What is the TMU

The TMU is a turbine monitor unit that connects to sensors on a typical gas-turbine engine, extracts the information for each parameter and relays it all for real-time display or other use to other devices, such as a smart phone or tablet.

The TMU can read two temperatures, two pressures, two speeds, as well as voltage and current (amps), and make this information available via Bluetooth (BLE), CAN bus and an RS-232 output.

Temperatures are extracted from thermocouple (only K-type at the moment) sensors and only in degrees Celsius (for now).
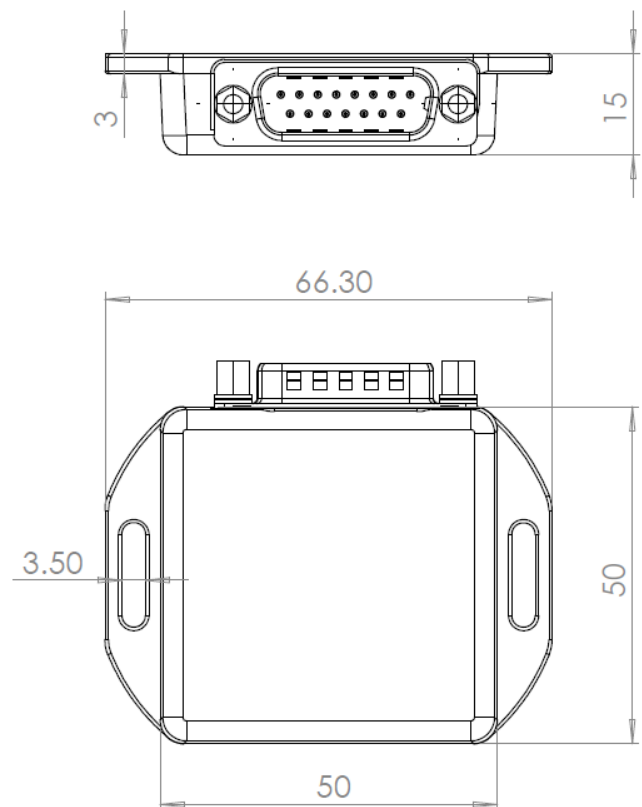
Pressures are extracted from 0.5-4.5V ratiometric pressure transducers, where each one's pressure range is fully configurable.

Speeds are extracted from tachometer generators (tachgens), inductive pickups or hall-effect sensors, where each one's conversion is also configurable.

Voltage is measured on the pin powering the TMU. Using this pin in combination with another pin allows the extraction of a current (amps) parameter from an external shunt (sensor) inserted where the user requires it in the positive electrical bus/rail, and where the shunt's current (amps) range is fully configurable.
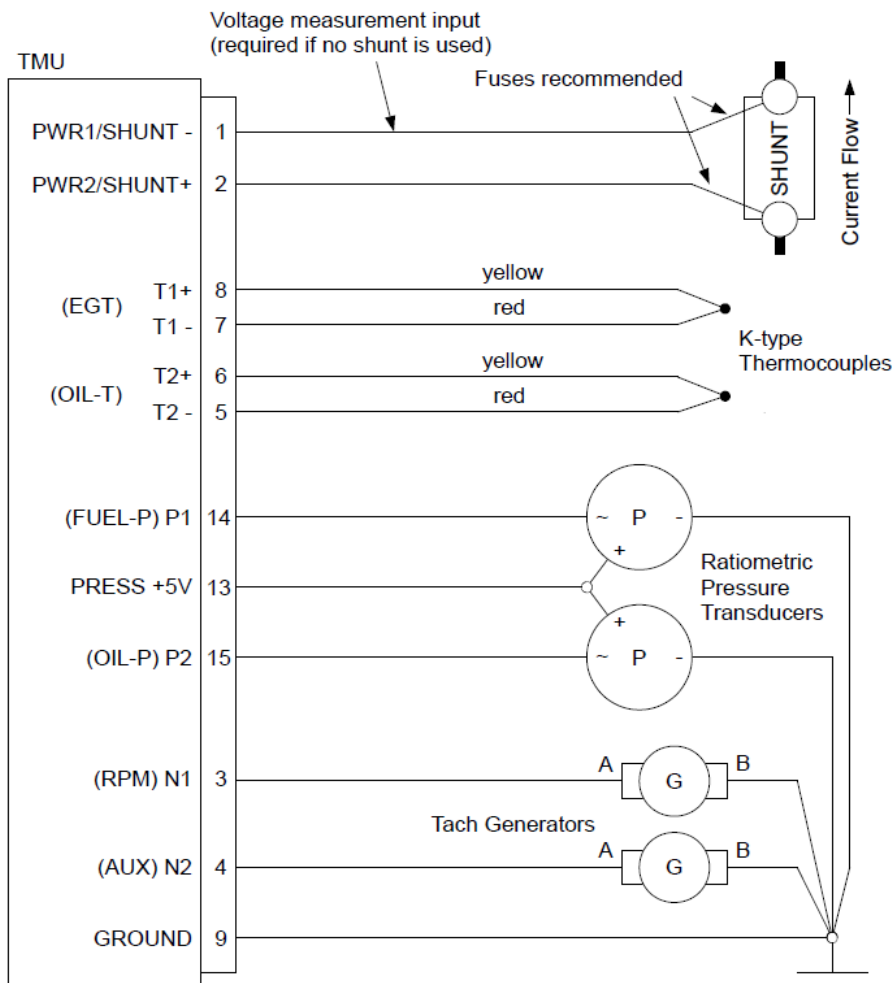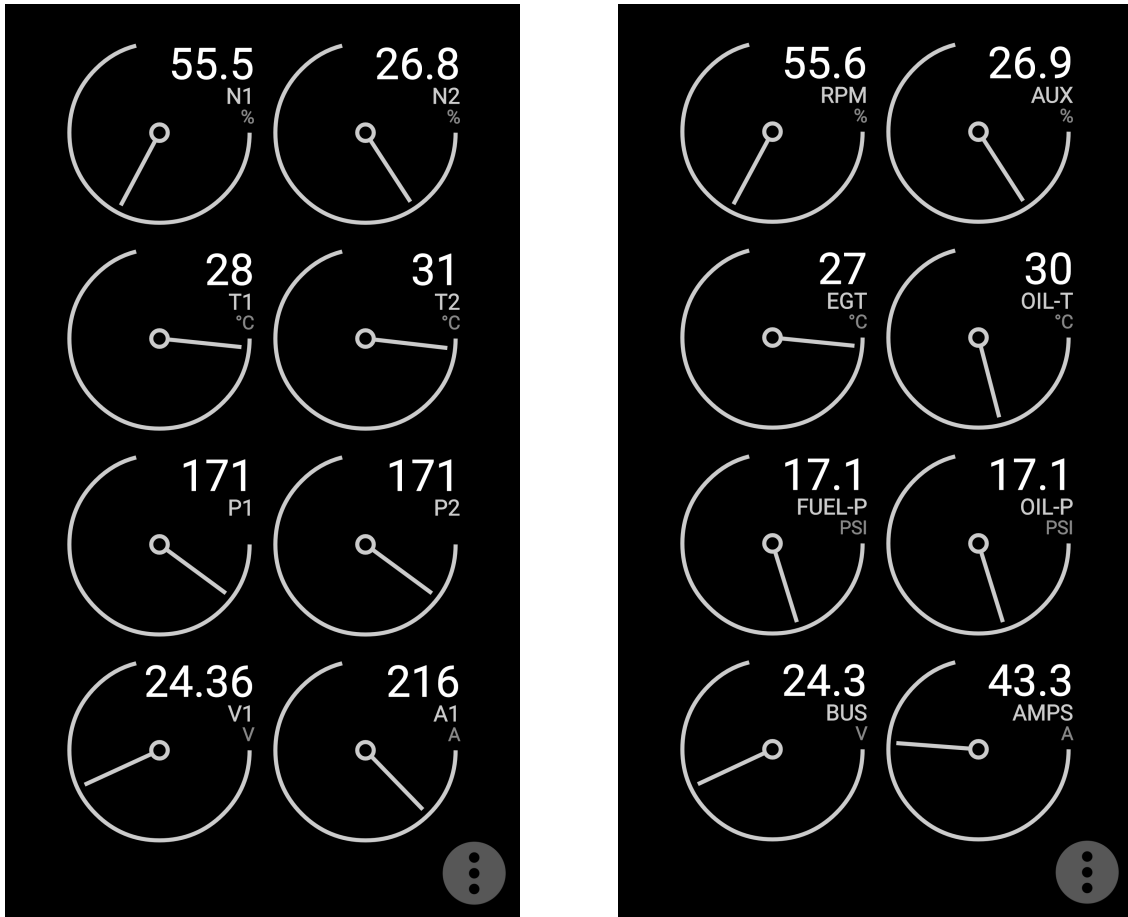

Dimensions

Pin-out

PIN	DIR	PARAMETER	DESCRIPTION
1	IN	V1, A1	POWER1 / VOLTAGE / SHUNT- (AMPS)
2	IN	A1	POWER2 / SHUNT+ (AMPS)
3	IN	N1	TACHOMETER GENERATOR / SPEED PICKUP #1
4	IN	N2	TACHOMETER GENERATOR / SPEED PICKUP #2
5	IN	T2	TEMPERATURE #2 - (THERMOCOUPLE)
6	IN	T2	TEMPERATURE #2 + (THERMOCOUPLE)
7	IN	T1	TEMPERATURE #1 - (THERMOCOUPLE)
8	IN	T1	TEMPERATURE #1 + (THERMOCOUPLE)
9	GND		GROUND
10	OUT		RS-232 OUTPUT
11	I/O		CAN-H
12	I/O		CAN-L
13	OUT	P1, P2	RATIOMETRIC PRESSURE TRANSDUCER POWER +5V
14	IN	P1	RATIOMETRIC PRESSURE TRANSDUCER #1 SIGNAL
15	IN	P2	RATIOMETRIC PRESSURE TRANSDUCER #2 SIGNAL

Example

Android Application

By downloading, installing and running our *SetView* Android application from our website onto your smart phone or tablet, you can connect via Bluetooth to your powered TMU by simply selecting it from a list where after the gauges screen shown below will appear.

Each gauge can be customized in various ways as the example above to the right shows. See our *SetView Android Application User Guide* for more on this as well as other operations.

Specifications

PROPERTY	VALUE
Normal operational voltage range (recommended)	6 - 36 V 0 V power dips < 50 ms
Abnormal operational voltage maximum	50 V surges < 50 ms
Operational temperature range	-40 - +85 °C
Operating altitude maximum	55,000 feet
Current available on pressure transducer +5V power (pin 13)	25 mA continuous, 50 mA short term