



# Certificate of Conformity

Certificate num.	Registration date	Version	Valid until	
<b>afp - 1699</b>	10-Dec-2004	Number 18	Issue date 19-May-2020	30-Apr-2021

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## Product designation

**Tyco MX, Model 814P, adjustable nom. sens. (S)=8% to 12% obs./m, remotely determined, analogue addressable, photoelectric smoke detector**

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

## Agent/distributor

Johnson Controls  
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 Tyco MX, Model 814P, adjustable nom. sens. (S)=8% to 12% obs./m, remotely determined, analogue addressable, photoelectric smoke detector has been evaluated and verified as conforming with the relevant requirements of the following criteria.

1. Australian Standard AS 1603.2-1997, 'Automatic fire detection and alarm systems - Point type smoke 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. Use in a dry environment where the temperature does not exceed the limits of -10°C to +70°C.
- ii. 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



# Schedule to Certificate of Conformity

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## Producer's description

Tyco MX, Model 814P, adjustable nom. sens. (S)=8% to 12% obs./m, remotely determined, analogue addressable, photoelectric smoke detector is inherently re-settable because all decisions are made by the compatible control and indicating equipment. The photoelectric light scatter system senses smoke using an infrared emitter and receiver. The output, for a given type of smoke, is proportional to the smoke density.

In the quiescent state, the detector's LED indicator optionally blinks when polled to indicate normal operation. The LED indicator is ON steady when the detector is in the alarm state.

When the Tyco MX, Model 814P, smoke sensor is used with the Tyco, Model MX4428 or 4100MXP control and indicating equipment, a choice of two multi-criteria fire detecting algorithms is available, SmartSense and MX FASTLOGIC. SmartSense uses a time integration and signal discrimination approach whereas MX FASTLOGIC uses "fuzzy logic" applied to recorded data. SmartSense is adjustable over a range of smoke obscuration values whereas MX FASTLOGIC has three settings which modify the speed at which the algorithm makes a decision to signal an alarm.

## Technical specification

The following details are a representative extract of the technical specification for the Tyco MX, Model 814P, adjustable nom. sens. (S)=8% to 12% obs./m, remotely determined, analogue addressable, photoelectric smoke detector and may be subject to change. Complete and current details should be determined from the designated producer's technical manual/data sheets.

### Schedule of properties/characteristics

The following schedule is an extract of physical and operational properties/characteristics of the certified/listed equipment.

<b>Working voltage range:</b>	20.0 to 40.0 Vdc (loop voltage)
<b>Quiescent current:</b>	250 $\mu$ A (typical). @ 25°C
<b>Alarm current:</b>	3 mA (typical), 3.3 mA (maximum) @ 25°C 10 mA with remote indicator fitted
<b>Operating temperature:</b>	-25°C to +70°C
<b>Humidity:</b>	95% RH (non condensing)
<b>Storage temperature:</b>	-40°C to +80°C
<b>Smoke sensor sensitivity:</b>	8% to 12% obs./m (as per AS 1603.2 - 1997)
<b>Dimensions:</b>	
Height:	43 mm
Diameter:	108 mm
Weight:	76g

### Schedule of components and/or assemblies

The following is a schedule of validated components and/or assemblies of the certified/listed equipment.

Base designation	Base + detector circuit type
Tyco MX, Model 4B base	Analogue Addressable
Tyco MX, Model 4B-I isolator base	
Tyco MX, Model 5BI isolator base	
Tyco MX, Model 814IB isolator base	
Tyco MX, Model 814RB relay base	
Tyco MX, Model 814SB sounder base	
Tyco, Model 5B universal base	
Tyco/Minerva, Model MUB universal base	

## Supplementary information

The Tyco, Model MUB Minerva universal base is a non-electronic base that provides clip-in mounting for the detector and connection of the MX addressable circuit wires from the control and indicating equipment.

The Tyco, Model 4B and 5B universal bases are non-electronic bases that provide clip-in mounting for the detector and connection of the MX addressable circuit wires from the control and indicating equipment.

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The Tyco MX, Model 814IB isolator base is designed to be used on the MX addressable circuit. It monitors the line condition and, when detecting a short circuit will isolate the affected section whilst allowing the rest of the addressing circuit to function normally. It may be used with or without a detector fitted.

The Tyco MX, Model 814SB sounder base (loop powered) requires a detector to be fitted in order to operate, as it is controlled by an output of the detector that is fitted to it. Removal of the detector or loss of power to the loop will cause the sounder to cease sounding.

The Tyco MX, Model 814RB is a relay base designed to be driven from the MX addressable circuit. It provides two changeover volt-free relay contacts capable of switching 24V @ 1A. The relay operates under control from the MX controller. The Tyco MX, Model 814RB Relay Base requires a detector to be fitted in order to operate, as it is controlled by an output of the detector that is fitted to it. Disruption of loop power or removal of the associated detector will cause the 814RB to revert to its reset state.

The Tyco, Model 4B-I and 5BI isolator bases are designed to be used on the MX addressable circuit as a short circuit protection device. It may be used with or without a detector fitted.

## Specifications for Tyco MX bases:

Model	4B / MUB / 5B	814IB	814SB	814RB	4B-I / 5BI
Electrical					
Loop voltage	20-40 Vdc				
Quiescent current	0 μA	80 μA	400 μA	50 μA (power up 450 μA for <1 second)	100 μA
Alarm current	-	-	9 to 15 mA	100 μA	-
Tripped current (maximum)	-	24 μA	-	-	3.5 mA
Series resistance	n/a	n/a	n/a	n/a	0.25 ohm
Equivalent capacitance	n/a	n/a	n/a	n/a	50 pF
Remote indicator	Tyco E500 Mk2				
Environmental					
Operating temperature	-25°C to +70°C (to +90°C for short-term)	-25°C to +70°C	-10°C to +55°C	-10°C to +55°C	-25°C to +70°C
Storage temperature	-40°C to +80°C				
Relative Humidity	0 to 95% non-condensing				
Dimensions					
Height	25 / 22 / 24 mm	22 mm	36 mm	36 mm	25 / 24 mm
Diameter	109 / 110 / 127 mm	110 mm	110 mm	110 mm	109 / 127 mm
Mass	60 / 66 / 50 g	80 g	166 g	153 g	63 g

## Wiring for Tyco MX bases:

Terminal	4B / MUB / 5B	814IB	814SB	814RB	4B-I / 5BI
L	Negative In & Out	No connection	Negative In & Out	Negative In & Out	No connection
L1	Positive In, Out & Remote	Positive In, Out & Remote	Positive In, Out & Remote	Positive In, Out & Remote	Positive In, Out & Remote
L2	No connection	Negative Out	No connection	No connection	Negative Out
M	-	Negative In	-	-	Negative In
R	Negative Remote	Negative Remote	Negative Remote	Negative Remote	Negative Remote