

Installation, Operating & Maintenance Instructions

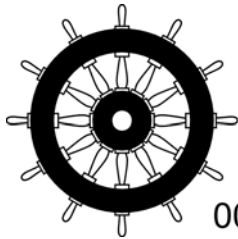
Description

The A-60 Marine Fire Damper is tested and approved for fitting to class A-60 divisions (bulkheads and decks), when suitably insulated (see page 2 for details).

Tests and Approvals

A60 Fire Rated.
Lloyds Register of Shipping Approved.
Marine Equipment Directive Compliant.
USCG Approved.
Germanischer Lloyds Approved.
American Bureau of Shipping Approved.
Corrosion Tested.
Vibration Tested.

The A-60 Marine Fire Damper is designed for inclusion in air conditioning and ventilation systems.



0038/YY

YY Denotes last two digits of year the Wheelmark is affixed to damper

Health and Safety

All wiring should be carried out in accordance with the wiring details provided, to the IEC regulations.

Larger dampers are heavy and must be handled in accordance with current regulations and good practice)

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.

General Information

The A-60 Marine Fire Damper is suitable for both vertical and horizontal applications, with airflow in either direction. The dampers which are A60 fire rated to IMO fire test procedures Code, Annex 1 Pt 3, are normally open, and fail-safe to the closed position. The A-60 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 should be treated with care during handling, storage and installation. A-60 Marine Fire Dampers are designed for applications in normal dry filtered air systems and should be subjected to a planned inspection programme, with cleaning and light oil lubrication in accordance with good industry practice. When exposed to fresh air intakes and/or inclement conditions this may need to be performed more regularly based on experience gained from previous inspections.

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A-60 Marine Fire Damper

Damper installation

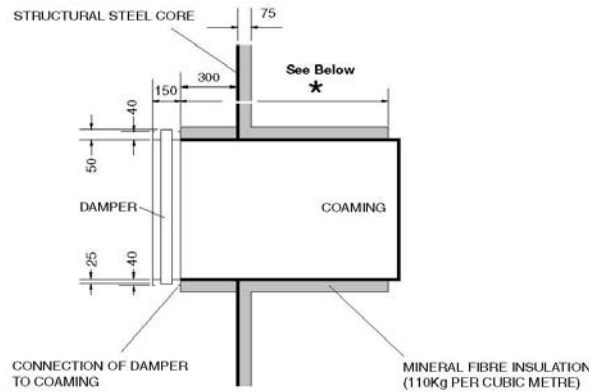
All installations must be carried out in accordance with the relevant Marine/Offshore Authority requirements.

The damper should be installed in accordance with Insulation details (as shown) that represents a typical A-60 installation. Bolt holes are provided as standard on the damper flanges (unless otherwise stated) 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 damper using M8 minimum diameter steel bolts, at a maximum of 200mm centres.

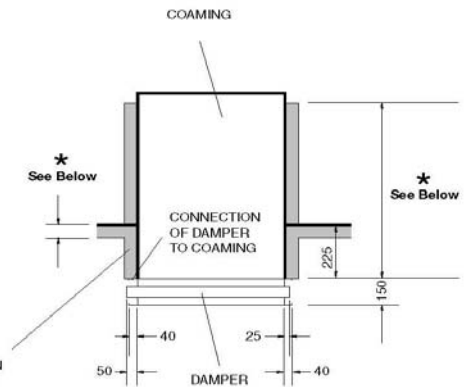
Note: For vertical applications, the 50mm casing dimension (see below) should be uppermost.

Insulation Details:

Bulkhead (Vertical)



Deck (Horizontal)

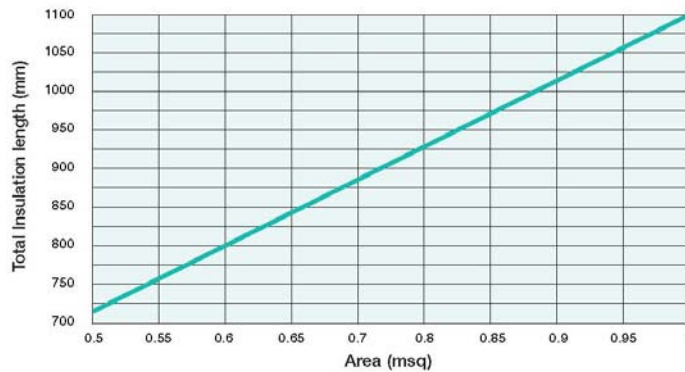


* Table of Minimum Total Coaming Insulation Length (Applies to all approval bodies)

Application	Insulation Thickness	Minimum Total Insulation Length
Vertical bulkhead up to 750 x 750 (0.5625msq)	75mm	725mm
Vertical bulkhead above 0.5625 msq		refer to graph below
Horizontal deck up to 750 x 750 (0.5625msq)	40mm	725mm
Horizontal deck above 0.5625 msq		refer to graph below
Horizontal deck (all sizes)	75mm	725mm

The same area/insulation criteria applies for multiple arrangements

Graph Showing Minimum Insulation length for Damper above 750mm x 750mm Base Damper (Applies to all approval bodies with the exception of ABS)



Note: for circular, use square base damper area.

Coaming Insulation Example

For a damper size of 910mm x 925mm.
Area = 0.85 msq

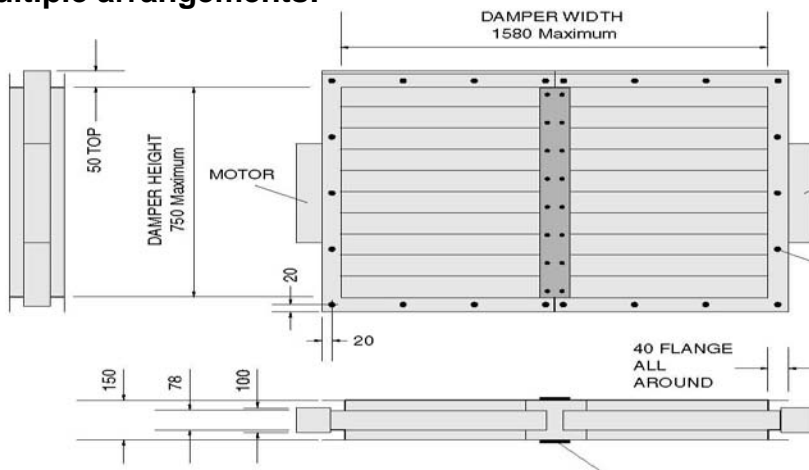
Vertical Installation

Insulation Thickness = 75mm (line 2 of table)
Insulation Length = 975mm (refer to graph)

Horizontal Installation

Insulation Thickness = 40mm (line 4 of table)
Insulation Length = 975mm (refer to graph)
Insulation Thickness = 75mm (line 5 of table)
Insulation Length = 725mm (line 5 of table)

Multiple arrangements:



Multiple width assemblies (2 x 1) have been tested and approved to a size of 1580mm wide x 750mm high.

Optional

12mm DIA. HOLES IN EACH CORNER AND EQUALLY SPACED AT 150mm MAX. CENTRES BOTH SIDES OF FLANGES ON EACH INDIVIDUAL DAMPER

1.2 STEEL x 75mm WIDE JOINING STRIP (BOTH SIDES) RIVETTED WITH 3.2mm STEEL RIVETS AT 100mm CENTRES, ON SITE BY OTHERS

Control Modes

Two sizes of Control Mode (Compact & Universal) are utilised. Correctly sized Control Modes are designed to fit only to the relevant sized damper. (See 'Control Mode Standard Parameters' figure)

1. Three position

(Refer to figs 1 and 2)

- 1.1. Remove transit plate from damper mounting plate, and discard.
- 1.2. Fit adaptor plate to Control Mode.
- 1.3. Position Control Mode onto mounting bracket. Secure with screw & washer provided. Tighten to 5Nm. 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

2. Single Position

(Refer to fig 3)

- 2.1 Remove transit plate from damper mounting plate, and discard.
- 2.2 Position Control Mode onto mounting bracket as Fig 3. Secure with screws provided. It is important that the Control Mode is fitted with the product label 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

- 1 Select a suitable position for the ETR on the duct as follows:
 - 1.1 Deck Installations – Must be anywhere below the damper.
 - 1.2 Bulkhead installations – Ideally this should be anywhere in the top half of the duct.
- 2 Position the self-adhesive fusible link drilling template label provided in the appropriate position on the duct.
- 3 Using a 3.0mm dia bit, drill the two ETR fixing holes.
- 4 Using a 10mm dia drill, drill the central hole.
- 5 Remove sharp edges.
- 6 Push the ETR through the duct and ensure that both screws are used to hold it securely in position.

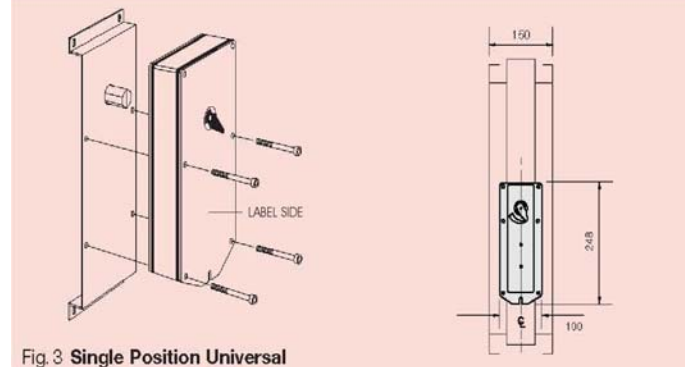
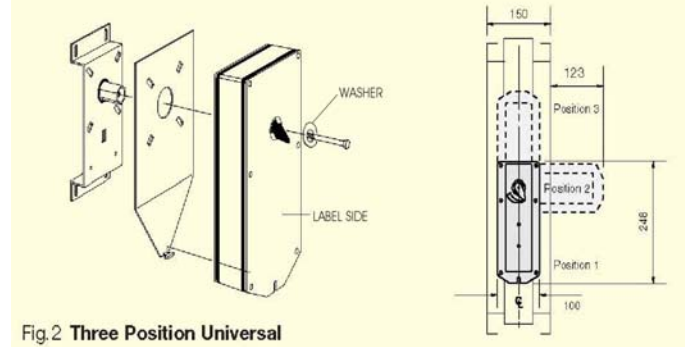
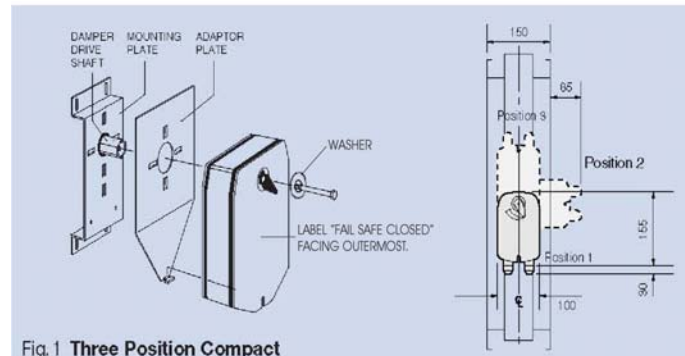
If the ETR is not fitted to the ductwork, the actuator will not operate. The ETR cable must not be shortened, and care must be taken not to damage it. Either of these actions will render the actuator inoperable. This is a built in safety feature.

Electrical Connection and Final Operational Test

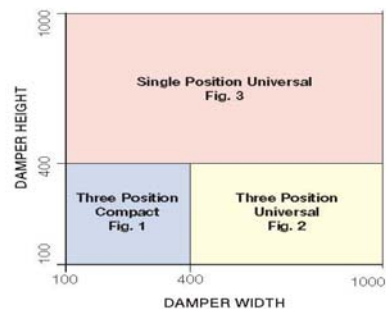
The unit must be wired as described in the Application and Wiring section, page 4.

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 pushing 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.

Note: Application of supply voltage will automatically override the manual locking mechanism



Control Mode Standard Parameters



ETR



Electrical Thermal Release (ETR)

A green 'Healthy' indication lamp is built into the ETR housing to give a simple and clear visual check that

- ✓ The actuator is receiving power
- ✓ The ETR is correctly fitted
- ✓ The thermal fuse is intact

A manual test switch allowing periodic operation of the damper for testing purposes simulates actual fail-safe release under smoke/fire conditions. End switches are provided with each Mode for reset and release monitoring.

Application and wiring

Control Mode 5 24V A.C. or D.C.

Control Mode 6 230V A.C. 50/60Hz

Control Mode 120120V A.C. 50/60Hz

Power On– Damper motors open.

Power Off–Damper springs closed.

ETR Operates–Damper springs closed.

Release Time ≈ 20 seconds.

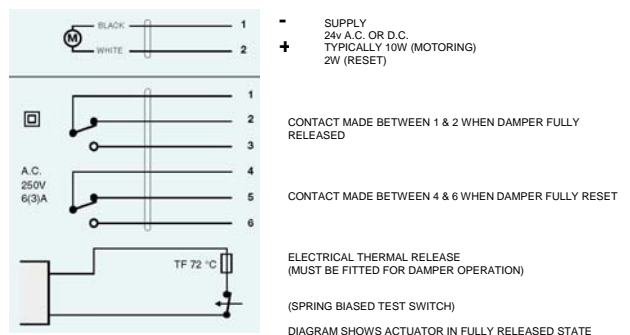
Reset Time = less than 60 seconds.

End Switches Rated at 250V 1.5 Amp (Maximum).

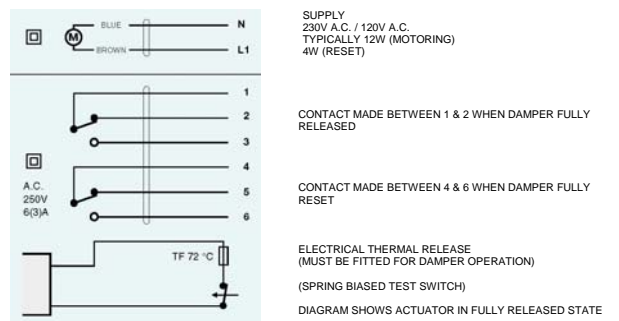
To isolate from main power supply, the system must incorporate a device, which disconnects the phase conductors, with at least 3mm contact gap.

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

Mode 5



Mode 6 & Mode 120



Troubleshooting

Fault	Possible problem	Recommended action
Control Mode does not fit damper	Two sizes of Control mode, and three bracket variants 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 'damper 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 outermost. Check and correct if necessary. Compact: Label "FAIL SAFE CLOSED" facing outermost. Check and correct if necessary.
	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.

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