**DESCRIPTION**

By detecting abnormal levels of carbon monoxide (CO), the MU614 provides an early warning to carbon-based fires whilst minimising the risk of false alarms.

When CO is detected, the detector latches into alarm and signals an alarm state to the fire alarm Control and Indicating Equipment (CIE). Whilst in alarm, the MU614 illuminates its integral LED indicator. If a remote indicator or externally powered load is connected to the Remote output, it is also energised.

The CIE interrupts the alarm current to reset an alarm. The alarm current must be limited by the CIE. This detector must be used with the Minerva base part number M614.

The MU614 is compatible with Tyco CIEs: F08, F3200, F4000 and MX4428.

The MU614 is tested for compliance with AS1603.2-1997 and listed by SSL under afp-1210.

**INSTALLATION**

**Mounting**

With a clockwise rotational motion, Minerva detectors mount quickly and easily onto the M614 base.

**Wiring**

Refer to M614 base instructions for wiring details.

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![Diagram of MU614 installation and wiring](c:\0dove\productinformation\oe452709.indd)

1. Must be externally limited
2. Minimum current for required LED visibility

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**SPECIFICATIONS**

- **Operating Voltage**: 16VDC to 28VDC
- **Quiescent Current**: 50μA (max.)
- **Alarm State Voltage**: 2.5V to 7.4V
- **Alarm State Current**: 0.7mA to 67mA
- **Visibility Alarm Current**: 3.2mA (min.)
- **Externally Powered Load**: 50mA @ 28VDC (max.)
- **Sensitivity (AS1603.2-1997)**: 0.20 MIC X
- **Nominal Alarm Threshold**: 38ppm CO
- **Ambient Temperature**: 0°C to +50°C
- **Relative Humidity (non-cond)**: 15 to 90%
- **Alarm Indicator Colour**: Red
- **Remote Indicator**: Tyco E500 Mk2 series
- **Part Numbers**: Detector MU614, Base M614, Test tablets X64

All wiring terminates at the M614 base as follows.

- **R**: Remote  *
- **L**: In and Out
- **L1**: + In & Remote
- **L2**: + Out

* When a common remote indicator is used for two or more detectors, join the ‘R’ terminal to the next M614 base ‘R’ terminal. The remote indicator will then activate when any of the connected detectors signals an alarm.
INSTALLATION continued

Testing
The MU614 is tested using the CO detector test tablets, part no. X64.

Maintenance
The MU614 should be maintained in accordance with AS 1851.8–1987 (Australia) or NZS 4512–2003 (New Zealand). Additionally, although the MU614 has an expected life in excess of ten years, in order for the MU614 to provide an unparalleled level of fire detection, the detector should be checked for calibration within 5 years of installation. Tyco Services Detector Clean & Calibration Wollongong are equipped and competent to check the calibration of MU614 detectors.

CAUTION - Where differential air pressure may exist between a ceiling cavity and the room below, it is advisable to seal any cable access hole to the back of a fire detector in the room. This will stop ceiling cavity air from flowing past or through the fire detector that could otherwise affect reliable fire detection. Such air flows may cause more rapid dust or moisture build-up in the detector or “shield” the detector from smoke or hot gas in the room.

CARBON MONOXIDE FIRE DETECTION
CO is a major cause of fatalities in fires. It is a toxic gas produced by carbon-based fires. Being colourless, odourless and tasteless, CO is almost impossible for a person to detect. Exposure to raised levels of CO can cause disorientation and collapse during physical exertion, whilst exposure to high levels of CO can lead to permanent brain damage and death. Slow-developing and smouldering fires produce significant quantities of CO before detectable levels of smoke are released. In these situations CO detectors actuate far earlier than photoelectric or ionisation smoke detectors.

APPLICATIONS

Slow smouldering fires
In slow smouldering fires the presence of CO and other noxious gases are a significant risk to human life. By detecting the earliest (and most dangerous) signs of fire, CO detectors can provide the maximum opportunity for life safety. Suitable applications include:

— hotels and apartment blocks
— hospitals and rest homes
— cruise liners
— schools and universities
— office blocks and shopping centres

Flexible detector positioning
As gas particles tend to spread evenly throughout a given space, positioning of CO detectors is less critical than for smoke detectors. Also, CO detectors can detect fire at a greater distance than smoke detectors. Thus, for large areas where detector positioning is difficult, CO detectors can provide additional protection. To meet the deemed-to-satisfy provisions of the Building Code, MU614s should be located in accordance with AS1670.1 (Australia) or NZS4512 (New Zealand).

False alarm immunity
Because they react only to a specific gas, CO detectors will not respond to common false-alarm sources such as steam, chemical vapour, water mist or dust. While CO detectors will respond to non-fire sources of CO, they will only do so when a hazardous level of CO has accumulated. Typical applications include:

— production facilities producing lots of dust
— kitchens where toast and cooking fumes cause false alarms (CO detectors respond to toast only when flaming occurs)

Unsuitable applications
Some fires produce little or no CO. Areas where there is a risk of these types of fires should not be protected solely by CO detectors. Typical fires that produce little CO are:

— early stages of electrical fires and burning cable
— fast-burning chemical fires
— metal fires (such as magnesium)

Finally, CO detectors are not recommended for duct sampling units used in building air-handling systems nor in areas of very high or low continuous humidity.