850SERIES

Generation 6 *MX* Detection Range

Features

- Compatible with *MX* Addressable Loop on SIMPLEX 4100ESi, VIGILANT *MX1* and VIGILANT MX4428 panels[1]

- Smoke, Heat, & Multi-Sensor detectors

- AS 7240.5 Listing (heat detectors)

- AS 7240.6 Listing (CO detectors)

- AS 7240.7 Listing (smoke detectors)

- AS 7240.17 Short circuit *MX* loop isolator

Advanced Fire Detection Technology

The Generation 6 850 Series fire detectors are designed to be both adaptable and flexible, which means they can be used in most premises to protect against a wide range of potential fire risks. They use sophisticated digital signalling to communicate with the *MX TECHNOLOGY* fire control panel. A range of standard and functional bases variously protect against short circuits, moisture ingress, and provide output control and sounder functions.

The ability of the 850EMT Engineering Management Tool to interrogate and program detectors connected to a VIGILANT *MX1* or SIMPLEX 4100ESi system via a 2-way infrared link, together with a range of bases and accessories, helps make the 850 Series detectors safe, quick, and easy to install.

The Ceiling Tile adaptor (CTA) allows detectors to be pre-commissioned and tested before the suspended ceiling is fitted.

Standard and custom colour options allow the detectors to either blend into the décor or be easily located against a contrasting background.

MX Gen6 Detector Features

- Choice of heat, smoke, heat/smoke, heat/smoke/CO detectors
- Advanced multi-sensor designs
- Enhanced chamber design
- Enhanced immunity to false activation
- Extended drift compensation
- Up to 250 devices per *MX* loop
- Built-in short circuit line isolator
- Quick and easy to install
- Two-way infrared programming with 850EMT[2]
- Dual colour indication for Alarm and Isolator operation
- Comprehensive range of bases and base accessories
- Compatible with Ceiling Tile Adaptor (CTA) Time-Saver Mount
- Cover and base available in any Pantone colour

1. Refer to Table 1 for compatibility.
2. IR programming not available on MX4428.

850PC Multi-Sensor CO, Smoke and Heat Detector

For life protection and when the environmental conditions are challenging, the 850PC detector provides the ultimate in detector performance and nuisance alarm rejection. It is a multi-sensor that monitors smoke, heat and CO levels in concert to accurately determine the presence of fire. Its nuisance alarm rejection properties make it the ideal choice for hotel bedrooms where steam from bathrooms is a common source of nuisance alarms. All the 850 Series detectors feature a built-in short-circuit line isolator which is active when the detector is used with a 4B-C base.

Technical Specifications

Operating Voltage	20 to 40Vdc
Quiescent Current	370μA (typ.)
Ambient Temp.	-10°C to +55°C
Relative Humidity	10% to 95% (non-cond)
Dimensions	109 dia x 43H mm
Weight	94g
ActivFire Listed	afp-2929
FPANZ Listed	VF/367
Part Number	516.850.054.E

850PH Multi-Sensor Smoke and Heat Detector

With the ability to detect a wide range of fires from flaming to smouldering types, the combined optical and heat multi-sensor detector is the preferred choice for a range of applications including light industrial, retail and office environments. It operates in a number of modes and sensitivities that can be selected to suit different environmental conditions. The heat sensor can generate a separate alarm using the A2S fixed temperature mode or the A2R rate-of-rise and fixed temperature mode.

All the 850 Series detectors feature a built-in short-circuit line isolator which is active when the detector is used with a 4B-C base..

Technical Specifications

Operating Voltage	20 to 40Vdc
Quiescent Current	330μA (typ.)
Ambient Temp.	-25°C to +70°C
Relative Humidity	10% to 95% (non-cond)
Dimensions	109 dia x 43H mm
Weight	76g
ActivFire Listed	afp-2930
FPANZ Listed	VF/363
Part Number	516.850.051.E

850P Smoke Detector

More benign environments where any potential fire will be slow burning can be protected using the optical detector. A choice of sensitivities and modes gives this detector a broad range of applications. All the 850 Series detectors have the capability to communicate with the 850EMT service tool via a bidirectional infrared link when connected to a VIGILANT *MX1* or SIMPLEX 4100ESi panel. This enables the detectors to be interrogated and programmed from the ground. No ladder required. In IR mode, the detector's LED flashes yellow to indicate when an IR link is established between it and the 850EMT.

Technical Specifications

Operating Voltage	20 to 40Vdc
Quiescent Current	330μA (typ.)
Ambient Temp.	-25°C to +70°C
Relative Humidity	10% to 95% (non-cond)
Dimensions	109 dia x 43H mm
Weight	76g
ActivFire Listed	afp-2928
FPANZ Listed	VF/362
Part Number	516.850.052.E

850H Heat Detector

The 850H detector's heat sensor can operate in fixed temperature or combined fixed temperature and rate-of-rise modes A2S, A2R, and the high temperature CS and CR modes. It is used in areas where the environment precludes the use of smoke detectors. All the 850 Series detectors feature an LED indicator which changes colour depending on the detector's state. With the system normal, the LED flashes red every 5 seconds when it is polled by the fire panel. Should a short-circuit occur, the LED will show yellow. If the detector is in alarm, the LED will show red.

Technical Specifications

Operating Voltage	20 to 40Vdc
Quiescent Current	290μA (typ.)
Ambient Temp.	-25°C to +70°C
Relative Humidity	10% to 95% (non-cond.)
Dimensions	109 dia x 43H mm
Weight	81g
ActivFire Listed	afp-2927
FPANZ Listed	VF/218
Part Number	516.850.053.E

801F Flame Detector

The 801F point type flame detector presents a cost-effective solution to providing high reliability flame detection for indoor applications. The 801F is a full featured flame detector. With solar blind characteristics and an optical filter which transmits light at a specific IR wavelength, the 801F allows a high degree of sensitivity to flames whilst maintaining a low sensitivity to other interfering sources, The 801F is designed for direct connection to the *MX* digital loop, employing the same universal detector base or functional base as the 850 series fire detectors. An intrinsically safe version is also available. The 801F is not supported by MX4428 or 4100ESi.

Technical Specifications

Operating Voltage	20 to 40Vdc
Quiescent Current	300µA (typ.)
Range[1]	0.4m[1] n-heptane at 50m
Field of View	100°
Ambient Temp.	−20°C to +70°C
Relative Humidity	10% to 95% (non-cond)
Dimensions	109 dia x 22H mm
Weight	110g
FPANZ Listed	VF/354
Part Number	516.800.006

1. Distance measured on axis

SAB801 Sounder Addressing Beacon & SAM800 Sounder Addressing Module

The Sounder Addressing Beacon, SAB801, and Sounder Addressing Module, SAM800, are designed to control an *MX* loop sounder base or relay base. The SAB801 has an integral high intensity red beacon that can be separately controlled to illuminate continuously or flash at 1Hz. (There is no facility to synchronise several SAB801 beacons). The SAB801 and SAM800 supply the address decoding in place of a detector, thus providing a remotely controlled sounder when fitted to an 802SB or 901SB sounder base or a remote controlled output when fitted to an 814RB relay base.

The SAB801 and SAM800 are not supported by the SIMPLEX 4100ESi.

SAB801   SAM800

Technical Specifications

	SAB801	SAM800
Operating Voltage		20 to 40Vdc
Quiescent Current		250µA
Alarm Current[1]	3.3mA	250µA
Max. device/Loop[2]		200/250
Flash Rate	Cont. or 1Hz	–
Dims (Dia.x H mm)	108 x 32	108 x 22
Weight		70g
Ambient Temp.		−10°C to +55°C
Relative Humidity		10 to 96% (non-cond.)
ActivFire Listing		afp-1446
FPANZ Listed	VF/420	VF/656
Part Numbers	516.800.956	516.800.954

1. In addition to associated sounder/relay current.
2. Maximum number per loop on MX4428/*MX1*.

850EMT Engineering Management Tool

The 850EMT Engineering Management Tool is a powerful and flexible tool used in the installation, commissioning, diagnostics and servicing of VIGILANT and SIMPLEX *MX* detection systems. The 850EMT can remotely interrogate, address and test 850 Series detectors via a two-way infrared link (not supported on MX4428). Alternatively *MX* detectors can be plugged on directly.*MX* modules are connected via a programming lead (included). The 850EMT is supplied packaged in a rugged carry case and includes rechargeable batteries, 240V mains adaptor, 12Vdc car adaptor, ancillary programming lead, spare pins for the ancillary lead, and shoulder strap.

Technical Specifications

Operating Voltage	240VAC to 12Vdc Adaptor
Batteries	6x AA NiMH rechargeable
Part Numbers	
850EMTK	Complete Kit
516.800.923	Spare Ancillary Lead
516.800.924	Ancillary Lead Spare Pins

D51MX Duct Sampling Unit

The D51MX consists of a D51 duct sampling housing fitted with a 4B-C detector base to suit the *MX* analogue addressable 850P or 850PH photoelectric smoke detector. When fitted with the detector the DSU is designed to sample air in air conditioning ducts and pass the air through the smoke detector. The D51MX is fitted on the outside of the duct to be sampled allowing easy access for detector servicing and replacement of the dust filters. To cater for most duct sizes, a sampling tube extension is available in 3 metre lengths. The E500 Mk2 Series Remote Indicators can be used for remote indication of an alarm.

Part Numbers
D51MX   Duct Sampling Unit
D51L   Baffle (box of 10)
D51F   Filter (box of 10)
D51T3   3m Sampling Tube
D51K100 Sampling Tube End Cap (pkt of 10)

Technical Specifications
Operating Voltage 20 to 40Vdc
Quiescent Current 275µA (typ.)
Alarm Current   10mA with LED on
Duct Pressure1   -1.15 to +3.0 kPa
Duct air velocity for
alarm at 8%Obs/m1   1, 2, 4, 8m/s
Sampling Tube Length   160mm minimum
Max. Duct Width   1.8m
Remote Indicator E500 Mk2 Series
Dimensions
             Base & Cover (LWH)
278x190x113 mm
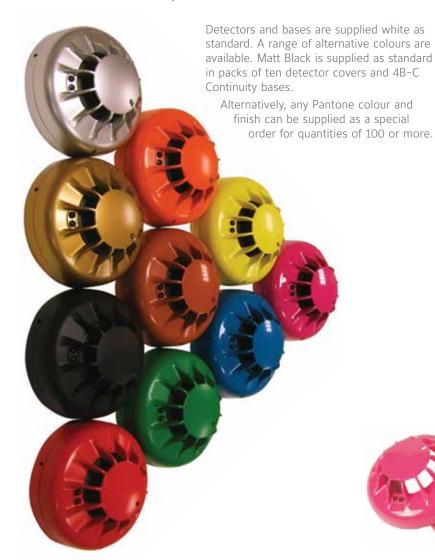   Sampling Tube Pitch   122mm
             Duct Holes Required   24mm
dia. x 2 places
Ambient Temp   -10°C to +55°C
Relative Humidity 10% to 95% (n/cond)
ActivFire Listed   afp-1496
1. AS 1603.13-1998 test

Detector Colour Options

Detectors and bases are supplied white as standard. A range of alternative colours are available. Matt Black is supplied as standard in packs of ten detector covers and 4B-C Continuity bases.

Alternatively, any Pantone colour and finish can be supplied as a special order for quantities of 100 or more.

Part Numbers
517.050.511   Covers and bases in Matt
                                    Black, pack of 10
517.050.512   Covers and bases Custom colour setup
517.050.513   Covers and bases Custom colour & finish, pack of 10
                                    (minimum order 100)

4B Universal Base

The 4B Universal base is the standard base for use where neither separate short circuit isolation nor loop continuity functionality is required. It is compatible with the 850 Series, 814 Series and 614 Conventional series of detectors.

As with all the 4-inch series bases, the 4B features a detector locking device, LED aperture plug, and temporary park plunger. The temporary park plunger enables a detector to be fitted to the base in a 'park' position – electrically isolated from the terminals.

Technical Specifications

Ambient Temp.	–25°C to +70°C
Relative Humidity	10% to 95% (non-cond)
Dimensions	109 dia x 25H mm
Weight	64g
ActivFire Listed	afp-2927/28/29/30
Part Number	517.050.041

4B-C Continuity Base

The 4B-C Continuity base is for use with 850 Series detectors to enable the detector's built-in loop isolator. The 4B-C's in-built switch opens when the 850 Series detector is inserted allowing the detector's in-built loop isolator to be in circuit.

When the detector is removed, a spring loaded contact closes to maintain loop continuity.

The 4B-C is not supported on MX4428.

Technical Specifications

Ambient Temp.	–25°C to +70°C
Relative Humidity	10% to 95% (non-cond)
Dimensions	109 dia x 25H mm
Weight	64g
ActivFire Listed	afp-2927/28/29/30
Part Number	517.050.042

4B-I Isolator Base

The 4B-I Isolator base is primarily used with detectors that do not have in-built short circuit isolation, such as the 814 Series detectors.

The 850 Series detectors can also be used, however, the detector's in-built short-circuit isolator will not be in operation. The 4B-I includes a yellow LED that lights when the loop is shorted on one side.

Technical Specifications

Operating Voltage	20 to 40Vdc
Quiescent Current	80µA (typ.)
Tripped Current	3.5mA (max.)
Ambient Temp.	–25°C to +70°C
Relative Humidity	10% to 95% (non-cond)
Dimensions	109 dia x 25H mm
Weight	64g
ActivFire Listed	afp-2927/28/29/30
FPANZ Listed	VF/650
Part Number	517.050.043

814RB Relay Base

The 814RB Addressable Relay base provides two sets of changeover volt-free contacts capable of switching 1A (resistive) @ 30Vdc. The relay function is controlled by the *MX* fire alarm panel via the detector or addressing module plugged into the 814RB. The 814RB may be mounted to the ceiling or plugged into a 4B/5B universal or 4B-I/5BI isolator base.

Technical Specifications

Quiescent Current	50µA (max.)
Switching Current	1A @ 30Vdc max.
Indoor Applications Only	
Ambient Temp.	–10°C to +55°C
Relative Humidity	10% to 95% (non-cond.)
Dimensions (mm)	110 dia x 38H
ActivFire Listed with *MX* detectors	
FPANZ Listed	VF/638
Part Number	814RB

802SB Sounder Base

The 802SB Addressable Sounder base provides a sounder function on *MX* addressable systems. Designed for indoor use, it requires an associated detector or addressing module in order to operate, as the sounder base is controlled by the detector/addressing module plugged in. The detector must be locked into the base using the detector locking device. Removal of the detector or loss of power to the loop will cause the sounder to cease sounding. It must be fixed to a flat ceiling or a suitable electrical back box with 50mm fixing centres. It is identified by a white coloured park clip. The 802SB supports ISO8201 T3 tones.

Technical Specification

Operating Voltage	20 to 40Vdc
Quiescent Current	200µA (max.)
Alarm Current	6.8mA (max. volume)
Sound Press. Level	90dBA (max. volume)
Tones	8 Selectable (incl. T3)
Ambient Temp.	-25°C to +70°C
Relative Humidity	10% to 95% (non cond.)
Dimensions (mm)	110 dia x 38H
Devices per loop	50 to 250
ActivFire Listing	afp-1446
Part Number	802SB

901SB Sounder Base

The 901SB *MX* Addressable Loop sounder base provides a sounder function for *MX* addressable systems. It produces a user-selectable tone under control from the Control and Indicating Equipment (CIE.) via the *MX* detector or addressing module plugged into the sounder base. The volume can be adjusted on-site using a special tool. The tones, including the ISO 8201 tone, are DIP switch selectable. The 901SB is powered by external 24Vdc, and up to 250 are supported on the *MX* loop at low volume (refer CIE. details). It is identified by a blue park clip.

Technical Specification

External Voltage	18-28Vdc
Quiescent Current	200µA (typ.)
Alarm Current	6.8mA (max. volume)
Sound Press. Level	90dBA (max. volume)
Tones	8 Selectable (incl. T3)
Ambient Temp.	-25°C to +70°C
Relative Humidity	10% to 95% (non cond.)
Dimensions (mm)	110 dia x 38H
Devices per loop	50 to 250
ActivFire Listing	afp-1446
Part Number	516.800.911

4B-DHM Deckhead Mounting

The 4B-DHM Deckhead Mounting can be used with VIGILANT 850 Series detectors using a 4B base. It provides an IP55 seal between the mounting surface and the detector base for superior environmental protection. The housing has four 20/25mm cable breakouts. The mounting surface should be flat over the area of the underside of the housing to ensure a stable fixing and strong enough to take the weight of the mounting, detector base and detector.
Extra Base Accessory Terminals (BATs) are available, one is supplied.

Technical Specifications

Ambient Temp.	-25°C to +70°C
Relative Humidity	10% to 95% (non-cond.)
Dimensions (mm)	115 dia x 42H
Mounting Centres	128.5 mm
Weight	200g
Ingress Protection	IP55
Part Numbers	
517.050.051	4B-DHM
517.050.612	BAT Kit - pack of 10

4B-DAF Address Flag

The 850 Series detectors have a feature which automatically transfers the address flags to the detector base when the detector is plugged into the base. On removal of the detector, the flag is retained in the base.

Part Numbers	
516.800.915	*MX* Address Flag (pk 100)
516.800.931	Flag Labels Loop A - Wht
516.800.932	Flag Labels Loop B - Yel
516.800.933	Flag Labels Loop C - Ppl
516.800.934	Flag Labels Loop D - Grn

CTA Ceiling Tile Adaptor (Time-Saver Mount)

The Ceiling Tile Adaptor (CTA) is used to fix detectors to suspended ceilings and allow the detector to be commissioned and tested before the ceiling is fitted. The kit comprises a Bezel, Clamp and Back Box. Using the CTA can reduce installation time by as much as 30%. Where a sounder base is used, an additional adaptor plate must be used.

Technical Specifications

Ambient Temp.	-25°C to +70°C
Relative Humidity	10% to 95% (non-cond)
Dimensions (CTA)	165 dia x 51.5H mm
Weight (CTA)	232g

Part Numbers

517.050.060	Ceiling Tile Adaptor Kit (shown) - incl. Back Box, Bezel & Clamp
517.050.056	Back Box (included in kit)
517.050.057	Bezel and Clamp (incl. in kit, for supply to ceiling installer)
517.050.058	Sounder Base Adaptor Plate (not shown)

4B-EM Euro Adaptor Mount

For surface cable and mini trunking installations, the Euro Adaptor provides a shallow back-box onto which the detector base is fitted.

Technical Specifications

Ambient Temp.	-25°C to +70°C
Relative Humidity	10% to 95% (non-cond)
Dimensions	110.5 dia x 20H mm
Weight	70g
Part Number	517.050.052

4B-6A Base 4 inch to 6 inch Adaptor

For use with U.S. style 6 inch electrical back boxes or can be fixed directly to a ceiling and used to conceal marks left when older, large diameter detector bases are replaced with 4-inch bases.

Technical Specifications

Ambient Temp.	-25°C to +70°C
Relative Humidity	10% to 95% (non-cond)
Dimensions	151 dia x 16.5H mm
Weight	50g
Part Number	517.050.054

Table 1 *MX* Detector and Base / *MX* Panel Compatibility			
Compatibility	*MX1*	MX4428	4100ESi
850PC Smoke/CO/Heat Multi-Sensor Detector	√	√	√
850PH Smoke/Heat Multi-Sensor Detector	√	√	√
850P Smoke Detector	√	√	√
850H Heat Detector	√	√	√
801F Flame Detector	√	–	–
SAB801 Sounder Addressable Beacon	√	√	–
SAM800 Sounder Addressable Module	√	√	–
D51MX Duct Sampling Unit	√	√	√
4B-C Continuity Base	√	–	√
4B-I Isolator Base	√	√	√
814RB Relay Base	√	√	√
802SB Loop Powered Sounder Base	√	√	√
901SB Externally Powered Sounder Base	√	√	√