**DESCRIPTION**

- **814PH** Photoelectric/Heat
- **814CH** Carbon Monoxide/Heat
- **814I** Ionisation
- **814H** Heat only
- **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 temperature
- Heat detection fixed temperature

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

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th></th>
<th>814PH</th>
<th>814CH</th>
<th>814I</th>
<th>814H</th>
<th>814P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height</td>
<td>43mm</td>
<td>43mm</td>
<td>43mm</td>
<td>43mm</td>
<td>43mm</td>
</tr>
<tr>
<td>Diameter</td>
<td>108mm</td>
<td>108mm</td>
<td>108mm</td>
<td>108mm</td>
<td>108mm</td>
</tr>
<tr>
<td>Weight</td>
<td>76g</td>
<td>88g</td>
<td>81g</td>
<td>79g</td>
<td>76g</td>
</tr>
<tr>
<td>Quiescent Current (typical)</td>
<td>275µA</td>
<td>275µA</td>
<td>330µA</td>
<td>250µA</td>
<td>275µA</td>
</tr>
<tr>
<td>Alarm Current²</td>
<td>3mA</td>
<td>3mA</td>
<td>3mA</td>
<td>3mA</td>
<td>3mA</td>
</tr>
<tr>
<td>Alarm Current³</td>
<td>10mA</td>
<td>10mA</td>
<td>10mA</td>
<td>10mA</td>
<td>10mA</td>
</tr>
<tr>
<td>Remote Indicator</td>
<td>Tyco E500Mk2 typical for all detectors</td>
<td>Tyco E500Mk2 typical for all detectors</td>
<td>Tyco E500Mk2 typical for all detectors</td>
<td>Tyco E500Mk2 typical for all detectors</td>
<td>Tyco E500Mk2 typical for all detectors</td>
</tr>
<tr>
<td>Max. Detectors per Loop</td>
<td>200/250</td>
<td>200/250</td>
<td>200/250</td>
<td>200/250</td>
<td>200/250</td>
</tr>
<tr>
<td>Ambient Temperature</td>
<td>-25°C to +70°C</td>
<td>0 to +50°C</td>
<td>-25°C to +70°C</td>
<td>-25°C to +70°C</td>
<td>-25°C to +70°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40°C to +80°C</td>
<td>-10°C to +50°C</td>
<td>-40°C to +80°C</td>
<td>-40°C to +80°C</td>
<td>-40°C to +80°C</td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>95%</td>
<td>95%</td>
<td>95%</td>
<td>95%</td>
<td>95%</td>
</tr>
<tr>
<td></td>
<td>AS1603.2-1997⁵</td>
<td>AS1603.2-1997⁵</td>
<td>AS1603.2-1997⁵</td>
<td>AS1603.2-1997⁵</td>
<td>AS1603.2-1997⁵</td>
</tr>
<tr>
<td>Part Number</td>
<td>516.800.510⁸</td>
<td>516.800.511⁸</td>
<td>516.800.512</td>
<td>516.800.513⁸</td>
<td>516.800.517</td>
</tr>
</tbody>
</table>

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.

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

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Desc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>516.800.915</td>
<td>Label Carrier</td>
</tr>
<tr>
<td>516.800.931</td>
<td>White Label</td>
</tr>
<tr>
<td>516.800.932</td>
<td>Yellow Label</td>
</tr>
<tr>
<td>516.800.933</td>
<td>Purple Label</td>
</tr>
<tr>
<td>516.800.934</td>
<td>Green Label</td>
</tr>
</tbody>
</table>

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.

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

- R – Remote
- L – In and Out
- L1: In, Out & Remote
- L2: In (5 BI only)
- M: In (5 BI 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. 517.050.603) or similar should 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.

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).

Depressing the plunger at the side of the base allows the detector to be rotated back into its operating position. Wormald Detectors 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.

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. 517.001.282) 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.

TYCO SAFETY PRODUCTS-ANZ

Tyco Safety Products, a division of Tyco Australia Pty Limited

A.B.N. 80 008 399 004, reserve the right to alter specifications without notice, in line with Tyco’s policy of continuing product improvement.

www.tycosafetyproducts-anz.com

120.415.744 Issue 13 © Tyco Safety Products - Fire Detection - ANZ Region 5 June 2009 Page 2 of 2