

DESCRIPTION

- 814PH Photoelectric/Heat
- 814H Heat only
- 814CH Carbon Monoxide/Heat
- 814I Ionisation
- 814P Photoelectric Smoke Only

The 814 Series MX Virtual Multi-Sensor detectors transmit to the Tyco MX Control and Indicating Equipment (c.i.e.) digital values that represent the level of smoke/CO/heat at the sensors. The c.i.e. software interprets the returned values, responding (e.g. to raise an alarm) according to the detection mode configured in the software. By utilising dual sensors (Photoelectric Smoke & Heat or CO & Heat) the c.i.e. detection algorithms can achieve optimum detection by combining the two components in different ways. Heat-enhanced smoke/CO detection lowers the alarm threshold when a heat rate-of-rise is detected. A choice of detection algorithm is available - fuzzy-logic based *MX FASTLOGIC™* or the field-proven *SMARTSENSE™* algorithm. The 814H, 814I and 814P are all single sensor devices. The multi-sensor detectors can be configured to operate in one of the following modes:

- Heat Enhanced Smoke/CO plus heat detection
- Smoke/CO plus heat detection
- Heat Enhanced Smoke/CO detection only
- Smoke/CO detection only
- Heat detection rate-of-rise & fixed temperature¹
- Heat detection fixed temperature only¹

INFORMATION SHEET


All 814 series detectors will plug into the following bases:

- 5B Universal Base
- 5BI Isolator Base
- 814RB Relay Base
- 802SB Sounder Base
- M614 Universal Base
- 814IB Isolator Base
- 814SB Sounder Base
- 901SB Sounder Base

Note: For 814P applications, MXP firmware must be at least V1.13 and 801AP firmware at least V2.2.

SPECIFICATIONS	814PH	814CH	814I	814H	814P
(less base)	Photoelectric/Heat	CO/Heat	Ionisation	Heat	Photoelectric
Height	43mm	43mm	43mm	43mm	43mm
Diameter	108mm	108mm	108mm	108mm	108mm
Weight	76g	88g	81g	79g	76g
Loop Voltage	20V to 40Vdc addressable loop voltage is provided by the MX c.i.e.				
Quiescent Current (typical)	275µA	275µA	330µA	250µA	275µA
Alarm Current ²	3mA	3mA	3mA	3mA	3mA
Alarm Current ³	10mA	10mA	10mA	10mA	10mA
Remote Indicator	Tyco E500Mk2 typical for all detectors				
Max. Detectors per Loop ⁴	200/250	200/250	200/250	200/250	200/250
Ambient Temperature ⁵	-25°C to +70°C	0 to +50°C	-25°C to +70°C	-25°C to +70°C	-25°C to +70°C
Storage Temperature	-40°C to +80°C	-10°C to +50°C	-40°C to +80°C	-40°C to +80°C	-40°C to +80°C
Relative Humidity ⁶	95%	15 to 90%	95%	95%	95%
CSIRO ActivFire listed	afp-1424	afp-1425	afp-1426	afp-1427	afp-1699
Standards	AS1603.1-1997 ⁷ AS1603.2-1997	AS1603.1-1997 ⁷ AS1603.2-1997 AS1603.14-2001	AS1603.2-1997	AS1603.1-1997 ⁷	AS1603.2-1997
Part Number	516.800.510 ⁸	516.800.511 ⁸	516.800.512	516.800.513 ⁸	516.800.517

1. Service replacement only when used on heat detector spacing. 2. Remote Indicator not fitted, excluding isolator / sounder / relay base currents.

3. With Remote Indicator fitted, excluding isolator / sounder / relay base currents.

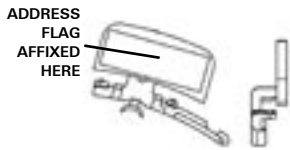
4. Depends on the c.i.e. used; MX4428/ MX1, 4100MXP. Refer to c.i.e. manuals for design limitations. 5. Types A & B Heat detector, 45°C max.

6. Maximum, non condensing. 7. AS1603.1-1997 compliance: 814H complies as Types A, B, C, D; 814CH and 814PH comply as Type A & B only.

8. The 814PH, CH, H detectors' heat sensors are coated to provide extra moisture protection, identified by 'MP5' on the label.

DETECTOR ADDRESS

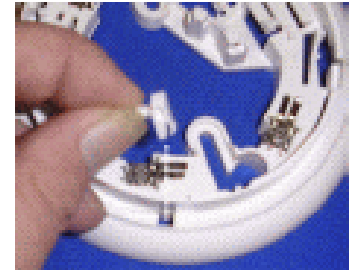
The address label carrier is fitted to the detector before mounting on the base. When the detector is mounted to the base, and turned clockwise until fully located on the base, the address label carrier is transferred to the base. If the detector is removed the address label carrier remains on the base.



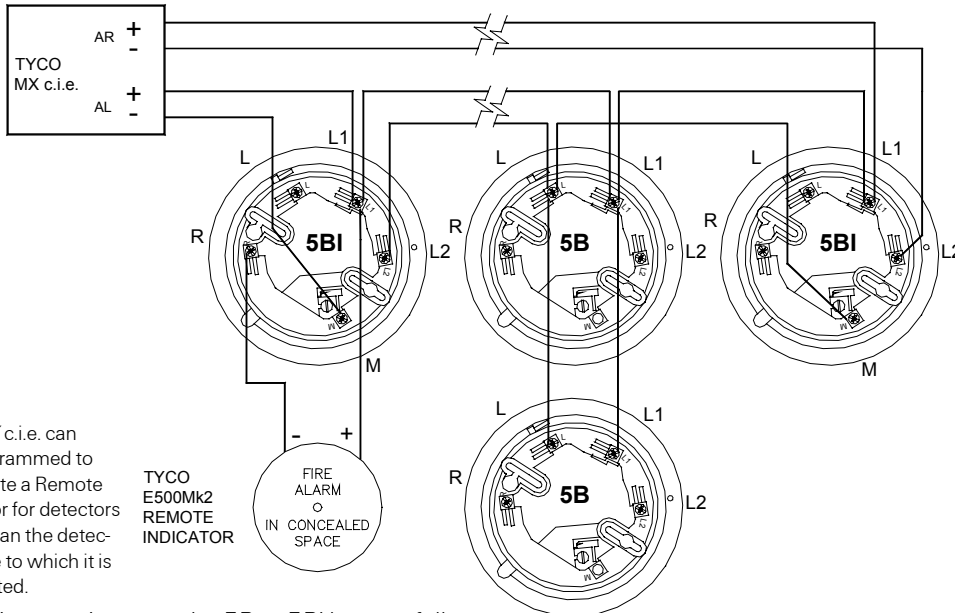
Part Number	Desc.
5 16.800.915	Label Carrier
5 16.800.931	White Label
5 16.800.932	Yellow Label
5 16.800.933	Purple Label
5 16.800.934	Green Label

LOCKING KEY

A detector locking device is moulded into the 5B base. This must be detached and inserted into the locking aperture if required, prior to the selected detector being installed. The detector may then be removed only by inserting an unlocking tool (a Ø3 x 22mm long rod) into the hole on the detector cover to depress the locking device.



WIRING



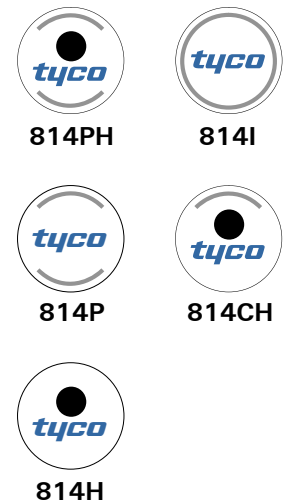
The MX c.i.e. can be programmed to illuminate a Remote Indicator for detectors other than the detector base to which it is connected.

TYCO
E500MK2
REMOTE
INDICATOR

FIRE
ALARM
IN
CONCEALED
SPACE

DETECTOR IDENTIFICATION

Each detector is identified by a unique label on the top, as shown:



All wiring terminates at the 5B or 5BI base as follows:

R: – Remote **L:** – In and Out **L1:** + In, Out & Remote **M:** – In (5BI only) **L2:** – Out (5BI only)

Cables should be arranged at each side of the terminal screw. A maximum of two 1.5mm² cables or one 2.5mm² 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/NZS 4512.

Note that alarm zone circuits with more than 40 devices must be wired as a loop and use isolator bases in accordance with the design manuals. Refer to the relevant information sheet for base wiring details.

INSTALLATION

The 814 series of detectors are not suitable for use where they may be exposed to condensing moisture, mist or water spray.

When mounting on a damp surface or narrow beams where condensation may enter the rear of the detector, the deckhead mounting base DHM5B (part no. 5 17.050.603) or similar should be used. The 814CH should not be positioned where high localised levels of CO may normally occur, e.g. indoor car parks, warehouses. The 814H Heat detector may be more appropriate. Installation of all detectors should be carried out in accordance with AS 1670.1/NZS 4512. Cable penetrations should be sealed when positive or negative pressures in ceiling spaces may affect the performance or contaminate the installed detectors.

MAINTENANCE AND SERVICE

The Tyco MX addressable system should be maintained in accordance with AS 1851/NZS 4512. The Tyco X300 Smoke Tester, X461 Heat Tester and CO Test Gas (part no. 5 17.001.262) 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 when isolator bases are used.

Depressing the plunger at the side of the base allows the detector to be rotated back into its operating position. Wormald Detector Clean & Calibrate Wollongong are able to check the calibration of MX detectors. Additionally, although the 814CH has an expected life in excess of 10 years, in order for the 814CH to provide the intended level of fire detection, the detector should be checked for calibration 5 years after installation or within 7 years of the date of manufacture.

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 the 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 B or Type D).

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