Automatic Roof Door Vents

Features

- UL Listed for use as an automatic smoke vent
- FM Approved as an automatic door vent for use in high-expansion foam systems
- Available in multiple sizes and corrosion-resistant materials, including galvanized steel and aluminum
- Designed to open against snow and wind load and lock in the open position
- Doors are fully insulated and curbs supplied with permanent gaskets for weather-resistant performance

Application

The ANSUL® Automatic Roof Door Vent is intended for use with the ANSUL® Water Powered High-Expansion Foam Generators. Automatic door vents are required when installing an air intake to facilitate supplying outside air to JET-X Water Powered High-Expansion Foam Generators (Form No. F-93137, latest revision). The doors are weather tight and are normally closed until actuated either by foam solution pressure supplied to the high-expansion foam generators or thermal release of a UL Listed fusible link.

Description

ANSUL® Automatic Roof Door Vents utilize gas spring operators with integral dampers for controlled opening of the doors to prevent damage to the doors or building. The doors are held closed by a latching mechanism which utilizes a separate latching point for each door. The latch is held in place by a UL Listed 165 °F (74 °C) fusible link and releases automatically when the fusible link melts or is disengaged by a hydraulic cylinder operated by foam solution pressure supplied when the high-expansion foam system operates. The latching mechanism can also be manually released by operation of either the internal or external manual pull cables. The latching mechanism is designed to hold the covers closed against a maximum 90 psf (438 kg/m²) wind uplift force.

Operational Loading Limits

ANSUL® Automatic Roof Door Vents are designed to open against a maximum 10 psf (49 kg/m²) combined snow and wind load.

Hardware

ANSUL® Automatic Roof Door Vents open utilizing gas spring operators with integral dampers to control the speed of the opening doors. The gas spring operators are provided with a powder coated body and chromate plated inner rod. All other components are either zinc plated/chromate sealed or galvanized.

Approvals

ANSUL® Automatic Roof Door Vents carry the following listings and approvals:

- UL Listed by the manufacturer as an automatic smoke vent (UL 793 and UL 790 Class A).
- FM Approved for use in high-expansion foam systems (FM 5130).
Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Free Vent/Intake Area (ft²)</th>
<th>Shipping Weight lb (kg)</th>
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<tbody>
<tr>
<td>703700</td>
<td>48 in. x 48 in. Aluminum Automatic Roof Door Vent Kit including Actuator Assembly</td>
<td>16</td>
<td>265 (120)</td>
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<tr>
<td>703701</td>
<td>48 in. x 48 in. Galvanized Steel Automatic Roof Door Vent Kit including Actuator Assembly</td>
<td>16</td>
<td>372 (169)</td>
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<tr>
<td>703702</td>
<td>60 in. x 60 in. Aluminum Automatic Roof Door Vent Kit including Actuator Assembly</td>
<td>25</td>
<td>335 (152)</td>
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<tr>
<td>703703</td>
<td>60 in. x 60 in. Galvanized Steel Automatic Roof Door Vent Kit including Actuator Assembly</td>
<td>25</td>
<td>700 (318)</td>
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<tr>
<td>703704</td>
<td>Replacement Actuator Assembly</td>
<td>n/a</td>
<td>5 (2.2)</td>
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</tbody>
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Note: The standard door vents offered are to be installed on flat roof types only. Contact Johnson Controls Technical Services if vents are to be installed on a Raised Rib or other type roof. Ductwork required between the ANSUL® Automatic Roof Door Vent and the high-expansion foam generator(s) is not included and must be designed and installed by qualified personnel.

Installation

ANSUL® Automatic Roof Door Vents should ideally be installed directly above vertically installed high-expansion foam generator or as close as possible when the high-expansion foam generators are installed in the horizontal orientation (see Figures 1 to 6). Automatic Roof Door Vents are required to be connected to the generator by ductwork to help ensure air supplied to the generator is from outside the hazard area. The design and installation of the ductwork should be designed and installed by qualified personnel and should minimize friction loss at the high-expansion foam generator. Contact Johnson Controls Technical Service for complete installation instruction.

For automatic operation utilizing the actuator assembly, the actuator must be connected to the foam solution piping, preferably near the inlet of the high-expansion foam generator. 1/4 in. copper tubing, brass pipe, or stainless steel pipe can be used to connect the foam solution piping to the strainer inlet of the actuator assembly. See Figures 7 to 9 for details of the actuator assembly.
Installation (Continued)

**Figure 3**
Roof Top View of Foam Generator with Air Intake in Vertical Mount Position

**Figure 4**
Front View of Foam Generator Without Air Intake in Horizontal Mount Position

**Figure 5**
Front View of Foam Generator with Air Intake in Horizontal Mount Position

**Figure 6**
Roof Top View of Foam Generator with Air Intake in Horizontal Mount Position

- Roof Top
- Hydraulic Actuated Door Intake
- Roof Top Generator Inlet Guard
- Generator Housing
- Structural Support
- Foam Screens
- Supporting Rods
- Foam Solution Inlet
- No Airflow Constraints Between Foam Generator and Air Intake
- Air Intake Duct
- Structural Support
Installation (Continued)

FIGURE 7
ACTUATOR ASSEMBLY IN THE SET UP POSITION
010291

FIGURE 8
ACTUATOR AND LATCH MECHANISM
010290

FIGURE 9
ACTUATOR ASSEMBLY WITH STRAINER
010292

CYLINDER ASSEMBLY
STRAINER
1/4 IN. INLET CONNECTION
FUSIBLE LINK PIN
FUSIBLE LINK
General Assembly

* THERMOLATCH II is a trademark of The Bilco Company.
Venting Requirements For High-Expansion Foam Systems in Enclosed Spaces

High-expansion foam systems may be installed to utilize air from outside or, with the approval of the Authority Having Jurisdiction, inside the hazard area. **Note:** Only outside air is allowed for FM Approved high-expansion foam systems. When using outside air, a system of ducts and vents, either through the wall or roof of the structure, is required to supply fresh air to the high-expansion foam generators. If the high-expansion system discharges into an enclosed space, and the system is equipped with a fresh air inlet system, the efficiency of the high-expansion foam generating system will be inhibited due to a slight over-pressurization of the enclosed space.

As the high-expansion foam system discharges into an enclosed space with air from outside, a volume of air equal to the discharge of the high-expansion foam generators is introduced into the space. This volume of air can cause a significant increase of air pressure inside the enclosed space, and if this occurs, the efficiency of the generators will decrease as the air pressure increases.

It is recommended in high-expansion foam systems with outside air supplied to the generators, high level vents be installed to prevent pressurization of the enclosed space. These vents should operate automatically upon actuation of the system or include some other normally open feature, and should be approximately the same area as the inlet vents to the foam generators. In no case, without complete air flow calculations by a licensed HVAC engineer, should the exhaust vents be less than 80% of the total area of inlet vents to the high-expansion foam generators.

For additional information, contact Johnson Controls Technical Services.

**Note:** The converted values in this document are provided for dimensional reference only and do not reflect an actual measurement.

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