الاتحاد لأنظمة اطفاء الحريق والحماية
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601CH

FIRECLASS

CARBON MONOXIDE FIRE DETECTOR

Ordering code: 516.600.004 Comply with **EN54** standard- **LPCB** approved.

CE

GENERAL FEATURES

The 601CH detector forms part of the series 600 range of plug in detectors for ceiling mounting.
601CH have a fast response in fire detection, are tolerant in positioning and can be mounted in locations where there are likely to be obstacles to free smoke plume movement. These detectors are particulary 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 detectors to operate in a wide variety of applications where combined risk mean that CO detection alone would be insufficient.

The integrated rate of rise detector acts as a normal heat detector, additionally enhancing the sensitivity of the carbon monoxide detector if a rapid change of temperature is detected by the detector thermistor.

OPERATING PRINCIPLE

CO Detection

The 601CH uses an electrochemical cell to detect the build up of carbon monoxide generated by fires. The cell operates by oxidising carbon monoxide on a platinum sensing electrode. On a corresponding counter electrode the other half of the reaction takes place. The sensing cell is represented diagrammally in Fig.1.
When this reaction takes place, the potential across the cell tries to change and this causes a current flow within the circuit around the cell. The current is mirrored into a current to voltage conversion circuit. The resulting output is directly proportional to the carbon monoxide concentration.

The cell itself has a diffusion limiting component to ensure that all carbon monoxide in the area proximate to the sensing electrode is continuosly oxidised. This means that the rate of transport of carbon monoxide to the cell is directly proportional to the external concentration and independent of air-speed.

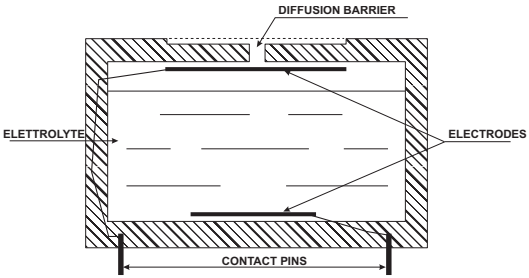

Fig. 1 *Representational Diagram of CO Sensing Cell*

Rate of Rise Thermal detector (according to standards EN54-7 – A1R)

In the 601CH detector two negative tempearture coefficient thermistors are used ,one is exposed to the air whilst, the other is termally lagged inside the detector body. If the temperature of the air around the detector rises quickly a temperature difference will be estabilished between the two thermistors.If a particular rate of change of temperature is sustained for sufficient time the detector will notify the alarm.
If the rate of temperature increase is very slow, then the temperatures of the two thermistors will be more nearly equal.

SPECIFICATIONS			
	Min	Typ	Max
Operating voltage	10.5V	24V	33V
Average quiescient current	79µ A	87µ A	91µ A
Stabilisation time	20 sec		
Alarm Current	see figure 3 (mA)		
Holding Voltage			5V
Holding Current			3mA
Reset Time		2 sec	
Remote Led Drive	1kΩ		
Static Response Temperature	54°C	60°C	65°C
Temperature rate of rise Response Threshold	According to EN54-5 Standards (A1R)		
Size HxD	43x109 mm		
Weight	0,09Kg		
Operating temperature	-10°C .. +55°C		
Storage temperature	-20°C .. +55°C		
MAX operational environmental Relative humidity	90% non-condensing		
MAX storage environmental Relative humidity	>40% .. < 70%		

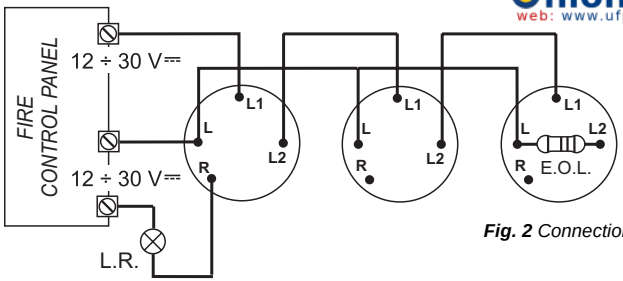

Fig. 2 *Connection diagram.*

Under these conditions the detector will notify the alarm condition when the predetermined fixed temperature is reached.
In the event of the thermistor detecting a fast rate of change of temperature, the sensitivity of the CO detector is enhanched.

WIRING

The detector circuits requires a positive and negative supply and these are wired to terminals L1 and L on the base (Polarity insensitive). Base terminal L2 is connected to base terminal L1 when the detector is fitted to provide continuity monitoring through the detector. Base terminals L2 and L provide outputs to the next detector or EOL device.
In case of alarm the detector communicate the state to control device by sinking from the supply leads an extra current according to the figure **3**, for restoring from an alarm condition the power has to be removed for 2-5 seconds.
A drive is provided for a remote indicator connected between supply + and terminal R, therefore at a detector where remote indicator is connected, the polarity of the supply must be known.

MAINTENANCE

The length of time between service for each detector will depend upon the environment into which they are installed.
It is recommended to Inspect, test and clean the detector at least annually.
The detector must be removed for service replacement at least every 5 years.

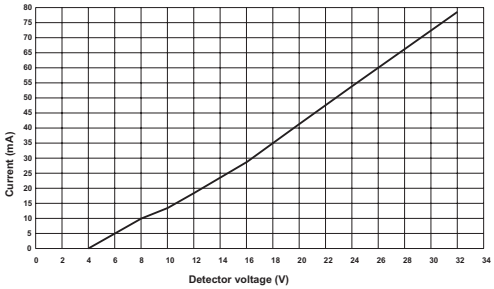

Fig. 3 *Alarm load.*

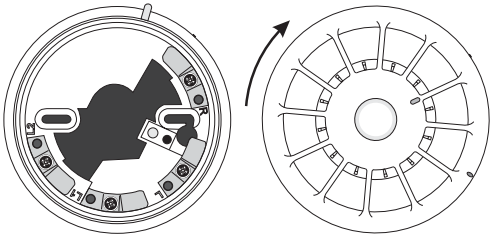

Fig. 4 *Fit the detector unit onto the base (as per figure) then twist clockwise.*

Recycling information

Customers are recommended to dispose of their used equipments (panels, detectors, sirens, and other devices) in an environmentally sound manner. Potential methods include reuse of parts or whole products and recycling of products, components, and/or materials.

Waste Electrical and Electronic Equipment (WEEE) Directive

In the European Union, this label indicates that this product should NOT be disposed of with household waste. It should be deposited at an appropriate facility to enable recovery and recycling.

☞ *The Manufacturer reserves the right to change the technical specifications of this product without prior notice.*