



▶ YOUR CONSUMPTION  
MANAGEMENT  
**assistant**

## ► THE INNOVATIVE CONCEPT

Eco-Pilot arose out of a 2008 encounter between a shipowner seeking to control operational costs and a start-up specializing in embedded electronics, based in Brittany (France).

In order to develop a simple, ergonomic and 'Sea Proven' product, our engineers surrounded themselves with chief engineers, tugboat captains and KRAL - a global player in the manufacture of flowmeters.

### ECO-PILOT OFFERS A 2-STAGE APPROACH: ► DATA ANALYSIS

#### - MEASUREMENT ON BOARD

Once the Eco-Pilot is installed, your crews have access to clear and precise consumption data. Being directly involved, the captain can immediately start optimizing the ship's operation.

#### - ANALYSIS ON LAND

Since the data recorded can be either directly transmitted or picked up on board, the shipping company has access to all the data it needs to know and understand the ship's consumption.

In this way, Eco-Pilot supports your decisions, limiting consumption while remaining well within your operational constraints.

Eco-Pilot can be connected to a modem or router to periodically transmit data to the shipping company. You can also consult the ship's consumption in real time.

The recordings are compatible with spreadsheets (such as Excel) to build personalized dashboards suited to the ship's operation.

Should you wish to concentrate only on data exploitation and making ergonomic tools available to all those with whom you work, C-Sense also offers made-to-measure solutions showing summary data in the form of tables or maps, as an optional extra.



## ► PATENTED SAFETY FEATURES

Eco-Pilot prioritizes safety via a solenoid-operated bypass valve.

A patented algorithm allows immediate opening of the bypass in the event of a faulty flowmeter.

**European Patent (Brevet) No.: EP 2650 657**



▲  
The Eco-pilot adapts to all units, from 15 to 80 meters in length

## ► WHEELHOUSE DISPLAY

The touch display allows access to all the Eco-Pilot's smart functions



## INITIAL DISPLAY

- Average consumption
- Instant consumption
- Operational status of sensors, network and GPS
- Day/Night Mode
- Engine selection displayed
- Totalizer
- Bypass Command

## ▶ KEY FEATURES OF THE ECO-PILOT

Inspired by the very best automotive technologies, we built the Eco-Pilot with the following objectives in mind:



### SIMPLICITY

- Electronic BUS architecture

### CONNECTIVITY

- Automatic data transmission
- Real-time consumption consultation
- GPS connection

### ERGONOMICS

- 7" touch screen

### SAFETY

- Strainer
- Automatic bypass

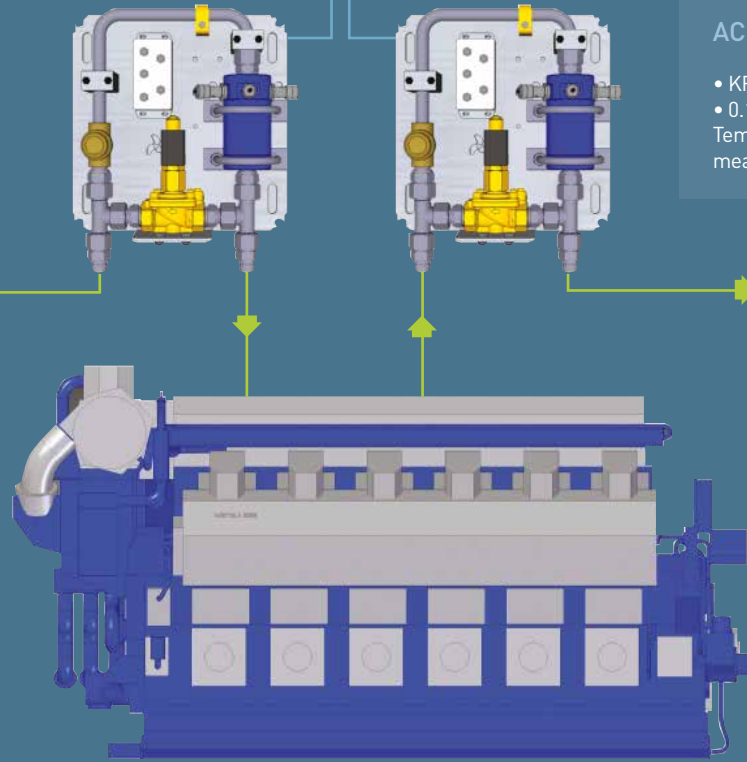
### ACCURACY

- KRAL flowmeter
- 0.1% accuracy / Temperature compensated measurement



### MODULARITY

- Fill level measurement
- Bunkering measurement
- Engine speed

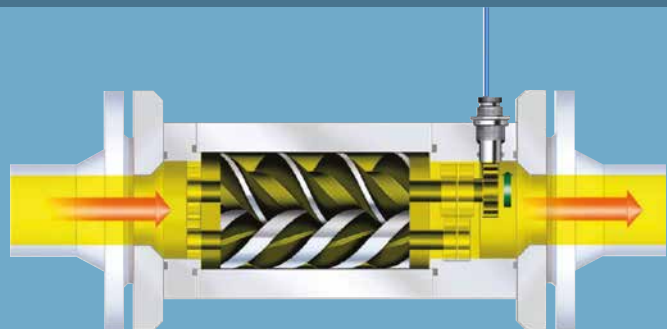


## ▶ KRAL

Our measurement specialist partner

Eco-Pilot uses KRAL flowmeters for their:

- high level of accuracy
- minimal pressure loss
- robustness
- Immunity to pulsating flow (injectors)



**KRAL**

## ▶ KNOWING AND ANTICIPATING

The information produced by the Eco-Pilot allows users to:

- Control their Fuel Oil consumption by setting limits in line with the ship's operation
- Increase reliability of consumption forecasting in line with missions
- Invoice Fuel Oil precisely, in the case of chartering
- Curb fuel theft
- Detect abnormal engine operation (fuel boost pump, injectors, etc.)
- Anticipate failure of the propulsion system (drive shaft bearing, etc.)
- Be fully informed about gas emissions via conversion of consumption (SEEMP - Ship Energy Efficiency Management Plan)
- Assessment of the impact of optimizations installed on board (paint, bulbs, pump couplings, etc.)



## ▶ FEATURES

| FLOWMETERS  |                                 |
|---|---------------------------------|
| ACCURACY  | 0,1%                            |
| TEMPERATURE PROBE   | Integrated                      |
| FLOWMETER CERTIFICATION   | On demand                       |
| ELECTRICITY   |                                 |
| POWER SUPPLY  | 24 VDC                          |
| ELECTRICAL CONSUMPTION  | 2A per engine fitted            |
| SCREEN  | 7 inch touch screen, night mode |
| CONNECTIVITY  |                                 |
| ENGINE CONTROL UNIT (direct acquisition of electronic injection engine consumption) | J1939                           |
| GPS   | NMEA 183                        |
| OUTPUT TO VESSEL MANAGEMENT SYSTEM  | Modbus                          |

▲  
Trusting us:

Offshore,  
Fishing,  
Servitude,  
Marine Transport,  
River Transport, etc.

Robust and reliable, the  
Eco-Pilot can adapt to numerous  
sectors of activity.

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