ADVANCED AIR
SYSTEM 32 CONTROL PANEL

System 32 control panel overview

For over 28 years Advanced Air have supplied addressable panels to control fire and smoke dampers. Our System 42 has been used on many large projects involving large numbers of dampers and complex Cause & Effect setups that include operating fans in alarm conditions.

The System 32 has been designed around the core technology of our first class System 42, but has been streamlined to suit smaller projects of up to 200 dampers. System 32 protects lives by responding instantly in different scenarios, controlling fire and smoke dampers to their alarm position thereby preventing the spread of fire and smoke also allowing smoke extraction from the zone of the alarm.

The control panel is connected to the dampers by means of an intelligent decoder that monitors the damper status at all times. The decoders can be simple open or closed and can be supplied pre-programmed or programmed through the control panel.

The communication wiring is a loop system with up to maximum of 4 loops with a maximum length of 1km. The maximum number of decoders allowed on 1 loop is 50. The panel has 24 alarm inputs with 2 outputs through volt-free contacts to give fault alarm and general alarm.

The panel software design allows the setup to match bespoke Cause & Effect designs with the added safety of not have open communication therefore no outside changes to the operation. The system does allow changes to the Cause & Effect if there are design changes through the control panel.

Features and benefits

Protects life and property by responding instantly to an alarm.

Up to 24 zone alarms allowing compartmentalisation reducing the spread of smoke and fire.

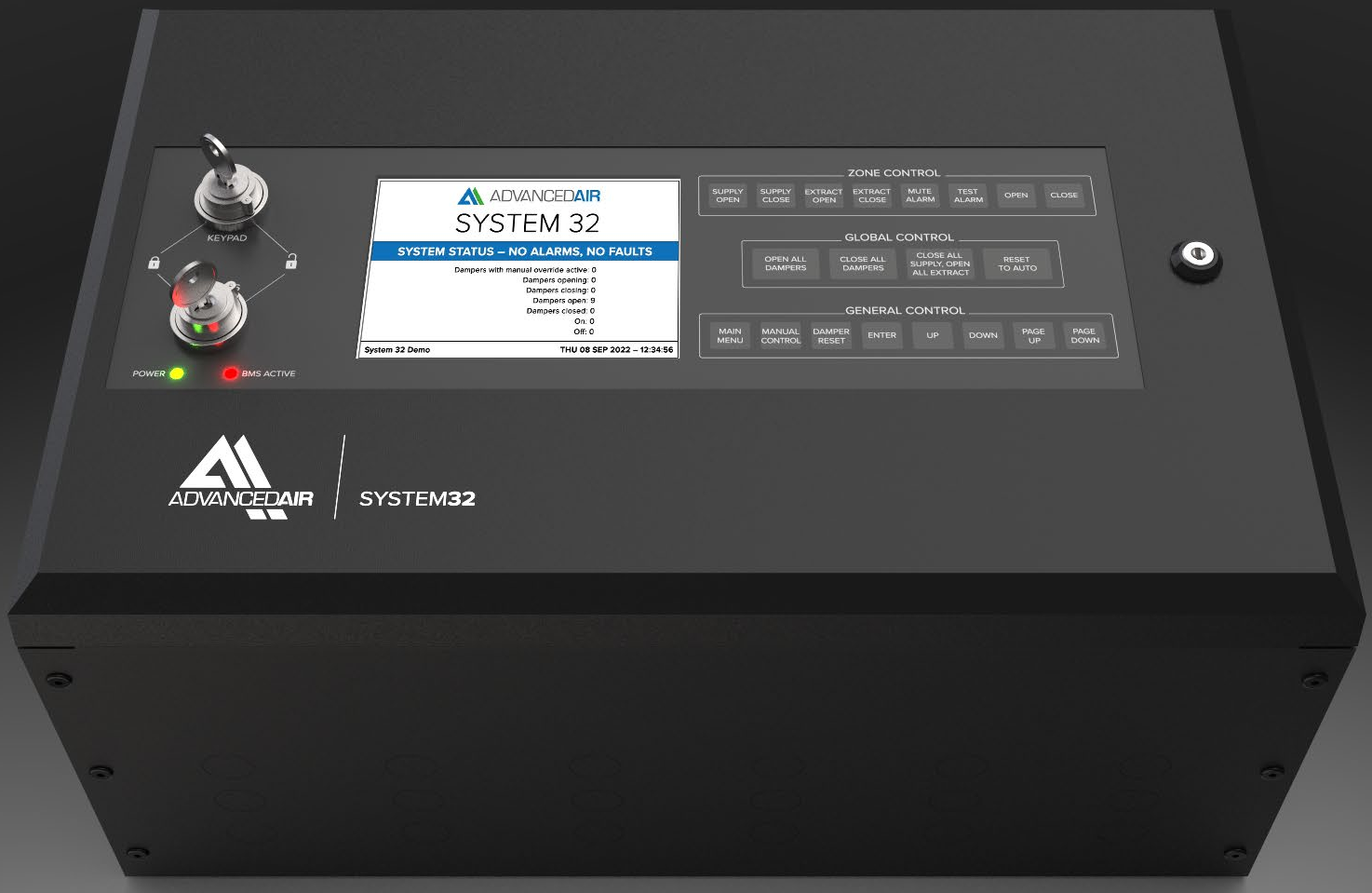
Performing to the Cause and Effect design, controlling the smoke dampers and fans to create pressurisation and smoke extract.

The System 32 allows changes to the damper performance to the cause and effect at the damper or control panel.

Our software and design team can support simple or complex control.

BMS Connection RS485 Modbus RTU.

Alarm overrides available but key activated.



ADVANCED AIR
SYSTEM 32 CONTROL PANEL

Control panel specification

Material	Mild steel case with ABS outer door
Finish	Textured polyester powder finish
Colour	Black case with black outer door
Size	W 475mm x H 300mm x D 200mm
Compliances	CE, LVD and EMC
BS Compliant	BS7346 Part 8
Panel Wiring	EN60204
Mounting	Surface mounting fixing kit with flush mounting bezel as standard
Power supply	0.1 A @ 230V (fuse 3A)
Battery back up	Optional – 15 minutes
Hardware	Integral microprocessor
Technology	Solid state
Damper testing	Yes
Cause & effect scenarios	Programmable
Monitoring of controlled devices	Individually and zone
Environmental occupancy	Yes
Alarm inputs per panel	24
BMS connection	RS485 (full system monitoring)
BMS protocol	Modbus RTU
Control Loops per panel	4
Decoders / control devices on each loop	50 single addresses
Number of single decoders per system	200
Control loop length	1,000 metres
Control loop connection	RS485
Monitoring and control	Yes – true bi-directional even on loop break
Alarm priority	Multi-level
Equipment controlled	Motorised fire/smoke dampers, fans/AHUs
General hard-wired fault	Yes, as standard
General hard-wired alarm	Yes, as standard
Display	LED colour screen with alphanumerical graphic display allowing for clear descriptions of device reference and location with live damper status
Panel audible alarm	Yes
Screen size	W 122mm x H 92mm
Fault display	Yes – main screen display
Alarm display	Yes – main screen display
Events logging	Yes – stored last 4,000 events that have occurred
Manual control	Yes – soft key buttons on main panel with keypad disable key
Alarm Inhibit	Yes – hard-wired key switch on front of panel

System expansion

Additional mimic panels	1
Additional alarm inputs	0
Control loops on mimic panels	No

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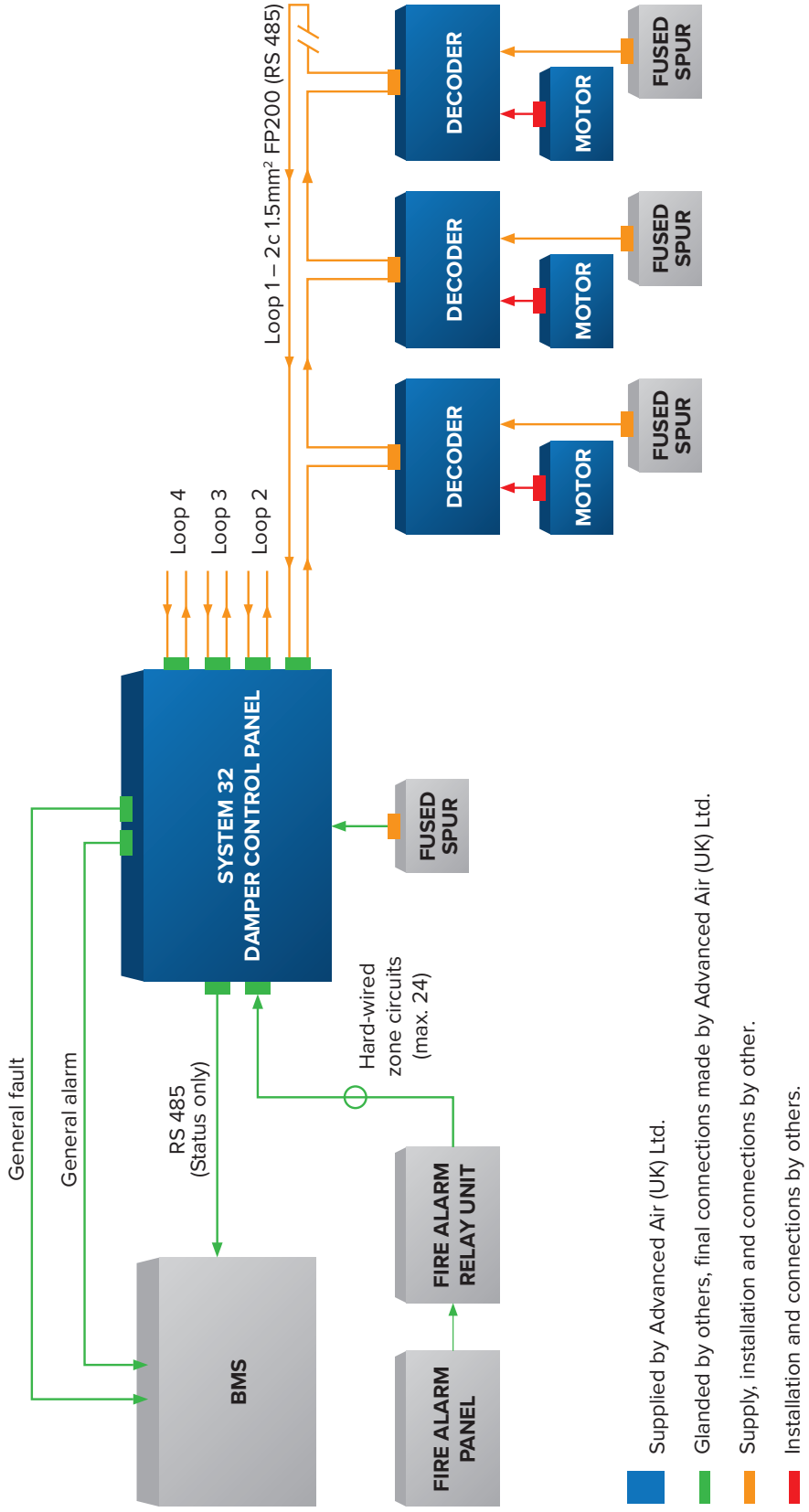
Typical System 32 installation



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ADVANCED AIR
PLUG AND PLAY DAMPER DECODER

Product description

The Plug & Play decoder reduces the installation time on site and is supplied complete with three plain glands – two for the loop communications cable (in and out) and one for the mains supply – and one socket for the connection to the damper. The only wiring required on site is the communications loop (in and out) and mains power supply through a fused spur. LEDs give status indication, and a test button operates the damper.

Commissioning

The decoder can be preprogrammed with its normal operation and alarm condition as required by the cause and effect thereby speeding up the commissioning time. Should the Cause and Effect have to be modified this can be done easily from The System 32 control panel.

In normal operation

In normal condition damper decoders will set the actuator to a preprogrammed position either open or closed. The actuator microswitches are monitored by the System 32 so if they do not reach the correct position a fault will be highlighted. LEDs on the decoder confirming the damper position and that the decoder is communicating the System 32. The decoder also has a test button that allows the damper to go to its safe position. Once released the damper will return to normal position.

Alarm condition

When an alarm is activated by the volt-free contact from the fire alarm panel, the System 32 panel instantly sends commands for the dampers to go to their alarm position following the cause and effect design for the zone of incident.

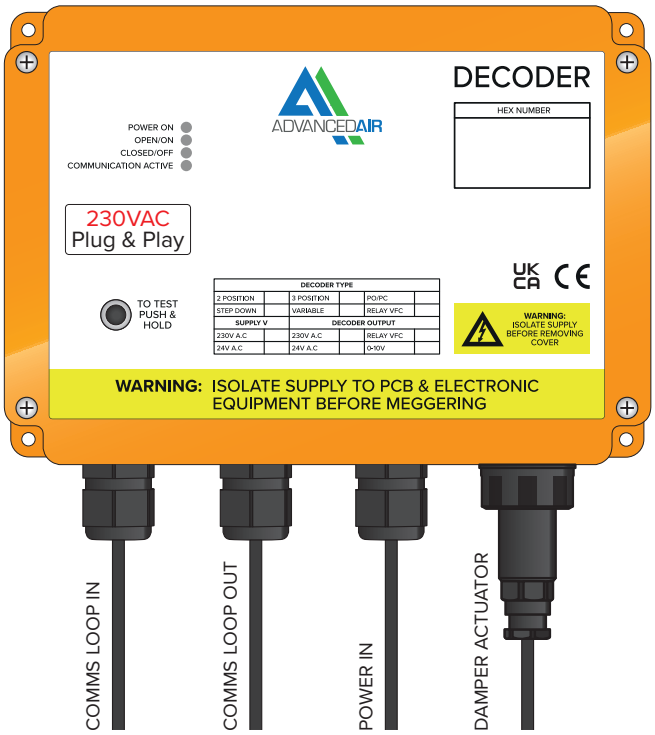
The dampers will be in their set position within 25 seconds and through the microswitches the panel will have full status of the system. If fan decoders are connected to the system on receiving the signal that smoke dampers are open the fans can be activated to allow smoke extraction.

Fail safe condition

Should for any reason a decoder loses communication with the control panel, the decoder can be programmed to take no action, or it can be programmed to revert back to its pre-defined safe position set in the Cause & Effect.

Generally for motorised fire dampers, this will be to send them to their closed position by removing power to the actuator. For a smoke control damper, this could be open or closed dependant on the Cause & Effect.

In a loss of communication situation, the main panel will also display a fault.



Decoder specification

Enclosure	ABS – UL94 V-0 Flame retardant material
Colour	RAL 2009
Temperature rating	80°C – factory tested to 100°C
Dimensions	255mm W x 180mm H x 63mm D
Fixing holes	4 x 5mm mounting holes
Lid fixings	4 x retained screws
Power supply	Local 230V or 24V supply to suit decoder voltage
Power consumption	0.1 A @ 230V, 0.4 A @ 24V (fuse 3 A to include actuator)
Mains connection	By others
Actuator voltage	230VAC or 24V (Actuator voltage MUST be confirmed as per mains supply)
Damper indication	Open & closed status
Damper connection	Plug and play damper socket
Monitoring / control	From main panel via RS485 communication loop
Alarm priority	Multi-Level
Local test facility	Yes
Local decoder indication	Open, closed, communication & power LEDs
Compliant	CE, LVD and EMC
Standards	EN 60204, BS7346 Part 8
Installation	To BS 7671
IP rating	IP54

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ADVANCED AIR
BASIC DAMPER DECODER

Product description

The basic decoder is complete with four plain glands – two for the loop communications cable (in and out), one for the mains supply and the final one tor the connection to the damper. All wiring on site by others. LEDs give status indication, and a test button operates the damper.

Commissioning

The decoder can be preprogrammed with its normal operation and alarm condition as required by the cause and effect thereby speeding up the commissioning time. Should the Cause and Effect have to be modified this can be done easily from the System 32 control panel.

In normal operation

In normal condition damper decoders will set the actuator to a preprogrammed position either open or closed. The actuator microswitches are monitored by the System 32 so if they do not reach the correct position a fault will be highlighted. LEDs on the decoder confirming the damper position and that the decoder is communicating the System 32. The decoder also has a test button that allows the damper to go to its safe position. Once released the damper will return to normal position.

Alarm condition

When an alarm is activated by the volt-free contact from the fire alarm panel, the System 32 panel instantly sends commands for the dampers to go to their alarm position following the cause and effect design for the zone of incident.

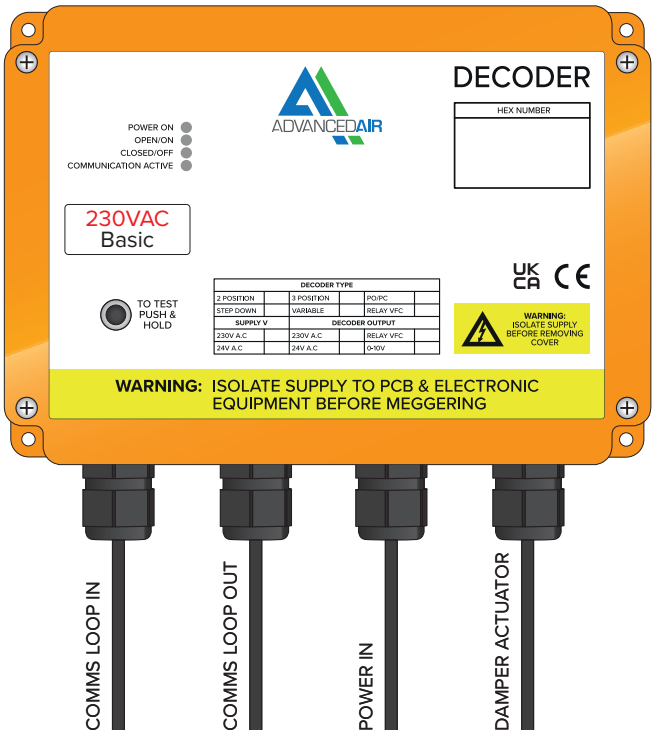
The dampers will be in their set position within 25 seconds and through the microswitches the panel will have full status of the system. If fan decoders are connected to the system on receiving the signal that smoke dampers are open the fans can be activated to allow smoke extraction.

Fail safe condition

Should for any reason a decoder loses communication with the control panel, the decoder can be programmed to take no action, or it can be programmed to revert back to its pre-defined safe position set in the Cause & Effect.

Generally for motorised fire dampers, this will be to send them to their closed position by removing power to the actuator. For a smoke control damper, this could be open or closed dependant on the Cause & Effect.

In a loss of communication situation, the main panel will also display a fault.



Decoder specification

Enclosure	ABS – UL94 V-0 Flame retardant material
Colour	RAL 2009
Temperature rating	80°C – factory tested to 100°C
Dimensions	255mm W x 180mm H x 63mm D
Fixing holes	4 x 5mm mounting holes
Lid fixings	4 x retained screws
Power supply	Local 230V or 24V supply to suit decoder voltage
Power consumption	0.1 A @ 230V, 0.4 A @ 24V (fuse 3 A)
Mains connection	By others
Actuator voltage	230VAC or 24V (Actuator voltage MUST be confirmed as per mains supply)
Damper indication	Open & closed status
Damper connection	Pre-fitted glands for direct wiring to damper
Monitoring / control	From main panel via RS485 communication loop
Alarm priority	Multi-Level
Local test facility	Yes
Local decoder indication	Open, closed, communication & power LEDs
Compliant	CE, LVD and EMC
Standards	EN 60204, BS7346 Part B
Installation	To BS 7671
IP rating	IP54

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ADVANCED AIR
VARIABLE DAMPER DECODER

Product description

The variable decoder is also Plug & Play, which reduces the installation time on site and is complete with three plain glands – two for the loop communications cable (in and out) and one for the mains supply – and one socket for the connection to the damper. Only wiring required on site in the communications loop in and out and mains power supply through a fused spur. LEDs give status indication, and a test button operates the damper.

Commissioning

The decoder can be preprogrammed with its normal operation and alarm condition as required by the cause and effect thereby speeding up the commissioning time. Should the Cause and Effect have to be modified this can be done easily from the System 32 control panel.

Air volume setting

The air volume can be set via the on-board potentiometer, normally carried out by the air balancers. This potentiometer adjusts the output 0-10V signal to the damper.

Optionally the damper blade position can be controlled by a 0-10V signal from the BMS under normal operating conditions. This would require an additional gland to the decoder with all wiring by others. Please consult the sales office for more information.

In normal operation

In normal condition damper decoders will set the actuator to a preprogrammed position either open, closed or any set position in between using the potentiometer.

The decoder uses the actuator's 0-10v feedback signal to give an accurate position of where the damper blades are, this is then displayed on the System 32's screen as a percentage. If the position is not set to closed, it must be set to 5% or greater to avoid fault.

LEDs on the decoder confirm the damper position and that the decoder is communicating with the System 32. The decoder also has a test button that allows the damper to go to its safe position. Once released the damper will return to normal position.

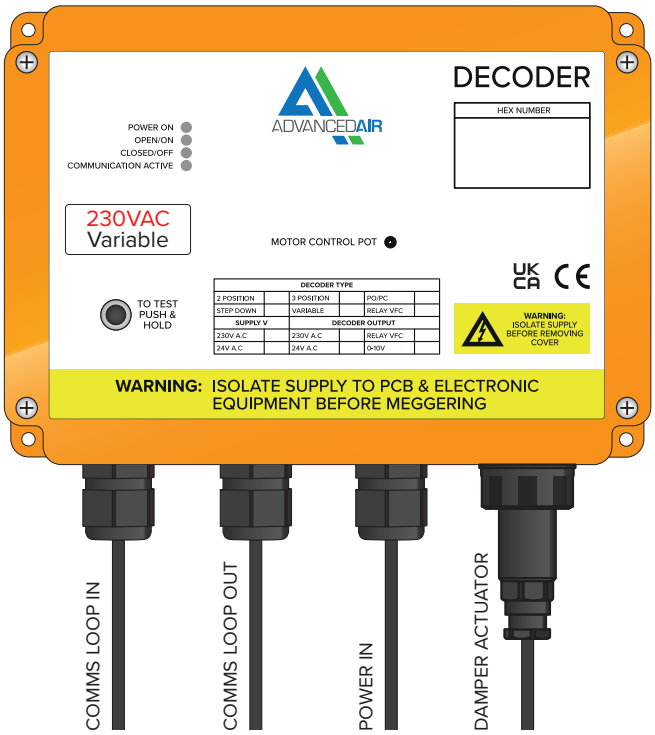
Alarm condition

When an alarm is activated by the volt-free contact from the fire alarm panel, the System 32 panel instantly sends commands for the dampers to go to their alarm position following the cause and effect design for the zone of incident.

The dampers will be in their set position within 25 seconds and through the microswitches the panel will have full status of the system. If fan decoders are connected to the system on receiving the signal that smoke dampers are open the fans can be activated to allow smoke extraction.

Fail safe condition

Should for any reason a decoder loses communication with the control panel, the decoder can be programmed to take no action, or it can be programmed to revert back to its pre-defined safe position set in the Cause & Effect. Generally for motorised fire dampers, this will be to send them to their closed position by removing power to the actuator. For a smoke control damper, this could be open or closed dependant on the Cause & Effect. In a loss of communication situation, the main panel will also display a fault.



Decoder specification

Enclosure	ABS – UL94 V-0 Flame retardant material
Colour	RAL 2009
Temperature rating	80°C – factory tested to 100°C
Dimensions	255mm W x 180mm H x 63mm D
Fixing holes	4 x 5mm mounting holes
Lid fixings	4 x retained screws
Power supply	Local 230V or 24V supply to suit decoder voltage
Power consumption	0.1 A @ 230V, 0.4 A @ 24V (fuse 3 A to include actuator)
Mains connection	By others
Actuator voltage	230VAC or 24V (Actuator voltage MUST be confirmed as per mains supply)
Damper indication	Open & closed status
Damper connection	Plug and play damper socket
Monitoring / control	From main panel via RS485 communication loop
Alarm priority	Multi-Level
Local test facility	Yes
Local decoder indication	Open, closed, communication & power LEDs
Compliant	CE, LVD and EMC
Standards	EN 60204, BS7346 Part 8
Installation	To BS 7671
IP rating	IP54

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ADVANCED AIR
FAN DECODER

Product description

The fan decoder is complete with four plain glands – two for the loop communications cable (in and out), one for the mains supply and the final one tor the connection to the fan. All wiring on site by others. LEDs give status indication.

Commissioning

The decoder can be preprogrammed with its normal operation and alarm condition as required by the cause and effect thereby speeding up the commissioning time. Should the Cause & Effect have to be modified this can be done easily from the System 32 control panel.

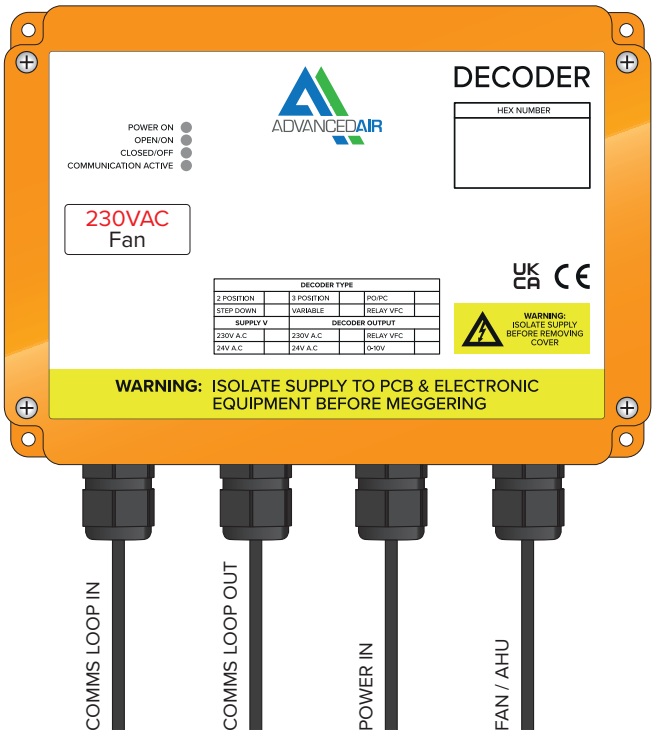
In normal operation

In normal condition fan decoders will set the fan to a preprogrammed position either on or off. LEDs on the decoder confirming the fan status and the decoder is communicating this to the System 32.

Alarm condition

When an alarm is activated by the volt-free contact from the fire alarm panel, the System 32 panel instantly sends commands for the fans to go to their alarm position following the cause and effect design for the zone of incident.

The fans will be turned on / off within seconds.



Decoder specification

Enclosure	ABS – UL94 V-0 Flame retardant material
Colour	RAL 2009
Temperature rating	80°C – factory tested to 100°C
Dimensions	255mm W x 180mm H x 63mm D
Fixing holes	4 x 5mm mounting holes
Lid fixings	4 x retained screws
Power supply	Local 230V or 24V supply to suit decoder voltage
Power consumption	0.1 A @ 230V, 0.4 A @ 24V
Mains connection	By others
Actuator voltage	230VAC or 24V (Actuator voltage MUST be confirmed as per mains supply)
Damper indication	Open & closed status
Damper connection	Pre-fitted glands for direct wiring to damper
Monitoring / control	From main panel via RS485 communication loop
Alarm priority	Multi-Level
Local test facility	No
Local decoder indication	Open, closed, communication & power LEDs
Compliant	CE, LVD and EMC
Standards	BS 5588, BS 5839, EN 12101-9 (Draft), EN 60204, BS7346 Part B
Installation	To BS 7671
IP rating	IP54

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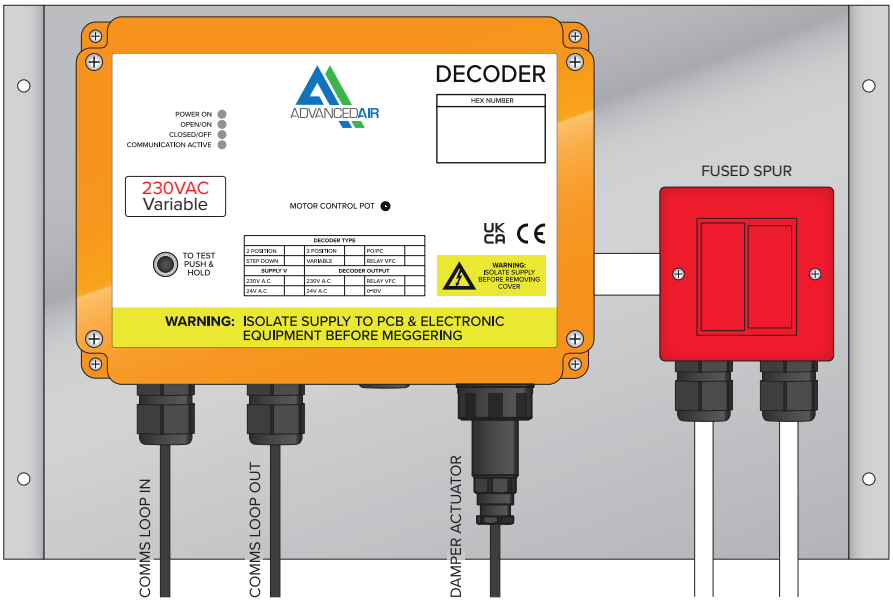
ADVANCED AIR
MODULAR DAMPER DECODER

Product description

The decoder (Plug & Play or Variable) is mounted on a modular plate, pre-wired to fused spur.

The main advantage of this arrangement is the mains power connection on site is not to the decoder.

The only site-wired connection to the decoder is the communications cable therefore reducing electrical errors and commissioning times.



Commissioning

The decoder can be preprogrammed with its normal operation and alarm condition as required by the Cause & Effect thereby speeding up the commissioning time.

Should the Cause & Effect have to be modified this can be done easily from the System 32 control panel.

In normal operation

In normal condition damper decoders will set the actuator to a preprogrammed position either open or closed. The actuator microswitches are monitored by the System 32 so if they do not reach the correct position a fault will be highlighted. LEDs on the decoder confirm the damper position and that the decoder is communicating the System 32. The decoder also has a test button that allows the damper to go to its safe position. Once released the damper will return to normal position.

Fail safe condition

Should for any reason the decoder lose communication with the control panel the power will be removed from the damper. For motorised fire dampers they will spring close but for smoke dampers they will remain in their normal position as the actuator is power open / power close. The panel will sound an alarm to advise of a fault.

Alarm condition

When an alarm is activated by the volt-free contact from the fire alarm panel, the System 32 panel instantly sends commands for the dampers to go to their alarm position following the cause and effect design for the zone of incident.

The dampers will be in their set position within 25 seconds and through the microswitches the panel will have full status of the system. If fan decoders are connected to the system on receiving the signal that smoke dampers are open the fans can be activated to allow smoke extraction.

Decoder specification

Enclosure	ABS – UL94 V-0 Flame retardant material
Colour	RAL 2009
Temperature rating	80°C – factory tested to 100°C
Dimensions	W 255mm x H 180mm x D 63mm
Fixing holes	4 x 5mm mounting holes
Lid fixings	4 x retained screws
Power supply	Local 230V or 24V supply to suit decoder voltage
Power consumption	0.1 A @ 230V, 0.4 A @ 24V (fuse 3 A to include actuator)
Mains connection	By others
Actuator voltage	230VAC or 24V (Actuator voltage MUST be confirmed as per mains supply)
Damper indication	Open & closed status
Damper connection	Plug and play damper socket
Monitoring / control	From main panel via RS485 communication loop
Alarm priority	Multi-Level
Local test facility	Yes
Local decoder indication	Open, closed, communication & power LEDs
Compliant	CE, LVD and EMC
Standards	EN 60204, BS7346 Part B
Installation	To BS 7671
IP rating	IP54

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ADVANCED AIR
SYSTEM 32 ORDERING CODES

Ordering

SYSTEM 32	CODE
Main Panel	32MP
Additional Panel	32RP
Main Panel with Integrated UPS	32MU
Additional Panel with Integrated UPS	32RU

SYSTEM 32 DECODERS	CODE
Basic Decoder	32BD
Plug and Play Decoder 6 Pin Socket (for 0400 / 2530 spring return actuators)	32D6
Plug and Play Decoder 7 Pin Socket (for 26SCD and modulating actuators)	32D7
Fan Decoder	32FD
Variable Decoder	32VA
8 In/8 Out board house in IP66 Enclosure	IOB
8 In/8 Out board No Enclosure	IOPB
Plug & Play Transformer 6-Pin (Post Decoder)	PPT6
Plug & Play Transformer 7-Pin (Post Decoder)	PPT7
Single Decoder Transformer (Pre Decoder)	SDTX
Wall Mounted Transformer (up to 15 single decoders)	WMTX

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