VIGILANT

850SERIES

Generation 6 *MX* Detection Range

Features

- Compatible with *MX* Addressable Loop on SIMPLEX 4100ESi, VIGILANT *MX1* and VIGILANT MX4428 panels
- Smoke/Heat/CO 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

Description

- 850PC Photoelectric Smoke/CO/Heat
- 850PH Photoelectric Smoke/Heat
- 850H Heat only
- 850P Photoelectric Smoke Only

The 850PC supports two triple-sensor algorithms: Universal and Resilient (for lower sensitivity applications), plus individual smoke, CO, and heat sensor modes.

The 850PH and 850P support Fast Logic (a fuzzy logic detection algorithm) or Count-Of-3 algorithms in High, Medium, and Low sensitivity settings. The 850PH can also support heat enhancement on some CIE.

The 850 Series *MX* Multi-Sensor detectors transmit digital values that represent the level of smoke/CO/heat at the sensors to the *MX* Control and Indicating Equipment (CIE).

The CIE software interprets the returned values, responding (e.g. to raise an alarm) according to the detection mode configured in the software. By utilising multiple sensors the CIE detection algorithms can combine the signals in different ways to achieve optimum detection.

The 850 Series detectors will plug into the following bases:

- 4B-C Continuity Base - use for most installations[8]
- 4B-I Isolator Base
- 5BI Isolator base
- 814RB Relay Base
- 802SB Sounder Base
- 4B Universal Base
- 5B Universal Base
- MUB Universal Base

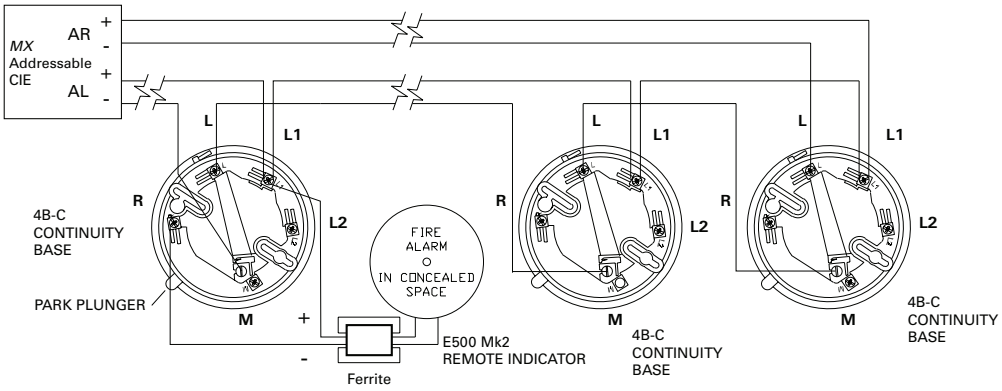
Note that the in-built loop short circuit isolator will function only with the 4B-C base. This base also maintains loop continuity if a detector is removed.

Specifications

	850PC	850PH	850H	850P
Mechanical (less base)	Photoelectric/Heat/CO	Photoelectric/Heat	Heat only	Photoelectric
Height	43mm	43mm	43mm	43mm
Diameter	109mm	109mm	109mm	109mm
Weight	94g	76g	81g	76g
Electrical				
Loop Voltage	20V to 40VDC addressable loop voltage is provided by the *MX* CIE			
Quiescent Current (typical)	370µA	330µA	290µA	330µA
Alarm Current[1]	3mA	3mA	3mA	3mA
Alarm Current[2]	10mA	10mA	10mA	10mA
Remote Indicator	VIGILANT E500Mk2 typical for all detectors			
Max. Detectors per Loop[3]	250/200	250/200	250/200	250/200
Normal Environmental				
Ambient Temperature[4]	-10°C to +55°C	-25°C to +70°C	-25°C to +70°C[7]	-25°C to +70°C
Storage Temperature	-20°C to +55°C	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C
Relative Humidity[5]	95%	95%	95%	95%
ActivFire Listed	afp-2929	afp-2930	afp-2927	afp-2928
FPANZ Listed	VF/367	VF/363	VF/218	VF/362
Standards	AS 7240.5-2004[6] AS 7240.6-2017 AS 7240.7-2004 AS 7240.17-2015	AS 7240.5-2004[6] AS 7240.7-2004 AS 7240.17-2015	AS 7240.5-2004[6] AS 7240.17-2015	AS 7240.7-2004 AS 7240.17-2015
Part Numbers	516.850.054.E	516.850.051.E	516.850.053.E	516.850.052.E

1. Remote Indicator not fitted 2. With Remote Indicator fitted 3. Depends on the CIE used, i.e., SIMPLEX 4100ESi; VIGILANT *MX1* / VIGILANT MX4428. Refer to CIE manuals for design limitations 4. A2S/A2R Heat detection enabled, 45°C max. 5. Maximum, non condensing 6. 850H heat sensor is A2S, A2R, CS and CR, 850PH and 850PC heat sensor is A2S and A2R only. 7. Short term to 90°C 8. Not available with VIGILANT MX4428

Installation - Wiring



Typical Wiring for *MX1* Addressable systems using the 4B-C Continuity base.

The *MX* CIE can be programmed to illuminate a Remote Indicator for detectors in alarm other than the detector base to which the Indicator is connected.
Note: an SX0005 ferrite is required on 850PC remote indicator wiring. Run one loop of wire through the ferrite, placed within 20cm of the detector base.

Wiring

Cables should be arranged at each side of the terminal screw. A maximum of two 1.5mm^2 cables or one 2.5mm^2 cable can be fitted to one terminal. Any additional cables (such as Remote Indicator) should be fitted with suitable fork or eyelet crimp terminal lugs. The installation should comply with AS 1670.1 or NZS 4512, as applicable.

4B Loop Cabling	4B-C Loop Cabling	4B-I Loop Cabling
L (-In/Out) L1 (+In/Out). A remote indicator may be connected between loop positive L1 (+In/Out) and terminal R (-ve). Terminal L2 must not be used.	L (-In) M (-Out) L1 (+In/Out). A remote indicator may be connected between loop positive L1 (+In/Out) and terminal R (-ve). Terminal L2 must not be used.	L2 (-In) M (-Out) L1 (+In/Out). A remote indicator may be connected between loop positive L1 (+In/Out) and terminal R (-ve). Terminal L must not be used.

Positioning of Detectors

The 850 series of detectors are not suitable for use where they may be exposed to condensing moisture, mist or water spray. When mounting on a narrow beam or where condensation may enter the rear of the detector, the deckhead mounting base 4B-DHM (part no. 517.050.051) should be used.
Installation of all detectors should be carried out in accordance with AS 1670.1 or NZS4512.
Cable penetrations should be sealed when positive or negative pressures in ceiling spaces may affect the performance of or contaminate the installed detectors.

Maintenance and Service

The VIGILANT *MX* addressable system should be maintained in accordance with AS 1851 or NZS4512.
The VIGILANT X300 Smoke Tester, X461 Heat Tester and CO test gas (517.001.262) may be used for testing in-situ.
Rotating the detector anticlockwise past an indent to the park position disconnects the detector from the circuit whilst still retaining it in the base, allowing wiring testing etc.
(Note that insulation testing must not be done where isolator bases are used). Depressing the plunger at the side of the base allows the detector to be rotated back into its operating position. The CO sensing element has an expected service life of 10 years.

The *MX* CIE can be set to report when the time period has been exceeded and the CO detector requires replacement.

Applications Warning In many fires, hazardous levels of smoke and toxic gas can build up before a heat detection device will initiate an alarm. In cases where life safety is a factor, the use of smoke and/or CO detection is highly recommended.

Heat detectors are not considered to provide life safety protection and are generally used where property protection is desired, but smoke or CO detectors cannot be used. Typical heat detector applications are satisfied by use of rate-of-rise and fixed temperature electronic detectors.

The addition of rate-of-rise operation provides faster heat detection for use where temperature fluctuations are controlled and less than 6°C/min. Where temperatures may fluctuate more quickly, use fixed temperature detection only (Type A2S or Type CS).

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VIGILANT, a respected regional brand of Johnson Controls, is a technology leader in the Australian and New Zealand fire detection markets with AS and NZS product approvals. The VIGILANT product line includes a comprehensive range of *MX TECHNOLOGY* fire detection products and the market-leading QE90 voice evacuation systems. VIGILANT product is widely supported throughout Australia and New Zealand by a network of installation companies, service companies and distributors.

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