



**STACK  
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**HUM / Accident Data Recorders**

[www.stackltd.com](http://www.stackltd.com)  
[www.stackinc.com](http://www.stackinc.com)

## HUM / Accident Data Recorders



### Powerful, scalable video & data Accident & HUM Recorder...

Our range of Multi-Function Event Recorders provide a powerful, scalable harsh environment data acquisition system. With up to 128 inputs and interfaces for ECU's, GPS, etc., these systems are fully configurable, for applications such as "black-box" accident recorders, and Health and Usage Monitoring (HUM) for military and civilian ground and air vehicles.

Stack's sophisticated but easy-to-use DataPro data analysis software allows data to be viewed, analysed and compared – important in determining trends in operations and component usage that can detect and prevent catastrophic mechanical failures.

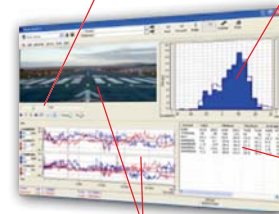
Stack's Digital Video Logger (DVL) provides synchronized video recording for event analysis from multiple cameras together with capability for GPS, G Sensor and vehicle data overlay.

Designed for the harshest environments, Stack's Multi-Function Event Recorders with DVL provide the most flexible and customisable HUM and Data Accident Recorder solution.

### Fast, easy to use Analysis Software.

Replay incident in real-time or frame by frame

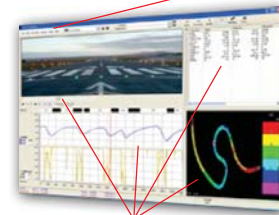
Histograms



Channel Values

Synchronized Video, Data & Audio

Powerful Data Export

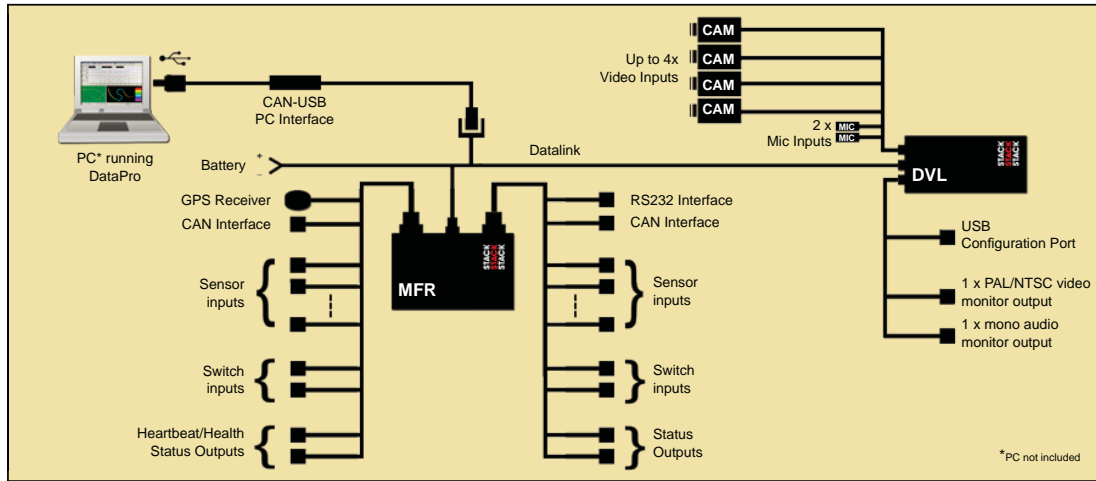


Simple data navigation by map, video or data

### KEY FEATURES

- Up to 128 data channels.
- Up to 4 video & 2 audio inputs with full Picture-in-Picture configurability.
- Built-in CAN-ECU links & GPS Interface options.
- Pre- and post-trigger record periods from 10 seconds up to 40 hours.
- Continuous Loop Recording Modes.
- Individual sampling rates up to 500Hz / channel.
- Built-in 3-axis g sensor in both MFR & DVL.
- Data Overlay on video image.
- Highest quality video recording available - MPEG2 @ up to 50Mbps.
- Fast and powerful, easy to use Analysis Software.
- Designed for the harshest environments:
  - Fully sealed to IP67.
  - Extended operating temperature range: -40°C to +80°C (-40°F to +176°F).
  - 20g continuous / 50g shock vibration rating.

# SYSTEM SCHEMATIC



## SPECIFICATIONS

### MFR

Number of recording channels	Up to 128
Maximum Sample Rate	500 Hz
Individual sample rate on each channel	✓
Total Recorder samples per sec.	13000
Recording memory size	up to 2GB
Power supply	9 to 18 Volts DC (20 to 36 Volts DC option)
Working temperature	-20 to +70 °C (-4 to 160 °F) (Other options available)
Size	127 mm x 107 mm x 35 mm (5" x 4.22" x 1.38")
Weight	0.4 kg (0.9 LB)
Vibration	30 g, 50 to 2000 Hz, 1 Octave / min, 36 hrs x 3 axis
Humidity	0 to 100% condensing (Fully sealed)
Immersion	IP67
Internal accelerometer	3 Axis +/- 6 g (Lateral/Longitudinal/Vertical)
CAN-bus interface (option)	✓
GPS receiver interface (option)	1-20 Hz (NMEA 0183 interface)
RS232 interface	Customisable for 3rd Party Systems

#### Analogue sensor inputs

Input description	Value
Input impedance	>1.0 MOhms (to +6.25v)
Input voltage measurement range	0 to +5.0 Volts min/max
Input over-voltage range	-2 to +18 Volts min/max
Input resolution	10bit (-5mV)

#### Pulse sensor inputs

Input description	Value
Input pull-up	18 mA (to +6.25v)
Input edge threshold	5.5 ±0.5
Input over-voltage range	-2 to +18
Max input frequency	2.5 KHz
High period pulse width	0.1 mS Min
Low period pulse width	0.1 mS Min

#### Pulse sensor outputs (5SV)

Sensor 5v supply voltage	5.00 ±0.05 Volts
Sensor 5v supply current	100 mA max

### DVL

Number of camera inputs	4 (single input models available)
Video standards	PAL/NTSC
Composite video input	Composite 1V pk-pk
Video frame rate	25 fps (PAL)/30 fps (NTSC)
Compression format	MPEG-2 MP@ML compression Program Stream; Windows Media Player & DVD compatible
Resolutions supported	PAL: 720x576, 720x400; 480x576; 352x576, 352x288 NTSC: 720x480; 720x400; 480x480; 352x480; 352x24
Quality - bitrate	1 to 20 Mbps ( 50 Mbps + VBR models available)
CF record time	Options to 140 Mins/GB available
Disk interface	Compact Flash; FAT 32
Maximum card size	32GB
Audio	2 channel, selectable AGC, balanced mono input models available
Power supply	9 to 20V DC (option for 20V to 50V DC)
Reserve/over-voltage protection	-60 to +60V DC models available
Brownout protection	Records up to 1 sec video after power loss (selected models)
Size	151 mm x 76 mm x 21 mm (5.9" x 3" x 0.8")
Operating temperature range	up to -40 to +80°C (-40 to 176°F) depending on model
Weight	300g (10.6 oz)
Vibration	20 g, 50 to 2000 Hz, 1 Octave / min, 12 hrs x 3 axis (quoted for selected models)
Humidity	0 to 100% RH condensing models available
Immersion	IP67 models available
Internal accelerometer	3 Axis +/- 6g (Lateral/Longitudinal/Vertical)
Continuous loop recording	Yes
Event recording mode	Yes
Pre-trigger period	0 - 60 Mins
Post-trigger period	0 - 24 Hours
Event counter data overlay (option)	Yes
Real-time date & time overlay	1 Sec resolution (0.001 Sec option)
GPS data overlay (option)	1-20 Hz
3 axis G-sensor data overlay	12.5 Hz
GPS receiver interface (option)	1-20 Hz (NMEA 0183 interface)
File download	Via USB / remove CF card
CAN-bus interface option	Configurable for Stack MFR or 3rd party systems



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