



Condition Monitoring for machines and assets

SmartCheck

Schaeffler SmartCheck Condition Monitoring System



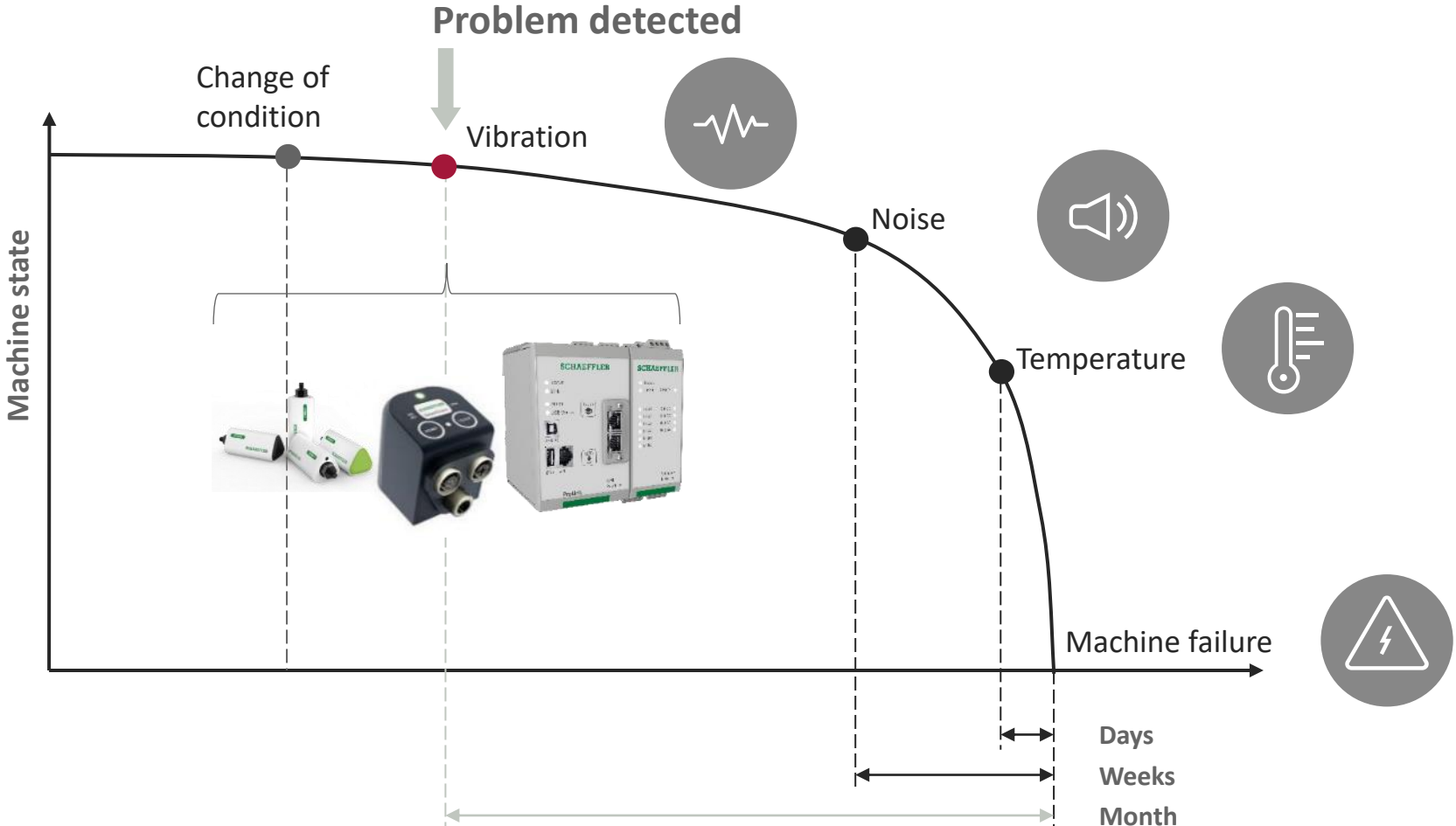
- Multiple interfaces for cloud communication
- Universal application
- Easy to use
- Perfect integration into customers infrastructure

Inhalt

- 1 Basics Vibration monitoring**
- 2 SmartCheck
- 3 Areas of application
- 4 SmartCheck system integration
- 5 Advantages
- 6 Accessories
- 7 Services

Why Condition Monitoring?

- Increased availability
- Prevention of unplanned downtime
- Planning of service and maintenance is improved
- Subsequent damages
- Reduction of maintenance costs
- Analysis of the damage root cause is supported



Simple application example

- Sawmill Kåge in Sweden
- Annual production Capacity approx. 240,000 m³ of sawn timber
- 81 employees
- Monitoring of main electric motors

Downtime costs per hour:	2.800€
4 hours downtime of asset:	11.200€
Total:	11.200€
Amortization period:	one unplanned downtime

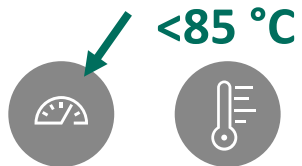


More examples: [Link](#)

Product portfolio Schaeffler Condition Monitoring Devices

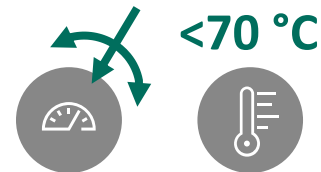
OPTIME

The next generation of condition monitoring: affordable, easy to install and scale up



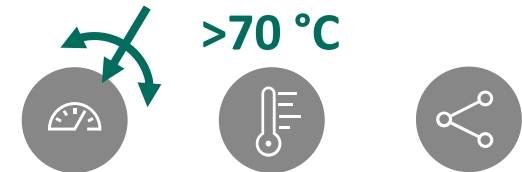
SmartCheck

Sophisticated, one-channel condition monitoring system with intelligent learning mode and integrated web server



ProLink CMS

Modular multi-channel condition monitoring system for vibrations and other parameters with extended connectivity



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SmartCheck



- Permanent monitoring
- For constant and variable operating machines (speed and/or load)
- Condition monitoring for beginners, because of pre configuration
- Automatic alarm threshold adjustment through self-sufficient learning mode (plug-and-play)
- Predefined measuring jobs for possible machine errors: (e.g. roller bearings, unbalance, belt drives)
- Easy integration into control and enterprise process landscape (analogue, digital, OPC/UA)
- Simple analyses directly on the device.

SmartCheck in- and output

Analog Input 1
e.g. torque



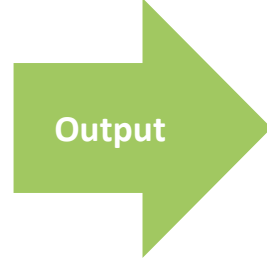
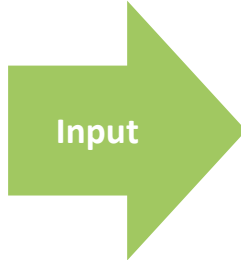
Analog Input 2
e.g. load



Digital Input
e.g. speed



Communication
e.g. OPC/UA



Switching output



Analogue Output



Communication
e.g. OPC/UA

Internal:



Vibration



System temperature

Function:

The internally installed acceleration sensor detects the vibration of the machine, which is important for monitoring. Together with the additional signals such as speed or load, this is sent to the CPU. The CPU evaluates the signals. In case of an alarm, the switching output is activated and the analogue output reports the alarm to the customer control.

All values can also be transferred to the control world via OPC/UA.

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Usable across all industries



- Steel
- Paper
- Raw Materials
 - Cement
- Production / Manufacturing
 - Wood processing

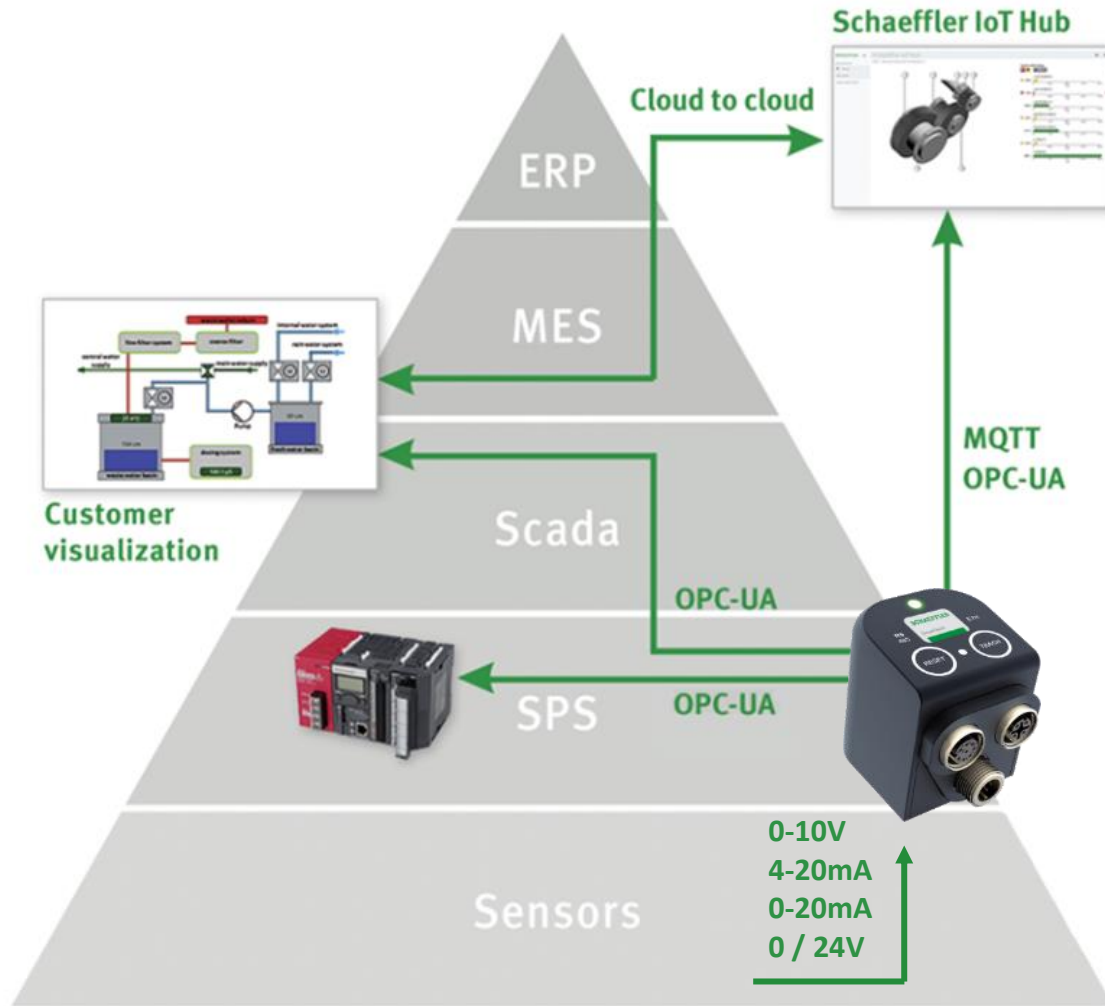


- Motors
- Fans
- Pumps
- Compressors
- Small gear boxes
- Vibration screens
- Decanter
- Separators

Inhalt

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System integration in customers infrastructure



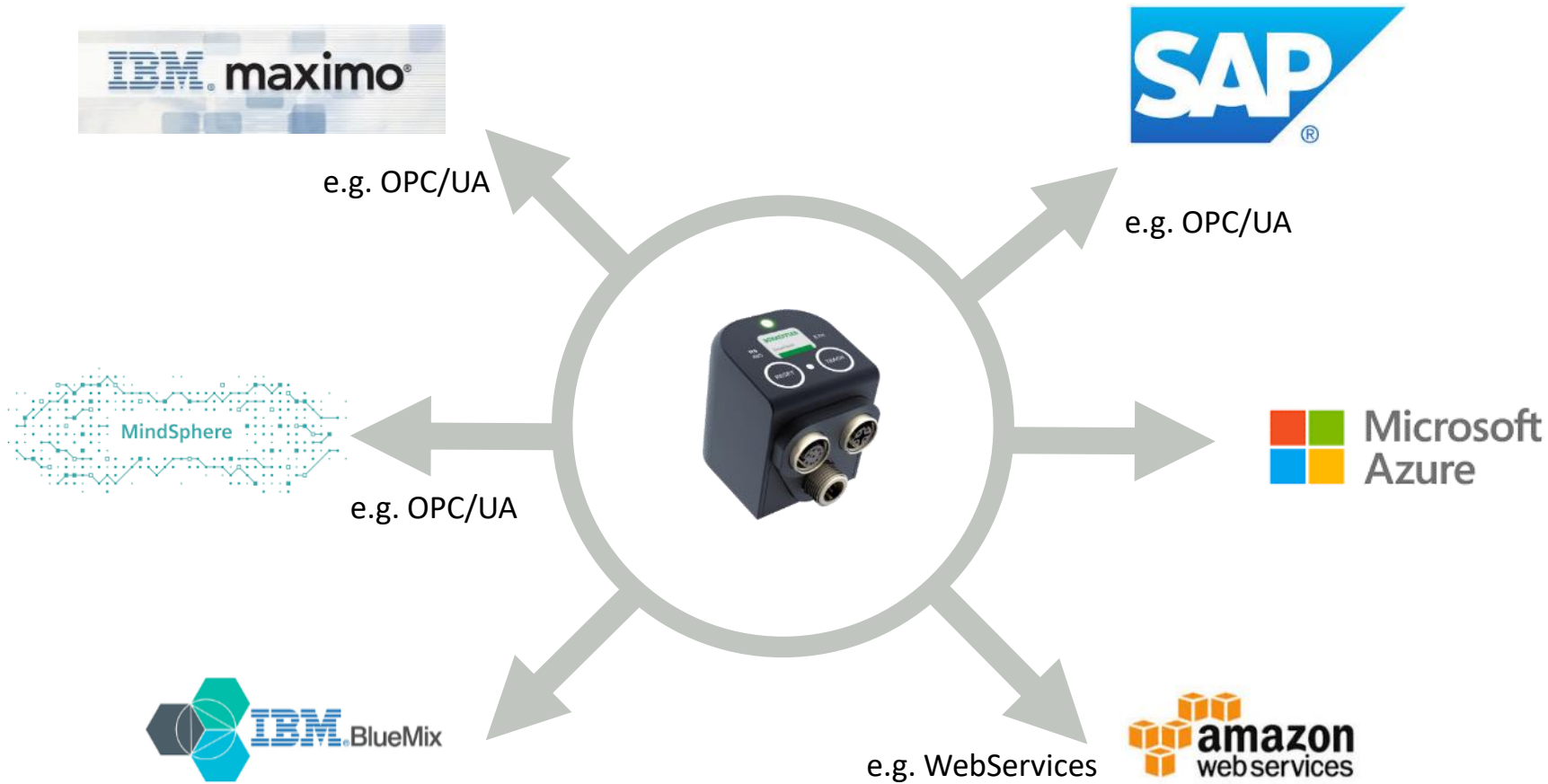
Easy integration in process automation via:

- OPC/UA Server
- SLMP Client

Cloud communication via:

- OPC/UA Server
- MQTT

Direct integration in ERP and Cloud



Direct integration via standard communication channels:

- OPC/UA Server
- WebServices
- E-Mail

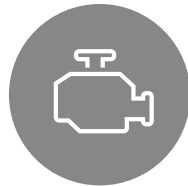
Inhalt

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Advantages

Immediately ready for use

- The pre-installed basic configuration of the SmartCheck allows general monitoring of standard equipment such as motors, fans and pumps
- The adaptive learning mode sets the alarm thresholds individually for the unit to be monitored



No additional software necessary

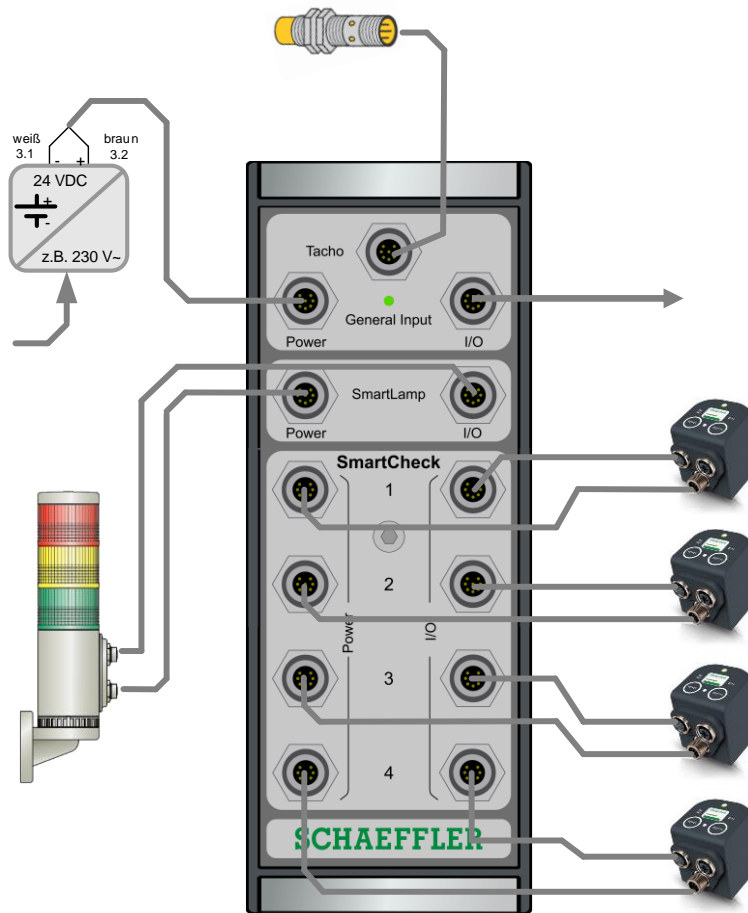
- Software for Configuration, View trend data and first analysis included on the device itself by using a standard web browser
- Operation possible without additional workstation licenses
- No approval by IT necessary



Inhalt

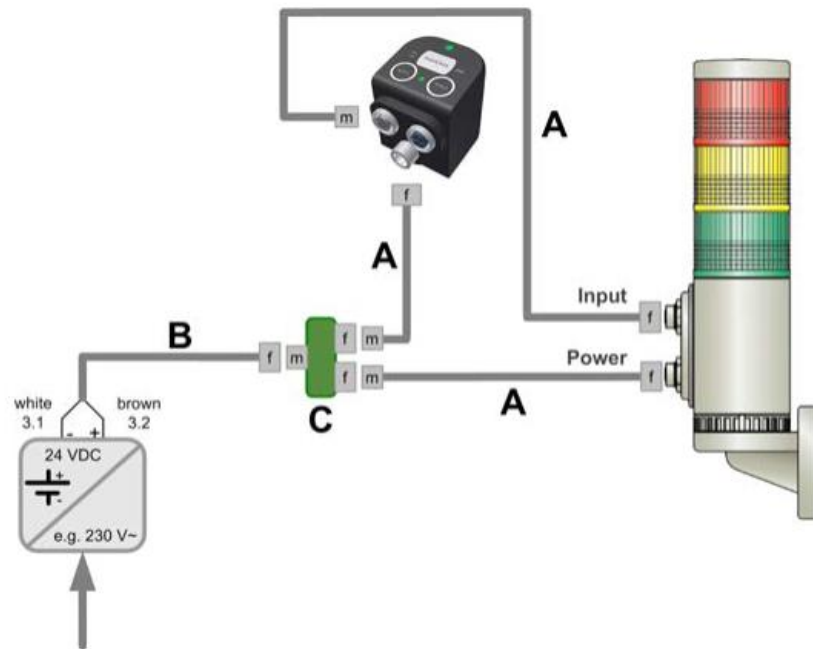
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SmartConnect Box



- Easy distribution of power supply and speed signals to a maximum of 4 SmartCheck devices
- Signaling of the alarm status with SmartLamp
- No specialist electrical knowledge necessary
- SmartConnect Box already includes the complete wiring
- Quick and easy installation by using the standard cables Plug and Play
- Various cable lengths available.

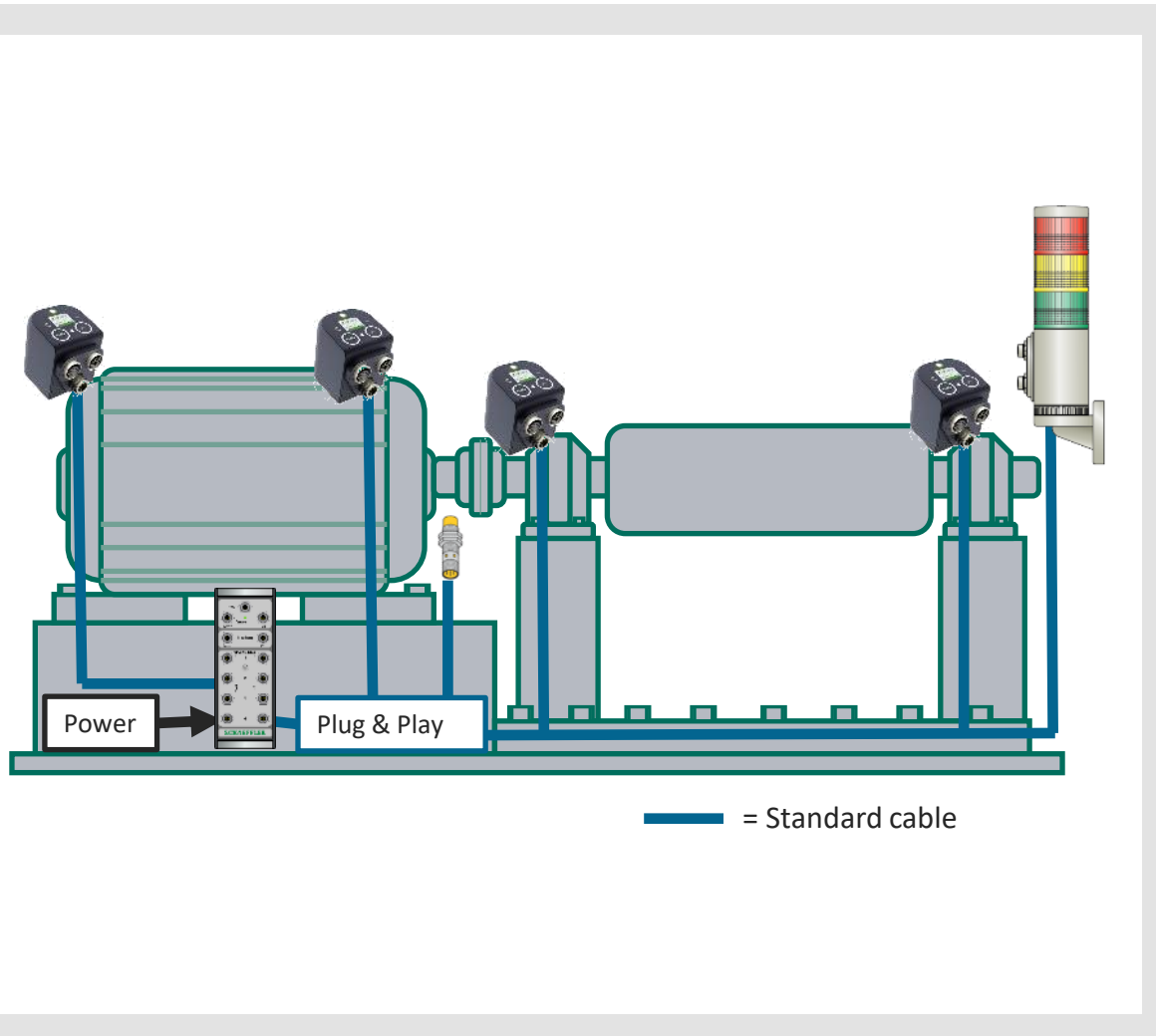
SmartLamp



Connection overview

- Signaling of the alarm status of the SmartCheck with SmartLamp
- No electrical expertise required
- Quick and easy installation by using the standard cables - Plug and Play
- No special configuration of the SmartCheck necessary. Standard configuration is sufficient
- Can be combined with SmartConnect Box

SmartConnect Box and SmartLamp in combination



Solution description:

- Simple distribution of power supply and inputs / outputs to up to four SmartCheck systems
- Connection of SmartLamp and standard speed sensor via SmartConnectBox
- Decentralised display of the overall status of one or more SmartCheck

Advantages of this solution:

- Low efforts for cabling and costs
- Quick and easy installation
- No configuration of the SmartCheck necessary. Factory delivery is sufficient
- Smart ConnectBox can be mounted directly on the machine due to protection class IP 67
- Plug & Play with Schaeffler standard cables

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Condition Monitoring



The services around the topic of condition monitoring include:

- **On-site service**
Measurement point definition, commissioning, reference measurements, measurement routes, system integration, root cause analysis in case of irregularities, endoscopy
- **Automatic diagnosis with digital Service ConditionAnalyzer**
Automatic analysis, integration into an existing IoT platform takes place via a REST API interface
- **Status report with recommendation for action**
Preparation of status reports and written recommendations for action
- **Maintenance Services**
System integration and adaptation, integration consulting, maintenance contracts
- **Trainings**
Standard and tailored to customer needs