

Introducing the FSM

The FSM gives a pilot advanced in-flight oversight and control of an aircraft's fuel supply. It is customized to a particular fuel supply layout, which consist of an arrangement of fuel tanks feeding the engine(s) via any number of fuel lines, valves and pumps.

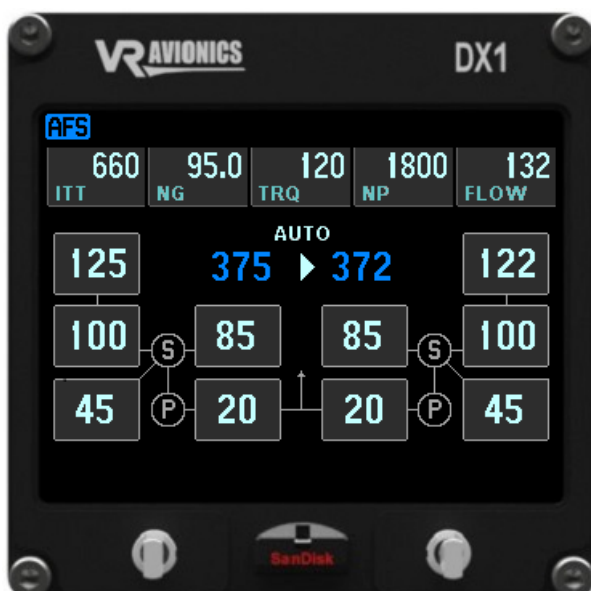
To provide oversight the FSM reads a system of fuel level, flow rate, pressure and pump sensors. Parameters so obtained are presented to the pilot via connected VRX-MFD multifunction displays. The FSM further subject these parameters to simple logical checks which if not met, alert the pilot about the particular situation. For example, it can sense if a certain pump does not produce the expected flow rate when activated and set off a warning.

The FSM reduces pilot workload by allowing automatic fuel leveling. When engaged the FSM will control pumps to cause fuel levels in both wings to decrease evenly during flight. Each FSM is able to activate up to two fuel pumps but if required more than one unit can be employed in collaboration.



Features

- ✓ Can sense:
 - up to 4 fuel levels
 - up to 3 fuel flows
 - up to 3 fuel pumps
 - one fuel pressure
- ✓ Can activate 2 pumps for automatic fuel leveling
- ✓ Can track fuel quantities through each flow sensor
- ✓ Shares real-time parameters
 - with VRX-MFD and/or other connected monitor and control instrumentation (RS232 and CAN bus)
- ✓ Depicts custom fuel supply layout on VRX-MFD
- ✓ Multiple VRX-MFD's can simultaneously link to FSM's and other VR Avionics units like the TSLM and PDC
- ✓ Simple troubleshooting
 - via maintenance interface to laptop / tablet PC running our SetView software
- ✓ Simple fuel level calibrations
 - via VRX-MFD or laptop / tablet PC with SetView
- ✓ Compact
 - line-replaceable unit that contains no moving parts like relays, potentiometers, etc.



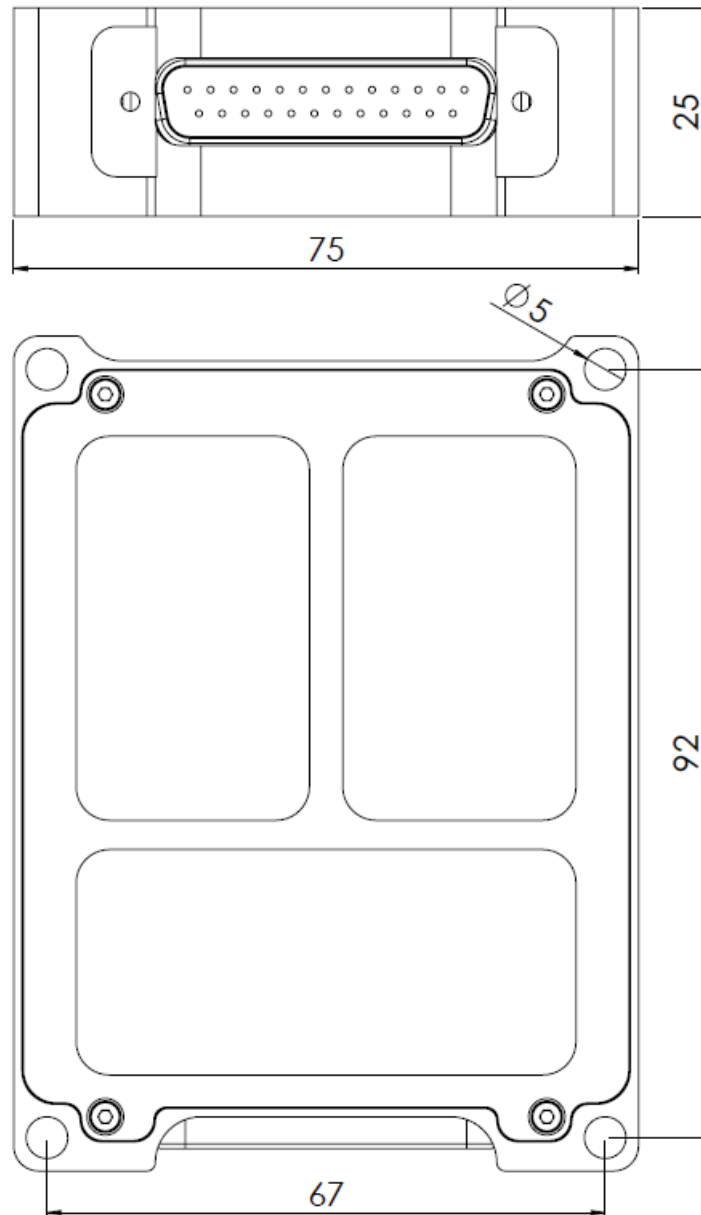
Pin-outs (male 25-pin d-sub)

PIN	DIR	FUNCTION	DESCRIPTION
12	IN	POWER	AIRCRAFT POWER
1, 13	GND	GROUND	AIRCRAFT GROUND
11	IN	AFL-PWR	AUTO FUEL LEVELING POWER
9	OUT	AFL-PUMP-L	AUTO FUEL LEVELING PUMP LEFT OUTPUT
10	OUT	AFL-PUMP-R	AUTO FUEL LEVELING PUMP RIGHT OUTPUT
8	IN	PRESS	FUEL PRESSURE SENSOR (4-20mA TRANSDUCER)
6	IN	FF-1	FUEL FLOW SENSOR 1
18	IN	FF-2	FUEL FLOW SENSOR 2
5	IN	FF-3	FUEL FLOW SENSOR 3
25	OUT	FL-12V	FUEL FLOW / LEVEL PROBE EXCITATION +12V
24	OUT	FL-5V	FUEL FLOW / LEVEL PROBE EXCITATION +5V
17	IN	FL-1	FUEL LEVEL PROBE 1
4	IN	FL-2	FUEL LEVEL PROBE 2
16	IN	FL-3	FUEL LEVEL PROBE 3
3	IN	FL-4	FUEL LEVEL PROBE 4
15	IN	PUMP-1	FUEL PUMP SENSE 1
2	IN	PUMP-2	FUEL PUMP SENSE 2
14	IN	PUMP-3	FUEL PUMP SENSE 3
7	OUT	FS-WARN	FUEL SUPPLY WARNING GROUNDED OUTPUT
19	OUT	AFL-WARN	AUTO FUEL LEVELING WARNING GROUNDED OUTPUT
21	OUT	TX232	RS232 INTERFACE TRANSMIT
20	IN	RX232	RS232 INTERFACE RECEIVE
22	I/O	CAN-H	CAN BUS INTERFACE HIGH
23	I/O	CAN-L	CAN BUS INTERFACE LOW

General Specifications

1	Operational Voltage Range	10 – 40 VDC
2	Operating Temperature Range	-40 to +85 °C
3	Max. Operating Altitude	55,000 feet
4	Dimensions	100 x 75 x 25mm
5	Weight	180 g
6	Power Consumption (no external loads)	50mA

Unit Outline



1. The FSM uses a 25-pin DSUB (M24308 series) male connector. The recommended mating receptacle (female) for it is the M24308/2-3
2. The unit is secured through four 5mm holes on each corner accepting AN3 bolts