

## MAYDAY LMW2 Loner Worker Safety System

### Specification

The MAYDAY is a lone worker safety system. It is designed to give audible and visual warning to prompt staff to take action by cancelling a warning after a pre-determined period. Failure to take action will result in a secondary alarm operating after a further pre-determined period. This is used to raise an alarm to call for assistance which can be either a simple sounder and visual indicator or from a remote signalling system by others. The two time periods are separately adjustable. 20 - 60 minutes and 2 - 10 minutes respectively. The MAYDAY is mains powered and supplied with a rechargeable 12v 0.8Ahr standby battery. The integral 12v power supply will deliver 150ma for ancillary items. The unit is housed in a plastic enclosure approx. 125w x 175h x 55d (mm).

The MAYDAY has the following integral indications and controls:-

1. An On Off key switch to arm the unit.
2. An OK button to restart the countdown timer and reset the alarm.
3. A green Power On LED.
4. Four red System Active countdown LEDs.
5. An integral piezo sounder. (85db at 10cm)
5. Two adjustable countdown timer controls. These are fitted internally and only used during the installation set-up.

Five inputs are provided for connecting ancillary devices:

IN1 Remote OK buttons to supplement the front panel OK button. (Normally Open -close to acknowledge OK)

IN2 To arm the MAYDAY from a key switch or other device. (Normally Closed - open to start lone working)

IN3 Input from a movement detector such as a PIR (Normally Closed -open on detection - i.e. OK)

IN4 Special remote input. (Apply a -ve for OK)

IN5 Timer set-up. This is a divide by 60 facility (eg 57mins= 57sec).

Volt free contacts are provided by three independent relays:

Relay 1 operates when the key switch is thrown to arm the unit.

Relay 2 operates at the end of the first pre-determined run-down delay T1 (20-60 minutes).

Relay 3 (Failsafe, normally on, off when operated) operates at the end of the second pre-determined countdown delay T2 (2-10 minutes).

Eight outputs are provided for remote indications:

LED1 - 4 follow the LEDs on the front panel.

LED5 Remote buzzer, follows internal buzzer.

LED6 Remote LED, all indications.

LED7 Remote LED to indicate T2 has run out.

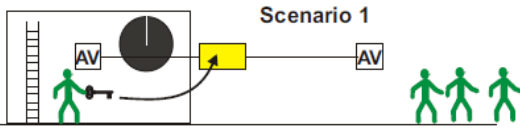
LED8 Remote power LED.

### Timer Set-Up Procedure

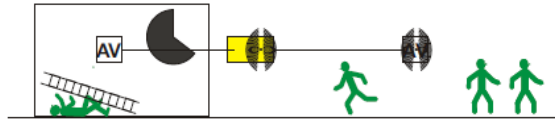
With IN2 closed (or key switch OFF), link out IN5, LED's 2 and 4 only illuminate. Set T1 and T2 pots approx. (Best guess). Press the OK button, the unit bleeps and LEDs 1 and 3 only illuminates for T1 time in seconds. At the end of T1 the unit bleeps and LEDs 1 and 2 only illuminate for T2 time in seconds. At the end of T2 the unit bleeps and reverts to LEDs 2 and 4 only. Adjust the pots accordingly and repeat until time T1 and T2 minutes are correct as indicated in seconds. Remove the link IN5 and the unit is set to operate in minutes.

### Lone Worker Scenarios where MAYDAY could be used

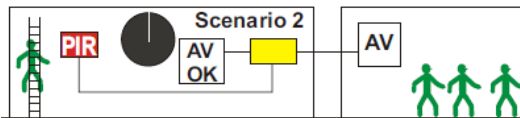
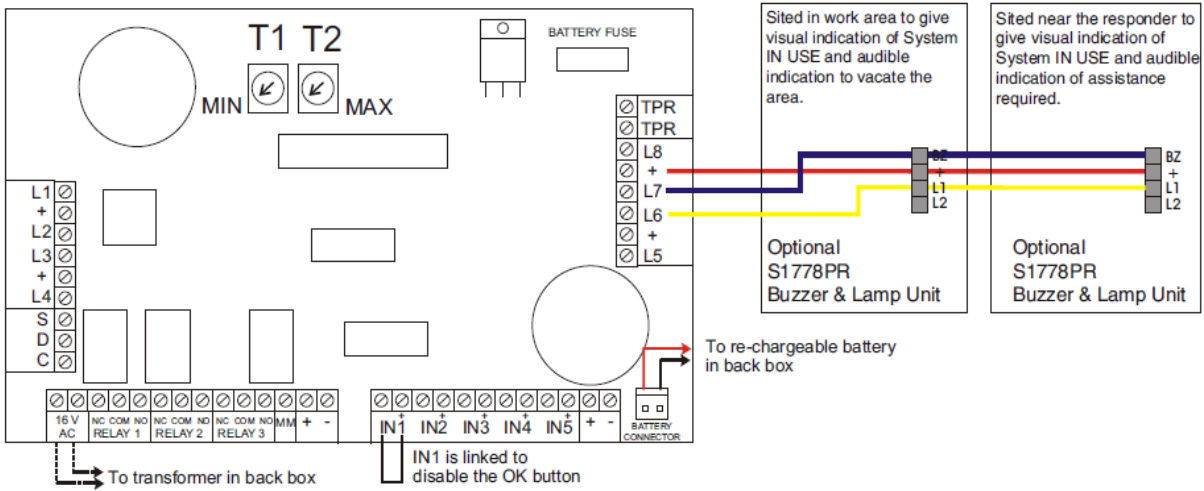
The notes below will assist in deciding how MAYDAY and ancillary equipment should be used and configured for any situation. The first consideration should be; where are the responders located?



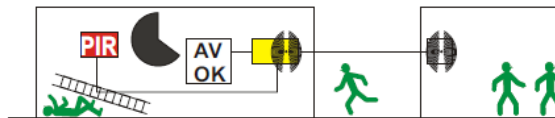
In this scenario a worker is only allowed in an area for a restricted work period, perhaps 30minutes. This could be a freezer where reduced temperature for long periods may be harmful to health or an area with a high concentration of fumes or very high temperatures. The worker would arm the MAYDAY with the key to start the countdown timer before entering the area. During the countdown period pre-alarms are generated to gradually warn that time is running out. At the end of the restricted period a full alarm is given to alert responders outside the area



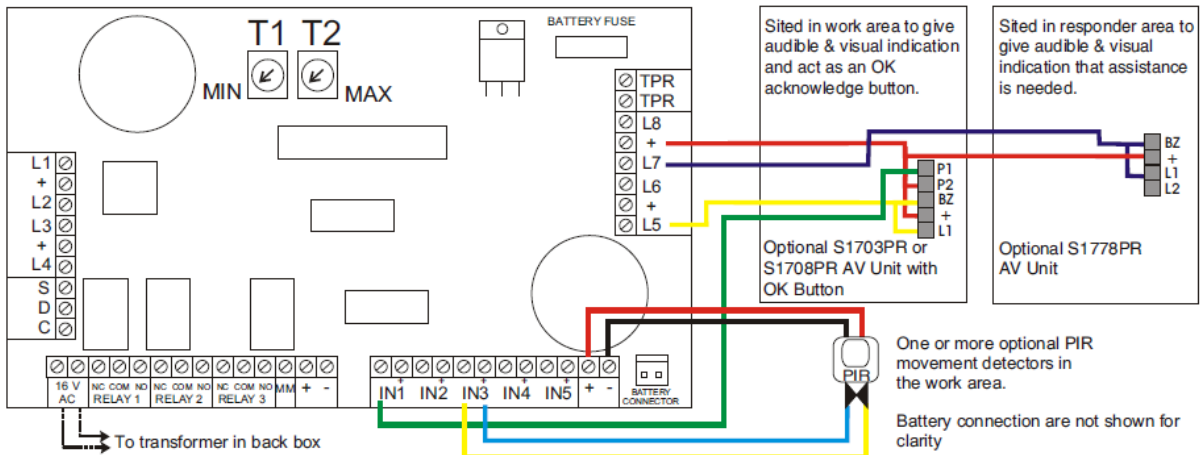
that the worker should have vacated the area and should be rescued. A MAYDAY and possibly an AV indicator within earshot of the responder are all that is needed, no other ancillary devices are needed though repeat AV indicator(s) may be of benefit to the worker. In this scenario the OK button on the front panel of the MAYDAY should be disabled (see below).  
 1 x LMW2  
 1 or more S1778PR AV units located near the responder (Optional)  
 1 or more S1778PR AV units for the worker (Optional)



The working practice in force here allows lone working for long periods of time. It could be a full 8 hour shift but on a remote part of a site. The responder(s) could be some distance away but on the same site. The worker would arm the MAYDAY to start the countdown timer. Pre-alarms are generated in the same way as in 1 above. Periodically the worker presses an OK button to restart the countdown timer. If the worker does not, then eventually the MAYDAY generates a full alarm at a remote audible/visual indicator AV to alert the responder. A MAYDAY and an AV indicator within earshot of the responder are all that



is needed, no other ancillary devices are needed though a repeat AV indicator(s) with OK acknowledge buttons may be of benefit for the worker depending on the size of the working area. An alternative to an OK button would be one or more Passive Infra Red detectors, this could allow for hands free operation.  
 1 x LMW2  
 1 or more S1778PR used as AV units located near the responder  
 1 or more S1703PR or S1708PR used as AV/OK buttons (Optional) and/or PIRs (Optional) for the worker.



## Operation

1. The green mains on LED is illuminated at all times unless the mains has failed.
2. When the key switch is thrown to activate i.e. arm the MAYDAY the four red System Active countdown LEDs adjacent to the OK button illuminate and the countdown timer T1 starts. If the key switch is used to switch off at any time, then no further timing or other action takes place. (This would be the case for scenario 1 above)
3. When armed the Lone Worker is expected to periodically press the OK button on the MAYDAY or an ancillary OK/AV button within the workplace. Alternatively, if a movement detector is used to sense movement within the workplace, then no action other than movement is required by the worker.
4. If the OK button or a remote OK button is pressed, the panel buzzer will bleep to acknowledge this. If a PIR movement detector senses movement with the workplace, then the countdown timer is reset without any bleep. This minimises annoyance when moving around constantly.
5. As the countdown timer runs down the four LEDs gradually extinguish to give a visual indication of time remaining. As each LED extinguishes a bleep is heard.
6. At the end of the first countdown period only one LED remains illuminated, and the bleeps become more frequent during the second countdown period to warn the lone worker that action must be taken to reset the countdown timer by pressing an OK button.
- 8 If no action is taken before the end of this second countdown, then a full alarm condition is raised. This may be an AV device on the same site to call the responders (Scenario 2). Or a signalling system supplied by others.
- 9 Under mains fail condition the green power on LED will extinguish.
- 10 If the mains have failed prior to arming then, on arming, the green power LED will flash for a short period and then extinguish. The MAYDAY will continue to function, but the four red countdown LEDs will flash.
- 11 If the mains fails after arming then the MAYDAY will behave as though the primary countdown timer has run down and only a short period remains before an OK button should be pressed. The MAYDAY assumes that there is a possibility that the cause of the mains failure could be the lone worker.

The above conditions assume that the rechargeable standby battery is healthy.