

CEMB presents CUBE

The most versatile vibration sensor
for Machine protection,
Predictive maintenance
& IoT Condition monitoring



Vibration equipment division

CEMB



CUBE: Smart Multimeasure VibSensor

Measure:

- 3-Axes Multiple bands Vibration (1Hz -5KHz)
- Configurable filters
- Rotation Speed or Pulse frequency measure (e.g. for blade passing)
- Unbalance measure
- Misalignment measure
- Coupling defect measure
- Ball bearing status detection
- Temperature measure
- Mechanical impacts
- Raw Vibration data for custom analysis & AI

Protect:

Configurable Outputs (4-20mA & ON-OFF)

IoT:

2 wire Ethernet – 10Mbit/s – 1Km range
AI, custom algorithms, IoT



> CUBE: 3 axis Protection + Condition Monitoring all in one



CUBE measures continuously the vibration over 3 axis + the temperature of machine support.

CUBE is the first heavy duty industrial sensor that provides, in a single device, the following functions:

- **Machine protection:** 4-20mA & ON/OFF output
- **Condition Monitoring:** FFT & Raw data via ethernet
- **Predictive maintenance:** Configurable filters & advanced algos

CUBE is designed for heavy duty IP 68 environment, with stainless steel body, rugged integrated cable or connector.

CUBE is native IoT & 4.0 Industry



COMPRESSOR



INDUSTRIAL FAN



MOTOR



FEED WATER PUMP



GEAR BOX



TURBINE



MACHINE TOOL



CUBE: protection & monitor for heavy duty application

CUBE 3 Axis Vibration + Temperature



Body material:	Stainless steel AISI 316
Body size:	32x32x37mm
Power supply:	24Vdc (10 ÷ 35 Vdc)
Binary output (PNP/NPN) load:	50mA
Temperature measure:	-20 ÷ +110°C @ ±5%
Frequency:	1Hz ÷ 5KHz on each axis
Operating conditions:	-55 ÷ 110°C IP68
Communication:	Ethernet SPE (10base-T1L)
Communication speed:	10Mbit/s @ 1 Km (on twisted pair)
Communication protocols:	ModBUS TCP/IP; MQTT; HTTP
IoT & configurability:	100% configurable

CONNECTIVITY

Each **CUBE** is available with 3 types of connection



	CUBE 0	CUBE 1	CUBE 2	CUBE 3
COMMUNICATION PORT	Ethernet SPE	Ethernet SPE	Ethernet SPE	Ethernet SPE
OUTPUT 1	-	4-20 mA	4-20 mA	4-20 mA
OUTPUT 2	-	-	4-20 mA	PNP/NPN Contact





**...unlimited solutions for
Machine protection
&
Condition Monitoring**



Vibration equipment division

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> We have a solution for any level, from just sensor to cloud

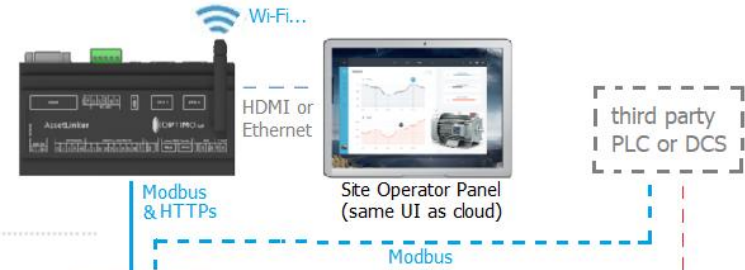
REMOTE or CLOUD Predictive Maintenance: (Pro vib Cloud)

PROVIB CLOUD
Multi plant User Interface
Deep data storage
Statistic and AI analysis
Alarm Notification: SMS, Mail
Secure cloud communication



SITE Condition Monitoring: (Pro vib Cabinet)

AL300
(with PROVIB SITE UI)
FFT analysis & Diagnostic
Local data storage (FIFO) &
Synchronization with cloud
Local User Interface
each AL300 manages up to 20 cube



LOCAL Operating Panel: machine train troubleshooting & visualization

LODIC-8
Local User interface
display measure of
up to 8 Cubes

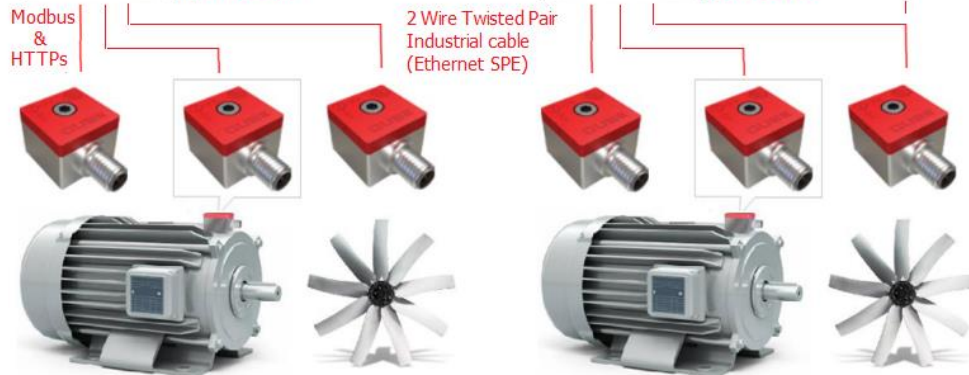


8 PORT SPE switch
Ethernet SPE to RJ45 converter
(2303-8SP1 by Phoenix Contact)

FIELD Machine Protection: CUBE Smart Vibsensor

**CUBE: Machine protection &
Condition monitoring**

- 3-Axis Multifunction sensor:**
- Multiband Vibration & bearing
 - Unbalance measure
 - Misalignment measure
 - Coupling defect measure
 - Temperature
 - Rotation speed
 - Raw data (acceleration/velocity)





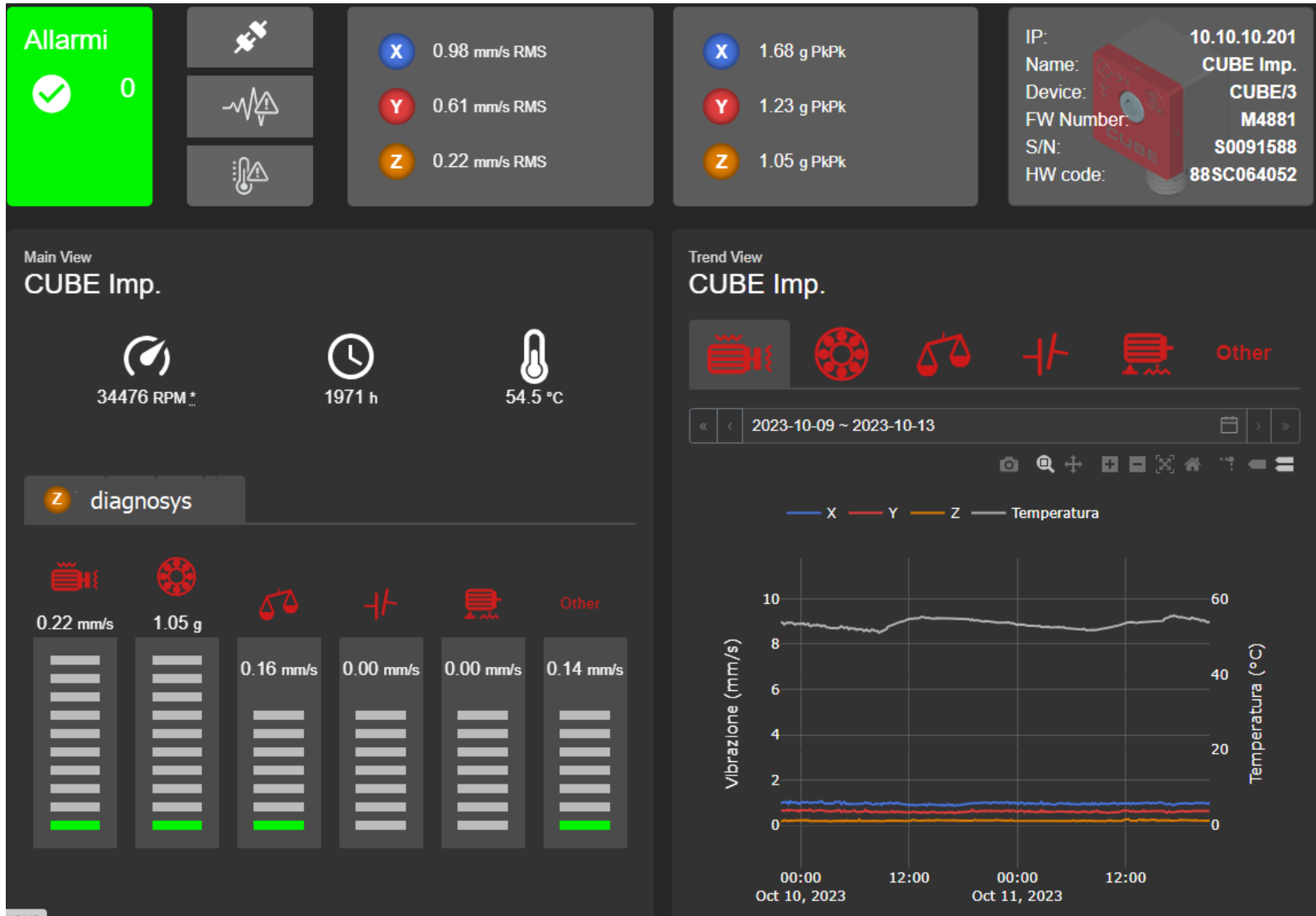
CUBE + PROVIB:

The cost effective solution for Protection, diagnosis & Maintenance of rotating machines.

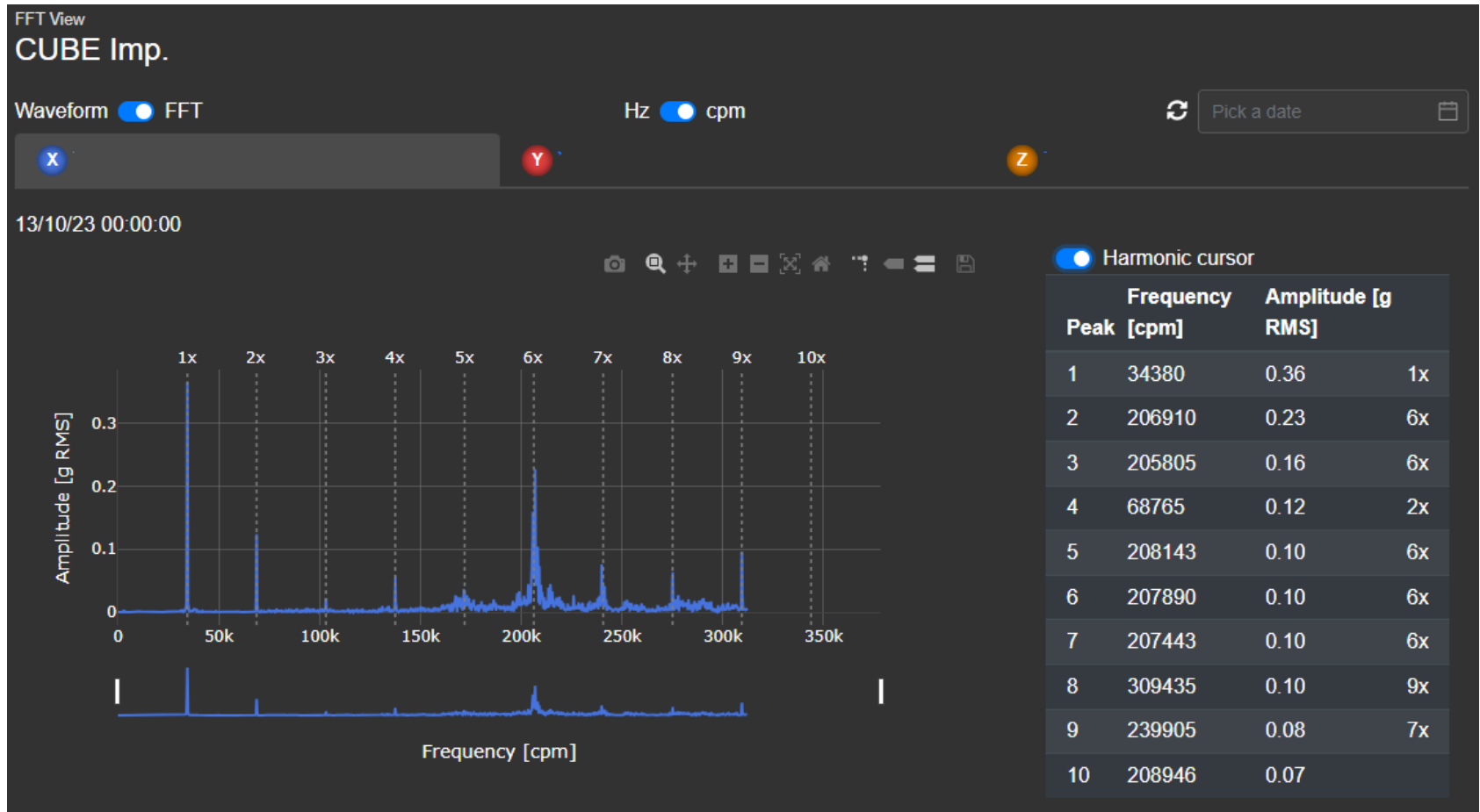
- Pumps
- Cooling towers and Evaporators
- Wind towers
- Motors
- Generators
- Fans
- Hydro turbines
- Gearboxes
- Compressors
- Milling machines
- Paper rolls
- Mixers and centrifuges



Condition Monitor UI: main page with trend



Condition Monitor UI: FFT page with harmonic cursor



> Condition Monitor: enjoy yourself!

You can enjoy and experience PROVIB by accessing [CEMB live demo](#) at the link below:

<https://demo.cemb.optimoiot.it/login>

Credentials:

Username: demo.provib.cemb@optimoiot.it

Password: D&m0psss

note: the fan is running from 8 a.m. to 16 p.m. CET from Monday to Friday

