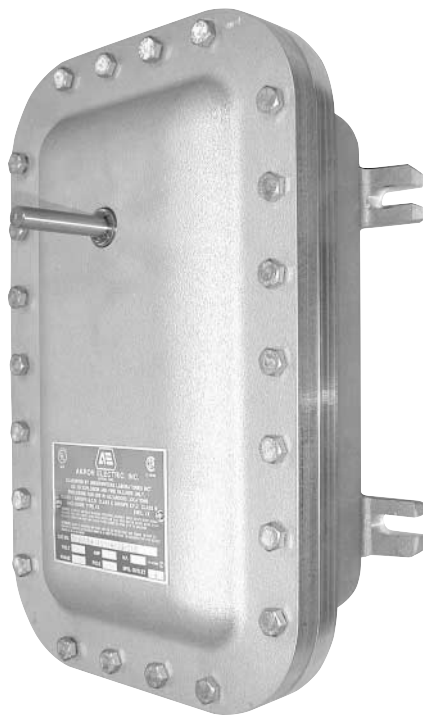


# ZS-260 Explosion-proof Housing

For GM..., AM..., SM..., AF..., NF..., LF... actuators



## Application

The ZS-260 explosion-proof housing may be used with the GM..., AM..., SM..., AF..., NF..., LF... series actuators. This housing is not designed for direct coupling. It is for use in Class I, II and III hazardous locations, and to meet the requirements for NEMA 4, 7 & 9 type enclosures.

## Operation

The ZS-260 enclosure is designed so that the required actuator may be easily field mounted into the enclosure. The actuator is fastened on to the internal portion of the operating shaft and secured at the end with an anti-rotation strap. A crank-arm, such as the KH8, is mounted to the external portion of the operating shaft for connection to connection to the damper linkage. ZG-109 right angle, and ZG-110 standoff mounting brackets may be used (see back).

The ZS-260 is designed so that the operating shaft can be mounted on either the front or rear side of the housing.

## Accessories

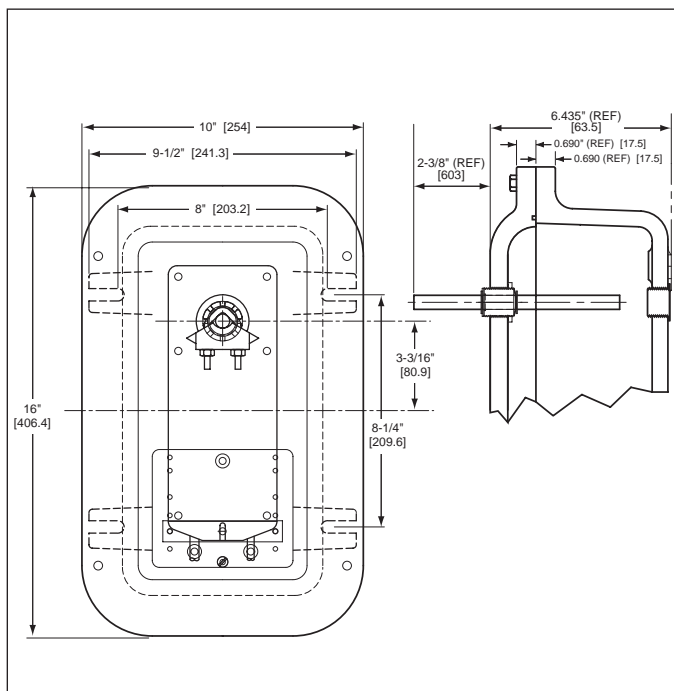
- KH8 Universal crankarm
- KG8 Universal ball joint
- KG10 Universal ball joint
- ZG-109 Right angle mounting bracket
- ZG-110 Stand-off mounting bracket

| Technical Data           | ZS-260   |
|--------------------------|--|
| Material                 | Housing: cast, copper-free, aluminum,<br>Cover bolts: stainless steel<br>Operating shaft: stainless steel                                  |
| Conduit holes            | 3/4"-14 NPT (2 supplied)<br>see Note 1   |
| Operating shaft diameter | 1/2 inch [12.7]  |
| Operating shaft location | Front or rear side of housing<br>(Field selected)  |
| Approved applications    | UL & CSA, Class I, II & III;<br>Group B, C, D, E, F & G<br>NEMA 7, Class I, Groups B, C & D<br>NEMA 9, Class II, Groups E, F & G<br>NEMA 4 |
| Weight                   | 31.0 lb. (14.0 kg) without actuator  |

Note 1: Fittings that meet the requirements of the hazardous location must be used. All applications must comply with applicable local and/or national electric code.

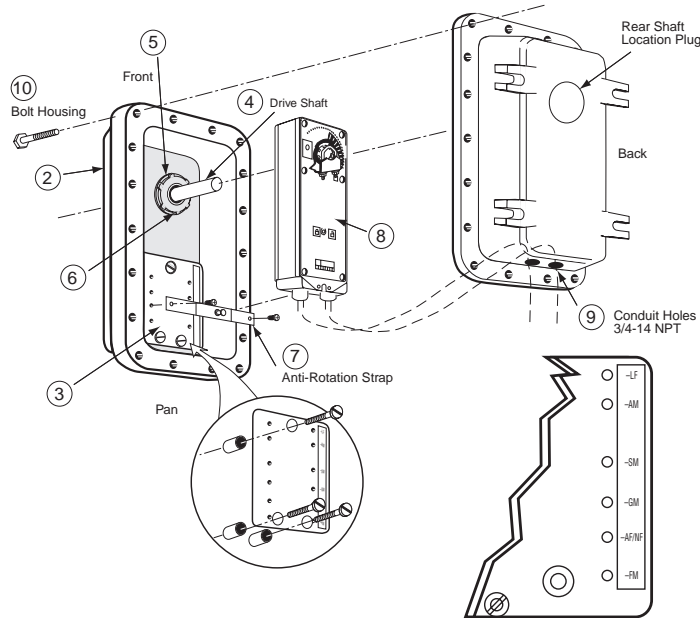
Note: Since conditions of use of this product are outside the control of Belimo, the purchaser should determine suitability of the product for their intended use, and assumes all risk and liability in connection therewith.

## Dimensions [All numbers in brackets are in millimeters.]



G20492-IG-Subject to change. © Belimo Aircontrols (USA), Inc.

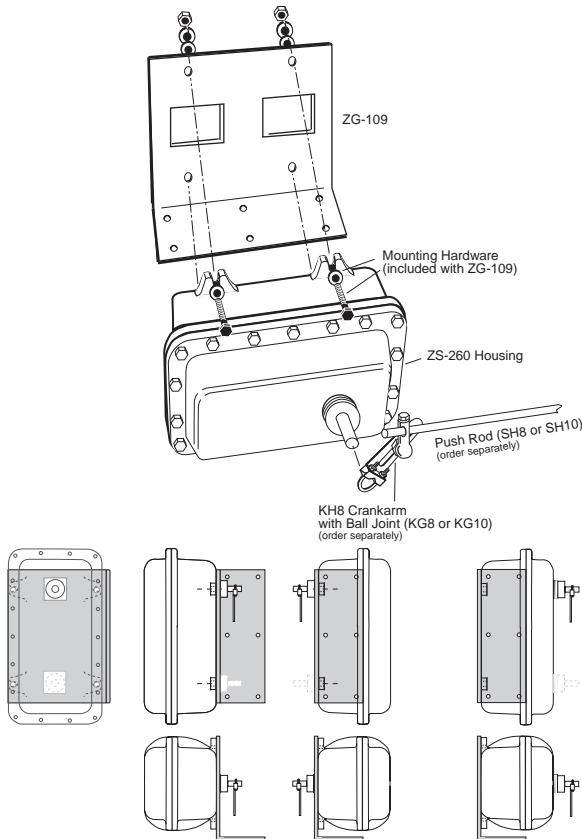
## ZS-260 Shaft Thru Front



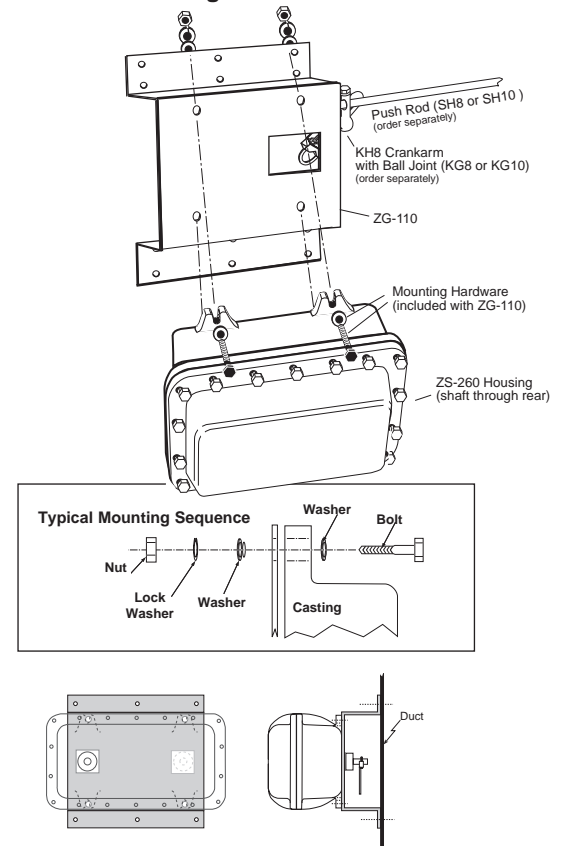
## ZS-260 Mounting Instructions

1. Determine proper operating shaft location.
2. Remove threaded plug from the hole in which the operating shaft will be mounted.
3. Install the anti-rotation strap, mounting plate, to the side of the housing where the operating shaft will be mounted.
4. From the inside surface of the housing, insert the operating shaft, short length first, into the mounting hole.
5. Hand tighten the shaft bushing into the housing until the star nut/seal is in contact with the face of the housing.
6. Using a screw driver blade, drive the star nut/seal clockwise until the bushing is locked into place.
7. Install the anti-rotation strap into the mounting plate at the designated holes for the actuator to be used.
8. Install actuator
9. Wire actuator (per electrical code).
10. Bolt housing together

## Typical ZG-109 Mounting



## Typical ZG-110 Mounting

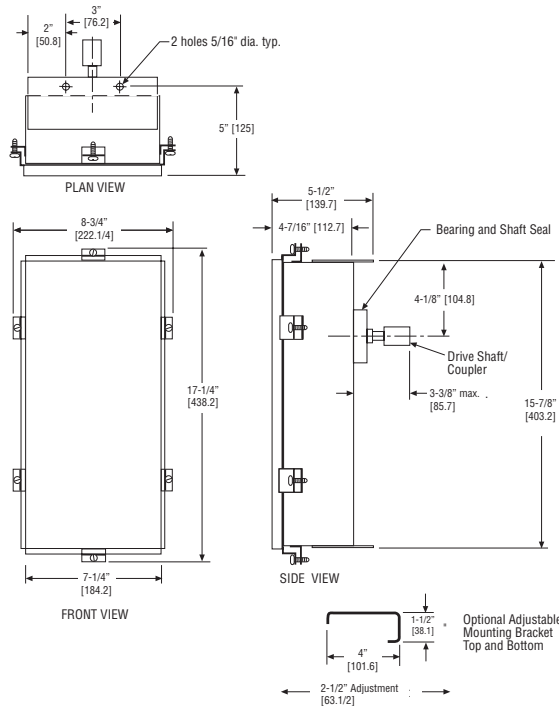


# ZS-300 Protective Housing

NEMA 4X, stainless steel, corrosion resistant enclosures for SM, AM, GM, AF, and NF actuators



## ZS-300



**Dimensions** [All numbers in brackets are in millimeters.]

## ZS-300 NEMA 4X Housing

For AM, SM, GM, AF, NF, LF Series Actuators

### Application

The ZS-300 (-1) NEMA 4X enclosures may be used with SM, GM, AM, AF, NF and LF Belimo actuators. They are intended for use primarily to provide protection against corrosion, windblown dust and rain, splashing water, hose-directed water; undamaged by the formation of ice on the enclosure. Type 304 stainless steel enclosures resist moisture, dust, salt, and corrosive chemicals, and are easy to keep clean for sanitary applications.

### Operation

The ZS-300 enclosures are designed so that the required actuator may be easily mounted in the enclosure. The operating shaft and coupling are inserted from the backside through the rotating shaft seal. The actuator is fastened on the end of the operating shaft and secured at the end with an anti-rotation strap. Adjustable mounting brackets, if supplied, are assembled to the fixed mounting holes at the top and bottom of the enclosure with stainless steel nuts, bolts and lock washers. The direct drive coupling is designed for a 1/2" round or hexagonal shaft and secured with two square head set screws. Mounting brackets are adjusted and secured in place.

### Ordering Information

ZS-300 Housing with mounting brackets  
 ZS-300-1 Housing without mounting brackets  
 ZS-300-5 316L enclosures, custom mounting brackets and operating shaft/couplings are available. Consult Belimo.

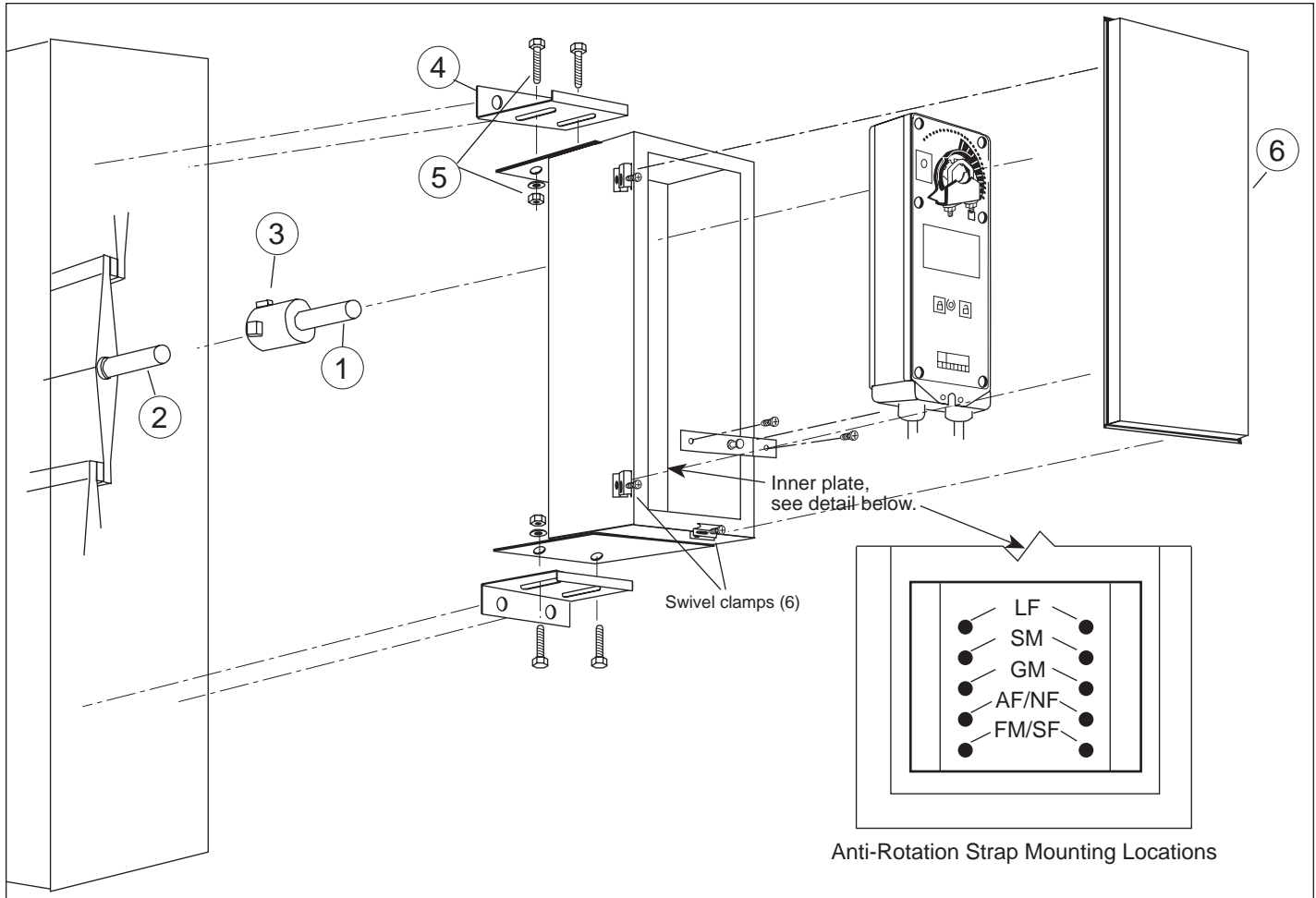
### Accessories

ZS-300-BK Mounting bracket set  
 ZS-300-C1 1/2" shaft adaptor (standard with housing)  
 ZS-300-C2 3/4" shaft adaptor  
 ZS-300-C3 1" shaft adaptor

### Technical Data

#### ZS-300 (-1) (-5)

|                                      |  |
|--------------------------------------|--|
| Material                             | All 304 stainless steel housing, door, (with neoprene gasket), shaft, coupling, universal mounting plate, and hardware.  |
| Material Thickness:                  | 16 GA  |
| Conduit holes                        | Field drilled as required. U.L. listed electrical fittings for NEMA 4X conditions must be used.  |
| Operating shaft (Ordered separately) | 1/2" by 5 15/16" long 304 stainless steel with integral coupling for direct mounting to 1/2" round or hexagonal drive shafts. Square head set screws are 304 stainless steel.  |
| Optional shafts                      | ZS-300-C1 1/2" shaft adaptor (standard with housing)<br>ZS-300-C2 3/4" shaft adaptor<br>ZS-300-C3 1" shaft adaptor   |
| Rotating shaft seal                  | Machined PVC hub, bronze oilite bearings, 10 PSI, Nitrile, bi-rotational, hydrodynamic, radial lip Wave seal.  |
| Industry standards                   | The Belimo ZS-300 NEMA 4X enclosure and Belimo model SM, GM, AM, AF, NF and LF are U.L. listed as an assembly. These enclosures conform to the NEMA standard for Type 4X (water-, dust-tight and corrosion resistant). |
| Weight                               | 11 lbs. [5 kg] without actuator or mounting brackets.  |


**ZS-300 Mounting instructions**

1. The damper operating shaft should extend approximately 1 1/2 inches from the damper assembly or duct side. Mount the drive shaft/coupler ① to the damper operating shaft ②. Fasten the coupler to the damper operating shaft by tightening the two 3/8 inch square head set screws ③.
2. Determine the housing mounting orientation for the application.
3. Locate the housing hole position(s) for the control wiring of the actuator.
4. Make the necessary holes in the housing for the electrical fittings. All fittings must be rated for use in NEMA 4X applications.
5. Install (if ordered with) the 2 mounting brackets ④ to the housing using the four 1/4-20 screws, washers, and nuts ⑤. Do not tighten.
6. Carefully slide the housing over the drive shaft.
7. Place the housing in the desired mounting position. Transfer the mounting hole locations from the mounting bracket to the mounting surface.
8. Drill the 4 holes and fasten the brackets to the surface.
9. Install the anti-rotation strap to the housing in the correct location for the actuator which is being used.
10. Mount the actuator to the drive shaft using the instructions for the actuator being used. Finger tighten the nuts of the universal clamp. Make sure the back of the actuator is parallel to the back of the housing.
11. The operating shaft must pass through the mounting clamp at least 3/8 of an inch. It must not extend beyond the front of the housing. Slide the actuator/housing assembly in the mounting brackets to obtain the proper position.
12. Tighten the mounting brackets to the housing. Verify that the back of the actuator is still parallel to the back of the housing. Tighten the nuts on the universal clamp.
13. Make all of the required electrical connections.
14. Test the actuator/damper operation.
15. Fasten the housing cover ⑥ using the 6 swivel clamps.