CO FIRE DETECTORS—THE FACTS

WHAT ARE CO FIRE DETECTORS?

CO fire detectors are electronic detectors used to indicate the outbreak of fire by sensing the level of carbon monoxide in the air. Carbon monoxide, usually known by its chemical formula CO, is a poisonous gas produced by combustion.

ARE THEY THE SAME AS CO DETECTORS USED FOR HOME SAFETY?

No. Home CO detectors (CO alarms) are used to protect residents against carbon monoxide produced by incomplete combustion in appliances such as gas fires or boilers. CO fire detectors use the same type of sensor but are more sensitive and respond more quickly.

HOW DO THEY WORK?

CO detectors have an electrochemical cell, which senses carbon monoxide, but not smoke or any other combustion products. The cells do not require much power, so the detectors can be made electrically compatible with ordinary smoke and heat detectors.

ARE THEY EFFECTIVE AS FIRE DETECTORS?

Yes—but only for certain types of fire. Deep-seated, smouldering fires produce carbon monoxide, which can be detected some distance from the seat of the fire. For this type of fire a CO fire detector will probably operate before a smoke detector.

Smoke detectors, however, will almost always give a better response to a fire that has produced a rising plume of smoke. CO fire detectors will give a poor response to flaming fires.

WILL THEY REDUCE THE NUMBER OF FALSE ALARMS?

Because CO fire detectors work on different principles from smoke detectors, their false alarm behaviour will be different. For example, they will not be affected by steam or by most cooking fumes.

However, because of their high sensitivity, they may false alarm from harmless transient levels of CO produced by gas heaters starting up, or from vehicle exhaust fumes entering through a window. These events would not affect an optical smoke detector.

As always, the detector must be selected for the application, to achieve the best balance between fire detection capability and false alarms.

ARE THERE ANY DISADVANTAGES?

There are some known disadvantages of CO fire detectors.

One is that the electrochemical cells at the heart of the detectors have a limited life–typically seven years–and that they are not fail-safe. The detector might be "dead" without this fact being apparent.

For this reason Apollo has incorporated a means of checking the cell of its CO detectors.

Another clear disadvantage is the poor response to many types of fire, especially life-threatening flaming fires.

WITH THE STANDARDS?
There are no British or European standards at present for CO fire detectors.

DOES APOLLO HAVE A CO FIRE DETECTOR?
Yes, as part of the Discovery range.

DO APOLLO'S CO FIRE DETECTORS COMPLY WITH THE STANDARDS?
There are no British or European standards at present for CO fire detectors.

Standards are currently being drafted but it will be some time before they are published. In the meantime, approvals may be granted based on tests agreed between the manufacturer and the approval body.

WHAT ARE THE RULES FOR INSTALLING CO FIRE DETECTORS?
The BFPSA has issued guidelines for the use of CO detectors.

Information is also available from Apollo - please request data sheet PP2089.

WHAT DOES APOLLO RECOMMEND?
Apollo has concluded that a multisensor detector, using smoke and heat sensors, can offer a big reduction in false alarms compared with simple smoke detectors. At the same time, the multisensor can outperform the CO fire detector for most common fire types.