

High-Performance Fire System for UL Standard compliance



SIGNALING





Protecting people and property from fire is a complex task, but Shield makes it simpler without sacrificing safety. If you require robust networking, smoke control, and fire audio for large-scale UL projects, Shield delivers fire safety you can rely on with complete peace of mind.





Table of Content

Introduction	04
NEO – The High-Performance UL Fire System	05
NEO Panels	07
System Diagram	08
Integrated Audio and Firefighter Telephones	10
Command Centres	11
Intelligent Detectors	12
Audio Visual, Modules and Pull Stations	13
System Network	14
DynamixSmoke – Complete Smoke Control	15
PerfectSync – Fire Audio Perfected	16
Fire and Emergency Telephone System	17
Technical Support	18







Introduction

Competence and innovation driven by consistent market development and customer requirements have shaped the successful development of the SHIELD Brand. The extensive product range of the market leader in the field of fire detection technology contains single, individually integrable system performances. In this way, a customized overall fire protection concept can be planned and realized for every need with optimally synchronized products.

Performance is in international demand, SHIELD is among the highly accredited fire alarm companies that meet rigorous British and American standards for all projects from small conventional system to multi site networks. Certifications such as UL and FM approvals have earned SHIELD a world-renowned reputation with quality products and powerful solutions.

A strong brand is generally known to be a secure basis for close and lasting customer relationships. In accordance with this, SHIELD uses available potential in order to keep on growing in a dynamic competitive environment. And at the same time, SHIELD stands for innovative and high quality fire alarm and evacuation systems.









The High-Performance **UL Fire System**

NEO

- · NEO is our complete solution for customers demanding a versatile, high-performing fire system. Panels are approved to UL 864 10th Edition and detectors are approved to UL 268 7th Edition.
- · NEO combines addressable panels with audio systems, command centres and a versatile and comprehensive range of wired devices to bring you performance, quality and ease of use.
- · NEO includes intuitive programming, powerful networking, comprehensive cause and effect and unique diagnostic features that put you in complete control of your fire protection and provide that all-important peace of mind.
- · NEO is a modular system, offering a wide variety of configurations and applications.
- · NEO is designed to go anywhere you need high quality, reliable and easy-to-use fire detection and control, from mass transportation and industrial complexes to landmark developments, historic buildings and public services.









Easy to install and use

NEO is built on Shield's outstanding pedigree of fire alarm and detection experience to bring you a range of UL 864-approved fire panels that are simple to install, configure and use.

- · Easy-fix removable chassis and in-built software make NEO fire panels quick and easy to set up.
- · Powerful networking, extensive configuration options and comprehensive cause and effect put you in complete control.
- · Intuitive controls and menus, with simple click and select programming for simple and easy commissioning.
- · The panels support intelligent annunciators, I/O drivers and BMS interface for integration with building management systems.
- · All panels and Command Centres are manufactured in the UK.
- · Our highly rated technical support team can help with advice, tips and training.

Powerful, flexible service reporting

Every NEO panel includes an inbuilt easy-to-use, windows-based service tool which saves you time and money by providing easy, instant access to historic and real-time device data, and shows proof of servicing at a glance.

- · Demonstrate proof of servicing, download service reports, inspect the device history and keep track of service schedules.
- · Customisable data filters make it easy to focus on potential trouble spots and ensure they're checked and tested during servicing.
- · Predict which devices are becoming contaminated so you can clean/replace them before they cause a false alarm
- · Customise reports to show the data you need and export it as PDF, Excel or HTML files to prove compliance simply and efficiently.

Versatility and choice

We know that sites can expand, and fire protection requirements change and evolve over time. That's why we've designed NEO to be scalable and flexible, able to adapt as required with minimal fuss or disruption.

- · Standalone control panels in one, two and four SLC formats so you can choose the panel size that meets your requirements and budget.
- Command centres in modular format, offering a wide variety of configurations and applications.
- · Remote annunciators available.
- · Each 500mA digital signalling line circuit supports up to 126 intelligent devices.
- · Up to 200 zones per panel and 25,000 devices per network.

Packed with premium features

Every NEO panel and command centre comes with a host of advanced features built in as standard, giving you peace of mind that you won't need to buy expensive add-ons in the future.

- · Unique diagnostic features provide readings on the panel from any loop, making it easy to identify and investigate any issues.
- Comprehensive network diagnostic tool prevents fires and faults from being transmitted across the network.
- Built-in multimeter measures all voltages and currents across the system, so you can speed up the commissioning process by identifying voltage/ current levels in real time.
- · Standard peripherals include direct USB and RS232 PC connections, and peripheral expansion is built in for added peace of mind.
- Modular in construction, with the ability to program your own company logo to appear on the fire panel screen.
- · 19 built-in LEDs as standard, 5 of which are freely programmable.
- Unique auto-test of battery cell integrity.
- · Easy to synchronise audio and strobes.
- Command centres are intuitive and easy for firefighters to operate.
- · Integrated control of fans and dampers, with unique spreadsheet-style programming matrix.
- · Built-in false alarm management technology.



Panels

NEO - 1 SLC Compact



NX10-FACP-1C

- Class X (A) or B operation.
- 126 addressable intelligent points.
- Available in a compact enclosure.
- 2x2 Amp Class A or Class B programmable NAC circuits
- 3x on-board relays. 1 trouble, 2 programmable.
- System keys for reset, acknowledge, silence, resound and
- 3 freely programmable system keys.
- 19 on-board LED indicators, 5 of which are freely programmable.

NEO - 1L



NX10-FACP-1L

- Class X (A) or B operation
- 126 intelligent addressable points SLC dependent
- 2 x 2 Amp Class A or Class B programmable NAC circuits as standard, expandable to a total of 4 NAC circuits, 2 Amps each.
- 3 x on-board relays. 1 trouble, 2 programmable.
- System keys for reset, acknowledge, silence, resound and drill.
- 3 freely programmable system kevs.
- 19 on-board LED indicators, 5 of which are freely programmable.
- 5 to 10 Amp system power.

NEO - 2



NX10-FACP-2

- Class X (A) or B operation.
- 252 intelligent addressable points SLC dependent.
- 2 x 2 Amp Class A or Class B programmable NAC circuits as standard, expandable to a total
- of 4 NAC circuits, 2 Amps each. 3 x on-board relays. 1 trouble, 2 programmable.
- System keys for reset, acknowledge, silence, resound and drill.
- 3 freely programmable system keys.
- 19 on-board LED indicators, 5 of which are freely programmable.
- 5 to 10 Amp system power.

NEO - 4



NX10-FACP-4

- Class X (A) or B operation.
- 504 intelligent addressable points SLC dependent.
- 2 x 2 Amp Class A or Class B programmable NAC circuits as standard, expandable to a total of 4 NAC circuits, 2 Amps each.
- 3 x on-board relays. 1 trouble, 2 programmable.
- System keys for reset, acknowledge, silence, resound and drill.
- 3 freely programmable system
- 19 on-board LED indicators, 5 of which are freely programmable.
- 5 to 10 Amp system power.

NEO - Remote Annunciators



NX10-FAN-C



NX10-FAN-D

- Class X (A) or B operation network interface.
- C version has annunciation and programmable control. D version annunciation only.
- On-board USB programming port.
- Peer-to-peer, cross-node operation.
- Monitored external trouble input.
- Info displayed fully configurable to any combination of fires, troubles, supervisory or other alarms.
- Both models include programmable status LEDs.
- Model FAN-C provides 3 freely programmable function keys.
- Optional tamper-proof and weather-proof enclosures.
- Surface or flush mount.

NEO Peripherals

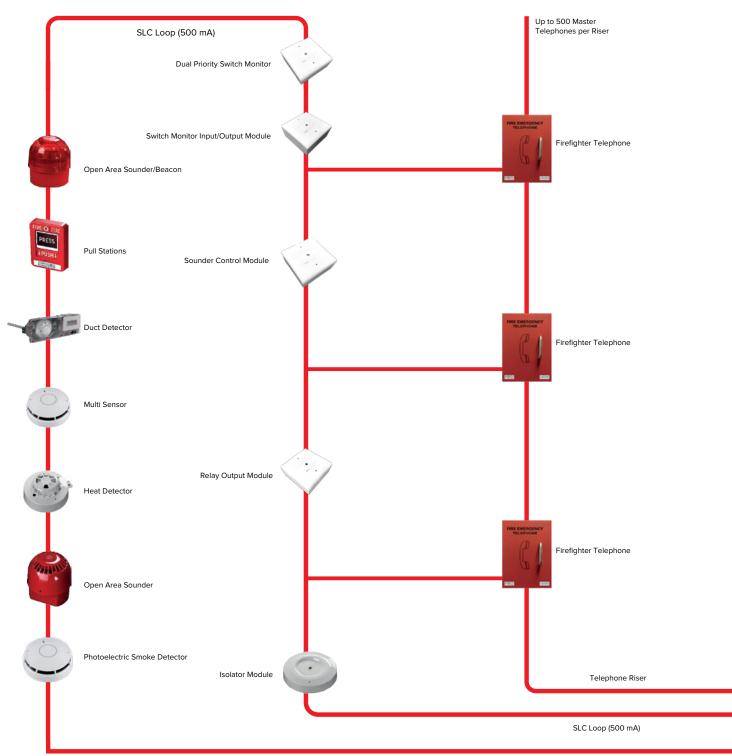


- NEO panels can be customised with a large range of peripheral cards wired directly to the panel, or via the PENN network device, anywhere on the network.
- Conventional zone module (8 Class B or 4 Class A) - up to 16 modules per panel.
- 4- or 8-way high-current relay modules.
- Dual NAC expander.
- Class X (A) or B operation.
- Fibre optic network converter module.
- 48-way I/O switch/LED driver.
- Panel-mounted printer.
- 16-way switch/48 LED module.





System Diagram

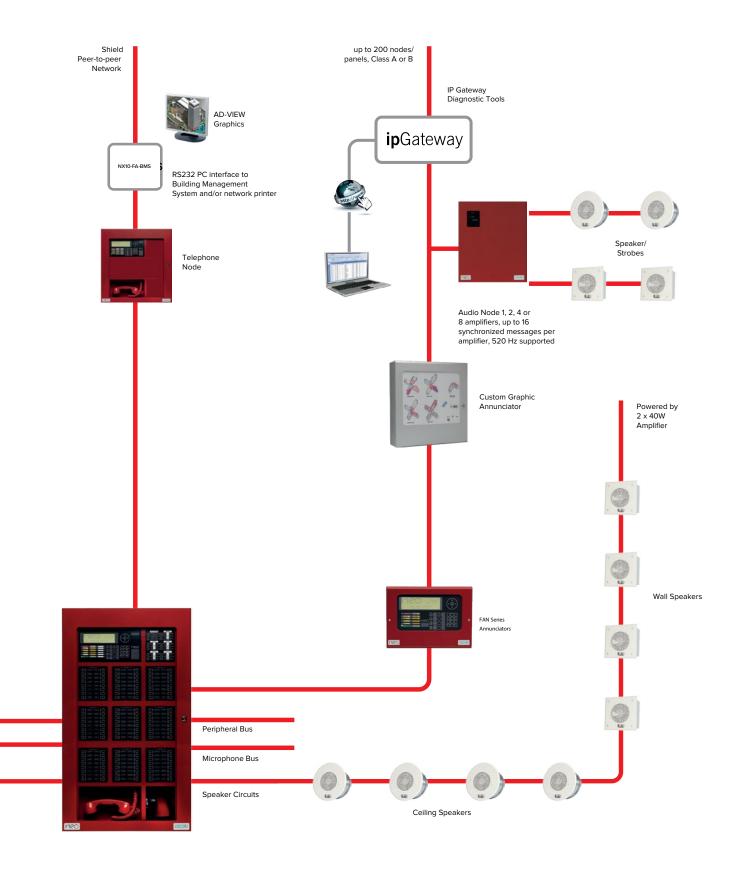


SLC Loop (500 mA)















Integrated Audio and Firefighter Telephones

NEO comes ready for complete audio configuration with the addition of an audio module (NX10-AMP-80), any control panel or Command Center of this series becomes fully audio capable.



NX10-VB

Audio Nodes

- · Choose from four models that support either 1,2,4 or 8 amplifiers in a single enclosure.
- · Easy and fast configuration.
- Designed to operate as a node on the NEO network.
- Provides increased digital audio signaling during an emergency situation.
- Each amplifier has two independent 40W, 25Vrms outputs.
- Each amplifier contains an independent 16 channel digital message/tone generator.
- Unique amplifier booster/ cascading option.
- Superb sound quality.
- Simple programming via
- Two (2) Class "A" or "B" speaker circuits.
- External AC Power and Trouble LEDs.
- Internal service diagnostic and status indicators.
- · Each amplifier may be programed for 1 to 1 backup.
- Powerful CBE logic programming.
- All amplifier audio output signals are synchronized across the NEO network.



NX10-V70

70 Volt Converter Module

- · Compatible with NEO Audio Booster, Audio Panel, Integrated Audio panels and Command Centers.
- Converts single or dual 25 Vrms audio output to 70 Vrms audio signal.
- All wiring is fully supervised.
- Ideal for retrofit applications.



NX10-VRM

Audio Panel

- Fully featured NEO Audio panel.
- Built-in live voice paging microphone.
- Manual message activate switches.
- Two (2) Class "A" or "B" speaker circuits.
- AC power on, amplifier and PSU and Trouble LEDs.
- Internal service diagnostic and status indicators.
- USB interface for message/ tone programming.
- Optional one-to-one amplifier backup capability.
- Three prioritized relay trigger inputs.



Telephone Node

- · When operating as independent network node:
- Separate AC power and battery backup.
- Does not require NEO Fire Panel to operate.
- When dependent network node:
- Phones may be wired to any NEO panel or Telephone Node.
- Can function as standalone emergency telephone system.
- LCD annunciation of telephone events.
- Ack, Hold, Scroll 'paging patch' control buttons.



NX10-TEL2-MCCS

Command Center Firefighter Phone

- Compatible with NEO Command Centers.
- Standard or pushto-talk handset.
- Class A or B Riser.
- Background noise cancellation module (optional).
- Easy installation.
- Supports up to 500 field phones.

Zone Splitter NX10-ZS

- Fits NEO Command Center or Audio Panel
- Used with Audio Module.
- 2 input/output options.
- 1 input split into 4 outputs (total 40W)
- 2 inputs split in 2x2 outputs (total 80W).

Telephone Riser Module NX10-TEL2-RISE

- Each riser supports up to 250 master phones, (two risers NEO).
- Live analog audio, no digitization.
- Up to 5 telephones per riser may be active simultanteously.
- Easy to configure with Dynamix Tools telephone
- May be located remotely in separate enclosure or integrated into Command Center enclosure.
- Supports Fire Warden remote paging feature.
- Class A or B.



NX10-JACK /NX10-CJACK

Telephone Jack

- · Phone active LED indicator.
- Telephone riser supervision.
- Supervises against opens, shorts and grounds.
- Class A or B configuration.
- Mounts to single gang electrical box.
- Field programmable buzzer and LED indicators
- Five phone 'party line' communications.
- Slide in label.



NX10-Phone Node

Portable Fire Fighter Phone Handset

- Used with any **NEO Addressable** Telephone Jack.
- Tip and sleeve connection.
- Built-in noise filter.
- Standard or push-to-talk.
- Background noise cancellation module (optional).



Fire Fighter/Warden Page Telephone

- · Each master supports up to four secondary telephones and/or jacks.
- Standard or push-to-talk handset.
- Magnetic, keylock or glass break door options.
- Standard or coil cord phone cable.
- Background noise cancellation module (option).
- Integrated 'dial', 'ring', 'busy' and 'hold' tones with 'connected' LED indication





Command Centres

NEO command centres are built on the backbone of our NEO intelligent fire panels to support a wide variety of configurations and applications.

All command centres are supplied in modular format for easy expansion and customisation. Our smaller command centres can be ordered as fully configured. All of our command centres are fully compatible with NEO audio and telephone options. The telephone riser module can be mounted inside the command centre or remotely within a separate telephone node for added security.

NEO Command Centres



Features

- PerfectSvnc synchronisation of audio and strobes across entire 200-node network.
- DynamixSmoke dedicated/ non-dedicated smoke control
- 520Hz audio support.
- Failsafe operation if loss of master command centre.
- Supports multiple true peerto-peer command centre operations.
- Intuitive and easy for firefighters to operate.
- Supports request/control/ denv command centre operation.
- Audio confirmation LEDs indicate when speaker zones are active.
- All call, page evacuate, page alert and page inactive and selective paging features.
- Manual activation of any message to any zone or group of zones.
- No performance degradation as the number of network nodes expands.

- · Dvnamix smoke control.
- Multiple emergency and non-emergency messages.
- Integrated telephone annunciation (LED or LCD) and controls
- Software wizard provides default telephone and audio options making set-up easy and fast.
- Powerful control-byevent programming with intelligent system test facilities provides superior system diagnostic and test functions
- Built-in network, AC power, aux power, battery and field wiring diagnostics.
- · Colour-coded slide-in labels with large text to identify system functions.
- Fire warden page.
- · PAS, 2-stage, alarm verification and event mode.
- Zone and point disable/ enable.
- 1,000 system zones.



- Order fully factory configured or in modular format for configuration on installation.
- 1. 2 or 4 SLC.
- 126, 252 or 504 addressable points SLC dependent.

2 Cabinet Sizes

- 2 cabinet sizes (3x3 and 3x5).
- Layout: 3 horizontal x 3 vertical or 3 horizontal x 5 vertical.

Network Nodes and Accessories:

- · NX10-FA-BMS module provides interface to building automation system.
- Ad-View graphics.
- NX10-LOCs local operating consoles.
- Smoke control panel.
- · Graphic annunciator(s).
- NX10-VB distributed audio panels.
- Telephone node.
- · Fibre converters.





Intelligent Loop Powered Detectors and Field Devices

The NEO range of Intelligent Fire Detectors and other field devices are advanced in design and performance, offering unique features that benefit both the installer and the end user.

Detectors & Bases



Heat Detector

Detector Without Isolator · Pure light optical

Photoelectric Smoke

- technology provides enhanced smoke detection and false alarm management.
- Internal drift compensation.
- Base locking mechanism (grub screw).
- In-built self-test
- · XPERT card addressing.
- Approved to UL268 7th edition.



S-A5013

- · Electronic temperature sensing.
- Alarm flag for fast alarm responding.
- Automatic addressing.
- Easy installation.
- Elegant design.
- Unaffected by wind or atmospheric pressure.
- Ideal for environments that are dirty or smoky under normal circumstances.
- Well suited to warehouses. loading docks and parking garages.



S-A4014E

Multisensor Detector Without Isolator

- Pure light optical technology provides enhanced smoke detection and false alarm management.
- Internal drift compensation.
- Base locking mechanism (grub screw).
- In-built self-test.
- XPERT card addressing.
- · Dual heat sensors.
- Approved to UL 268 7th edition and UL 521.



S-A5001

Mounting Base

- · Mounting Base which is a low insertion force base with stainless steel contacts for the detector terminals.
- Fast and Easy to install.
- XPERT Addressing Cards are supplied with all bases.
- One way fit.
- Locking feature to prevent unauthorized removal.



S-A5011

Photoelectric Smoke Detector With Isolator

- · Pure light optical technology for enhanced smoke detection and false alarm management.
- Built-in isolator
- · Drift compensation..
- In-built self-test.
- · Base locking mechanism (grub screw).
- XPERT card addressing.
- Approved to UL268 7th edition.



S-A5014

Multisensor Detector With Isolator

- Pure light optical technology for enhanced smoke detection and false alarm management.
- Built-in isolator.
- Drift compensation.
- In-built self-test.
- Base locking mechanism (grub screw).
- XPERT card addressing
- Dual heat sensors.
- Approved to UL 268 7th edition and UL 521.

Pull Stations



S-A4061

Dual Action Polycarbonate Pull Station

- · Control Panel Compatibility.
- · Kev lock.
- Easily resettable.
- LED visible even when Pull Station is closed.
- Redundancy to false alarm.
- Loop powered.





Audio Visual, Modules and Pull Stations

Intelligent Modules



· Built-in isolator.

Loop Powered.

· Visible LEDs.

Addressable Dual Priority

Switch Monitor Module

· Ground fault detection.

response is required.

Interrupt facility.

ease of wiring.

· Improved design for

· Selectable priority to monitor

equipment where a fast

S-A5042

S-A5044

Addressable Sounder Control Module

- · Built-in isolator.
 - Visible LEDs.
 - Loop Powered.
 - Can be used for public address speakers.
 - Power supply health monitoring.
 - Reverse polarity detection.
 - Active short circuit detection (panel/power supply dependent).
 - AC/DC monitoring (limited by wire length).
 - Improved design for ease of wiring.



Addressable Switch Monitor Input/ Output Module

- · Built-in isolator.
- Visible LEDs.
- Loop Powered.
- Ground fault detection.
- Improved design for ease of wiring.



Addressable Relay Output Module

- · Built-in isolator.
- Visible LEDs.
- Loop Powered.
- Improved design for ease of wiring.



Isolator Module

- Minimizes disruption from short-circuits.
- Automatic de-isolation on
- Up to 20 devices may be

- · Detects wiring short-circuits using patented technology.
- short-circuit removal.
- installed between isolators.

Beacons & Sounders



S-A4021/ S-A4022

S-A4025

Open Area Sounder

- Loop-powered.
- Self-test trouble monitoring.
- Two volume settings 92 dB(A) and 100 dB(A).
- Synchronization of tones.
- Individual and group addressing.
- Available in red or white.
- Integral self-check feature
- IP65 rated.



Open Area Sounder/Beacon

- · Loop-powered.
- 15 tone pairs.
- Sounder and beacon are independently configurable.
- Volume and tone settings are independently selectable from the control panel.
- Tones can be used for other purposes in addition to warning of fire, making the device ideal for use in schools etc.
- Soft start option, ideal for hospitals and nursing homes.
- Group and individual control for increased response time.





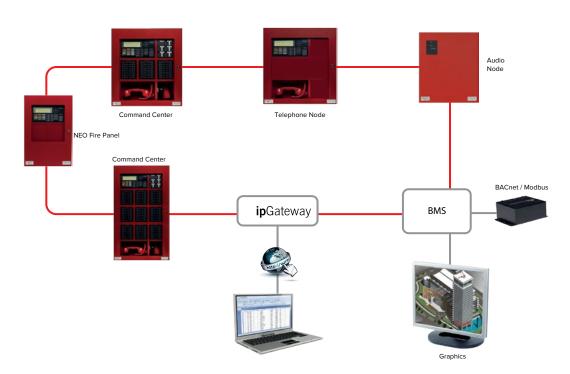
System Network

Neo delivers fast, reliable, peer to peer communications from the smallest two panel network up to a large 200 node network.

Neo network systems are fully scalable to suit virtually any application including "campus" style and "high rise" style configurations. Built-in diagnostics and test facilities make installation and ongoing maintenance simple. Performance in excess of multiple international standards.

- · Peer to Peer performance for optimum distributed
- · Consistent system performance independent of the number of nodes.
- · Synchronization of audio and strobes across entire 200 node network.
- Fail Safe operation if loss of master Command Center.
- · Supports multiple true peer-to-peer Command Center operations.
- · Sectoring feature allows customized operations per
- Integrated or Isolated high rise telephone network option.
- · Single or multiple DACT, radio and/or City Tie options.
- · Offline test option isolates panels from network during testing without fear of false alarms.
- · Class B cable wiring 32 Nodes, 5,000ft maximum.
- · Class A cable wiring 200 Nodes, 5,000ft between nodes, 66,000ft maximum.

- · Fiber cable 16,404ft maximum between nodes
- · ipGateway transmits emails and text messages via a secure internet connection while also allowing viewing of system status and controls capability remotely.
- · NX10-FA-BMS interfaces to 3rd party Building Automation and Controls solutions via standard BACnet or Modbus communications.
- · Supports Mass Notification.
- · One configuration tool is required to program NFO Diagnostic panels. features prevent erroneous actions that may be detected prior to on site installation and test.
- · Each intelligent audio node contains up to 16 digital messages which are synchronized across the entire
- · Loop power technology built into each panel provides tremendous application options.
- · Nodes may be customized to suit any application, reducing installation costs and maximizing performance. Nodes may (or may not) include SLC loops, displays, microphones, telephones, amplifiers, power supplies, switch modules, and any Neo peripheral device.



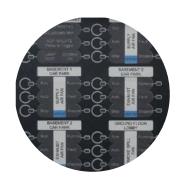






Dynamix Smoke







Integrated Fan and Damper Control

Shield NEO fire system features DynamixSmoke, dedicated and non-dedicated fan and damper control, for fire and life safety. As you'd expect from Shield it's a high-performance solution that is easy to configure and maintain, even on the most complicated sites.

Features

- · Regulatory compliance assured
- · Automatic and manual smoke control options in accordance with NFPA and National Building Code Standards.
- Dedicated smoke control auto/manual controls and LED status indicators.
- · Customised FSCS firefighter smoke control (graphic) stations can be located locally or remotely.
- · Groundbreaking ease of use.
- · Simple spreadsheet-style programming matrix is a step change that makes even the most complex smoke control programming easy.
- · System divided into virtual smoke control compartments in software for automatic fan and damper control (cbe).
- · Uses standard I/O modules for fan and damper interfacing. Software auto-configures outputs for run/ stop and open/close, with feedback inputs if required.
- · All options configurable from one dedicated menu with the ConfigTool.
- · Interlocking feature to prevent over pressurisation of
- · Post-fire purge options with configurable priorities.
- · Auto stairwell pressurisation option.

- · Key switch enable/disable option.
- · Manual controls can be configured for one-to-one operation, or grouped one-to-multiple fans or dampers.
- · Duct probe option will override auto settings if smoke detected.
- · The system can respond only to the first smoke compartment in alarm or priorities can be set so that devices respond dynamically to a spreading fire.
- · Dedicated smoke control reset function.
- · All manual controls take priority over automatic mode.
- · Adjustable feedback delay ensures fans are given time to run or a damper is allowed time to travel before any trouble conditions reported.
- · Fully programmable sequential fan restart to avoid power spikes.
- Automatic testing of fans and dampers including scheduled 'holiday' dates.
- Engineering test menu allows HVAC to be controlled using panel menu and provides current operation and status feedback.
- · Customisable intelligent graphic annunciators with simple connection and configuration via panel P-BUS/ PFNN.







Perfect Sync

PerfectSync delivers best-in-class synchronisation of audio and strobes for fire and life safety applications. PerfectSync achieves a level of integrity and performance not seen before.



Features

- · Synchronisation of audio and strobes across entire **NEO** network
- · Dynamically adjusts as conditions change
- · Prevents confusion during an emergency
- · Aids in meeting intelligibility requirements
- · No need for special programming or wiring
- · NEO network capacity
 - 200 panels.
 - 3200 distributed amplifiers.
 - Each amplifier contains its own digital message generator.
 - Each message generator can support 16 messages.
 - 800 built-in NAC circuits.

· Total synchronisation

All speakers turn on and are fully synchronised even if the same message is played from different amplifiers connected to different panels on a large network. The maximum time to re-activate any speaker output following the first message played does not exceed 5 seconds.

· When a fire spreads, any new affected areas or higher priority messages will begin immediately. This may result in some areas of the building being briefly out of sync. With PerfectSync these areas will quickly resynchronise even on a large network system. Similarly paging operation may result in some areas of the building being temporarily out of sync as any automatic message must recommence from the beginning. With PerfectSync these areas will quickly re-synchronise.

· More audio flexibility

Up to 16 digital pre-recorded messages per amplifier. Simple 3-channel audio (evacuate, alert, page) to complex multichannel notification including individual message prioritisation. Unique audio engineering test feature confirms which amps are active, what message is playing, and can select and play a message in a specific area. Command centre audio control lockout with indication of who's in control.





Fire and Emergency **Telephone System**



Exceptional Clarity for Superior Performance

Providing robust telephone communication channels ensures maximum safety.

The Shield fire and emergency telephone system

- · Addressability for precise identification of the location of field telephone users.
- · Flexibility so it can be configured as a standalone, independent system or completely integrated into the fire system.
- · Crystal-clear live voice channels with no delays or echoing.
- · Reassurance of communication channel status via dial, ring, busy and hold tones, as well as local LED indication at each addressable handset.

Quick and easy to install and configure.

Ideal for installations where local fire departments and emergency/facility personnel need access to fire/ emergency telephone communications, e.g. in high and low-rise apartment buildings, hotels, universities, government and military sites.

As an entire telephone system can be installed and configured to operate standalone without panels, Shield fire and emergency phones are also perfectly suited to any retrofit or non-fire application.







Technical support

Highly rated customer support. Available by telephone and online.

As a Shield customer, you have access to a host of helpful advice and support.



Services include:

- Technical support available by phone and online from one of our experienced technical support
- Software download software and save your software packages by installation/site.
- Literature download manuals, specifications, approved partner certificates, technical information and more.
- Training direct customers can book training online and will be sent training certificates by email. If you need to access a previous training certificate, simply complete an online request form. All nondirect customers should book training through their distributor.
- Warranty download our warranty statement.









