WE CONNECT TO THE REAL WORLD
SMART WATER
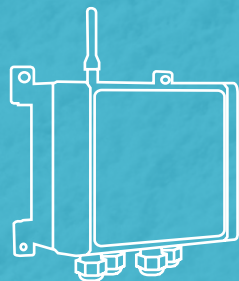
SMART **SENSORS**   WIRELESS **INTERFACE**   **ARTIFICIAL** INTELLIGENCE

NEXT industries MILANO

Smart Water WIRELESS Interface

NI400 devices are **ultra low power wireless** sensors communication interfaces. They can be provided with **2G/3G modem** or **LTE CAT-M**, **NBIoT** or with new standard network low power **Sigfox** or **Lo.ra.**

NI400 Smart Water is a **low-cost** vertical solution focused on **smart water monitoring**, this means you can measure flow, PH, temperature, conductivity, hardness, chemical pullutants, pressure of different kinds of water(s) - rivers, lakes, salt or subterranean waters. Thanks to the compatibility with Third Parties' **cloud** service **software** you can view data in cloud mode with **smartphone** or **tablet** from different devices in different locations at the same time.

1 STEP 1 — CONNECT SENSORS TO DEVICE

• Water level sensor

• Calcium
• Fluoride
• Fluoroborate
• Nitrate
• Lithium

2 STEP 2 — CHOOSE WIRELESS INTERFACE

3G **LTE-M** **NB-IoT** **sigfox** **LoRa**™

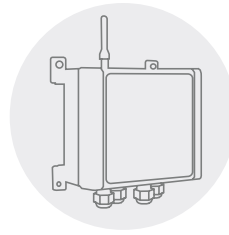available from 2022   available from 2022
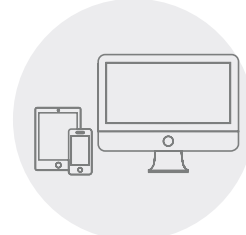
BUILD YOUR SYSTEM

STEP 1
CONNECT
SENSORS
TO DEVICE ✳
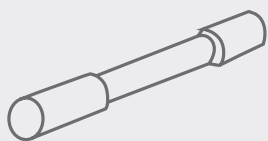
STEP 2
CHOOSE
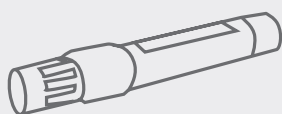WIRELESS
INTERFACE

STEP 3
ANALYZE
DATA WITH
ARTIFICIAL INTELLIGENCE

*Up to 4 Sensors

- Bromide
- Chloride
- Cupric
- Iodide
- Silver

- PH
- Soil Temperature
- Water Temperature
- Air Temperature
- Turbidity

- Water Flow
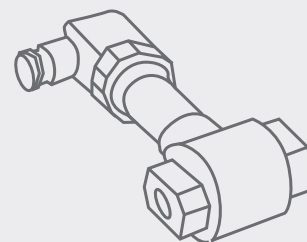
- Pressure

3 STEP3
ANALYZE DATA WITH ARTIFICIAL INTELLIGENCE

Pictures are intended for product presentation only

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FAMILY OVERVIEW
NI400

SMART STRUCTURAL

SMART ENVIRONMENT

SMART AGRICULTURE

SMART PIPING

SMART WATER

SMART CITIES

FLOW AND WATER LEVEL MONITORING

WASTEWATER MONITORING

WATER QUALITY MONITORING

WATER TREATMENT PLANT APPLICATION

- PM1
- PM 2,5
- PM 10
- AIR PRESSURE

- TURBIDITY
- OXIDATION-REDUCTION POTENTIAL (ORP)
- PH
- WATER IONS

- TEMPERATURE
- HUMIDITY

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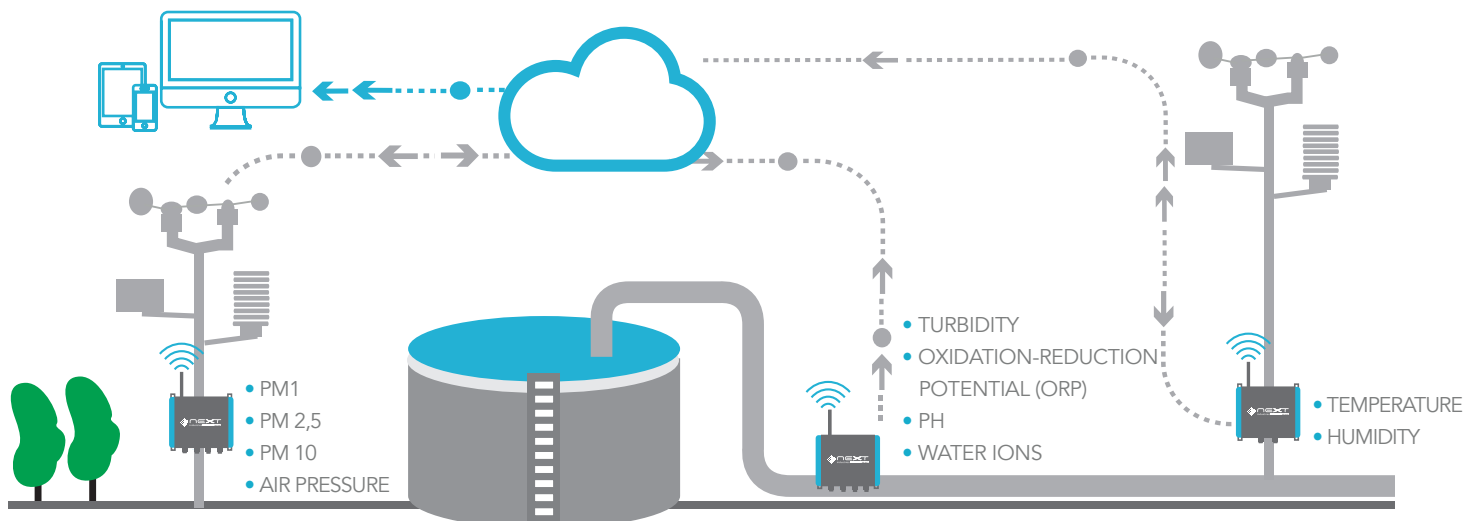
NI400 WIRELESS
Devices

4
differential analog channels

1
RS485

1
1 USB port

32
GB sd card

NI400 SPECIFICATIONS

NI400 devices are **ultra low power** data loggerS with optional integral modem designed specifically for **remote** and **stand alone** applications. **NI400 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
- mV/V
- mA
- NTC
- Thermocouple
- Vibrating Wire**

1

2

3

1 Antenna
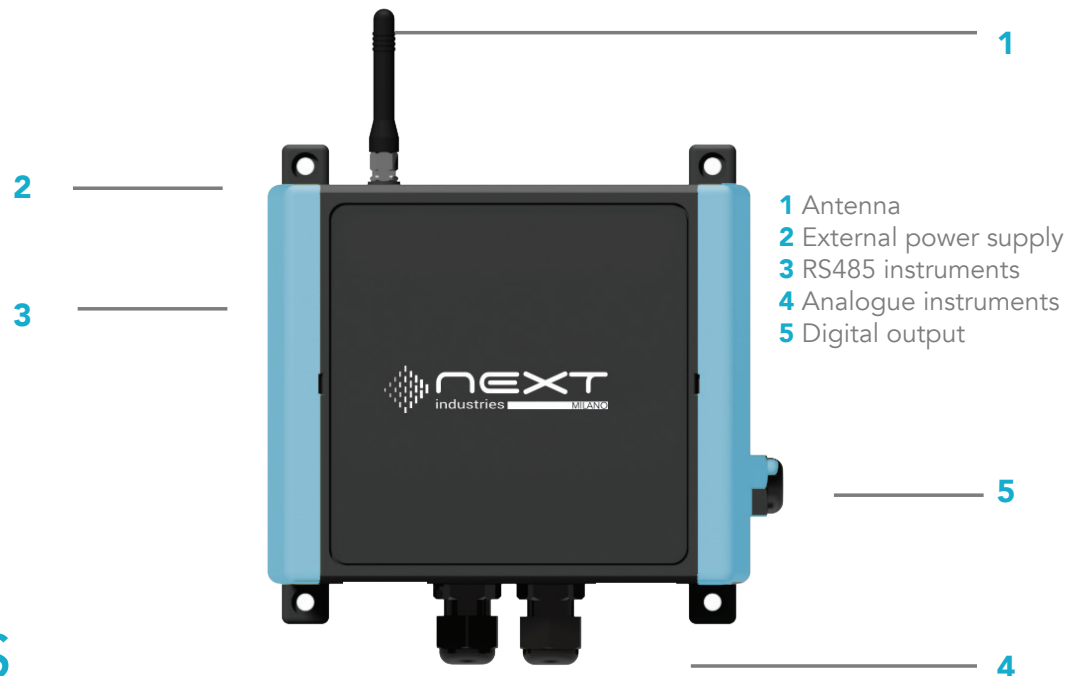**2** External power supply
3 RS485 instruments
4 Analogue instruments
5 Digital output

5

4

⚙ 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

- 2G/3G, LTE CAT-M / NB1, Sigfox, Lo.Ra, Wifi
- Web Server On Board
- Compatibility with Third Parties' Cloud Platforms

3G **LTE-M** **NB-IoT** **sigfox** **LoRa**™

available from 2022   available from 2022

* Pictures are intended for product presentation only
** Vibrating Wire reading is under development

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NI400 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	5 screws clamp termination blocks; it clamps solid and stranded conductors up to 1,3 mm² (16 AWG)
Calibration	Recommended every 1 year

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

	NI400
Case and Protection	IP67
2G/3G, LTE CAT-M, NBIoT, Sigfox, Lo.Ra options	Y
Wireless	Y
Relay Output (30V 1A)	1
Analog Input Number	4
Voltage	Y
Current	Y
mV/V	Y
Vibrating Wire*	Y
NTC	Y
Thermocouple	Y
PT100	N
Switchable Power supply	Y
(selectable by factory): 24 V, 12V, 5V	
RS485	1
Power Supply RS485	Y
Display	7 segment
USB HOST	Y
PC Connection with USB	Y
Relè Protection/Gas Discharge	Y
Memory	32GB
Software Web Server	Y
Compatibility with Third Parties' Cloud Platforms	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
Lo.Ra	868 MHz (Europe) at 14dBm maximum
	915 MHz (North and South America, Australia and New Zealand at 20dBm max.
	433 MHz (Europe) at 10dBm maximum
	470 – 510 MHz (China) at 14dBm maximum
LTE CAT-M	Available from 2022
NBIoT	Available from 2022
WiFi	802.11b/g/n 16mbps
2G/3G	Integrated SIM holder Extended temperature range (-40° to 85°C). Stubby Antenna with SMA connector

NI400 WIRELESS
Devices

SPECIFICATIONS

CPU AND MEMORY	
Mass storage	SD CARD 32 GB for data (about 5 Mega data points) and WEB pages

INPUT	
Analog differential inputs **(it depends on model)**	N. 4 differential channels, individually configured at factory, according to the following sensors:
	- 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)
	- N. 2 direction/alarm input

INTERFACES	
USB Device	USB 2.0 full speed (Mini B connector) 5V, max 500 mA, PC connection only
Modbus RTU sensor slave RS485 **(it depends on model)**	5 screw clamp: DCE port for max. No.64 Modbus digitized sensors.
	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' (0,75 A)
	Power supply management (always on or energy safe)

OUTPUT	
Digital output (it depends on model)	One relay output (for alarm, etc.): volt-free closure (low voltage 30V, 1A)

SYSTEM POWER REQUIREMENTS	
Voltage	7.2 to 14 V DC, max 12 W
External rechargeable battery **(i.e. solar panel system)**	12V DC nominal
Internal non-rechargeable **batteries (no external power supply)**	6 batteries size AA, chemistry Lithium/ Iron disulfide (Life s2), nominal voltage 1.5 V, min 2 A continous current discharge, min 2 A pulse capability, min 3 Ah capacity

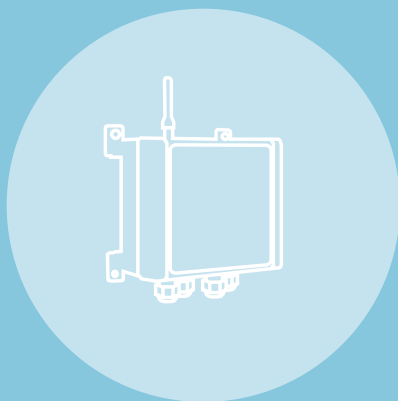| ENVIROMENTAL CONDITIONS	
Operating temperature	-30 to +70°C (batteries -20 to +60°C)
Storage temperature	-40 to +85°C (batteries 0 to +40°C)
Protection	IP67
Humidity	80%
Overvoltage category	II
Pollution degree	2
Sound levels	< 74dBA
Maximum height of use	3000m

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*Vibrating wire reading is under development

crtefranceschini.it

WIRELESS
DEVICES

DATALOGGERS

INTERNET OF THINGS
SENSORS

ARTIFICIAL **INTELLIGENCE**

Next Industries S.r.L
Via G. Di Vittorio 2/F,
20065 Inzago (MI) - Italy

T+39 02.95764356
info@nextind.eu
www.nextind.eu