

# Rotation Monitoring Sensor Solutions

## Practical Example of Product Application

<b>Market Segment</b>	: Marine
<b>Application</b>	: Propellor shaft monitoring
<b>Type of machine</b>	: Diesel propulsion engine of a cruise ship
<b>Sensor Type</b>	: Inductive Proximity
<b>Catalog No.</b>	: XS1M18PA370

### THE SOLUTION

Supply available: 24 VDC battery.

Depending on the position of the switches, the spacing between them must be determined for each wheel. From the drawings supplied, wheel N°1 has the smallest spacing. According to the calculations and from the devices available in our range, the XS1M18PA370 proximity switch was used for all the sensors.

### THE PROBLEM

- What sensor is used if there is a wheel of a certain external diameter rotating at a speed of 0 to 145 RPM?  
The problem is to determine the size of the proximity switch, not to process the output signal: this is the customer's responsibility.
- Determine the wheel teeth.

### SPECIAL CONSIDERATIONS

- All sensors must be identical.
- Constraints: vibrations.
- Marine environment: Humidity 95%, salt.
- Proximity: 9 switches mounted on 3 wheels side-by-side.
- The distance between sensor and tooth is 3 mm minimum.

### PRINCIPLE OF THE CONTROL SYSTEM (Simplified Block Diagram)

