

## ANALOGUE VALUES & SENSOR RECALIBRATION



This Technology Guide explains the range of Analogue Values produced by the ESP Range of Sensors and which values relate to correct operation, maintenance faults and those outside of the sensor's working limits. It also summarises the way in which ESP sensors automatically recalibrate themselves after contamination.

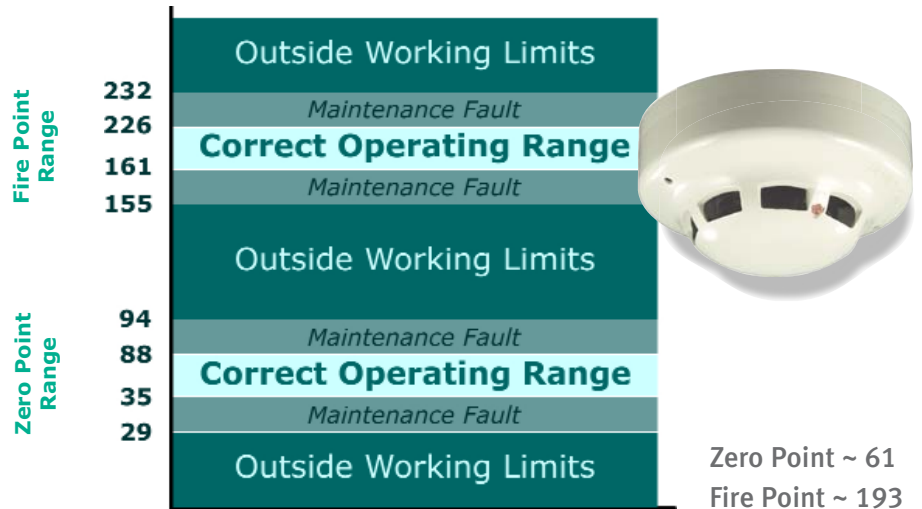


**TCH-B100**  
Hand Held Device  
Programmer

With the Hochiki ESP Range of Sensors the analogue signal produced by the device is proportional to the smoke (or Heat) present in the sensing chamber. This level can be expressed as a numerical analogue value which can be read by the TCH-B100 Address Programmer, the TE-LCT Loop Commissioning Tool or the Control Panel itself.

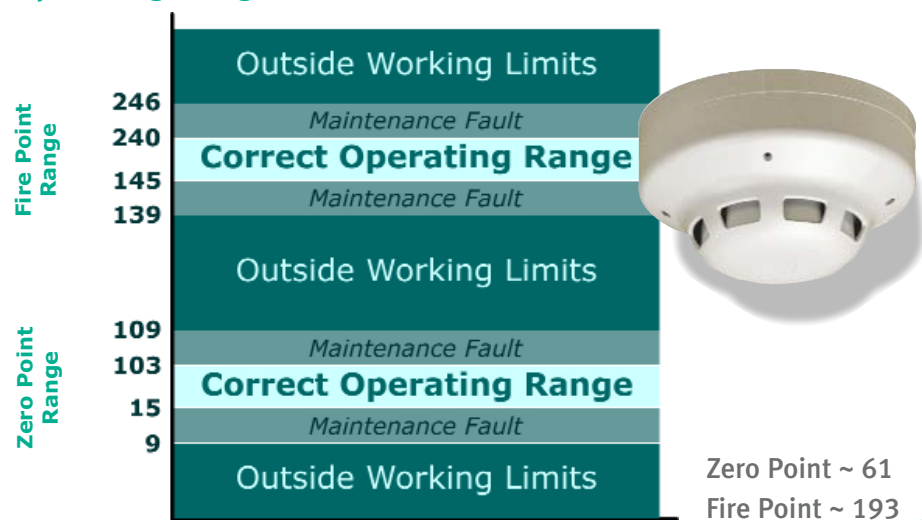
The tables below show the correct operating ranges for each type of sensor, if the sensor values fall outside of these ranges then a maintenance fault will be displayed at the panel and the sensor will require cleaning and recalibration.

### ALG-EN Operating Ranges

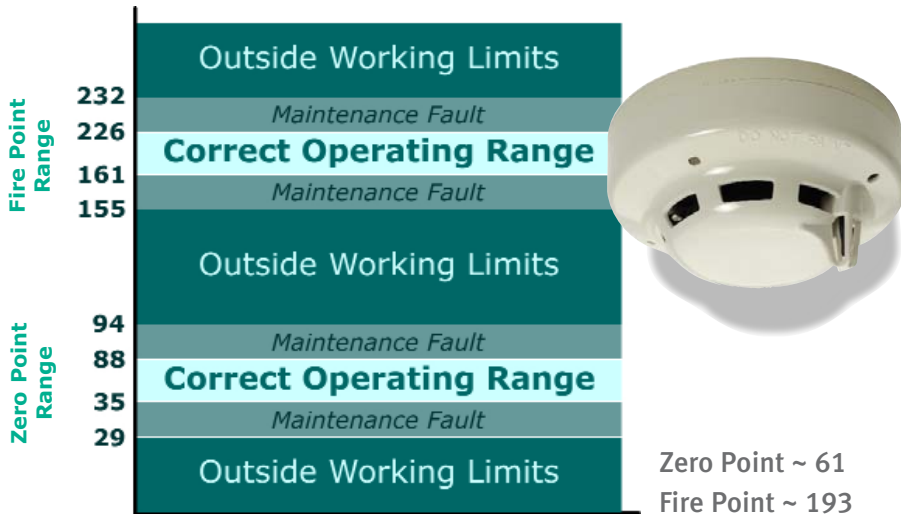


**TE-LCT**  
Loop Commissioning  
Tool

### AIE-E Operating Ranges



## ACA-E Operating Ranges



Note: When reading the analogue value of the ACA-E multi-sensor, the TCH-B100 will only display the value for the smoke chamber.

## ATG-E, ACB-E & ACB-EW Operating Ranges

As the ATG-E, ACB-E and ACB-EW Heat Sensor analogue values are in direct correlation to the temperature within the room in which they are located, there are no graphs displaying values. The values would vary depending on the background temperature within the room itself. However the temperature in °C can be calculated from the value displayed by the TCH-B100 using the simple formula below:



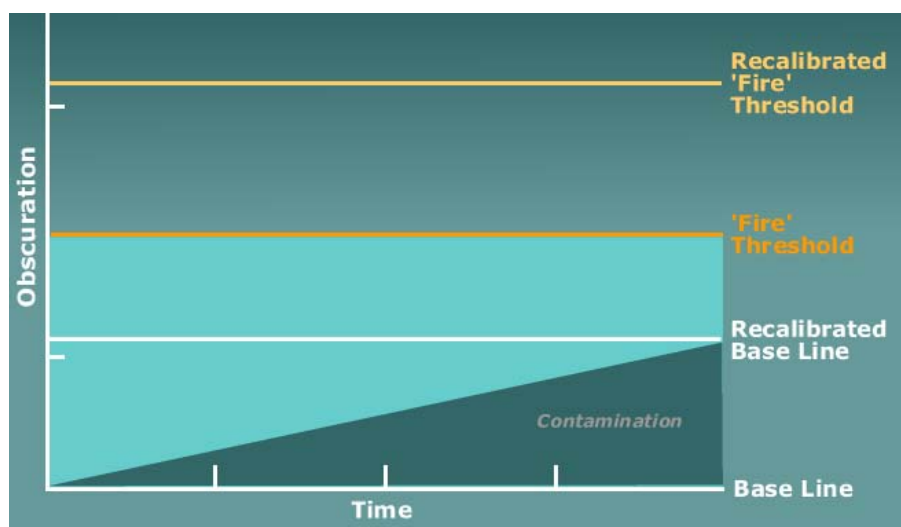
$$\frac{\text{ANALOGUE VALUE ON TCH-B100}}{2} - 20 = \text{TEMPERATURE } ^\circ\text{C}$$

Example:  $\frac{82}{2} - 20 = 21^\circ\text{C}$

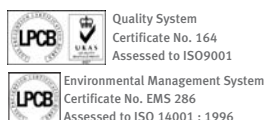
## Sensor Recalibration

Once installed the sensors performance will vary over time due to gradual contamination by the environment. This can lead to either the device becoming over-sensitive (unwanted alarms) or become so contaminated that it fails to respond to smoke altogether. To overcome this contamination the ESP system automatically re-calibrates all smoke sensors every 24 hours maintaining the sensor at its optimum performance.

However the sensor will eventually reach a point where it can no longer re-calibrate satisfactorily (maintenance fault). At this point it can either be serviced or replaced.



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