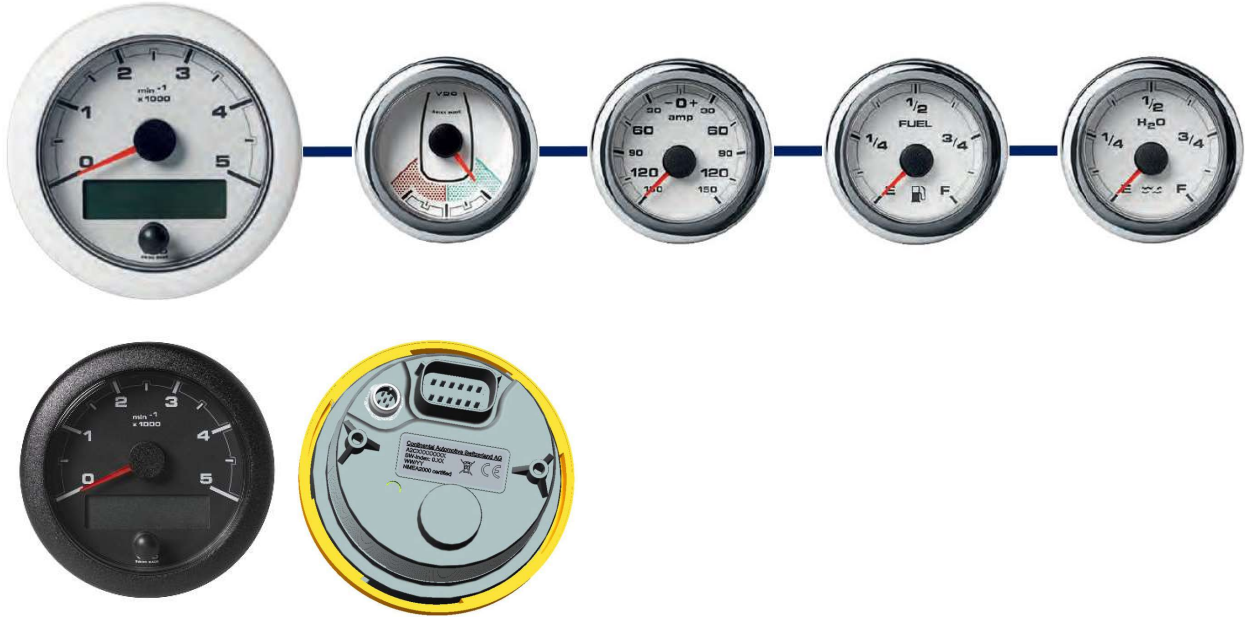


AC DC Marine Inc.

OceanLink®



Pin	Signal
1	Term.30 (Battery)
2	Term.31 (GND)
3	Buzzer 500 mA (output)
4	Tachometer input " pulse per revolution
5	CAN L /SAE JS 1939
6	CAN H /SAE JS 1939
7	Term.15 (Ignition)
8	Analogue (0 to 400 ohm)
9	Analogue (0 to 400 ohm)
10	Illumination
11	Easylink Bus power
12	Easylink Bus Data

Pin	Signal	Color Code	Notes
1	Term.30 (Battery)	Red	5 A external Fuse
2	Term.31 (GND)	Black	-
3	Buzzer 500 mA (output)	White	-
4	Tachometer input	Green	Engine RPM
5	CAN L /SAE JS 1939	Blue	SAE J1939
6	CAN H /SAE JS 1939	Blue-White	SAE J1939
7	Term.15 (Ignition)	Yellow	-
8	Analogue (0 to 400 ohm)	Gray	Analogue (0 to 400 ohm)
9	Analogue (0 to 400 ohm)	Brown	Analogue (0 to 400 ohm)
10	Illumination	Orange	-
11	Easylink Bus power	Red	-
12	Easylink Bus Data	Yellow	-

TACHOMETER

Tachometers with different dial scales 3000/5000 RPM

Analogue inputs to NMEA 2000 gateway

NMEA 2000 certified

Dot matrix LCD - 128x32 pixels

10-30V operating voltage

Front pushbutton

Alarm output

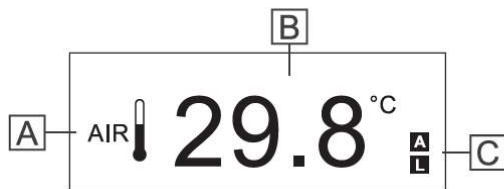
Engine hours internal calculation

LCD CONTENTS

The embedded LCD can show a number of different data coming either from local sensors (analogue in) or NMEA 2000

The information displayed on the screen can be customized via Settings menu

At startup the display shows the last data displayed



Part	Description
A	Data symbol
B	Current value with relevant unit of measure
C	"AL": indication that at least one alarm was triggered. The current alarm list is available after the last data page

	Engine rpm		Total engine operating hours		Course over ground (COG)
	Fuel consumption		Engine coolant temperature		Depth below transducer **
	Fuel level		Engine coolant pressure		Trim
	Fresh water level		Transmission oil temperature		Rudder angle
	Waste water level		Transmission oil pressure		Room temperature
	Battery voltage		Engine oil temperature		Sea water temperature
	Battery current		Engine oil pressure		Time
	Speed through water (STW)		Engine oil level		GPS module information ***
	Speed over ground (SOG)		Boost pressure		
	Magnetic heading		Exhaust gas temperature		

SETTINGS MENU

In normal operation, the pushbutton is used to select between 8 levels of backlight and contrast of the LCD.

ACCESS THE SETTINGS MENU

To enter in the settings menu the user must first turn OFF the power, then keep the button pressed while power is turned ON again until “SETTINGS” is displayed on the LCD.

NAVIGATE THE MENU

Short press to change the menu item.

Long press to confirm and navigate into the menu setting. The selected menu item flashes as a visual confirmation.

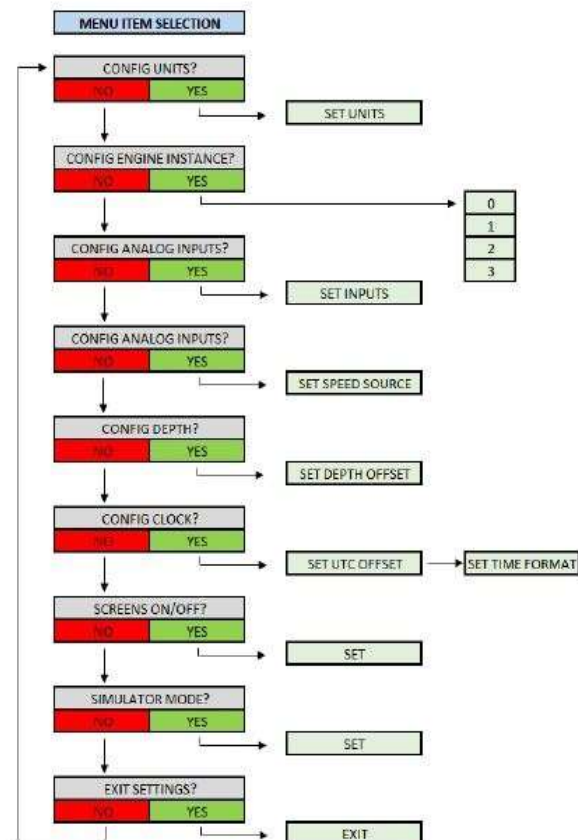
MENU STRUCTURE



NOTE

The Engine Instance setting influences the following output parameters:

- ▼ Engine number on NMEA 2000 transmitted data
- ▼ Engine number on NMEA 2000 received data
- ▼ Tank number for level indications
- ▼ EasyLink engine number



NMEA 2000 GATEWAY CONFIGURATION

ANALOGUE TO NMEA 2000

The gauge allows the direct connection of several resistive-type analogue sensors

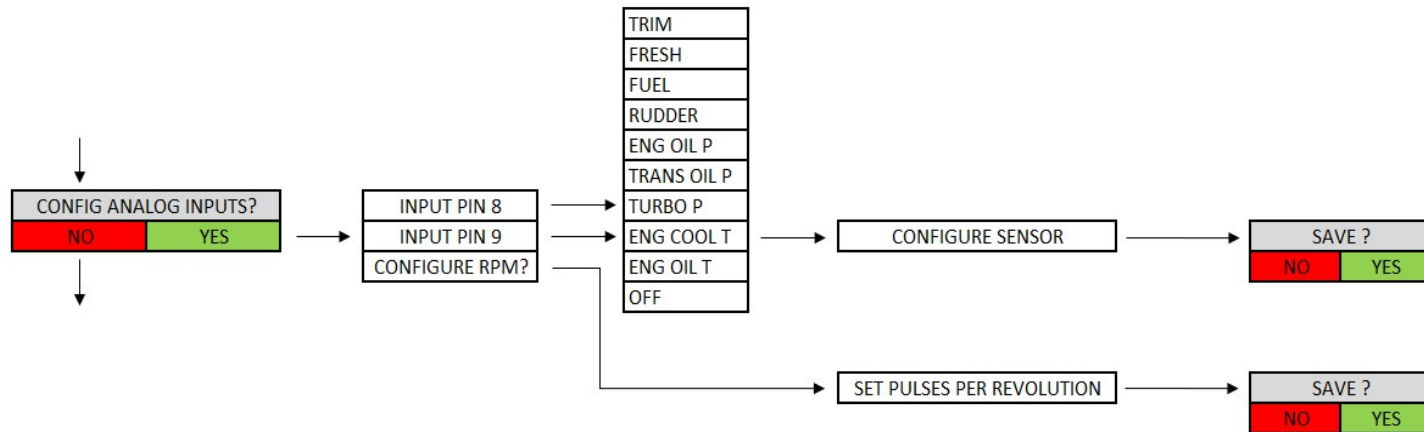
The configuration happens through Settings menu

The measured values are then displayed on the LCD Screen

The same values are also transmitted on the NMEA 2000 network (see supported PGNs)

PGN	
126992	System time
127250	Vessel heading
127488	Engine Parameters, Rapid Update
127489	Engine Parameters, Dynamic
127493	Transmission Parameters, Dynamic
127505	Fluid level
127508	Battery status
128259	Speed: Water referenced
128267	Water depth
129026	COG and SOG: Rapid update
129033	Local Time Offset
130310	Environmental parameters
130311	Environmental parameters
130312	Temperature
130316	Temperature, Extended Range
127245	Rudder
129025	Position: Rapid update

ANALOGUE INPUT CONFIGURATION



When a sensor configuration is selected, the gauge will ask whether to use a default calibration or a customized one

In the first case, it is possible to select between a selection of predefined sensor curves

Otherwise, it is possible to perform a custom calibration in 3 steps, to perfectly suit the real application (not for temp and press sensors)

At the end of the process, the gauge asks if to store the calibration or discard it

NMEA 2000 GATEWAY CONFIGURATION

Supported resistive sensors and calibrations

Sensor type	Default configurations	Custom Calibration (3 points)
Trim	10 – 167 Ω	Yes – Up / Center / Down
Fresh Water level	3 – 180 Ω	Yes – 0% / 50% / 100%
Fuel level	3 – 180 Ω / 240 – 33 Ω	Yes – 0% / 50% / 100%
Rudder Angle	10 – 180 Ω / 5 – 90 Ω	Yes – STBD / Center / PORT
Engine Oil Press	10 – 184 Ω	No
Transmission Oil Press	10 – 184 Ω	No
Boost Press	10 – 184 Ω	No
Engine Coolant Temp		No
Engine Oil Temp		No

NMEA 2000 GATEWAY CONFIGURATION

SAE J1939 TO NMEA 2000

The OceanLink gauges are able to read data from CAN engines

The data is taken from the supported J1939 PGNs (see table) and bridged to NMEA 2000 with the Engine Instance set into the Settings Menu

The J1939 bus does not manage engine instances, therefore one bus input is needed for each engine

1x J1939 input to the OceanLink gauges are designed to suit one-engine (per gauge) applications

Supported SAE J1939 Messages

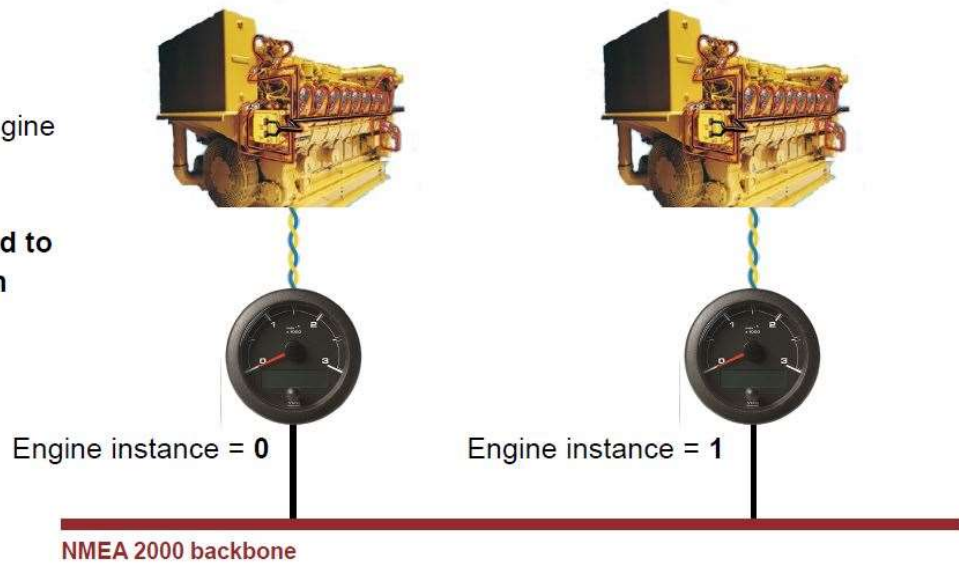
PGN	SPN	
61444	190	Engine Speed
65253	247	Engine Total Hours of Operation
65262	110	Engine Coolant Temperature
65262	175	Engine Oil Temperature 1
65263	98	Engine Oil Level
65263	100	Engine Oil Pressure
65263	109	Engine Coolant Pressure
65266	183	Engine Fuel Rate
65270	102	Engine Turbocharger Boost Pressure
65270	173	Engine Exhaust Gas Temperature
65271	114	Net Battery Current
65271	115	Alternator Current
65271	158	Battery Potential (Voltage), Switched
65271	167	Charging System Potential (Voltage)
65271	168	Electrical Potential (Voltage)
65272	177	Transmission Oil Temperature
65272	127	Transmission Oil Pressure
65276	96	Fuel Consumption
65279	97	Water In Fuel Indicator

NMEA 2000 GATEWAY CONFIGURATION

SAE J1939 → NMEA 2000 TWO ENGINES USE CASE

NMEA 2000 can distinguish the engine number through engine instances.

Any EasyLink satellite connected to the gauge will indicate data from that engine.



ALARMS

For each analogue sensor connected it is possible to set an alarm through the Settings menu (Local Alarms)

The external buzzer output can be activated together with the alarm

The alarm is also bridged on the NMEA 2000 bus

Once triggered, it can be snoozed with the gauge pushbutton or through any other OceanLink device on the network

The alarms received from J1939 and NMEA 2000 are also supported (see list)

**NMEA2000 - Engine Parameters,
Dynamic (PGN 127489)**

- Check engine
- Hot engine
- Low oil pres
- Low oil level
- Low fuel pres
- Low voltage
- Low cool level
- Water flow
- Water in fuel
- Charge indicat
- Preheat indic
- Boost pressure
- Over rev
- EGR system
- Main throttle
- Emergency stop
- General warn 1
- General warn 2
- Pwr reduction
- Maintenance
- Eng com error
- Sub throttle
- Neutral prot
- Eng shut down

**NMEA2000 - Transmission Parameters,
Dynamic (PGN 127493)**

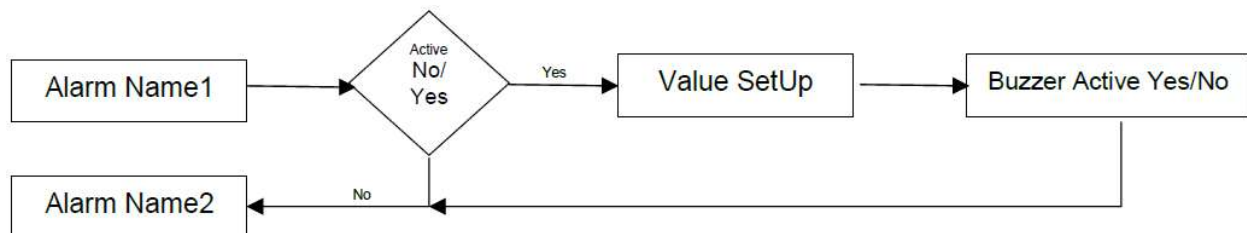
- Check gear
- Gear oil temp
- Gear oil pres
- Gear oil level
- Sail drive

**SAE J1939 - Active Diagnostic Trouble
Codes (DM1)**

- Water in fuel indication
- Engine speed
- Engine Turbocharger boost pressure
- Exhaust gas temperature
- Engine oil pressure
- Engine Coolant Pressure
- Engine Coolant Temperature
- Engine oil temperature
- Transmission oil temperature
- Transmission oil pressure
- Fuel Level

LOCAL ALARM SETUP

To configure a local alarm



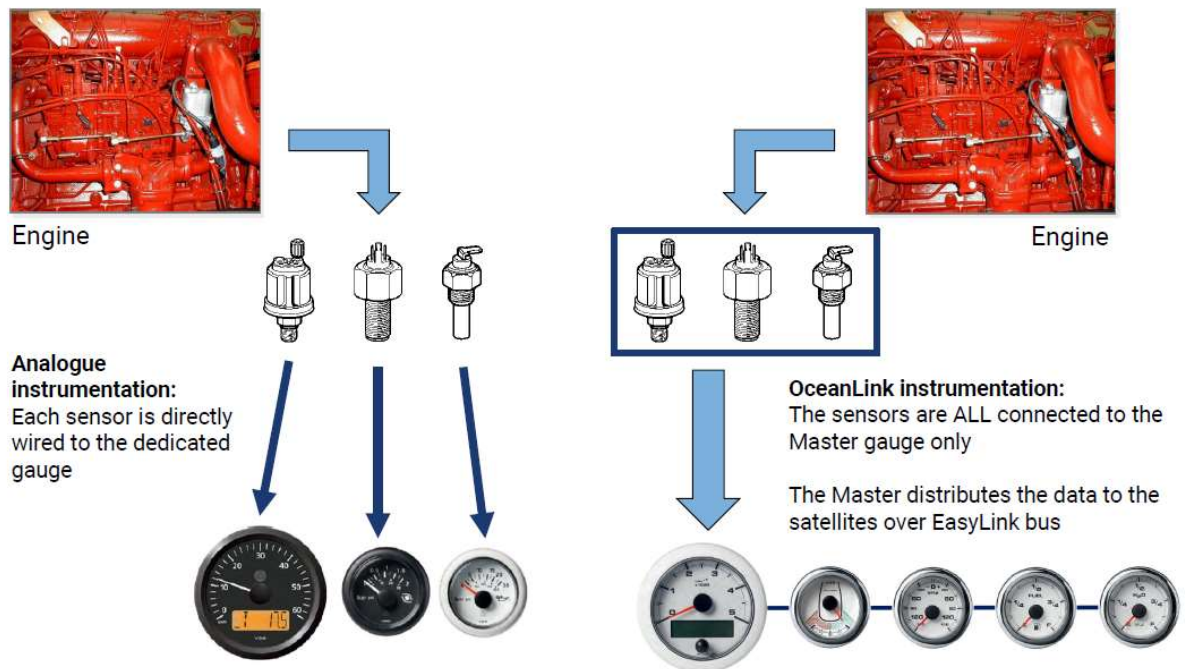
The «Minimum RPM» is the Engine Speed threshold needed to trigger the Engine Oil Press alarm

It also represents the minimum engine speed value needed to count engine hours

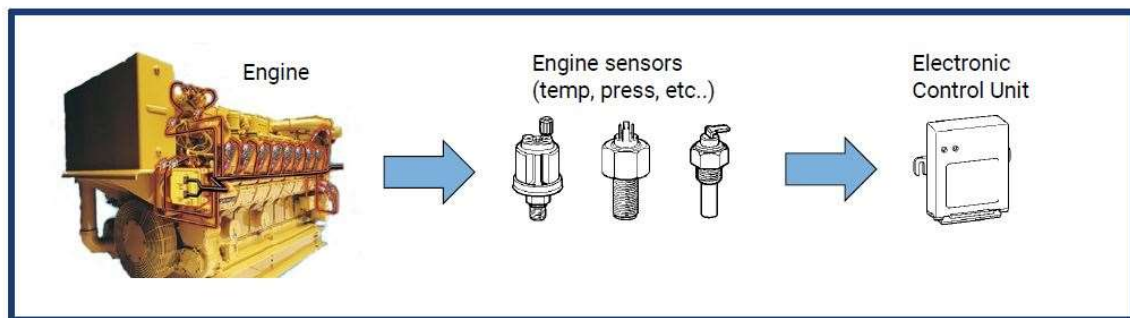
Local alarms list

Depth Shallow Water, Engine Water Temperature, Engine Oil Temperature, Engine Low Oil Pressure, Engine Low Oil Level, Waste Water, Battery, Fuel, Waste Water, Min RPM (by value definition).

OceanLink –Master concept



OceanLink -Digital instruments



OceanLink -Digital instruments NMEA2000 Gateway

➤ Embedded gateway available as per OceanLink® family.

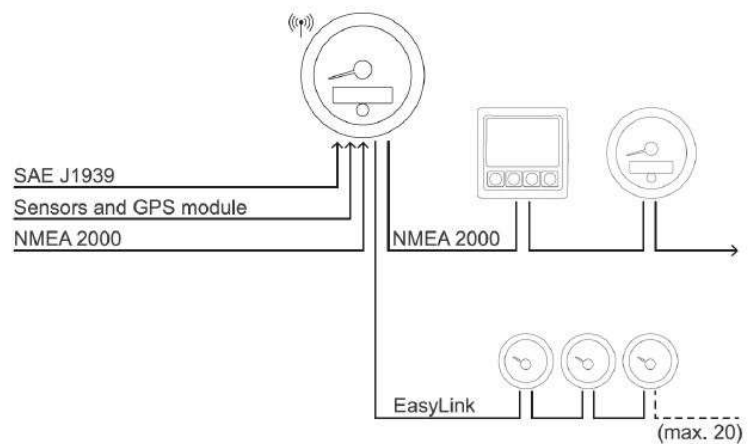
➤ SAE J1939

➤ 2x configurable resistive inputs

➤ EasyLink connectivity

➤ Configuration via embedded menu

➤ Alarm output



OceanLink Display Indication

Parameter Group Numbers

Bezeichnung	PGN
ELECTRONIC ENGINE CONTROLLER #2	61443
ELECTRONIC ENGINE CONTROLLER #1	61444
ENGINE HOURS, REVOLUTIONS	65253
ENGINE TEMPERATURE	65262
ENGINE FLUID LEVEL / PRESSURE	65263
CRUISE CONTROL / VEHICLE SPEED	65265
FUEL ECONOMY	65266
INLET/EXHAUST CONDITIONS	65270
VEHICLE ELECTRICAL POWER	65271
TRANSMISSION FLUIDS	65272
DASH DISPLAY	65276
TURBOCHARGER INFORMATION #4	65176

Parameters taken out from PGN

Messwert	PGN
% Load	61443
Exhaust gas temperature 1 (before turbine)	65176
Exhaust gas temperature 2 (before turbine)	65176
Exhaust gas temperature	65270
Intake air temperature	65270
Engine hours	65253
Engine speed	61444
Vehicle speed	65265
Fuel consumption (L/h)	65266
Fuel quantity	65276
Cooling water temperature	65262
Charge air pressure	65270
Transmission oil pressure	65272
Engine oil pressure	65263
Transmission oil temperature	65272
Engine oil temperature	65262
Battery voltage	65271

Settings Menu

When the gauge is ON, the button is used to select between the 8 levels for the Backlight and Contrast of the LCD.

To enter in the settings menu the user must first turn OFF the power, then keep the button pressed while power is turned ON again until “SETTINGS” is displayed on the LCD.

The button has 2 simple functions to navigate the settings:

Short press to change the menu item.

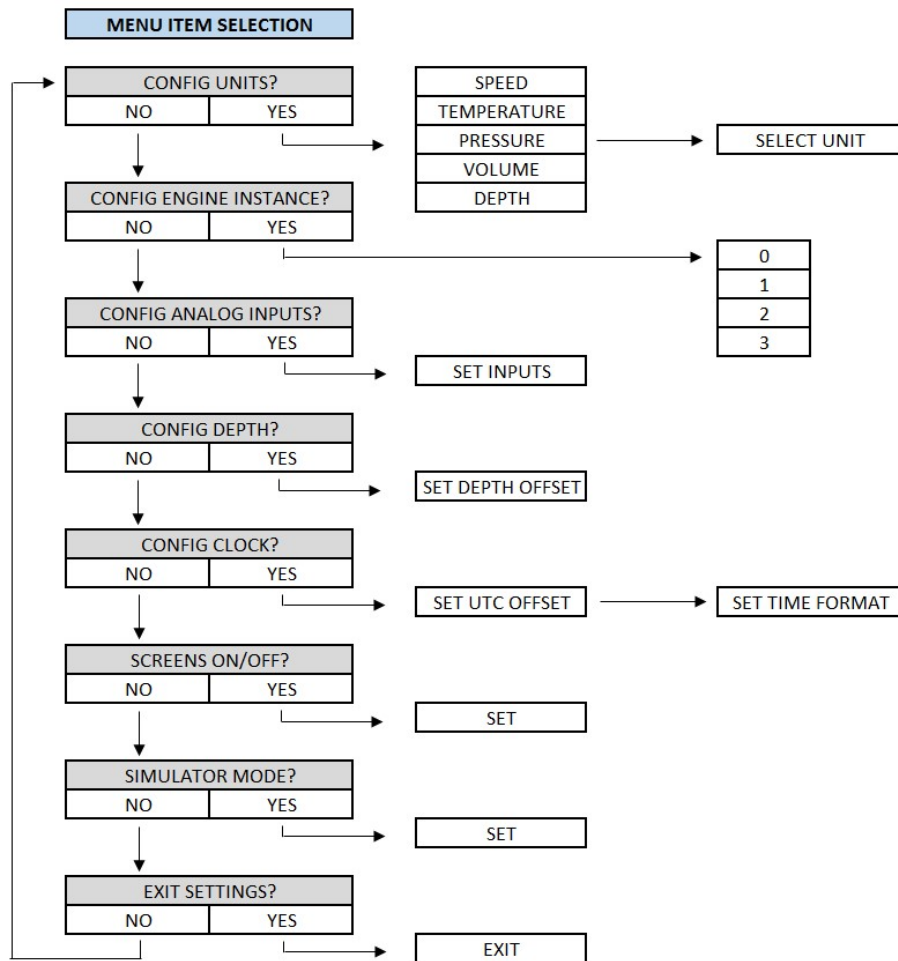
Long press to confirm and navigate into the menu setting. The selected menu item flashes as a visual confirmation.

Once all the items are scrolled, the unit will ask if to exit from the settings menu or not.

If Exit is selected, the device will store all the changes and it reboots.



Settings Menu



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