AlarmBox

AlarmBox
Dust Suppression Controller

AlarmBox is Turnkey®'s new controller for dust suppression equipment and audio-visual warning alarms for high concentrations. It is equally suitable for use in tunnelling operations or controlling dust suppression equipment at open-cast or material handling sites.

The **AlarmBox** connects to any of Turnkey®'s range of dust or gas monitoring instruments to provide an autonomous alarm and suppression system without the need for additional computers. Once connected, it will automatically sense what parameters the particular instrument is measuring.

Configuration of the **AlarmBox** is simply done via a laptop or by using a free mobile phone app **'AlarmBoxApp'**. The Android® mobile phone or laptop connects to the **AlarmBox's** USB connector. With Osiris or Topas dust monitors for example, the app can be used to construct an alarm scheme based on a chosen dust concentration (any combination of TSP, PM10, PM2.5 or PM1), wind speed and wind direction segment. Once set, the scheme is automatically saved in **AlarmBox's** flash memory.

AlarmBox has four physical alarm outputs (12 volt or 110 volt) driven by up to 16 alarm 'scripts'. These scripts are used to assign an instrument reading channel (e.g. PM10) to a particular physical alarm output, set the trigger threshold, set the trigger type (greater than or less than threshold), set whether or not the alarm triggers instantaneously or if the trigger condition has to be sustained for a minimum time, whether or not the alarm clears instantaneously or not, and so on. Multiple alarm 'scripts' can also be logically linked (AND, OR, XORed) to a single physical alarm allowing a single physical alarm to require two or more trigger events.

Hence dust suppression equipment can be turned on automatically only if the dust concentration is above the chosen threshold, AND the wind is blowing in a chosen range of directions, AND the wind speed is greater than a chosen value.

AlarmBox also has four 0 to 4000mV 12-bit voltage outputs with a resolution of 1 mV. These are controlled by voltage output 'scripts' that link one of the 8 instrument reading channels to a physical voltage output. An independent scale factor and offset can be applied to the reading used for each voltage output.