



Quick Start Guide for Harley Scientific Enclosure Monitor HS-EM1

Please note, we make every effort to ensure that the information provided in all our material is accurate and up to date, but, to the extent permitted by law, we do not accept any legal responsibility for any errors, omissions or misleading statements.

1. FOREWORD

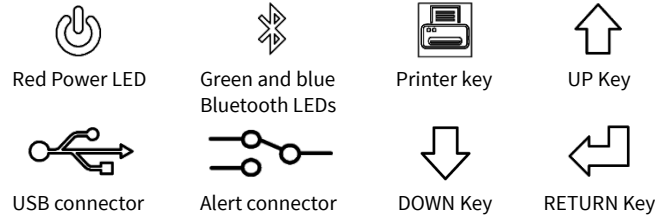
This quick start guide must be read in conjunction with **HS-EM1 – UG – UK – v1** which is available at www.harley-scientific.co.uk. Please note that any non-observance of this user guide may invalidate any warranty associated with the product.

2. STANDARD OPERATING PROCEDURES

The purpose of these standard operating procedures is to provide guidance for the correct and safe method of use of the units.

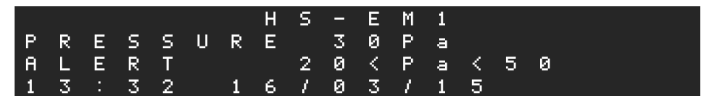
⚠ All personnel engaged in decontamination must follow the health and safety protocols described in the current legislation and guidance.

2.1 Controls and indicators



2.2 Set-up procedures: Choose a suitable location to position the unit, close to an available mains power supply and within 10m (max) of a suitable place to pass tubing into the area to be monitored. Connect the 6mm OD tubing to the negative input push-fit connector on the unit. Ensure that the distal end of the tubing within the enclosure is positioned so that it cannot be obstructed, and preferably pointing downwards to prevent debris from entering it. Ensure that there is no potential for leakage around the point at which the tubing enters the enclosure. Insert the power lead into the unit, and connect the other end of the power lead to a suitable supply (100 – 240V~).

2.2.1 Switching on the unit: Switch the unit ON by depressing the small rocker switch below the power entry connector. The audible alarm will sound for several seconds. It is assumed that the unit has been pre-set using a computer communicating through the USB port with the following parameters: Minimum Pressure: 20 Pa; Maximum Pressure: 50 Pa; Language: ENGLISH; Time and date: AS PER MANUFACTURER'S TIME ZONE. All settings and changes are maintained in the unit's memory until reset, even after power is removed. The OLED display screen will show:



Approximately every ten seconds the display will blink and show:



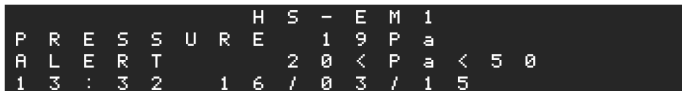
This confirms that the current data has been saved to memory.

2.2.2 Adjusting the alert set-points: The alert set points can be adjusted by a suitably qualified operator. The minimum alert pressure can be changed by using the UP or DOWN buttons. The maximum alert pressure can be changed by holding the RETURN button and pressing the UP or DOWN buttons. In both cases, the UP key will increase the set-point while the DOWN key will decrease the set-point. The set points can be adjusted in the range 0 to 60Pa.

✓ Using the HS-EM1's software, it is possible to lock the keypad to prevent accidental or unauthorised modification of the alert levels

2.2.3 Action in an 'alert' condition: There are two situations in which an 'alert' condition is triggered; the first is when the pressure drops below the minimum pressure set-point, and the second is when the pressure rises above the maximum pressure set-point. In the event that the monitored pressure drops **BELOW** the defined pressure range: the alarm will sound; the relay contacts accessed through the external sounder/remote dialler connector will change state; and the relay contacts accessed through the air management unit connector will change state. In the event that the monitored pressure increases **ABOVE** the defined pressure range: the alarm will sound; the relay contacts accessed through the external sounder/remote dialler connector will change state; but the relay contacts accessed through the air management unit connector will NOT change state.

2.2.4 Responding to an 'alert' condition: When an alert condition occurs as described above, the initial action to be taken is to identify which 'alert' condition has occurred. By reading the display, first identify if the pressure has dropped below the threshold, or raised above the threshold. This can be achieved by seeing whether the pressure (Pa) is lower than the minimum alert pressure or higher than the maximum alert pressure. Below is an example of a low pressure alert condition:



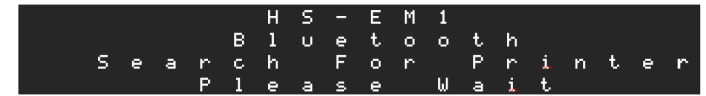
2.2.4.1 Responding to a low pressure alert condition: Once the alarm has sounded, pressing the ACCEPT button will result in: the sounder being silenced; the relay contacts accessed through the external sounder/dialler connector returning to their original state; and the relay contacts accessed through the air management unit connector remaining in their changed state. Any subsequent elevation of the pressure within the enclosure above the minimum alert set point will result in: the sounder continuing to activate until ACCEPT is pressed (unless already pressed); the relay contacts accessed through the external sounder/remote dialler connector continuing in the change state until ACCEPT is pressed (unless already pressed); and the relay contacts accessed through the air management unit connector changing state and reverting to the normal condition.

2.2.4.2 Responding to a high pressure alert condition: Once the alarm has sounded, pressing the ACCEPT button will result in: the sounder being silenced; the relay contacts accessed through the external sounder/dialler

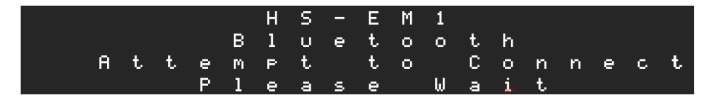
connector returning to the original state; and the relay contacts accessed through the air management unit connector remaining in their original state. Subsequent reduction of the pressure within the enclosure below the maximum alert set point will result in: the sounder continuing to activate until ACCEPT is pressed (unless already pressed); the relay contacts accessed through the external sounder/remote dialler connector continuing in the change state until ACCEPT pressed (unless already pressed); and the relay contacts accessed through the air management unit connector remaining in their original state.

2.2.5 Shutting down: When the monitoring process ceases to be required, simply switch the unit OFF by pressing the small rocker switch below the power entry connector into the 0 position.

2.2.6 Using an optional Bluetooth printer: The unit is designed to connect using the Bluetooth communications protocol. Harley Scientific can provide an optional small hand-held printer to provide a hard copy of the unit's event log. To print, the printer should be turned ON. Press the PRINTER key and the ENTER key simultaneously on the HS-EM1 unit when prompted on the display. The display will then show the message:



When it finds the printer, the display will show:



Within the next five seconds, the printer will respond, and print out the most recent 32 events in the log. During the print operation, the blue LED will flash to indicate a successful connection.

2.2.7 Error messages: The HS-EM1 internal pressure sensors are factory calibrated and in normal operating conditions no adjustments are necessary. However, there is a requirement for the sensors to be checked and re-calibrated on an annual basis. To remind the user of this requirement, a message 'not calibrated' will show on the OLED display twelve months from shipment.



In addition, this screen will display the 'not calibrated' message in the unlikely event that an internal fault has developed within the unit. If this happens, contact Harley Scientific direct or your distributor for further instruction.

