

# Technical Bulletin

## Solex panel Extinguishing output programming

# TB 1014

The Kentec Solex Single Loop Analogue Addressable Extinguishing Control Panel is available with either one or two extinguishing areas. Up to 127 devices (126 for Apollo protocol) may be connected to the detection circuit, any or all of which may contribute to the release of Extinguishant in the protected area(s).

Complex logical combinations are possible through the use of simple programming, using the cause & effect wizard. The application of the true coincidence cause & effect operator may be used to maximise the detection performance in the protected area.

This document gives details and examples of programming the Solex for typical use.

### Internal connection details

The Solex detection control board (K5001 PCB) has 24 open collector outputs, referred to as Local Outputs. These programmable outputs are used to signal to the Extinguishing Control Board (K4.01 PCB), with two outputs allocated for each area. During manufacture, the following connections are made;

Solex Panel Type	Areas	Local Output Connection	K4.01 Connection
K5101 K5010/E	1	1	Area 1 Input 1
		2	Area 1 Input 2
K5102 K5102/E	2	1	Area 1 Input 1
		2	Area 1 Input 2
		3	Area 2 Input 1
		4	Area 2 Input 2

### K4.01 PCB Operation

The inputs of the K4.01 PCB are hardware configured so that operation of either Input 1 OR Input 2 is a first stage alarm and operation of Input 1 AND Input 2 is a second stage alarm - which leads to a preset delayed operation of the Extinguishant output.

### Panel Configuration - Example 1 - True Coincidence

In this example, the protected area has six ceiling mounted smoke detection devices. These devices are addressed using loop addresses 1 through to 6 on the detection circuit. Two cause & effects are used to create 1st and 2nd stage operation. 2nd stage uses "any 2 of 6" devices for activation, by using the coincidence operator in the cause & effect.

Using the Solo configuration software, these devices are added to the detection loop, with their device location details and zone information. In this scenario, it is possible to map all six devices to a single detection zone on the control panel, if required.

**NOTE:** Peripheral detection is permitted, providing the other devices are not selected as inputs to the cause & effects described below. The example in Fig 1 shows three additional peripheral devices.

The output properties for the local outputs 1 and 2 should be set so that the output does not respond to default ring mode, is not evacuable, silenceable or delayed (see Fig 1). These outputs are controlled by cause & effect operation

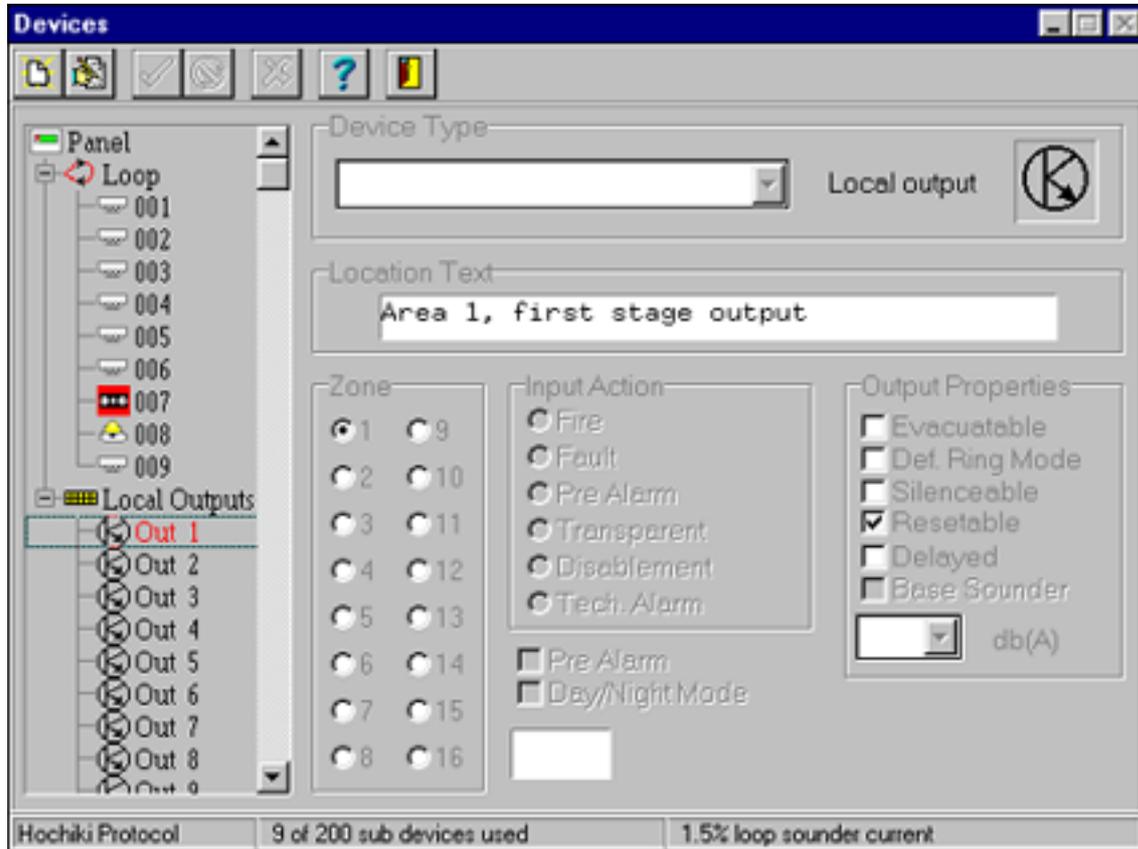


Fig. 1 - Local Output Settings

Next, the cause and effects are written for the two local outputs.

### 1st Stage operation

Using the cause & effect wizard, write an action cause & effect. The "cause" action inputs will be all devices in the protected area (addresses 1 to 6) and the action operator is the OR function. The "effect" output will be Local Output 1 set to continuous operation. This cause & effect will be saved using a name such as "1st Stage operation".

### 2nd Stage operation

Using the cause & effect wizard, write a second action cause & effect. Again, the "cause" action inputs will be all devices in the protected area (addresses 1 to 6) and the action operator is the COINCIDENCE function. The "effect" output will be Local Output 2 set to continuous operation. This cause & effect will be saved using a name such as "2nd Stage operation".

For any single device, the OR operator will make the 1st stage cause and effect true, which will operate the Local output 1. This will then set the K4.01 PCB to 1st stage operation. For any two devices, the 2nd stage cause and effect is true and the Local output 2 is operated. This will set the K4.01 PCB into second stage operation and the discharge imminent timer will start.

### Panel Configuration - Example 2 - Conventional Panel Emulation

The Solex may be used to emulate a conventional extinguishing panel, by mapping the devices in the protected area in to two detection zones. In this case, two "OR" cause & effects are used. The first cause and effect uses all devices in one zone to operate Local Output 1, using a Zone action input. The same is used to operate local output 2, using a second zone as an action input.

The preferred operation of the Solex panel is to use true coincidence to operate the second stage output. Conventional panel emulation requires two separate zones to operate and therefore up to 50% of the detection devices could, in effect, be isolated from contributing to the coincidence operation of the K4.01 PCB.