

Features

- Provides turbine engine information for use by EFIS units and/or our VRX displays
- Lowest wire-count engine monitoring solution on the market
- Reads sensors directly:
 - 3 x temperatures
 - 3 x pressures
 - 2 x tachometer-generators
 - 4 x fuel quantity / levels
 - 1 x fuel flow
 - 1 x amps and voltage
 - 8 x discrete switch inputs
- Communicates information via:
 - RS-232 interface to EFIS units
 - CAN bus interface to our VRX displays
- Any and all sensors/inputs may be shared with a TSLM or TSM unit



Description

The Engine Information Unit (EIU) will read various sensors and switches both in-front-of and behind the fire-wall, extract the required parameters and package the information for use by EFIS units, VRX displays or both.

The information is dispatched at a sufficient rate to realize highly responsive engine gauges for various turboprop, turbofan and jet engines.

The EIU provides separate and independent power to each sensor requiring external excitation. This prevents any single sensor (or wiring) failure causing the loss of more sensor measurements, which would happen on systems with a common sensor power bus.

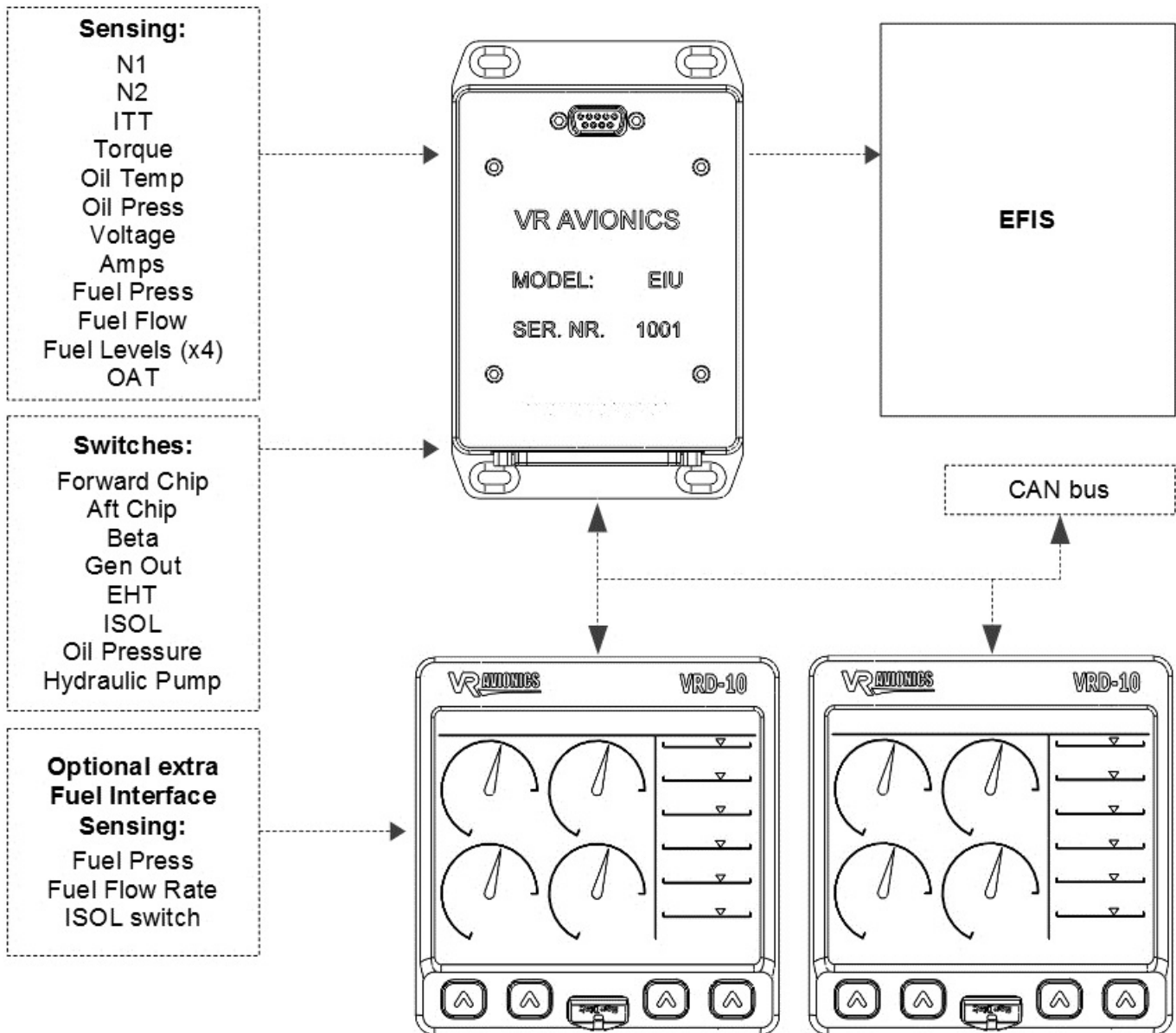
The EIU will limit the current to each sensor in order to contain possible faults. Such faults whether caused by a bad sensor or faulty wiring are also reported.

The EIU and TSM or TSLM are able to share the same sensors (or use separate ones) to add any additional redundancy you require for particular measurements.

All electrical connections are made to one 50-pin standard D-Sub connector on the side of the unit. The unit then gets configured, calibrated and verified through a laptop running a Windows based program via a serial port on the top of the unit.

Calibration (or mapping) of each of the four fuel tanks are done in one operation – filling an empty tank in stages at user fuel increments until full. Afterward you can, at any time, make small adjustments to any tank's calibration table should you want to.

Block Diagram – Example Engine Monitoring



Illustrated above is a EIU application providing a engine monitor solution for the M601 engines. Other turboprop, turbofan and jet engines can be similarly connected.

The joint CAN bus allows one or more VRX displays as well as more VR Avionics units such as our TSLM, TSM, PDC and FSM to be added easily allowing users to select the monitoring scope and level of redundancy they require.

Pin-outs (male 50-pin d-sub)

PINS	DIR	FUNCTION	DESCRIPTION
33	IN	POWER	AIRCRAFT POWER
50	GND	GROUND	AIRCRAFT GROUND
1,2	IN	TEMP1	TEMPERATURE SENSOR 1 (K-TYPE THERMOCOUPLE +)
18,19	IN	TEMP2	TEMPERATURE SENSOR 2 (K-TYPE THERMOCOUPLE +)
34,35	IN	TEMP3	TEMPERATURE SENSOR 3 (K-TYPE THERMOCOUPLE +)
37	IN	PRESS1+	PRESSURE SENSOR 1 (4-20mA TRANSDUCER)
21	IN	PRESS2+	PRESSURE SENSOR 2 (4-20mA TRANSDUCER)
4	IN	PRESS3+	PRESSURE SENSOR 3 (4-20mA TRANSDUCER)
29	IN	N1-SIG	SPEED SENSOR 1 (N1 TACHGEN)
30	IN	N2-SIG	SPEED SENSOR 2 (N2 TACHGEN)
5	OUT	FF-PWR	FUEL FLOW SENSOR EXCITATION
22	IN	FF-SIG	FUEL FLOW SENSOR INPUT
9	OUT	FQ1-PWR	FUEL QUANTITY / LEVEL PROBE EXCITATION 1
26	IN	FQ1-SIG	FUEL QUANTITY / LEVEL PROBE INPUT 1
8	OUT	FQ2-PWR	FUEL QUANTITY / LEVEL PROBE EXCITATION 2
25	IN	FQ2-SIG	FUEL QUANTITY / LEVEL PROBE INPUT 2
7	OUT	FQ3-PWR	FUEL QUANTITY / LEVEL PROBE EXCITATION 3
24	IN	FQ3-SIG	FUEL QUANTITY / LEVEL PROBE INPUT 3
6	OUT	FQ4-PWR	FUEL QUANTITY / LEVEL PROBE EXCITATION 4
23	IN	FQ4-SIG	FUEL QUANTITY / LEVEL PROBE INPUT 4
13,14	IN	SHUNT/VOLTS	AMPS SHUNT INPUT & VOLTAGE SENSE INPUT
11,12,28,44,45	IN	SW-G1..5	DISCREET GROUNDING INPUTS (1...5)
10,27,43	IN	SW-P1..3	DISCREET POWERING INPUTS (1...3)
16	OUT	TX232	RS232 INTERFACE TRANSMIT (TO EFIS)
17	IN	RX232	RS232 INTERFACE RECEIVE
48,49	I/O	CAN-H	CAN BUS INTERFACE HIGH
31,32	I/O	CAN-L	CAN BUS INTERFACE LOW
15	IN	CAN-T	CAN BUS INTERFACE TERMINATE

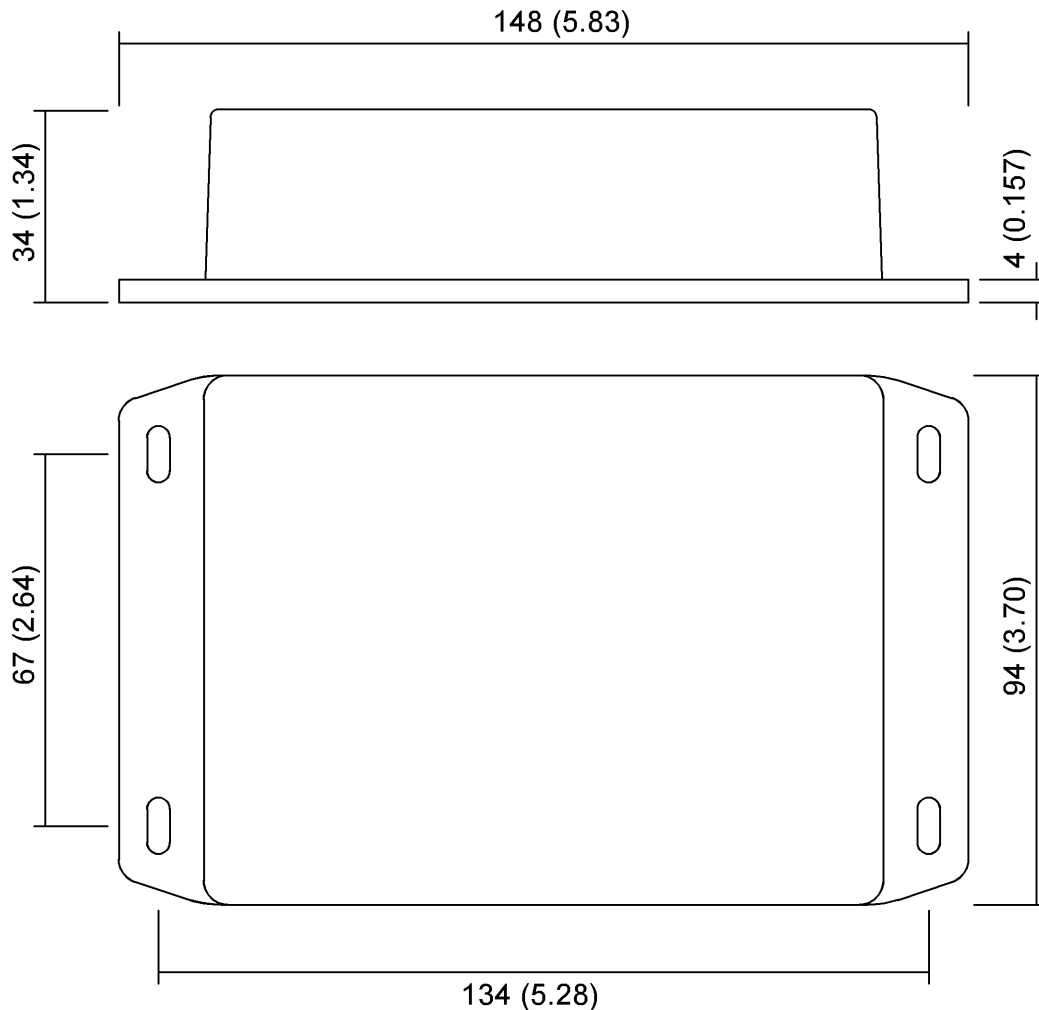
Maximum Ratings

1	POWER SUPPLY VOLTAGE RANGE	10 TO 32 VDC
2	STORAGE TEMPERATURE	-55 TO +125 °C
3	OPERATING TEMPERATURE	-40 TO +85 °C

General Specifications

4	DIMENSIONS	148 x 94 x 34mm
5	WEIGHT	340 g
6	POWER CONSUMPTION (NOT SWITCHING ANY LOADS)	80mA (typical)

Unit Outline



DIMENSIONS IN MM. (INCHES ARE IN BRACKETS)

The EIU uses a 50-pin D-SUB (M24308 series) male connector.

The recommended mating receptacle (female) for it is the M24308/2-5F