

EMU-1 ENGINE MONITORING UNIT



The EMU-1 digitises analogue engine sensors enabling the sharing of engine data throughout the NMEA 2000® bus.

The Actisense EMU-1 is a specialised analogue to NMEA 2000® Gateway which converts data from analogue engine senders into NMEA 2000®, enabling all NMEA 2000® display devices to monitor the connected engine(s) on a vessel.

Each EMU-1 can be configured to suit the engine it is working with, offering a flexible solution for multiple engine makes and models. Capable of reading a wide range of engine parameters, the EMU-1 will report how the engine is operating and share the information across the network.

The EMU-1 can monitor two engines where each engine has three (or less) gauges that require monitoring. Where dual engines have more than three gauges each to monitor, multiple EMU-1 units are required.

The EMU-1 can be used to monitor fluid levels in up to six tanks with the addition of a configurable 'instance' for each tank allows the user to identify which tank the data is coming from.

The EMU-1 has a PC based configuration tool that allows the settings inside the EMU-1 to be changed to best suit the engine it is working with.

Benefits

No need to change an existing engine

Easy installation

Easy to configure to suit the connected engine

Connect signals from fluid level gauges (that share a common ground with the engine) to NMEA 2000®

Features:

Enables analogue signals to be converted to NMEA 2000® messages

Convert signals from two engines (that share a common ground) with a single EMU-1

Six gauge/parameter inputs

Four alarm inputs

Two additional auxiliary inputs

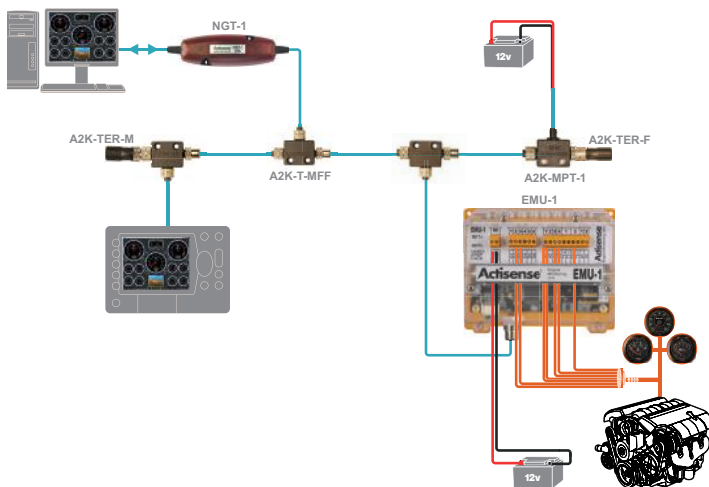
Customised case

Two Tach inputs

Wide power compatibility of 9 to 40 Vdc

Bulkhead mount, with optional DIN rail mount kit

Total engine hours are logged by the monitoring of engine Tach (RPM) input



EMU-1 Specifications

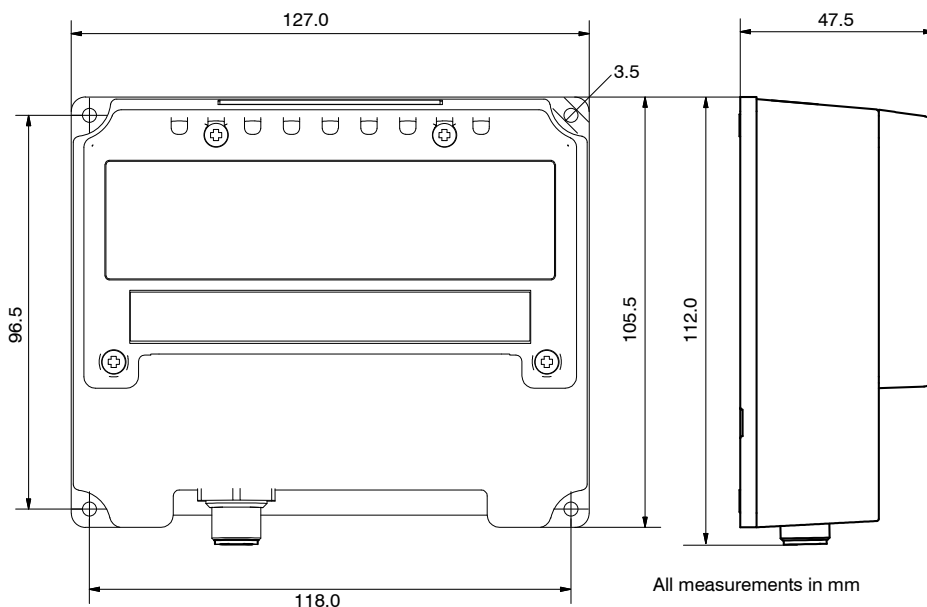


Power Supply	
Supply Voltage	9 to 35V DC
Supply Current	Typically < 25mA @ 12V DC
Supply Protection	Continuous reverse polarity protection and load dump protection (meets SAE J1113)
Supply Connector	Pluggable 2-way screw terminal, 3.5mm pitch
Supply Voltage (NMEA 2000 port)	9 to 29V DC
Supply Current (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	0, 4 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	Configurable, default is 5V
Alarm Polarity	Configurable, 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	±3 to ±60V
Input Impedance	> 100kΩ to ground
Input Pulse Range	4 to 50,000Hz
Accuracy	<= 1%
Sender Compatibility	Ignition coil, alternator ("W", "R" or "AC") terminal, 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 an 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	127mm (L) x 112mm (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	
Fully NMEA 2000 Certified	
EMC	EN 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

All specifications are taken with reference to an ambient temperature (TA) of +25°C.

Product Dimensions



All specifications are taken with reference to an ambient temperature of 25°C unless otherwise specified.

All specifications correct at time of print.