Backwards

Occasionally the installer will wire the motor backwards which causes the motor system to operate erratically or run continuously. The best way for the installer to tell if a wiring problem exists is to turn the power off with the window(s)/skylight(s) in an intermediate open position. After one minute turn the power back on and listen for the motor. Be sure not to press any buttons on the switch while waiting (it could take about 40 seconds for the system to start running). After the power is turned back on, the window(s) should close and hold close. If the windows(s) open they would need to disconnect power and reverse the motor connections.

Tech Note #8: SENTRY 2000® MOTORIZED WINDOW SYSTEM: Solutions To Common Installation Problems

Running Motor Before Applying to Operator

Occasionally, the installer will want to test the motor before applying it to the operating hardware. Because of how the micro-processor sets up the operating parameters through the start-up procedure, the motor must be applied to the operating hardware to determine if the system is operating properly. When the motor goes through its start-up procedure, it looks for the limits of the operating hardware. If the motor is not applied to the operating hardware, the control system can find no hardware limits, so the motor will run continuously in one direction. During the start-up procedure, the motor control system ignores any switch input until the start-up procedure is completed.

Rain Sensor

The rain sensor can only be used and connected to an LCII motor control, a IR Receiver (#43.31), or an RS Module (#43.32). This sensor is included with each of these products.

Guidelines:

- Install the sensor with “grid” exposed.
- Wire with 22 AWG - 2 conductor shielded, twisted pair 50 ft. (15m) Max. Note: Connect shield to “G” connection (ground).
- Consider prevailing winds when locating the sensor. Keeping away from obstructions.
- The sensor can be mounted outside (maximum sensitivity) or inside vent edge (minimum maintenance).
- Maintenance: Regular cleaning of sensor panel with a mild cleaning agent. Dirt or debris can cause the vent to stay closed even when not raining.

Start-up Procedure/Amount of Opening

The purpose of the start-up procedure is for the microprocessor located in the LCI/LCII control switch to learn the limits of the window. Correct function of the motor control module depends on a successful reset procedure. During the start-up procedure, the microprocessor times the open and close movement. Once these times are determined, the microprocessor is able to establish the proper venting position. Full open can be achieved by holding the switch down. Except for skylights, the relationship between opening/closing time and window position is not linear. This means 60 to 80% open is in terms of time - not window position. Window position will therefore vary between casement and awning windows with different types of hardware.

Egress Window Applications

Truth Hardware does not recommend the application of our Sentry 2000 motorized window system to egress windows - with or without battery back-up.

Tech Note #8: SENTRY 2000® MOTORIZED WINDOW SYSTEM:
Solutions To Common Installation Problems

TROUBLESHOOTING OF 300 SERIES SENTRY 2000

Symptom
Unit does not operate, no sound from motor.
Possible Solution

1. Press "Reset" button.
2. Refer to wire diagram and check connections.
3. Check power at transformer, 110-125 VAC input and 24 VAC output.
4. Check Screen Interlock.

Symptom
Unit makes noise, but window/skylight will not move.
Possible Solution

1. Press "Reset" button.
2. Be sure window is unlocked.
3. Be sure window will operate freely without motor attached.
4. Remove motor cover and test; cover screw length must be 6 x 3/8 PH.
5. Skylight lid may be too heavy.
6. Transformer incorrectly wired to motor (see wire diagram).

Symptom
Unit operates erratically.
Possible Solution

1. Press "Reset" button.
2. Be sure window will operate freely without motor attached.
3. Skylight lid may be too heavy.
4. motor leads are reversed, refer to information on "wiring backwards".

Symptom
Unit runs slowly.
Possible Solution

1. Due to gear reduction in different operators, the speed will vary. Skylights (due to very low gearing) are normally slower.

Symptom
Unit makes excessive noise during operation.
Egress Window Applications

1. Check that motor grommet was installed in bracket.
2. Be sure motor cover is tight.
3. The unit will be louder on a metal window frame.

Symptom
Unit does not close completely.
Possible Solution

1. Press "Reset" button.
2. Be sure window/skylight will operate freely without motor attached.
3. Disconnect power and refer to information on "wiring backwards".
4. Check jumper setting for application (see wire diagram).

Tech Note #8: SENTRY 2000® MOTORIZED WINDOW SYSTEM: Solutions To Common Installation Problems

Symptom
Unit runs continuously in one direction when bench testing.
Possible Solution

1. Motor must be connected to window/skylight for correct operation.
   Note: Connecting the transformer directly to the motor can cause damage.

Symptom
Unit closes when open button is pressed.
Possible Solution

1. Motor leads are reversed, refer to information on “wiring backwards”.