

Filter Change Indicator S830A

PRODUCT DATA



APPLICATION

The S830A indicates the need to clean the electronic air cleaner, or to replace the air filters of forced air heating, air conditioning, and heat pump equipment.

- A red **CHANGE FILTER** flag drops into the window on a pressure decrease because of filter loading.
- Flag also makes a set of contacts which may actuate an indicator light at the system panel or special thermostat subbase.
- Sturdy molded plastic case mounts easily on furnace blower compartment with a Tinnerman fastener or two screws.
- Flag is manually reset by turning the black button on the S830A face.
- Adjustment screw on the S830A face provides manual adjustment for more or less frequent clogged filter indication.
- The S830A mounts directly on the blower compartment or at a remote location.

SPECIFICATIONS

IMPORTANT

The specifications given in this publication do not include normal manufacturing tolerances, therefore, this unit may not match the listed specifications exactly. Also, this product is tested and calibrated under closely controlled conditions, and some minor differences in performance can be expected if those conditions are changed.

Model: S830A Filter Flag Indicator. Includes mounting template, two screws, and Tinnerman fastener.

Electrical Rating: Contacts make when flag drops into window. 1.5 amp running, 7.5 amp locked rotor at 24 Vac.

Pressure Range: 0.1 to 0.7 in. wc (0.025 to 0.17 kPa).

Maximum Operating Temperature: 170 °F (77 °C).

Indicators: Red flag drops into window when filter is clogged, indicating need to change filter. The S830A can also turn on a warning light in Q539, Q611, Q672, and Q674 Thermostat Subbase models which have built-in warning lights.

Dimensions: 3-1/4 in. high, 2-1/4 in. wide, 2 in. deep from end of knob to base. (82.6 mm high, 57.2 mm wide, 50.8 mm deep).

Mounting: Mounts directly on furnace blower compartment with 2 screws or Tinnerman fastener included. For remote mounting, use two screws provided.

Case: Sturdy molded plastic.

INSTALLATION

When installing this product...

1. Read these instructions carefully. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given in the instructions and on the product to make sure the product is suitable for your application.
3. Installer must be a trained, experienced service technician.
4. After installation is complete, check out product operation as provided in these instructions.



CAUTION
Disconnect power supply to prevent electrical shock or equipment damage.

Location

The S830 must be located where it can sense pressure conditions in the blower chamber between the filter and the blower. On differential pressure applications, the case and tubing must be located where it can sense the pressure DIFFERENCE between the return air plenum and the blower chamber. See Fig. 1.

The most desirable location for the case when mounted on the equipment is near a corner, where the sheetmetal is rigid. This prevents a bump or vibration from tripping the indicator. For remote mounting, the suction port and differential pressure port must be accessible.

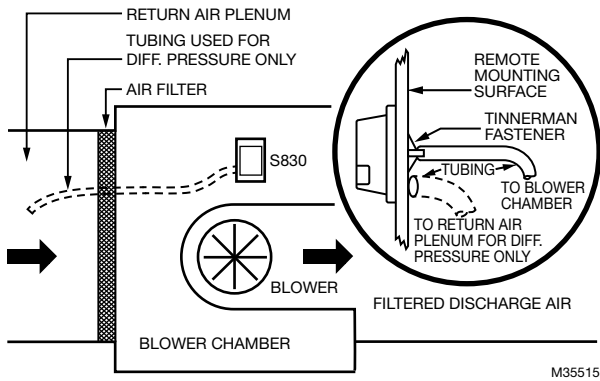


Fig. 1. Mounting location.
Inset shows remote mounting of the case.

Mounting

The S830 must be mounted in a vertical position with the CHANGE FILTER flag visible at the bottom.

If the S830 is used with an AT72 Transformer and electronic air cleaner, follow the instructions supplied with the air cleaner.

If the S830 is used for another type of installation:

1. Determine type of mounting—surface or remote.
2. Select proper mounting template. Fasten template (gummed back) level in the exact location selected for S830 (Fig. 1).
3. Attach the template instruction section alongside the mounting template.
4. Proceed to the applicable surface or remote mounting section below.

SURFACE MOUNTING

1. Drill all holes indicated on template.
2. If the electrical switch is to be used, connect wires to the terminals on the back of the case (Fig. 3).

3. After connecting the wires, run them through the channel at the top or bottom of the case. If the wires are too thick, enlarge the channel with a small file.
4. Mount the case using the Tinnerman fastener and steadying lug (Fig. 2). An alternate method is to use two No. 6 sheetmetal screws (furnished), and remove the steadying lug or drill a hole for it in the mounting surface.

NOTE: Completely airtight seals are not necessary, but the case must be tight against the mounting surface.

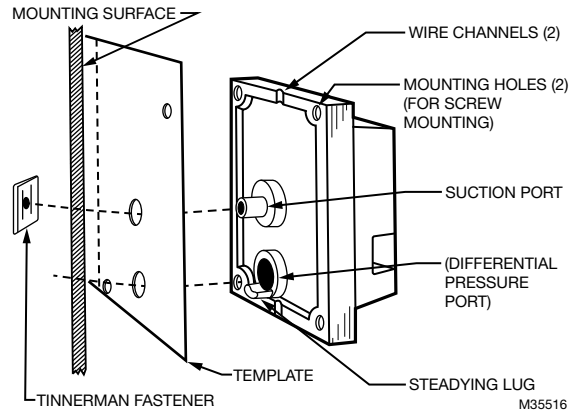


Fig. 2. Surface mounting with Tinnerman fastener.

REMOTE MOUNTING

If the case is remotely mounted, install as indicated under surface or flush mounting above and:

1. Run 1/4 in. (6.4 mm) ID flexible tubing from the suction port to the blower chamber. Tubing may be obtained at any hardware store.
2. Drill a hole in the blower chamber wall and insert the tubing.

DIFFERENTIAL PRESSURE MOUNTING

If case is mounted for a differential pressure application, install as indicated under surface or flush mounting and:

1. Carefully open the differential pressure port with a sharp, pointed object (Fig. 2).
2. If the case is mounted on the blower chamber, run 3/8 in. (9.5 mm) ID flexible tubing from the differential pressure port through the blower chamber, and the filter to the return air plenum. Tubing may be obtained at any hardware store.

If the case is remotely mounted, drill a hole in the return air plenum, run 3/8 in. (9.5 mm) ID flexible tubing from the differential pressure port, and insert the tubing in the hole. Drill a hole in the blower chamber, run 1/4 in. (6.4 mm) ID flexible tubing from the suction port and insert the tubing in the hole.

NOTE: Avoid sharp bends and kinks in the tubing. Make sure tubing is not under strain. Tubing must fit insert holes tightly. Tubing may be obtained at any hardware store.

WIRING

All wiring must comply with applicable electrical codes and ordinances. Disconnect power supply to prevent electrical shock or equipment damage.

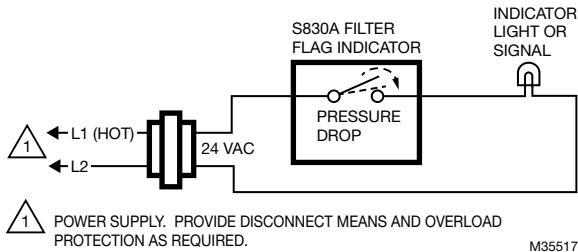


Fig. 3. Typical hookup for S830A. Circuit is activated when S380A flag drops.

OPERATION

When the furnace air filter (disposable, washable, or electronic) becomes clogged, the suction increases on the downstream side of the filter, causing air to be drawn through a port on the back of the S830. When suction becomes greater than the set point of the S830, it releases the red flag marked CHANGE FILTER. The flag shows in the clear plastic window on the front of the case. The S830A may be wired to a remote filter light on a thermostat subbase (Fig. 3). The contacts make to actuate the light when the air filter needs cleaning or changing. See wiring instructions furnished with subbase.

ADJUSTMENTS AND CHECKOUT

The S830 must be adjusted to suit each individual application. *Always clean the filter before adjusting the setting.* Dampers and registers should be in normal position. For 2-speed blowers, adjust the S830 for the higher speed.

TO RESET FLAG: Turn black knob on cover in direction of arrow until flag latches out of sight.

To adjust the setting

1. Turn the adjusting screw clockwise until tight. Do not overtighten; the threads may strip out.
2. Turn on the system blower (high speed on 2-speed blowers).
3. Reset flag, if necessary.
4. With sheets of paper, cover 2/3 of the upstream (return air duct) side of the filter surface. The 1/3 uncovered area should be in the center of the filter(s).
5. Turn the adjusting screw counterclockwise until the flag drops.
6. Turn off the blower.
7. Remove paper from filter and reset flag.

NOTE: During normal service the flag may drop before the filter reaches the time-to-clean condition, as the result of a bump or vibration. To avoid cleaning filters unnecessarily, reset the flag. If it trips again when the blower is operating, replace of clean the filter.

It may be necessary to adjust the setting after changing the type of filter or making changes in the duct system, damper, or register openings.

Minor adjustments can be made. Turning the ADJUSTMENT screw in the “+” or counterclockwise direction causes the flag to drop earlier. The filter will then be changed more often. Turning the screw in the “-” or clockwise direction gives less frequent filter changes.

Automation and Control Solutions

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