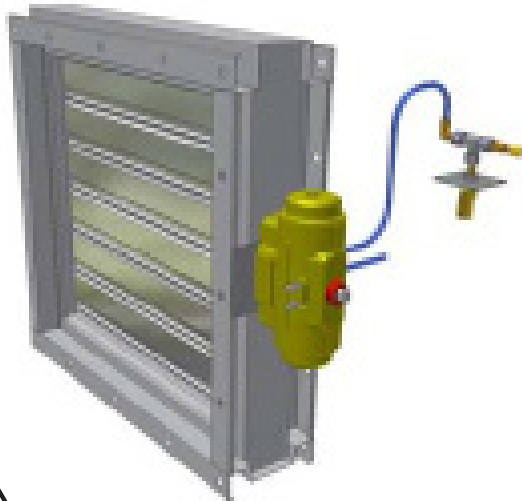


A60 Marine Fire Damper

With ATEX rated Pneumatic (Hytork) Actuator Installation Manual



TYPE OF PROTECTION 'C'

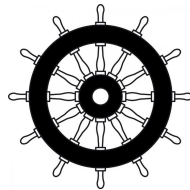
II 2G Exh II C T6 Gb

II 2D Exh III C T85 Db

Sira 11ATEX6259

EN ISO 80079-36:2016

EN ISO 80079-37:2016



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.

A-0 does not require any insulation to the casing.

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 international convention for the safety of life at sea (SOLAS)
- Sira certification (Ex) category 2 equipment
- 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 procedure, 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.

Maintenance & Cleaning

Dampers are supplied in two casing and blade material options: -

1. Galvanised Steel casing and 430 Stainless steel blades, only suitable for installation in dry filtered systems.
2. 316 Stainless steel casing, blades 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.

Testing

Two levels of testing exist.

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.

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.

'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. When exposed to fresh air intakes and/or inclement conditions this may require monthly cleaning and lubrication maintenance to be performed.

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.

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.

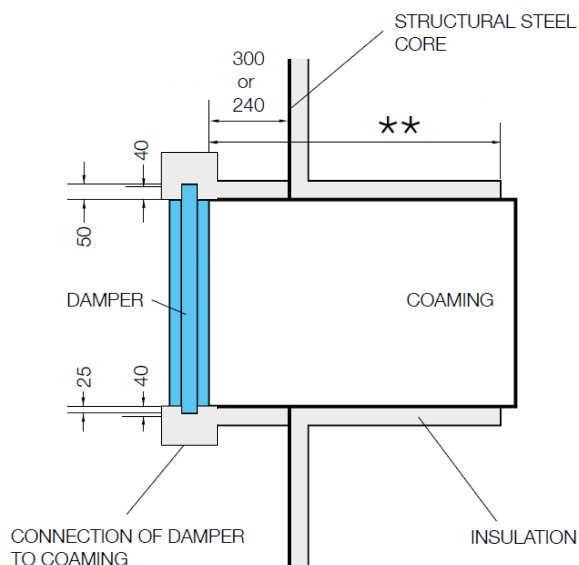
Bolt holes provided as standard on the damper flanges (unless otherwise stated) at 150mm maximum centres. Matching hole positions are necessary on mating coaming/duct flanges.

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

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

For insulation lengths ** please refer to the relevant notified body certificates located on our website.

Bulkhead (Vertical) Figure 1



Deck (Horizontal) Figure 2

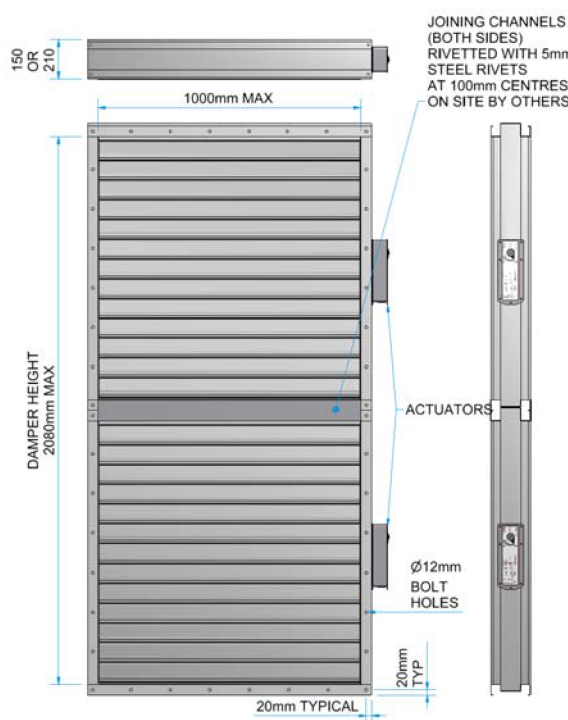
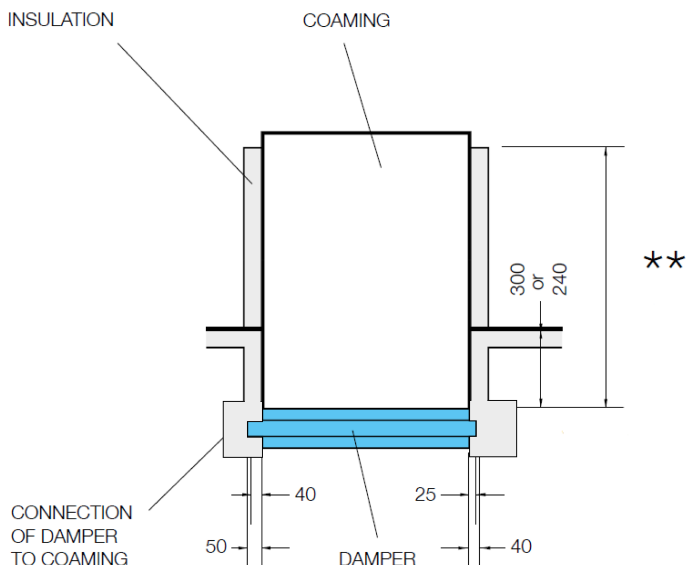


Figure 3

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

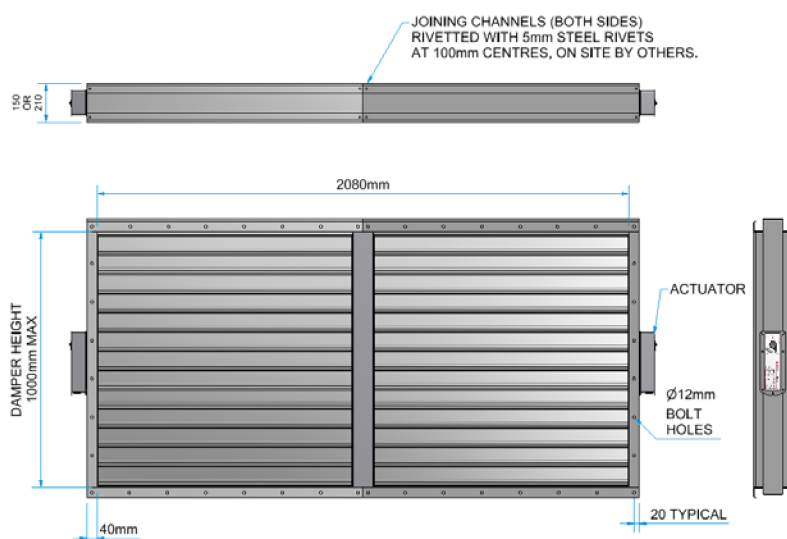


Figure 4

Actuator Installation

The actuator mounting plate is used also as a transit plate prior to fitting of the actuator on site. The transit plate keeps the damper blades closed by retaining the damper drive shaft in a fixed position. When the plate is removed the drive shaft is not secured.

Remove the 2No cross-recessed (Pozi) head screws retaining the transit plate and discard the screws.

Using the 4No socket head cap screws supplied (M8 or M6 for HYTORK or FESTO actuators respectively), fit transit plate (hereafter referred to as the mounting plate) to the actuator.

Refit mounting plate to damper casing or bracket, (whichever is the case) using 4No steel rivets supplied, ensuring that the 4 holes in the damper casing line up with the appropriate slots in the mounting plate (Marked 'X' on figure 7, below).

***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.**



Figure 5

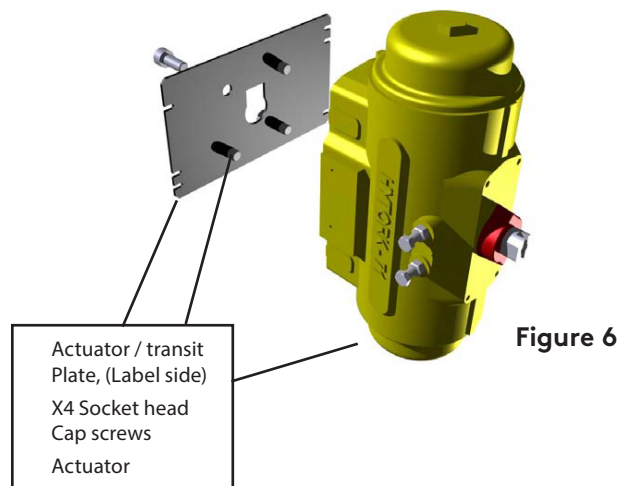
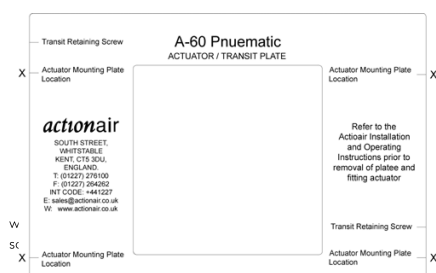


Figure 6

Figure 7



Pneumatic Thermal Release (PTR)

The PTR assembly is a special purpose design and is supplied with necessary tubing that connects to the quick fit couplings of the PTR and actuator. The PTR coupling must not be disassembled, and the appropriate size tubing must be connected to ensure correct operation.



Figure 8

PTR Installation

- Select position for PTR, ideally this should be in the top half of the duct and sufficiently close to the actuator to allow easy connection of the 4mm diameter nylon tube supplied by Actionair.
- Drill hole in selected position using a 30mm diameter hole cutter, removing / deburr sharp edges.
- Position PTR and drill the 4No 3mm diameter fixing holes.
- Remove PTR and apply approved fire-retardant sealant on the duct around the hole.
- Refit PTR and secure with the 4No cross-recessed (Pozi) head screws provided.
- Connect 4mm diameter tube to the actuator and PTR.
- Connect 6mm diameter tube to input side of PTR
- Connect air supply. Damper opens fully,
- Important: Testing method operation must be undertaken

Test Method

This MUST be carried out for each and every installation (With air supply connected).

Test fail-safe operation by temporarily removing and refitting the brass fusible link, on the PTR.

- Push spring loaded bottom lever upwards – Link will lift over the small socket cap head screw, on the fusible link body.
- Release bottom lever. Air exhausts from the PTR, ensure complete damper closure.
- Refit link by pushing the central pin at the bottom of the PTR upwards with a small screwdriver, whilst rotating bottom lever upwards and refitting brass link over the small socket cap head screw.

Special Conditions of Safe Use

1. The associated spring return failsafe actuator must be suitably rated ATEX certified for the hazardous atmosphere into which it is to be installed.
2. The equipment must be suitably bonded to a common earth point and continuity to be checked upon installation.
3. The equipment must not be subjected to charging mechanisms stronger than manual rubbing.
4. The minimum ignition energy of dust atmospheres into which the equipment is installed is to be >1mJ

Trouble shooting:

Fault	Possible problem	Recommended action
Damper fails to open or partially opens.	Insufficient air pressure / leak / blockage.	Check correct 5 bar (minimum) air pressure is present at actuator.
	Brass fusible link not fitted	Refit link
	Brass fusible link has activated.	Replace fusible link.
	Actuator mounting plate fitted incorrectly	Refer to Actuator installation – Actuator / Transit / Mounting Plate alignment figure 6
	Actuator open 'End Stop' adjustment incorrect.	Refer to Actionair Technical sales office.
Damper fails to fully close when air pressure is removed.	Damper not correctly synchronised with the actuator	Remove air supply to actuator. Remove actuator from damper. Fully close damper. Refit actuator in accordance with Actuator installation – Actuator / Transit / Mounting Plate alignment figure, page 3.
Damper fails fully close when Fusible Link element is removed.	Air supply connections incorrect.	Check fittings. (Refer to page 3) Refer to Actionair Technical sales office.
	Actuator closed 'End Stop' adjustment incorrect.	Refer to Actionair Technical sales office.