

Black Box recorders – Instructions

Issue: 1.01

Introduction

The units record vibration (3-axis V, L+T), Humidity and temperature.
Data is recorded at set intervals and upon pre-set delta change limits being exceeded.

Operation

The units are self contained and start to monitor as soon as the battery is connected.

The normal procedure to setup and start to monitor and then to check the recorded data is detailed below.

- 1 Fit a battery and connect the unit to the 'TTL TO RS232 CONVERTER' with the ribbon cable to the connector marked TTL IN. Connect the 'RS232 OUT' to COM1 on a PC using the grey cable. Switch the Converter to 'ON' (The green LED will illuminate to show the internal battery is OK).
- 2 On the PC run the Programme supplied and click on Connect to module. The message box should show the response 'Hello this is Magus'
- 3 Click the send Date/Time button to set the real time clock in the unit to the time on the PC.
- 4 Click the Check setup button to check the clock is correct. The numbers are Seconds, Minutes, Hour, Day, Date, Month, Year. (Day 1 is Monday).
- 5 Exit the PC prog and disconnect the unit form the Converter box.
- 6 Remove the Battery and after 10 seconds reconnect Checking the LEDS flash for a second or so to show the battery is OK.
- 7 Secure the unit to the equipment to be monitored
- 8 After the monitoring period, Connect to the converter and PC as above.
- 9 Click the button 'Connect to module'. The Message box should show 'Hello this is Magus '
- 10 Click on the 'Get data' button and the recorded events will be shown by the date and time recorded
- 11 Click on any of the events to show the recorded values.
- 12 The list can be scanned by using the up/down arrow keys to select the events.
- 13 When the data has been viewed click the button 'Clear data' to reset the data pointer in the module.
- 14 If required the 'Un-delete data' button resets the pointer to show the first few events.

Data recording Pre-set values.

The unit will record all data (Vibration - V,L,T,R.H and temperature) every hour. Also any vibration greater than 5G (+ or -) will produce an event.

In addition, the data is checked every 10 minutes and a event is recorded if:

- 1 The temperature has changed since the last saved event by more than 5C.
- 2 The Relative humidity (R.H.) Has changed by more than 5 since last recorded

Specifications

Temperature range: -20 to 100C +/- 1C

Humidity: 0 to 100R.H. +/-5%

Shock: 0.5 to 25G +/-20%.
Resolution above 3G 0.2G @3.6V Battery
Frequency response: >1 KHZ

Battery life: 1 Battery fitted:3.5Months
2 Batteries fitted:7 Months

Battery SAFT – LS14500C 3.6V AA Cell

Leds (green and amber) flash at switch on if battery ok

All measured parameters recorded at switch on and every hour.

Any Vibration >5G will produce a recorded event

All measured parameters checked ever 10 minutes.

If the temperature or Humidity changes by more than 5 from the last recorded value then a new event will be recorded at the 10 minute checks

All data recorded in FLASH memory for protection with a flat battery.

Capacity as required – fitted with 32K devices as standard.

Internal battery cut-off circuit to prevent running out of control on a flat battery.

Output via 9-Way D-Type connector at TTL levels.

Accessories available:

TTL to RS232 converter unit with ribbon cable to module.

RS232 cable from converter to PC

www.magusmonitoring.co.uk