WE CONNECT TO THE REAL WORLD SMART PIPING

SMART
SENSORS

WIRELESS
INTERFACE

ARTIFICIAL
INTELLIGENCE

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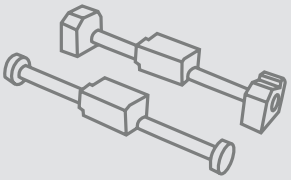
Redatto da: R&D e MKT
Approvato da: CEO

next industries MILANO

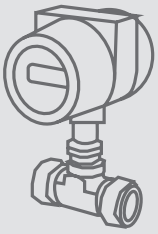
Smart Piping WIRELESS Interface

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 standards network low power **SIGFOX** or **Lo.Ra.**
NI400 Smart Piping is a **low-cost** vertical solution designed for **pipelines monitoring**; this means you can measure range, PH, temperature, conductivity, hardness, chemical pullutants, pressure of **different kinds of plants** - drinking water, gas and/or natural gas, oil, heavy industry. 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 STEP1 **CONNECT** SENSORS TO DEVICE



VIBRATING WIRE* STRAIN GAUGE
- deformation
- temperature



FLOWMETER
- flow

*Vibrating wire reading is under development

2 STEP2 **CHOOSE** WIRELESS INTERFACE

3G

LTE-M NB-IoT

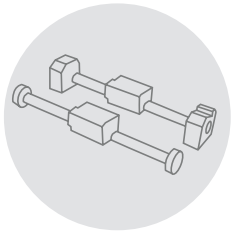
available from 2022

sigfox LoRa™

available from 2022

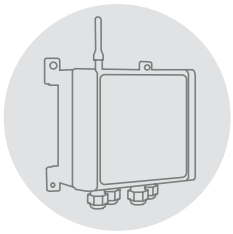
BUILD YOUR SYSTEM

STEP 1



CONNECT
SENSORS
TO DEVICE *

STEP 2

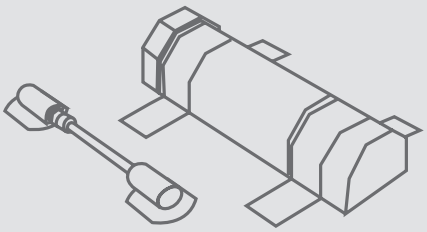


CHOOSE
WIRELESS
INTERFACE

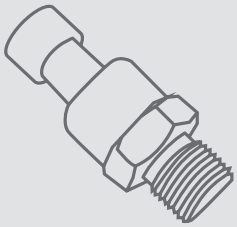
STEP 3

ANALYZE
DATA WITH
ARTIFICIAL INTELLIGENCE

*Up to 4 sensors



STRAIN GAUGE
- deformation
- temperature



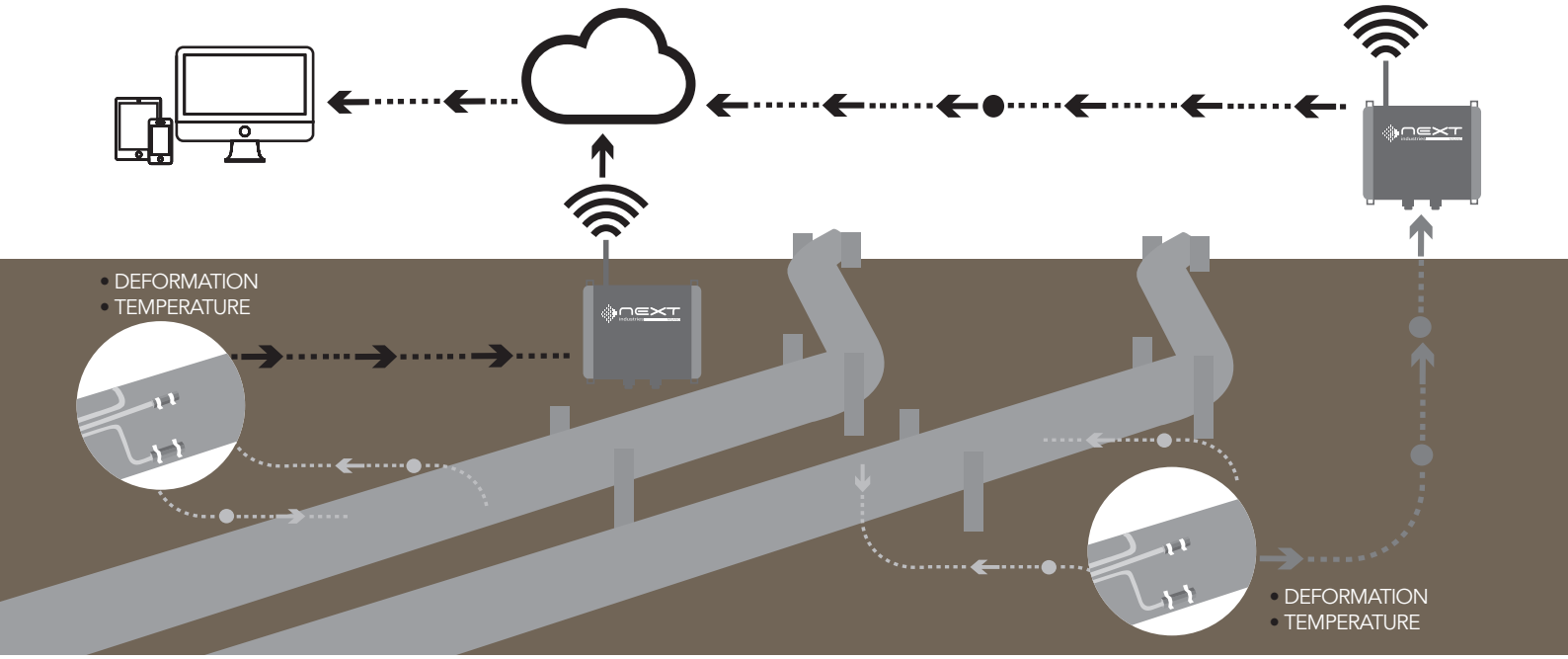
PRESSURE SENSOR
- liquid pressure

3 STEP3 **ANALYZE** DATA WITH ARTIFICIAL INTELLIGENCE

FAMILY OVERVIEW
NI400

CHOOSE YOUR MODEL

SMART STRUCTURAL | SMART ENVIRONMENT | SMART AGRICULTURE | SMART PIPING | SMART WATER | SMART CITIES



PIPELINE MONITORING APPLICATION

4
differential analog channels

1
RS485

1
1 USB port

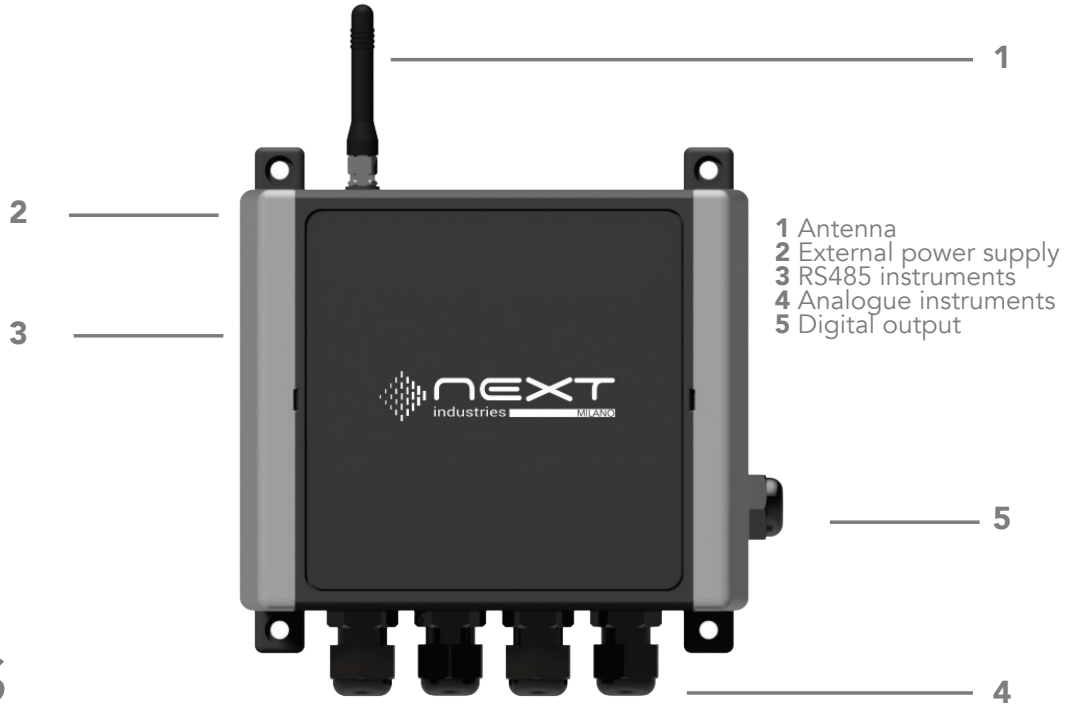
32
GB sd card

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**



FEATURES

- 4 differential analog channels
- Measures: mV, mA, mV/V, NTC,Thermocouple, Vibrating Wire** (it depends on 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*

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

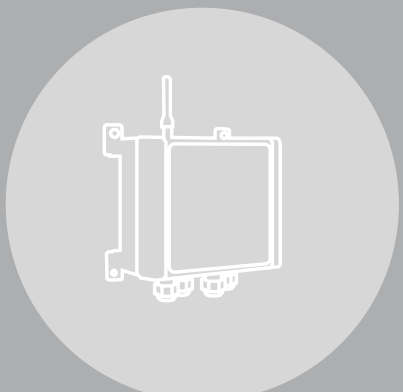
*Vibrating wire reading is under development

SPECIFICATIONS

CPU AND MEMORY	
Mass storage	SD CARD 32 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)
	- 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	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' (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	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 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

NI400 WIRELESS
Devices

WIRELESS **DEVICES**



DATALOGGERS

INTERNET OF THINGS
SENSORS

ARTIFICIAL **INTELLIGENCE**

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