GREENHECK

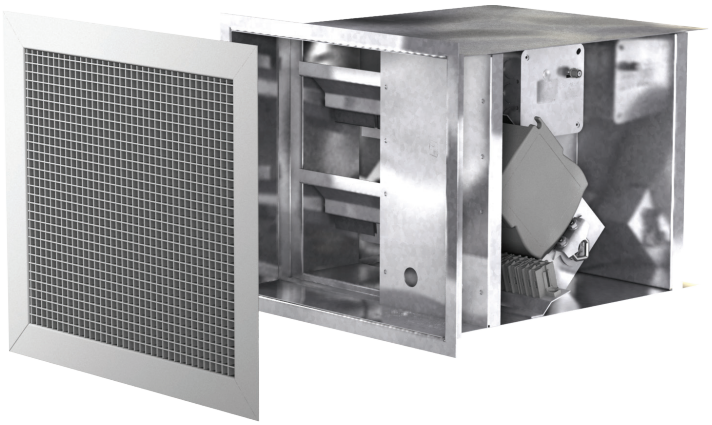
Model GFSD-212

Combination Fire Smoke Dampers

Grille Access
Steel 3V Blades
UL555S 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. 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.



Ratings

UL555 Fire Resistance Rating

Fire Rating:	1 1/2 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:	350°F (177°C) - depending on actuator

UL555S 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:	350°F (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	-
Axle Bearings	316SS	-
Axle Material	Plated steel	-
Blade Seals	Silicone	-
Jamb Seals	Stainless Steel	-
Closure Device	RRL	RRL/OCI, TOR, or Fusible Link
Closure Temperature	165°F (74°C)	212°F (100°C), 250°F (121°C), 350°F (177°C)

CLASSIFIED C UL US

See complete marking on product.
UL 555 and UL 555S Classification R13317

Model GFSD-212 meets the requirements for fire dampers established by:

National Fire Protection Association
NFPA Standards 80, 90A, 92A, 92B, 101 & 105

IBC International Building Codes

CSFM California State Fire Marshal
Fire Damper Listing (#3225-0981:0103)
Leakage Damper Listing (#3230-0981: 0104)

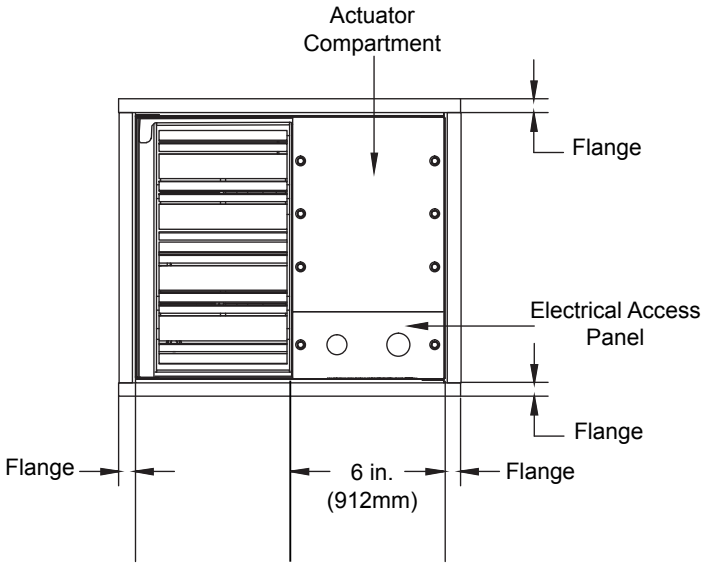
W x H	*Minimum Size*	*Maximum Size*	
		Single Section	*Multiple Section*
Inches	14 x 12	42 x 48	48 x 48
mm	356 x 305	1067 x 1219	1219 x 1219

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.

Installation instructions available at www.greenheck.com.

Damper Sizing Information



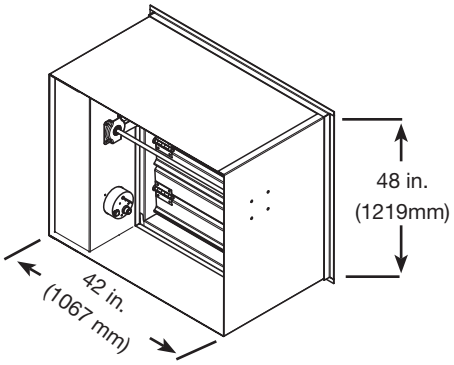
*Width and Height dimensions furnished approximately ¼ in. (6mm) undersize. Add blanket thickness (⅛ in. [3mm]) and sleeve thickness for overall sleeved damper dimension.

Oversize wall opening as follows:

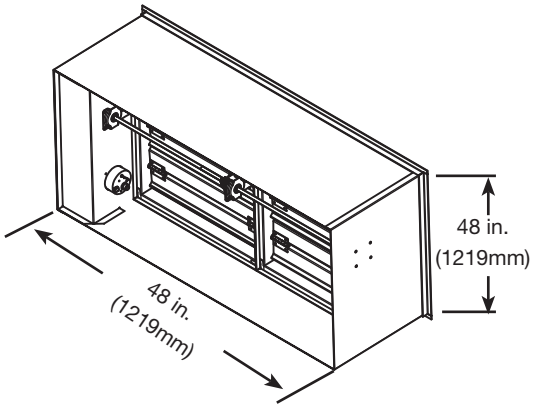
Nominal damper size plus ⅜ in. (9.5mm).

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

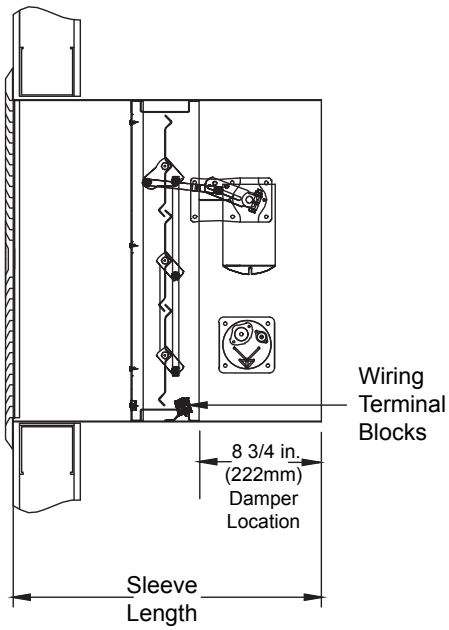


Double Section



Damper Sizing

The drawing to the right 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.



Options & Damper Sizing Information

Options

- Actuators: 120V, 24V, 230V
- Smoke detectors - ship loose
- Greenheck test switches (GTS-1, -2, -3, -4)
- POC retaining angles
- Sealed sleeves
- Clean wrap

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, 92, 101, and 105) and 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 1 1/2 hours and be of low leakage design qualified to UL555S, 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 316SS 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 UL555S 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