

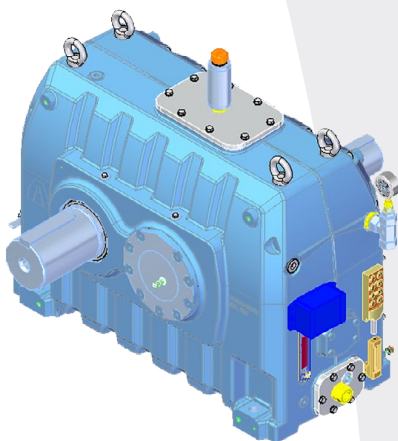
# Guard Gear 300

## Technical Specification

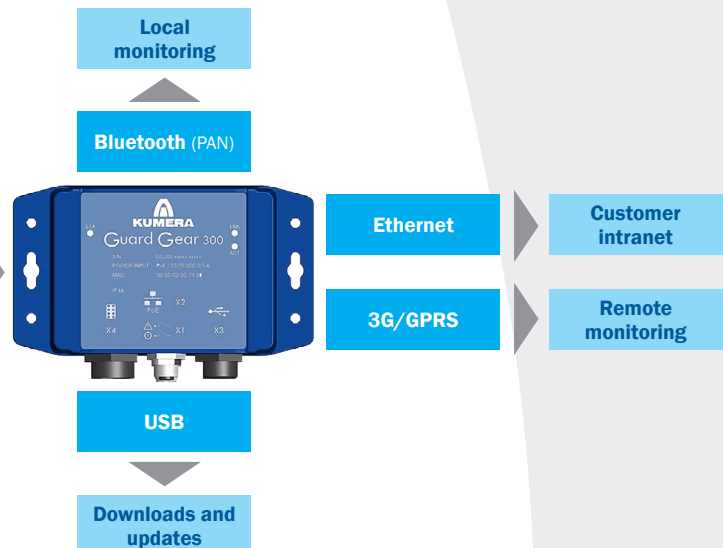


Kumera Guard Gear 300 monitors and diagnoses gear unit condition in real time 24/7. If operation condition of the gear unit changes Guard Gear 300 gives a warning and more detailed analyzes can be perform. Guard Gear 300 standard monitoring parameters are; quality, level and temperature of lubrication oil, vibration of the gear unit and rotational speed.

In addition to standard monitoring parameters end-customer can freely connect sensors with 4-20 mA signals to Guard Gear 300. Warning and alarm limits can be set to all measurements. There are three options for Guard Gear 300 connectivity; Ethernet, 3G/GPRS or Bluetooth (PAN).



- Lubrication oil**
  - Quality
  - Level
  - Temperature
- Vibration**
- Rotational speed**
- Optional parameters**



# Guard Gear 300

## Monitoring parameters:

### Standards:

- Vibration
  - Frequency bandwidths; 10-40 Hz, 40-400 Hz and 400-1000 Hz
- Lubrication oil
  - Quality (based on the change of dielectric constant)
  - Level
  - Temperature
- Rotational speed
- Internal Guard Gear temperature

### Optionals:

- Loading of gear unit
  - from inverter
  - from motor current
  - from load cell
- Lubrication oil switches (I/O)
  - Pressure
  - Filter contamination
  - Flow
- Optional sensor (4-20 mA signal), for example
  - Particle counter
  - Humidity sensor
  - Viscosity sensor
  - Etc...

## Main functions:

- Provides an estimation of lubrication oil remaining lifetime
- Activates warning or alarm switch when monitoring limits are exceeded, alarms logs to an alarm log file
- Automatic vibration alarm level calculation
- Presents measurement log data in graphics from monitoring parameters with warning and alarm limits in web browser based user interface
- Measurement tool for vibration spectrum calculation and more accurate measurements
- Gathers measurement data to logs:
  - 3 hours in accuracy of 1 minute,
  - 1 month in accuracy of 1 hour and
  - 2 years in accuracy of 1 day

## Main unit dimensions and mechanical properties:

- Operating temperature ..... -40...+80 °C
- Case material ..... Polycarbonate
- Case mounting ..... 4 x M5 (140,8 x 50,8)
- Enclosure class ..... IP-66



## Connectivity:

### Inputs:

- PoE, Ethernet & Ethernet/IP
  - User web interface
  - Factory interface
- Bluetooth
  - Wireless user web interface
  - PAN support (Personal Area Network)

### ■ USB

- Wireless connection with 3G/GPRS modem
- Download measurement logs and documents
- Firmware and parameters updates

### ■ Sensors

- Connector board

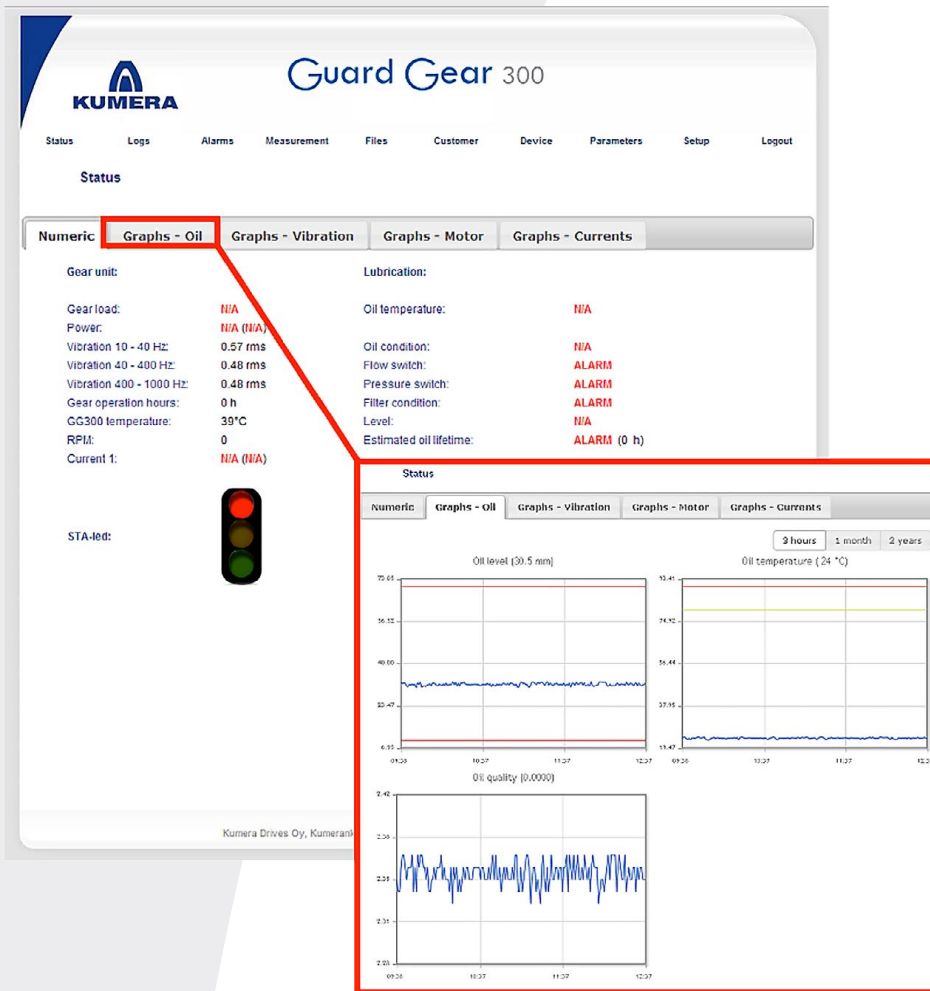
### Outputs:

- Warning and alarm switch relay (I/O)

## Web browser based user interface

The condition of the gear unit can be monitored in real time from the browser based user interface. Numeric tab shows active warnings and alarms of the gear unit. Graphs tabs give graphical detailed information of the monitoring parameter with different time span. Guard Gear 300 prognoses estimated remaining lifetime of lubrication oil based on the parameters and Kumera algorithm. All settings and alarm levels can be modify through the web browser user interface.

All measurement results automatically saved into internal memory of Guard Gear 300. Measurement results can be also saved into text-file for further processing. Real time measurement with 10 Hz sampling rate from selectable sensor inputs can be made on-demand. Customer information and documents (part list, assembly drawing...) can be saved into internal memory of Guard Gear 300. Available is also field for notes, into which observations or for example gear unit service history can be written.



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