

This TSLM is an automatic start controller for the TPE331 turboprop from Garrett/Honeywell.

To start an engine the operator momentarily depresses a toggle switch in one direction and to do a (dry) run operation, the other direction.

During a start the TSLM will activate the starter, fuel heat lockout, oil vent, ignition exciter, fuel shutoff valve as well as the fuel pressure regulation (SPR) valve as required to attempt to bring the engine to idle speed as efficiently as possible without operator intervention and without exceeding the turbine temperature.

For a run the TSLM will only activate the starter, fuel heat valve and oil vent to turn the engine over for a few seconds.

To abort any operation or shut the engine down after a flight the operator can press the engine shutoff button.

Each start and run operation is recorded by the TSLM in a detailed graph format showing turbine temperature, rpm, voltage, and more versus time. This allows precise analysis after any event in order to make informed follow-up decisions.

The TSLM allows a number of diagnostic tests to be performed through it in order to quickly troubleshoot in isolation external wiring, switches, valves, etc.



The TSLM is available as part of one of our standard or custom master control units (MCU's) that includes contactors, shunts, and other VR Avionics products such as our starter-generator controller (SGC) that can support lithium batteries and/or parallel-series battery starting.

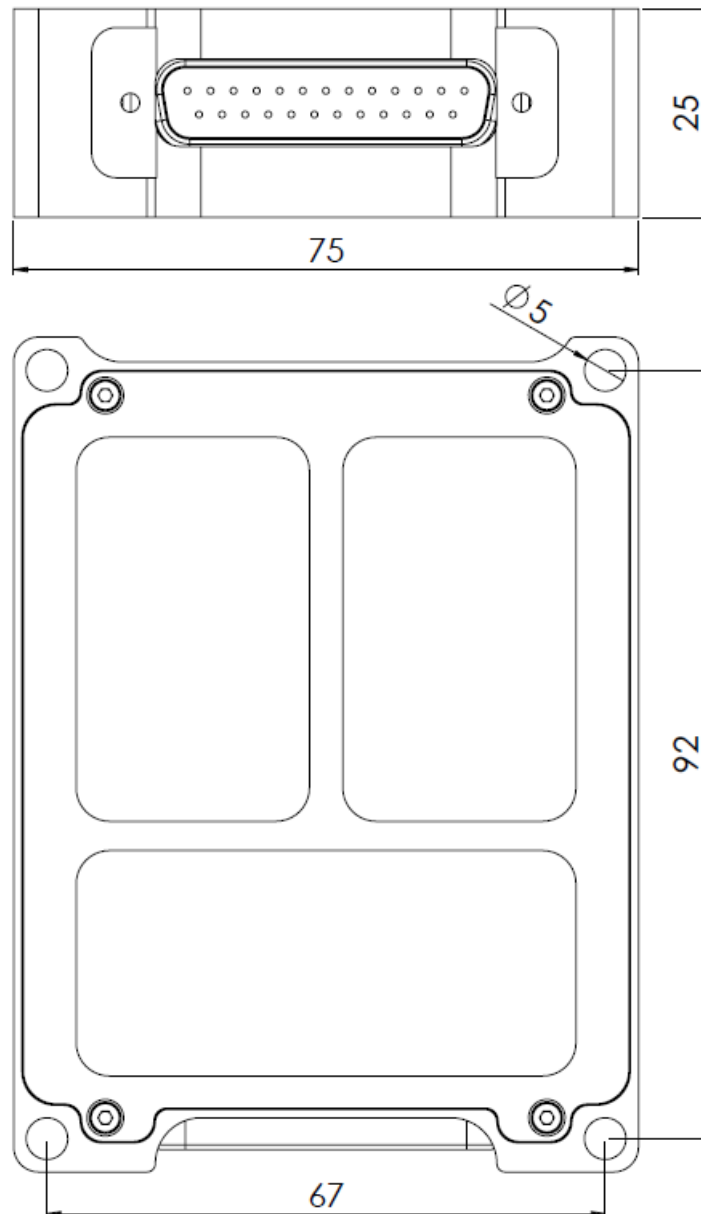
Pin-outs (male 25-pin d-sub)

PINS	DIR	FUNCTION	DESCRIPTION
12,24	IN	POWER	AIRCRAFT POWER (28VDC)
13	GND	GROUND	AIRCRAFT GROUND
2	IN	RPM	SPEED SENSOR 1 (TACHGEN)
15	IN	-	SPEED SENSOR 2 (TACHGEN)
16	IN	-	PRESSURE SENSOR 1 (4-20mA TRANSDUCER)
4	IN	-	PRESSURE SENSOR 2 (4-20mA TRANSDUCER)
1	IN	TOT+	TEMPERATURE SENSOR 1 (K-TYPE THERMOCOUPLE +)
14	IN	TOT-	TEMPERATURE SENSOR 1 (K-TYPE THERMOCOUPLE -)
25	IN	-	TEMPERATURE SENSOR 2 (K-TYPE THERMOCOUPLE +)
17	IN	-	TEMPERATURE SENSOR 2 (K-TYPE THERMOCOUPLE -)
3	IN	VOLTS	SYSTEM BUS VOLTAGE SENSE
6	IN	SHUTOFF	DISCREET GROUNDING INPUT
20	IN	START	DISCREET GROUNDING INPUT
19	IN	RUN	DISCREET GROUNDING INPUT
11	OUT	IGNITION	12A SWITCHED POWER OUTPUT
22	OUT	STARTER	12A SWITCHED POWER OUTPUT
10	OUT	FUEL OPEN	5A SWITCHED POWER OUTPUT
9	OUT	-	5A SWITCHED POWER OUTPUT
7	OUT	-	5A SWITCHED POWER OUTPUT
8	OUT	SPR+	5A SWITCHED POWER OUTPUT
23	OUT	SPR-	5A SWITCHED GROUNDED OUTPUT
21	OUT	TSLM	5A SWITCHED GROUNDED OUTPUT
5	I/O	CAN-H	CAN BUS INTERFACE HIGH
18	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 TSLM 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