antz systems

Product Catalogue 2026

Monitoring and control hardware for zoos, aquariums, hatcheries and animal-care facilities.











Spec sheets for 32 devices

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Every ANTZ device is designed around a job on site: keeping animals safe, warning teams early and saving keepers time. Each one has a two-page sheet: where it works and what it does first, then how it works and the key facts.



HABITAT CLIMATE
ClimaCore Habitat Controller 4
Climate control for animal rooms: a safe relay box and a 7-inch touch panel.



ENVIRONMENTAL MONITORING
Hood Field Logger 8
An outdoor wireless logger with a built-in hood against sun and rain.



IRRIGATION & FERTIGATION
Enclosure & Landscape Fertigation 12
Water and feed planted enclosures and zoo landscapes through buried drip lines, on schedule.



WATER SUPPLY
Water Supply Monitor 16
Checks that the water actually arrived, not just that a pump was told to run.



WATER CHEMISTRY
Auto Dosing 20
Tests alkalinity and doses the correction, automatically.



SOLAR PUMPING
Solar Pump Controller 24
Runs your pump on solar and shows whether water is really moving.



FACILITY INTELLIGENCE
Smart Energy Meter 28
Know the moment a heater, HVAC unit or pump stops.



AIR QUALITY
Ammonia Scrubber 32
Takes ammonia and odour out of animal-room air, with media you can regenerate.



ANIMAL WELFARE
Natural Weighing Stations 36
Weigh animals on the perches, ropes and platforms they already use.



ENVIRONMENTAL MONITORING
Pebble Climate Logger 6
A wireless temperature and humidity logger in a soft, pebble-shaped case.



SMART IRRIGATION
Smart Valve Node 10
A solar, wireless valve controller shaped like the hand-wheel it replaces.



WATER SUPPLY
Tank Level Node 14
Know every tank's level before an animal system runs dry.



AQUACULTURE
Pond Controller 18
Water quality watched around the clock, with pumps and air run on need.



WATER CLARITY
Algae UV Clarifier 22
A UV-C clarifier that doses harder when the water turns green.



FACILITY INTELLIGENCE
Motor Guard 26
Early warning for the pumps and fans that keep animals safe.



FACILITY AUTOMATION
Smart Timer 30
Scheduled switching for farm loads, set and seen from a dashboard.



BIOACOUSTIC MONITORING
Vespr 34
Always-on listening that turns wildlife calls into biodiversity data.



ANIMAL NUTRITION
Feeding Monitor 38
A feed bowl that records how much was eaten, and how fast.



ANIMAL ENRICHMENT
Smart Food Dispenser
Sensor-triggered feeding that keeps animals moving and foraging.
40



INCUBATION & INSPECTION
Smart Egg Analysis Module
A compact egg inspection station with a clear, guided touchscreen.
44



INCUBATION DATA
Egg Rotation Tracker
A sensor egg that shows how your incubator really turns.
48



CHICK REARING
Gradient Brooder
A brooder where chicks choose their own temperature.
52



VISITOR EXPERIENCE
Living Labels
E-paper signs for visitors and keepers that update over the air.
56



SECURITY & VISION
Sentinel Edge
Fanless, on-site AI vision for your camera network.
60



PRESENCE SENSING
Nod Presence Sensor
A 24 GHz radar that knows when someone is there, without a camera.
64



INCUBATION & INSPECTION
Egg Analysis Pro
The professional bench station for complete egg inspection.
42



INCUBATION
Egg Incubator
An incubator that watches oxygen and CO_2, not just temperature.
46



INCUBATION DATA
Reptile Egg Weigher
Every reptile egg weighed every day, without lifting it.
50



KEEPER OPERATIONS
Keeper Fob
A belt-worn tap-and-log device for animal-care rounds.
54



DATA RETROFIT
Scale Link
Turns a display-only scale into a logged data source.
58



PEOPLE & ACCESS
SentinelFace Display
A door-side attendance display: see your check-in, confirm your check-out.
62



ANIMAL SAFETY & SECURITY
Zone & Tamper Alert
Instant alerts for restricted zones, enclosure doors and tampering.
66

ClimaCore Habitat Controller

Climate control for animal rooms: a safe relay box and a 7-inch touch panel.



THE CHALLENGE

Frogs, reptiles and other sensitive species depend on misting, light and temperature being right, all day.

Many animal rooms still run lights, misters, pumps and foggers from separate timers, with no single view of what is happening and no warning when a probe fails. ClimaCore runs them all from one relay box with temperature probes in every vivarium and a touch panel at the door.

WHERE IT WORKS

Amphibian & frog rooms

Misting and fogging on schedules and temperature rules for vivarium racks.

Reptile rooms

Light cycles and temperature-linked outputs for every vivarium in the room.

Nocturnal & quarantine rooms

Reversed light cycles, a dimmed screen and no buzzers near the animals.

WHAT IT DOES

Six switched channels

Two lighting, two misting, a pump and a fogger output, each with its own light.

Five temperature probes

Four vivaria and the room, read all the time.

Back on after a power cut

Schedules catch up when power returns.

Rules per channel

Intervals, time windows, temperature limits, run times and daily limits.

Fails safe

Rules pause on a dead probe, and outputs tied to temperature switch off if all are lost.

Keeps running alone

The relay box carries on with its rules even if the panel is offline.

WHY TEAMS CHOOSE IT

One view per room

Every output and probe on one 7-inch touch panel.

Warned, not surprised

Alerts on the panel and a status summary to staff phones.

Safety first

Mains switching stays in the relay box, away from the panel.

Easy for keepers

Manual override that returns to automatic after 30 minutes.

HOW IT WORKS

1

Install

Mount the relay box and the touch panel, then connect lights, misters, pump and fogger.

2

Set

Place the probes and set schedules and temperature rules on the panel.

3

Control

ClimaCore switches each channel to its rules, day and night, and alerts on faults.

KEY FACTS

Outputs	6 fused 230 V channels: 2 light, 2 mist, pump, fogger
Sensors	5 stainless temperature probes (4 vivaria + room)
Panel	7-inch touch panel, powered from the relay box
Panel link	Wireless to the relay box, with a wired fallback
Network	Wi-Fi for set-up and alerts
Indicators	Channel lights, power, link and alert lights
Power	230 V via the site's breaker and RCD
Design	Mains and low voltage in separate chambers; wipe-clean

IN THE BOX

- ✓ Relay box
- ✓ 7-inch touch panel
- ✓ 5 temperature probes
- ✓ Panel cable
- ✓ Wall fixings and drilling templates

WORKS WITH

Pebble Climate Logger for room records, and Motor Guard for the pumps behind the room.

Planning a pilot?

Tell us about your animal rooms and species, and we will plan a ClimaCore layout.

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Designs and specifications may change without notice.

Pebble Climate Logger

A wireless temperature and humidity logger in a soft, pebble-shaped case.



THE CHALLENGE

A room that drifts out of range overnight is often found only when the damage is done.

Incubator rooms, cold stores and animal houses need steady conditions, but paper charts and spot checks leave long gaps. Pebble logs temperature and humidity around the clock on its own battery and reports over LoRaWAN, with no mains power or Wi-Fi needed.

WHERE IT WORKS

Incubator rooms

Room conditions logged around the clock where eggs and chicks are kept.

Cold rooms & stores

Food and medicine stores watched for temperature drift.

Indoor animal houses

Temperature and humidity records for every house and holding room.

WHAT IT DOES

Temperature & humidity

Continuous readings from a plug-in probe.

Battery powered

Runs on its own battery, so it goes where there is no socket.

Sealed but breathing

One O-ring seal and a membrane vent keep moisture out.

Swap the sensor

One universal port also takes cable probes such as soil moisture or leaf wetness.

Reports over LoRaWAN

Readings travel to the site gateway with no Wi-Fi.

Off the wall

Stands clear of the wall on its bracket to cut wall heat from the reading.

WHY TEAMS CHOOSE IT

No more gaps

A continuous record instead of spot checks.

No Wi-Fi needed

LoRaWAN carries readings from any room.

One logger, many sensors

Swap the probe as your needs change.

Quick to install

Slides onto its bracket and locks: no cables to run.

HOW IT WORKS

1

Mount

Fix the bracket to a wall or pole and slide Pebble on until it locks.

2

Log

It measures temperature and humidity around the clock on battery power.

3

Review

Readings arrive over LoRaWAN for charts and records.

KEY FACTS

Measures	Temperature and humidity from a plug-in probe
Sensor port	Universal M16 port for probes, cable glands or a blank
Connectivity	LoRaWAN to the site gateway; no Wi-Fi
Power	Internal rechargeable battery pack
Seal	One-piece shell, single O-ring, membrane vent
Mounting	Dovetail wall or pole bracket with a hidden lock screw
Size	74 × 50 × 150 mm
Setting	Indoor rooms: incubator, cold and animal rooms

IN THE BOX

- ✓ Pebble logger with battery
- ✓ Temperature and humidity probe
- ✓ Membrane vent (fitted)
- ✓ Wall or pole bracket and lock screw
- ✓ Wall screws and plugs

WORKS WITH

Hood Field Logger outdoors, on the same bracket, gateway and records.

Planning a pilot?

Tell us which rooms need watching, and we will plan a Pebble rollout.

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Designs and specifications may change without notice.

Hood Field Logger

An outdoor wireless logger with a built-in hood against sun and rain.



THE CHALLENGE

Outdoor sites need records too, but rarely have power or Wi-Fi.

Paddocks, polyhouses and field stations are where conditions swing most, and a bare sensor out there takes sun, rain and drips. Hood's front rolls into a lip that shelters the probe and vent, and it logs on its own battery over LoRaWAN.

WHERE IT WORKS

Outdoor enclosures

Conditions where animals actually live, from paddocks to moats.

Polyhouses

Temperature and humidity for growing houses and nurseries.

Remote field sites

Long-term records where there is no mains power or Wi-Fi.

WHAT IT DOES

Sheltered probe

The hood lip keeps sun, rain and drips off the probe and vent.

Swap the sensor

The universal port takes cable probes such as soil moisture or leaf wetness.

Reports over LoRaWAN

Readings travel to the site gateway with no Wi-Fi.

Temperature & humidity

Continuous readings from a plug-in probe.

Battery powered

Runs on its own battery, far from any socket.

Service on the wall

The shell slides off forward; electronics and battery stay on the bracket.

WHY TEAMS CHOOSE IT

Built-in shelter

The hood protects the probe without a separate shield.

Works in remote places

LoRaWAN and battery power, no infrastructure.

One logger, many sensors

Swap the probe as your needs change.

Easy upkeep

Change the battery without taking the logger down.

HOW IT WORKS

1

Mount

Fix the bracket to a post, pole or wall and slide Hood on.

2

Log

It measures conditions around the clock, sheltered under its hood.

3

Review

Readings arrive over LoRaWAN for charts and records.

KEY FACTS

Measures	Temperature and humidity from a plug-in probe
Sensor port	Universal M16 port for probes, cable glands or a blank
Connectivity	LoRaWAN to the site gateway; no Wi-Fi
Power	Internal rechargeable battery pack
Seal	Single O-ring seal and membrane vent
Shelter	Front hood lip over the probe and vent
Mounting	Dovetail wall or pole bracket, shared with Pebble
Size	58 × 71 × 149 mm (167 mm with probe)

IN THE BOX

- ✓ Hood logger with battery
- ✓ Temperature and humidity probe
- ✓ Membrane vent (fitted)
- ✓ Wall or pole bracket and lock screw
- ✓ Wall screws and plugs

WORKS WITH

Pebble Climate Logger indoors, on the same bracket, gateway and records.

Planning a pilot?

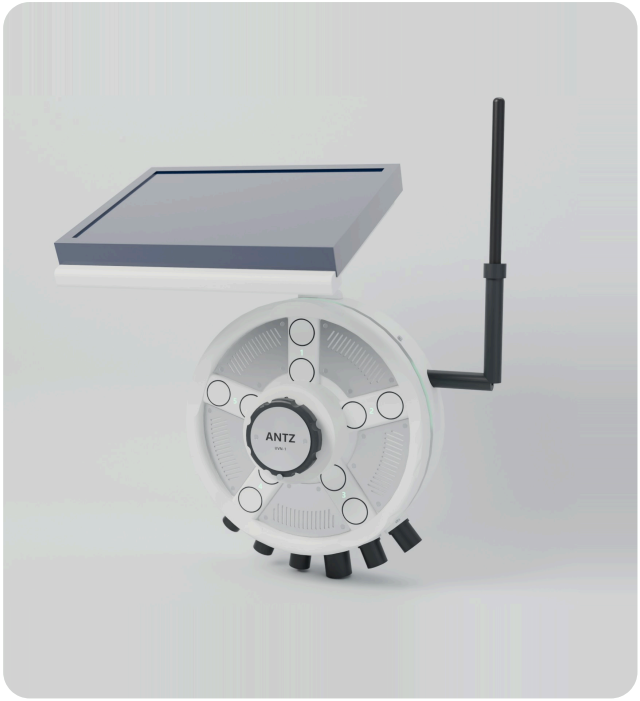
Tell us about your outdoor sites, and we will plan where Hood loggers belong.

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Designs and specifications may change without notice.

Smart Valve Node

A solar, wireless valve controller shaped like the hand-wheel it replaces.



THE CHALLENGE

Opening and closing valves by hand across a large site takes hours of walking every day.

Misting, irrigation and water features are spread across enclosures and landscapes, and every change means a trip to the valve. The Smart Valve Node runs up to four valves from one solar-powered unit, takes its orders from the site controller over LoRaWAN and still works by hand with a magnet key.

WHERE IT WORKS

Enclosure misting & irrigation

Humidity and watering for animal enclosures, on schedule or on demand.

Landscape & lawn zones

Zones across a large campus run from one place instead of by hand.

Polyhouses & nurseries

Watering for plant houses and nursery beds, set and checked remotely.

WHAT IT DOES

Up to four valves

Opens and closes latching DC solenoid valves on command from the site controller.

Fails safe

Closes its valves if it loses contact with the controller, and again after a restart.

Flow & leak watch

Counts flow while valves are open and flags flow when they are all closed.

Hand override

Hold the magnet key on OPEN or CLOSE, even if the controller is down.

Never strands a valve open

It will not open a valve unless the battery can close it again.

Keeps valves healthy

Checks each valve coil and exercises idle valves so they do not seize.

WHY TEAMS CHOOSE IT

Less walking

Change valves across the site without visiting each one.

No power cable

Solar panel and battery: it goes wherever the valve is.

Safe by hand

The magnet key gives authorised staff a manual override.

Catches leaks

Flow readings show a burst pipe or a valve that did not close.

HOW IT WORKS

1

Fit

Mount the node on a pole beside the valve chamber, or inside it, and connect up to four valves.

2

Link

It joins the site controller over LoRaWAN, powered by its own solar panel.

3

Run

Valves open and close on schedule or on command, or by hand with the magnet key.

KEY FACTS

Valves	Up to 4 latching DC solenoid valves (9, 12 or 24 V)
Sensor inputs	Flow meter, rain gauge, dry contacts, 0–3 V and 4–20 mA
Sensor bus	SDI-12 for up to 10 field sensors
Connectivity	LoRaWAN (IN865) with an external antenna; no Wi-Fi
Power	5 W solar panel with a LiFePO4 battery pack
Battery change	Through the hub, without opening the electronics
Controls	Magnet key on OPEN and CLOSE marks; no exposed buttons
Mounting	Pole bracket with U-bolts, or a valve-chamber wall

IN THE BOX

- ✓ Smart Valve Node with battery
- ✓ Magnet key
- ✓ 5 W solar panel and sun plate
- ✓ Antenna
- ✓ Pole bracket with U-bolts
- ✓ Cable glands and blanking plugs

WORKS WITH

The ANTZ site controller and gateway, plus flow meters, rain gauges and SDI-12 soil sensors.

Planning a pilot?

Tell us how your water is laid out, and we will plan where Smart Valve Nodes save the most walking.

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Designs and specifications may change without notice.

Enclosure & Landscape Fertigation

Water and feed planted enclosures and zoo landscapes through buried drip lines, on schedule.



THE CHALLENGE

Planted enclosures and zoo landscapes are often watered by hose, with staff working around animals and visitors.

Hand watering wastes water and misses the roots, and surface sprinklers soak paths and disturb animals. This controller runs subsurface drip lines zone by zone and doses nutrients into the water to EC and pH targets, so plants are watered and fed at the roots on schedule, without anyone going into the enclosure.

WHERE IT WORKS

Planted animal enclosures

Buried drip lines water enclosure plants without staff going in.

Zoo landscapes & lawns

Visitor areas, gardens and lawns watered zone by zone on schedule.

Browse plots & nurseries

Steady water and feed for browse crops and nursery beds.

WHAT IT DOES

Subsurface drip zones

Runs buried drip lines zone by zone, so water goes to the roots.

Zone programs

Valve programs and schedules for each zone.

Works on its own

Keeps running its programs with no network connection.

Fertigation

Closed-loop EC and pH dosing into the irrigation water.

Pump & filter control

Runs pumps and filters with safety interlocks.

Alarms

A buzzer and an alarm output for a beacon or the app.

WHY TEAMS CHOOSE IT

Water at the roots
Less evaporation and run-off than sprinklers.

No one in the enclosure
Watering happens without staff going in.

Plants fed on target
Nutrients dosed to EC and pH targets.

Whole-site control
Enclosures and landscapes run from one controller.

HOW IT WORKS

1

Lay
Lay subsurface drip lines in each enclosure or landscape zone.

2

Program
Set zone schedules and EC and pH targets on the controller.

3

Run
It waters and doses each zone on schedule and raises an alarm on faults.

KEY FACTS

Irrigation	Zone valves for subsurface drip lines
Fertigation	Closed-loop EC and pH dosing
Programs	Valve programs and schedules per zone
Plant room	Pump and filter control with interlocks
Inputs & outputs	12 digital in, 6 digital out, 4 × 4–20 mA in
Connectivity	RS-485 ×2, Ethernet, Wi-Fi; runs without a network
Power	100–240 V AC mains
Cabinet	Wall cabinet, 360 × 360 × 140 mm

BEST FOR

- ✓ Planted animal enclosures
- ✓ Zoo landscapes, lawns and gardens
- ✓ Browse plots and nurseries

WORKS WITH

Smart Valve Nodes for remote valves across the site, as part of the same ANTZ irrigation system.

Planning a pilot?

Tell us about your enclosures and landscape zones, and we will plan their irrigation and fertigation.

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Designs and specifications may change without notice.

Tank Level Node

Know every tank's level before an animal system runs dry.



THE CHALLENGE

Roof and sump tanks are out of sight until one runs dry or overflows.

Someone has to climb up and look, so levels are checked rarely. Tank Level Node fits through a hole in the tank lid, measures the water with ultrasound and reports over LoRaWAN, on its own battery and with no cables.

WHERE IT WORKS

Roof & header tanks

Levels for the tanks behind animal houses and misting.

Sumps

Sump levels without lifting the lid.

Farm & RO storage

Storage tanks across the site in one view.

WHAT IT DOES

Ultrasonic level

Measures from above, with nothing in the water.

Regular updates

Measures every 5 minutes; reports every 15 minutes or on a change.

Battery watch

Battery voltage is reported for a low-battery warning.

Faster while filling

Reports every minute while a tank fills, so a pump can be stopped in time.

Seal watch

An internal humidity sensor warns of a leaking seal.

Magnet tap

Tap the magnet key to see the level in blinks, or to join the network.

WHY TEAMS CHOOSE IT

No cables
LoRaWAN radio and its own battery.

Quick to fit
Drops into a 60 mm hole and twists to lock.

Levels at a glance
Every tank in the app as a percentage.

No dry runs
See low tanks before systems fail.

HOW IT WORKS

1 → 2 → 3

Drill
Cut a 60 mm hole in the tank lid, or use an existing 2-inch boss.

Fit
Drop the node in, twist to lock and tap the magnet to join.

Read
Levels arrive over LoRaWAN, faster while the tank fills.

KEY FACTS

Measures	Water level, by downward ultrasonic sensor
Tanks	Plastic roof and sump tanks; non-drinking water
Reporting	Every 15 min or on change; every 60 s while filling
Connectivity	LoRaWAN (IN865)
Power	Replaceable lithium cell; no cables
Fitting	60 mm hole in a 3–22 mm lid, or a 2-inch BSP boss
Size	Ø124 mm, 100 mm above the lid
Top of tank	The top 25–29 cm under the lid reads as full

IN THE BOX
- ✓ Tank Level Node
- ✓ Collar, lock nut and lid gasket
- ✓ Set screw
- ✓ Drilling template

WORKS WITH
Your site's LoRaWAN gateway and the app, where each tank shows as a percentage.

Planning a pilot?
Tell us how many tanks you have and where, and we will plan a Tank Level rollout.

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Designs and specifications may change without notice.

Water Supply Monitor

Checks that the water actually arrived, not just that a pump was told to run.



THE CHALLENGE

A pump can be switched on and still deliver nothing.

Misters, tanks and RO plants are automated, but automation usually trusts the command. If a supply fails, a system can log 'done' while an animal's tank quietly runs dry. The Water Supply Monitor measures flow, tank level and water quality on each line and compares what was commanded with what arrived.

WHERE IT WORKS

RO water plants

Flow, level and TDS on the systems that feed animal water.

Misting supplies

Proof that misters actually got water.

Header & holding tanks

Tank levels behind every automated system.

WHAT IT DOES

Commanded vs actual

Compares each 'run' command with the water that actually flowed.

Tank levels

Level sensing on the tanks the systems draw from.

Supply status

Shows whether each supply is delivering.

Flow on every line

Inline flow sensors on RO and tank lines.

Water quality

TDS readings on the RO supply.

Monitoring only

It watches and reports; it does not switch pumps.

WHY TEAMS CHOOSE IT

Trust your automation
Catches the silent failures timers miss.

Protects animals
A failing supply is spotted before tanks run dry.

One view
Every supply line in one place.

Faster fixes
Points to the line that failed.

HOW IT WORKS

1

Fit
Add flow and level sensors to the RO and tank lines.

2

Compare
The monitor checks each command against the water that arrived.

3

Act
Staff see which supply failed and fix it before tanks run dry.

KEY FACTS

Watches	RO systems, tanks and misting supply lines
Measures	Flow, tank level, TDS and supply status
Sensors	Inline flow and level sensors
Logic	Commanded versus actual water
Role	Monitoring only; switches no pumps
Controller	ESP32 with Wi-Fi to a web dashboard
Power	Mains

BEST FOR

- ✓ RO water plants
- ✓ Misting and fogging supplies
- ✓ Header and holding tanks

Planning a pilot?
Tell us how water reaches your animal systems, and we will plan where to watch it.

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Designs and specifications may change without notice.

Pond Controller

Water quality watched around the clock, with pumps and air run on need.



THE CHALLENGE

Ponds are often run on habit: pumps on timers and water checked by hand.

Temperature, oxygen and pH change through the day, but hand checks only catch a moment, and pumps and aerators run whether they are needed or not. The Pond Controller reads industrial water probes continuously and switches pumps, air pumps and motors from what the water actually needs.

WHERE IT WORKS

Koi & display ponds

Water quality and equipment control for ornamental ponds.

Moats & pools

Pumps and aeration for enclosure moats and pools.

Fish-holding ponds

Oxygen and water checks where fish are held.

WHAT IT DOES

Five water readings

Temperature, pH, dissolved oxygen, ORP and turbidity from industrial probes.

Industrial control

A PLC drives every pump and motor through contactors.

Camera option

Optional camera analytics flag feeding activity, surface crowding and low activity.

Runs equipment on need

Pumps, air pumps and motors switch from the readings, not fixed timers.

Live view & remote control

Readings and controls on a web dashboard.

WHY TEAMS CHOOSE IT

Less wasted power
Equipment runs when the water needs it.

Always watched
Continuous readings instead of spot checks.

Healthier water
Oxygen or pH problems show up early.

Industrial parts
PLC control and RS485 probes built for site use.

HOW IT WORKS

1

Fit
Install the probes in the pond and connect pumps and aerators to the control panel.

→ 2

Monitor
The controller reads the water continuously over RS485.

→ 3

Control
Pumps and air run on need; readings and controls appear on the dashboard.

KEY FACTS

Measures	Temperature, pH, DO, ORP and turbidity
Probes	Industrial RS485 water probes
Controls	Water pumps, air pumps and motors
Controller	Industrial PLC with contactors
Monitoring	Web dashboard with live data and remote control
Power	Mains
Option	Camera analytics for feeding and activity

BEST FOR
- ✓ Koi and display ponds
- ✓ Enclosure moats and pools
- ✓ Fish-holding ponds

WORKS WITH
Auto Dosing for water chemistry, and the Algae UV Clarifier for clear water.

Planning a pilot?
Tell us about your ponds and equipment, and we will plan a Pond Controller layout.

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Designs and specifications may change without notice.

Auto Dosing

Tests alkalinity and doses the correction, automatically.



THE CHALLENGE

Hand tests for alkalinity are slow and infrequent, and hand dosing is never quite the same twice.

Marine and reef systems need stable carbonate hardness (KH), but tests happen only now and then and dosing depends on who is on shift. Auto Dosing samples the water, runs a colour-change titration and doses the correction with its peristaltic pump bank.

WHERE IT WORKS

Marine & reef systems

Stable alkalinity for corals and marine life.

Aquarium life support

Routine chemistry for exhibit and holding systems.

Quarantine & holding

Repeatable tests without hand titration.

WHAT IT DOES

Automatic KH tests

Finds the titration end point with a pH probe and colour sensors.

Doses the correction

A peristaltic pump bank doses from the test result.

Water temperature

An RTD probe reads the water temperature.

Precise sampling

A stepper motor draws each water sample.

Dose from a phone

Doses can also be started remotely.

WHY TEAMS CHOOSE IT

No hand titration
Tests run themselves.

Steadier chemistry
Test, decide and dose in one loop.

Remote dosing
Start a dose from your phone.

Less routine work
Frees staff from daily tests and dosing.

HOW IT WORKS

1 → 2 → 3

Sample
The system draws a measured water sample.

Test
A titration with pH and colour sensing finds the alkalinity.

Dose
The pump bank doses the correction, or staff dose from a phone.

KEY FACTS

Measures	Alkalinity (KH) by colour-change titration
Sensing	pH probe, colour sensors, RTD temperature
Sampling	Stepper-driven sample draw
Dosing	Peristaltic reagent pump and dosing pump bank
Control	Automatic from the test, or manual from a phone
Controller	ESP32 with pump driver
Power	Mains

BEST FOR
- ✓ Marine and reef systems
- ✓ Aquarium life support
- ✓ Quarantine and holding tanks

WORKS WITH
The Pond Controller for continuous water readings.

Planning a pilot?
Tell us about your systems and dosing routine, and we will plan an Auto Dosing trial.

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Designs and specifications may change without notice.

Algae UV Clarifier

A UV-C clarifier that doses harder when the water turns green.



THE CHALLENGE

A fixed UV unit gives the same dose on a clear day and in an algae bloom.

Green water clouds exhibits and stresses fish, yet most UV clarifiers run at one fixed output. The Algae UV Clarifier reads turbidity and slows its pump when the water is greener, so the water spends longer under the UV-C lamps, and a wiper keeps the quartz sleeves clean.

WHERE IT WORKS

Koi & display ponds

Clear water for viewing and healthier fish.

Moats & pools

Algae control for enclosure water bodies.

Aquarium systems

UV treatment in exhibit and holding loops.

WHAT IT DOES

Reads the water

A turbidity sensor tracks how green the water is.

Adaptive dose

Slows the pump for longer contact when the algae load is high.

Close to the lamps

Turbulence inside keeps the water passing close to the UV-C tubes.

Self-cleaning

A wiper keeps the quartz sleeves clear.

PLC control

A PLC and VFD set the pump speed.

WHY TEAMS CHOOSE IT

Clearer water
The dose follows the algae load.

No wasted effort
Normal flow when the water is clear.

Less cleaning
The wiper keeps the quartz clear.

Better viewing
Visitors see the animals, not green water.

HOW IT WORKS

1

Install
Plumb the chamber into the pond or system loop.

→ 2

Sense
Turbidity readings show the algae load.

→ 3

Treat
The pump slows for a higher UV dose when needed, and the wiper cleans the sleeves.

KEY FACTS

Treatment	UV-C flow chamber
Sensing	Turbidity, as a measure of algae load
Control	PLC with VFD pump-speed control
Flow	Internal turbulence features
Cleaning	Self-cleaning wiper for the quartz sleeves
Power	Mains

BEST FOR
- ✓ Koi and display ponds
- ✓ Enclosure moats and pools
- ✓ Aquarium and holding systems

WORKS WITH
The Pond Controller, which watches the rest of the water quality.

Planning a pilot?
Tell us about your ponds and water loops, and we will size an Algae UV Clarifier.

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Designs and specifications may change without notice.

Solar Pump Controller

Runs your pump on solar and shows whether water is really moving.



THE CHALLENGE

Solar pump controllers say 'running' even when a cloudy day means no water is moving.

Off-the-shelf controllers are black boxes, with no remote view and no way to tell a real run from a false one. The Solar Pump Controller drives the pump through a VFD and senses current and flow, so you can see real pumping, solar input and runtime from anywhere.

WHERE IT WORKS

Ponds

Circulation pumps on solar power.

Borewells

Solar borewell pumping with a remote view.

Farm irrigation

Daytime irrigation pumping off the grid.

WHAT IT DOES

Real vs false running

Current sensing tells actual pumping from a stalled 'running' state.

Solar & flow sensing

Solar input and water flow are measured.

Panel protection

AC and DC breakers in a fabricated panel.

VFD drive

Drives a solar BLDC pump through a variable-frequency drive.

Remote view

Live status and remote operation over Wi-Fi.

WHY TEAMS CHOOSE IT

The truth about your pump

Know when it is really pumping.

Daytime solar energy

Pumping from solar power.

Remote operation

Check and run it from anywhere.

Find problems fast

Spot cloudy-day stalls and faults.

HOW IT WORKS

1

Install

Mount the panel by the pump and connect the solar array, pump and sensors.

2

Run

The VFD drives the pump from solar power.

3

Monitor

Current and flow show real pumping, live on the dashboard.

KEY FACTS

Drive	VFD for a solar BLDC pump
Sensing	Current, solar input and water flow
Insight	Real pumping versus false 'running'
Control	STM32 with ESP32 Wi-Fi
Monitoring	Live status and remote operation on a web dashboard
Protection	AC and DC breakers in a fabricated panel
Power	Solar

BEST FOR

- ✓ Pond circulation
- ✓ Borewell pumping
- ✓ Farm irrigation

Planning a pilot?

Tell us about your pumps and solar set-up, and we will plan a Solar Pump Controller.

antzsystems.com

Designs and specifications may change without notice.

Motor Guard

Early warning for the pumps and fans that keep animals safe.



THE CHALLENGE

When a life-support pump or blower stops, animals can be at risk within hours.

Motors rarely fail without warning. Current creeps up, bearings run warmer and vibration grows, often for days before a breakdown, but nobody is watching. Motor Guard sits beside the starter panel, watches one motor around the clock and flags trouble early, so your team can fix it on a planned visit instead of in an emergency.

WHERE IT WORKS

Aquarium & pool life support

Circulation and filtration pumps that keep water moving and clean for fish, penguins and marine mammals.

Hatchery & pond aeration

Blowers and aerators that keep oxygen levels up in hatchery tanks, ponds and moats.

Animal-house climate & water supply

Exhaust fans and HVAC units behind reptile houses, aviaries and holding rooms, plus borewell pumps.

WHAT IT CATCHES

Pump running dry

Current and power factor drop while the motor is still on: lost prime or an empty sump.

Developing bearing wear

Vibration and temperature rise slowly against the motor's own healthy baseline.

Unexpected stop

The starter is on but the motor draws nothing: a tripped overload, blown fuse or open winding.

Overload or jam

Current and motor temperature climb together: a blocked impeller or a dragging load.

Imbalance & looseness

Vibration jumps at running speed: a loose mount, misalignment or a damaged fan.

Supply problems

Low or high mains voltage that makes motors run hot and wear out early.

WHY TEAMS CHOOSE IT

Repair on your schedule

Catch faults early and plan the fix, instead of a night-time call-out.

No rewiring

The current clamp clips around the existing cable. Nothing is cut or broken into.

Readable from the doorway

A health bar and status lights show the motor's state at a glance.

Your data stays on site

Readings go to your own gateway and the Antz App, with no cloud service.

HOW IT WORKS

1

Fit

Mount the unit beside the starter panel, clip the clamp around the motor cable and fix the sensor puck to the motor frame.

2

Watch

Motor Guard measures power, vibration and temperature around the clock and compares them with the motor's healthy baseline.

3

Warn

The health bar changes on the unit, and readings and alerts reach your team through the Antz App.

KEY FACTS

Monitors	One single-phase 230 V pump, fan, blower or compressor
Electrical	Voltage, current, power, power factor, frequency, energy
On the motor	Vibration and frame temperature from a sealed sensor puck
Current sensing	Clamp-on split-core sensor, up to 100 A
Extra inputs	Shaft speed and starter (contactor) feedback
On the unit	Live-value display, 12-segment health bar and status lights
Connectivity	LoRaWAN (IN865) to the site gateway; Wi-Fi for set-up only
Mounting	Wall-mounted by the starter; puck by magnet or M8 stud
Power	From the supply ahead of the starter, so it stays on
Safety	Mains and low-voltage parts in separate compartments

IN THE BOX

- ✓ Motor Guard unit
- ✓ Clamp-on current sensor
- ✓ Sensor puck with 1.5 m cable
- ✓ Magnet mount and M8 stud
- ✓ LoRa antenna
- ✓ Wall fixings

WORKS WITH

The Antz App for dashboards and alerts, through your site's LoRaWAN gateway.

Planning a pilot?

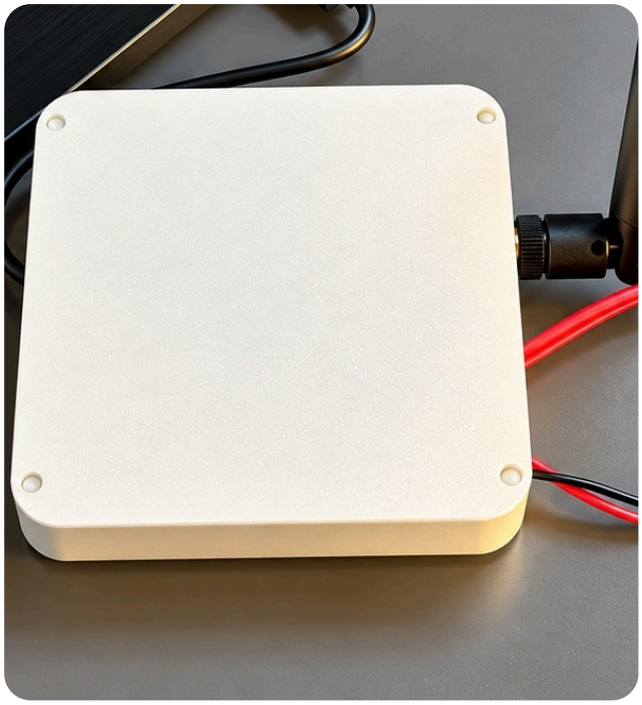
Tell us which pumps and fans matter most on your site, and we will plan a Motor Guard pilot around them.

antzsystems.com

Designs and specifications may change without notice.

Smart Energy Meter

Know the moment a heater, HVAC unit or pump stops.



THE CHALLENGE

Temperature-critical animals depend on heaters and air handling that nobody watches overnight.

When a heater, HVAC unit or pump stops, the first sign is often an animal in trouble the next morning. The Smart Energy Meter watches the electrical supply to critical appliances, shows how much energy they use and raises an alert when one stops.

WHERE IT WORKS

Reptile & tropical houses

Heaters and lamps that keep temperature-critical species alive.

Incubator rooms

Incubators and room heating where a short outage can cost a clutch.

Field stations

Remote sites where nobody is there to notice a failure.

WHAT IT CATCHES

Appliance stopped

Current drops on a critical appliance that should be running.

Supply problems

Voltage and frequency outside normal values.

Unusual energy use

An appliance drawing more or less power than usual.

Energy per appliance

How much each HVAC unit, heater or pump costs to run.

WHY TEAMS CHOOSE IT

Alerts when it matters
Hear about a stopped appliance before animals suffer.

See your energy
Appliance-level energy use for planning and savings.

No Wi-Fi needed
Readings and alerts travel over LoRaWAN.

Protects critical species
Built for temperature-critical animal care.

HOW IT WORKS

1

Connect
Fit the meter to the supply of a critical appliance.

2

Measure
It measures voltage, current, power, frequency and energy.

3

Alert
Readings go over LoRaWAN, with an alert if the appliance stops.

KEY FACTS

Measures	Voltage, current, power, frequency and energy
Monitors	Critical appliances such as HVAC units, heaters and pumps
Alerts	When a critical appliance stops
Connectivity	LoRaWAN for remote installations
Enclosure	With antenna and cable connections

BEST FOR
- ✓ Wildlife and reptile houses
- ✓ Temperature-critical species facilities
- ✓ Incubator rooms
- ✓ Field stations

Planning a pilot?
Tell us which appliances your animals cannot do without, and we will plan where to meter first.

antzsystems.com

Designs and specifications may change without notice.

Smart Timer

Scheduled switching for farm loads, set and seen from a dashboard.



THE CHALLENGE

Mechanical timers work in 15-minute steps and cannot tell you whether they ran.

Pumps, lights and aerators across a site are often switched by mechanical timers that are coarse, offline and unmonitored. The Smart Timer is a two-channel relay module scheduled from a web dashboard, so every timed load can be set and checked from one place.

WHERE IT WORKS

Pumps

Fill and circulation pumps on fine schedules.

Lights

Lighting cycles for animal houses and grow rooms.

Aerators & fans

Aeration and ventilation on a timetable.

WHAT IT DOES

Two relay channels

Switches two mains loads.

Fine schedules

Much finer steps than a mechanical timer.

Dashboard control

Set schedules from a web dashboard over Wi-Fi.

Every timer in one view

See every timed load on the property in one place.

WHY TEAMS CHOOSE IT

Fine control
Schedules beyond 15-minute steps.

Visible
Every timed load on one dashboard.

Remote changes
Adjust schedules from anywhere.

Drop-in upgrade
Replaces a mechanical timer.

HOW IT WORKS

1 → 2 → 3

Fit
Wire the Smart Timer in place of the mechanical timer.

Schedule
Set the on and off times on the dashboard.

Check
See the schedules for every timed load in one place.

KEY FACTS

Channels	2 relay outputs for mains loads
Controller	ESP32 with Wi-Fi
Scheduling	From a web dashboard, finer than 15-minute steps
Power	Mains, with a built-in 5 V supply
Housing	Junction box with cable gland

BEST FOR
- ✓ Pumps
- ✓ Animal-house and grow-room lighting
- ✓ Aerators and fans

Planning a pilot?
Tell us which loads still run on mechanical timers, and we will plan the switch-over.

antzsystems.com

Designs and specifications may change without notice.

Ammonia Scrubber

Takes ammonia and odour out of animal-room air, with media you can regenerate.



THE CHALLENGE

Ammonia builds up in busy animal rooms, and fans alone only move it around.

Insect and rodent rooms produce ammonia that irritates animals and staff, and ventilation or air fresheners do not remove it. The Ammonia Scrubber pushes room air through a citric-acid bath that traps ammonia, then through a zeolite bed that takes up what is left. The zeolite is regenerated rather than thrown away.

WHERE IT WORKS

Insect & rodent rooms

Ammonia control where animals are kept densely.

Small-mammal houses

Fresher air for animals and keepers.

Quarantine rooms

Cleaner air in closed holding rooms.

WHAT IT DOES

Acid bath

Room air bubbles through citric acid, which traps ammonia as a salt.

Regenerable media

The zeolite is reactivated by a written procedure, not discarded.

Optional sensing

An optional ammonia sensor shows room levels.

Zeolite polish

A zeolite bed adsorbs the remaining ammonia and odour.

Simple control

A fan with minimal controls.

WHY TEAMS CHOOSE IT

Fresher air
Ammonia is captured, not just moved.

Less waste
Zeolite is regenerated and reused.

Simple to run
A fan and two stages, with no complex parts.

Healthier rooms
Better air for animals and staff.

HOW IT WORKS

1 → 2 → 3

1 Draw
A fan pulls room air into the scrubber.

2 Capture
The acid bath and the zeolite bed take out ammonia and odour.

3 Maintain
Top up the bath and regenerate the zeolite on a schedule.

KEY FACTS

Stage 1	Citric-acid bath that traps ammonia
Stage 2	Zeolite bed for remaining ammonia and odour
Media	Regenerable zeolite, with a reactivation procedure
Airflow	Fan-forced
Sensing	Optional ammonia sensor
Power	Mains
Upkeep	Acid bath topped up; zeolite regenerated

BEST FOR

- ✓ Insect and rodent rooms
- ✓ Small-mammal houses
- ✓ Quarantine and holding rooms

Planning a pilot?
Tell us about the room and the animals in it, and we will size an Ammonia Scrubber.

antzsystems.com

Designs and specifications may change without notice.

Vespr

Always-on listening that turns wildlife calls into biodiversity data.



THE CHALLENGE

A survey team hears a few hours of a habitat that is calling day and night.

Manual surveys miss nights, dawn choruses and whole seasons, and hours of raw recordings take weeks to review. Vespr listens continuously, recognises species on the device and reports call density and soundscape health, so teams see what is happening in a habitat without wading through audio.

WHERE IT WORKS

Biodiversity surveys

Continuous species records across a site, season after season.

Zoos & aviaries

Vocal activity in exhibits and breeding aviaries, as a window on behaviour and welfare.

Conservation research

Target species and habitat health followed at remote field sites.

WHAT IT REPORTS

Species detected

On-device detection of the species calling around the unit.

Soundscape health

Acoustic indices (ACI and NDSI) that sum up the condition of a habitat.

Direction of calls

An optional microphone array gives each call a bearing, to help separate individuals.

Call density

How much each species calls, over hours, days and seasons.

Human disturbance

Anthrophony detection flags human noise, and speech is filtered out.

Tuned to each site

Adaptive calibration matches each unit to its own acoustic environment.

WHY TEAMS CHOOSE IT

Answers, not audio

Results arrive as species and indices, ready to use.

Always listening

Covers the nights and seasons that surveys miss.

Tuned to every site

Each unit calibrates to the acoustics where it is placed.

Wildlife signal only

Human noise and speech are kept out of the results.

HOW IT WORKS

1

Deploy

Place Vespr at the survey point or in the exhibit; it tunes itself to the site's acoustics.

2

Listen

It records and analyses calls on the device, around the clock.

3

Report

Species, call density and soundscape indices are reported for review over time.

KEY FACTS

Operation	Autonomous, continuous monitoring of calling wildlife
On the device	Species detection and call density
Soundscape	ACI and NDSI acoustic indices for habitat health
Calibration	Adaptive DSP with site-specific microphone tuning
Microphones	Configurable geometry
Filtering	Human-noise detection and speech rejection
Option	Directional array that gives each call a bearing

BEST FOR

- ✓ Biodiversity surveys
- ✓ Target-species conservation
- ✓ Habitat health assessment
- ✓ Zoos and aviaries
- ✓ Animal welfare research

Planning a pilot?

Tell us about your site and target species, and we will plan a Vespr deployment with you.

antzsystems.com

Designs and specifications may change without notice.

Natural Weighing Stations

Weigh animals on the perches, ropes and platforms they already use.



THE CHALLENGE

Weight is one of the earliest signs of illness, but weighing an animal usually means catching it.

Catching, crating or training animals onto a scale is stressful and takes keeper time, so weights are checked rarely. Natural Weighing Stations put load cells inside the perches, ropes and platforms that animals already use every day, so a weight is recorded each time they settle.

WHERE IT WORKS

Weighing perch

A natural wood perch for birds in aviaries and bird houses.

Red panda platform

A resting shelf or branch platform for red pandas and other small climbers.

Primate rope

A load cell in the anchor of a climbing or hanging rope, for monkeys.

Big-cat resting platform

A heavy-duty resting platform for leopards and other big cats.

WHAT IT DOES

Weighs without handling

A weight is taken each time the animal settles on the perch, rope or platform.

Daily weight trends

Weights build into a trend for each station, ready for vets and keepers.

Looks natural

Wood, rope and platform finishes that fit the habitat.

Steady readings only

Designed to keep readings only while the animal is still, not mid-jump or swing.

Sized per species

Load cells and frames sized for each species, from birds to leopards.

Early warning

A steady loss or gain stands out before other signs appear.

WHY TEAMS CHOOSE IT

Less stress

No catching, crating or scale training.

Saves keeper time

Weights record themselves, every day.

Spot changes early

Trends show weight loss or gain before it is obvious.

Fits the habitat

Looks like the furniture animals already use.

HOW IT WORKS

1

Install

Replace a perch, rope anchor or resting platform the animal already uses with a weighing one.

2

Weigh

Load cells record a steady reading each time the animal settles.

3

Review

Keepers and vets see daily weights and trends for each station.

KEY FACTS

Range	Perch, climber platform, primate rope anchor, big-cat platform
Sensing	Load cells built into the perch, platform or rope anchor
Readings	Steady readings recorded when the animal settles
Sizing	Load cells and frame sized for each species
Finish	Natural wood, rope and platform finishes
Electronics	Designed to sit out of the animal's reach
Groups	A station weighs whoever uses it; telling animals apart needs separate ID

BEST FOR

- ✓ Aviaries and bird houses
- ✓ Red panda and small-climber exhibits
- ✓ Primate enclosures
- ✓ Big-cat paddocks and night houses
- ✓ Veterinary and welfare programmes

Planning a pilot?

Tell us which animals you need to weigh, and we will plan a weighing station for their enclosure.

antzsystems.com

Designs and specifications may change without notice.

Feeding Monitor

A feed bowl that records how much was eaten, and how fast.



THE CHALLENGE

Feeding is often guesswork: food goes in, and the leftovers are eyeballed.

Without weights, nobody knows how quickly animals eat, how much they eat or how much is wasted. The Feeding Monitor puts a load cell under the bowl and records the weight through each feed, so appetite and wastage become numbers.

WHERE IT WORKS

Bird diets

Intake curves for birds on managed diets.

Small animals

Appetite checks during health monitoring.

Nutrition trials

Measured intake for diet studies.

WHAT IT DOES

Weight over time

The bowl's weight is logged through each feed.

Wastage estimates

An estimate of the food wasted per feed.

Wireless

Wi-Fi from an ESP32 in the base.

Consumption curves

How fast and how much was eaten, per bowl.

Splash-proof

The bowl and load-cell gap are waterproofed.

WHY TEAMS CHOOSE IT

Appetite in numbers
Spot a drop in eating early.

No weighing by hand
Intake records itself.

Less waste
See how much food is left or spilled.

Per bowl
One bowl per animal gives individual intake.

HOW IT WORKS

1

Place
Set the Feeding Monitor in place of the usual bowl.

2

Feed
The weight is logged as the animal eats.

3

Review
See consumption curves and wastage for each feed.

KEY FACTS

Sensing	Load cell with HX711 amplifier under the bowl
Output	Weight over time for each feed
Insights	Consumption curves and wastage estimates
Controller	ESP32 with Wi-Fi
Power	Battery or mains
Build	Waterproofed bowl and load-cell gap
Per animal	Individual intake needs one animal per bowl

BEST FOR

- ✓ Bird diet programmes
- ✓ Small-animal health checks
- ✓ Nutrition trials

Planning a pilot?
Tell us about the animals and diets you want to track, and we will plan a feeding trial.

antzsystems.com

Designs and specifications may change without notice.

Smart Food Dispenser

Sensor-triggered feeding that keeps animals moving and foraging.



THE CHALLENGE

Food that arrives at the same place and time every day leaves animals with little to do.

Natural foraging means searching, moving and working for food. The Smart Food Dispenser detects a nearby animal and releases a small portion, and several units can work together at different times and places to encourage animals to explore and stay active.

WHERE IT WORKS

Zoo enrichment

Food that appears in different places to encourage natural foraging.

Animal shelters

Activity and engagement for animals spending long hours in kennels and runs.

Research & care settings

Rule-based feeding for behaviour and enrichment studies.

WHAT IT DOES

Detects the animal

Sensors notice when an animal comes close.

Dispenses by rules

Food is released according to the rules you set.

Works as a group

Several units can dispense at varied times and places.

Portion control

Portion limits and cooldowns manage how often food is given.

WHY TEAMS CHOOSE IT

More natural behaviour

Searching and moving for food, as in the wild.

Less routine work

Rules handle the small, frequent feeds.

Controlled portions

Limits and cooldowns stop overfeeding.

Spread through the habitat

Several units turn the whole space into a foraging area.

HOW IT WORKS

1

Place

Put one or more dispensers around the enclosure or run.

2

Set rules

Choose portions, cooldowns and when each unit may dispense.

3

Enrich

Animals find food as they move and explore.

KEY FACTS

Form	Cylindrical body with an angled feed chute
Trigger	Animal presence detected by sensors
Dispensing	Small portions by configurable rules
Control	Portion limits and cooldowns
Multi-unit	Several units can dispense at varied times or locations

BEST FOR

- ✓ Animal shelters
- ✓ Enrichment areas
- ✓ Zoos
- ✓ Animal-care and research environments

Planning a pilot?

Tell us about the animals and spaces you want to enrich, and we will plan a dispenser layout.

antzsystems.com

Designs and specifications may change without notice.

Egg Analysis Pro

The professional bench station for complete egg inspection.



THE CHALLENGE

Every egg in a breeding programme matters, but a full inspection takes many separate tools.

Candling, weighing, measuring and checking for a heartbeat usually means moving the egg between instruments, away from incubation conditions. Egg Analysis Pro does it all in one warm, dark chamber and saves a single complete record for every egg.

WHERE IT WORKS

Hatcheries

Fast, repeatable inspection of fertile eggs, with a record for every one.

Conservation breeding

Gentle, complete checks on rare and valuable eggs.

Research & avian vets

Images, thermal data and measurements for incubation studies and veterinary work.

WHAT IT RECORDS

360° surface view

Rollers turn the egg under one camera for a full-surface view and vein mapping.

Heartbeat screening

A built-in check for signs of a living embryo.

Weight trends

Weigh the same egg over days to follow its water loss.

Candling

White and infrared candling to look inside the shell.

Thermal image

A thermal camera captures the egg's temperature pattern.

Egg-safe turning

Turning follows the incubation day: none in the first days or at lockdown.

WHY TEAMS CHOOSE IT

One complete record

Every test for an egg saved together, not in separate notebooks.

Gentle on the egg

A warm, dark chamber keeps the egg at incubation conditions.

Guided on screen

A touchscreen walks the operator through each step.

Comparable results

The same method for every egg, clutch and season.

HOW IT WORKS

1

Load

Place the egg on the rollers inside the warm, dark chamber.

2

Inspect

The station turns, images, candles, screens, weighs and measures the egg, guided on screen.

3

Record

Results reach the phone app, with vein maps and heartbeat analysis, in one record per egg.

KEY FACTS

Eggs	Bird eggs from quail to goose
Imaging	12 MP camera; motorised rollers turn the egg 360°
Candling	White and 850 nm infrared light, plus heartbeat screening
Thermal	32 × 24 thermal camera
Weighing	Built-in load-cell scale
Chamber	Held at 37.5 °C, with over-temperature cut-offs
Interface	4.3-inch touchscreen in the door; phone app over Wi-Fi
Body	Folded, anodised aluminium with a lift-off glass top
Footprint	184 × 160 mm, bench-top; 12 V power adapter

IN THE BOX

- ✓ Egg Analysis Pro station
- ✓ 12 V power adapter

WORKS WITH

The Egg Analysis Pro phone app, over Wi-Fi, for focus stacking, vein maps and heartbeat analysis.

Planning a pilot?

Tell us about your species and egg numbers, and we will show you Egg Analysis Pro in your workflow.

antzsystems.com

Designs and specifications may change without notice.

Smart Egg Analysis Module

A compact egg inspection station with a clear, guided touchscreen.



THE CHALLENGE

Checking eggs by hand is slow, and the results live in notebooks.

Measuring, weighing and candling each egg takes separate tools and careful note-taking, and it is hard to compare one clutch with the next. The Smart Egg Analysis Module brings the key measurements and a visual check into one short, guided workflow on a single touchscreen.

WHERE IT WORKS

Hatcheries

Quick, consistent checks on incoming and incubating eggs, with every result recorded.

Conservation breeding

Careful handling of rare eggs, with measurements kept for each clutch.

Incubation research

Comparable size and weight data across trials, incubators and seasons.

WHAT IT RECORDS

Length & width

Egg dimensions measured from the camera view, shown with a confidence score.

Candling view

Candling to look inside the egg without opening it.

Measurement confidence

Each reading shows how sure the measurement is, so doubtful ones get a re-check.

Weight

A built-in scale with a tare control for each egg.

Heartbeat screening

A dedicated control to screen the egg for a heartbeat.

Calibration control

A dedicated calibration step before measuring.

WHY TEAMS CHOOSE IT

One guided workflow

Measure, weigh and candle in one place, step by step.

Clear at a glance

Colour-coded result cards make each reading easy to read.

Comparable records

The same method every time, so results can be compared.

Easy to learn

Calibration and tare are one touch away for any operator.

HOW IT WORKS

1

Place

Set the egg in the cradle under the camera and check its position on screen.

2

Measure

Read length, width and weight on colour-coded cards, then candle or screen for a heartbeat.

3

Record

Save the result for the egg and move on to the next one.

KEY FACTS

Measures	Egg length, width and weight
Inspection	Camera view, candling and heartbeat screening
Interface	Touchscreen with colour-coded measurement cards
Controls	Calibration, tare, heartbeat and candling
Camera	Camera view for placing and inspecting the egg
Format	Bench-top inspection station

BEST FOR

- ✓ Incubation research
- ✓ Hatchery workflows
- ✓ Conservation programmes
- ✓ Specialist egg assessment

Planning a pilot?

Tell us about your eggs and your incubation workflow, and we will show you how the module fits in.

antzsystems.com

Designs and specifications may change without notice.

Egg Incubator

An incubator that watches oxygen and CO_2, not just temperature.



THE CHALLENGE

Most incubators hold temperature and little else, so hatch rates vary from batch to batch.

The air inside an incubator changes as embryos grow, and pressure and humidity drift with the weather. This incubator's own control board reads temperature, humidity, pressure, oxygen and CO_2, turns the eggs and is designed to keep a record of every batch.

WHERE IT WORKS

Hatcheries
Steadier conditions for every batch.

Conservation breeding
Careful incubation for valuable eggs.

Bird & reptile breeders
Climate and air quality watched for each clutch.

WHAT IT DOES

Temperature & humidity
Climate sensing for the incubation chamber.

Oxygen & CO_2
Gas sensors watch the air as embryos develop.

Five switched outputs
Relays for heating, fans, humidity and more.

Pressure
A barometric sensor tracks air pressure.

Egg turning
A stepper motor turns the eggs.

Peltier drive
A thermoelectric module driver for temperature control.

WHY TEAMS CHOOSE IT

Steadier hatches
Air and climate watched together.

Batch records
Designed to keep a record of every batch.

Several sensors
Climate and gas readings cross-check each other.

Fine control
Peltier drive and five outputs for precise climate.

HOW IT WORKS

1 → 2 → 3

1 Load
Set the eggs on the turning tray and choose the incubation settings.

2 Incubate
The board holds temperature and humidity, turns the eggs and watches the air.

3 Review
Check conditions and the batch record through the hatch.

KEY FACTS

Controller	Custom STM32 control board
Sensors	Temperature/RH, pressure, O_2 and CO_2
Outputs	5 relays plus a Peltier driver
Turning	Stepper-motor egg turning
On board	Real-time clock, micro-SD, fan and display headers
Power	Mains

BEST FOR

- ✓ Hatcheries
- ✓ Conservation breeding
- ✓ Bird and reptile breeders

Planning a pilot?
Tell us about your species and batch sizes, and we will plan an incubator for them.

antzsystems.com

Designs and specifications may change without notice.

Egg Rotation Tracker

A sensor egg that shows how your incubator really turns.



THE CHALLENGE

You set the turning schedule, but do you know what the eggs actually experience?

Turning is critical to a good hatch, yet a stuck tray, a missed turn or a too-steep angle is easy to miss inside a closed incubator. The Egg Rotation Tracker is an egg-shaped sensor that sits among the real eggs and records every movement and the temperature around it, so turning can be checked, not assumed.

WHERE IT WORKS

Incubator validation

Confirm that a new or serviced incubator turns eggs as set before a valuable clutch goes in.

Hatchery process review

Compare turning between machines and trays when hatch rates drop.

Research trials

Record rotation profiles and temperature for each trial and compare them over time.

WHAT IT RECORDS

Turning events

When the egg was turned, and how often.

Missed or stuck turns

Gaps in the turning pattern stand out in the record.

Turning direction

Which way the egg turned, so alternating turns can be checked.

Turning angle

Rotation across all three axes from motion sensors.

Temperature at the egg

The temperature where the eggs sit, alongside the movement.

Knocks and tilts

Sudden bumps during handling or tray changes show up in the motion record.

WHY TEAMS CHOOSE IT

Sits with the real eggs

Egg-shaped, so it rides the tray exactly like the clutch.

Facts, not assumptions

A record of turning instead of trusting the timer.

Status at a glance

A receiver unit shows the tracker's status outside the incubator.

Find faults early

Spot a failing turner before it costs a hatch.

HOW IT WORKS

1

Place

Put the sensor egg on the tray among the real eggs.

2

Record

It logs movement on three axes and temperature through the incubation.

3

Review

Look at the rotation pattern over time and compare it with the schedule you set.

KEY FACTS

Form	Egg-shaped sensor for the incubator tray
Motion sensing	Accelerometer and gyroscope across X, Y and Z
Also measures	Temperature at the egg
Receiver	Separate unit with a status light and a button
Setting	Inside the incubator, among the real eggs
Output	Rotation and temperature record for review over time

IN THE BOX

- ✓ Sensor egg
- ✓ Receiver unit

BEST FOR

- ✓ Incubator validation
- ✓ Hatchery process review
- ✓ Research trials
- ✓ Rotation-profile analysis

Planning a pilot?

Tell us which incubators you run, and we will plan a turning check around them.

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Designs and specifications may change without notice.

Reptile Egg Weigher

Every reptile egg weighed every day, without lifting it.



THE CHALLENGE

Reptile eggs must not be turned, so every hand check is a risk.

Weight loss is one of the clearest signs of how an egg is doing, but lifting reptile eggs to weigh them risks rolling them. The Reptile Egg Weigher gives each egg its own load cell and cradle inside the incubator and records a daily weight automatically.

WHERE IT WORKS

Reptile breeding

Daily weights for every egg in a clutch.

Conservation programmes

Hands-off records for valuable eggs.

Incubation research

A weight-loss curve for each egg.

WHAT IT DOES

One cell per egg

Each egg sits on its own small load cell.

Daily weight

The daily value is the median of the night readings.

Electronics outside

The electronics sit outside the incubator.

Never turned

Eggs lie in a cradle, marked side up, and stay put.

Overload stop

A stop under each cradle protects the load cell.

WHY TEAMS CHOOSE IT

No handling
Eggs are never lifted or rolled.

A curve for every egg
Daily weights show trends early.

Less record-keeping
Weights log themselves.

Protected sensors
An overload stop on every cradle.

HOW IT WORKS

1

Place
Set each egg in its cradle, marked side up.

2

Weigh
Load cells read continuously; a daily weight comes from the night readings.

3

Review
Keepers see each egg's weight trend and decide on any changes.

KEY FACTS

Sensing	One small load cell per egg (100 g or 500 g)
Eggs	Reptile eggs in fixed cradles; no turning
Daily value	Median of the night readings
Protection	Overload stop under each cradle
Electronics	ESP32 and amplifiers outside the incubator
Power	12 V supply
Space	About 300 × 190 × 200 mm inside the incubator
Small eggs	Eggs under about 5 g need a hand balance

BEST FOR

- ✓ Reptile breeding centres
- ✓ Conservation incubators
- ✓ Incubation research

Planning a pilot?

Tell us about your species and clutch sizes, and we will plan an egg weigher for your incubator.

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Designs and specifications may change without notice.

Gradient Brooder

A brooder where chicks choose their own temperature.



THE CHALLENGE

A heat lamp in a box forces every chick to cope with one temperature.

Young chicks need warmth, but how much changes by the hour and by the chick. This brooder has a heated end and a cooled end, so chicks move along a gradient of about 35 to 29 °C and pick what suits them, with filtered air and an easy-clean floor.

WHERE IT WORKS

Bird rearing

Warmth that chicks can choose for themselves.

Conservation breeding

Careful rearing for valuable chicks.

Brooder rooms

Stackable units for many clutches.

WHAT IT DOES

Heated & cooled ends

A PID heater and radiant plate at one end, a Peltier cold plate at the other.

Chicks choose

A gradient of about 35 to 29 °C along the chamber.

Humidity

An ultrasonic humidifier with temperature and humidity probes.

Filtered air

A low filtered intake and an exhaust fan.

Easy cleaning

A slide-out droppings tray under a mesh floor.

Camera option

An optional camera add-on for activity and feeding insights.

WHY TEAMS CHOOSE IT

Chicks choose
Comfort set by the animal, not a guess.

Clear view
Double-wall clear polycarbonate chamber.

Easy to clean
Mesh floor and slide-out tray.

Remote view
Touch display and Wi-Fi to a dashboard.

HOW IT WORKS

1 → 2 → 3

Set
Set the warm-end and cool-end temperatures on the touch display.

Brood
Chicks move along the gradient to the warmth they need.

Check
Watch temperature and humidity on the display or the dashboard.

KEY FACTS

Chamber	900 × 400 mm double-wall clear polycarbonate
Warm end	PID heater and radiant plate
Cool end	Peltier cold plate
Gradient	About 35 to 29 °C
Humidity	Ultrasonic humidifier, temperature/RH probes
Air	Filtered intake and exhaust fan
Control	STM32 + ESP32, touch display, Wi-Fi
Power	Mains
Option	Camera analytics for activity and feeding

BEST FOR
- ✓ Bird rearing
- ✓ Conservation breeding
- ✓ Brooder rooms

Planning a pilot?
Tell us about the species and numbers you rear, and we will plan a brooder set-up.

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Designs and specifications may change without notice.

Keeper Fob

A belt-worn tap-and-log device for animal-care rounds.



THE CHALLENGE

Paper checklists on keeper rounds get wet, lost and filled in at the end of the day.

Feeding, cleaning and health checks happen at dozens of enclosures, often with gloves on. Keeper Fob lets a keeper tap an enclosure's tag, pick what was done and move on, with every log time-stamped and sent over LoRaWAN.

WHERE IT WORKS

Zoo & aquarium rounds

Feeding, cleaning and checks logged at each enclosure as they happen.

Animal shelters

Care tasks recorded for every kennel and run.

Facility inspections

A record that every point on an inspection route was visited.

WHAT IT DOES

Tap at every enclosure

Tap the enclosure's NFC tag and its name appears on screen.

Confirmed on the spot

The fob shows 'Logged' with the time and gives a buzz.

Voice notes

Record a short spoken note when a status is not enough.

Fed, cleaned, checked

Pick a status, or raise an issue, with three sealed side keys.

Alerts to the keeper

Messages such as 'needs attention' arrive on the fob to acknowledge.

Nothing lost offline

Logs queue out of range and send when a gateway is back.

WHY TEAMS CHOOSE IT

No more paper

Rounds logged at the enclosure, not at the end of the shift.

Glove-friendly

Three large sealed keys and a sunlight-readable screen.

No Wi-Fi needed

Logs travel over LoRaWAN to the campus gateways.

Proof of care

A time-stamped record for every enclosure.

HOW IT WORKS

1

Tap

Hold the fob to the enclosure's NFC tag.

2

Pick

Choose fed, cleaned, checked or issue with the side keys.

3

Sync

The log goes out over LoRaWAN; the cradle syncs and charges at the end of the day.

KEY FACTS

Identify	NFC reader for enclosure tags
Screen	1.8-inch sunlight-readable display with front light
Controls	3 sealed side keys: up, select, down
Feedback	Vibration, buzzer, status light and speaker
Connectivity	LoRaWAN (IN865); Wi-Fi only in the cradle
Power	Rechargeable cell, magnetic pogo charging; no open ports
Wear	On a retractable belt reel, with a protective bumper

IN THE BOX

- ✓ Keeper Fob
- ✓ Breakaway badge reel
- ✓ Charging and sync cradle

WORKS WITH

Living Labels keeper tags, which show the last log at each enclosure.

Planning a pilot?

Tell us how your rounds run today, and we will plan a Keeper Fob trial with your team.

antzsystems.com

Designs and specifications may change without notice.

Living Labels

E-paper signs for visitors and keepers that update over the air.



THE CHALLENGE

Printed signs go out of date the day an animal moves, arrives or goes off show.

Reprinting signs takes time, so visitors read stale information and keepers' notes stay on paper. Living Labels are e-paper signs that update over the air: a large sign for visitors and a small tag that shows each enclosure's latest care log.

WHERE IT WORKS

Visitor signs

Species, conservation status, facts and next feed, kept current.

Keeper tags

Fed, cleaned, checked or issue at each enclosure, with time and keeper.

Gardens & trails

Labels for paths, plants and plots that change with the seasons.

WHAT IT DOES

Always current

Content updates over the air, with no reprinting.

Scan or tap

A QR code and an NFC tag link phones to more.

Stale content shows

Every screen carries a timestamp.

Shows the last check

The keeper tag shows the latest log and who made it.

Logs every tap

A tap records who tapped and what, and the light bar flashes.

Readable without power

Three-colour e-paper holds its image with no backlight.

WHY TEAMS CHOOSE IT

No more reprinting

Change a sign from your desk in minutes.

Better visits

Fresh information and a link to more on the visitor's phone.

Care at a glance

Anyone can see when an enclosure was last checked.

No wiring

Battery powered, with solar top-up outdoors.

HOW IT WORKS

1

Mount

Fix the sign to a wall plate, or band it to a post under its sun-hood.

2

Publish

Send names, facts and status to the sign over LoRa radio.

3

Engage

Visitors scan or tap for more; keepers tap to log their checks.

KEY FACTS

Sizes	7.5-inch visitor sign and 4.2-inch keeper tag
Display	Black, white and red e-paper; no backlight
Connectivity	LoRa (IN865) with an internal antenna
Tap	NFC tag behind a tap ring, for phones and the Keeper Fob
Power	LiFePO4 battery; solar cells in the outdoor sun-hood
Also senses	Temperature and humidity
Mounting	Stainless wall plate, or post bracket with sun-hood
Best placed	Indoors or in shade; outdoors facing north or shaded

IN THE BOX

- ✓ Living Label sign
- ✓ Wall plate, screws and drilling template (wall version)
- ✓ Sun-hood, bracket and stainless bands (post version)

WORKS WITH

Keeper Fob, whose taps show up on the keeper tags.

Planning a pilot?

Tell us about your signs, trails and rounds, and we will plan a Living Labels pilot.

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Designs and specifications may change without notice.

Scale Link

Turns a display-only scale into a logged data source.



THE CHALLENGE

Weights on a scale's display are written down by hand, or not at all.

Many weighing machines only have a display, so readings never reach a record unless someone copies them. Scale Link taps into the scale itself, reads the weight and sends it over Wi-Fi, so weigh-ins can be logged automatically.

WHERE IT WORKS

Animal weighing

Weights logged as animals are weighed.

Feed & stock records

Feed and store weights straight into records.

Kitchens & stores

Diet-kitchen weights captured as they happen.

WHAT IT DOES

Reads the display

Decodes the scale's multiplexed 7-segment display signals.

Wi-Fi out

Sends the weight over Wi-Fi.

Minimal soldering

Taps onto the scale's board or display.

Or the load-cell chip

One wire on the scale's ADC data line gives the raw reading.

Uses the scale's power

Runs from the scale itself or USB.

WHY TEAMS CHOOSE IT

No hand copying
Weights go straight into records.

Keep your scales
Upgrade the machines you already own.

Live weights
See readings as they happen.

Better records
Fewer copying mistakes.

HOW IT WORKS

1

Fit
Open the scale and tap Scale Link onto its display lines or ADC.

→ 2

Read
It decodes the weight as the scale measures.

→ 3

Log
Weights travel over Wi-Fi into your records.

KEY FACTS

Method 1	Decodes multiplexed 7-segment display lines
Method 2	One wire on the load-cell ADC data line
Controller	ESP32 or Raspberry Pi Pico 2 W
Connectivity	Wi-Fi
Power	From the scale or USB
Fitting	Taps onto the scale's board; minimal soldering
Compatibility	Checked per scale model before fitting

BEST FOR

- ✓ Animal weighing
- ✓ Feed and stock records
- ✓ Diet kitchens and stores

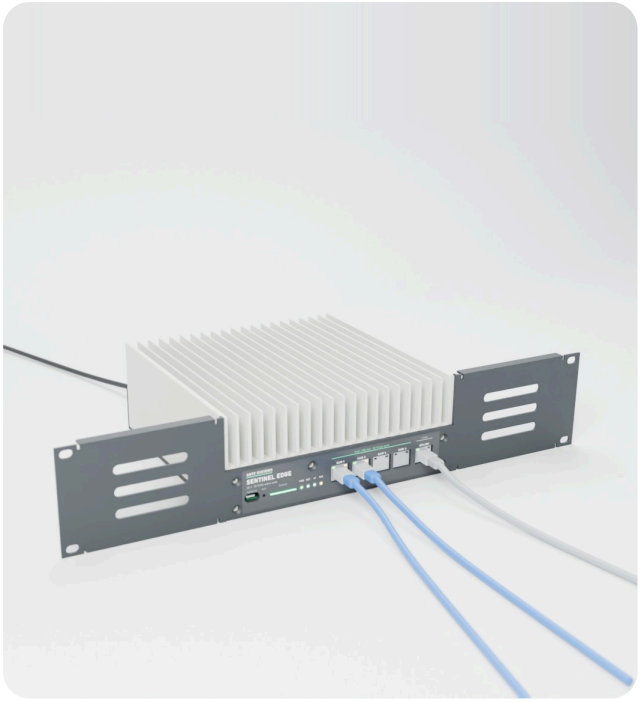
Planning a pilot?
Tell us which scales you use, and we will check how Scale Link fits them.

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Designs and specifications may change without notice.

Sentinel Edge

Fanless, on-site AI vision for your camera network.



THE CHALLENGE

Cameras record everything, but nobody can watch every screen.

Security teams and managers need to know when something happens, not search footage afterwards, and many sites do not want video leaving the campus. Sentinel Edge runs AI vision right next to the cameras, so events are spotted on site and the video stays local.

WHERE IT WORKS

Staff attendance

Face-recognition attendance at staff doors, with no cards or queues.

Gates & car parks

Number-plate reading for vehicles coming and going.

Perimeter & restricted areas

Intrusion alerts when someone enters where they should not.

WHAT IT DOES

Face attendance

Recognises enrolled staff at entrances and logs attendance.

Intrusion detection

Flags people in restricted zones and out of hours.

Four cameras, one box

Four PoE+ ports power and connect the cameras.

Number plates

Reads vehicle plates at gates and barriers.

Video stays on site

Streams are processed on the unit, not in the cloud.

Status at a glance

A light bar and per-port lights, readable across the room.

WHY TEAMS CHOOSE IT

Private by design

Video never has to leave your campus.

Events, not footage

Get told when something happens.

Simple cabling

One cable per camera for power and data.

Low maintenance

Fanless: no fans or filters to service.

HOW IT WORKS

1

Connect

Plug up to four PoE+ cameras into Sentinel Edge and link it to your network.

2

Analyse

AI vision models process every stream on the unit.

3

Act

Attendance, plate and intrusion events reach your team; the video stays on site.

KEY FACTS

AI module	SiMa.ai Modalix machine-learning module, 50 TOPS
Storage	500 GB SSD
Cameras	4 PoE+ ports (30 W each), kept off the site LAN
Network	1 Gigabit Ethernet uplink; no radio
Cooling	Fanless aluminium heatsink enclosure
Mounting	19-inch rack, 2U high, half width
Power	External 54 V DIN-rail supply with locking plug
Setting	Indoor equipment rooms

IN THE BOX

- ✓ Sentinel Edge unit with rack ears
- ✓ 54 V power supply and plug
- ✓ Earth kit and rack screws
- ✓ 1U vented blank panel

WORKS WITH

Your PoE+ IP cameras, and the ANTZ attendance and security software.

Planning a pilot?

Tell us about your cameras and what you need to know, and we will plan a Sentinel Edge pilot.

antzsystems.com

Designs and specifications may change without notice.

SentinelFace Display

A door-side attendance display: see your check-in, confirm your check-out.



THE CHALLENGE

When attendance happens silently, staff never know whether they were counted.

Face recognition at the door is fast, but people want to see that it worked and need an easy way to correct it. SentinelFace Display sits beside the door, shows each person their check-in and hours, and gives two large keys to check out now or cancel, all on one network cable.

WHERE IT WORKS

Staff entrances

Check-in and check-out confirmed at the door, with no cards or queues.

Keeper rooms & offices

Each person sees today's hours and check-in time as they pass.

Laboratories & campus buildings

The same attendance flow at every building entrance.

WHAT IT DOES

Welcome card

Shows the person's name and check-in time when they arrive.

Two large keys

CHECK OUT now or CANCEL, with lit rings, for a quick decision.

History on touch

Today's check-ins on the 7-inch touch screen.

Hours at a glance

Today's and this week's hours, with progress to the weekly target.

Countdown before check-out

In the evening it counts down first, so a wrong check-out can be cancelled.

Status light

A light bar shows whether the display is online.

WHY TEAMS CHOOSE IT

Seen to work
Staff see their attendance recorded, every time.

One cable
Power and network on a single PoE cable.

Easy corrections
CANCEL keeps someone checked in if they are not leaving.

No extra camera
Uses the door camera already on site.

HOW IT WORKS

1 → 2 → 3

1 Mount
Fix the back box beside the door and run one PoE network cable.

2 Recognise
The site's door camera and Sentinel Edge recognise each person.

3 Confirm
The display shows the result; staff check out or cancel with the large keys.

KEY FACTS

Screen	7-inch IPS touch screen, 1280 × 720
Keys	Two lit keys: CHECK OUT and CANCEL
Status	Online light bar; screen dims with room light
Camera	None: works with the site's door camera
Network	Ethernet, with Wi-Fi as a fallback
Power	PoE (IEEE 802.3af), one cable
Mounting	Surface wall mount, tilted 6° down, tamper screws
Size	206 × 163 mm
Setting	Indoor entrances and offices

IN THE BOX
- ✓ SentinelFace Display
- ✓ Wall back box
- ✓ Tamper screws
- ✓ Wall screws, plugs and drilling template

WORKS WITH
Sentinel Edge and a door IP camera, which do the face recognition, and the ANTZ attendance software.

Planning a pilot?
Tell us about your entrances and shifts, and we will plan a SentinelFace pilot.

antzsystems.com

Designs and specifications may change without notice.

Nod Presence Sensor

A 24 GHz radar that knows when someone is there, without a camera.



THE CHALLENGE

Motion sensors miss people who keep still, and cameras are not welcome everywhere.

Ordinary PIR sensors only see movement, and cameras raise privacy questions. Nod uses a 24 GHz radar to sense a person present up to 16 m away, and the distance and speed of a moving person up to 25 m, without capturing any images.

WHERE IT WORKS

Keeper safety checks

Know whether a person is still in a service area or empty enclosure before it is locked.

After-hours intrusion

Presence alerts in restricted zones when nobody should be there.

Rooms & corridors

Occupancy for lights, fans and room use, with no camera.

WHAT IT SENSES

Presence

Whether a person is there, up to 16 m, including someone standing or sitting still.

Wide view

A 100° × 40° beam that tilts ±30° on its hinge to aim it.

Behind covers

Works behind plastic or glass panels; metal blocks it.

Distance & speed

In ranging mode, how far (1.2–25 m) and how fast (0.1–10 m/s) a person moves.

Your detection zone

Set the minimum and maximum range, trigger distance, sensitivity and hold time.

Not a people counter

It reports presence and one target's distance and speed, not a headcount.

WHY TEAMS CHOOSE IT

Sees people who keep still

Radar presence, not just movement.

Private by design

No camera and no images.

Aim it where it matters

Tilts ±30° and works to the zone you set.

Simple to place

Desk, shelf or tripod thread, powered over USB-C.

HOW IT WORKS

1

Place

Stand Nod on a shelf or fix it to a tripod or camera mount, and tilt it at the area to watch.

2

Set

Choose the detection range, trigger distance and sensitivity.

3

Use

It reports presence, or distance and speed, to your system.

KEY FACTS

Sensor	24 GHz FMCW mmWave radar (DFRobot C4001)
Presence	Up to 16 m
Motion & distance	1.2–25 m; speed 0.1–10 m/s
Beam	100° horizontal × 40° vertical; tilts ±30°
Through covers	Plastic or glass yes; metal no
Counting	Not a people counter; for headcounts use camera analytics
Animals	Tuned for people; animal detection is not claimed
Controller	ESP32-C3
Power	USB-C, always on (not for battery use)
Mounting	Desk, or a 1/4-inch tripod or camera-mount thread
Size	46 × 42 mm footprint, 67–76 mm tall

WORKS WITH

Sentinel Edge camera analytics where you need headcounts, and your own system for alerts and lighting.

Planning a pilot?

Tell us which rooms, corridors or zones you need to watch, and we will plan a Nod pilot.

antzsystems.com

Designs and specifications may change without notice.

Zone & Tamper Alert

Instant alerts for restricted zones, enclosure doors and tampering.



THE CHALLENGE

An unlocked door or someone in a no-go zone can turn into an incident in minutes.

Enclosure doors left open, people entering restricted areas and fixtures being interfered with are often found too late, on the next round. The Zone & Tamper Alert watches these points with sensors and sends an alert to the person responsible as soon as something happens.

WHERE IT WORKS

Enclosure doors

Know at once when a secured enclosure door or keeper gate is opened.

Restricted & no-go zones

Detect entry into areas where visitors or staff must not go.

Monitored fixtures

Flag unauthorised changes to locks, barriers and equipment.

WHAT IT CATCHES

Entry into a no-go zone

Movement or entry in a designated restricted area.

Tampering

An unauthorised change to a monitored fixture.

Out-of-hours movement

Activity in a zone at times when nobody should be there.

Enclosure door opened

A secured door or gate opening when it should not.

Door left open

A gate or door that stays open longer than it should.

Who needs to know

Each alert goes to the person responsible for that area.

WHY TEAMS CHOOSE IT

Alerts in real time

Hear about it now, not on the next round.

No Wi-Fi needed

Alerts travel over LoRaWAN, not the site Wi-Fi.

Right person, first time

Alerts are routed to whoever is responsible for the area.

Safer animals and people

Fewer escapes, intrusions and surprises.

HOW IT WORKS

1

Fit

Place the sensors on doors, zones and fixtures that matter.

→ **2**

Detect

The device watches for entry, opening and tampering.

→ **3**

Alert

An alert goes over LoRaWAN to the responsible person.

KEY FACTS

Detects	Zone entry, door opening and tampering
Sensors	Chosen for each installation: zone, door and tamper sensors
Connectivity	LoRaWAN
Alerts	Sent to the person responsible for the area

BEST FOR

- ✓ Animal shelters
- ✓ Zoos
- ✓ Research facilities
- ✓ Restricted enclosures and animal-care areas

Planning a pilot?

Show us the doors and zones that worry you most, and we will plan where alerts help first.

antzsystems.com

Designs and specifications may change without notice.