



CI/SfB Classification

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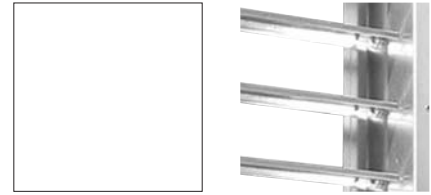
Defender

Motorised Smoke & Fire Dampers

Smoke Control



DEFENDER I SMOKE DAMPER



DESCRIPTION

The Colt Defender I is a motorised damper that allows the passage of smoke from corridors, lobbies and stairwells into smoke shafts.

The Defender I may be operated by a local fireman's breakglass switch along with a dedicated locally mounted smoke detector.

If these components are incorporated into an OPV control system, there is the advantage of a fully integrated addressable system.

In the event of a fire, the Colt OPV panel opens the Defender on the specific fire floor in conjunction with the roof mounted ventilator at the top of that shaft, allowing smoke to pass from the fire floor into the smoke shaft.

The other dampers on the floors above and below will remain closed, so as not to allow any leakage of smoke to spread onto the other floors. For this reason Defender is purposely designed not to failsafe open.

When the system is reset the damper will motor close.

A battery backup system is recommended to ensure the damper operates in the event of a mains failure.

COLT SHAFT

The Colt Shaft, which is suitable for use in any fire-fighting core, typically requires a shaft of only 0.6m² compared to 3.0m² for the BRE Shaft. Inlet into the shaft from the lobby is normally provided by a Defender I damper behind a 0.8m² decorative grille.

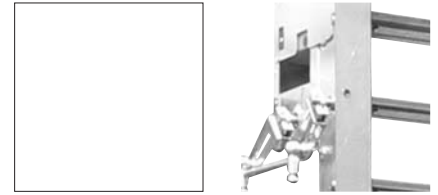


FEATURES AND BENEFITS

- Robust 1.5mm galvanised steel construction
- Wide range of sizes and controls options
- Low leakage rate
- High free area
- Wide range of optional decorative fascia grilles
- Exhaustively tested and approved to BS 7346 part 1. In addition a successful 10,000 cycle lifecycle test was completed with no sign of wear and tear at the test conclusion
- Sleeved option with motor at the front avoiding the need to access the shaft and/or to remove the damper for maintenance.



DEFENDER I SPECIFICATION



DIMENSIONS (Aperture Size)

400 x 400 mm up to 1315 x 2200 mm.

Approximate free area with damper in the open position:

1000 x 2200	=	1.54 m ²
1000 x 1500	=	1.00 m ²
1000 x 1000	=	0.65 m ²
500 x 500	=	0.12 m ²

The free area of the masking grille will affect these values.

WEIGHT

Damper weight approx 34kg/m².

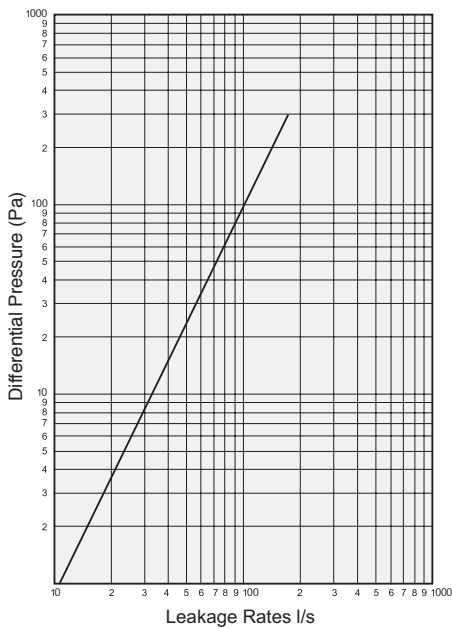
CONSTRUCTION

Comprising a 1.5mm fully welded galvanised mild steel outer casing incorporating 1.6mm formed mild steel parallel operation blades mounted onto stainless steel spindles and bushes complete with integral stainless steel side seals, rated to prevent hot smoke passing through for 1 hour.

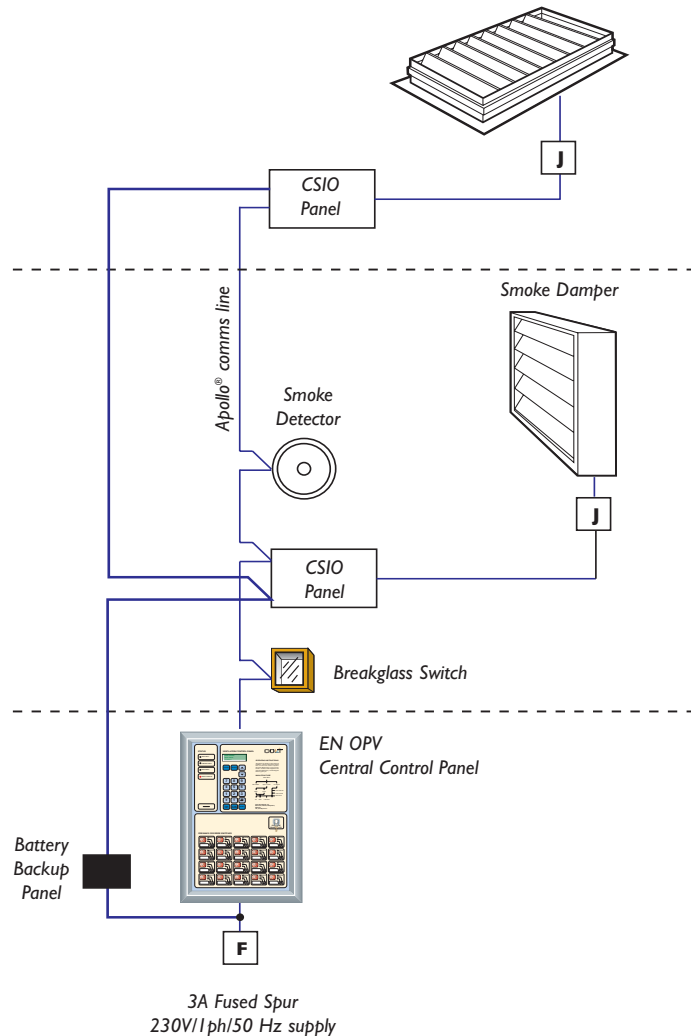
The damper is actuated by a drive in, drive out (select) 24v dc / 230 v ac motor fitted to (select) the front / rear / the side.

CONTROLS

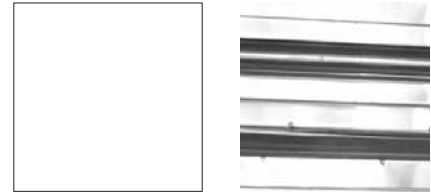
The Illustration below shows a typical configuration.



Based on a 1000 x 2000 unit in ambient conditions



DEFENDER 2 FIRE DAMPER



DESCRIPTION

The Colt Defender 2 is a motorised fire damper suitable for use in all types of HVAC ductwork. It has been designed to prevent the passage of fire from one area to another.

Defender 2 is operated by the fire detection system, with the additional back-up of a thermal link which closes the damper at a pre-determined temperature.

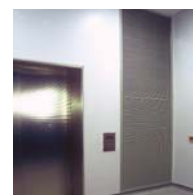
In the event of a fire, the Colt OPV panel closes the Defender in the specific duct. When all clear the damper will motor open.

It is recommended that 24 volt dc motors be used, since this will allow a simple battery back up system to be incorporated.

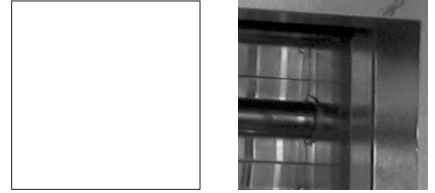


FEATURES AND BENEFITS

- Stainless steel interlocking blades and frame side seals, Class C airtight to DW144
- Wide range of sizes and controls options
- Precision blade linkage mechanism
- High free area
- Wide range of optional decorative fascia grilles
- Tested and approved to BS 476 part 20, providing a four hour fire rating
- A successful 50,000 cycle lifecycle test with damper fully operational at the test conclusion.



DEFENDER 2 SPECIFICATION



DIMENSIONS (Nominal)

200 x 200 mm up to 1000 x 1000 mm. Intermediate sizes and multiple assemblies available.

Approximate free area with damper in the open position: = 75% of geometric area.

WEIGHT

Approx 36kg/m²

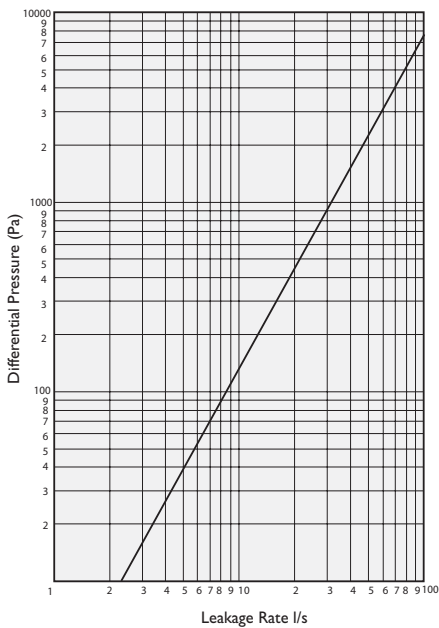
CONSTRUCTION

Comprising a 1.5mm fully welded galvanised mild steel flange case incorporating 2mm stainless steel interlocking blades and frame side seals, providing a four-hour fire rated assembly to BS 476 part 20 (1987). Airtight to Class C according to DW 144.

The damper is actuated by a (select) 24v dc / 230 v ac drive open, spring close motor, fitted to (select) the rear / the side. A thermal link closes the damper at 72°C. Alternatively the damper will close when (select) a signal is received from a fire detection system / when electrical supply fails.

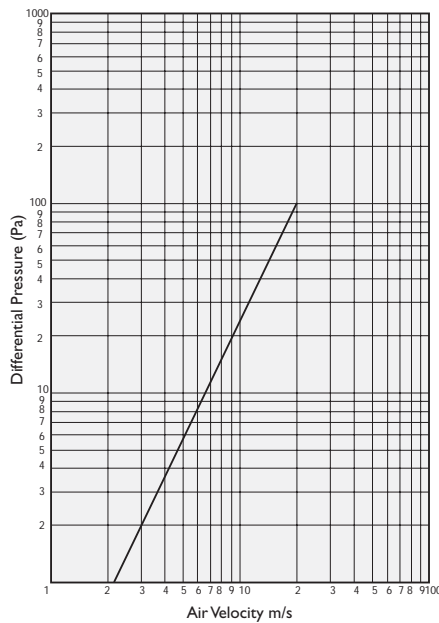


Graph 1



Based on a 1000 x 1000 unit

Graph 2



Airflow Blade Leakage Against Differential Pressure

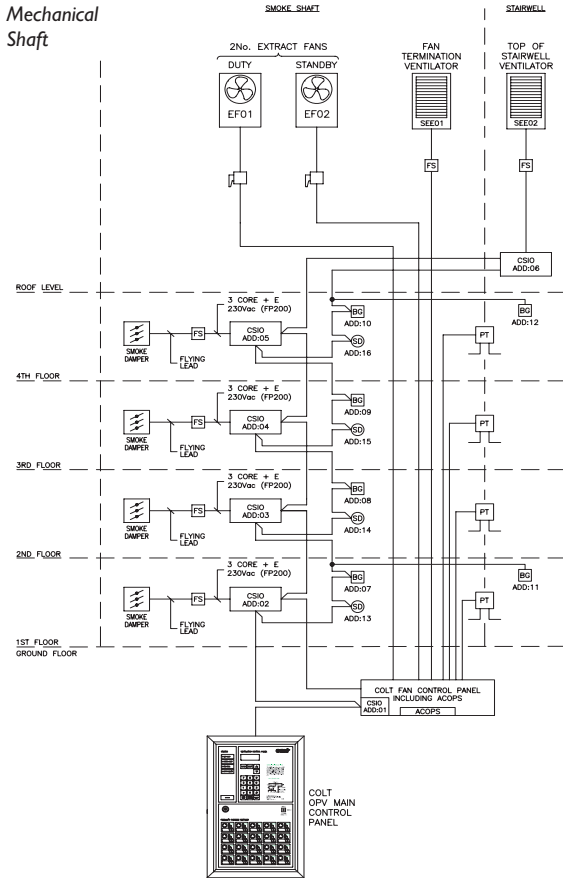
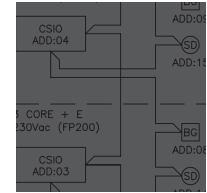
Graph 1 illustrates the maximum leakage obtainable when the damper is in a fully closed position under ambient temperature conditions.

Air Velocity Against Pressure Drop

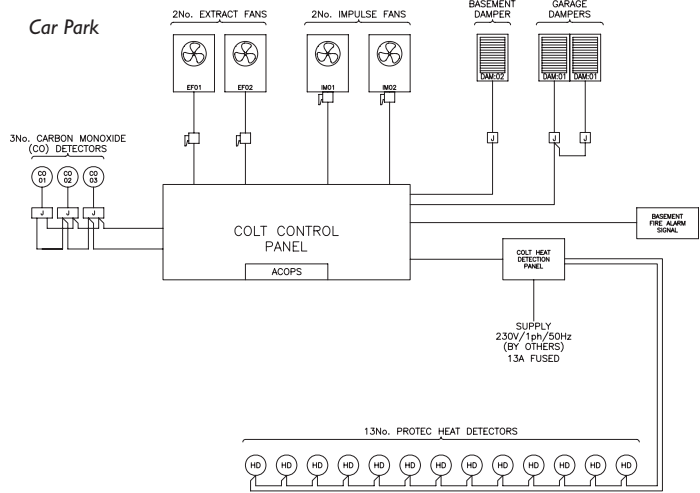
Graph 2 has been formulated to give an indication of the pressure drop expected through a fully open damper in relation to duct air velocity.

DEFENDER I SMOKE DAMPER

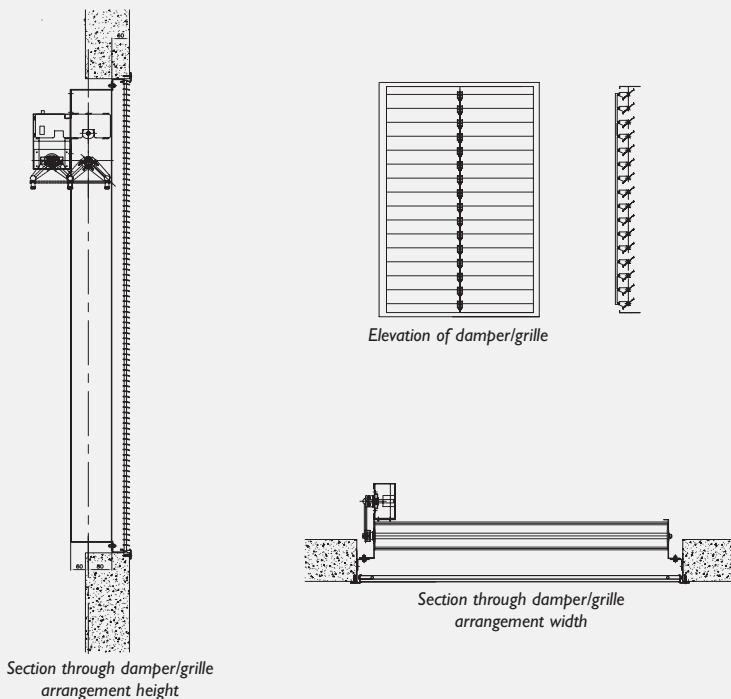
Wiring schematic



Car Park



FIXING DETAILS

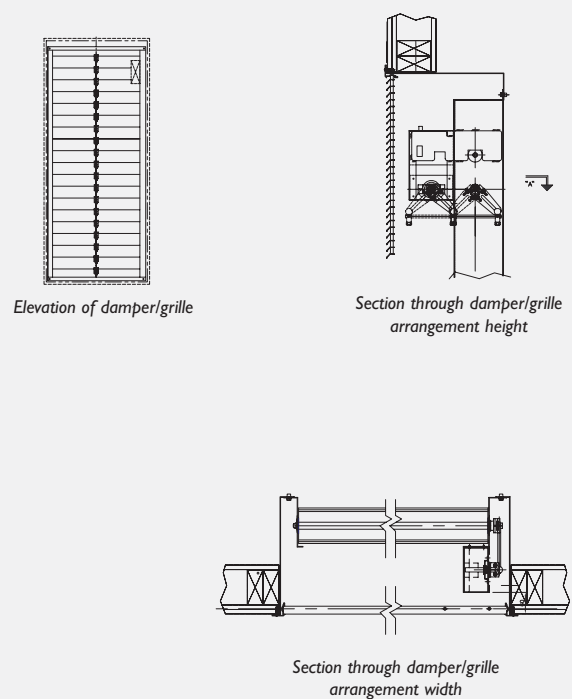


Section through damper/grille arrangement height

Elevation of damper/grille

Section through damper/grille arrangement width

UNSLEEVED DEFENDER I SMOKE DAMPER, MOTOR SHOWN AT REAR



Elevation of damper/grille

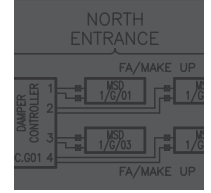
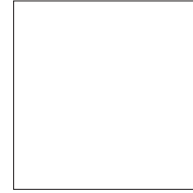
Section through damper/grille arrangement height

Section through damper/grille arrangement width

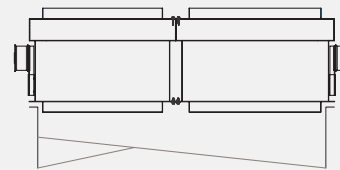
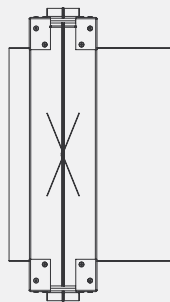
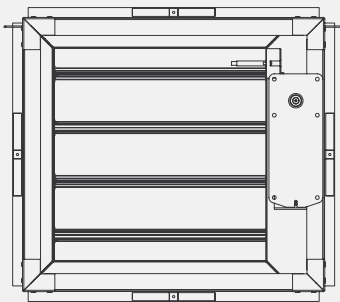
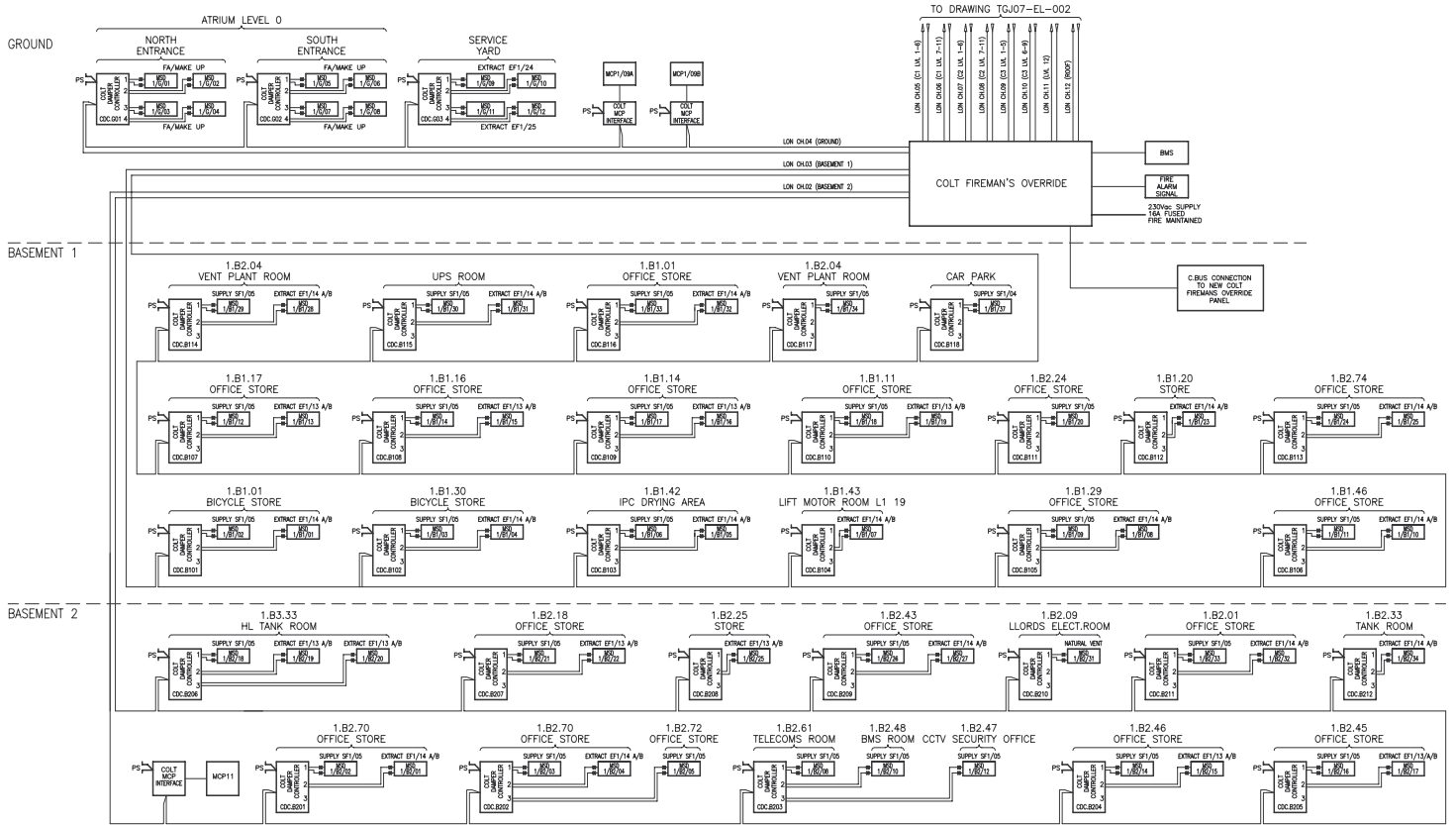
SLEEVED DEFENDER I SMOKE DAMPER, MOTOR SHOWN AT FRONT

DEFENDER 2 FIRE DAMPER

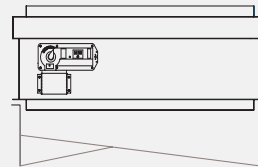
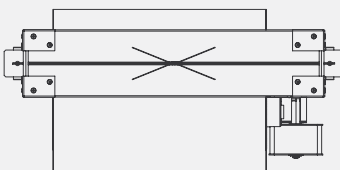
Wiring schematic



Office building HVAC system



Section through width of damper arrangement



Section through length of damper arrangement

Damper shown with HEVAC installation frame.
Alternative fixing methods are available.

DEFENDER 2 FIRE DAMPER

THE COLT PACKAGE

Colt International offers the following services:

- Scheme design of all types of Smoke and Heat Exhaust Ventilation Systems (SHEVS)
- Scheme design of pressurisation systems
- Scheme design of smoke containment systems
- Provision of performance specifications
- Project management
- Supply, installation, commissioning and maintenance of systems, including all necessary controls, which will be designed to interface with others' control systems.

A free full system check will be carried out approximately 9 months after a Smoke Control System has been installed and commissioned by Colt. Besides the opportunity to check that the system is performing as designed, this will allow for any further training of local personnel that may be necessary. Assuming that this visit falls within the warranty period, any defective parts are replaced free of charge. A test certificate will be issued.

Other reasons to choose Colt:

- Colt Smoke Control systems are suited to both commercial and industrial buildings, and may be adapted to suit most architectural requirements.
- Over the years Colt has funded a large proportion of the research into smoke control, and its representatives maintain an unparalleled level of technical expertise.
- Colt's in-house research and development capability ensures that Colt smoke control systems are designed, tested and updated by Colt to meet or exceed relevant legislation and standards.
- The majority of Colt's Smoke Control systems are manufactured in the UK under BS EN ISO 9001:2000 and BS EN ISO 14001:2004. They are also CE marked, where relevant, in compliance with EN 12101-2.

COLT SERVICE

Part of the Colt Group of companies, Colt Service offers a comprehensive range of maintenance packages incorporating the maintenance and repair of all building services equipment including non Colt products.

Colt Service provides a 24 hour, 365 day emergency cover as standard.

MAINTENANCE

Maintenance of a smoke control system is essential. Regular maintenance protects your investment and brings peace of mind that the system will operate effectively in an emergency.

The British Standard, BS 5588-12: 2004 recommends that smoke control systems should be serviced at least once a year and tested weekly.



People feel better in Colt conditions

Architectural Solutions

Climate Control

Smoke Control

Service and Maintenance

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