

Features

- Stand-alone data recorder for mobile applications
- 512 MBytes of memory, with data retention in case of power loss
- 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
 - COMMTX - MineTrax battery-powered wireless mesh network modem
 - 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
- 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 IP65 certified



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 (HRNMN2-310) to connect the Recorder to the power supply and peripherals.

Software Configuration:

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

Options

OPTVB2	Vehicle Data bus - option 2 – CAN1: CAN 2.0a/b (HS-CAN) – CAN2: CAN 2.0a/b (FT-CAN) – SAE-J1708/SAE-J1587
OPTVB3	Vehicle Data bus - option 3 – CAN1: CAN 2.0a/b (HS-CAN) – CAN2: CAN 2.0a/b (SW-CAN) – SAE-J1708/SAE-J1587

Calibration

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

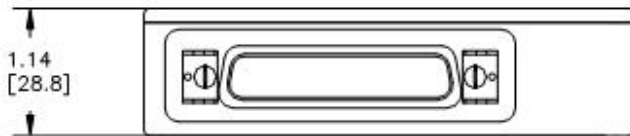
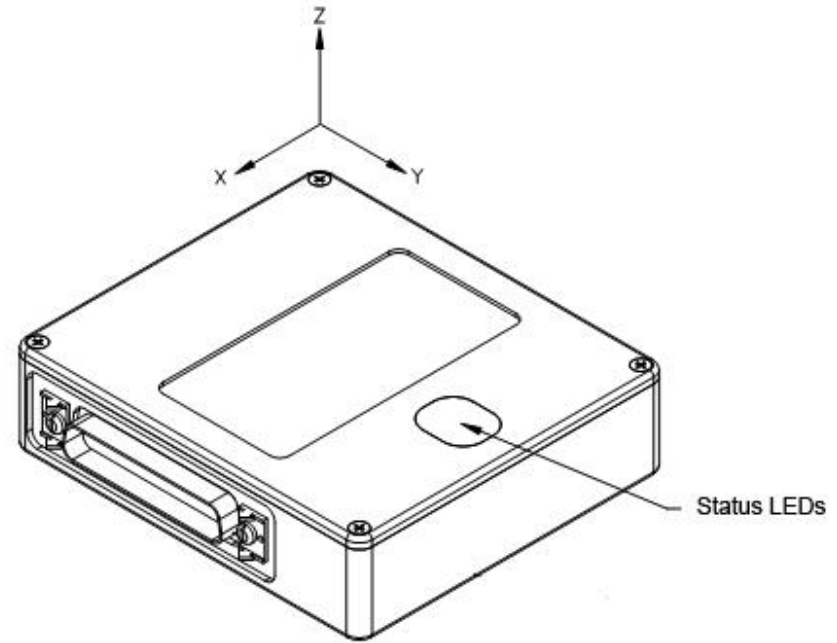
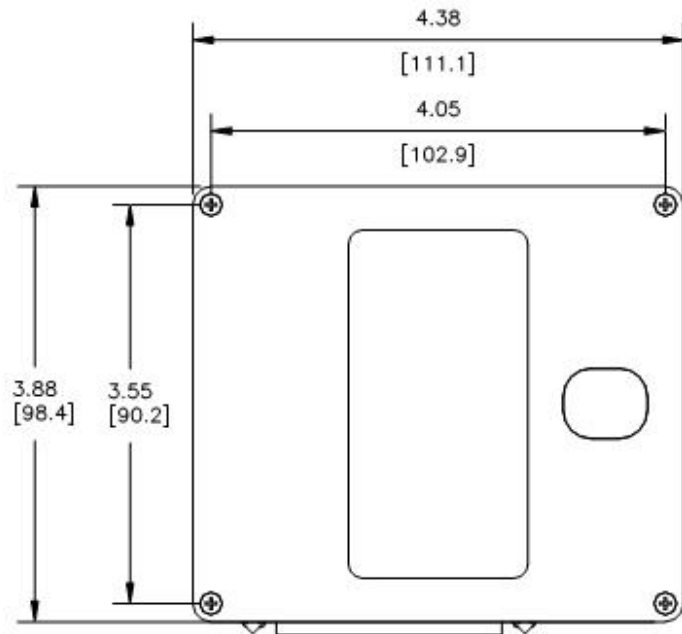
Specifications

Description	Symbol	Min	Typ	Max	Unit
VDP (Vehicle Data and Power)					
Input voltage	V_{in}	10.0		30.0	V
Input current @ 12.0V ¹	I_{in-12}		75		mA
Input current @ 24.0V ¹	I_{in-24}		53		mA
VDP HSCAN (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
VDP J1708 Interface (National DS36277)					
Bit rate	BR_{J1708}		9.6		kbit/sec
DC voltage at pin A	V_{J1708A}	-10		15	V
DC voltage at pin B	V_{J1708B}	-10		15	V
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
COM group					
Output voltage	V_{COM}	$V_{in}-0.6$		V_{in}	V
Total output current	I_{COM}			500	mA
Regulated output voltage	$V_{COM-REG}$	4.75		5.25	V
Regulated output current	$I_{COM-REG}$			500	mA
Control output voltage	V_{CTL}	0		5	V
IDN (ISAAC Device Network)					
Output voltage	V_{IDN}	$V_{in}-0.6$		V_{in}	V
Total output current	I_{IDN}			500	mA
IDN HSCAN (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
IDN FTCAN Interface (Motorola MC33388) (Option OPTVD2)					
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
IDN SWCAN Interface (Philips AU5790) (Option OPTVD3)					
Bit Rate	BR_{SWCAN}	10	33	100	Kbit/sec
DC voltage at pin CANH	V_{SWCANH}	-10		18	V
Transient voltage at pin CANH	$V_{tSWCANH}$	-100		100	V
Effective download throughput					
USB			530		KBytes/sec
COM1, COM2, COM3 (RS-232)			10		kBytes/sec
Environment					
Operating temperature	T_o	-40 (-40)		85 (185)	C (F)
Storage temperature	T_s	-40 (-40)		85 (185)	C (F)
Certifications					
Electromagnetic compatibility	CE	CE Mark			
IP (Ingress protection) (IEC 60529)	IP 65	IP 65 (dust & waterproof)			
Environmental (military spec.)	MIL-STD 810F	501.4 (low temperature)			
	MIL-STD 810F	502.4 (high temperature)			
	MIL-STD 810F	507.4 (humidity)			
	MIL-STD 810F	514.5 (vibration)			
	MIL-STD 810F	516.5 (mechanical shock)			
	IEC 68-2-52	Resistance to Cyclic Salt Spray			

¹ Recorder with no sensor attached



Mechanical Specifications			
Height		28.8 (1.14)	mm (in)
Depth		98.4 (4.00)	mm (in)
Width		111.1 (4.38)	mm (in)
Weight		260 (9.17)	g(oz)



All dimensions are in inches [millimeters].