



# Certificate of Conformity

Certificate num.	Registration date	Version	Valid until	
<b>afp - 1214</b>	29-Jan-1999	Number 14	Issue date 1-May-2018	30-Apr-2019

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## Product designation

**Minerva, Model MD614, Type A heat detector**

(Refer to the Schedule/enclosures for further specified details)

## Agent/distributor

Tyco Fire Protection Products  
Level 3, 95 Coventry Street, SOUTHBANK, VIC, AUSTRALIA, 3006

## Registrant

Johnson Controls  
17 Mary Muller Drive, HILLSBOROUGH, CHRISTCHURCH, NEW ZEALAND, 8022

### Producer

Tyco Fire & Security GmbH  
Victor von Bruns-Strasse 21, NEUHAUSEN AM RHEINFALL, SWITZERLAND, 8212

## Conformance criteria and evaluation

The Minerva, Model MD614, Type A heat detector has been evaluated and verified as conforming with the relevant requirements of the following criteria.

1. Australian Standard AS 1603.1-1997, 'Automatic fire detection and alarm systems - Heat detectors' incl. Amdt 1 (August 1998).

## Limitations/conditions of conformance

Limitations/conditions of conformance, where identified on this certificate, are derived from qualifications from evaluation(s) for conformity and/or other related technical documentation. All details with respect to design, assembly and installation instructions and restrictions should be checked against the producer's current technical manual/data sheets and the requirements of the Authority having Jurisdiction.

Specified limitations/conditions, determined from the evaluation for conformity, include the following.

- i. The operating temperature range of the detector is -10 °C to 45 °C.
- ii. The detector is used in indoor, dry environments.
- iii. The alarm current range of the detector is between 2 and 100 mA.
- iv. Compatibility of this fire detector and its base assembly with new or existing control and indicating equipment should be verified prior to installation.

This certification is issued within the scope of CSIRO Verification Services – Rules governing ActivFire Scheme and is valid only for the product(s) as submitted for evaluation and verification of conformity, subject to the following conditions.

- Reference to details, limitations and requirements, where documented as a schedule/enclosure with this certificate.
- The Registrant is responsible for their attestation of conformity and ensuring that on-going production complies with the conformance criteria defined in this certificate.
- This certificate will not be valid if any changes or modifications are made to the product which have not been notified and validated by CSIRO Verification Services.
- This certificate is subject to periodical re-validation upon verification that all requirements, as determined by the conformity assessment body, continue to be satisfactorily met by the Registrant.
- This certificate may only be reproduced in its published form, without modification and inclusive of all schedules/enclosures.
- Any changes, errors or omissions, must be submitted in writing and if necessary or requested, substantiated with relevant evidence.
- Any representations, such as advertising or other marketing related activities or articles shall reflect the correct contents of this certificate and conform with all relevant trade practices and consumer protection legislation and regulations.
- Any terms or conditions of use as applicable to content and documentation as published or accessed through web sites administered by the CSIRO Verification Services.

Issued by

David Whittaker  
Executive Officer – ActivFire Scheme



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## Producer's description

The Minerva, Model MD614, Type A heat detector is classified as resetting type heat detector that may operate as either by rate of rise operation or fixed temperature operation. For fixed temperature operation, the detector utilises a negative temperature coefficient thermistor (TH1) as the heat sensitive element. The thermistor is electrically connected to circuitry that responds to a change in the environment temperature. An alarm condition is initiated when the environmental temperature exceeds the fixed alarm temperature set point for the detector and the rate of change in the environmental temperature is slow.

The fixed alarm temperature of the detector is set at the point of manufacture. The manufacturer specifies fixed temperature alarm nominal set point of  $60 \pm 2^{\circ}\text{C}$  for the Type A detector.

Rate of rise operation of the detector is provided by electro-pneumatic design of the detector and incorporates a flexible diaphragm as part of the printed circuit board (pcb) assembly, air breather vents and a metal dome which is sealed onto the pcb. Under rate of rise conditions, an alarm state is achieved by physical movement of the flexible diaphragm and attached contact arm which changes the electrical state of the rate of rise contacts from normally open to closed. Rate of rise operation is initiated by a rapid change in environmental temperature.

The detector has one integral LED in the cover moulding which is red in colour when the detector is in the alarm condition. Electrical connection to the detector is achieved through the mounting base. Once the detector is in the alarm state, interrupting the power supply is required to reset the detector.

## Technical specification

The following details are a representative extract of the technical specification for the Minerva, Model MD614, Type A heat detector and may be subject to change. Complete and current details should be determined from the designated producer's technical manual/data sheets.

<b>Working voltage range:</b>	16 Vdc to 28 Vdc
<b>Quiescent current:</b>	10 $\mu\text{A}$ @ 16 Vdc 38 $\mu\text{A}$ @ 28 Vdc
<b>Alarm voltage:</b>	5 Vdc to 8.5 Vdc
<b>Alarm current:</b>	2 mA to 100 mA (alarm state current to be externally limited)
<b>Temperature range:</b>	$-10^{\circ}\text{C}$ to $45^{\circ}\text{C}$
<b>Maximum relative humidity:</b>	95 % (non-condensing).
<b>Dimensions:</b>	108 mm (approx) diameter 48 mm (approx) height when connected to the base assembly

Tested base designation	Base + detector circuit type
Minerva, Model M614	Conventional
Tyco, Model 5B	Conventional
Tyco, Model Z134A	Addressable

## Supplementary information

### Minerva, Model M614 or Tyco, Model 5B base assembly terminal wiring identification

R	Remote indicator (negative)
L	Line B (negative) In/Out
L1	Line A (positive) In & Remote indicator (positive)
L2	Line A (positive) Out

### Tyco, Model Z134A base assembly

#### Description

The Tyco Z134A is a Series 130 addressable detector base compatible with the Minerva 614 range of detectors. The Tyco Z134A connects to the Vigilant F4000 Multi Protocol Responder (MPR) addressable 2-wire loop and is programmed as an ADM133 Micro Monitor Module.

#### Specifications

Operating voltage:	12 to 28 Vdc
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Quiescent current:	530 $\mu$ A (plus detector Iq)
Alarm current (LED off):	1.5 mA max.
Alarm current (LED on):	10 mA max.
Reset time (minimum):	2 secs.
Remote Indicator:	Tyco E500 Mk2
Operating temperature:	-5° to +75°C
Operating humidity:	95% R.H. non condensing
Address:	101 to 199

## Wiring

+R	Positive remote indicator
+R	Positive remote indicator link to/from next base*
-R	Negative remote indicator
Data In	Data In from MPR/previous base
Data Out	Data to next base
Comm In	Common from MPR/previous base
Comm Out	Common to next base

- \* When a common remote indicator is used for 2 or more detectors, this line goes to the next 130 series device.  
+ Remote terminal. The Remote Indicator will then activate when any of the connected devices signals an alarm.