


EMU-1 Engine Compatibility and Setup

In order to confirm that the EMU-1 will be compatible with your system, please look at the gauges on the dashboard to work out the manufacturer (VDO, Faria, US Marine) and the range of values (40 to 140 degrees C, 0 to 5 Bar etc.). When you know those details, please check the gauge compatibility table below to see if they match up. The manufacturer of the engine is not relevant.

All of the senders/gauges on the current list are standard resistance senders/gauges. The EMU-1 is not currently compatible with constant current (4-20 mA) senders/gauges. We are always adding more gauges to the compatibility table and EMU Configuration Tool (current total is 50 gauges).

You may notice that there aren't any Tacho (RPM) gauges in the compatibility table. This is because you simply need to know your engines pulses per revolution (PPR) and enter this in to the EMU Configuration Tool. The PPR can be found from your engine manufacturer or in the engine manual.

 The EMU-1 can be connected in parallel to existing gauges or as a replacement for some or all of the gauges. The EMU-1 automatically detects whether a gauge is present or not and configures itself to provide a current feed to the sender where required.

If your gauge is not listed here, you may wish to try the [beta version of Toolkit](#), which contains a 'Custom Gauge Manager' feature to manually enter the details for your own gauge.

Gauge Compatibility Tables

Fluid Level

Unit	Min Range	Max Range	Voltage	Market	Manufacturer

Ohms	3	180	12/24	EU	VDO
Ohms	10	180	12/24	EU	Faria
Ohms	240	33	12/24	US	VDO
Ohms	240	33	12/24	US	Faria
Ohms	240	33	12	US	US Marine (Faria)

Pressure

Type	Unit	Min Range	Max Range	Voltage	Market	Manufacturer
Engine Boost	Bar	0	2	12/24	EU	VDO
Engine Coolant	Bar	0	10	12/24	EU	VDO and Faria
Engine Coolant	PSI	0	100	12/24	US	Faria
Engine Coolant	PSI	0	150	12	US	US Marine (Faria)
Engine Oil	Bar	0	5	12/24	EU	VDO and Faria
Engine Oil	Bar	0	8	12/24	EU	VDO
Engine Oil	Bar	0	10	12/24	EU	VDO and Faria
Engine Oil	PSI	0	80	12/24	US	Faria
Engine Oil	PSI	0	100	12/24	US	Faria
Engine Oil	PSI	0	80	12	US	US Marine (Faria)
Engine Oil	PSI	0	150	12	US	US Marine (Faria)
Transmission Oil	Bar	0	25	12/24	EU	VDO
Transmission Oil	Bar	0	25	12/24	EU	Faria
Transmission Oil	PSI	0	400	12	US	US Marine (Faria)

Temperature

Type	Unit	Min Range	Max Range	Voltage	Market	Manufacturer
Engine Oil	Deg. C	50	150	12/24	EU	VDO
Engine Oil	Deg. F	100	250	12	US	VDO
Engine Oil	Deg. F	100	250	12/24	US	Faria
Engine Oil	Deg. F	150	300	12/24	US	Faria
Engine Oil	Deg. F	100	250	12	US	US Marine (Faria)

Engine	Deg. C	40	120	12/24	EU	VDO
Engine	Deg. F	100	250	12	US	VDO
Engine	Deg. C	40	120	12/24	EU	Faria
Engine	Deg. F	100	250	12/24	US	Faria
Engine	Deg. F	100	250	12	EU	US Marine (Faria)
Transmission Oil	Deg. C	50	150	12/24	EU	VDO
Transmission Oil	Deg. F	100	250	12	US	VDO
Transmission Oil	Deg. F	100	250	12/24	US	Faria
Transmission Oil	Deg. F	150	300	12/24	US	Faria
Transmission Oil	Deg. F	100	250	12	US	US Marine (Faria)

Supported NMEA 2000 Data (PGNs)

The EMU-1 will transmit the converted analogue data from your engines gauges/senders as standard NMEA 2000 engine data PGNs, so it will be compatible with MFD's/PC software that also use these standard NMEA 2000 PGNs. To ensure your engine monitoring display is compatible for use with the EMU-1, please check which NMEA 2000 PGN's your display supports against the PGN list below.

PGN	PGN Name	Receive (Rx)	Transmit (Tx)	Tx Rate
59392	ISO Acknowledge	Yes	Yes	N/A
59904	ISO Request	Yes	No	N/A
60160	ISO Transport protocol, Data Transfer	Yes	Yes	N/A
60416	ISO Transport Protocol, Connection Management	Yes	Yes	N/A
60928	ISO Address Claim	Yes	Yes	N/A
65240	ISO Commanded Address	Yes	Yes	N/A
126208	NMEA Request/Command Acknowledgement	Yes	Yes	N/A
126464	RX and Tx PGN Lists	No	Yes	N/A
126720	Propriety Fast-Packet	Yes	Yes	N/A
126996	Product Information	No	Yes	N/A

126998	Configuration Information	No	Yes	N/A
127488	Engine Parameters, Rapid Update	No	Yes	0.1 Seconds
127489	Engine Parameters, Dynamic	No	Yes	0.5 Seconds
127493	Transmission Parameters, Dynamic*	No	Yes	0.5 Seconds
127505	Fluid Level*	No	Yes	2.5 Seconds
127508	Battery Status	No	Yes	1.5 Seconds

*Not enabled by default. Can be configured using Toolkit.

Dual Station Senders

The EMU-1 is compatible with both single and dual station senders.

A dual station sender must always have two gauges connected to it: the EMU-1 cannot replace one or both of those gauges. If it is required to remove one or both gauges, the dual station sender will need to be replaced with a single station sender.

Recommended Wire Gauge

The recommended wire to use between the gauge/sensor and the EMU-1 connectors will be a minimum of 24 AWG (0.5 mm diameter).

Gauges we know don't work with the EMU-1

To date, the only gauges we know of that are NOT compatible with the EMU-1 are VDO Viewline 12/24V gauges. We will continue to monitor and update this list accordingly.

The imminent release of the custom gauge configuration tool ([currently in beta](#)) will potentially mean that all gauges will work with the EMU-1.

Further Reading

- [Providing power to the EMU-1.](#)
- [What's needed to configure the EMU-1](#)

Engine monitoring using NMEA 2000 with the EMU-1



https://desk.zoho.eu/portal/actisense/kb/articles/engine-compatibility#Dual_Station_Senders