Actisense®
Connect without limits



EMU-1
Engine Monitoring Unit

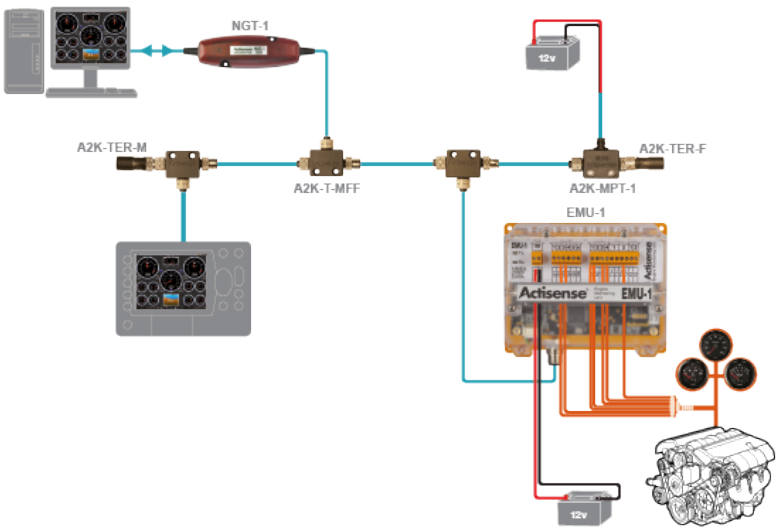
The EMU-1 digitises analogue engine sensors enabling the sharing of engine data throughout the NMEA 2000® bus.

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.
An Actisense NGX-1 is required to configure the EMU-1



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

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

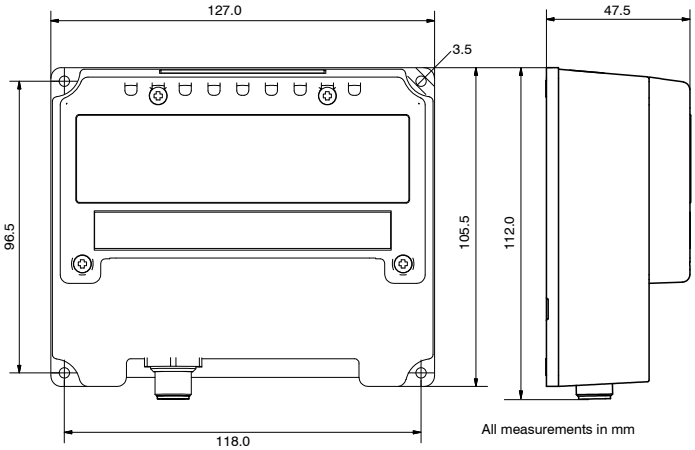
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EMU-1 Specifications

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 Equivalent Number (LEN)	1
Supply Protection (NMEA 2000 Port)	Continuous reverse polarity protection
NMEA 2000 Port - In/Out	
Compatibility	Fully NMEA 2000 certified
Galvanic Isolation	NMEA 2000 port
Speed / Baud Rate	250kbps
NMEA 2000 Connector	M12 Male (A coded) connector
Gauge Inputs	
Voltage Range	0 to 35V DC
Input Impedance	> 50kΩ
Sender Current 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 30,000Hz
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 106mm (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	IP65 (PCB housing)
Operating Temperature	-20°C to +55°C
Storage Temperature	-30°C to +70°C
Recommended Humidity	0 - 93% RH
Guarantee	5 Years

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