INNOVATION TO MONITOR BOLT TENSION, GET YOUR ACTIVITY SAFE AND PLAN YOUR MAINTENANCE FOR EFFICIENCY

OUR TECHNOLOGY: A SOLUTION TO MONITOR BOLTED ASSEMBLIES

CHALLENGES IN MANY INDUSTRIES

Some assemblies face significant constraints: vibrations, repeated stress, variations of temperature, shocks: it often generates nut loosening.

Industries use solutions to lock bolts or put in place periodic maintenance to avoid accidents and lethal injuries. These solutions take time and cost a lot of money.

SOLUTIONS TO MONITOR FASTENERS

JPB Système designed and manufactured a specific sensor which checks in real-time the tension in your assembly.

If you have critical fasteners with periodic torque checks, preventive maintenance, fasteners with difficult access... Our Smart Program solution will help you to save time & money, automatically record the tension and move to predictive maintenance.

STOP SYSTEMATIC CHECKS... TIGHTEN WHEN NECESSARY!
HOW IT WORKS

JPB Système developed specific strain gauges that allow size reduction of the sensor. The installation of the sensor is easy in your assembly. Sensor is equipped with smart electronics. It processes and converts measurements into a robust signal that is not affected by distance of communication or variations of temperature. It ensures a high level of accuracy over the entire operating range.

JPB Système developed a data acquisition system and displays solutions according to your needs:

RFID Smart Washer & Reader for on-site check
- Manual control
- Suitable in safety-sensitive environment (not connected to the Internet)

Wired Smart Washer & App for remote check
- Automatic and remote control
- Data available at any time (IoT)

BENEFITS

- **Secure** the monitoring of the tightening: check tension in the assembly when & where needed.
- **Quick** and **accurate** check in less than 2 seconds. No disassembly/reassembly; no torque wrench test.
- **Reduce** maintenance time and cost.
- **Easy access** in confined space with the RFID reader extension.
- **Simple** and **intuitive** to use.
- **Ensure** automatic traceability of fasteners monitoring.
- **Easy installation** in your assembly: ultra-thin thickness (5 / 7,5mm).
THE 2 SOLUTIONS ARE EASY TO USE

- Before assembly, simply calibrate the Smart Washer at “0%” with the reader (RFiD Smart Washer) or with the app (Wired Smart Washer).
- Put the Smart Washer on the non rotating part of the fastener (screw head or nut).
- Tighten the bolt as usual with your torque wrench. Don’t change your torque process.
- When bolt is properly tightened, define the “100%” level with the reader or with the app.
- At any time, you can check the variation of the tension in the fastener: do a manual check with the reader (RFiD Smart Washer); manual or automatic check with the app (Wired Smart Washer).
## TECHNICAL FEATURES

<table>
<thead>
<tr>
<th></th>
<th>RFID Smart Washer</th>
<th>Wired Smart Washer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Range</strong></td>
<td>M8 - M22</td>
<td>M8 - M24</td>
</tr>
<tr>
<td><strong>Operating temperature</strong></td>
<td>-20°C to +50°C (reader)</td>
<td>-20°C to +70°C</td>
</tr>
<tr>
<td><strong>Resistance temperature</strong></td>
<td>-50°C to +150°C</td>
<td>-30°C to +90°C</td>
</tr>
<tr>
<td><strong>Water resistance</strong></td>
<td>IP66</td>
<td></td>
</tr>
<tr>
<td><strong>Material of body</strong></td>
<td>Stainless Steel</td>
<td></td>
</tr>
<tr>
<td><strong>Data transmission</strong></td>
<td>Passive RFID</td>
<td>LORA</td>
</tr>
<tr>
<td><strong>Internet connection</strong></td>
<td>No: local data storage</td>
<td>Yes: computer/cloud storage</td>
</tr>
<tr>
<td><strong>Power supply</strong></td>
<td>No power (passive RFID)</td>
<td>230V</td>
</tr>
<tr>
<td><strong>Precision mode (kN)</strong></td>
<td>±6% IL*</td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Precision relative mode (%)</strong></td>
<td>±3% IL*</td>
<td>±4% IL*</td>
</tr>
<tr>
<td><strong>Number of measuring points</strong></td>
<td>Redundancy: 2 measurement points</td>
<td>Simple point of measurement</td>
</tr>
</tbody>
</table>

*IL: Initial Load

---

## RESISTANCE

Load sensor, electronic, elastomer, antenna are **tested in harsh conditions**: vibrations, drops, shocks, chemical solvents resistance, UV resistance... We check the product at every manufacturing steps to guarantee a **high level of quality & reliability**.

Smart Washers are delivered with a **calibration certificate**.

### PASSIVE DEVICE

### ASSEMBLY SAFETY

### HUMAN FACTOR MITIGATION

### REDUNDANT MEASURE

### EASY TO USE

### TIME SAVING FOR MAINTENANCE

---

info@jpbleствуeme.com
(+33) 1 64 79 71 20
FRANCE - USA - POLAND

www.jpbleствуeme.com