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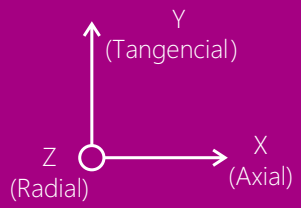
LEADING THE RECYCLING ECONOMY,
INNOVATIVE ENERGY-SAVING EMISSION REDUCTION!

Oldlang Smart Electrical

CHC21-B Smart Sensor

Condition monitoring for motors

The Oldlang CHC21-B Smart Sensor converts traditional motors into smart, wirelessly connected devices. It enables you to monitor the health of your motors, optimize efficiency and improve reliability and safety.



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About Oldlang Smart Electrical

Oldlang Smart Electrical is a modern technology enterprise, committed to innovating energy conservation and emission reduction and leading the circular economy. The focus on the energy saving, data collection, remote control and other smart functions are the characteristics of Oldlang's Smart electrical products. To enable users to use energy safely, reliably and efÞcently is the value of Oldlang Smart Electrical. Therefore, the intelligent energy management is not only the inevitable development of the times, but also Oldlang's development direction of the intelligent electrical systems. Oldlang Smart Electrical provide wisdom into the city, the intelligence into household products, improve people's life and improve the earth's environment. The focus on sustainable development has always been the belief of Oldlang Smart Electrical.

In Oldlang smart electrical, we are always advocating:
INNOVATIVE ENERGY-SAVING EMISSION REDUCTION LEADING THE RECYCLING ECONOMY!

Low Carbon Wireless Energy Saving

CHC21-B Smart Sensor
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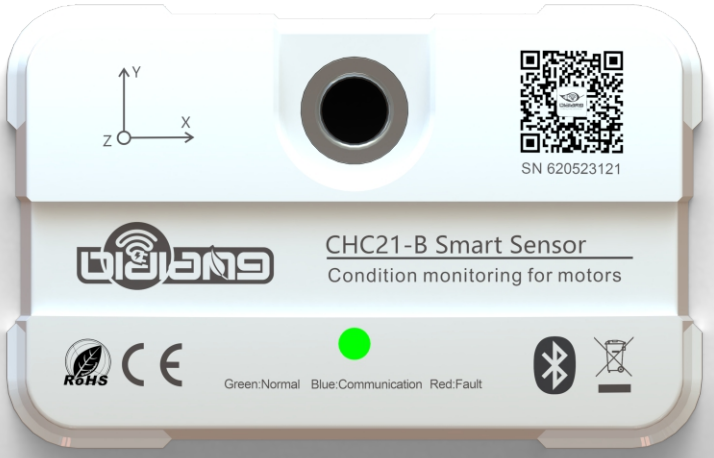
The Oldlang CHC21-B Smart Sensor converts traditional motors into smart, wirelessly connected devices. It enables users to monitor the health of their motors and to plan maintenance in advance.

Unplanned downtime can be avoided, efficiency optimized and safety improved.



Intended use

- Industrial AC motors, induction or synchronous.
- Continuous or intermittent duty.
- Frame sizes
  - IEC: 56-500.
  - NEMA: 42-449. non-standard motors equivalent to IEC 500.
- Fixed speed or variable speed.
- New or existing motors from Oldlang or other manufacturers.

Oldlang CHC21-B Smart Sensor gateway

Automatically collects data from a high number of Smart Sensors and transmits the data to the cloud for processing.

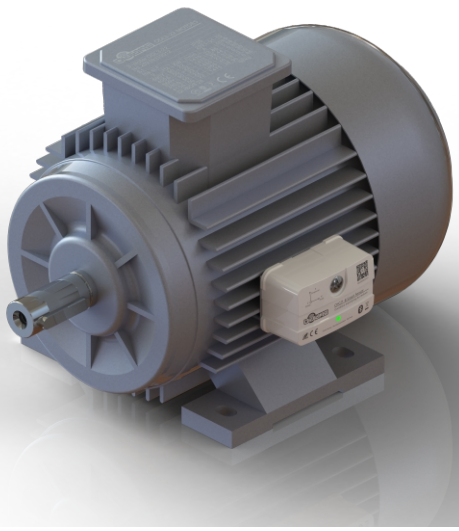
Gateway specifications	
Range	Approx. 50 m (can vary in an industrial environment depending on facility layout)
	Power supply over ethernet port
Power supply	1879 FCC, CSA, CE
Certifications	ISM band, 2.402-2.480 GHz
Radio frequency	WiFi, LAN
Data transfer	4G/LTE USB dongle
Environment	Operating temperature:-40℃~ +65℃

Health parameters

- Overall condition
- Overall vibration (velocity rms)
- Bearing condition
- Misalignment
- Skin temperature (degrees)

Operating parameters

- Radial vibration (velocity rms)
- Tangential vibration (velocity rms)
- Axial vibration (velocity rms)
- Speed (rpm)
- Operating hours
- Number of starts
- Supply frequency (Hz)
- Output power (hp/kw)
- Regreasing count-down



CHC21-B Smart Sensor
Condition monitoring for motors

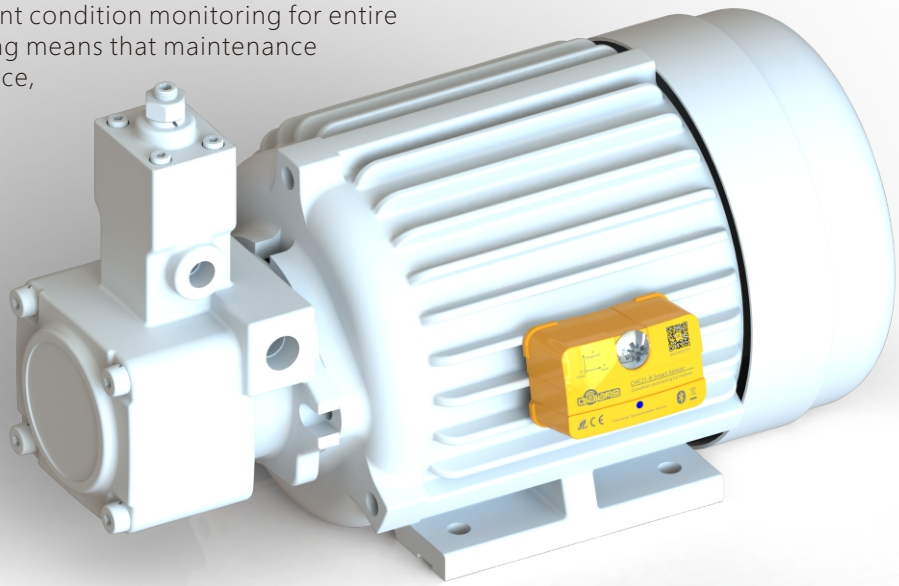
SPECIFICATIONS	
Temperature measurement	
Measurement range	-40°C to +85°C
Resolution	0.05°C
Accuracy (baseplate temperature)	+/-0.5 °C
Vibration measurement (overall velocity values)	
Amplitude range	0.04-700 mm/s (25 Hz)
Frequency range	10 Hz - 1 kHz
Wireless communication	
Network / radio standard	Bluetooth 4.0 / IEEE 802.15.1
Frequency	2.4 GHz, license free ISM band
Range	With mobile phone: 1-10 m With gateway: approx. 50 m (can vary in an industrial environment depending on the facility layout)
Power	
Battery type (not replaceable)	3.0 V Lithium Permanganate (LI-MnO4) button cell CR2477N
Estimated battery lifetime	Batteries have a design life of 5 years. Expect 3-5 vears depending on usage, settings and temperatures
Measured skin temperature (℃)	+40°C +70°C
Battery life in years, sensor in default con**fi**guration	approx. 5 approx. 3
	Default con**fi**guration: Sensor measures once per hour and stores data to memory. stored data must be collected at least monthly with a Bluetooth mobile device or gateway.
Environmental	
Temperature	Operation:-40°C to +80°C
	Storage: +10°C to +25°C
IP class	IP66 (dust-tight and resistant to powerful water jetting)
Vibration (of mounted surface)	<15 g at 100 Hz
Certifications	
	CE
	Safe areas only: no hazardous area certi**fi**cation
Physical	
Weight	0.1 kg
Case material	Stainless steel/Thermoplastic
Mounting	Centrally on motor frame, parallel to motor shaft; ensure good contact Ensure that correct mounting kit is used; ready-made mountinq kits might not be available for all kinds of motors

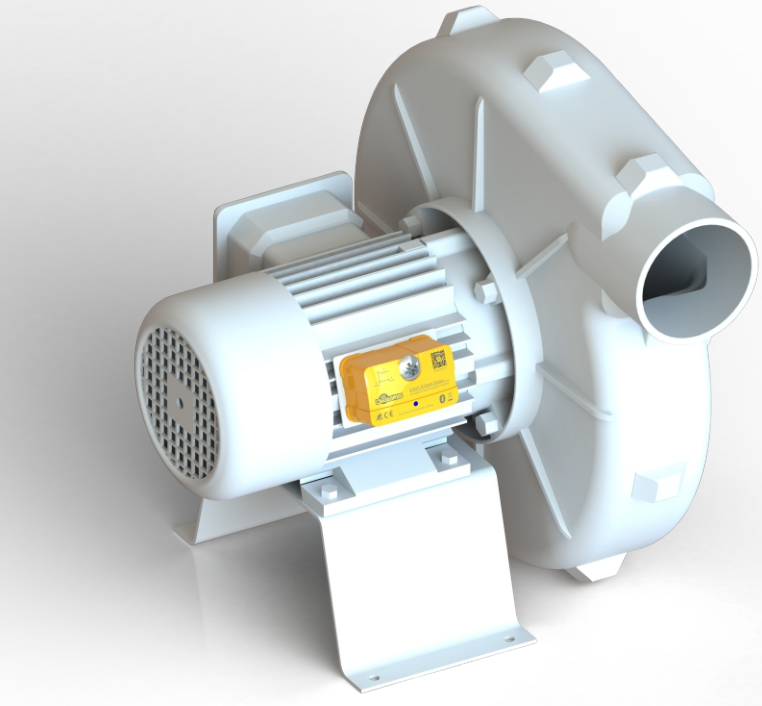
CHC21-B Smart Sensor
Condition monitoring for motors

Predictive maintenance for motors

In the past, permanently installed condition monitoring was too expensive to use with the majority of motors. As a result, most of the motors were run until they failed. Oldlang's cost-efficient solution changes all that. With a payback time estimated at less than one year, it brings remote condition monitoring to a much wider range of motors -plants can even implement condition monitoring for entire motor fleets. Condition monitoring means that maintenance activities can be planned in advance, which reduces downtime and supports longer motor lifetimes.

At the same time the solution generates 'big data' on the status of large numbers of motors, paving the way for predictive maintenance and plant-wide optimization of operations and energy consumption.





Easy-to-fit smart sensing technology

At the heart of the solution is a compact sensor unit that is easily attached to motors without the need for wiring. Selected ranges of Oldlang motors can be factory fitted with the sensors as an option. For already installed motors, retrofit kits are available that enable motors to be field upgraded with sensors.Mounting and conÞguring the sensors takes only a few minutes. They are compatible with new and old motors, from Oldlang or other vendors.

The sensor monitors signals from the motor, accurately measuring key parameters at regular intervals.It transfers the data using built-in Bluetooth Low Energy technology to a smartphone or gateway and to a secure cloud-based server. Data communications use industry standard encryption protocols, and all data are stored in the cloud in an encrypted form.

Advanced algorithms based on Oldlang's extensive know-how analyze the data and produce meaningful information. The server sends this information directly to the user's smartphone and to a dedicated Oldlang CHC21-B Smart Sensor web portal. Data is also tracked over time for trend analysis.

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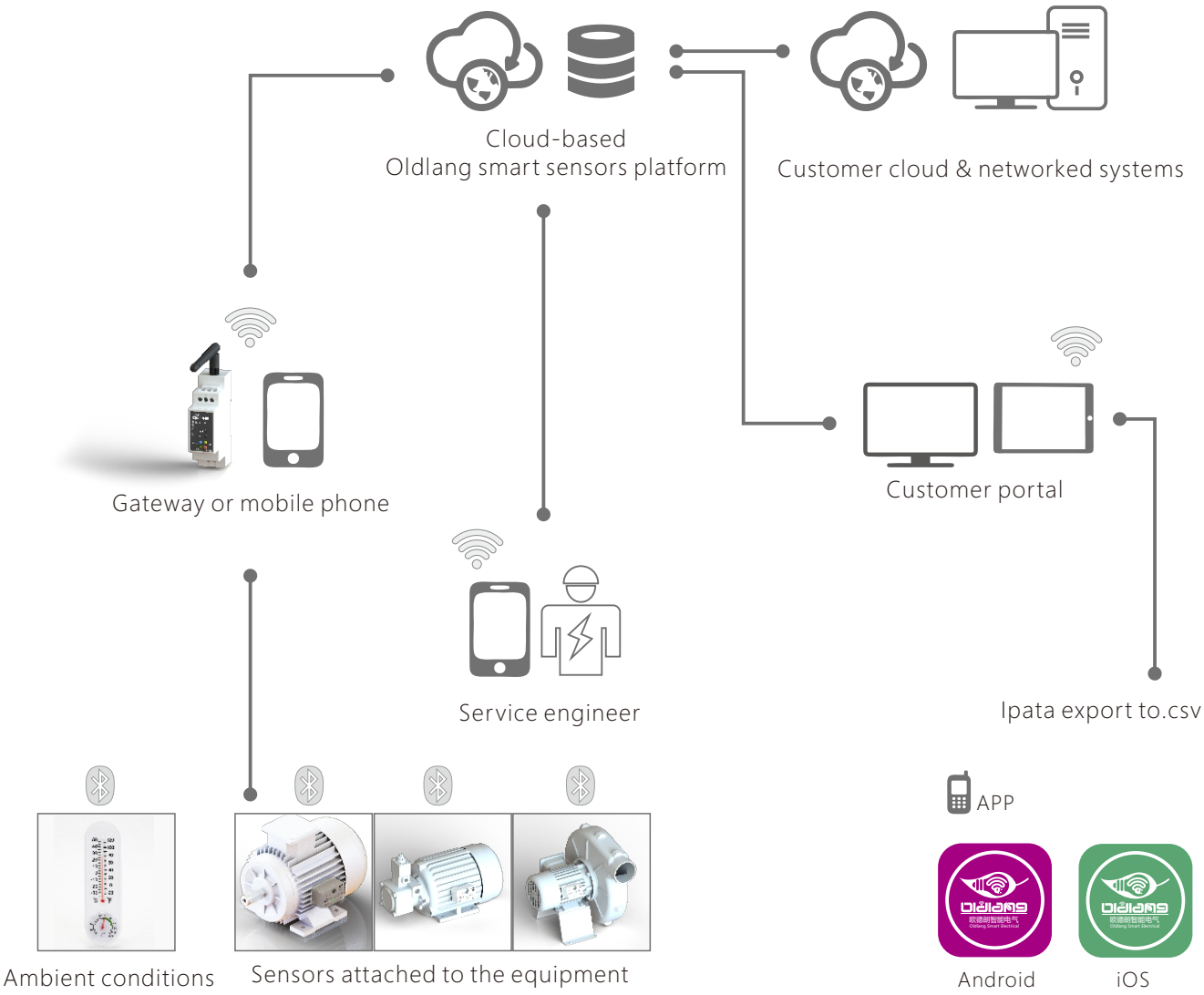
Condition monitoring for motors



Intuitive interface

Users can check the status of their motors at any time with their smartphone via the Oldlang Smart Sensor app. The interface includes a 'traffic light' display to give a quick overview of all the motors that are being monitored. Users also receive clear recommendations on how to optimize maintenance and save costs.

There are also opportunities to optimize motors' energy consumption. By combining data on the eneray consumption levels of individual motors with plant operating information, it is possible to select the most appropriate motors to cut eneray costs.The solution supports plant operators' efforts to reduce their overall cost of motor ownership.

RED
Critical issue - failure likely soon. Take action as soon as possible.

BLUE
Operation can continue but the motor should be watched closely and serviced at the next possible opportunity.

GREEN
Motor fine -operation can continue.

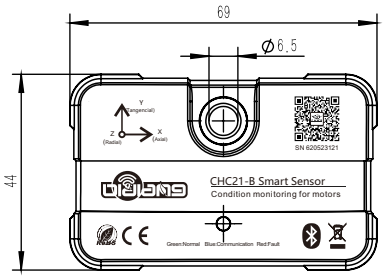
CHW13-4G: RS485 To 4G Communication bridge module

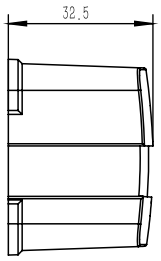
Factory of the future with digital powertrains

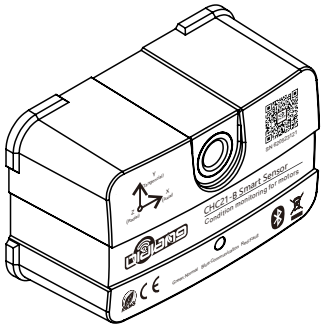
Smart, connected factories are the future of manuacturing. Oldlang smart sensors connects users to the power of the Industrial Internet of Things (IIoT). Oldlang smart sensors can combine data collected by the motor sensor with data from other connected equipment, such as mounted bearings, gearing, variable-speed drives and pumps. This data can be accessed and analyzed remotely, providing deeper insight into the health of the entire process. Oldlang offers a unique digital advantage by combining connectivity and data analytics with industrial expertise to make operations efÞcient, predictable and safe.

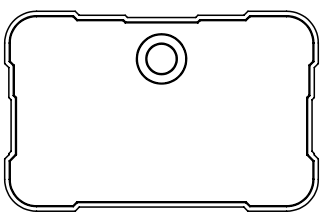
Mechanical tolerances (mm)

Undimensioned tolerance	Mounting hole size tolerance
< 1mm:±0.2mm 1~5mm:±0.3mm > 5mm:±0.5mm	±0.4mm









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Low Carbon

Wireless

Energy Saving

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