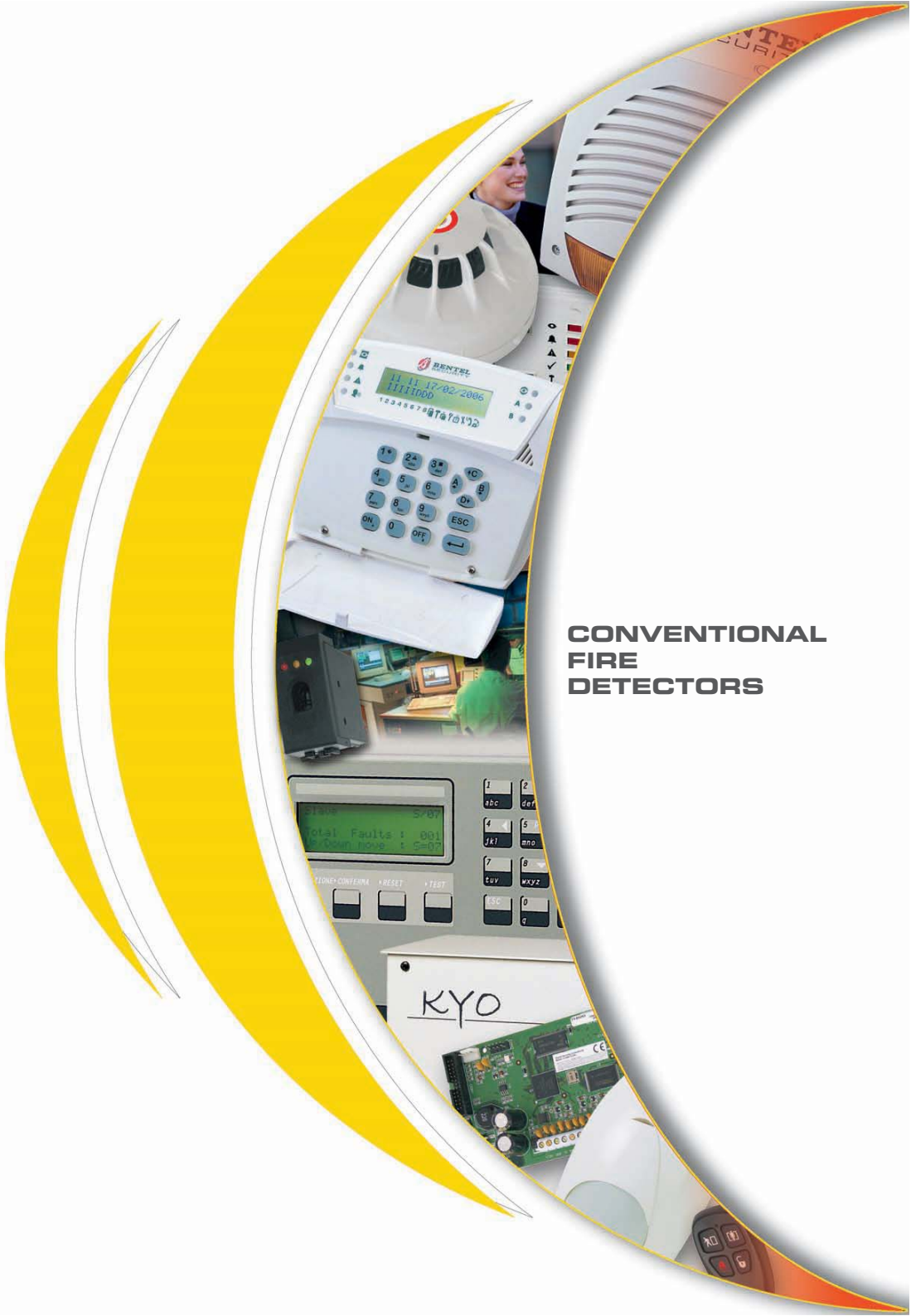
BENTEL SECURITY

tyco Fire & Security



CONVENTIONAL FIRE DETECTORS

SERIES 600

- EN54 approved by LPCB
- Low operational voltage : 10.5V to 33V
- Aesthetically discreet
- Superior performance and reliability
- Designed for rapid installation
- Integrated alarm led
- Remote led connection
- Wiring polarity independent
- Compatible with standard mounting base and with relay base

Conventional detector design evolution has resulted in the creation of a new Series 600 range of unobtrusively styled detectors, incorporating a number of unique design features enabling improved operation, installation and ease of servicing.
Included within the Series 600 range is the new conventional enhanced carbon monoxide fire detector (601CH).

The incorporation of a reliable electrochemical CO detection cell and high specification low thermal mass thermistor for accurate temperature detection has enabled the introduction of an enhanced CO detector suitable for fast, reliable detection on both slow and fast developing fires. The complete range has been designed to meet the requirements of the EN (European Standards) for fire detectors.

All detectors also carry a mandatory CE mark.

SERIES 600 CONVENTIONAL DETECTORS

Series 600 provides the detection part of an automatic fire detection system. The Series 600 conventional or two state detector provides two output states to the controller, either "normal" or a "fire alarm" condition.

ORDER CODES	
601P	Optical smoke detector
601PH	HPO smoke detector
601H-R	Rate-of-Rise heat detector
601H-F	Fixed temperature 60°C Heat detector
601CH	Enhanced carbon monoxide fire
5B	Standard mounting base for serie 600 detectors
MUB-RV	Relay base

conventional fire detectors

SERIES 600

APPLICATION

As each type of fire detector responds to a particular "fire characteristic", the relative speed of response of the detector is therefore dependent upon the type of fire being detected.
The range of Series 600 fire detectors have been designed to provide the earliest possible warning of a fire condition, with a minimum possibility of false/unwanted alarms.

As smoke is normally present at an early stage in most fires, smoke detectors (optical or high performance optical) are therefore considered the most useful. When considering the type of smoke detector for the application, the probable type of fuel for the fire should be considered, in general terms, optycal type smoke detector (601P) are suitable for slow developing fire, whereas where there is an equal possibility of either a "fast" or "slow" fire developing the intelligent high performance optical detector (601PH) provides an excellent detection response.

In situations where the installation of smoke detectors would cause an unacceptable level of false alarms, heat detectors or the enhanced CO fire detectors may be installed.

Because of the wide variety of applications that fire detectors are expected to cover, it should be undertaken to determine the most suitable detector for any application.

SERIES 600 APPLICATION NOTES

ENVIROMENT		CLEAN AND DRY	MODERATLY CLEAN REGULATED TEMPERATURE	DIRTY SMOKY	DUSTY AND /OR HUMID	HOT AND SMOKY	OPEN AREAS
Fire loading	**Probable Risk**	Clean room Data processing suite	Offices, light industrial, hospitals, residential, passenger accomodation	Loading bay/warehouse with diesel fork-lifts etc. Heavy industrial Ferry (car deck)	Livestock pen mill, laundry, chancing room	Kitchen engine room engine test beds	
Electronic equipment - Electrical switchgear - Electric motors - Cable conduit	**Cable pyrolysis (toxic fumes) Electrical arcs (ignition source) Associated electrical dangers**	601P 601H	601P 601HP	601P			
Fabrics, clothes soft furnishings - paper, cardboard plastic foams - Animal bedding, wood shavings	**Smoulderings (difficult to locate – toxic fumes) likelihood of flashover back draught)**	601H 601H 601P	601CH 601P	601CH 601P	601CH	601CH	
Flammable liquids - Paints - Solvents - Flammable gasses - Unstable chemicals	**Flaming fire (rapid build up of dense smoke) - High temperature fumes Associated explosion dangers**	601H 601P	601PH 601HP			601HR	
FoodStuffs General organic waste animal feed Wooden structures solid fuels	**Smoke and Flame Initially fairly slow but high temperature once estabilished**	601H	601H 601P 601CH	601CH 601CH 601H	601H-R 601P 601H-R	601CH 601CH	
Plastic chemicals Machinery building materials Unknown contents	**Type of fire risk may vary as can the type of fire (may require a mix of detection types)**	601H 601CH 601P	601PH 601CH 601PH-R	601P 601CH	601CH 601P	601H-R 601CH	601CH

conventional fire detectors

SERIES 600

601P

601P detectors are capable of detecting the visible smoke produced by materials which smoulder or burn slowly, i.e. soft furnishings, plastic foam etc; or smoke produced by overheated but unburnt PVC.

These detectors are particularly suitable for general applications and areas. Optical only detectors are not suitable for detecting fast burning fires producing little visible smoke or very black smoke.
The novel design of the asymmetrical sampling chamber and signal processing techniques stop unwanted alarms caused by very small insects, i.e. thrips. Smoke entering the sampling chamber scatters the infra-red light pulses onto a photodiode. These pulses are converted to an electrical signal which is compared against a preset alarm level.

ORDER CODES

601P	Optical smoke detector

601PH

601PH detectors react to the complete range of fire products, from slow smoldering fires, producing visible particles to open flaming fires producing large numbers of very hot smaller sized aerosols.

The combination of optical and heat technology allows detection of clear burning fire products which hitherto could only be easily detected by ion-chamber detectors.
For normal ambient conditions the HPO behaves as a normal detector. Only when a rapid rise in temperature is detected does the sensitivity of the detector increase and the presence of smoke will confirm a fire condition which will be trasmitted as an alarm level.
The 601PH design incorporates a unique "mousehole" optical chamber whith an unrivaled signal to noise ratio providing high resilience to dust and dirt which means reduced servicing cost.
In addition a unique chamber cover actually draws slow moving smoke into the chamber to provide a more responsive detector.

ORDER CODES

601PH	HPO smoke detector

601H-R / 601H-F

Heat detectors offer an acceptable, but less sensitive alternative to smoke detectors if environmental conditions rule out their use.

601H-R (rate of rise) and 601H-F (fixed temperature) detectors detect abnormally high rates of rise of temperature and abnormally high (static) temperatures respectively.
For general use and particular where the ambient temperature may be low, a rate of rise heat detector 601H-R is to be preferred. A fixed temperature limit is also incorporated in these detectors. In many environments, e.g. kitchens, canteens and boiler rooms, sudden large changes in temperature are considered normal therefore rate-of-rise detectors are generally not suitable in these cases and a slower response fixed temperature detector 601H-F should be used.

ORDER CODES

601H-R	Rate-of-Rise heat detector
601H-F	Fixed temperature 60°C heat detector

601CH

601CH detectors are generally faster than optical detectors in responding to fires that start by smoldering. 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 to sleeping risk, storage areas and applications where smoke detectors are prone to false alarm. Incorporation of A1R rate of rise heat detector within the 601CH provides extra non-selectable detection modes which allows the detector to operate in a wide variety of applications where combined risk mean that CO detection alone would be insufficient.
The integrated rate-of-rise heat detector acts as a normal heat detector, additionally anhancing the sensitivity of the carbon monoxide detector if a rapid change of temperature is detected by the detectors thermistor.

ORDER CODES

601CH	Enhanced Carbon Monoxide Fire

TECHNICAL INFORMATION

MECHANICAL	
Detector Material	FR110 "Bayblend" fire resistant
Dimensions	See figure 1
Weight	See specification summary
Color	Withe
ELECTRICAL	
Reset Time	2 – 5 seconds
Relative Humidity	0 – 95% non condensing
Wiring Connections	On MUB - Max 2x1,5 mm² each terminal
CONFORMS WITH:	
EN 54-5:2000 + A1:2002	Fire detection and fire alarm systems - Heat detectors - Point detectors
EN 54-7:2000 + A1:2002	Fire detection and fire alarm systems - Smoke detectors - Point detectors using scattered light, transmitted light or ionization

	SPECIFIATION	WEIGHT (Kg)	SUPPLY VOLTAGE (Vdc)	AVERAGE QUIESCENT CURRENT (uA)		ALARM CURRENT (mA)		OPERATING TEMPERATURE (NO CONDENSATION OR ICING)	STORAGE TEMPERATURE (NO CONDENSATION OR ICING)	REMOTE LED CURRENT (MA) @ 24V (1K1 INTERNAL RESISTOR FITTED)	APPROVAL
TYPE	**Description**	10,5V	24V	10,5V	24V	10,5V	24V				
601P	**Optical smoke**	0,093	10,5 - 33	63	67	12	45	-20°C.. +70°C	-25°C.. +80°C	21	LPCB
601PH	**High performance optical smoke**	0,093	10,5 - 33	63	67	12	45	-20°C.. +70°C	-25°C.. +80°C	21	LPCB
601H-R	**Heat rate of rise**	0,08	10,5 - 33	57	65	14	35	-20°C.. +70°C	-25°C.. +80°C	21	LPCB
601H-F	**Heat 60°C fixed temp**	0,08	10,5 - 33	58	61	14	53	-20°C.. +70°C	-25°C.. +80°C	21	LPCB
601CH	**Enhanced CO fire**	0,09	10,5 - 33	60	68	60	53	-10°C.. +55°C	-10°C.. +55°C	21	LPCB
5B	**Universal base**	0,065	-	-	-	-	-			-	LPCB
MUB-RV	**Universal relay base**	0,066	10,5 - 33	-	-	15	12	-10°C.. +55°C	-20°C.. +55°C	-	LPCB