

## Ducted Systems Technical Services: Service Tips Letter

Letter: ST-014-23

Date: June 14, 2023

To: S1 HVAC Branch and Distributor Principal, Sales Manager, Service Manager, Parts Manager, Warranty Manager, Training Manager, Delegated Administrator. Ducted Systems Technical Services, DS Parts/S1, ES Americas, ADTI Channel, Account Representatives, Marketing, Sales, Warranty teams.

Subject: High Duct Static Switch Nuisance Trip

Product/s: Premier 25-50T **GV**(A,B,C,D) **GZ**(A,B,C,D) **GT**(A,B,C,D)

Summary: This letter is to assist qualified technicians through the evaluation and modification procedures for the high duct static pressure switch in cases where a nuisance trip causes a unit lockout.

Dear valued customer:

The high duct static switch (DAPHI-A) is a manual reset differential pressure diaphragm switch located in the unit's low voltage control panel. In cases where there is high differential static pressure across the supply fan, the switch may trip below the desired 4-inch water column positive pressure setting resulting in a nuisance lockout of the unit. When these cases occur, there is a modification that can be made to the low-pressure tubing of the switch that will eliminate the nuisance event. Below are details on how to identify, evaluate, and implement this modification. Because this nuisance trip is the result of equipment application/installation rather than design, there is no reimbursement for labor or materials to implement this modification.

## **Verification Evaluation**

- Verify that the switch shown in Fig 1 is set to 4 inches water column by following the directions in the unit Startup and Operations Manual.
- Verify that the problem is the result of a nuisance trip and not an actual over-pressurization of the supply plenum of the unit. Do this by measuring the positive pressure in the supply fan cabinet with a manometer. For accurate measurement, you will need to tee into the tube running from the high-pressure port on the switch to the supply fan compartment. Be sure to leave the low side of the manometer open to the atmosphere. See Fig 1. Measure the actual static pressure in the supply fan compartment then refer to the following 2 choices for the next steps.
- If it has been verified that the **positive pressure does not** reach the unit limit of 4 inches water column when the switch trips, continue to the Switch Modification Steps.
- If it is found that the **positive pressure does** reach the 4 inch water column pressure limit **STOP** and correct the supply duct restrictions to lower the supply pressure below the 4 inch water column limit and repeat the test.



## **Switch Modification Steps**

- 1. Locate the low-pressure tube that runs from the switch to the barbed fitting on the fan wall directly under the switch. See Fig 1.
- 2. Remove this tube completely and run a new tube from the low side of the switch to the return compartment of the unit teeing it into the interior section of tube running out to the atmospheric pressure reference (Red Bird). See Fig 2.

## Alternate tubing route for units without an atmospheric reference (Red Bird):

- Drill a hole in the bottom of the control cabinet in a location that will enter the unit base rail, then route a small section of tubing from the low side of the switch into the base rail being sure to have a filter or screen on the end of the tubing to prevent insects from entering and blocking the tube. Seal any gaps around tubing.
- 3. Verify the switch set point does not exceed 4 inches water column by following the instructions in the Startup and Operations Manual.
- 4. Start supply fan and verify switch operation using a manometer as instructed in the verification evaluation above.



Fig 1





Light Blue line indicates the route of the atmospheric static reference tube. Tee into it at an accessible location **inside unit.** 

If you have any questions or concerns regarding this instruction, please call the Product Technical Support line listed below and follow the prompts for Premier, or you can email us at the address listed below.

Warm regards,

Victor Panicci Product Technical Support Eng II Building Technologies & Solutions Ducted Systems Johnson Controls 877-874-7378 cg-upgtechsupport@jci.com