

## SPC-E PHOTOELECTRIC BEAM DETECTOR MOUNTING GUIDELINES

When installing the SPC-E Beam Detectors, it is important that the following guidelines are adhered to:

- ❑ Do not mount in locations that are exposed to extremely high temperatures or water vapour.
- ❑ Do not mount SPC-E within 300mm of any obstruction.
- ❑ Do not mount where the distance between the Emitter and Receiver is less than 5 metres or greater than 100 metres.
- ❑ Make sure the surface that the SPC-E units are to be mounted on is rigid (ideally part of the building structure) to avoid any possibility of movement.
- ❑ When fixing the SPC-E allow enough space to gain access to the sight hole for aligning purposes (this is located on the top right hand side of the Receiver unit, when viewed from the front).

### List of Parts

The SPC-E Beam Detector kit consists of three separate parts:

- ❑ SPC-E Receiver and Emitter.
- ❑ 2 x four pronged Mounting Plates.
- ❑ Test Filters (25%, 50% and 60%).

### Mounting the SPC-E Beam Detectors

The SPC-E Beam Detectors are designed to mount vertically onto the four pronged mounting brackets supplied. These brackets should be fixed securely to the wall and directly opposite each other, they must also be mounted in the same horizontal plane.

There are several wiring methods available for the SPC-E, all of which are further explained in our Application Note AP097 available from our website. The most common wiring method is shown below. In all methods, cables should be brought through the top of the back box, and terminated into the appropriate connector blocks. The SPC-E Beam Detectors require the use of an auxiliary 24Vd.c. Power Supply Unit (not supplied). The Power Supply and field wiring should be terminated into the front of the SPC-E. Refer to Fig.1 if the panel requires a short-circuit to produce a fire condition. If the panel requires a fire resistor refer to Fig 2.

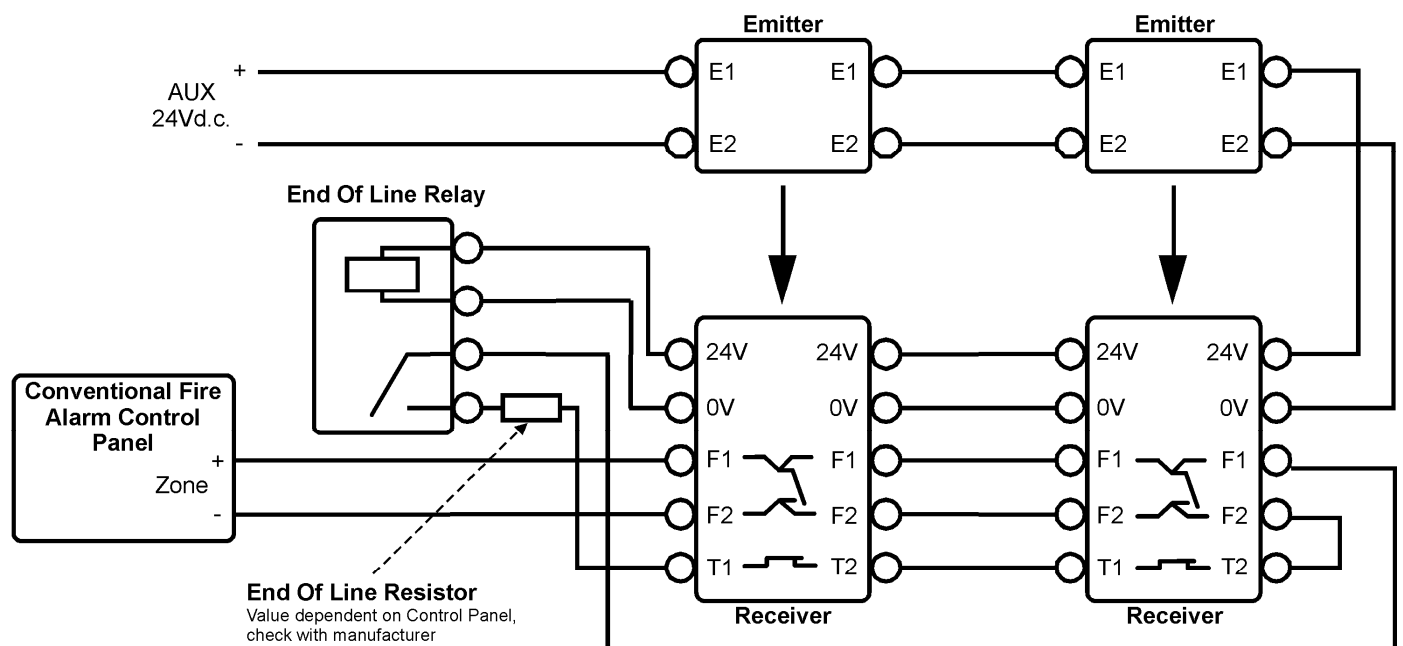


Fig.1

Note: The Emitter can be powered directly from a local 24Vd.c. power supply, the Conventional zone or an ESP loop.

Starting at the emitter end, the cover should be opened (refer to Fig.3.) the field wiring can then be connected either from behind the detector or from below the detector, depending on the suitability of the installation. If the wires are to come in from below, then it will be necessary to break the knock-out slot from the bottom of the detector body (located near to the retaining clip).

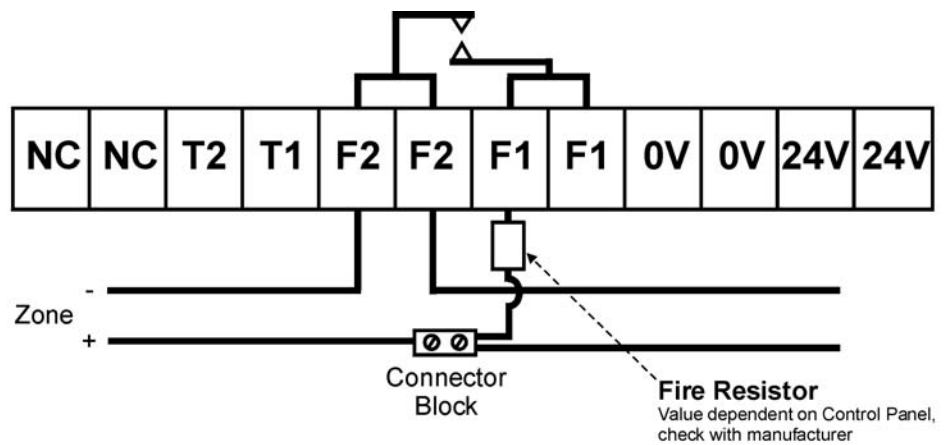


Fig.2

Hook the back of the detector body to the 4 prongs of the mounting plate and slide down firmly, ensuring that the cables are not trapped or damaged by the detector.

The stripped wires should be pushed into the holes of the connector whilst the white push key is pressed with a small screwdriver, this will enable the wire to push completely home, the white push key can then be released, and this should then grip the cable securely.

The Receiver should then be connected next. Firstly open the Receiver cover (refer to Fig.3.) and then connect the field wiring either from behind or below the detector, depending on the suitability of the installation.

The Receiver can then be mounted onto the Interface kit by aligning the four mounting slots on the rear of the Receiver with the four mounting hooks on the mounting bracket and then sliding the Receiver down gently. The cables should be terminated as shown in Fig.1. or Fig.2.

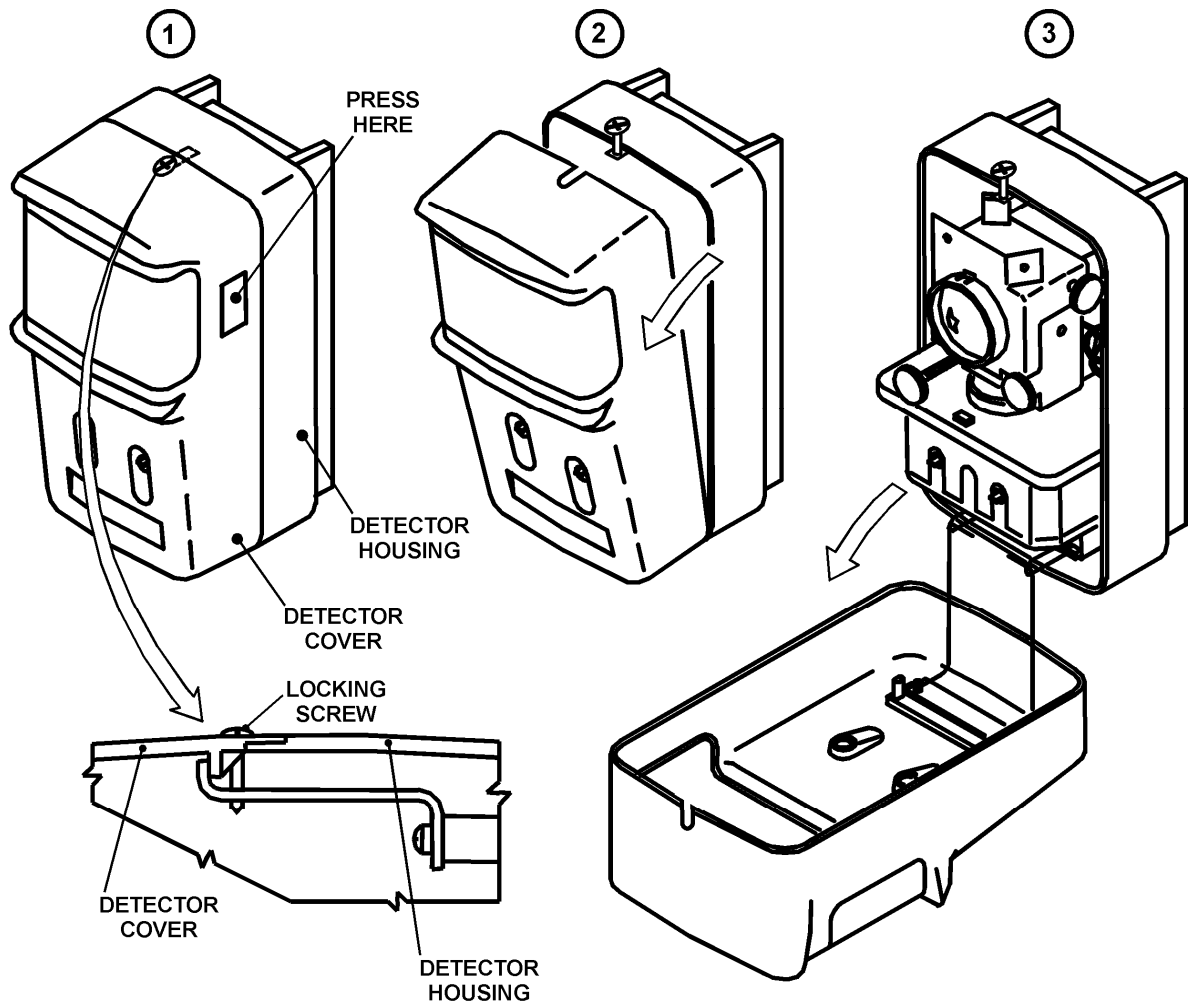


Fig.3

## Setting up the SPC-E

Once power has been applied (24VDC) the Beam Detector can now be aligned. The covers on both the Emitter and Receiver need to be open. The green polling LED on the Receiver should now be flashing once per 3 seconds, but please note the units require between 30 and 60 seconds to fully power-up.

On the top right of the Receiver there is a sight hole, when looking through this the Emitter should be clearly visible in the centre of this hole (please refer to Fig.4.). If it isn't, then using the silver alignment wheels (left wheel horizontal adjustment, right wheel vertical adjustment) the Receiver should be adjusted until the Emitter is clearly visible.

This procedure should then be repeated at the Emitter end. Set the distance switch on the emitter according to the monitoring distance and close the cover of the emitter. Close the cover, then fasten the locking screw, refer to Fig.5.

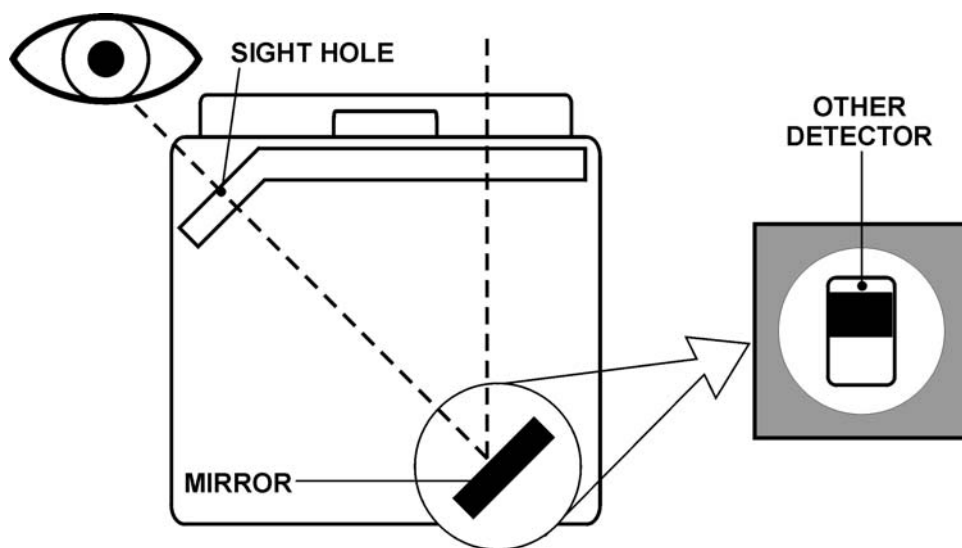


Fig.4

Once this has been achieved the 4-part DIP switch needs to be set. Bits 1 and 2 are set according to which signal strength is required; there are three choices available, 25%, 50% and 60%. Bit 3 can be set to switch the signals to be emitted when the beam is blocked to fault and fire(OFF), or to fault alone(ON). Bit 4 can be set to switch between the automatic(OFF) or manual(ON) recovery from the fault status. **Please note that if the SPC-ET is set to show a non-latching fault on total obscuration, and the SPC-ET beam is blocked for more than 30 minutes then the fault will LATCH. To remove this fault the SPC-ET will need to be powered down, or the receiver cover will need to be opened and then closed to re-synchronise the receiver with the emitter.**

The cover on the Receiver can now be closed (please refer to Fig.5.), this should be done carefully, avoiding the possibility of moving the SPC-E out of alignment.

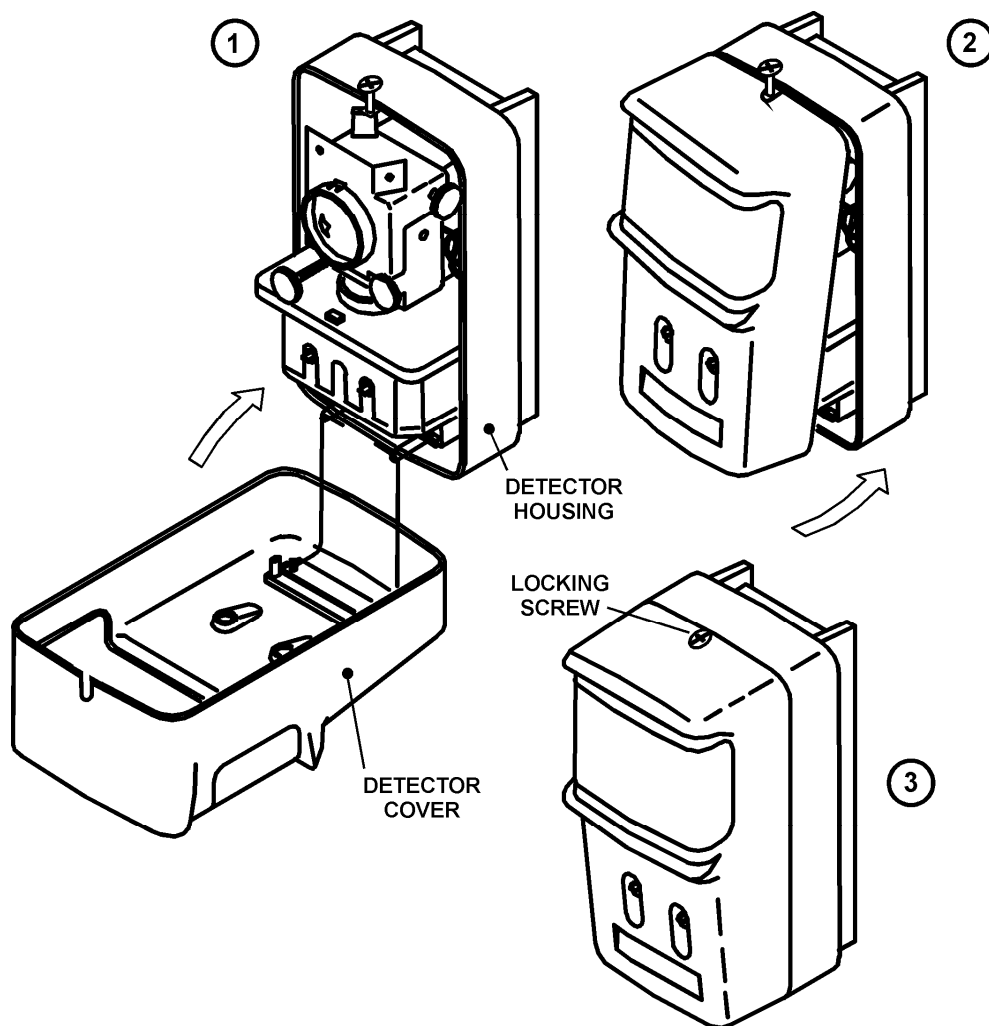


Fig.5

Closing the cover on the receiver synchronizes the receiver with the emitter, then automatically adjusts the amplification factor of the reception circuit, then initiates fire monitoring.

While synchronization is being established with the emitter and while the reception signal level is automatically adjusted, the monitor lamp (green) and fault lamp (yellow) on the receiver blink at intervals of three seconds. If the system shifts successfully to the monitoring state, the monitor lamp (green) alone will blink. It takes about two minutes for fire monitoring to begin after the receiver cover is closed. In the meantime, take care not to block the beam. Once this has completed the cover should be locked in place with the supplied locking screw (please refer to Fig.5).

After the SPC-E has completed its initialisation it should be tested using the filters supplied. The range 1 filter relates to 25%, the range 2 filter relates to 50% and the range 3 filter relates to 60%. Firstly place the no alarm side of the filter in front of the SPC-E for at least one minute this should cause no fire or fault signals, if a fault occurs the amber LED will flash once every 3 seconds. Next place the alarm side of the filter in front of the SPC-E for at least one minute. During this time a fire alarm should occur and the red LED should illuminate continuously, if no alarm occurs, then the SPC-E is not operating as expected.

## Installation Data

Allowable Misalignment Angle	
Emitter	$\pm 0.5^\circ$ (max)
Receiver	$\pm 1.0^\circ$ (max)

## Guide Settings

Range	Sensitivity
5 ~ 10m	25% (1.25 dB)
10 ~ 100m	50% (3.01 dB)

## Approved Settings

The SPC-E is EN54-12:2002 approved at the 25% and 50% sensitivity settings.



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