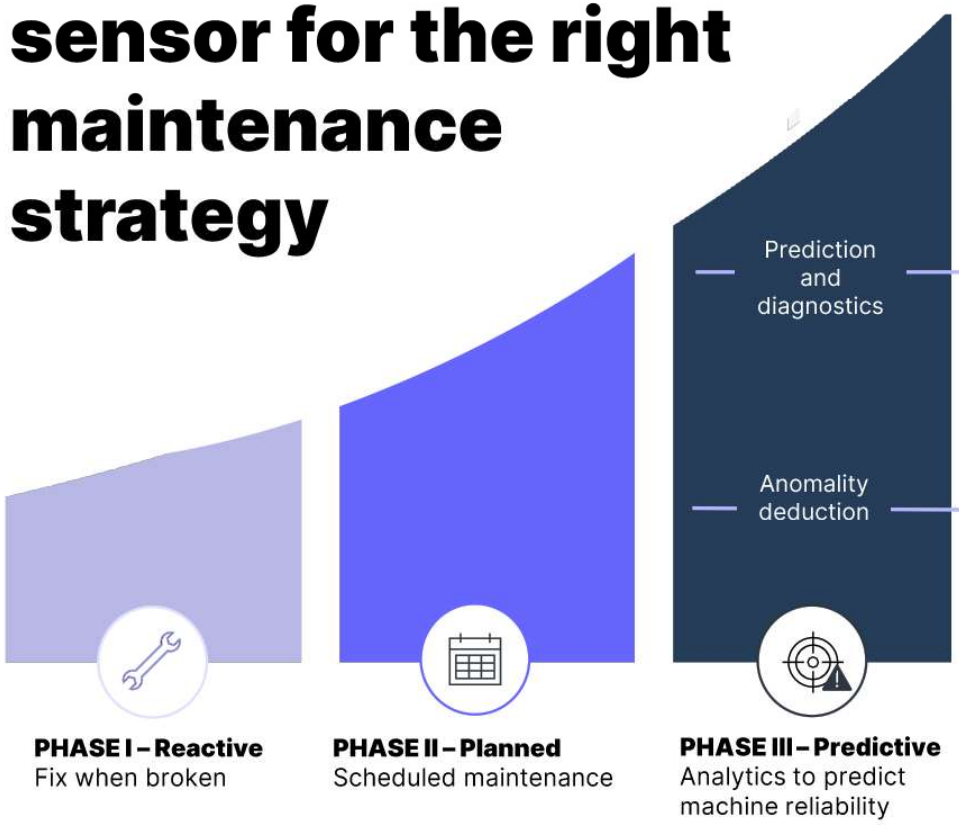
TREON SENSORS

Choose the right sensor for the right maintenance strategy



Performance

Treon Industrial Node X
For equipment with long maintenance lead times, diagnostics and fault characterization are key.

Core

Treon Industrial Node C
For equipment with a short repair or replacement window before failure.

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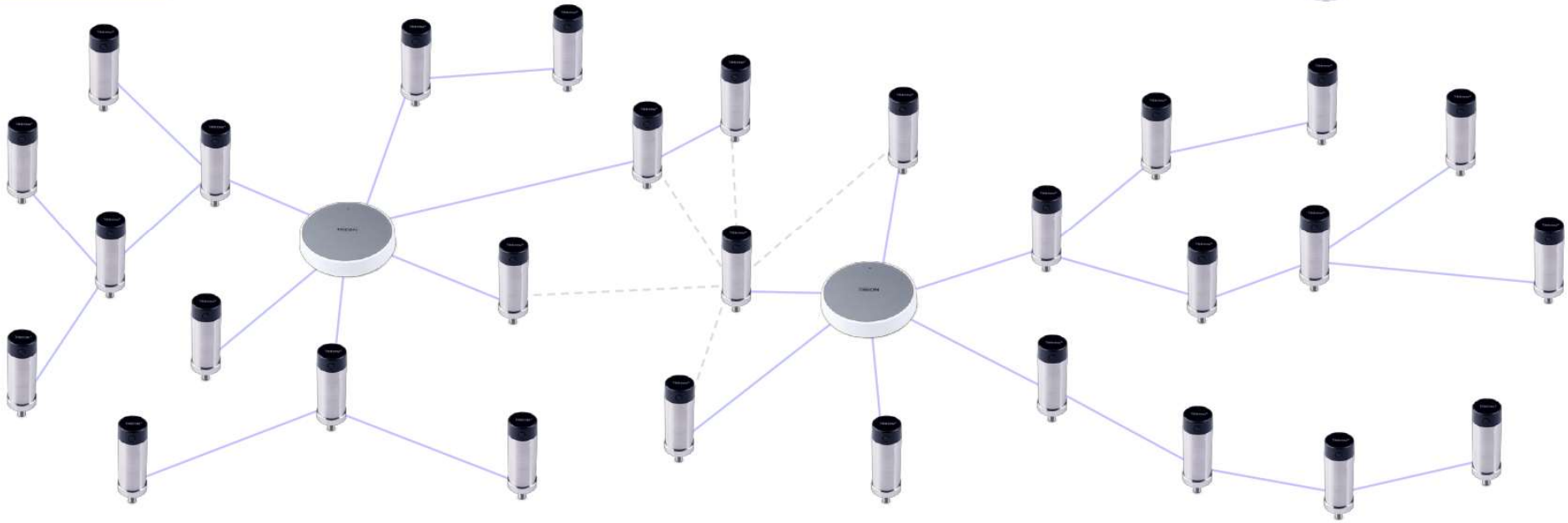
SCALABILITY

Mesh for massive IIoT

Sensors and gateways communicate wirelessly in a mesh network and transmit data to backend of your choice. Network is secure, decentralized and can scale to thousands of devices. Automatic channel selection, adaptive transmit power and self-healing ensure robust operation even in difficult congested environments.

Read more



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TECHNICAL SPECIFICATIONS

Treon Industrial Node 6

Dimensions
78.5 x 28mm
Mounting to M8 thread
Weight 129g
Cover material 316ss
Top cap material PA

Environment
Operating temperature -40°C to +85°C
Storage temperature +10 to +30°C
IP rating IP67

Wireless communication
2.4GHz / Wirepas Mesh

Battery
3.6V lithium thionyl chloride
Battery lifetime up to 5 years
(Battery life is dependent on operating temperature and configuration)

Software
Fully configurable data delivery

Vibration
Triaxial acceleration measurement
Dynamic range +/- 2, 4, 8 or 16
Frequency range 2-6300Hz (+/-3dB) *
Sampling rate 26.7kHz
Resolution 16bit

Temperature
Measurement range -40°C to +105°C
Resolution 0.1°C
Accuracy +/- 0.3°C
Repeatability +/- 0.1°C

Key performance indicators
Velocity: RMS, PEAK, P2P
Acceleration: RMS, PEAK, P2P, kurtosis, crest factor

Sample amounts
Single axis, max. 110592 samples
Triaxial, max. 36864 samples per axis

* Mounting dependent

Signal processing
Butterworth high, low and band pass filter
Configurable low and high cut-off
Decimation configurable, max. ratio 1:9

FFT Calculation
Sample amount 4096
Lines of resolution 1600
Averages, max. 9
Overlap, 0 to 100%
Hanning windowing

Patent
Pat. US11656239

Certifications
See up to date list in Treon online store

Visit web store

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TECHNICAL SPECIFICATIONS

Treon Industrial Node 6 Ex*

Dimensions
78.5 x 28mm
Mounting to M8 thread
Weight 129g
Cover material 316ss
Top cap material PA

Environment
Operating temperature -40°C to +60°C (hazardous environment) / -40°C to +85°C (non-hazardous environment)

Storage temperature +10 to +30°C
IP rating IP67

Wireless communication
2.4GHz / Wirepas Mesh

Battery
3.6V lithium thionyl chloride
Battery lifetime up to 5 years
(Battery life is dependent on operating temperature and configuration)

Software
Fully configurable data delivery

Vibration
Triaxial acceleration measurement
Dynamic range +/- 2, 4, 8 or 16
Frequency range 2-6300Hz (+/-3dB) *
Sampling rate 26.7kHz
Resolution 16bit

Temperature
Measurement range -40°C to +85°C **
Resolution 0.1°C
Accuracy +/- 0.3°C
Repeatability +/- 0.1°C

Key performance indicators
Velocity: RMS, PEAK, P2P
Acceleration: RMS, PEAK, P2P, kurtosis, crest factor

Sample amounts
Single axis, max. 110592 samples
Triaxial, max. 36864 samples per axis

* Mounting dependent
** Limited by maximum operating temperature

Signal processing
Butterworth high, low and band pass filter
Configurable low and high cut-off
Decimation configurable, max. ratio 1:9

FFT Calculation
Sample amount 4096
Lines of resolution 1600
Averages, max. 9
Overlap, 0 to 100%
Hanning windowing

Patent
Pat. US11656239

Certifications
ATEX/IECEx
II 2 G Ex ib IIC T4 Gb, when -40°C ≤ Ta ≤ +60°C
II 2 D Ex ib IIIC T135°C Db, when -40°C ≤ Ta ≤ +60°C
HazLoc, MET

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*This patented technology is protected by US Patent 11656239.

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TECHNICAL SPECIFICATIONS

Treon Industrial Node X

Dimensions
79.5 x 43.6 mm
Mounting to M30 x 2.0 adapter interface
30 mm direct mounting surface
Weight 210 g
Top cap material PA
Bottom cap material 304 stainless steel

Environment
Operating temperature -40°C to +85°C
Storage temperature +10°C to +30°C
IP rating IP6K9K

Wireless communication
2.4GHz / Wirepas Mesh
Maximum transmit power 8 dBm
NFC

Battery
Treon Power Module – replaceable battery module
3.6V lithium thionyl chloride
Battery lifetime up to 5 years
(Battery life is dependent on operating temperature and configuration)

Primary accelerometer
Triaxial acceleration measurement
Dynamic range +/- 2, 4, 8 or 16
Frequency range up to 6300 Hz *
Sampling rate 26667 Hz
Resolution 16bit
Sensitivity min. 0.061 mg/LSB
Noise floor 75 µg/√Hz
*Mounting dependent

Sample amounts
10 second sampling time with 26667 Hz ODR
Per axis in triaxial measurement

Vibration data delivery
Velocity: RMS, PEAK, P2P
Acceleration: RMS, PEAK, P2P
Crest Factor and Kurtosis
FFT (Acceleration, Velocity, Envelope)
Acceleration and Envelope waveform

Temperature
Measurement range -40°C to +105°C
Resolution 0.1°C
Accuracy +/- 0.3°C
Repeatability +/- 0.1°C

Magnetometer
Triaxial magnetic field measurement
Frequency range up to 2500 Hz
Range ±1200 µT (max.)
Resolution 18bit
Sensitivity 10 nT/LSB
Noise floor min. 40 nT rms

Magnetometer data delivery
Rotations per minute (RPM)
RPM variability index
RMS, PEAK, P2P
FFT
Waveform

Memory
Dedicated serial flash for long sample capture

Signal processing
Butterworth high, low and band pass filter
Configurable dynamic cut-offs
Configurable decimation
Enveloping

FFT Calculation
Sample amount 16384
Lines of resolution up to 6400
Averaging and overlapping
Hanning windowing

Real-time clock (RTC)
1-second accuracy

ATEX Zone 0 certification will be available in H2/2025

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TECHNICAL SPECIFICATIONS

Treon Industrial Node C

Dimensions
52.8 x 43.0 x 24.9 mm2.08 x 1.69 x 0.98 inch
Mounting: Direct glue / epoxy mounting on flat surface
Weight: 54 g / 1.9 ounces

Environment
Operating temperature: -20°C to +80°C / -4°F to +176°FStorage temperature: +10°C to +30°CIP rating: IP69

Wireless communication
Bluetooth Low Energy 5NFC

Battery
Lithium metal non-rechargeable batteries
Battery lifetime up to 5 years (Battery life is dependent on ambient and mounting surface temperature)

Accelerometer
Triaxial acceleration measurement
Dynamic range: ±16Frequency range: up to 1000 Hz

Sampling rate
6600 Hz
Resolution: 16bit

Vibration data delivery
Velocity: RMS, Peak (10–1000 Hz)Acceleration: RMS, Peak (10–1000 Hz)

Temperature
Resolution: 0.1°C (0.18°F)Accuracy: ±0.5°C (±0.9°F)

Software
Treon Connect compatibility – seamlessly integrated with Treon Connect middleware and applications

Certifications
Commercial availability in Europe, United States, and Canada from Q3 2025*

*Additional market availability from Q4 2025, subject to regional certifications

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TECHNICAL SPECIFICATIONS

Treon Gateway 2

Dimensions
ø95mm x 18,3mm
Weight 85g

Materials
Cover material polycarbonate

Mounting
Wall mount accessory available

Environment
Operating temperature 0°C to +50°C
Storage temperature -40°C to +85°C

Power supply
Power supply 5V DC

Hardware
ARM Cortex-A8 1GHz Processor
1 GB DDR3L RAM
16 GB eMMC Storage

Connectivity
USB A Host Port
Ethernet
2G, LTE-M
Wi-Fi, 2.4GHz 802.11b/g/n
Bluetooth 5, Bluetooth LE
Wirepas 2.4GHz

Networking
Firewall (iptables)
Linux TCP/IP stack
TLS/SSL
MQTT
BlueZ
Linux Bluetooth stack
Wirepas Connectivity

Software, Development Environment
ARM-based Linux OS (Yocto)
Pre-loaded Python and Node.js
SDK, Native GCC

Cloud support
Microsoft Azure IoT EDGE certified
Amazon Web Services
Easy integration to any cloud

Certifications
See up to date list in Treon online store

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TECHNICAL SPECIFICATIONS

Treon Gateway 2 in Protective Enclosure

Dimensions
Size 180 x 130 x 81mm (excluding cable sealing clamps)
Weight 632g (without power cord) / 867g with EU power cord

Materials
Cover material Polycarbonate
Gasket TPE

Mounting
Wall mounting with wall mounting lugs

Enclosure environment
Operating temperature -20°C to +50°C
Storage temperature -40°C to +85°C
Humidity 20 to 90%, noncondensing
pressure equalizer

Ratings
IP66/IP67 enclosure
IP44 integrated power cord (length 1.5m)*
EURO type F ungrounded plug
Impact Resistance IK08 (EN 62262)

* IP rating may vary depending on plug variant

Power supply
Voltage range 85 to 264 VAC
Frequency range 47 to 440 Hz
Power consumption 30VA max

Treon Gateway hardware
ARM Cortex-A8 1GHz Processor
1 GB DDR3L RAM
16 GB eMMC Storage

Connectivity
USB A Host Port
Ethernet
2G, LTE-M
Wi-Fi, 2.4GHz 802.11b/g/n
Bluetooth 5, Bluetooth LE
Wirepas 2.4GHz

Networking
Firewall (iptables)
Linux TCP/IP stack
TLS/SSL
MQTT
BlueZ
Linux Bluetooth stack
Wirepas Connectivity

Software, Development Environment
ARM-based Linux OS (Yocto)
Pre-loaded Python and Node.js
SDK, Native GCC

Cloud support
Microsoft Azure IoT EDGE certified
Amazon Web Services
Easy integration to any cloud

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