GREENHECK

Model GFSD-212

Combination FIRE SMOKE DAMPERS

Grille Access
Steel 3-V Blades
UL 555S Leakage Class II
UL555 1½ Hour Fire Resistance Rating

APPLICATION

Model GFSD-212 is a combination fire smoke damper with 3V style blades designed for easy access through the grille to the damper, closure device and the actuator for a shallow depth of 13 1/2 inches (343mm). A separate compartment on the side of the damper houses the actuator. The GFSD-212 has been qualified to 2000 fpm (10.2 m/s) and 4 in. wg (1 kPa) for operation and dynamic closure in emergency fire smoke situations. Model GFSD-212 may be installed vertically (with blades running horizontal) or horizontally and is rated for airflow and leakage in either direction.

Model GFSD-212 meets the requirements for fire dampers, smoke dampers and combination fire smoke dampers established by:

National Fire Protection Association
NFPA Standards 80, 90A, 92A, 92B, 101 & 105
IBC International Building Codes
CSFM California State Fire Marshal
Leakage Damper Listing (#3230-0981:0104)

"UL CLASSIFIED (see complete marking on product)"
"UL CLASSIFIED to Canadian safety standards (see complete marking on product)"
Standard 555 & 555S (Listing #R13317)

RATINGS

UL 555 Fire Resistance Rating

Fire Rating: 1½ Hours
Dynamic Closure Rating: Actual ratings are size dependent
Maximum Velocity: 2000 fpm (10.2 m/s)
Maximum Pressure: 4 in. wg (1 kPa)
Maximum Temperature: 350ºF (177°C) -- Depending on actuator

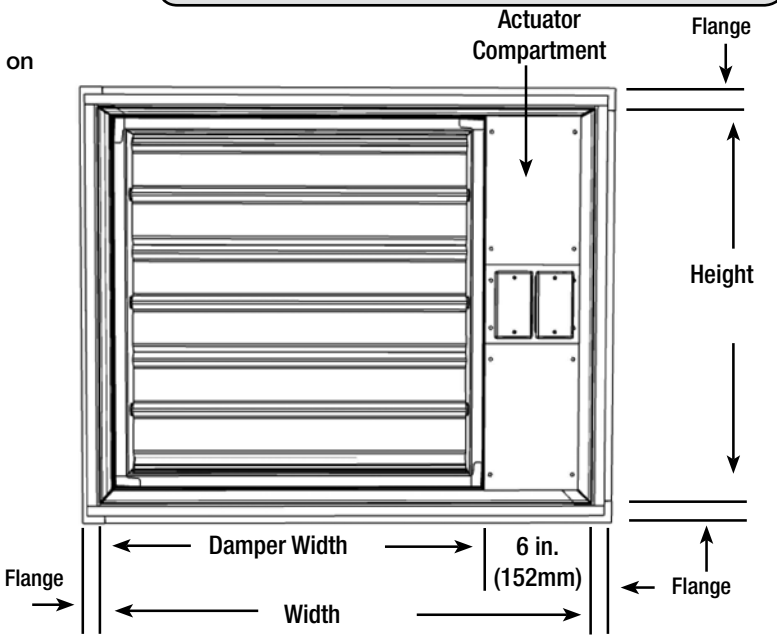
UL 555S Leakage Rating

Leakage Class: II
Operational Rating: Actual ratings are actuator dependent
Maximum Velocity: 2000 fpm (10.2 m/s)
Maximum Pressure: 4 in. wg (1 kPa)
Maximum Temperature: 350ºF (177°C) - Depending on actuator

Construction	Standard	Optional
Frame Material	Galvanized steel	-
Frame Material Thickness	16 ga. (1.5mm)	-
Frame Type	5 in. x 1 in. (127mm x 25mm) hat channel	-
Blade Material	Galvanized steel	-
Blade Material Thickness	16 ga. (1.5mm)	-
Blade Type	3V	-
Linkage	Plated steel out of airstream, concealed in jamb	304SS
Axle Bearings	Bronze	304SS
Axle Material	Plated steel	304SS
Blade Seals	Silicone	-
Jamb Seals	304SS	-
Closure Device	RRL	RRL/OCI, TOR, PRV, or Fusible Link
Closure Temperature	165°F (74°C)	212°F (100°C), 250°F (121°C), 350°F (177°C)

W x H	*Minimum Size*	*Maximum Size*	
		Single Section	*Multiple Section*
Inches	14 x 12	42 x 48	48 x 48
mm	356 x 305	1067 x 1219	1219 x 1219

Installation installations available at www.greenheck.com



*W&H dimensions furnished approximately ¼in. (6mm) undersize.
(Add sleeve thickness for overall sleeved damper dimension)

FEATURES:

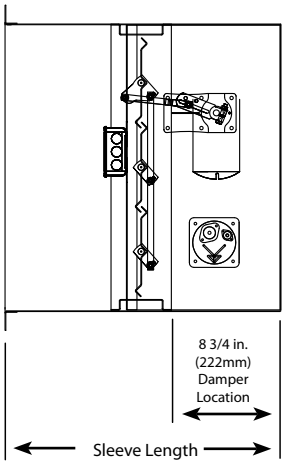
- Frames are constructed with reinforced corners. Low profile head and sill are used on sizes less than 17 in. high (432mm).
- Blades are reinforced with 3 longitudinal structurally designed vee's.

OPTIONS:

- Actuators: 120V, 24V, 230V, Pneumatic
- Factory mounted accessories
  - Retaining angles
  - Quick connect breakaway connections
  - S & drive connections
- Greenheck test switches (GTS-1, -2, -3, -4)
- POC retaining angles
- RRL/OCI (Open closed indication switches)
- TOR (Temperature limited override)
- Sealed sleeves
- Smoke detectors - ship loose

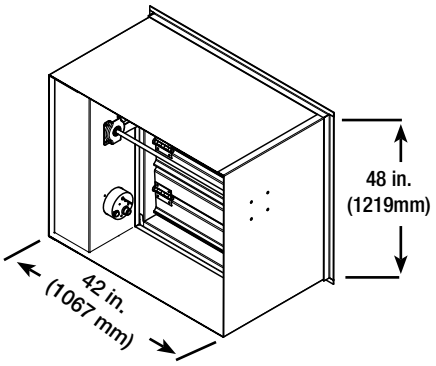
Damper Sizing Information

The drawing below shows the position of the GFSD-212 damper when mounted in a factory sleeve. The standard mounting location provide enough space for the mounting of actuators, controls and allow space for installation of retaining angles and duct connections.

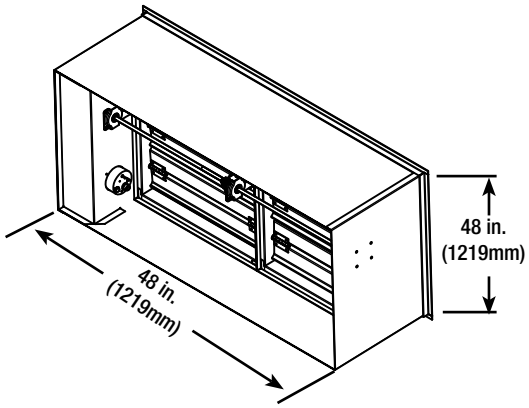


Dampers larger than maximum single section size are supplied as a factory assembly of two or more sections of equal size. The following figures show maximum damper section size and assembly configurations for multi-section dampers.

Single Section



Double Section



Specifications

Combination Fire Smoke Dampers meeting the following specifications shall be furnished and installed where shown on plans and/or as described in schedules. Dampers shall meet the requirements of NFPA 80, 90A, 92A, 92B, 101 & 105 and further shall be tested, rated and labeled in accordance with the latest edition of UL Standards 555 and 555S. Dampers shall have a UL555 fire rating of 1½ hours and be of low leakage design qualified to UL 555S Leakage Class II.

Each damper/actuator combination shall have a UL555S elevated temperature rating of 250°F (121°C) minimum and shall be operational and dynamic rated to operate at maximum design air flow at its installed location. Each damper shall be supplied with an appropriate actuator installed by the damper manufacturer at the time of damper fabrication. Damper actuator shall be (specifier select one of the following) electric type for 120 (24 or 230) volt operation.

Damper blades shall be 16 ga. (1.5mm) galvanized steel 3V type with three longitudinal grooves for reinforcement. Damper frame shall be galvanized steel formed into a structural hat channel shape with reinforced corners. Bearings shall be sintered bronze sleeve type rotating in extruded holes in the damper frame. Blade edge seals shall be silicone rubber designed to inflate and provide a tighter seal against leakage as pressure on either side of the damper increases. Jamb seals shall be stainless steel compression type. Blades shall be completely symmetrical relative to their axle pivot point, presenting identical resistance to airflow in either direction or pressure on either side of the damper. Actuator compartment shall be attached to the damper frame with sleeve surrounding damper and compartment.

Damper must be rated for mounting vertically (with blades running horizontal) or horizontally and be UL 555S rated for leakage and airflow in either direction through the damper. Each damper shall be supplied with a 165°F (74°C) RRL.

The basis of design is Greenheck Model GFSD-212.

GREENHECK
P.O. Box 410 • Schofield, WI 54476-0410 • 715.359.6171 • greenheck.com