NOTIFIER®
by Honeywell

OPAL™ Detector range

Data Sheet

The revolutionary OPAL range delivers a totally new detector platform incorporating an advanced digital protocol. The advanced protocol delivers more devices on the loop and gives greater control, configurability and device management whilst enabling the overall system to be optimised to the location and use of the building with far greater flexibility than ever before.

Features

- Built in short circuit isolation
- New advanced Opal protocol allows mapping of the loop for precise fault location using isolators
- Tri colour LED offering red, green and amber colours
- Rotary decade address switches
- Pure white colour to complement modern buildings
- 100% mechanical and electrical backwards compatibility
- Base designed to ease installation and wiring

Technology Leadership

Opal incorporates major hardware and software technology driven developments. A completely new optical chamber design is proven in extensive testing to be more efficient, less liable to false alarm due to dust and insects and less susceptible to fault in high air velocities or back pressure. Extensive hydrodynamic modelling has confirmed the greater efficiency of the new chamber and housing shape combination. Large-scale integration of the all-new electronics, through the fully automated surface mount PCB assembly, coupled with in-line testing through the manufacturing process, laser PCB cutting along with a completely new compound of plastic offers improved quality and reliability.

All OPAL detectors are environmentally friendly and meet the WEEE and RoHS legislative requirements, minimising end of life disposal costs, and are mechanically and electrically backwards compatible with existing devices.

Product Range

The family consists of six detection devices: three heat detectors (58° and 78° fixed temperature, and rate of rise), an optical smoke, a photo-thermal multi-sensor and our award winning SMART^3. All six devices come with electrical short circuit isolation and the new Advanced Protocol. In addition to the new family of devices, a new installation base that makes the installation process far easier and quicker, replaces the previous versions.

For more information, contact:
NOTIFIER. Charles Avenue, Burgess Hill, West Sussex, RH15 9UF. United Kingdom
Phone: +44 (0) 1444 230 300 Fax: +44 (0) 1444 230 888

ISO9001
Design, Manufacture and Supply to Quality Management Systems Certified to ISO9001:1994

Quality Systems Certificate No. 154
Assessed to ISO9001

Opal™ Photoelectric Smoke Detectors - NFXI-OPT

The Opal photoelectric smoke detector has a completely new detection chamber design, the result of many years of research and development. This delivers improved responsiveness, reduced sensitivity changes caused by settling dust and reduced false alarms resulting from ingress of insect and other debris. The plug-in unit uses sophisticated processing circuitry that incorporates smoothing filters to help eliminate transient environmental noise conditions that can be the cause of unwanted alarms. The devices are managed by embedded software running complex algorithms that further improve resilience to false alarms and improve detection speed.

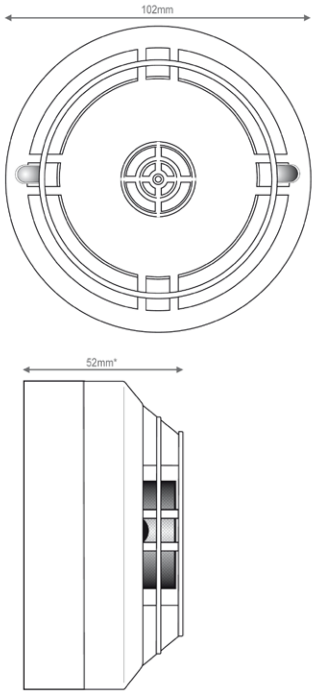
The Opal NFXI-OPT has built in short circuit isolation and two integral tri-colour LEDs that provide 360° local visual indication of the device status. The LEDs are programmable with static or blinking red, amber and green status indications available.

Specifications

Opal NFXI-OPT

Mechanical Specification

- Height: 52mm installed in B501AP base
- Diameter: 102mm installed in B501AP base
- Weight: 97g (inc base)
- Max Wire Gauge for Terminals: 2.5mm²
- Colour: White
- Material: PC/ABS



Electrical Specification

- Operating Voltage Range: 15 to 28.5Vdc
- Max. Standby Current: 200µA @ 24Vdc (no communications) / 300µA @ 24Vdc (LED blink enabled, once every 5 seconds)
- Maximum Continuous Current: 1A (switch closed)
- Isolation Current: 15mA @ 24Vdc
- LED Current Red: 3.5mA @ 24Vdc; Green: 7.0mA @ 24Vdc; Yellow: 10.5mA @ 24Vdc
- Remote Output Voltage: 22.5Vdc
- Remote Output Current: 10.8mA @ 24Vdc
- Additional loop resistance: typ 80mohm @ 24V (max 170mohm @ 15V)

Environmental Specifications

- Temperature Range: -30°C to +70°C†
- Humidity: 10 to 93% relative humidity (non-condensing)
- IP Rating: IP40 when installed in B501AP base; IP43 when installed in WB-1AP base

* When installed in a B501AP base
† Do not install detectors in locations where normal ambient temperature exceeds 50°C

NOTIFIER® by Honeywell

Opal™ SMART² Photoelectric / Thermal Multi-Criteria Detectors - NFXI-SMT2

The Opal multi-criteria, multi-sensor, photo, thermal detector uses thermal assistance to the core photoelectric smoke detector to give enhanced false alarm immunity and faster response to a wide range of incipient fires. The plug-in unit combines two separate sensing elements that are managed by embedded software to act as a single unit. The Opal NFXI-SMT2 conforms to EN54-7, a 58°C fixed temperature and rate of rise thermal assistance conforming to EN54-5. The thermal detection function combines thermistor technology with a software corrected linear temperature response. In areas where the normal daytime activities may potentially create unwanted alarms, the detector can be programmed to operate in a “heat only” mode, automatically reverting to full photo-thermal operation during unoccupied periods.

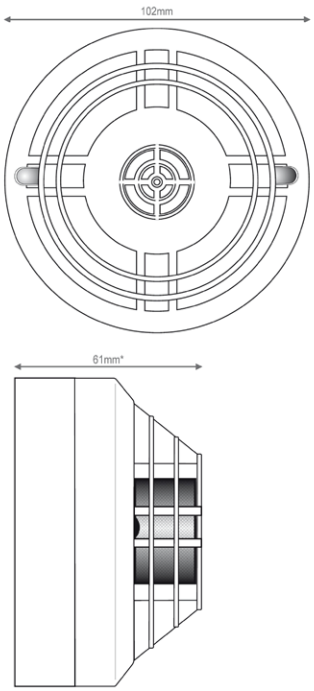
The sensing elements of the Opal NFXI-SMT2 are panel controllable so the sensitivity thresholds of each element can be changed by the panel offering the ability to customise the device for the changing use of the area it is protecting. The detector has built in short circuit isolation and two integral tri-colour LEDs that provide 360° local visual indication of the device status. The LEDs are programmable with static or blinking red, amber and green status indications available.

Specifications

Opal NFXI-SMT2

Mechanical Specification

- Height: 61mm installed in B501AP base
- Diameter: 102mm installed in B501AP base
- Weight: 99g (inc base)
- Max Wire Gauge for Terminals: 2.5mm²
- Colour: White
- Material: PC/ABS



Electrical Specification

- Operating Voltage Range: 15 to 28.5Vdc
- Max. Standby Current: 200µA @ 24Vdc (no communications) / 300µA @ 24Vdc (LED blink enabled, once every 5s)
- Max. Continuous Current: 1A (switch closed)
- Isolation Current: 15mA @ 24Vdc
- LED Current Red: 3.5mA @ 24Vdc; Green: 7.0mA @ 24Vdc; Yellow: 10.5mA @ 24Vdc
- Remote Output Voltage: 22.5Vdc
- Remote Output Current: 10.8mA @ 24Vdc
- Additional loop resistance: typ 80mohm @ 24V (max 170mohm @ 15V)

Environmental Specifications

- Temperature Range: -30°C to +70°C†
- Humidity: 10 to 93% relative humidity (non-condensing)
- IP Rating: IP20 when installed in B501AP base; IP23 when installed in WB-1AP base

Sensitivity Settings

Alarm level 1	1%/ft smoke
Alarm level 2	2%/ft smoke
Alarm level 3	3%/ft smoke
Alarm level 4	3%/ft smoke
Alarm level 5	3%/ft smoke
Alarm level 6	Class A1R

* When installed in a B501AP base
† Do not install detectors in locations where normal ambient temperature exceeds 50°C

OPAL™ SMART³ Photo, Thermal, & Infra Red Multi-Criteria Detectors - NFXI-SMT3

The Opal multi-criteria, multi-sensor, photo, thermal and infra red (SMART³) detector is the environmentally friendly alternative to the ionisation detector, a technology that is now over sixty years old. The SMART³ offers comparable speed of response to the ionisation technology for a fast flaming fire and is less susceptible to false alarms. It can be deployed with confidence in locations where the main risk is from fast-developing flaming fires. SMART³ moves the goal posts in the fight against false alarms by delivering enhanced false alarm immunity. In addition to being an effective alternative to ionisation units, SMART³ offers better performance over the alternative technologies of dual angle or dual wavelength optical detectors and photo-thermal detectors.

The integration of continual monitoring for all three major elements of a fire enables the SMART³ to respond far more quickly to an actual fire and has the highest immunity to nuisances. Based upon the sensor signals, the program dynamically changes sensor thresholds, sensor gain, time delays, combination, sampling rates, averaging rates and, if any sensor fails, changing sensitivity of the remaining sensors as well as indicating a fault condition.

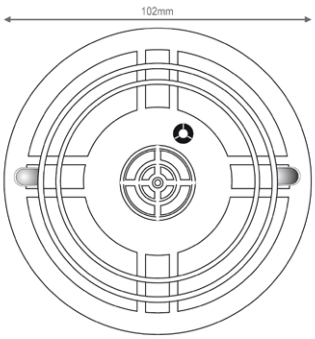
The sensing elements of the SMART³ are panel controllable so the sensitivity thresholds of each element can be changed by the panel offering the ability to customise the device for the changing use of the area it is protecting. The detector has built in short circuit isolation and two integral tri-colour LEDs that provide 360° local visual indication of the device status. The LEDs are programmable with static or blinking red, amber and green status indications available.

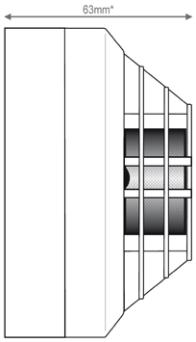
Specifications

Opal NFXI-SMT3

Mechanical Specification

- Height: 63mm installed in B501AP base
- Diameter: 102mm installed in B501AP base
- Weight: 102g (inc base)
- Max Wire Gauge for Terminals: 2.5mm²
- Colour: White
- Material: PC/ABS





* When installed in a B501AP base

† Do not install detectors in locations where normal ambient temperature exceeds 50°C

Note: The panel threshold should be chosen according to the specific environment. The following would be Notifier's recommendations: Ultra-clean applications use Level 1 for pre alarm or alarm. Clean Applications use Level 1 for pre alarm and Levels 2 & 3 for alarm. Moderate environments use Level 1,2 or 3 for pre alarm and Level 4 for alarm. Harsh environments use Level 2 or 3 for pre alarm and Levels 5-6 for alarm

Electrical Specification

- Operating Voltage Range: 15 to 28.5Vdc
- Max. Standby Current: 200µA @ 24Vdc (no communications) / 300µA @ 24Vdc (LED blink enabled, once every 5s)
- Max. Continuous Current: 1A (switch closed)
- Isolation Current: 15mA @ 24Vdc
- LED Current Red: 3.5mA @ 24Vdc; Green: 7.0mA @ 24Vdc; Yellow: 10.5mA @ 24Vdc
- Remote Output Voltage: 22.5Vdc
- Remote Output Current: 10.8mA @ 24Vdc
- Additional loop resistance: typ 80mohm @ 24V (max 170mohm @ 15V)

Environmental Specifications

- Temperature Range: -30°C to +70°C†
- Humidity: 10 to 93% relative humidity (non-condensing)
- IP Rating: IP20 when installed in B501AP base; IP23 when installed in WB-1AP base

Sensitivity Settings

Alarm level 1	Low false alarm resistance, high photoelectric only sensitivity. 1%/ft smoke
Alarm level 2	Medium false alarm resistance, medium photoelectric only sensitivity. 2%/ft smoke
Alarm level 3	Standard false alarm resistance, low photoelectric only sensitivity. 3%/ft smoke
Alarm level 4	High false alarm resistance, low photoelectric only sensitivity. 3%/ft smoke
Alarm level 5	Very high false alarm resistance, low photoelectric only sensitivity. 3%/ft smoke
Alarm level 6	Class A1R

OPAL™ Thermal Sensors - NFXI-TDIFF, NFXI-TFIX58, NFXI-TFIX78

The Opal NFXI-TFIX58 & NFXI-TFIX78 are fixed temperature analogue addressable sensors employing low mass thermistors and microprocessor technology for fast response and linear temperature sensing. Their linear response allows these sensors to be used to signal temperatures over the range of 58°C (Class A1S) to 78°C (Class BS).

The Opal NFXI-TDIFF uses the same thermistor and microprocessor technology to provide an alarm when the rate of rise in temperature exceeds 10°C/minute (typical) or if the temperature exceeds a threshold of 58°C (Response Class A1R). Notifier's Opal protocol allows it to be software configured to be either a fixed 58°C, a fixed 78°C unit or a 58°C with rate of rise device. For backwards compatibility and approval continuity, three separate versions continue to be available as separate part numbers.

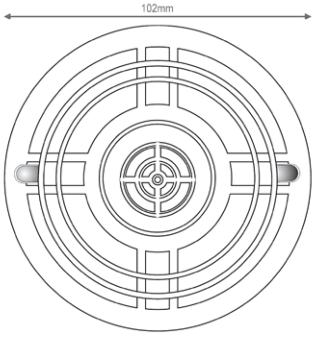
The sensing elements of all three heat sensors are panel controllable through the Opal Protocol so the sensitivity thresholds of each element can be changed by the panel offering the ability to customise the device for the changing use of the area it is protecting. The detectors have built in short circuit isolation and two integral tri-colour LEDs that provide 360° local visual indication of the device status. The LEDs are programmable with static or blinking red, amber and green status indications available.

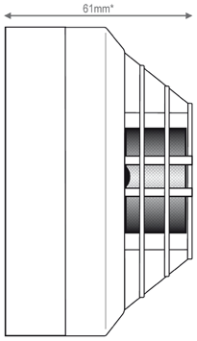
Specifications

Opal NFXI-TDIFF, NFXI-TFIX58, NFXI-TFIX78

Mechanical Specification

- Height: 61mm installed in B501AP base
- Diameter: 102mm installed in B501AP base
- Weight: 88g (excluding base)
- Max Wire Gauge for Terminals: 2.5mm²
- Colour: White
- Material: PC/ABS





Electrical Specification

- Operating Voltage Range: 15 to 28.5Vdc
- Max. Standby Current: 200µA @ 24Vdc (no communications) / 300µA @ 24Vdc (LED blink enabled, once every 5s)
- Max. Continuous Current: 1A (switch closed)
- Isolation Current: 15mA @ 24Vdc
- LED Current Red: 3.5mA @ 24Vdc; Green: 7.0mA @ 24Vdc; Yellow: 10.5mA @ 24Vdc
- Remote Output Voltage: 22.5Vdc
- Remote Output Current: 10.8mA @ 24Vdc
- Additional loop resistance: typ 80mohm @ 24V (max 170mohm @ 15V)

Environmental Specifications

- Temperature Range: -30°C to +70°C†
- Humidity: 10 to 93% relative humidity (non-condensing)
- IP Rating: IP20 when installed in B501AP base; IP23 when installed in WB-1AP base

Heat Detection Performance

NFX/NFXI-TDIFF	Class A1R: 58°C fixed temperature and rate of rise
NFX/NFXI-TFIX58	Class A1S: 58°C fixed temperature
NFX/NFXI-TFIX78	Class BS: 78°C fixed temperature

* When installed in a B501AP base
† Do not install detectors in locations where normal ambient temperature exceeds 50°C

Product Range at a Glance

		Isolator	Colour	Part Number
	OPAL Optical smoke detector	✓	White	NFXI-OPT
	OPAL Heat detector, fixed 58ºC	✓	White	NFXI-TFIX58
	OPAL Heat detector (A1R), rate of rise + fixed 58ºC	✓	White	NFXI-TDIFF
	OPAL Heat detector, fixed 78ºC	✓	White	NFXI-TFIX78
	OPAL SMART^2 Optical smoke & heat detector	✓	White	NFXI-SMT2
	OPAL SMART^3 Optical smoke & heat detector with infra-red flame sensing	✓	White	NFXI-SMT3
	Analogue sensor base with SEMS screw connections and address identification label	n/a	White	B501AP
	Wet Base shroud for use with standard bases to allow condensation run off and rear seal. Conduit entry only.	n/a	White	WB-1AP

NOTIFIER® by Honeywell

Charles Avenue
Burgess Hill
W. Sussex
RH15 9UF

T: +44 (0) 116 246 2255
F: +44 (0) 116 246 2210
E: sales@notifierfiresystems.co.uk
www.notifierfiresystems.co.uk