

Actionpac LNS3

Intelligent Damper Control and Monitoring System

Range and Features

- Solid State Panel PC.
- Full diagnostic for system and device integration from Panel PC.
- Flexible system architecture.
- Accepts fire engineering configuration from the most basic to the most complex.
- 2 core network cable, utilising daisy chain method of wiring to all devices, offering reduced wiring costs.
- Centralised or localised wiring to input and output devices, potentially further reducing wiring costs.
- Graphical User Interface provides live damper status position and location.
- Devices powered by closest distribution board.
- Will control and monitor many variants of Actionair motorised Dampers.

Typical applications

- Airports
- Hospitals
- Hotels
- Office Blocks



Recessed version shown

*action*air

Dampers Controls Fancoils

Ruskin Air Management Limited
www.ruskinuk.co.uk

Smoke... the silent killer

Introduction

Consultants in the field of fire engineering have long recognised the damage and danger to human life that can be caused by smoke spreading through buildings, even when the fire is confined to a small area.

Smoke/fire protection can save human lives as well as keeping damage to property and contents to an absolute minimum.

Control measures for smoke/fire protection, in old and new buildings, comprise a wide variety of systems and items of equipment that must be carefully integrated in order to ensure maximum safety.

One of the most important tasks is performed by the automatic smoke and fire dampers that are incorporated into HVAC systems. In an emergency they must close immediately to contain the smoke and fire and prevent their spread through the ducting or open immediately to allow smoke extraction to take place.

The Actionpac LNS3 system represents a new generation of smoke/fire damper control. The system has been designed with the user in mind, providing an advanced tool that simplifies installation and commissioning of smoke/fire dampers and peripheral devices. The Panel PC operates on an embedded

platform and utilises solid state technology for optimum reliability.

It's server architecture delivers new benefits such as reduced commissioning time, simplified operation and scope for future growth.

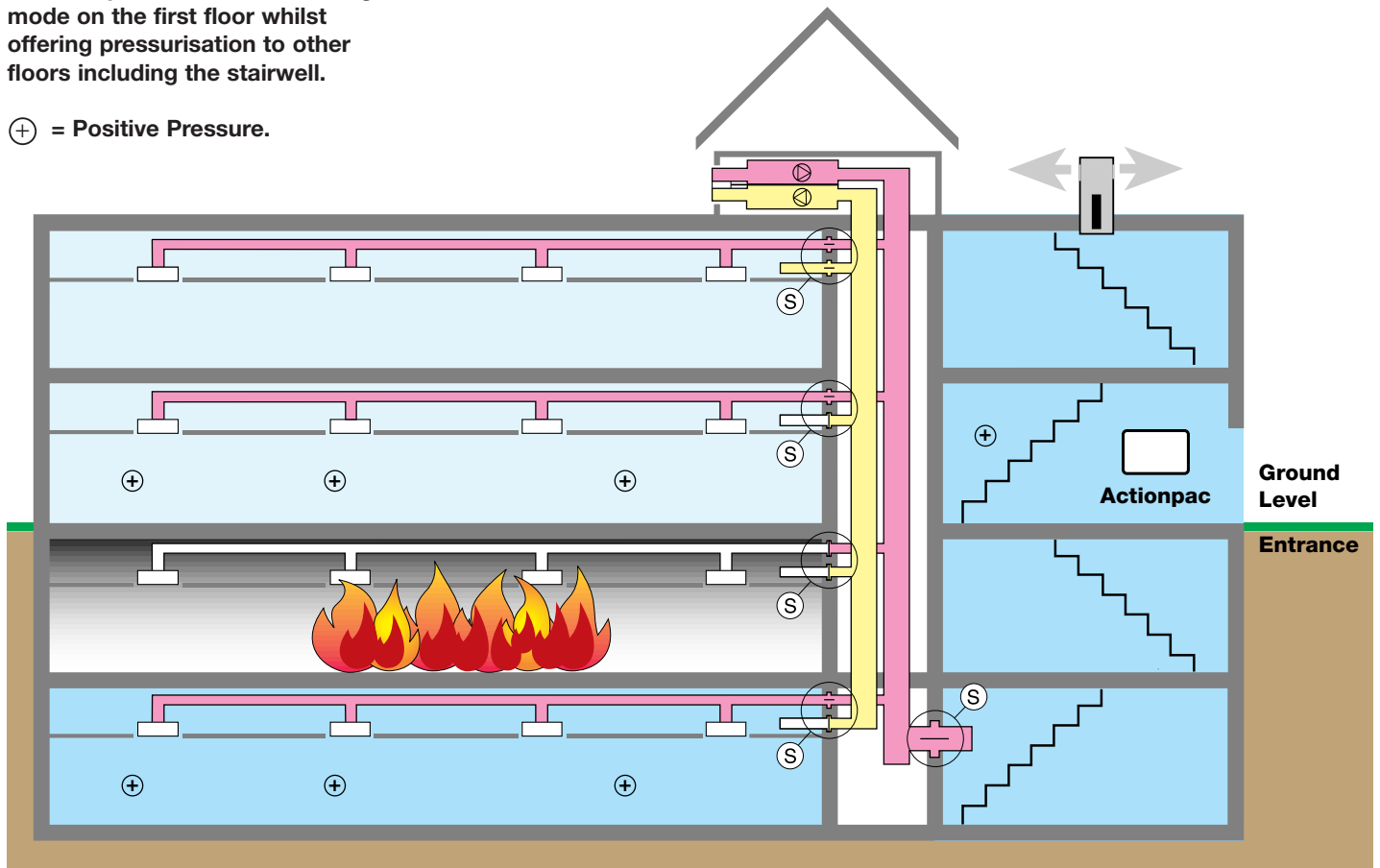
The Actionpac LNS3 Intelligent Smoke and Fire Damper typical Control System application.

The Actionpac LNS3 system is designed to protect life and property from damage caused by smoke and fire, by providing the means to:-

- Compartmentalise fire zones.
- Reduce the spread of smoke and fire.
- Keep escape routes and fire-fighting access open.
- Allow pressurisation and smoke extract by combined operation of dampers and fans.

Ⓢ Denotes Automatic Smoke and Fire Damper in smoke containing mode on the first floor whilst offering pressurisation to other floors including the stairwell.

⊕ = Positive Pressure.



Specification



Panel PC

Control Panel

The Actionair Actionpac LNS3 System consists of a Panel PC, UPS and pre-loaded software. The system communicates with damper interfaces to provide intelligent control and monitoring of motorised dampers and monitoring of manual fire dampers. The data network cabling enables substantial reduction in costs when compared with conventional systems. Digital inputs and outputs (DI804) can be accommodated on the network cable or located within the panel enclosure.

The Panel PC is supplied with Actionair Actionpac LNS3 software and operates on an embedded platform, which is extremely user friendly. The server

architecture delivers new benefits such as reduced commissioning time, ease of configuration, simplified operation, future system growth, full diagnostics for system and device integration along with optional automatic scheduled damper testing.

Actionpac LNS3, as supplied by Actionair.



Digital Input / Output Device (DI804)

This device accepts eight volt free contact inputs into the Actionpac LNS3 System. Typical inputs would be from fire alarm panels, fireman's override switches, manual call points and smoke detectors.

This device also provides three relay outputs to be driven from the Actionpac LNS3 System. Typical outputs would be to fans and BMS systems.

Complex strategy (cause and effect) lists can be driven from this input / output device with is located within the Panel PC enclosure.

Mimic Panels

Bespoke LED mimic panels are available to clients' specification.

Firefighter's Override Panels (FOP)

Bespoke key switch or push button firefighter's override panels are available to clients' specification.

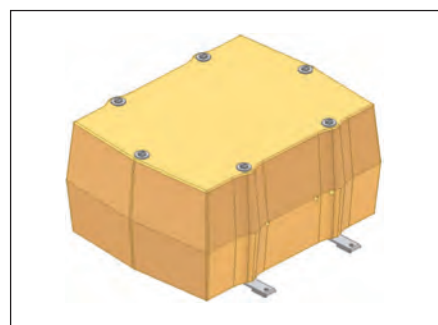


Damper Interfaces

The damper interfaces accept local auxiliary inputs (normally smoke detectors) which can drive cause and effect schedules.

Smoke Fire Damper Interface (SFDI)

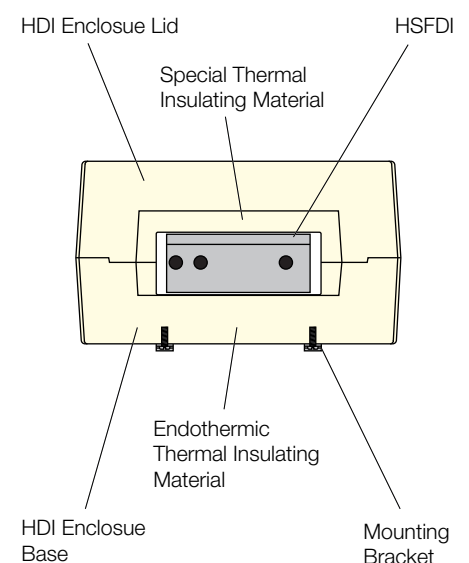
This device, which is a registered Lon Mark® FSDAC product, is required for each smoke fire damper used with the Actionpac LNS3 System. The SFDI controls and monitors motorised smoke/fire dampers. The device ensures correct operation and status of the damper and provides an alarm at the PC Panel in the event of local power supply failure.



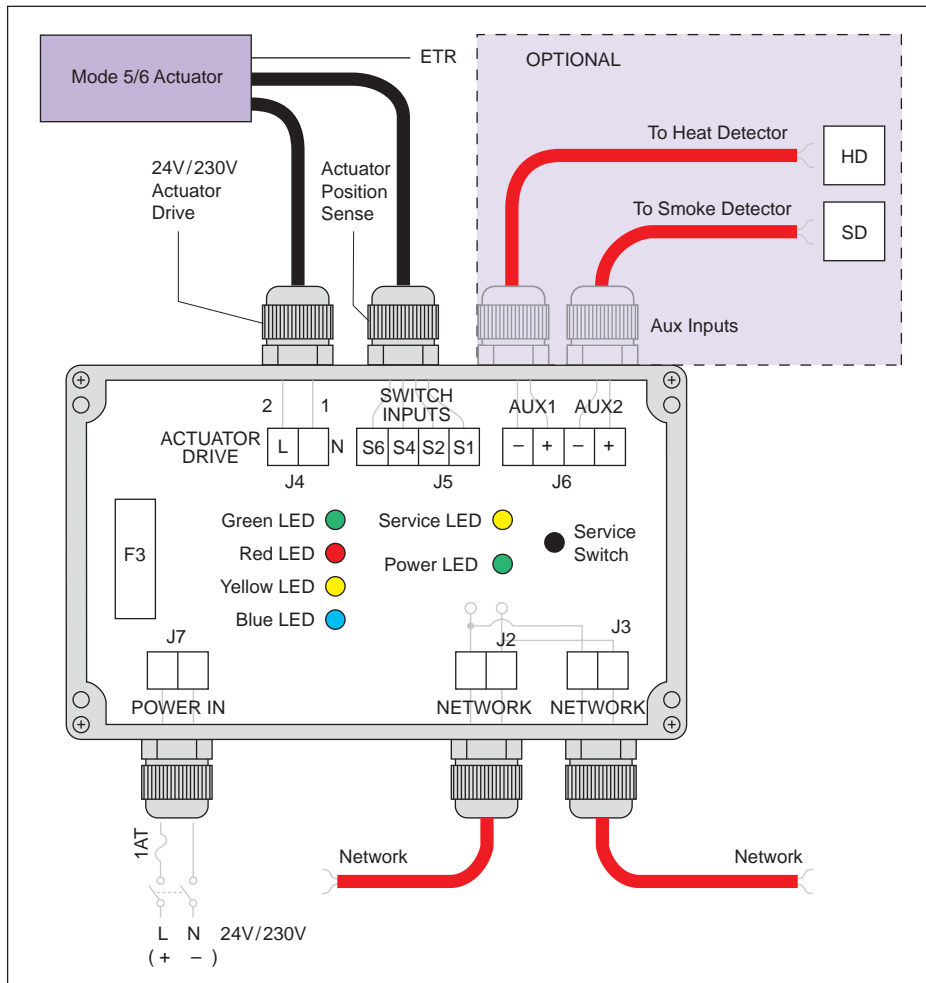
Hot Smoke/Fire Damper Interface (HSFDI)

The HSFDI with a unique thermal enclosure (HDI) offers protection of the interface to control and monitor Hot/Shield dampers up to 300°C for 1 hour. The HDI enclosure consists of two separate materials, enabling the HSFDI to function at the extreme temperature specified. The outer casing has endothermic properties that significantly slow down the internal temperature rise in a high temperature emergency condition. The inner casing is a special thermal insulating material. The unit has been tested and independently witnessed by BRE (Ref Test No. 221067A).

Sectional View of HDI Enclosure



SFDI Wiring Detail



Control Options

System will control and monitor most motorised dampers and offers monitoring of any dampers that are manually reset.

Typical Operation

- Power On – Damper resets
- Power Off – Spring release
- Release Time • 20 secs.
- Reset Time • 60 secs.

24V AC or DC

Connect 24V via a safety isolating transformer.

230V AC 50 / 60Hz

1 amp fused spur to be provided. EN wiring regulations to be observed.

Power Consumption

24V AC or DC
230V AC
Maximum power consumption for combined SFDI plus 24V or 230V actuator is <17W.

LED Behaviour

Function	Green ●	Red ●	Yellow ●	Blue ●	Service (Yellow) ●	Power (Green) ●
Open	On	Off				On
Closed	Off	On				On
Travelling	Flashing	Flashing				On
Fault			Flashing			On
Ping (Communicating)				One-shot		On
Offline	On	On	On	On		On
Wink					Flashes for 5 secs	On

Cable Specifications

Cable Type	Fire rated	Max length between devices	Max length per network channel	Conductor size
Beldon 8471 NH	2 core	400m	500m	1.3mm ²
Prysmian (Pirelli) FP 200 Gold	2 core ●	400m	500m	1.5mm ²
Prysmian (Pirelli) FP Plus	2 core ●	400m	500m	1.5mm ²
Firetuf	2 core ●	400m	500m	1.5mm ²
Firetuf Plus	2 core ●	400m	500m	1.5mm ²

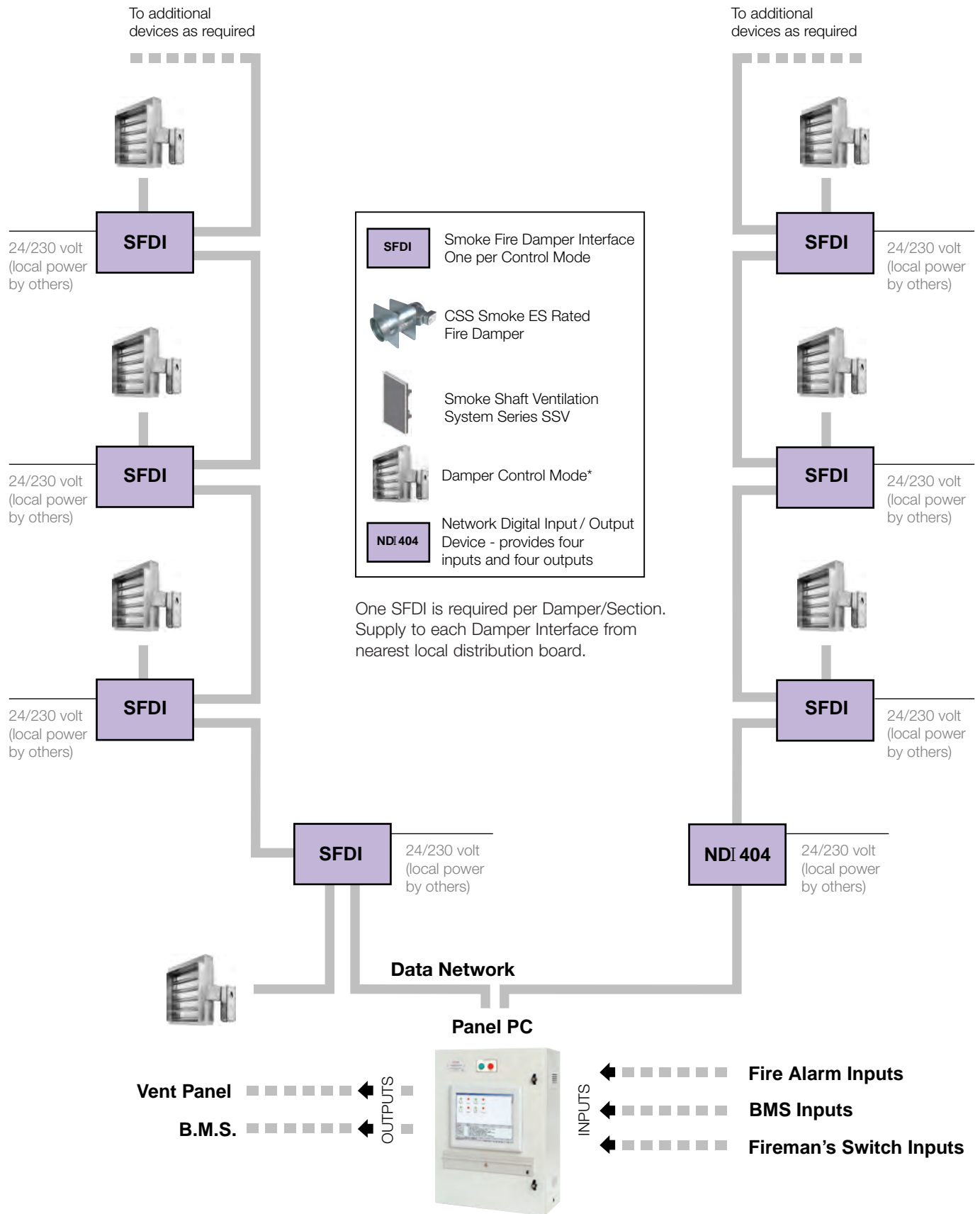
These cable specifications are fundamental to the stable and reliable operation of your smoke/fire control and monitoring system.

Failure to adhere to these specifications will result in unstable and unreliable network communications and will void all warranties.

1. Maximum number of devices per network channel is 64. If >64 and / or >500m a network extender is required.
2. If wired as a loop, the network is polarity sensitive. In all other instances, the network is polarity insensitive.
3. Networked devices are wired in a simple 'daisy chain', (in and out). No cable stubs permitted.

Typical Network Schematic

General Schematic of Actionpac LNS3 Damper Control System



Benefits

- Completely flexible to meet practically any building's damper requirements
- Three levels of alarm priority
- Panel PC driven system with real-time graphic displays
- Panel PC utilises solid state technology for optimum reliability
- Full configuration and diagnostics from Panel PC
- Optional automatic scheduled Damper testing
- Multiple wiring configurations to include Radial or Loop Topology
- Damper operational count provided
- Flexibility to accommodate any last minute changes to strategy, zones, damper quantities, references and descriptions etc.
- Powerful and flexible functionality enables standardisation of software (no bespoke site specific versions required)
- Cause and effect scenarios easily accommodated
- Multiple options for monitoring dampers, individually or by group or zone - output contacts can be triggered when a predefined percentage within a group or zone change position
- System designed to cater for environmental occupancy as well as the building's smoke/fire strategy. RS232 BMS link provided enabling a BMS to link directly to the system to read damper positions etc.
- Optional remote access available
- Graphical User Interface displays live damper status and details as well as cause and effect strategies
- Text fields facilitate clear description of device references and locations
- System wide activity logged and viewable for diagnostics and maintenance
- Allows for phased commissioning and future expansion
- CE marked, LVD and EMC compliant

System Commissioning

Actionair offers a comprehensive after sales service to include pre-commissioning checks and a complete commissioning service for all our products.

Our Standard Commissioning service includes the following:-

- Attendance at all necessary induction courses and site familiarisation.
- Final connections of inputs to system from fire alarms, override switches, BMS etc.
- Final connections of each damper interface unit, electrical contractor to have ensured all necessary cables are entered into enclosure glands.
- Establishing communication to each damper interface unit.
- Viewing of damper blade movement to check operation.
- Configuring of the relevant cause and effect.
- Demonstration / witnessing of 10% of dampers installed. Full witnessing available by special request.
- Client Training on the system.

Customer Service

Actionair provides quality products backed by a dedicated team committed to providing the very best in customer service.

We also offer experienced technical backup, comprehensive sales and administrative customer support, product commissioning and maintenance service.

Enclosure Specifications

Standard enclosure sizes and weights are dependent on the number of data networks and DI804's required.

Enclosure Size (mm) W x H x D	Max Load (Watts)
600 x 600 x 300	500
800 x 800 x 300	500
800 x 1000 x 300	500
800 x 1200 x 300	500
Colour	RAL 7035
Hinged	Left
Power cables	Bottom of right hand side
Network cables	Top entry
I/O cables	Top entry
Protection	IP 20 (230 Volt terminals shrouded)
Max ambient temperature	30 °C (Panel must be in a ventilated environment)
Minimum clearance for vents	150mm each side

Other Addressable Panel Options



Actionpac 60/120

The Actionair Actionpac 60/120 (LNS Standard) System consists of a Panel PC, UPS and pre-loaded software. The system communicates with damper interfaces to provide intelligent control and monitoring of motorised dampers and monitoring of manual fire dampers. The data network cabling enables substantial reduction in costs when compared with conventional systems. The digital inputs and output device (DI804) is accommodated within the panel enclosure.

The Panel PC is supplied with Actionair

Actionpac 60/120 (LNS Standard) software and operates on an embedded platform, which is extremely user friendly. The server architecture delivers new benefits such as reduced commissioning time, ease of configuration, simplified operation, full diagnostics for system and device integration along with optional automatic scheduled damper testing.

Note:

Actionpac 60/120 is recommend when there are more than 50 smoke/fire dampers to be controlled and monitored. Refer to Actionpac 60/120 (LNS Standard) brochure for full details.

Actionpac Electro Mechanical Smoke and Fire Damper Hard Wired Control Panels



EMS – Standard

Control and monitoring system.

Actionpac Electro Mechanical Smoke and fire damper control system.

Automatic damper operation utilising relay logic and LED indication of damper status.

Standard Modular Construction.

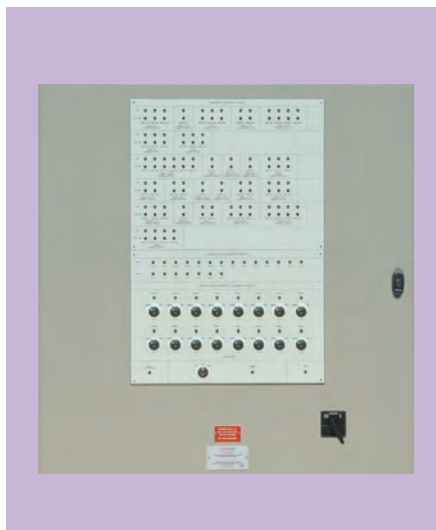
LED indication of damper status.

Mains isolator.

Test/Normal/Override Keyswitch.

Lamp test facility.

2 Versions (Mode 5 and Mode 6), available in 3 sizes, from Stock.



EMB – Bespoke

Control and monitoring system.

Actionpac Electro Mechanical Smoke and fire damper control system.

Automatic damper operation utilising relay logic and LED indication of damper status.

Features

Customised central Control Panel.

Individual, or collectively controlled and continually monitored.

Wall mounted enclosure to IP55.

Custom Engraved Traffolyte fascia.

LED indication of damper status.

Zonal inputs.

Door interlocking isolator.

Miniature circuit breaker protection.

Options

Lockable glazed door.

Special paint finish to BS standard colour reference numbers.

Flush mounting flanges.

Latching push buttons.

Fireman's override key switches.

Test Switch.

Lamp Test.

Audible alarm with mute facility.

B.M.S. common fault relay interface.

B.M.S. output.

Delay timers.

Battery backup.

Specialist Panels available

Fan Control Panel.

Fireman's control panel.

Mimic (Repeater) Panel

Fire damper monitor (Indication) panel.

Note: Actionpac EMS (Standard) or Actionpac EMB (Bespoke) Systems are recommended for areas where there are less than 50 dampers.

**Ruskin Air Management Limited
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company.**

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Due to a policy of continuous product development the specification and details contained herein are subject to alteration without prior notice.

**Comprehensive and detailed information
is available for all Actionair products.
Visit our website at www.actionair.co.uk**

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