AIR TRANSFER GRILLES

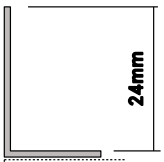
LVN20S

HIGH PERFORMANCE NON-VISION FIRE + SMOKE AIR TRANSFER GRILLE

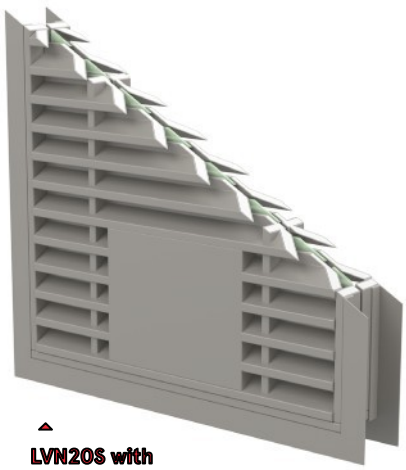
The LVN20S provides a unique solution to the problem of containing both fire and smoke in emergency conditions yet offering good air transfer through doors in everyday use. Using the same intumescent louvred slat configuration as the LVN20, but incorporating an electro mechanically operated smoke shutter mechanism. Can provide up to 60 minutes fire and smoke resistance.

Key benefits

- Contains cold smoke + toxic gases remote from the source of fire
- Simple installation
- Auto reset + fail-safe
- Safe low DC voltage
- Status reporting + auto-cycling via .Talkback Damper Control Monitor (DCM)
- Optional audio warning facility
- Connects to fire panel +/or Building Management System (BMS)
- BMS alarm notification via Alarm Monitoring System (AMS)
- Nominal 5mA current open/closed
- Max 200mA in operation
- Allows bi-directional airflow
- Louvred slats give privacy.



LV2516
steel flange



LVN20S with
integral steel flange

AIR TRANSFER GRILLE SELECTOR (MM)

ATG NOMINAL SIZE	200 x 200	300 x 300	400 x 400
ATG ACTUAL SIZE	198 x 198	298 x 298	398 x 398
FLANGE SIZE	201 x 201	301 x 301	401 x 401
APERTURE SIZE	209 x 209	309 x 309	409 x 409

SYSTEM SPECIFICATIONS

Test evidence
- Fire: BS 476-20 & 22:1987.
- Smoke: BS 476-31.1:1983 (shutterplate).

Performance
- Can be used to provide up to 60 minutes resistance to fire + cold smoke.

Size
- Width: 200mm - 400mm (in 50mm increments).
- Height: 200mm - 400mm (in 50mm increments).
- Square and rectangle options available.

Thickness
- 2 pieces x 20mm.

Free area
- Approx 30% free area.

Finish
- Silver as standard.

Orientation
- LVN20S must be used in the vertical plane.

Application
- Suitable for doors.
- Note: in applications where high levels of humidity or wetness are anticipated, please speak to our Technical Department for alternatives.

Positional requirements
- Certifire: The upper edge of the grille shall be no higher than 800mm from floor level.
- Test Report Applus 19/19940-1428: The upper edge of the grille shall be no higher than 1350mm from floor level.

Material
- Rigid PVC slats with an intumescent core.
- Steel flange.
- Electro mechanically operated smoke shutter mechanism.

Fixing
- Requires an aperture 9mm over size. E.g. a 300mm x 300mm needs an aperture 309mm x 309mm to accommodate the flange and liner.
- Screwed into door with an aperture lined with Lorient intumescent liner (B24402).

Use with
- Talkback damper control system.
- Conductor hinges.
- Optional Alarm Monitoring System (AMS) and battery backup.

Certification

certifire (CF564)

NBS Source PARTNER

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LORIENT
ASSA ABLOY

TALKBACK DAMPER CONTROL SYSTEM

The Talkback Damper System is designed to monitor and control 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.
- 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.

Installation Types:

- **Ring System:** Allows up to 16 air transfer grilles to be connected using a 3-core cable arranged in a ring. The maximum length is 100 meters (Diagram A, page 3).
- **Radial/Spurred System:** Maximum length for each leg is 50 meters. A spurred system may limit the number of air transfer grilles connected to a DCM (Diagram B, page 3).

Cable Specifications:

Generally, 1mm² flat twin and earth cable is acceptable. However, 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 air transfer grille has an individual code, requiring a 3-core cable to supply and signal to each unique address. Further information on how to set the address of individual air transfer grilles can be found on page 5.

Installation Guidelines

Qualified Personnel:

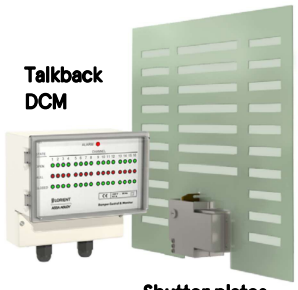
Wiring installations and commissioning should be undertaken by qualified personnel using Lorient wiring, fitting, and commissioning instructions.

Location of DCM:

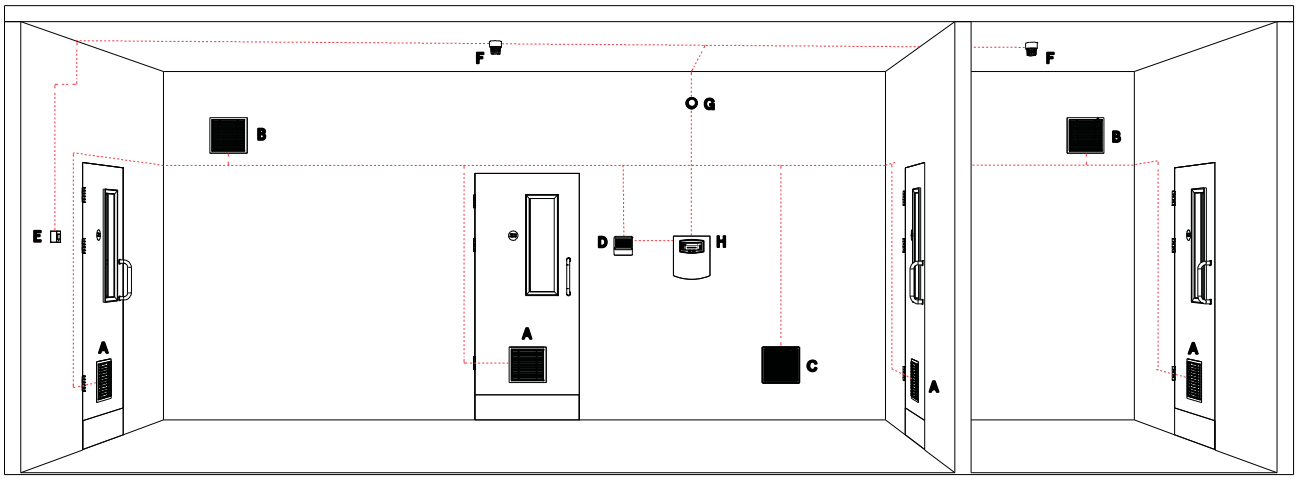
DCMs should be located where they can be routinely viewed. If using an Audio Monitoring System (AMS), it should be positioned where the audio warning can be heard by a responsible member of staff. The AMS does not need to be situated next to the DCM.

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.



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: Power and monitor unit
E: Fire point
F: Smoke sensors
G: Fire alarm
H: Fire alarm panel

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:

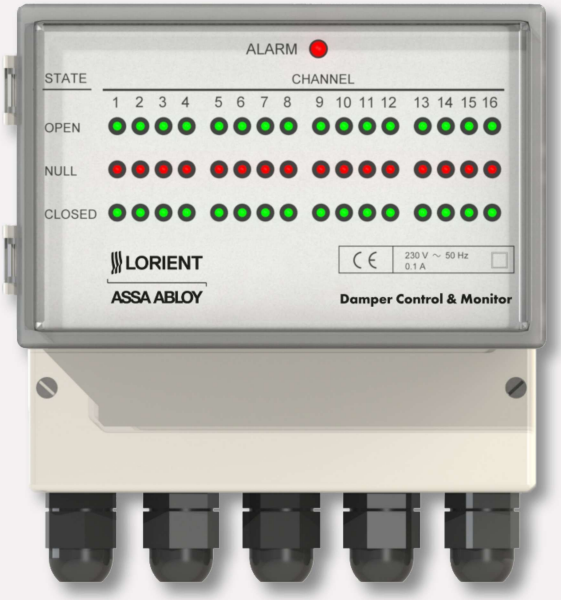
If any green lights are replaced by red lights after approximately 20 seconds, it indicates a fault with those air transfer grilles. The DCM interrogates each actuator in turn and receives responses to confirm their status.

Manual Testing:

Manual testing can be conducted by disconnecting the alarm interface wiring and using the rotary test switch shown in Diagram C (page 5).

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:** 165w x 155h x 125d 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:

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

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 rotary test switch or automatically every 24 hours during the auto-cycle.

TALKBACK DAMPER CONTROL SYSTEM

SCHEMATIC WIRING INSTALLATIONS

DIAGRAM A:
Ringed wiring installation

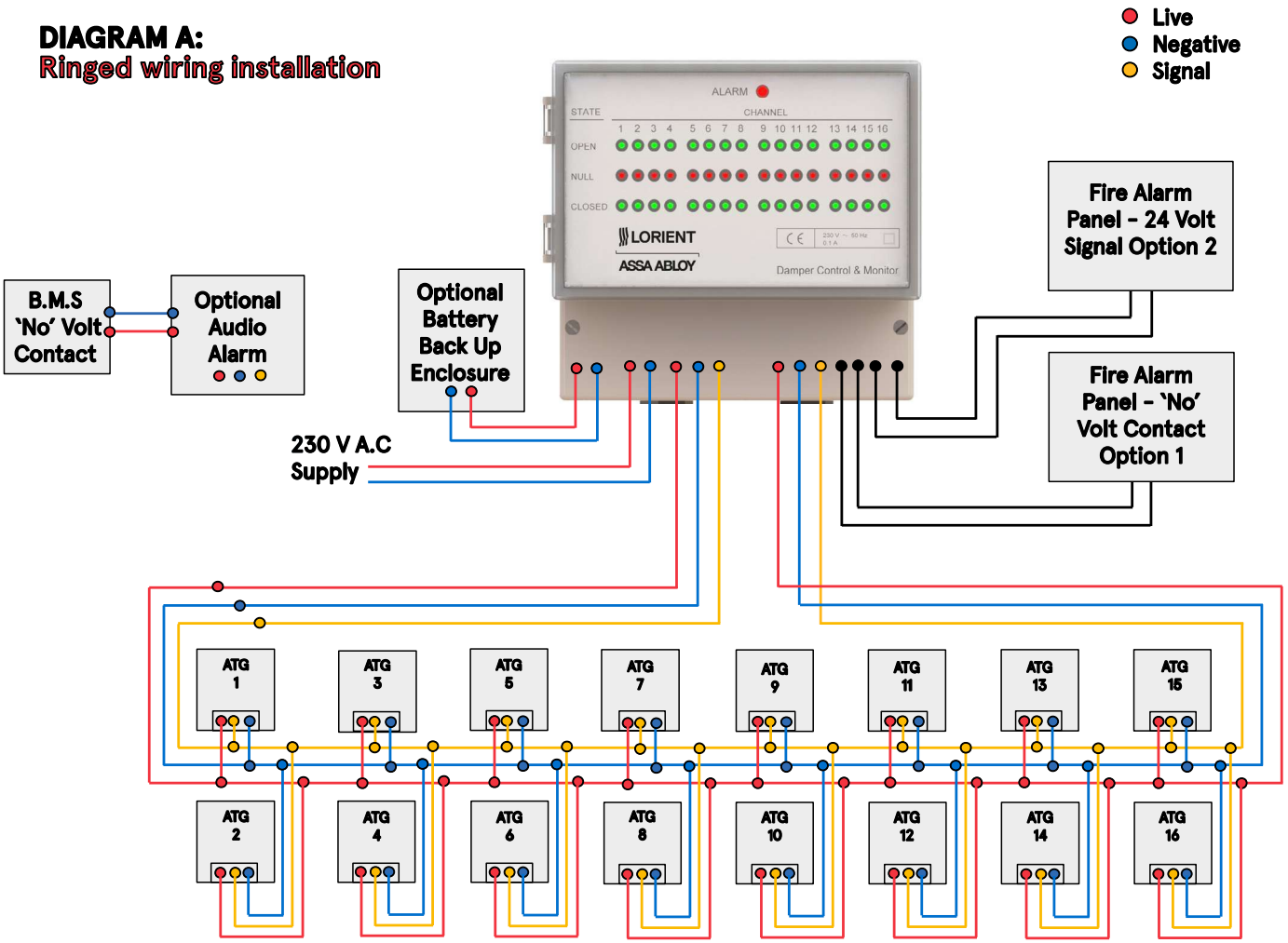
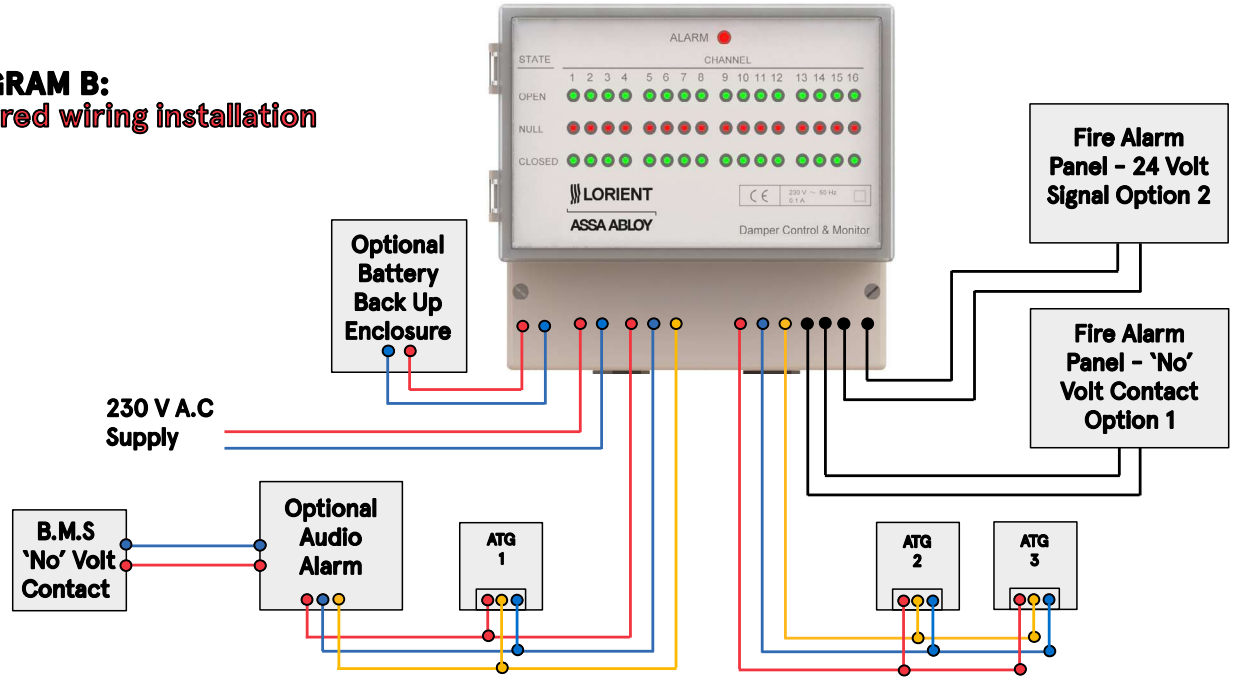
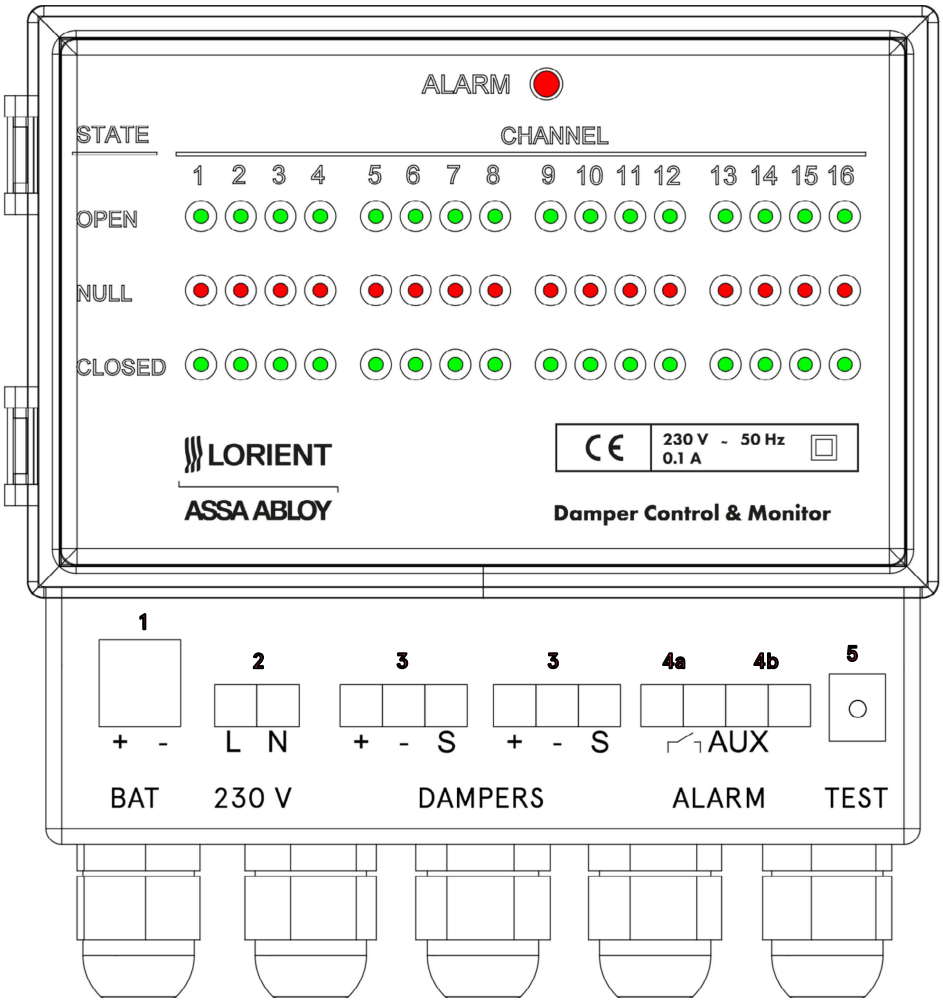


DIAGRAM B:
Spurred wiring installation



TALKBACK DAMPER CONTROL SYSTEM

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



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.

How to set the address on an air transfer grille:

To set the addresses on the air transfer grilles for connection to the Talkback Damper Control Monitor (DCM), follow these steps:

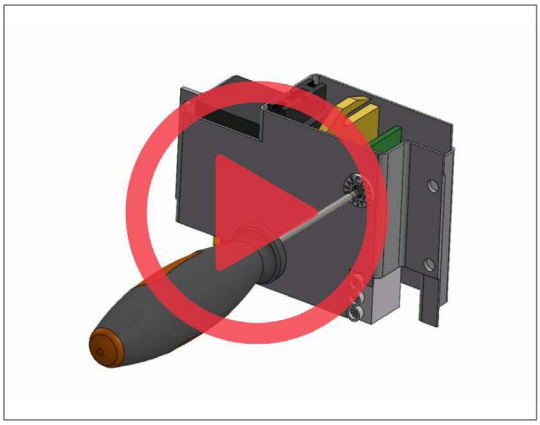
1. Ensure Unique Addresses:
Each DCM should have unique addresses for each air transfer grille (e.g., 1 x no.1, 1 x no.2, 1 x no.3, etc.).

2. Tools Needed:
You will need a small flat-bladed screwdriver.

3. Setting the Address:

- Locate the rotary switch on the actuator of the air transfer grille.
- Use the screwdriver to turn the rotary switch to the desired address. The switch is labelled 1-9, with letters A-O representing numbers 10-16 (e.g., A equals 10, B equals 11, C equals 12, etc.).

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.



Addresses:

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