

Features

- Stand-alone data recorder for mobile applications
- 512 MBytes of memory, with data retention in case of power loss
- 8 external inputs: analog, frequency, counters or state
- 5 internal sensors:
 - 3 internal accelerometers: $\pm 2G$ or $\pm 6G$.
 - Internal Temperature.
 - Supply Voltage
- 3 Vehicle data bus ports
 - CAN1: CAN 2.0a/b (HS-CAN)
 - CAN2: CAN 2.0a/b (HS-CAN – see other options below)
 - SAE-J1708/SAE-J1587
- 3 RS-232 serial ports (COM)
- Compatibility with:
 - COMGPS - GPS receiver with antenna
 - COMEVD - CDMA cellular network transceiver
 - COMETH - Ethernet communication module
 - COMBLU - Bluetooth radio transceiver
 - COMMH1 - 900 MHz long range radio transceiver.
 - COMGSM - GPRS (GSM) cellular network transceiver.
 - COMWFI - Wi-Fi communication module
 - VDPMOD-OBD - Connect to all OBD compatible vehicle data bus (J1850PWM, J1850VPW, ISO9141-2, ISO 14230 KWP, ISO15765 - CAN)
- Recording triggered by input - automatic start/stop
- Sampling rate up to 4 kHz for all external channels
- 1 USB 2.0 full-speed port.
- Low power consumption and auto shutdown
- Small size, light weight, rugged anodized aluminum enclosure, resistant to petroleum products
- Built-in overvoltage protection circuit
- Vibration Lock™ connector, no tools required
- MIL-STD-810F, CE and IP67

Options

OPTVD2	Vehicle Data bus option 2 <ul style="list-style-type: none"> – CAN1: CAN 2.0a/b (HS-CAN) – CAN2: CAN 2.0a/b (FT-CAN) – SAE-J1708/SAE-J1587
OPTVD3	Vehicle Data bus option 3 <ul style="list-style-type: none"> – CAN1: CAN 2.0a/b (HS-CAN) – CAN2: CAN 2.0a/b (SW-CAN) – SAE-J1708/SAE-J1587


Installation
Hardware setup:

- Attach the Recorder to the vehicle chassis using Dual-Lock™ Velcro
- Position the Recorder such that the three LEDs indicating the system status are visible
- Align the Recorder's X, Y and Z axis along the lateral, longitudinal and vertical orientation of the vehicle
- Use the main recorder harness (HRNMN2-318-SLD) to connect the Recorder to the power supply and peripherals

Software Configuration:

Use Analyzer V9 software to configure or retrieve data from the Recorder.

Calibration

The calibration data for the three internal accelerometers is supplied with the Recorder

Specifications

Description	Symbol	Min	Typ	Max	Unit
Power supply					
Input voltage	V_{in}	10.0		30.0	V
Supply current @ 12.0V ¹	I_{in-12}		75		mA
Supply current @ 24.0V ¹	I_{in-24}		53		mA
Internal accelerometer					
±2G resolution X, Y and Z	ACCRES _{XYZ2G}		0.00195		g/bit
±6G resolution X, Y and Z	ACCRES _{XYZ26}		0.00586		g/bit
0G level	ACCZGL _{XYZ}		1.25		V
non-linearity X, Y, Z	ACCNL _{XYZ}		±2		%FS
bandwidth X, Y and Z	ACCBW _{XYZ}		10		Hz
Internal temperature sensor					
Accuracy over measuring range	ACC _{TMP}		±2		C
Resolution	RES _{TMP}		0.12207		C/bit
A group (A1-A8)					
Supply voltage ²	V_{ExtIn}	$V_{in}-0.6$		V_{in}	V
Total supply current per group ³	I_{ExtIn}			170	mA
Sampling rate per input	SAMP _{ExtIn}	1/600		4000	Samp/sec
<u>Frequency, state, counter mode:</u>					
Digital input low voltage ⁴	DTC _{Lo}	-35		2.4	V
Digital high voltage ⁵	DTC _{Hi}	2.6		35	V
Internal pull-up resistor	R_{pup}		3		MΩ
Input capacitance	C_{DTC}		1.7		pF
Input frequency	F _{DTC}	0.7		1000	Hz
Counter resolution	RES _{DTC}		5.3333		us
<u>Analog mode:</u>					
Analog input voltage ⁶	SIG _{SENA}	0		5.0	V
Analog input voltage tolerance ⁷	VTOL _{SENA}	-35		35	V
Analog input accuracy	ACU _{SENA}		±0.025		%FS
Input capacitance	C_{SENA}		1.7		pF
A/D converter resolution	ADR _{SENA}		1.221		mV/bit
A/D conversion time per chan.	ADT _{SENA}	7		14	us
A/D conv. time all SENA chan.	ADTA _{SENA}	14		28	us
A/D conv. frequency	ADTF _{SENA}	8.928		17.85	kHZ
COM group					
Supply voltage	V_{COM}	$V_{in}-0.6$		V_{in}	V
Total supply current	I_{COM}			500	mA
Regulated supply voltage	$V_{COM-REG}$	4.75		5.25	V
Regulated supply current	$I_{COM-REG}$			500	mA
Control output voltage	V_{CTL}	0		5	V
CAN HSCAN Interface (TI SN65HVD1050D)					
Bit Rate	BR _{HSCAN}	10		1000	KBbit/sec
DC voltage at pin CANH/CANL	V_{HSCANH}/V_{HSCANL}	-27		40	V
Transient voltage at pin CANH/CANL	$V_{tHSCANH}/V_{tHSCANL}$	-200		200	V
CAN FTCAN Interface (Motorola MC33388)					
Bit rate	BR _{FTCAN}	10		125	KBit/sec
DC voltage at pin CANH/CANL	V_{FTCANH}/V_{FTCANL}	-20		27	V
Transient voltage at pin CANH/CANL	$V_{tFTCANH}/V_{tFTCANL}$	-40		40	V

¹ Recorder with no sensor attached

² Voltage supplied by the Recorder to the given sensor or detector group.

³ Maximum current before the auto-reset fuse interrupts supply to the given external sensor or external detector group.

⁴ Single-ended voltage for each detector input.

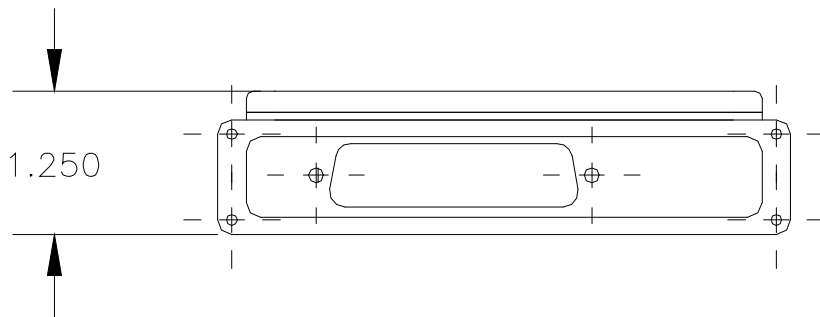
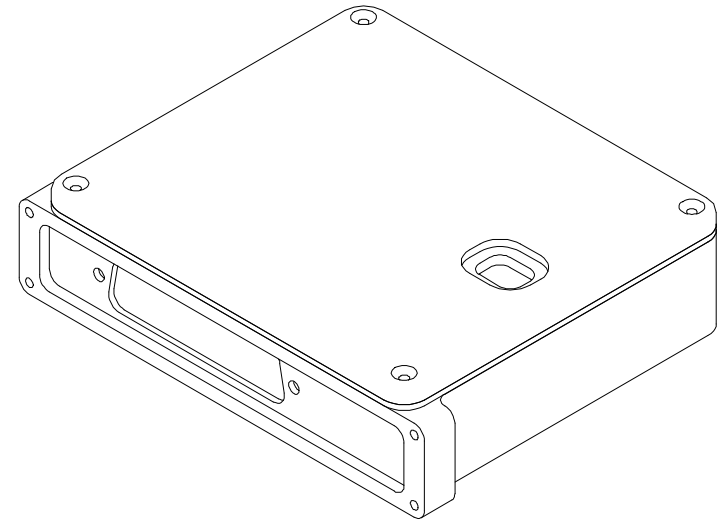
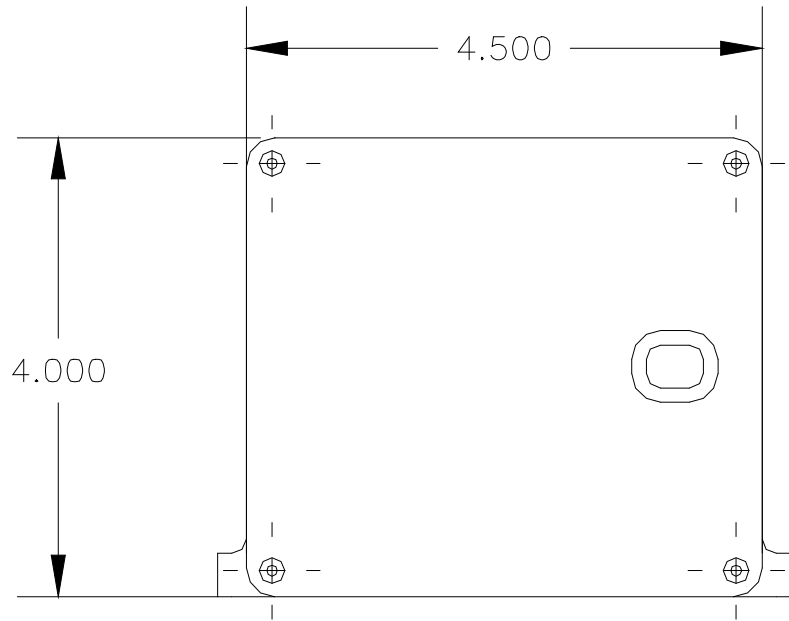
⁵ Single-ended voltage for each detector input.

⁶ Single-ended voltage for each sensor input

⁷ Single-ended voltage tolerance without damaging the unit

Data Recorder Unit, model 908-SLD - DRU908-SLD

CAN SWCAN Interface (Philips AU5790) Bit Rate DC voltage at pin CANH Transient voltage at pin CANH	BR_{SWCAN} V_{SWCANH} $V_{tSWCANH}$	10 -10 -100	33	100 18 100	Kbit/sec V V
SAE J1708 Interface (National DS36277) Bit rate DC voltage at pin A DC voltage at pin B	BR_{J1708} V_{J1708A} V_{J1708B}	-10 -10	9.6	15 15	kbit/sec V V
Effective download throughput USB COM1, COM2, COM3 (RS-232)			530 10		KBytes/sec kBytes/sec
Environment Operating temperature Storage temperature	T_o T_s	-40 (-40) -40 (-40)		85 (185) 85 (185)	C (F) C (F)
Certifications Electromagnetic compatibility IP (Ingress protection) (IEC 60529) Environmental (military spec.)	CE IP 67 MIL-STD 810F MIL-STD 810F MIL-STD 810F MIL-STD 810F MIL-STD 810F IEC 68-2-52	CE Mark IP 67 (dust & waterproof) 501.4 (low temperature) 502.4 (high temperature) 507.4 (humidity) 514.5 (vibration) 516.5 (mechanical shock) Resistance to Cyclic Salt Spray			
Mechanical Specifications Height Depth Width Weight			31.75 (1.25) 101.00 (4.00) 114.30 (4.50) 260 (9.17)		mm(in) mm(in) mm(in) g(oz)



All dimensions are in inches [millimeters].