

FUNCTIONAL OVERVIEW - Trace M Pendant



The Trace-M pendant is a safety device that forms part of a Trace-M network or a Co-Buddy™ vehicle unit. A worker when working away from their vehicle, in a remote location or underground complex, carries the pendant (usually in an overall pocket), which in the event of an emergency alerts the monitoring centre that they need assistance.

In an emergency situation the worker can transmit a 'panic' message by pressing the red button, which provides a confirmation beep.

The pendant transmits its message to the Pendant Controller situated in a vehicle or building. On transmission of any message, a red LED flashes on top of the pendant to indicate the message has been sent.

All messages are automatically sent to the controller 3 times within 30 seconds to ensure the message gets to the controller regardless of how many times the panic button is pushed. As a safe guard the pendant controller discards duplicate messages.

Any message sent from a pendant to a pendant controller (and on to the monitoring software) will include the following information:

- The status, for example 'battery ok', 'panic' or 'man down'
- The pendants unique identifier. This can be preset by the user and include, vehicle Reg, type of vehicle, name of driver etc up to 248 values.
- The identifier of the most recent waypoint (if installed) that the worker has come in contact with (waypoint data is automatically transmitted and stored on the pendant as the worker travels around a complex). This establishes the approximate location of the worker and his pendant particularly if working in a large building complex above or below ground.
- The status of the waypoint, for example 'ok' or 'low battery'.

The pendant senses deviation from the vertical. If the worker falls, the pendant first flashes its yellow light and beeps loudly.

If the worker takes no action, after 10 seconds the pendant sends a message to the pendant controller including a pendant status of 'man down'.



Either returning the pendant to the vertical or pressing the yellow 'CRAWL' button during the 10 second period will cancel the sending of the message.

Pressing the 'CRAWL' button at any time starts a crawl timer for a period of 5 minutes. While the crawl timer is running any tilting of the pendant is ignored. This allows the worker to move freely in the prone or crawling position for this period should the nature of the job require it.

Pressing the 'CRAWL' button at any time results in the timer being set for a further 5 minutes regardless of whether the crawl timer was already running.

While the crawl timer is running the yellow led flashes quickly (or flickers). A long push of the 'CRAWL' button resets the crawl timer.

The pendant also sends a message to the pendant controller in the following cases:

- When the pendant commences charging.
- When the pendant is disconnected from charger power. (The crawl timer is started automatically to prevent a 'man down' activation whilst the unit is clipped on to the worker).
- When the pendant receives a message from a waypoint with a status of 'low battery'.

All switched inputs to the pendant are de-bounced appropriately which means the user is able to run and climb stairs without false triggering the tilt sensing (i.e. man down).