Actisense®

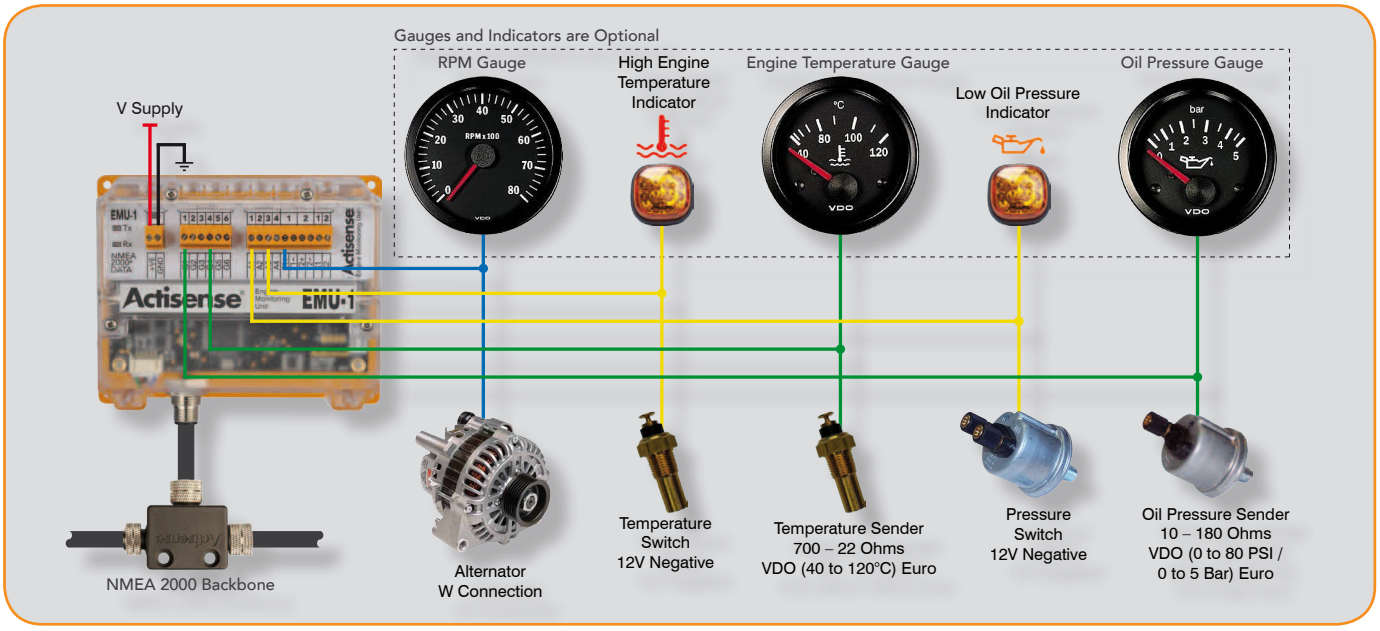
Engine Monitoring Unit
EMU-1

The EMU-1 shares vital engine information on the NMEA 2000® bus by digitising analogue engine sensors.

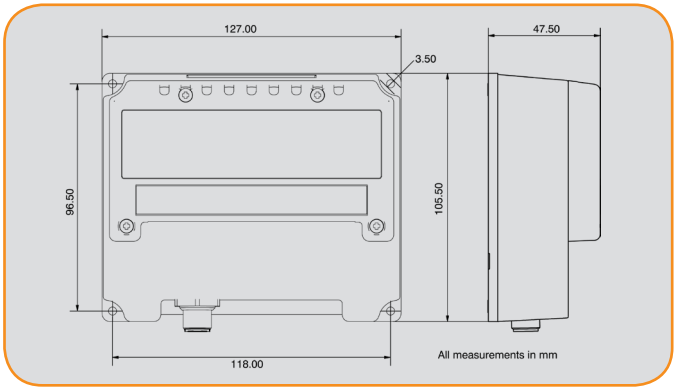
So flexible, it can be used with much more than engine sensors - any senders on a boat can be converted using our simple configuration tool.

The EMU-1 is compatible with all leading makes of engine and NMEA 2000 compliant displays.

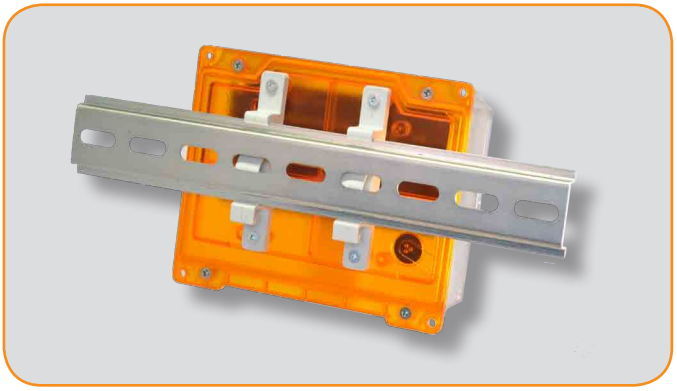
Example Configuration



Case Dimensions



Mounting Options (Din Rail Kit)



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EMU-1 Technical Specifications

Power Supply	
Supply Voltage	9 to 35V DC
Supply Current	<25mA @ 12V DC in idle mode
Supply Protection	Continuous reverse polarity protection and load dump protection (meets SAE J1113)
Supply Connector	Pluggable 2-way screw terminal, 3.5mm pitch
Supply Voltage (NMEA 2000 port)	9 to 35V DC
Supply Current (NMEA 2000 port)	<20mA @ 12V DC from NMEA 2000 bus
Load Equivalence Number (NMEA 2000 port)	1 LEN
Supply protection (NMEA 2000 port)	Continuous reverse polarity protection and overvoltage protection to 40V
NMEA 2000 Port - In/Out	
Compatibility	NMEA 2000 compatible
Galvanic Isolation	2500V input to ground
Speed/baud rate	250kbps
NMEA 2000 connector	M12 male (A coded) connector
Gauge Inputs	
Voltage Range	0 to 35V DC
Input Impedance	>50kΩ
Sender Feed	0mA, 4mA or 18mA
Accuracy	<=2%
Input Connector	Pluggable 6-way screw terminal, 3.5mm pitch
Input Protection	Overvoltage protection to +/-40V
Alarm Inputs	
Voltage Range	0 to 37V DC
Input Impedance	>50kΩ
Threshold Voltage	Programmable, default is 0.5 of supply voltage
Alarm Polarity	Programmable, default is alarm on low input
Accuracy	<=2%
Input Connector	Pluggable 4-way screw terminal, 3.5mm pitch
Input Protection	Overvoltage protection to +/-40V

Tacho Inputs	
Voltage Range	0 to +/-60V
Input Impedance	>100kΩ to ground
RPM Range	10 to 16,000 RPM
Accuracy	<=1%
Sender Compatibility	Ignition coil, Alternator W connection, Hall effect, VR or inductive sender
Threshold	Automatically adjusts to signal level
Input Connector	Pluggable 4-way screw terminal, 3.5mm pitch
Input Protection	Can withstand ignition pulse to +/-500V
Engine Log	
Engine Hours	2 separate engine hour logs internally connected to the Tacho inputs. Hours are logged when RPM is present. Stored in non-volatile memory.
Mechanical	
Housing Material	Polycarbonate
Protective Lid Material	Polycarbonate
Sealing Materials	Expanded silicone foam gasket, closed cell polyurethane splash guard and ePTFE waterproof vent.
Dimensions	128mm (L) X 120mm (W) X 48mm (H)
Weight	250g
Mounting	4 X 3.5mm lugs to allow panel mount with self tapping s/s screws (included), optional DIN rail mount available on request.
Approvals and Certifications	
NMEA 2000®	Full NMEA 2000® approval
EMC	IEC 60945 (sections 9 & 10)
Environmental Protection	IP66 (PCB housing)
Operating temperature	-20°C to +55°C
Storage temperature	-30°C to +70°C
Relative humidity	0 to 93% RH
Guarantee	3 years

Part Number	Description
EMU-1	Engine Monitoring Unit with default configuration and without a cable harness

* Note: These specifications are subject to review and may change at any time without notice from Active Research Limited.

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