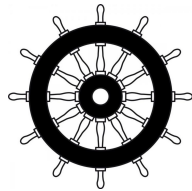


A60 Marine Fire Damper

With (Belimo) Actuator Installation Manual



2923/YYYY

YYYY Denotes the year the Wheel mark is affixed to damper

Description

The actionair Marine Fire Damper is tested and approved for fitting to class A-0 A-15 A-30 A-60 divisions (bulkheads and decks), when suitably insulated.

Tests, approvals and certification

- Lloyds Register Approved.
- DNV-GL Approved.
- ABS Approved
- USCG Approved.
- Transport Canada Approved.
- MED Marine Equipment Directive Compliant.
- Fire tested to the latest IMO FTP code & in compliance with the international convention for the safety of life at sea (SOLAS)
- Corrosion Tested - EN60068-2-52 severity 2 conditions
- Vibration Tested – EN60068-2-6 (5Hz to 350Hz @2g)

Health and Safety

Care must be taken when installing and inspecting dampers, as they are likely to close without warning due to loss of electrical power, or a temperature rise in the ductwork. This is their prime function.

Do not introduce any items, fingers or limbs between the blades.

Larger dampers are heavy and must be handled in accordance with current local regulations and good practice. All wiring should be carried out in accordance with the wiring details provided, to the IEC regulations.

General Information

The actionair Marine Fire Damper is suitable for both vertical and horizontal applications, with airflow in either direction. The dampers tested to IMO fire test procedures Code, Annex 1 Pt 3, are normally open, and fail-safe to the closed position. The actionair Marine Fire Dampers are supplied with the blades in the fully interlocked closed position to avoid damage during transit and installation. It is recommended that the dampers remain closed until actual date of commissioning. All fire dampers are life safety products and must be treated with care during handling, storage and installation. Actionair Marine Fire Dampers are designed for applications in normal dry filtered air systems and should be subjected to a planned inspection programme. Installation - see below.

Dampers are supplied in two casing and blade material options:

- 1/ Galvanised Steel casing and 430 Stainless steel blades.
- 2/ 316 Stainless steel casing and blades and drive.

Maintenance Testing

Routine testing - Monthly, or in accordance with Routine testing maintenance programme, release and reset damper (via control system or ETR test switch). Check remote indication or visual check of mechanical pointer as appropriate. Visually check blades for damper closed and open positions.

Prove remote indication if applicable.

Routine Maintenance

- Depending upon environmental conditions, each damper will merit its own cleaning regime.
- 'Frequency of maintenance' should be determined by collecting historical data from previous visits, and for this reason, commence maintenance programmes.
- Dampers in 'Dry Filtered Air' require very limited maintenance.

Cleaning

- Using light lubricant, clean all exposed surfaces, using a cloth. Remove all traces of surface staining, as this will deteriorate further causing deeper material corrosion.
- For 316 stainless steel blades and case, pay specific attention to the blade rivets where crevice corrosion will cause rapid failure of blades if not kept in check.
- If damper is stiff to operate lubricate blade ends, open and close damper successively until the damper moves with ease. (This may necessitate removal of the actuator and operating the blades manually by the drive shaft).
- Refit actuator and re-test.
- Clean off excessive lubricant.

Control Modes (4 positions)

Two sizes of Control Mode (Compact and Universal) are utilised. Correctly sized Control Modes are designed to fit only to the relevant sized damper. (See 'Control Mode Standard Parameters' figure 7) Remove transit plate from damper mounting plate and recycle. ***IMPORTANT*** - please ensure damper blades are in the fully closed position prior to mounting actuators. Failure to do so may damage drive shafts and render the damper inoperable.

Fit adaptor plate to Control Mode and fit to mounting plate on the damper. Secure with screw & washer provided - 5Nm Max. It is important that the Control Mode is fitted with the product label denoting "fail safe close" is facing outermost; otherwise the assembly will not operate as designed.

Mechanical Operation Check

As an interim check, the damper should be manually reset and released using the manual reset key provided, (refer to Control Mode label) to ensure that correct mechanical operation is achieved. This feature may be used for system commissioning when electrical power is unavailable. Note however, the ETR is not operable without electrical power, and the damper will not close automatically should a temperature rise or fire occur.

Electrical Thermal Release (ETR) Installation

Select a suitable position for the ETR on the duct as follows:
Deck Installations - Must be anywhere below the damper.
Bulkhead installations - Ideally this should be anywhere in the top half of the duct. Position the self-adhesive fusible link drilling template label provided in the appropriate position on the duct. Using a 3.0mm Ø bit, drill the two ETR fixing holes. Using a 10mm Ø drill, drill the central hole. Remove sharp edges.

Push the ETR through the duct and ensure that both screws are used to hold it securely in position. The ETR cable must not be shortened, and care must be taken not to damage it, as this will render the actuator inoperable.

ETR can be installed in damper case when using a 210mm deep damper.

This is a built-in safety feature.

Electrical Connection and Final Operational Test.

The unit must be wired as described in the Application and Wiring section, page 4. When power is available, the unit must be checked for electrical operation. Power on to motor open, power off to spring close. The unit must also be checked by moving and holding the test switch on the ETR to confirm that the damper closes. When pressure is removed from the switch the damper will re-open. This may be done after the initial installation test, to provide periodic operation of the damper to simulate actual fail-safe closure under fire conditions.

Electrical

Fail-safe is by means of a unique and patented Electrical Thermal Release (ETR) which operates at 72°C or if power supply is interrupted. This gives the user a simple and clear visual check that the Actuator is receiving power, the ETR is correctly fitted, and the thermal fuse is intact. A manual test switch allows periodic operation of the damper for testing purposes, simulating actual failsafe release under fire conditions. The associated electrical Control Modes are available in 24V, 120V or 230V versions. Probe section only available as a spare replacement part.

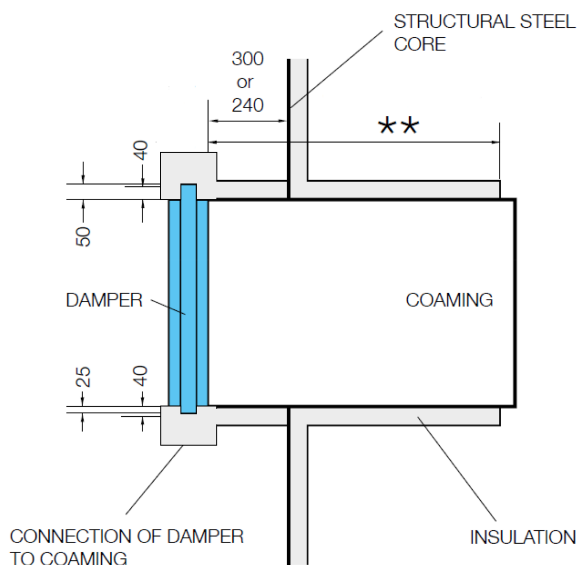
Damper Installation

All installations shall be carried out in accordance with the relevant Marine/Offshore Authority requirements. The damper should be installed in accordance with Insulation details that represent a typical installation. Please refer to the relevant notified body certificates for insulation lengths located on Actionair website. Bolt holes provided as standard on the damper flanges at 150mm maximum centres. Matching hole positions are necessary on mating coaming/duct flanges.

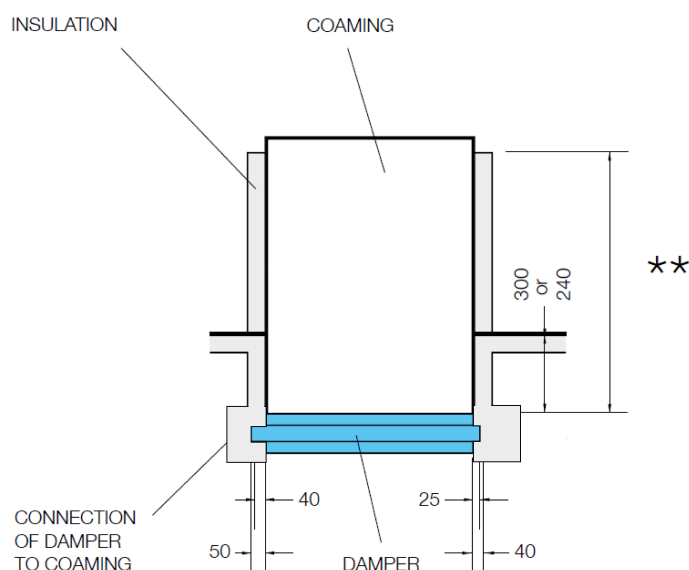
Apply approved fire-resistant sealant/gasket to mating flanges and position damper.

Bolt A60 square/rectangular dampers using suitable steel bolts minimum M10 diameter and minimum M6 diameter on A60 circulars.

Bulkhead (Vertical) Figure 1

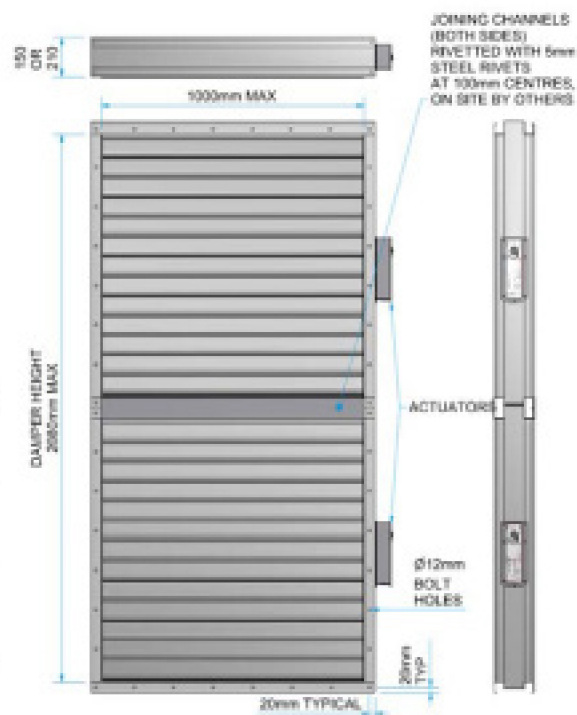
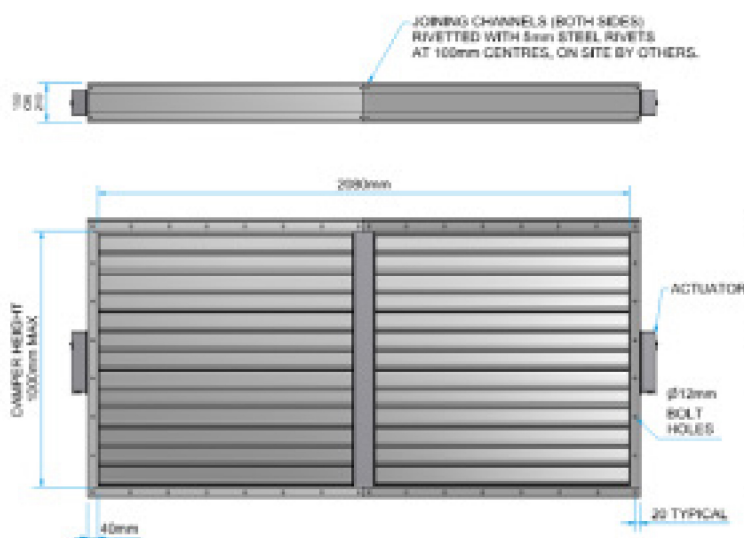


Deck (Horizontal) Figure 2



For insulation lengths ** Please refer to the relevant notified body certificates located on Swegon website

Multiple Damper Assemblies
Tested and approved to a size of either;
(2x1) 2080mm x 1000mm
or (1x2) 1000mm x 2080mm



A60 Marine Fire Damper With Electrical (Belimo) Actuator

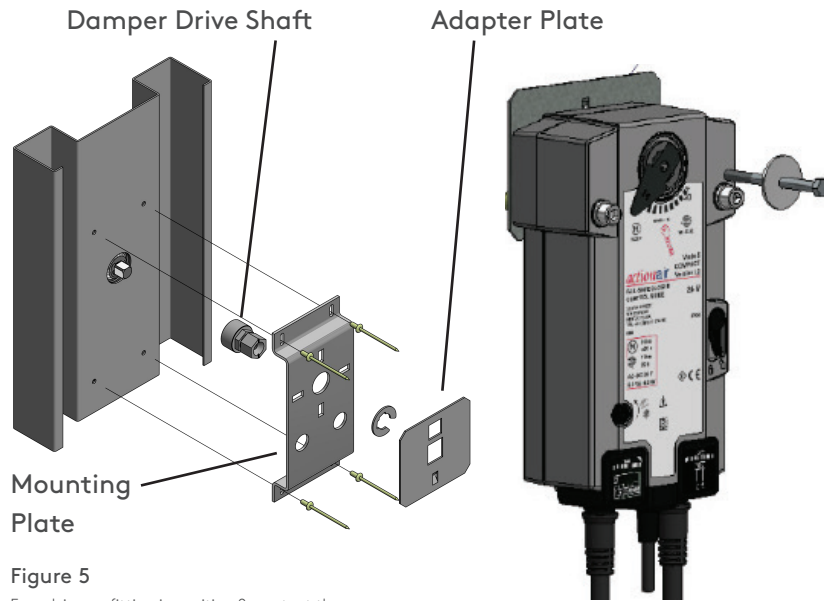


Figure 5

For advice on fitting in position 2, contact the Actionair Sales Office

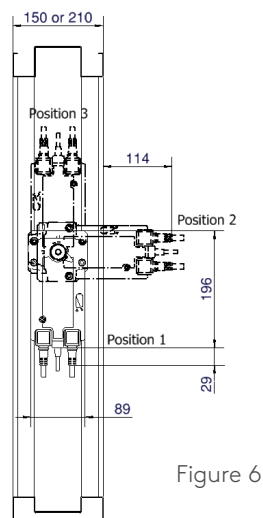


Figure 6

Control Mode Standard Parameters

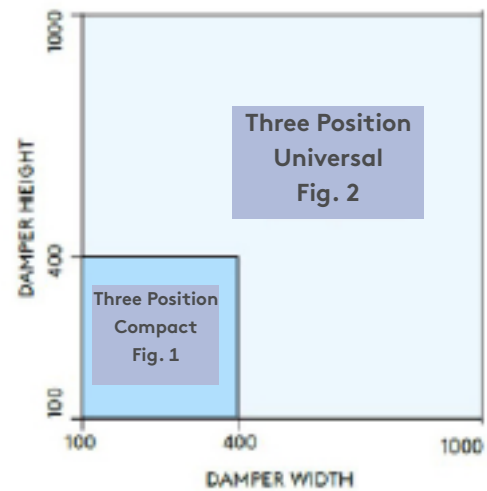


Figure 7

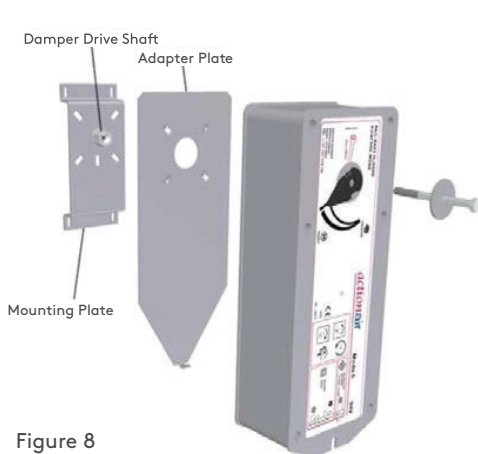


Figure 8

Fig. 2 Four Position Universal

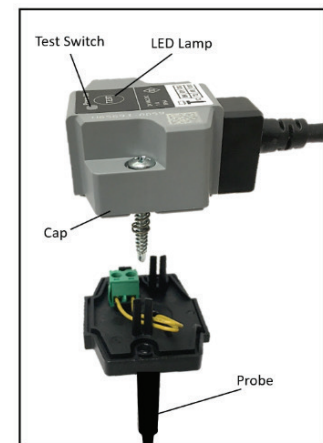
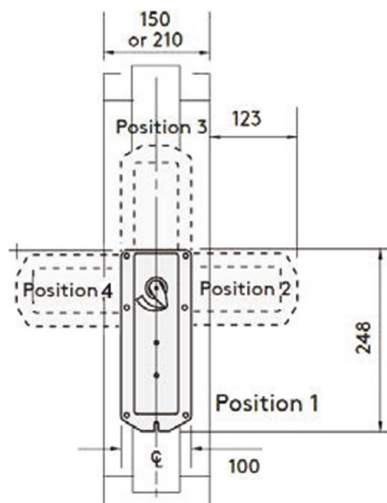


Figure 9

BAT ETR for Compact and Universal actuator

Control Mode 5 - 24V A.C. or
D.C.24V - AC (19.2 - 28.8V) -
50/60Hz24V - DC (21.6 - 28.8V)

Control Mode 120 - 120V
A.C.120V A.C. (96 - 132V) -
50/60Hz

Control Mode 6 - 230V
A.C.230V A.C. (196 - 264V) -
50/60Hz

Supply On - Damper motors open.
Supply Off - Damper springs closed.
ETR Operates - Damper springs
closed.

12W (Maximum Motoring)4W
(Maximum Reset)

End Switches2 x S.P.D.T. 6(3)A, AC
250V

**To isolate from main power supply, the
system must incorporate a device, which
disconnects the phase conductors, with at
least 3mm contact gap.**

2 x 1 metre of halogen free, low smoke and fume
electric cables are included with each control
mode. The ETR is prewired with 0.5-metre
halogen free low smoke and fume cable.

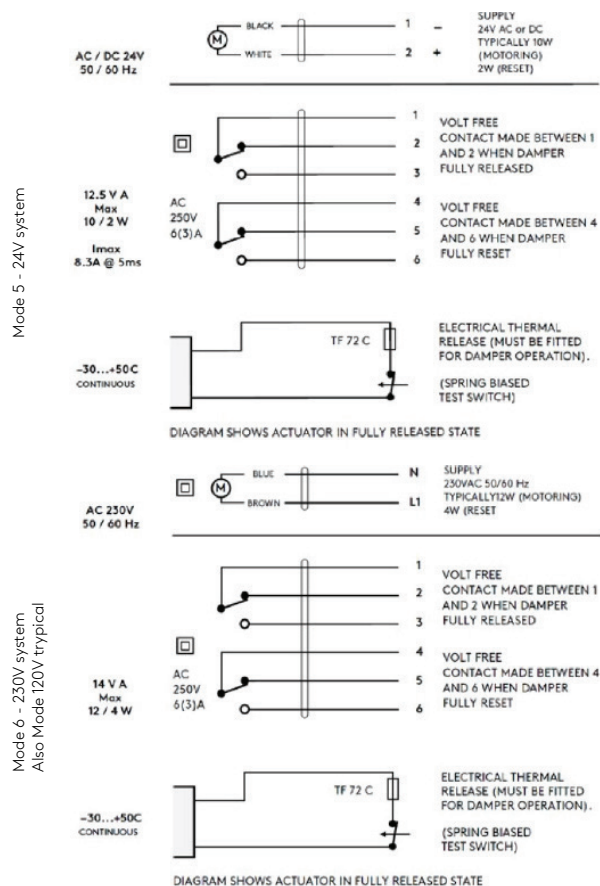


Figure 11

Trouble shooting:

Fault	Possible problem	Recommended action
Control Mode does not fit damper	Two sizes of Control mode exist	Check correct selection (page 3)
Control Mode does not fit to damper drive shaft when Control Mode is correctly positioned	Damper shaft not in 'danger closed' position	Damper shaft has an 'indication groove' which is parallel to damper blades. Damper must be in closed position before fitting Control mode
	Control Mode not in released position	If not electrically connected, check manual reset mechanism is released. (Refer to Control Mode label). If electrically powered, with ETR fitted, press and hold test switch on ETR
Control Mode does not operate electrically (ETR LED not illuminated)	ETR not correctly fitted	Refer to Page 3
	Mode wired incorrectly / No power	Refer to above wiring diagram
	ETR activated	Remove probe section of ETR. Check electrical continuity of ETR probe, replace if necessary
Control Mode operated, but limited or no movement of damper blades evident	The Control Mode is fitted back to front	Universal: Label must be outer most. Check and correct if necessary. Compact: Label "FAIL SAFE CLOSED" facing outermost. Check and correct if necessary.
	Over tightening of M5 x 80mm screw. (3 position only)	Loosen screw to 5Nm torque
	Damper/Control Mode positions not synchronised	Remove Control Mode. Check damper closed (see indication Groove on damper shaft), and Control Mode released. Refit Control Mode
	Obstruction impeding damper blade	Check visually, remove obstruction. If necessary, remove Control Mode and operate damper drive shaft with 14mm A/F spanner