Tyco 614 Series
Collective Fire Detection

Tyco's collective detector design evolution has resulted in the creation of a new Tyco 614 Series of unobtrusively styled detectors. Several features previously found on the Minerva range of detectors continue, such as the unique detector park position, requiring only a 'single visit to the ceiling' for installation, service and maintenance. The Tyco 614 Series provide reliable fire detection technology in an attractive cost effective package.

Features

- Range includes unique combined Carbon Monoxide (CO) and Heat, Photoelectric (Scattered Light) and Ionisation fire detectors
- Type A, B, C and D Heat Detectors
- Low profile and unobtrusive
- Superior performance and reliability
- Patented Optical Chamber
- Attractive design
- Designed for fast, easy installation
- Detector Lock included with 5B Base
- 360° Integral and remote alarm LED
- Backward compatible with Minerva 614 range
- CSIRO ActivFire Listed

General

The Tyco 614 range of low profile collective fire detectors have a number of unique design features that offer improved operation, installation and ease of servicing. Through innovative design, the Tyco 614 series detectors have reduced the installation and servicing time to a minimum. The Park position on the detector base means only one visit to the ceiling to complete the installation.

The Tyco 614 range includes the unique combined CO and Heat fire detector, which responds to carbonaceous fires with an unprecedented early detection of slow smouldering fires, yet offers unparalleled unwanted alarm immunity.

The use of the patented optical sensing chamber for the photoelectric detector, together with refined signal processing, has enabled the introduction of a smoke detector suitable for fast, reliable smoke detection of both slow and fast developing fires.

614P Photoelectric Smoke Detector

The 614P is capable of detecting the visible smoke produced by materials which smoulder or burn slowly, such as soft furnishings, plastic foam, or 'smoke' produced by overheated but unburnt PVC. These detectors are particularly suitable for general applications and areas where cable overheating may occur in electrical services areas. They are suitable for use in sleeping areas and must be used in common paths to exits, to give early warning of smoke that may make escape difficult. The novel design of the asymmetrical sampling chamber and signal processing techniques stop unwanted alarms caused by very small insects. Smoke entering the sampling chamber scatters the infrared light pulses onto a photodiode. These pulses are converted to an electrical signal that is compared against a preset alarm level.

Technical Specifications

Operating Voltage	10 to 33Vdc
Quiescent Current	60µA typ. 100µA max.
Alarm State Current[1]	5mA to 85mA (55°C)
Alarm Voltage	4V to 7.6V
Ext. Powered Load	50mA, 28Vdc max.
Sensitivity	0.18 dB/m (4% obs/m) (AS 7240.7:2004)
Reset Time	2 sec max.
Remote Indicator	E500 Mk2 Series
Relative Humidity	10% to 95% (non cond.)
Ambient Temperature	-20°C to +70°C
Dimensions (inc. base)	54 x 127 mm (H x dia)
Weight (inc. base)	188g
CSIRO ActivFire Listed	afp-1715
Part Number	516.600.301

1. Min. 5mA for LED visibility. Max. current must be externally limited

614CH Combined Heat and Carbon Monoxide Detector

Tyco 614CH detectors are generally faster than ion-chamber and photoelectric smoke detectors in responding to fires that start by smouldering. They are also more tolerant of positioning and can be mounted in locations where there are likely to be obstacles to free smoke plume movement. These detectors are particularly well suited for sleeping areas, storage areas and applications where smoke detectors are prone to unwanted alarms. Incorporation of a Class A1R rate of rise heat detector within the 614CH provides an additional mode of detection, allowing the detector to be used in a wide variety of applications where combined risks mean that CO detection alone would be insufficient. The integrated rate-of-rise heat detector enhances the sensitivity of the carbon monoxide detector if a rapid change of temperature is detected by the detector's thermistor. The 614CH has an expected life in excess of 10 years. To maintain an unparalleled level of fire detection, they should be checked for calibration within 5 years of installation.

Technical Specifications

Operating Voltage	10 to 33Vdc
Quiescent Current	70µA typ. 80µA max.
Alarm State Current[1]	5mA to 85mA (55°C)
Alarm Voltage	4V to 7.6V
Alarm Threshold	38ppm CO, A1R heat
Ext. Powered Load	50mA, 28Vdc max.
Reset Time	2 sec max.
Remote Indicator	E500 Mk2 Series
Relative Humidity	15 to 90% (non cond.)
Ambient Temp[2]	0 to +50°C
Dimensions (inc. base)	54 x 127 mm (H, dia)
Weight (inc. base)	200g
CSIRO ActivFire Listed	afp-1718
Part Number	516.600.304

1. Min. 5mA for LED visibility. Max. current must be externally limited.

2. Detector may be stored between -20°C and +55°C without exposure to condensation or icing.

614I Ionisation Smoke Detector

614I detectors are offered for old specifications which still call for ionisation smoke detectors. The 614CH and 614P detectors offer improved performance, significantly fewer unwanted alarms and environmental compatibility for smoke detection applications. The 614I nevertheless offers detection of visible and invisible fire aerosols (products of combustion) and are therefore capable of detecting the early presence of hot smouldering and flaming fires, such as wood, paper etc. They use a dual ionisation chamber in which the air is ionised by a single radioactive source. The presence of smoke in the sampling chamber causes a change in the balance voltage, between the two chambers. This is then compared against an alarm level.

Technical Specifications

Operating Voltage	10 to 33Vdc
Quiescent Current	60µA typ. 67µA max.
Alarm State Current[1]	5mA to 85mA (55°C)
Alarm Voltage	4V to 7.6V
Ext. Powered Load	50mA, 28Vdc max.
Ionisation Source	<33kBq (Am241)
Alarm Threshold	y=0.8 (0.32 MIC X)
Reset Time	2 sec max.
Remote Indicator	E500 Mk2 Series
Relative Humidity	10% to 95% (non cond.)
Ambient Temperature	-20°C to +70°C
Dimensions (inc. base)	54 x 127 mm (H x dia)
Weight (inc. base)	200g
CSIRO ActivFire Listed	afp-1716
Part Number	516.600.305

1. Min. 5mA for LED visibility. Max. current must be externally limited

614T Heat Detector

Tyco 614T heat detectors use a fast response thermistor based design. The fixed temperature sensing thermistor readily tracks the local ambient temperature, thus quickly, accurately and consistently identifying when a fixed temperature is exceeded. Rate-of-rise detection is achieved by comparing the response of two thermistors, one of which has a slower thermal response. By combining accurate thermistors with proper physical placement, this patented rate-of-rise detection design achieves a high level of performance not normally available with mechanical detection.

Part Number	Model	CSIRO ActivFire Listed
4098-9637EA	Type A	afp-1813
4098-9638EA	Type B	afp-1814
4098-9639EA	Type C	afp-1815
4098-9640EA	Type D	afp-1816

Technical Specifications

Operating Voltage	11 to 32Vdc
Quiescent Current	85µA typ. 100µA max.
Alarm State Current [1]	5mA to 80mA
Alarm State Voltage [2]	3.0V to 12.4V
Remote Indicator	E500 Mk2 Series
Relative Humidity	10% to 95% (non cond.)
Ambient Temperature	
Types A, B	-10°C to +45°C
Types C, D	-10°C to +75°C
Storage Temperature	-10°C to +75°C
Dimensions (inc. base)	54 x 127 mm (H x dia)
Weight (inc. base)	174g

1. Min. 5mA for LED visibility; max. current must be externally limited. 2. Min. voltage with remote indicator shorted @ 5mA. Max @ 80mA without remote indicator connected.

5B Universal Base

The 5B Universal Base is suitable for indoor applications of the Tyco 614 series of detectors. It provides excellent space for cable access and terminations. Its larger skirt makes it suitable as a replacement for the earlier M614 base to cover any paint rims or covering a larger hole in the ceiling.

Features

- Variety of fixing options using up to 4.8mm screws
- Remote LED connections
- Anti-tamper facility, locking device included
- Park position disconnects detector from wiring whilst retaining detector in base.
- Compatible with base accessories including Deckhead Mount, Surface Mounting and Detector cage.

Technical Specifications

Operating Temp.	-25°C to +75°C
Relative Humidity	10% to 95% (non cond.)
Dimensions	127 dia x 24 mm
Weight	63g

CSIRO ActivFire Listed with compatible detectors

Part Numbers

517.050.017	5B Base
517.050.603	Deckhead Mount
517.050.604	Euro Mount
517.050.614	Detector Cage

601SB Sounder Base

The Sounder Base provides a sounder function on collective fire detection circuits. It operates independently of the detector circuit and may be used without an associated detector.

The 601SB Sounder Base requires an external 24Vdc supply and provides eight tones (including ISO 8201 T3 evacuation signal) and variable volume settings. It is identified by a green park clip.

Technical Specifications

Operating Voltage	18 to 32Vdc
Alarm State Current	1.2mA @ 68dBA (low vol)
	6.8mA @ 90dBA (max vol)
Operating Temp.	-25°C to +70°C
Relative Humidity	10% to 95% (non cond.)
Dimensions	108 dia x 38 mm
Weight	195g
Wire Size	1.5mm^2 to 2.5mm^2

Not CSIRO ActivFire Listed

Part Number 577.001.035

SU0600 15V Manual Call Point

The SU0600 15V Manual Call Point (MCP) clamps the line voltage to 15 volts when actuated. When used on the same circuit as collective fire detectors, it complies with AS1670.1. This MCP has a plastic coated frangible glass element to ensure safe and reliable operation, producing no dangerous glass shards. The MCP is operated by simply pressing on the centre of the frangible element until it snaps. This releases the MCP's micro switch, which signals an alarm at the FIP and illuminates the integral LED indicator. The unit features IN and OUT terminals, which are requirements of AS1670.1 and is compatible with the MX4428 ADR-M, F3200 (band 3 Instant Alarm) and F08 version 3.

Technical Specifications

Operating Voltage	18 to 28Vdc
Quiescent Current	5µA max. @ 24Vdc
Alarm Current*	30mA max.
Alarm Current	1mA max @ 8Vdc
Alarm Voltage	14 to 16Vdc
Reverse Polarity Current	100mA max.
Reverse Polarity Voltage	0 to 1Vdc
Ambient Temp	-10 to +70°C Indoor only
Relative Humidity	10% to 95% (non cond.)
CSIRO ActivFire Listed	afp-1385

Part Numbers

SU0600	15V MCP (excl. backbox)
SU0602	Backbox

*Max. current must be externally limited

SU0631 Manual Call Point

This collective MCP is surface mounting, with a plastic coated frangible glass element to ensure reliable, safe operation. The Tyco MCPs are available coloured red (for fire applications) or white (for Emergency applications). Note that for red coloured devices, it is necessary to order both the Housing and the Backbox. The call point is operated when the glass element is snapped, releasing the MCP's micro switch, which signals an alarm to the fire panel. The element is snapped by pressing on its centre – a hammer, or other impact device, is not required.

Technical Specifications

Max Current @ 30VDc	Resistive 8A Inductive 3A
Contact Resistance	100mOhm. (max)
Legend	
Red MCP	Fire Pictogram
White MCP	Emergency Alarm
Ambient Temperature	-30 to +70°C
Relative Humidity	95%(non condensing)
CSIRO ActivFire Listed	afp-

Part Numbers

SU0631	Red MCP (excl. backbox)
SU0632	Red Backbox

D51 Duct Sampling Unit

The D51 Duct Housing is used to sample air in air conditioning ducts through a suitable smoke detector. The D51 is fixed on the outside of the duct to be sampled. This allows easy access for detector servicing and replacement of the dust filter. To cater for most duct sizes, 3 metre lengths of sampling tube extension are available. The Tyco E500 Mk2 Series Remote Indicators can be used for remote indication of an alarm. The D51 is able to accept a wide variety of bases and smoke detectors.

Technical Specifications

Duct Pressure*	-1.15 to +3.0 kPa
Sampling Tube Length	160 to 3000mm
Max. Duct Width	1.8m
Remote Indicator	E500 Mk2 Series
Not CSIRO ActivFire Listed	

Part Numbers

D51	Without base fitted
D515B	D51 c/w 5B base
D51L	Baffle box of 10
D51F	Filter box of 10
D51T3	3m Sampling Tube

*AS 1603.13-1998 test

P136 Duct Sampling Unit

The P136 is an integrated housing and collective detector for detecting smoke in air-conditioning ducts. The detection system consists of a photoelectric smoke sensor and a separate PCB that combines non-latching trigger circuitry and field-wiring termination.

Part Numbers

P136	Non-latching DSU
D51L	Baffle box of 10
D51F	Filter box of 10
D51T3	3m Sampling Tube

Technical Specifications

Operating Voltage	15 to 28 VDc
Quiescent Current	500µA max. @ 24VDc
Alarm Current	3mA to 60mA
Alarm Voltage	10.5 to 12.5VDc
Reverse Polarity Current	100mA max
Reverse Polarity Voltage	0 to 1VDc
Ambient Temperature	-5°C to +45°C
Relative Humidity	10% to 95% (non cond.)
Max. Duct Width	1.8m
Sensitivity	5%Obs/m @ 4 to 64Pa differential pressure
Duct Pressure*	-1.15 to +3.0 kPa
Duct air velocity** for alarm at 8%/m Obs	1, 2, 4, 8m/s
Remote Indicator	E500 Mk2 Series
Sampling Tube Length	160 to 3000mm
CSIRO ActivFire Listed	afp-1211

* AS 1603.13-1998 test
**Complies with AS1603.13-1998 at 1 to 8m/s duct air velocity

TYCO614broW 0701

Australia **Phone** 133 166 | **Email** firesafety.au@tycoint.com | **Web Site** www.wormald.com.au
New Zealand **Phone** 0800 4 WORMALD | **Email** wormald.questions.nz@tycoint.com | **Web Site** www.wormald.co.nz

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