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# WIRING INSTRUCTIONS

TALKB
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# TALKBACK DAMPER CONTROL SYSTEM

The Talkback Damper System is designed to monitor and control fire & smoke resistant air transfer grilles (ATGs) within a building, interfacing with the fire alarm system to ensure safety. The Damper Control Monitor (DCM) provides DC power and monitors the status of ATGs.

## Wiring Specifications

### Cable Requirements:

- A three-core cable is required to connect the DCM to the air transfer grilles for power (12V +/-) and signal.
- Using 1mm² wire provides a ring system with a maximum length of 100 meters. For radial or spurred systems, each leg can be a maximum of 50 meters. These lengths can be increased proportionally with increments in wire cross-sectional area. 1.25mm2 & 2.5mm2 provides 125m & 250m respectively.

### Installation Types:

- **Ring System:** Allows up to 16 air transfer grilles to be connected using a 3-core cable arranged in a ring. (Diagram A, page 4).
- **Radial/Spurred System:** A spurred system may limit the number of air transfer grilles connected to a DCM (Diagram B, page 4).

### Cable Specifications:

It is advisable to check with the local fire officer for compliance with local policies. Fire-resistant cable may be used if it provides at least the same capacity as 1mm² copper wire.

### Individual Addressing:

Each fire & smoke resistant ATG has an individual address, requiring a 3-core cable to supply and signal to each unique address. Further information on how to set the address of individual fire & smoke resistant ATG can be found on page 6.

## Installation Guidelines

### Qualified Personnel:

Wiring installations and commissioning should be undertaken by qualified personnel using Lorient wiring, fitting, and commissioning instructions.

### Location of DCM:

DCMs should be located where they can be routinely viewed. If using an Audio Monitoring System (AMS), it should be positioned where the audio warning can be heard by a responsible member of staff. The AMS does not need to be situated next to the DCM.

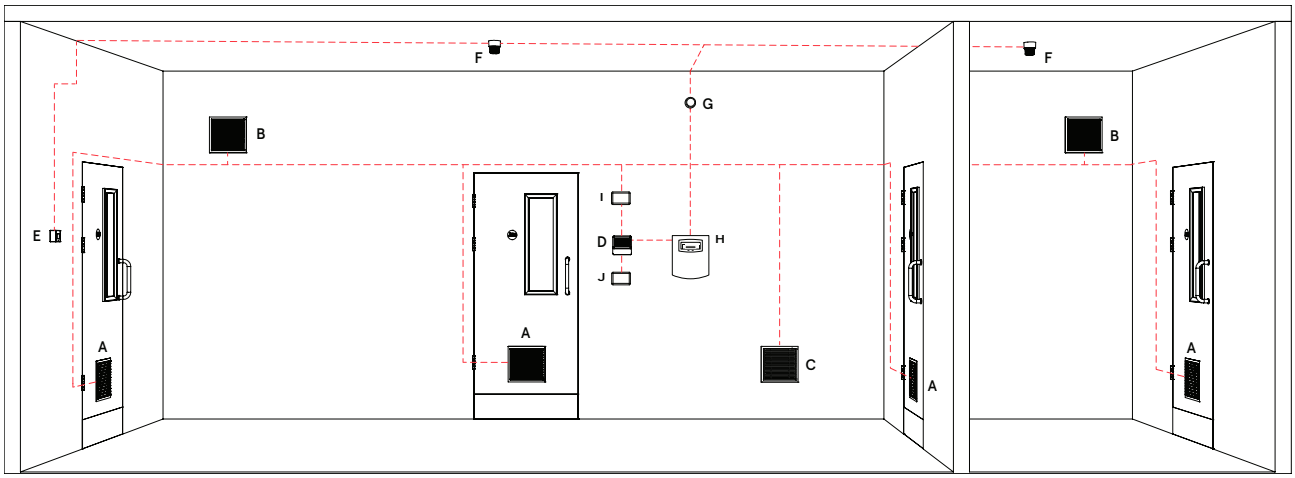
### Commissioning:

A completed wiring diagram for each installed system should be provided to the building operator after commissioning, indicating the location of each air transfer grille and its DCM address.




Smoke damper & actuator

## TYPICAL INSTALLATION OF THE LORIENT TALKBACK SYSTEM




**A:** Door mounted fire & smoke air transfer grilles
**B:** End of duct fire & smoke air transfer grilles
**C:** Wall mounted fire & smoke air transfer grilles
**D:** Talkback DCM
**E:** Fire point
**F:** Smoke sensors
**G:** Fire alarm indicator
**H:** Fire alarm panel
**I:** Audio / Visual alarm
**J:** Battery back-up

## Fire Alarm Connection Options

### Option 1:

- The DCM sends its own signal to a "0" volt contact on the alarm panel. In an alarm condition, the normally closed contact opens and breaks the signal, instructing all shutters to close.

### Option 2:

- A 24-volt signal generated by the fire alarm panel is used. In normal conditions, the signal is live, but it ceases in an alarm condition, triggering the DCM to instruct the shutters to close.

## Operation

### Normal Conditions:

Shutters within the air transfer grilles will be in the open state, and the top row of green lights on the DCM will be illuminated, indicating compliance with the open instruction.

### Testing:

During auto-cycling or manual testing, the fire alarm panel's normal interface signal to the DCM is interrupted. A red warning light flashes, and the DCM instructs the shutters to close. The bottom row of green lights will indicate the closing instruction, and if all shutters close, the corresponding green lights remain illuminated.

### Fault Indication:

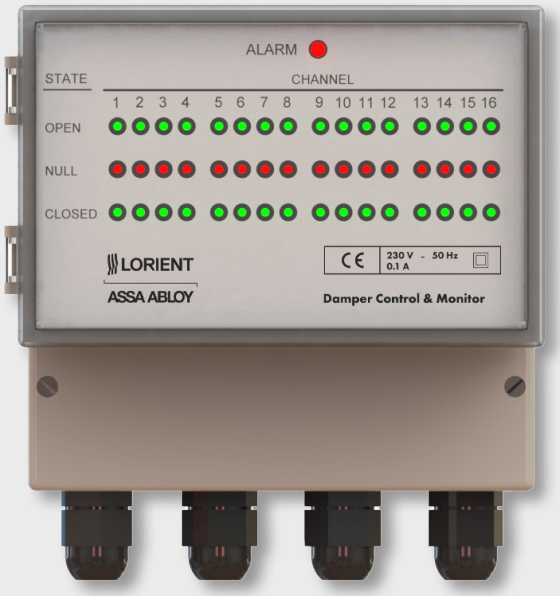
If any green lights are replaced by red lights after approximately 20 seconds, it indicates a fault with those air transfer grilles. The DCM interrogates each actuator in turn and receives responses to confirm their status.

### Manual Testing:

Manual testing can be conducted by using the test switch shown in Diagram C (page 5). **Important: The test switch must remain in the upright/open position to allow control by the fire panel.**

### Fail-Safe Operation:

If an actuator does not receive a signal from the DCM within 10 seconds, it will assume a fault or alarm and close the shutters as a fail-safe measure.




Talkback Damper Control Monitor (DCM)

## Damper Control Monitor (DCM) Features

### Physical Specifications:

- **Dimensions:** 195w x 165h x 105d mm.
- Clear vision panel in the upper section.
- Screw-fixed panel for wiring connections in the lower section.

### Display Panel:

Contains 3 horizontal rows of 16 LEDs

- **Top row (green):** Indicates ATGs are open as commanded.
- **Bottom row (green):** Indicates ATGs are closed as commanded during a test cycle.
- **Middle row (red):** Indicates a fault or unconnected channel.

### Interfacing with Fire Alarm Panels:

- **Option 1:** A signal generated by the DCM is passed through a normally closed "no volt" contact on the alarm panel.
- **Option 2:** Use a spare 24-volt DC signal output from the alarm panel.

### Initial Powering Up:

Converts a 230-volt AC supply to a clean 12.8-volt DC output. Each ATG actuator is instructed to open according to its address, taking approximately 10 seconds to cycle through all 16 channels. Upon initial power up, allow 5 minutes for the system to stabilise.

### Continuous Monitoring:

An interrogatory signal is passed every 10 seconds from the DCM to each ATG actuator, ensuring continuous status updates.

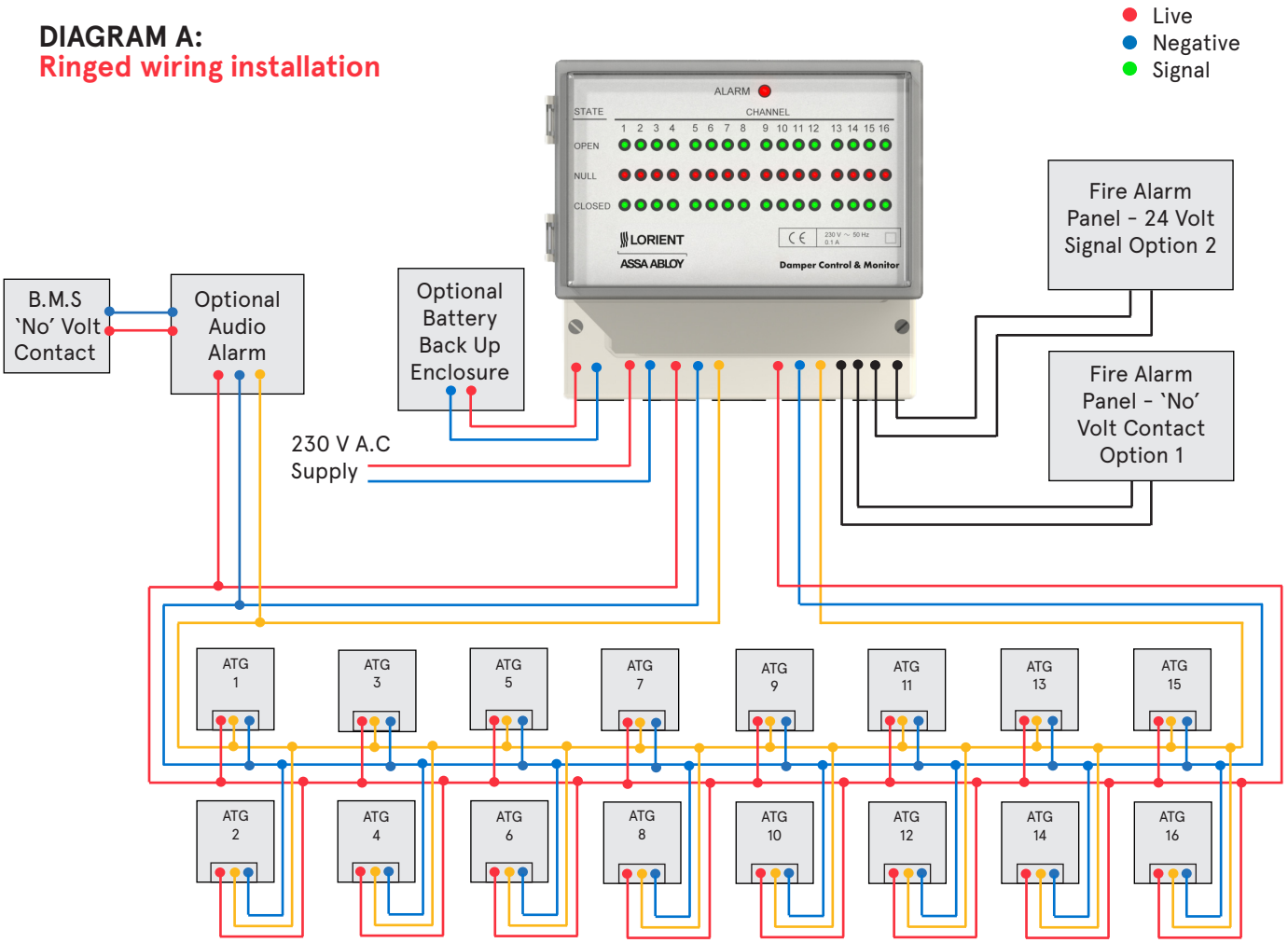
### Simulated Alarms:

Conducted manually using the test switch or automatically every 24 hours during the auto-cycle.

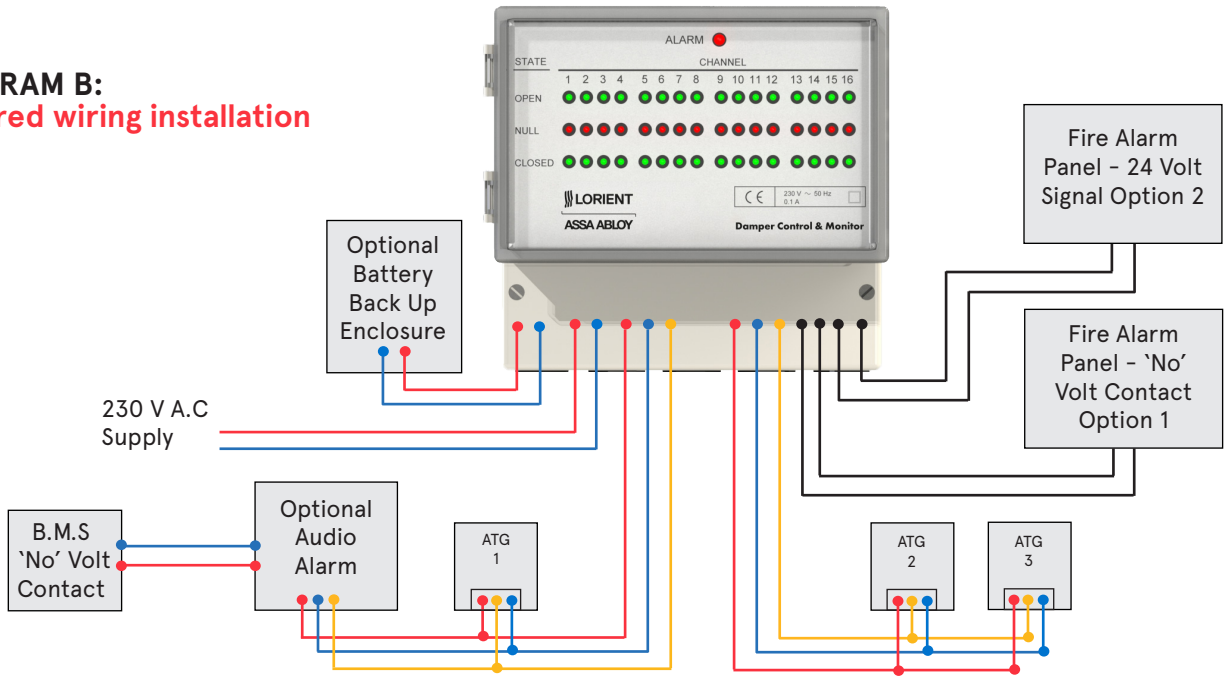
# TALKBACK DAMPER CONTROL SYSTEM

## SCHEMATIC WIRING INSTALLATIONS

### DIAGRAM A:
### Ringed wiring installation

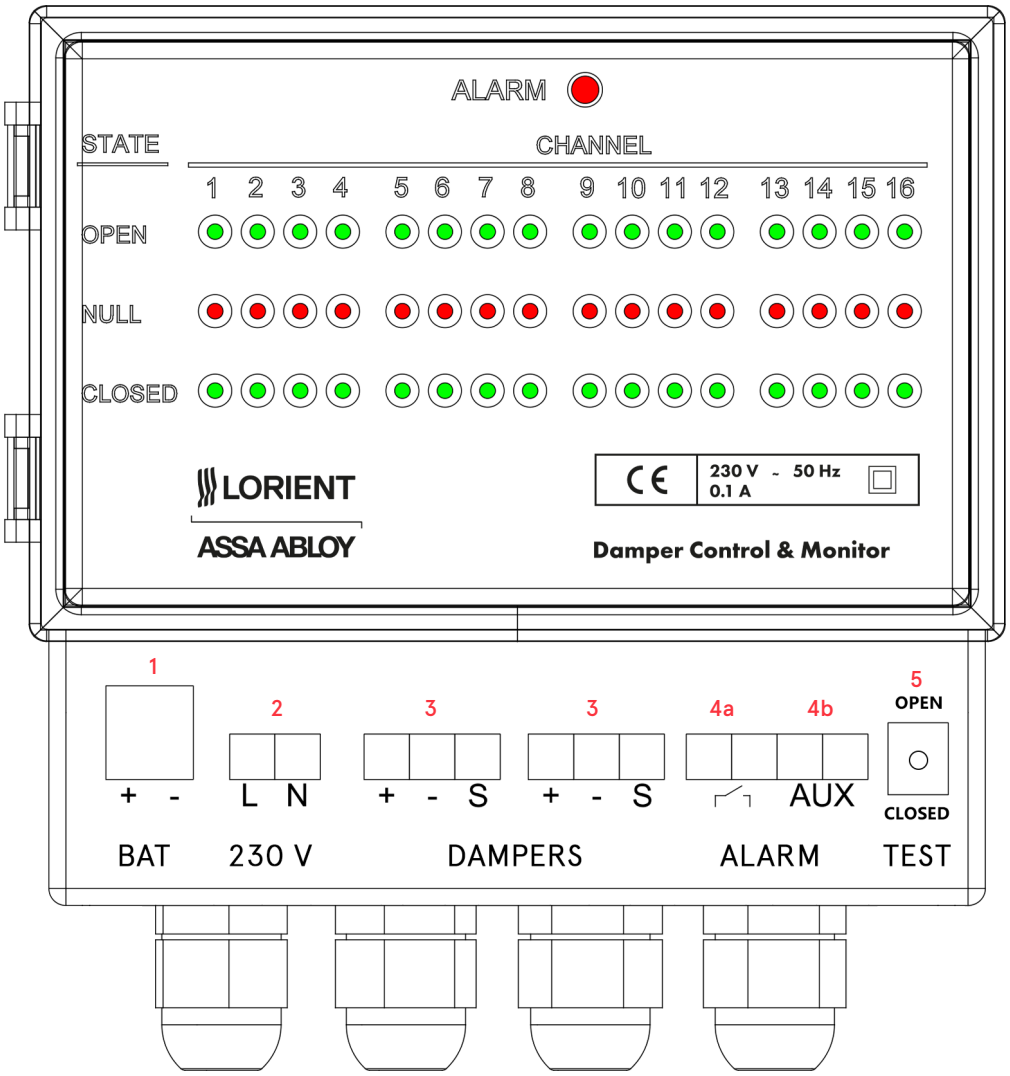



### DIAGRAM B:
### Spurred wiring installation



# TALKBACK DAMPER CONTROL SYSTEM

## DIAGRAM C:
## Connections within Talkback Damper Control Monitor (DCM)




## Talkback DCM wiring connections

1. Optional battery backup

2. Mains supply 230 V A.C

3. Supply & signal to dampers - 12.8 V D.C

**Alarm interface options:**

4a. Connect to '0' volt normally closed contact on fire panel

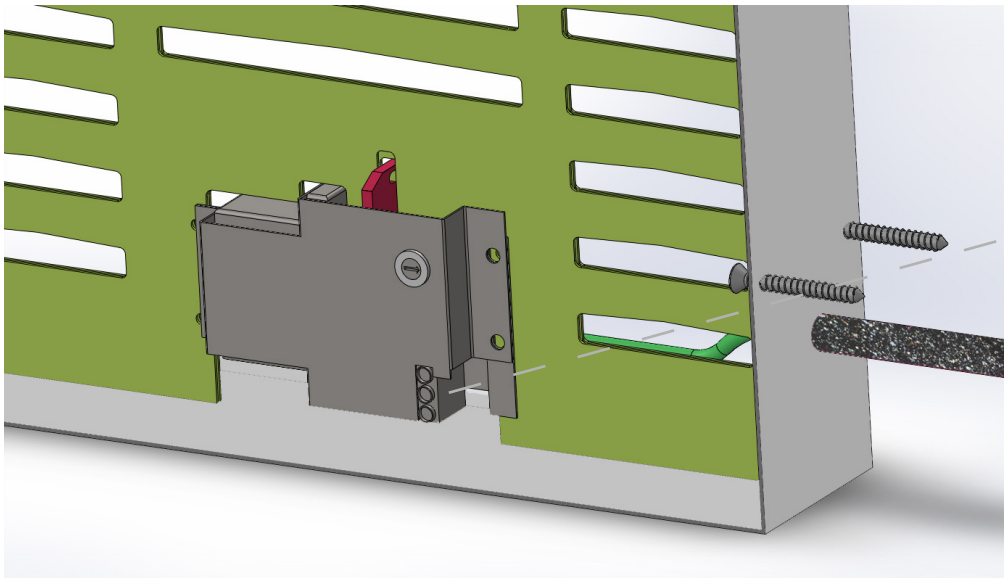
4b. Connect to normally on 24 volt signal from fire panel if available

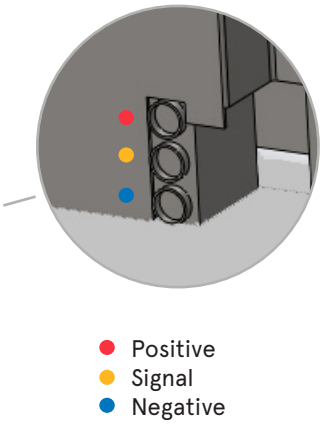
5. Test switch.

**The test switch must remain in the upright/ open position to allow control by the fire panel.**

# TALKBACK DAMPER CONTROL SYSTEM

## DIAGRAM D:
## Actuator wiring details






## How to wire fire & smoke resistant air transfer grilles to the conductor hinge

**1. Insert intumescent cable way tube:**

- Ensure the intumescent cable way tube is correctly inserted into the hole from the hinge to the aperture.

**2. Feed and Identify Wires:**

- Identify the positive, signal and negative wires from the conductor hinge.
- Feed these wires through the intumescent tube and the hole.

**3. Connect Wires:**

- Connect the identified wires to the corresponding terminal on the actuator.

**4. Secure Excess Wiring:**

- Fix any excess wiring to the aperture perimeter.
- Ensure no loose wires can interfere with the operation of the smoke shutter.

**Setting Addresses for Air Transfer Grilles**

**5. Ensure Unique Addresses:**

- Assign a unique address to each fire & smoke resistant ATG connected to the Talkback Damper Control Monitor (e.g., 1 for no.1, 2 for no.2, 3 for no.3, etc.).

**Tools Needed:**

- Small flat-bladed screwdriver.

**6. Set the Address:**

- Locate the rotary switch on the actuator of the fire & smoke resistant ATG.
- Use the screwdriver to turn the rotary switch to the desired address:

| | |
|---|---|
| Options shown: | 1 2 3 4 5 6 7 8 9 A B C D E F O |
| Equates to: | 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 |

**7. Before Connecting to Mains Supply:**

- Ensure that the address is set on the actuator before connecting the system to the mains supply to avoid any conflicts or issues.

**Testing and Final Steps:**

**8. Fire Panel Connection:**

- Ensure the fire panel is connected to the DCM. Otherwise, the DCM will enter the alarm state and the shutters will not open.

**9. Test the System:**

- Run a test cycle by putting the test switch down into the closed position and check that the shutters close.

**10. Ensure Correct Switch Position:**

**The test switch must remain in the upright/open position to allow control by the fire panel.**

If installed correctly, the corresponding address location on the DCM will change from red to green.

# MAINTENANCE

## Maintenance

### Air Transfer Grille Maintenance:

- If a fault develops on any fire & smoke resistant air transfer grille, remove the cover grille or intumescent fire grille to expose the shutter plates and actuator.
- Examine wiring connections for looseness and refit or tighten as necessary.
- Check shutter plates for jamming due to distortion or debris. Clean plates using a paint brush if debris is present.
- Do not remove the actuator from the shutter plate assembly or dismantle the shutter plate assembly.
- Contact the manufacturer if the problem cannot be resolved. If all shutters fail to operate and only red lights are illuminated, refer to the Lorient fault finding chart.

### Duct Mounted Damper Maintenance:

- If a fault develops on a cassette type smoke containment damper, remove the cassette retaining screw to slide the shutter assembly from the damper housing.
- Remove shields from the actuator, check for debris, and clean if necessary. Check and tighten or refit actuator wiring connections as needed.
- Do not remove the actuator from the shutter plate assembly or dismantle the shutter plate assembly.
- Contact the manufacturer if the problem cannot be resolved. If all shutters fail to operate and only red lights are illuminated, refer to the Lorient fault finding chart.

### General Maintenance:

- The auto-cycling feature of the Talkback system typically prevents dust and debris accumulation.

## Standards and Testing

### BS 9999 Compliance:

BS 9999 provides a best practice framework for fire safety, including standards for the definition, maintenance, and testing of fire dampers. It states that all fire dampers should meet the criteria of fire resistance for a stated period of time and that:

***'Arrangements should be made for all fire dampers to be tested by a competent person on completion of the installation and at least annually, and to be repaired or replaced immediately if found to be faulty. Spring-operated fire dampers should be tested annually and fire dampers situated in dust-laden and similar atmospheres should be tested much more frequently, at periods suited to the degree of pollution.'****

Within the context of VH001 guidance document, "tested" means the demonstration of the operational function of the damper.



LVH44S fire + smoke resistant air transfer grille

## Commissioning and maintenance

**We offer a professional and expert commissioning service for fire and smoke air transfer grilles.**

We check and test the installation and components of Lorient fire and smoke air transfer grilles; and issue a fully detailed service report, highlighting status and compliance.

Our comprehensive service covers a number of factors, including:

- Checking the system is installed as per Lorient recommendations and is compliant with test evidence.
- Checking the full functionality of the system, which can be coupled with witness testing to demonstrate functionality and compliance if required.
- Providing documented evidence that the system is functioning as per requirements.
- Providing documented installation detail, which can be used in off-site support and/or included in site handover.
- Reducing delays caused by improper installation which require technical support.

Please contact our Testing + Technical Services team for pricing and further information on **+44 (0)1626 834252** or email **technical@lorientuk.com**

# ATG COMMISSIONING CHECKLIST

For care and maintenance information of Lorient air transfer grilles please follow these guidelines.

## DCM Control Panel

- Ensure constant 230V A.C. supply to DCM panel.
- Ensure 12V supply to the wiring loom at DCM panel.
- Ensure Fire Alarm Panel (FAP) is connected to DCM ( 24V = Aux or 0 Volt = —o/ o— )
- Ensure signal wire is connected.
- Ensure all connections are tight.

## Air Transfer Grille

- Ensure air transfer grille is fitted in accordance with Lorient fitting guidance.
- Ensure each air transfer grille is assigned its own individual address with no duplications on a circuit.

| Options shown: | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Equates to | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |

- Ensure Positive, Negative & Signal wire are connected to correct terminals.
- Ensure clean connections with no loose strands to cause any short circuits.
- Check for steady 12V supply to actuator.

## Operation

Before conducting a lost power "Fail Safe" test, at least 4 minutes must be allowed from powering up the system in order to ensure that all capacitors have been adequately charged.

**The top row of green lights of the control unit indicate:**

- Initially that the control unit has instructed the shutters in the air transfer grilles to open.
- 20 seconds later, if the green light is still illuminated the shutters have successfully executed the instruction.

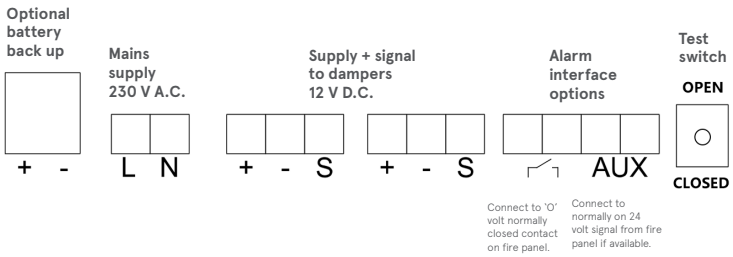
**The centre row of red lights marked NULL on the control unit when illuminated indicate either:**

- Failure of a shutter to follow the last command from the control unit if connected. The red light may take 30 seconds to illuminate after the command was transmitted whilst the system interrogates and responds for each channel.
- No shutter is connected to this channel.

**The bottom row of green lights of the control unit indicate:**

- Initially that the control unit has instructed the shutters to close.
- 20 seconds later if the green light is still illuminated the shutters have successfully executed the instruction.
- Ensure that sufficient time is allowed for the system to stabilise when initially powered up. Also allow sufficient time for control unit commands to be received by the actuators and confirmation from the actuators sent back to the control unit.

## Diagram C: Connections within Talkback Damper Control + Monitor




A simulated alarm can be conducted manually for service testing whilst connected to the FAP, for this purpose a test switch is located within the DCM as shown in Diagram C. The test switch will either be in the form of a toggle switch or a rotary dial which can be set to the 'Open' or 'Closed' position.

- Set the switch to 'open' and check the DCM panel shows green lights to the top row of all connected air transfer grilles.
- Check the individual air transfer grilles connected in the circuit to confirm they are all in the 'open' position.
- Set the switch to 'closed' and check the DCM panel shows green lights to the bottom row of all connected air transfer grilles.
- Check the individual air transfer grilles connected in the circuit to confirm they are all in the 'closed' position.

If necessary a manual test may also be conducted on the system before the FAP has been connected. The alarm interface terminals will need to be bridged between 'A to B' taking care to make sure the wires do not short.

**When testing is complete make sure to leave the switch in the 'Open' position.**

## Note

**For any further advice please contact Lorient's Technical department directly: technical@lorientuk.com.**



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