

# 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  
Det Norske Veritas Approved.  
American Bureau of Shipping Approved to max size of 750mm x 750mm for single dampers, 1580mm x 750mm for 2x1 multiple dampers.  
Corrosion Tested.  
Vibration Tested.

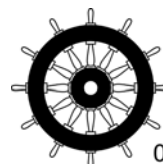
## Health and Safety

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 regulations and good practice.

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



0038/YY

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

## 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 to blades, casing and actuator, 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.

**Testing-Maintenance and cleaning** A-60 Dampers are supplied in 2 casing and blade options:-

1. 430 Standard steel blades, Galvanised Steel casing - only suitable for installation in dry filtered systems.
2. 316 Standard steel blades, casing and drive - more suited for corrosive conditions, but even this will rapidly corrode and fail if not properly maintained, when used in air intake systems at sea. The addition of a mist eliminator is highly recommended and access must be provided for maintenance.

Pay particular attention to the blade rivets, where crevice corrosion will cause rapid failure of blades if not kept in check.

**Testing** Two levels of testing exists.

### 1. Routine testing

Monthly, or in accordance with maintenance programme, release and reset damper (via control system or ETR test switch). Check remote indication or visual check of mechanical pointer as appropriate.

### 2. Visual check at damper

At commissioning and at least once a year, check damper operation by removing and re-applying power to actuator. (via ETR test switch). 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. Particularly hostile areas may require monthly cleaning and lubrication.

*'Frequency of maintenance'* should be determined by collecting historical data from previous visits, and for this reason, commence maintenance programmes at very frequent intervals. Dampers in *'Dry Filtered Air'* require very limited maintenance.

Using Duck Oil (recommended lubricant, or similar equivalent), clean all exposed surfaces, using a cloth. Remove all traces of surface staining, as this will deteriorate further causing deeper material corrosion.

If damper is stiff to operate, lubricate blade ends and 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.

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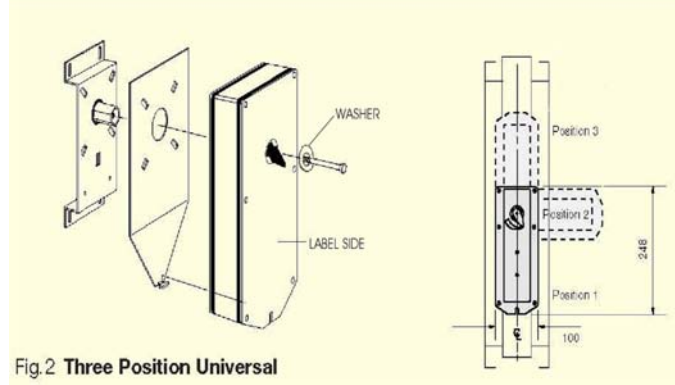
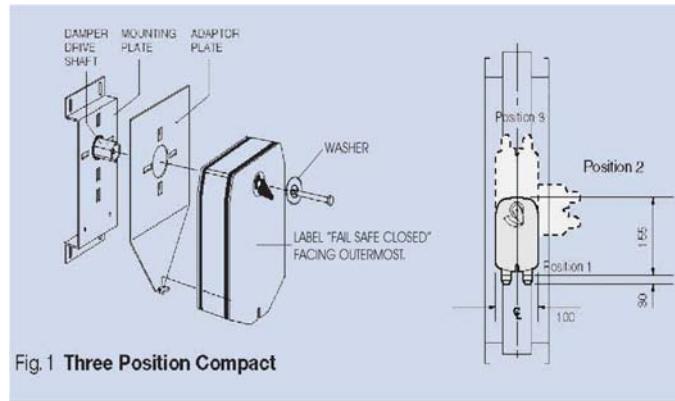


# Control Modes (3 positions)

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)

(Refer to figs 1 and 2)

- 1, Remove transit plate from damper mounting plate, and recycle.
- 2, Fit adaptor plate to Control Mode.
- 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;



## 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.

The ETR cable must not be shortened, and care must be taken not to damage it, as this will render the actuator inoperable. This is a built in safety feature.

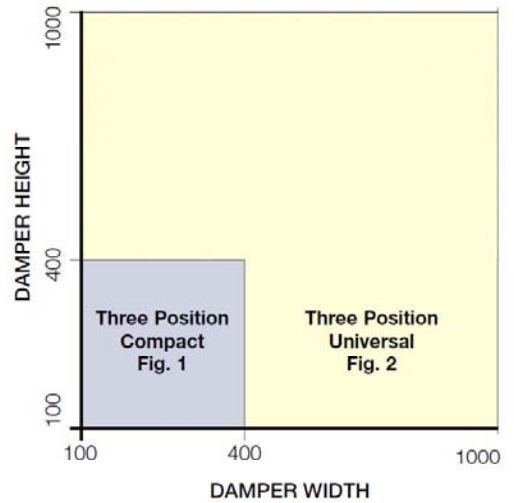
## Electrical Connection and Final Operational Test

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 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.**

**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.

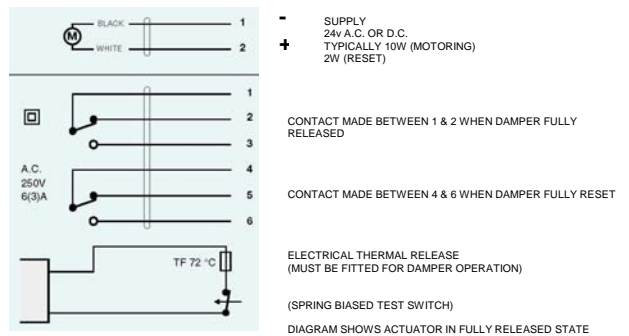
Reset Time = less than 60 seconds.

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

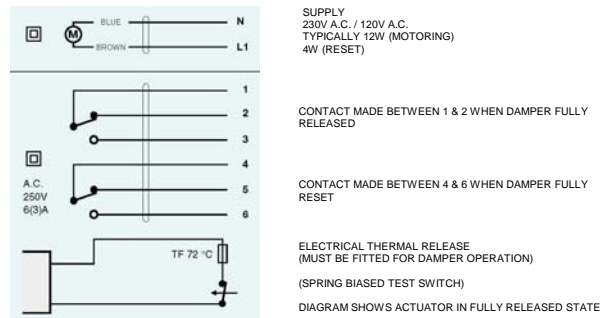
To isolate from main power supply, the system must incorporate a device, which disconnects the phase conductors, with at least 3mm contact gap.

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 & Mode120



## Troubleshooting

| Fault  | Possible problem                                      | Recommended action   |
|--|---|--|
| <b>Control Mode does not fit damper</b>  | Two sizes of Control mode exist.                      | Check correct selection (page 3)   |
| <b>Control Mode does not fit to damper drive shaft when Control Mode is correctly positioned</b> | 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. |
| <b>Control Mode does not operate electrically (ETR LED not illuminated)</b>                      | 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.   |
| <b>Control Mode operated, but limited or no movement of damper blades evident</b>                | The Control Mode is fitted back to front              | <b>Universal:</b><br>Label must be outermost. Check and correct if necessary.<br><b>Compact:</b><br>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.  |
|  |   |  |

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