



# Dual Axis Inclinometer - Elite

*Dual axis inclinometer with remote sensor*

A full colour dual-axis inclinometer giving operators of machinery an accurate pitch and roll read out.

Ideally suited for mining and civil engineering equipment.

## Powerful Performance

The Elite Inclinometer measures pitch and roll using a remote incline sensor. The use of a remote sensor allows the display to be positioned at an optional angle for operator visibility whilst allowing for accurate angle measurement.

Warning and alarm levels are user configurable through the password protected menu. When a warning level is exceeded, the critical reading will be highlighted yellow and an optional internal audible alarm will begin to beep. When an alarm level is exceeded, the critical reading will be highlighted red and the alarm will sound continuously. Two positive drive outputs are provided that can be set to activate or deactivate on warning and alarm.



The sensor can be calibrated to remove errors due to small offsets in mounting and can be damped to optimise accuracy in high vibration environments. An optional RF sensor is available on request.

The unit is multi voltage and can work in 12V and 24V vehicles.



Installation is simple with the only external wiring required being power and ground. The external sensor plugs into the loom provided. The sensor wiring can be extended if required.

The inclinometer display is supplied with a RAM mounting system which allows the display to be orientated optimally for the operator. Optional windscreen mounting kits are available on request.

The sensor should be ideally be mounted horizontally with the mounting tabs down and the wires exiting to the rear of the vehicle. For best results, mount the sensor as close to the centre of the vehicle as possible

## Base Features

- Pitch and Roll measurement
- Configurable warning and alarm levels
- Outputs for warning alarm
- Full colour display
- Remote incline sensor
- Sensor damping configurable
- Optional RF sensor
- Internal buzzer
- Password protected menu
- Rugged RAM mounting system,
- Multi Voltage



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The Dual Axis Inclinometer - Elite also features additional graphical displays, and the ability to log pitch, roll, GPS location, speed and time to internal memory.

The Elite can also monitor two independent sensors, for example a truck's prime mover and its trailer.

## Additional Display Modes

In addition to basic degree and percentage display modes, the Elite can also display pitch and roll in terms of vehicle pictograms for an intuitive view of the vehicle's angle.

The Elite also features a target display mode – commonly used in crane or digger applications.



## Event Recording and Dual Independent Sensor Monitoring Capabilities

The Dual Axis Inclinometer - Elite also features advanced event logging capabilities. The Elite can store time, date, GPS location and speed to its internal memory when a Warning or Alarm event occurs.

An additional incline sensor may also be monitored simultaneously – providing independent pitch and roll information for a second vehicle. This may be useful to monitor both a vehicle and its towed trailer or load, for example a prime mover and its trailer.



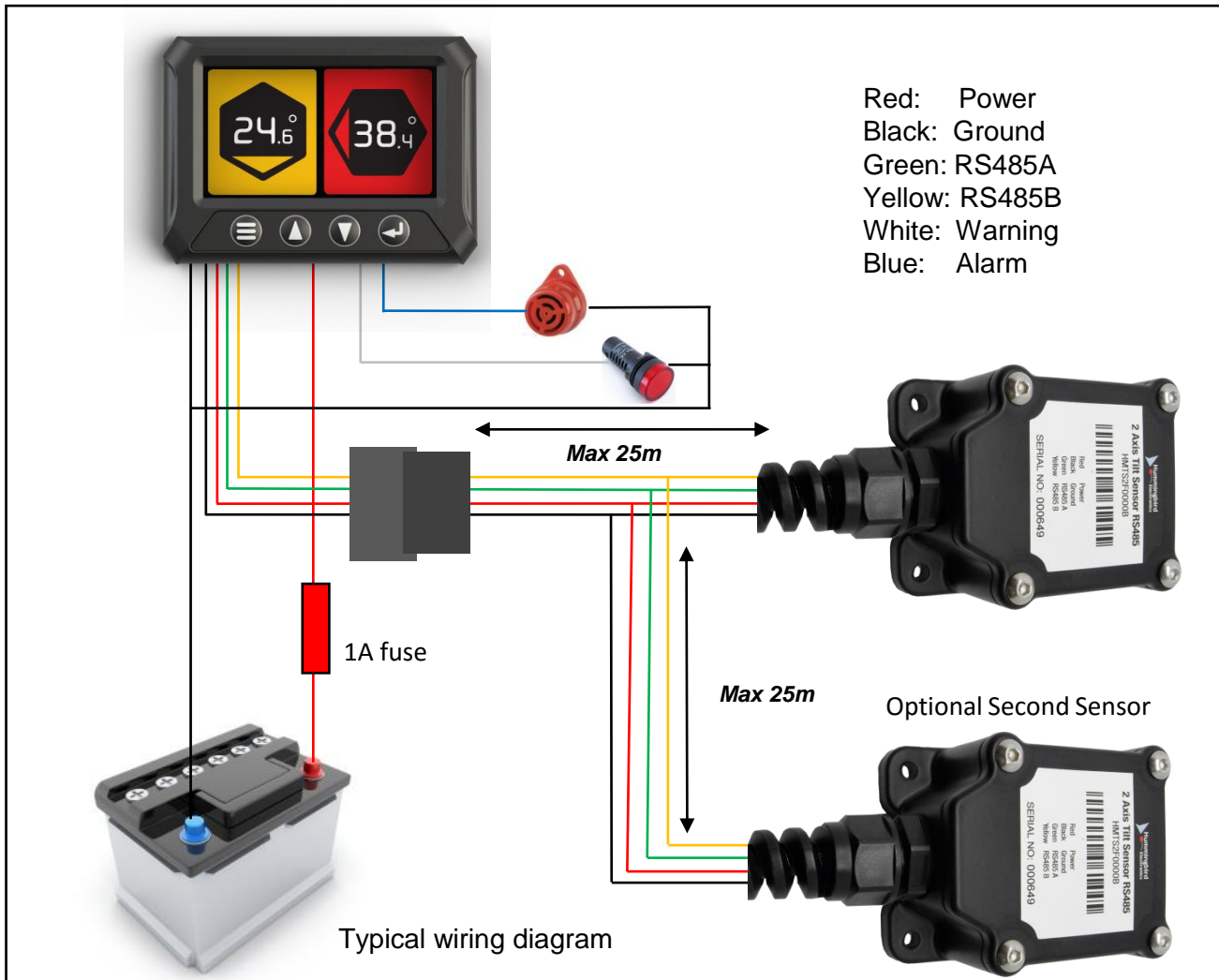
## Advanced Features of the Dual Axis inclinometer - Elite

- Additional display modes:
  - Graphical display – truck, digger, dozer, trailer and other images available.
  - Target display – keep the dot centred; typically used in drilling rigs.
- Event logging to internal memory – including:
  - pitch,
  - roll,
  - GPS location,
  - speed,
  - time
  - and date
- Warning and Alarm events stored for later review
- Ability to monitor two independent incline sensors (second incline sensor sold separately)



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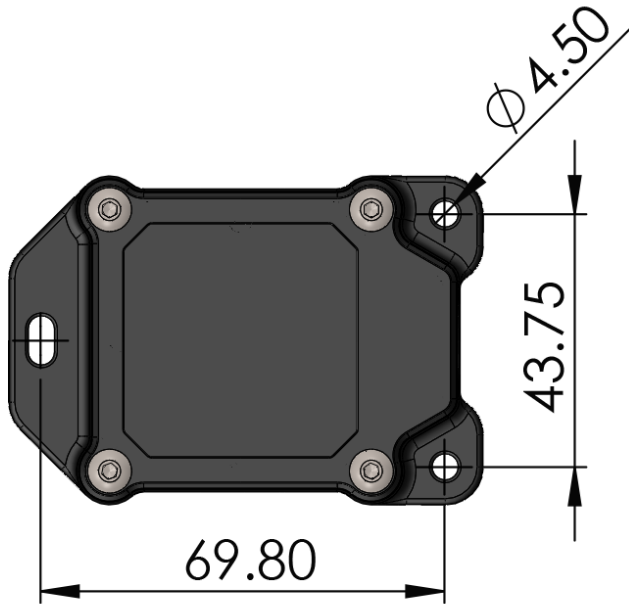
## Technical Specifications and Ordering Information

Part Number (including remote sensor)	HMDS8000
Part Number (including RF sensor)	HMDS8000RF
Part Number (spare remote sensor)	HMTS2M0000B
Part Number (spare RF sensor)	HMTS2M0000BRF
Mounting system	1" RAM mount with diamond base
Input Voltage	9-36V
Power consumption	Less than 2W
Dimensions (Display unit)	130mm (width) x 94mm (height) x 25mm (depth)
Dimensions (Sensor)	82mm (length) x 58mm (width) x 36mm (height)
Sensor cable length	7m
Sensor resolution	1 degree
Operating temperature	-40 to 85 degrees

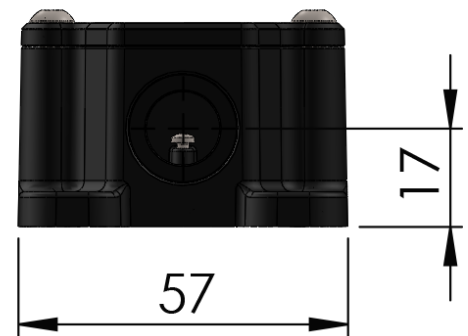
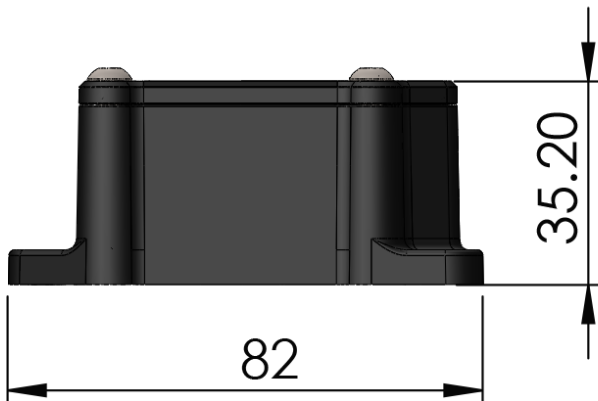


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Mounting holes  
suit M4 screws.



**Sensor dimensions**



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## Navigating the Menus



Press the *Menu* key (far left) to open the menu.

### Using the Keypad

The *Menu* key cancels or goes back one level.

The *Up* key navigates up, or increases a value.

The *Down* key navigates down, or decreases a value.

The *Enter* key (far right) selects an option or confirms a setting.

## Display Settings

### Mode

There are a number of configurable display modes – “Pitch and Roll”, “Pitch Only” / “Roll Only”, plus the additional graphical and target display modes.

With a second incline sensor, the display can be configured to show either or both parameters, for either or both sensors.

### Brightness

Controls the brightness of the display, from 1 (dimpest) to 10 (brightest)

## Alert Settings

The Alert Settings menu allows the configuration of the angles at which the Inclinometer enters a warning or alarm state. The angles are given in the unit selected (degrees or percent-gradient) in the System Settings menu.

Additionally, alerts may be independently configured for when the vehicle is both stationary and while moving. An over-speed alert may also be set.

### Forward Warning

The angle at which the Inclinometer will enter a warning state when pitching forwards.

### Forward Alarm

The angle at which the Inclinometer will enter an alarm state when pitching forwards.

### Backward Warning

The angle at which the Inclinometer will enter a warning state when pitching backwards.

### Backward Alarm

The angle at which the Inclinometer will enter an alarm state when pitch backwards.

### Left Warning

The angle at which the Inclinometer will enter a warning state when rolling left.

### Left Alarm

The angle at which the Inclinometer will enter an alarm state when rolling left.

### Right Warning

The angle at which the Inclinometer will enter a warning state when rolling right.

### Right Alarm

The angle at which the Inclinometer will enter an alarm state when rolling right.



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## Sensor / Second Sensor Settings

### Calibrate

Opens the calibration submenu.

### Reset Calibration

Removes the calibration set with the “Calibrate” option.

### Response Speed

Sets the speed at which the measured angle changes, 1 is the slowest and 10 is the fastest. A slower response speed makes the Inclinometer less prone to sudden changes.

### Sensor / Second Sensor

The Inclinometer can use both wired (HMTS2M0000B or HMTS2M3000B) or wireless (HMTS2M0000BRF or HMTS2M3000BRF). This option must be set to match the type of sensor being used.

### Sensor Address / 2<sup>nd</sup> Address

The address of the sensor being used. It is recommended that users use the “Scan” function, below, rather than changing the address.

### Scan / Scan for 2<sup>nd</sup> Sensor

Scans for either wired or wireless sensors, depending on what is selected with the “Sensor” option, above.

### Another menu item

Some text for menu item.

## System Settings

### Load Default Settings

Resets all settings to the factory defaults.

### Angle In

Selects whether angles should be shown in degrees or percent-gradient.

## Warning Output

Selects whether the Warning Output is enabled for both Pitch and Roll warnings, just pitch, just roll, or is disabled.

### Warning Output Level

Selects whether the Warning Output is normally off and switches to power when activated (active-high), or is normally powered and switches off when activated (active-low).

### Alarm Output

Selects whether the Alarm Output is enabled for both Pitch and Roll alarms, just pitch, just roll, or is disabled.

### Alarm Output Level

Selects whether the Alarm Output is normally off and switches to power when activated (active-high), or is normally powered and switches off when activated (active-low).

### Latch Outputs

Allows the warning and alarms states to automatically be held on for a period of time. This is useful to prevent the buzzer and the outputs from switching off and on repeatedly when near an alert level.

### Mute Time

Sets the time that the enter key will mute the buzzer and disable the outputs.

### Buzzer

Enables or disables the internal buzzer.

### Password

Enables or disables the password.

### Set Password

Sets the password required to enter the menu.

## Calibration Submenu

Shows the current calibration. Pressing enter will set the current position of the sensor to zero pitch and roll. The menu key returns the user to the Sensor Settings menu.