PSC Engineering S.r.l.
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CKSU
Customizable Kinetic Sensor Unit

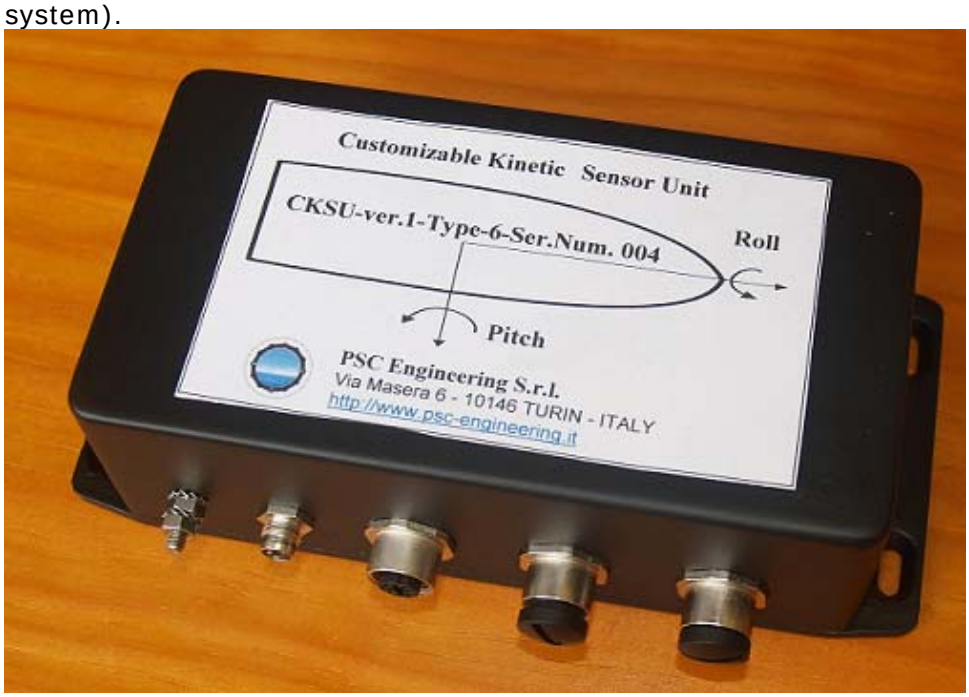
OVERVIEW

The **CKSU** is a computer based sensor, an implementation of an **advanced IMU**.
Respect to the classical IMU the **CKSU** provides standard inertial sensors fully integrated with many others sensors in order to support a more precise and safety navigation.

These **performances** are obtained using internal **Know-How** firm, developed by **R&D dept.**, such as:

- **very low effect of lateral and longitudinal acceleration** on roll and pitch angle (minimum **attenuation 50 times**) obtained through **Kalman filtering**;
- a **patented method** for calculate the sensor offsets **grant very high precision and accuracy of measuring** with **very low noise** (rate gyro < 0.1°/s RMS for 10Hz cut off frequency).
  The **offsets** versus temperature **are computed**, and the measure supplied by **sensor is completely offsets free** for accelerations and rate gyros.

The **CKSU** is available in several versions and the appropriate software and sensor for **specified customer requirements** are installed (showed type is equipped with sensors suitable for naval system).



Power Supply: 24Vdc±15% 5W

	Operating Condition	Storage Condition
T	-25° .. +70°C	−45° ..+85°C
UR	max.95% @55°C	max. 95% @55°C

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DATA & INTERFACES

The **CKSU** full version includes the following sensors data available as **output** on the **interfaces**:

- **8 channels Analog Output Signals** (customer indicates the range of the analog output voltages and the location fit with the physical quantity);
- **Ethernet** UDP/TCP Protocol (all data);
- **CAN Bus** 2.0B, ISO 11898-1 (option);

and the following system features:

- **System Healt Check** through **CBIT** (Continuous Built-in Test);
- **Configurable bandwidth** of the output signal (both analog and LAN);

Data	Range	Notes
Temperature	-25 to +100°C	
Barometric Pressure	15 to 115kPa	
GPS		
–148 dBm (Cold Start Acquisition) –160 dBm (Re-Acquisition) –165 dBm (Navigation/Tracking) 22 tracking + 66 acquisition channels WAAS/EGNOS support Predicted AGPS, aiding valid for 14 days		
Heading	0-360°	3 Axis Magnetometer
X,Y,Z Acceleration	±3g	DOUBLE Sensors
Roll Rate	±30°/s	DOUBLE Sensors
Pitch Rate	±30°/s	
Yaw Rate	±30°/s	

The data refreshed at **100Hz** are available on both the interfaces, on ethernet all the data are available while on analog signals only 8 channels are available to be factory configured in the range indicated by the customer.

The output from **Ethernet** can be easily connected to a **NMEA bridge** in order to interface standard **NMEA instruments**.