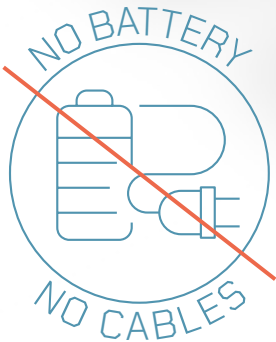


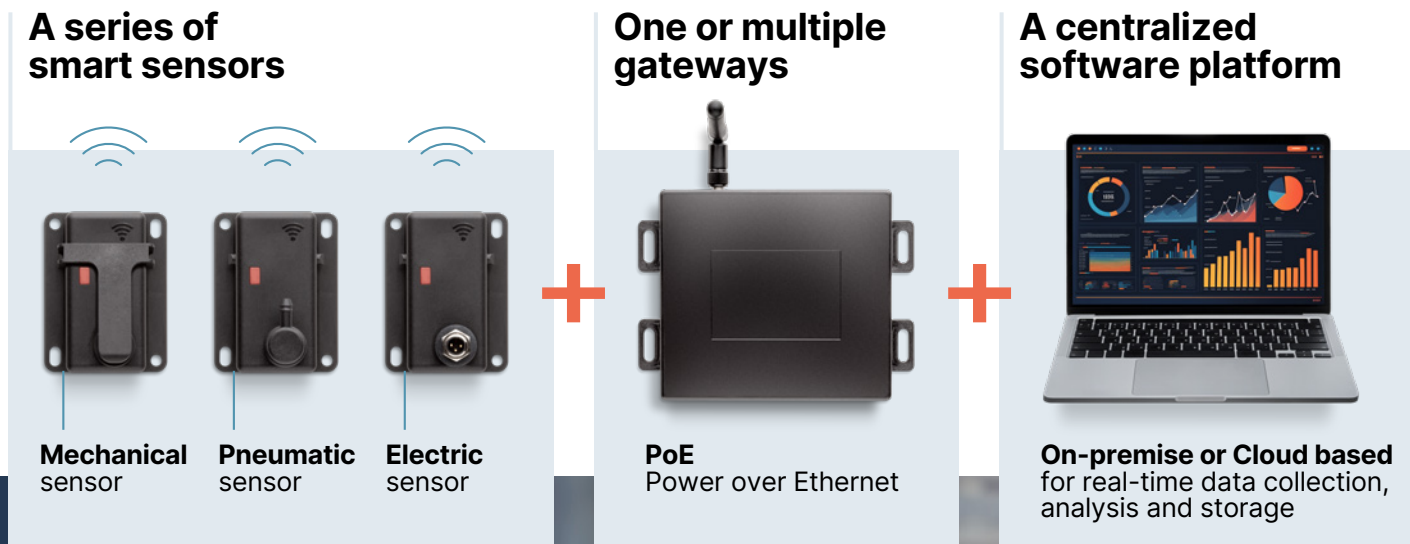
# Smart Sense

The plug & play system  
that makes machines,  
workstations and equipment,  
**a source of data**



# What is SmartSense?

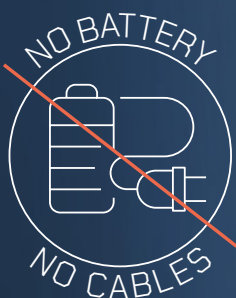
The Kairo's SmartSense system provides a **simple, affordable and retrofittable solution** to monitor any type of machine, workstation and production equipment leading to the optimization of the entire production process.










The sensors are battery-free and cable-free and when a change of state occurs, they communicate wirelessly their unique serial number and their status to all the listening gateways.

It literally takes minutes to install the system in parallel to any existing apparatus and to get production data available on-line and globally.

Any process or manufacturing phase can be taken under control without any deep electrical or mechanical action on machines.



## Why to choose SmartSense

-  • Battery-free, cable-free and maintenance-free sensors
-  • Collects, monitors and analyzes meaningful production data from any existing apparatus or workstation in minutes
-  • Modern and outdated assets can all be connected similarly
-  • Lifetime and performances of every single asset can be tracked inside the same production plant or in other dislocated plants
-  • Removes costs and overcomplexities of other more traditional solutions, without the effort of merging heterogeneous data
-  • Monitors the number of cycles and the cycle time of assets and workstations, generating notification emails in case of special events
-  • Drives the optimization of the production process and human resources and improves quality of both products and processes

## Where to use SmartSense

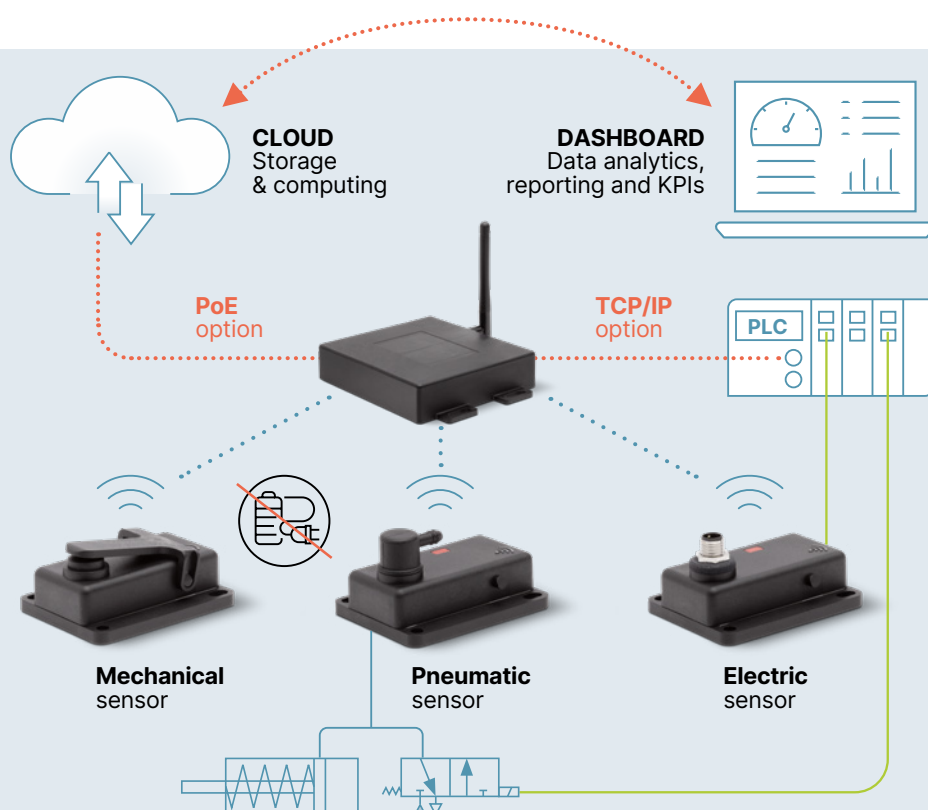
Kairo's SmartSense can be installed on any existing machine, workstation or equipment. Some examples:

- Generic workstation for manual/automatic assembling
- Machines for cables and conductors cutting and stripping
- Wire terminal crimping stations
- Individual molds and/or injection molding machines
- Indexing machines
- CNC machines and fixtures

In general, whether there is a source of mechanical displacement, a pneumatic connection, or an electrical digital signal available, a standard SmartSense sensor can be directly installed or easily adapted with commercial transmission adaptors.

## How to install SmartSense

The gateway collects data from all the different types of SmartSense sensors and transfers information directly to a PLC (TCP/IP option) or to a Cloud based software platform using a single power over ethernet connection (PoE option).



# SmartSense components features and dimensions

## SENSORS

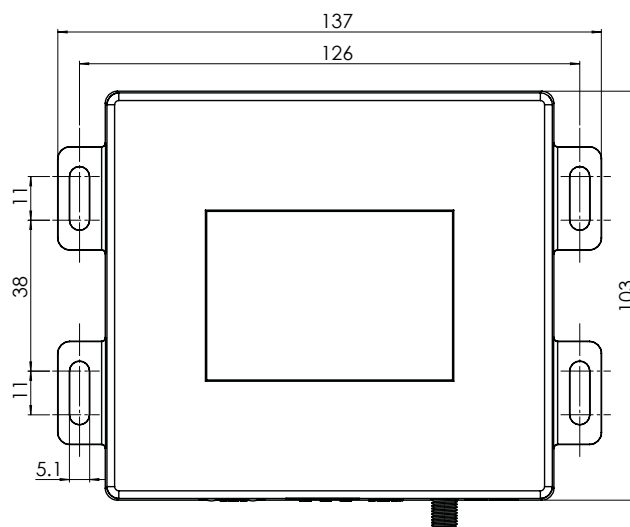
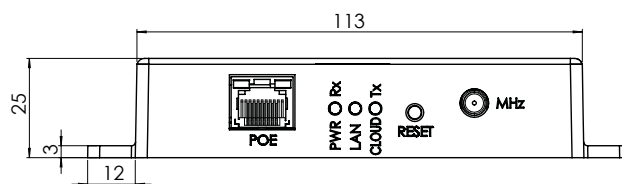
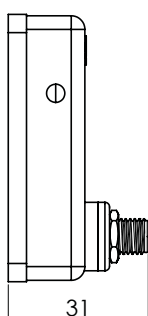
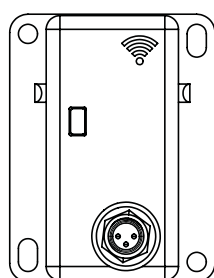
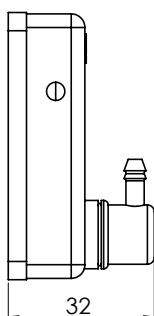
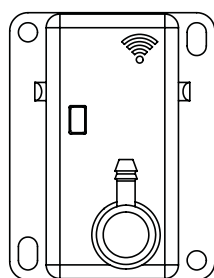
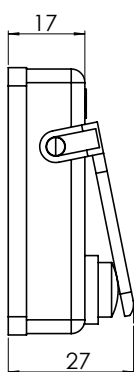
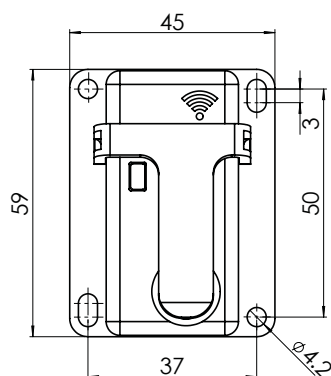


	Mechanical	Pneumatic	Electric
Actuation	Lever/Push button	Built in piston (pipe $\varnothing 6 \times 4$ mm)	PNP/Dry contact or NPN (M8 3 pins)
Mass	45 g		
Body material	PA66 + 30% glass fiber		
IP rating	IP65		
Power supply	Self-powered (no battery, no wires)		Powered: 24Vdc
Temperature range	from $-10^{\circ}\text{C}$ to $+80^{\circ}\text{C}$		
Certifications	EN60950-1, ETSI 301 489-1 V.2.1. ETSI 301 489-3 V.2.2.2, ETSI EN302802		

## GATEWAY



	PoE Gateway
Body material	Latamid V0
Mass	135 g
IP rating	IP40
Power Supply	PoE Ethernet Cable
Consumption	< 1 W
Temperature range	from $-10^{\circ}\text{C}$ to $+50^{\circ}\text{C}$
Connections	PoE + 868MHz + broadband HTTP or TCP/IP
Local connection	Dynamic IP (default)
Configuration	Integrated Web Server
Signal coverage	10-80 m (depending on the layout)
Certifications	EN60950-1, ETSI 301 489-1 V.2.1 ETSI 301 489-3 V.2.1.1 ETSI EN302802



SMART, CONNECTED.

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