



WIRING
INSTRUCTIONS

TALKB
DAMP
CONTI
SYSTEME

TALKBACK DAMPER CONTROL SYSTEM

APPLICATION

The "Talkback" system has been designed to provide up to 16 damper/air transfer grille locations with one centralised status monitoring location. The unique 2-way communication system between the Damper Control & Monitor Unit (DCM) and the damper actuators facilitates rapid assessment of serviceability of the installation and immediately identifies the location of a defective damper.

The "Talkback" system comprises a "Damper Control & Monitor" (DCM) and up to 16 uniquely addressed damper/shutter assemblies. The interconnecting 3-core cable can be installed as a "ring" for greater reliability and maximum range, or it may be spurred if necessary.

An extra optional audio warning device can be connected to the DCM wiring circuit as shown in diagram "A". This device would be incorporated to draw attention to the DCM status display in the event of a fault occurring.

The DCM also incorporates connection for a battery backup option, as shown in diagram "A". An appropriate re-chargeable battery and enclosure is available from Lorient if required.

WIRING INSTRUCTIONS

A three-wire cable is required to connect the Damper Control Monitor (DCM) to the dampers. Using 1mm² wire provides a ring system of a maximum circumference of 100 metres. If installed radially or spurred, the maximum length is 50 metres. These lengths can obviously be increased with increments of wire cross sectional area.

Since Talkback is a multiplex system and therefore only one damper is being activated at any one time, only the length of the longest spur need be taken into account on an installation where a ring serves several spurs.

Generally, 1mm² flat twin and earth cable is acceptable for the Talkback system, since in the event of cable failure due to a fire, the system will automatically fail safe to the closed position.

However, it is advisable to check with the local fire officer that such cable does not conflict with local policy. In which event, fire resistant cable may be used so long as it provides at least the same capacity as 1mm² copper wire.

DAMPER CONTROL AND MONITOR (DCM)

The display panel contains 3 horizontal rows of 16 light emitting diodes (LED).

The top row of green LED's when lit indicating the dampers are open as per command.

The bottom row of green LED's indicate during a test cycle that the dampers are closed as commanded.

The middle row of red LED's indicate a fault or an unconnected channel. Therefore, each vertical group of 3 LED's (i.e. Green, Red, and Green) gives the status of the corresponding damper, i.e.: open, fault, closed.

During initial "powering up" a transformer and full wave rectifier within the DCM converts a 230-volt AC supply to a clean 12.8-volt DC output. Initially an alarm condition is indicated until the system has stabilised. Each damper actuator in turn is then instructed to open according to the damper address. It will take approximately 10 seconds to cycle through all 16 channels.

There are two methods of interfacing the DCM with a fire alarm panel (see diagram C):

a) If the alarm panel has a spare 24-volt DC signal output which is normally live but ceases in the event of an alarm, this output can be wired to the FA terminals in the DCM.

OR

b) A signal generated by the DCM from the terminals marked can be passed through a normal closed "no volt" contact on the alarm panel.

Please note: access for terminal connections into the DCM should be gained through the lower panel. Removal of the transparent cover is not necessary and should be avoided.

To the right of the inside of the terminal box is a test switch (see diagram C) to simulate an alarm condition. This facility can be used to test the DCM and damper interface but does not test the DCM to FAP interface. This must be done by simulating an alarm condition on the FAP.

Each damper actuator has a unique address and constantly scans the

position of the damper plate. A two-way communication occurs between each actuator and the DCM every 2.5 seconds, therefore, the actual damper status is indicated on the rows of LED. Those channels not connected will constantly display a red LED (null signal).

Should any damper fail to follow the DCM command, either open or close, the red LED will light indicating a fault (null). The channel number indicated being the actuator number which has failed.

To assist in fault finding, a layout drawing with relevant actuator number (0-16) indicating on each damper location, should be left in the vicinity of the DCM.

Please note: the actuators are opened by the 12.8-volt DC supply from the DCM and they are closed by using the energy stored in capacitors mounted on each actuator circuit board.

THE ACTUATOR IS MOTORISED AND IS POWERED IN BOTH OPEN OR CLOSE CYCLES. THERE ARE NO SOLENOIDS, RETURN SPRINGS OR BATTERIES AND GRAVITY IS INCIDENTAL NOT INSTRUMENTAL TO OPERATION.

ACTUATOR CHANGE OF ADDRESS; see page 4.

These wiring instructions should be used in conjunction with individual product fitting instructions.

TALKBACK DAMPER CONTROL SYSTEM

MULTI-CHANNEL COMPONENTS Damper Control and Monitor Unit (DCM)

This unit provides DC power, and monitors the status of dampers whilst interfacing with the fire alarm. The enclosure measures 165 w x 155 h x 125 d overall, and incorporates a clear vision panel in the upper section.

It should not be necessary to open this hinged panel during installation or in service. Access for wiring connections is through a screw fixed panel in the lower section of the enclosure. Reference to the wiring diagram will provide information concerning the relevant connections.

Each damper that has successfully closed will send confirmation back to the DCM within 20 seconds of receiving instructions. The confirmation signal will ensure the top green LED remains illuminated. Should the damper not open fully, no confirmation signal will be received by the DCM, consequently the top green LED will be extinguished and a red LED will illuminate, indicating a fault on that specific damper.

Thereafter, an interrogatory signal is passed from the DCM every 10.0 seconds to each damper actuator. The damper actuator in turn signals the DCM that it is conforming to the instructions or a fault is assumed. Therefore, the DCM is able to provide a continuous status update. Similarly, in a simulated situation or real alarm situation each damper actuator will be instructed to close which will illuminate the appropriate green LED's on the bottom row.

Should the green LED be extinguished after 10 seconds and the middle row red LED then lights, a failure to fully close is indicated or no damper is connected to the channel.

If at any time an actuator does not receive a signal from the DCM within 10.0 seconds a fault or alarm is assumed and the actuator will close the damper in accordance with the "Fail Safe" imperative.

A simulated alarm can be conducted manually during a commissioning or for service testing by competent authorised personnel. For this purpose, a test switch is incorporated within the DCM in the position as shown on Diagram C. This switch should be operated with a small non-metallic screwdriver.

Please note: Simulated alarm conditions can be created at any time, but they are automatically conducted every 24 hours during the auto-cycle.

DAMPER/SHUTTER ACTUATOR

The function of the actuator is to open or close the damper/shutter in accordance with the alarm status as interpreted by the LORIENT DCM. The actuator employs a geared electric motor which provides a powerful action but with minimal current consumption, typically 5 milliamps when the damper is in the open position and 200 milliamps momentarily when in the process of opening.

In the event of a power failure, energy stored within a capacitor mounted on a printed circuit board (PCB) within the actuator unit is tapped to drive the motor to the closed position. In the event of an alarm the DCM instructs the actuator to close which is executed by using the power supply from the DCM. A phototransistor is used to confirm the final position of the damper and initiates a signal to the DCM, which illuminates a green LED on the bottom row of the display. This indicates that the damper is completely closed. If no signal is received from the actuator by the DCM within 10.0 seconds, a fault is assumed and a middle row red LED is illuminated.

Cancellation of the alarm or restoration of power will trigger the DCM to signal the actuator to move the damper to the open position, the final position of the damper being sensed by another photo transition and reported to the DCM for display.

Should the actuator not receive a signal from the DCM within a 10.0 second period, it will assume a failure and close the damper.

WIRING INFORMATION

Each damper/air transfer grille within a system has an individual code; therefore a 3-core cable is employed in order to provide a means of supply and signaling to each unique address.

Please refer to Lorient wiring diagrams and the comprehensive fitting instructions before attempting installation.

CE MARKING

EMC & LVD (Electro Magnetic Compatibility and Low Voltage Directive)

Lorient smoke control systems have been successfully tested in accordance with the requirements of EMC & LVD and, therefore, bears the CE Mark (Conformité Européen). Copies of the relevant test reports are available on request.

Lorient electro-mechanical systems should only be installed by qualified and competent technicians, working strictly to the relevant Lorient fitting instructions. Any proposed deviation from the original design or installation instructions must be sanctioned by a senior member of Lorient's technical staff.

Systems users are advised that servicing or retrospective installation modifications must be undertaken by the original installers or a technically competent contractor who is totally familiar with the relevant system and is in possession of the appropriate Lorient technical data sheets.

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TALKBACK DAMPER CONTROL SYSTEM

SCHEMATIC WIRING INSTALLATIONS

DIAGRAM A:
Ringed wiring installation

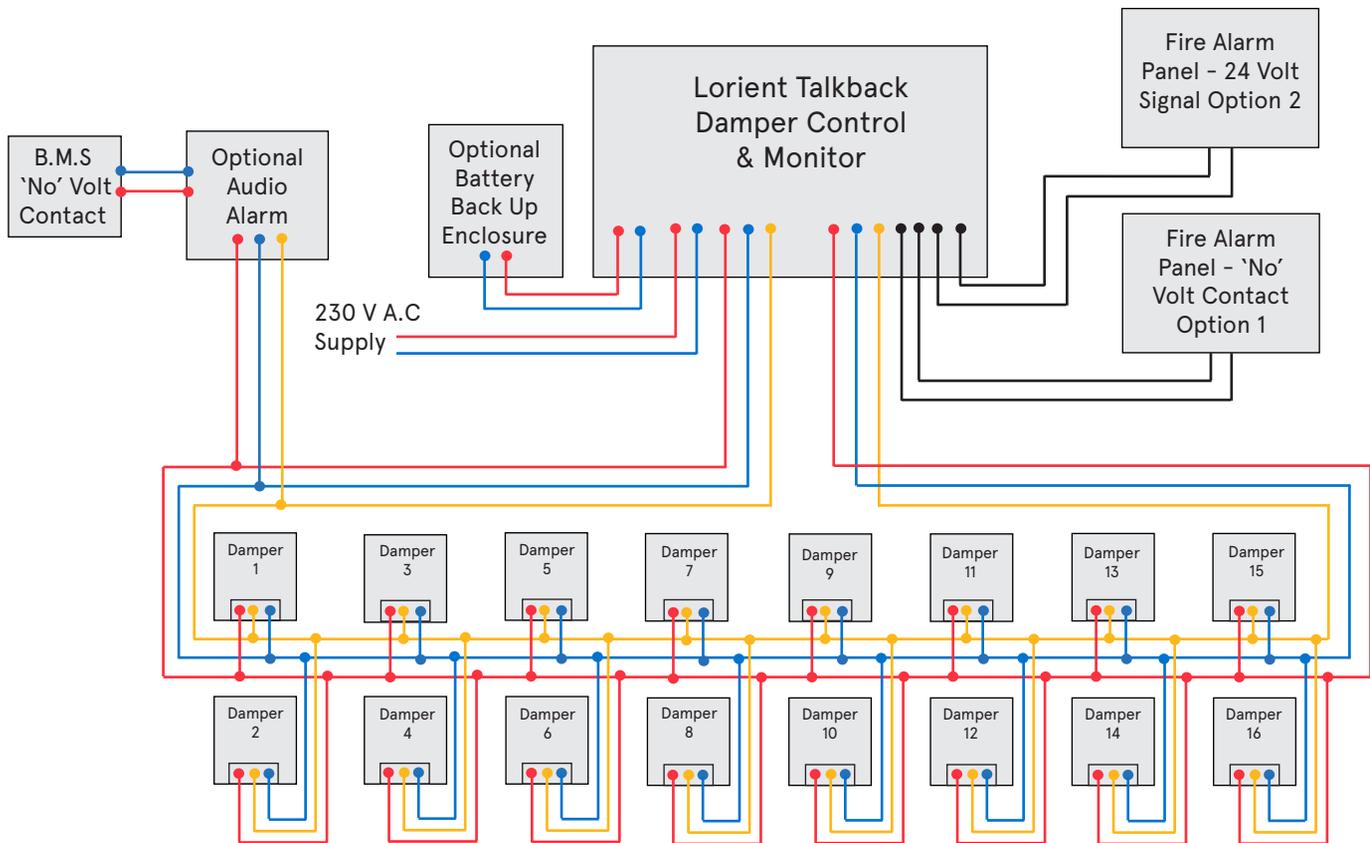
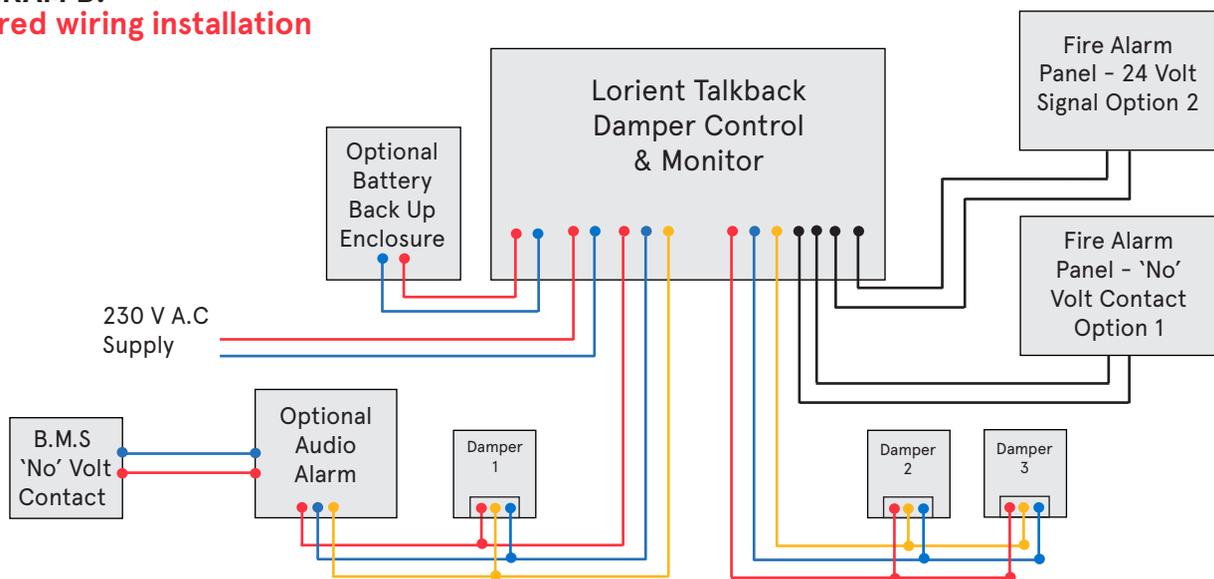
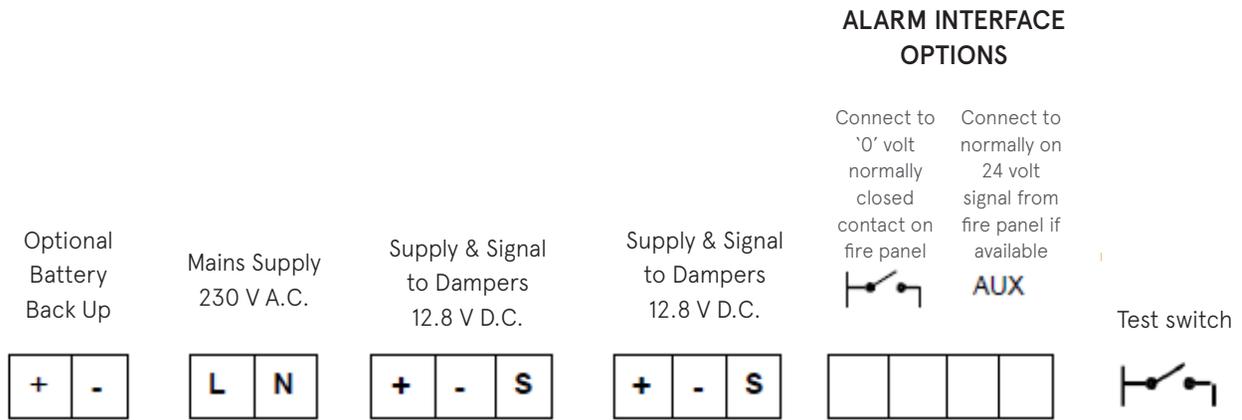


DIAGRAM B:
Spurred wiring installation



TALKBACK DAMPER CONTROL SYSTEM

DIAGRAM C: Connections within Talkback Damper Control + Monitor



As we are unaware of the placement of the individual dampers we cannot set the address to correspond with the damper control system.

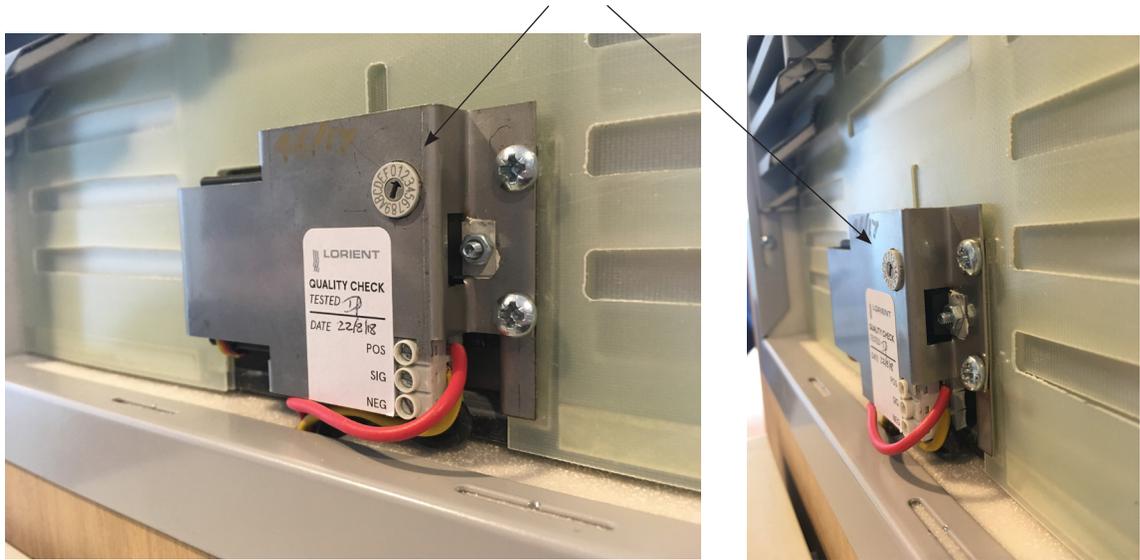
Each unit should only have 1 x no. 1, 1 x no. 2, 1 x no. 3, etc connected to it.

PLEASE ENSURE YOU SET THE ADDRESS ON THE ACTUATOR BEFORE CONNECTING THE SYSTEM TO THE MAINS SUPPLY.

This is done by using a small flat bladed screwdriver and turning the rotary switch.

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

The pictures below show the location of the rotary switch:





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