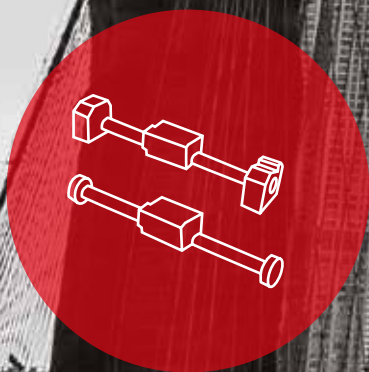
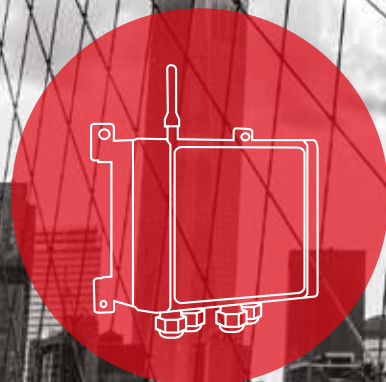


WE CONNECT TO THE REAL WORLD STRUCTURAL MONITORING



SMART **SENSORS**



WIRELESS **INTERFACE**



SOFTWARE **CLOUD**

Rev.9 del 01/06/2017

Redatto da: R&D e MKT

Approvato da: CEO

Smart structural WIRELESS Interface

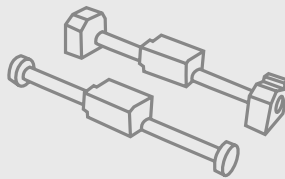
NI200 devices are **ultra low power** wireless sensors communication interfaces.

They can be provided with **169 / 868 Mhz radio** or with new standard network low power **SIGFOX**. **NI200 devices Family** is a low-cost vertical solution designed for **smart building monitoring**; this means you can **measure tilt, pressure or cracks extension** of the building. Thanks to our **cloud** service software you can view data in cloud mode with **smartphone** or **tablet** from different devices in different locations at the same time, with the possibility to choose the widget to display them.

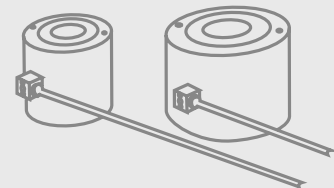


1
STEP1

CONNECT SENSORS TO DEVICE



VIBRATING WIRE
• deformation



LOAD CELLS
• load distribution

2
STEP2

CHOOSE WIRELESS INTERFACE



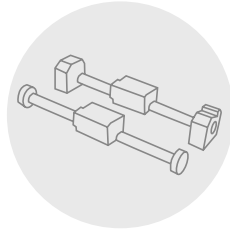
- Long distance up to 15 km
- Standard en13757
- Tx power of up to 35mW
169Mhz / 868 Mhz



- Long life battery
- Long range distance
- Global reach
- Out of the box connectivity

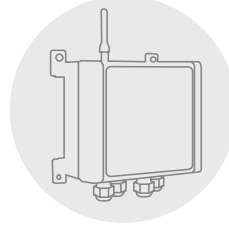
BUILD YOUR SYSTEM

STEP 1



**CONNECT
SENSORS
TO DEVICE ***

STEP 2



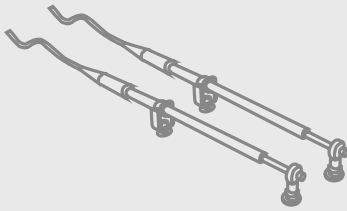
**CHOOSE
WIRELESS
INTERFACE**

STEP 3

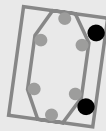


**VIEW
DATA WITH
CLOUD**

*Up to 2 Sensors

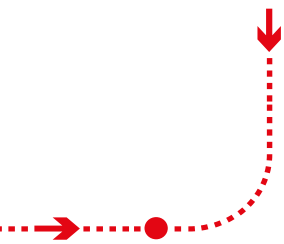


CRACK METERS
• movements
across cracks and
joints in buildings



INCLINOMETERS
• grade
• tilt

3 STEP3 VIEW DATA WITH CLOUD



FAMILY OVERVIEW

NI200

CHOOSE YOUR MODEL



SMART STRUCTURAL

SMART ENVIRONMENT

SMART AGRICULTURE

SMART PIPING

SMART WATER

SMART CITIES



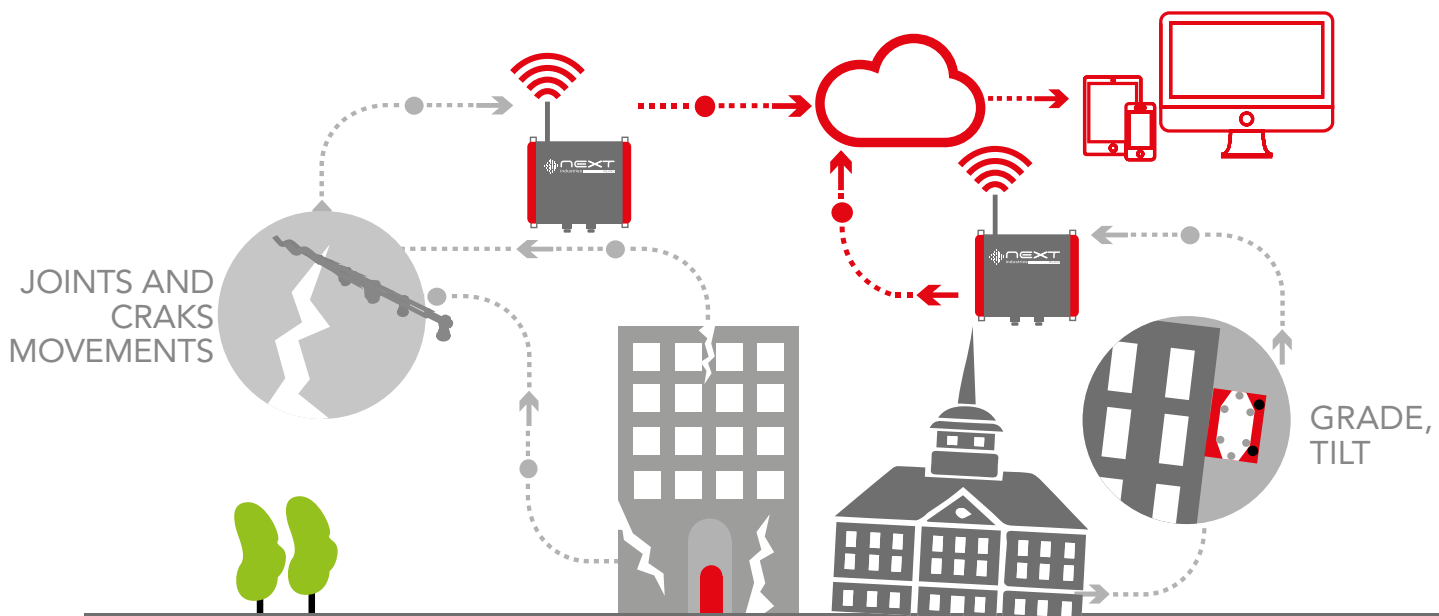
BUILDING MONITORING



BRIDGE MONITORING



HISTORICAL MONITORING



BUILDING MONITORING APPLICATION

NI200 WIRELESS Devices

4

differential analog
channels

2

pulse input

1

1 USB port,
1 RS 485

2

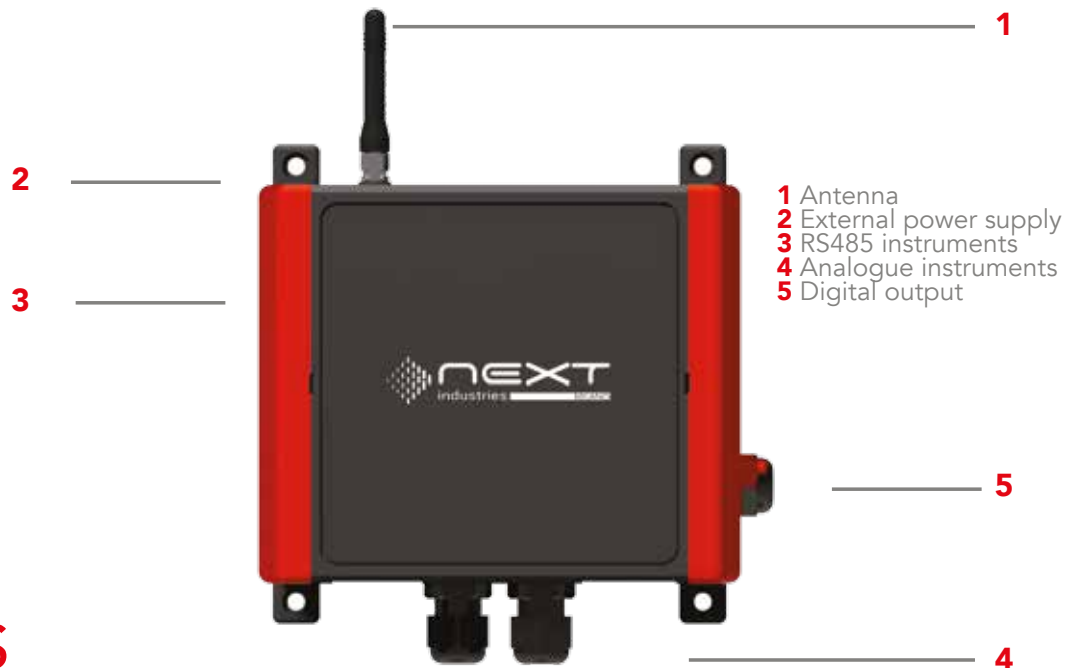
GB sd card

NI200 SPECIFICATIONS

NI200 devices are **ultra low power** data logger with optional integral modem designed specifically for **remote** and **stand alone** applications. **NI200 devices** are designed for hard environment field use with **IP67** box, USB memory stick and electromechanical relays for each measuring channel.

Available Measure (it depends on the model)

- mV, mA
- mV/V
- Pulse
- NTC
- Thermocouple
- Vibrating Wire



FEATURES

- 2 differential analog channels
- Measures: mV, mA, mV/V, NTC, Thermocouple, Pulse, Vibrating Wire (it depends on the model)
- 0,05% F.S. Accuracy with mV measure
- WMBus, SIGFOX connectivity
- Web Server on Board
- Internet of Things Technology
- Cloud Base Dashboard Management



- Long distance up to 15 km
- Standard EN 13757
- Tx power of up to 35mW
169Mhz / 868 Mhz



- Long life battery
- Long range distance
- Global reach
- Out of the box connectivity

NI200 WIRELESS

Devices

SPECIFICATIONS

PHYSICAL CHARACTERISTICS

Weight	780 grams (batteries included)
Dimensions (L x W x H)	151 x 125 x 90 mm (without cable gland and antenna)
Material	Polycarbonate
Wiring	Spring-cage PCB termination blocks; it clamps solid and stranded conductors up to 0.5 mm ² (20 AWG)
Calibration	Recommended every 1 year

We reserve the right to change our product without prior notice.

	NI202	NI203
Case and Protection	IP67	IP67
2G/3G option	Y	Y
Wireless	Y	Y
Relay Output (30V 2A)	1	1
Analog Input Number	N	4
Voltage	N	Y
Current	N	Y
mV/V	N	Y
Vibrating Wire	N	Y
PT100 - NTC	N	Only NTC
Thermocouple	N	Y
Pulse Counter	Y	Y
Switchable Power supply	N	Y
(selectable by the software): 24 V, 20V , 10V , 5V		
RS485	1	1
Power Supply RS485	Y	Y
Display	7 segment	7 segment
USB HOST	-	-
PC Connection with USB	Y	Y
Relè Protection/Gas Discharge	Y	Y
Memory	2GB	2GB
Software Web Server	Y	Y
Cloud Dashboard Management	Y	Y
SIGFOX	Networking: Sigfox Network	
	Frequency: 868-870 MHz Modulation: BPSK	
	Broadcast 1.6 sec	
	ETSI: 140 messages of 12 bytes, per object per day	
WMBus 169 Mhz	169 MHz band and runs Wireless M-Bus N mode protocol, defined by EN13757-4 2012 for this band, on Tx power of up to 35 mW.	
WMBus 868 Mhz	Tx power up to 25mW with sensitivity up to -109 dBm	
	Power consumption of less than 1.5 µA in sleep mode with an RTC clock running	
	Download over the Air (DOTA)	
915 Mhz	Low power consumption	
	Superior outdoor range of up to 40 miles with 6 dBi antenna gain	
	Data encryption (AES128) available	

NI200 WIRELESS

Devices

SPECIFICATIONS

CPU AND MEMORY

Mass storage SD CARD 2 GB for data (about 5 Mega data points) and WEB pages

INPUT

Analog differential inputs N. 4 differential channels, individually configured at factory, according to the following sensors:

(it depends on model)

- Thermocouples

- Vibrating Wire + Thermistor

- 4-20 mA current loop (2 wires)

- 4-20 mA (3-4 wires)

- Voltage (4 wires)

- Wheatston bridge (6 wires, utilize No. 2 channels)

Pulse

- N. 2 direction/alarm input

- counter, frequency (max frequency 1 KHz, it depends on the sensor)

INTERFACES

USB Device USB 2.0 full speed (Mini B connector) 5V, max 500 mA, PC connection only

Modbus RTU sensor slave RS485 5 screw clamp: DCE port for max. No.64 Modbus digitized sensors.

(it depends on model)

Communication interface: RS485

Communication protocol: MODBUS RTU

The voltage 'V OUT' is switched on and off from the software. V OUT is the unregulated power supply input 'V IN' (1 A)

Power supply management (always on or energy safe)

WIRELESS

SIGFOX

SIGFOX, class 0

Long range distance

rapid access to internet

WMBus

169,868 MHz band

OUTPUT

Digital output

One relay output (for alarm, etc.): volt-free closure (low voltage 30V, 1A)

SYSTEM POWER REQUIREMENTS

Voltage

7.2 to 14 V DC (reverse polarity protected), max 12 W

External rechargeable battery

12V DC nominal

(i.e. solar panel system)

Internal non-rechargeable

6 batteries size AA, chemistry Lithium/ Iron disulfide (Life s2), nominal voltage 1.5 V,

batteries (no external power supply)

min 2 A continuous current discharge, min 2 A pulse capability, min 3 Ah capacity

NI200 WIRELESS

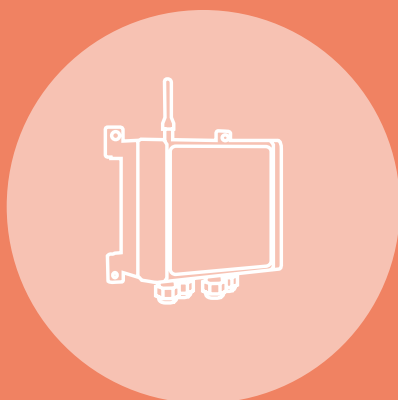
Devices

SPECIFICATIONS

ENVIRONMENTAL CONDITIONS

Operating temperature	-40 to +85°C (batteries -20 to +60°C)
Storage temperature	-40 to +85°C (batteries 0 to +40°C)
Protection	IP67
Humidity	80%
Overvoltage category	II
Pollution degree	2
Sound levels	< 74dBA
Maximum height of use	3000m

WIRELESS DEVICES



DATALOGGERS



**INTERNET OF THINGS
SENSORS**



WEB SOFTWARE



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