HydroMet

KISTERS' Intelligence Platform Technology for Embedded Connectivity.

FAQs

KISTERS
Empowering decisions of tomorrow

KIPTEC FAQs

Contents

KIPTEC FAQs

1. Understanding KIPTEC.

Q1. Why did KISTERS create KIPTEC, and why does it matter for environmental monitoring?

Sometimes setting up a monitoring site feels like more hassle than progress — too many devices, too many failure points, and too much time lost.

That's why we created KIPTEC: to make monitoring simpler, faster and more reliable. With KIPTEC monitoring teams deploy more sites in less time, operate them reliably, and manage them with fewer resources. KIPTEC takes a smarter approach than traditional setups using multiple devices that slow deployments, drive up costs, and create multiple points of failure.

By embedding processing, logging, communication, and smart power management directly into select KISTERS sensors, KIPTEC helps networks scale effortlessly - and operate more efficiently every day.

Q2. Which sensors feature KIPTEC?

It's easy to spot. If you see "Edge" in the name of a KISTERS sensor, that's your signal: the sensor is prepared with KIPTEC to run on its own once power is supplied.

The first model to be launched is "HyQuant Edge" – and it's just a start: more Edge models are on the way.

Q3. What is KIPTEC?

At its core, **KIPTEC is what makes some of our sensors "smart".**

Classic KISTERS sensors already measure with precision and reliability. With KIPTEC we embed an extra layer of intelligence that lets selected models do more on their own — like logging, transmitting, and optimising power use.

Technically speaking, KIPTEC is KISTERS' Intelligence Platform Technology for Embedded Connectivity: a unique blend of hardware and software built right into the sensor. That means onboard processing, adaptive behaviour, self -monitoring, smart power management, and real-time data delivery — all in one housing.

Tech strengths

- **Event-based transmission**: designed to capture and send out critical changes in sensor readings as they happen.
- **Adaptive power management**: designed to optimise energy use to extend battery life and power autonomy.

- **Store-and-forward for data continuity**: designed to ensure nothing is lost during communication interruptions.
- **Integrated telemetry for direct delivery**: designed for fast setup – insert SIM card, set APN, and start transmitting straight to your chosen server.

Note: Full specifications are available in the relevant Edge sensor datasheet.

Q4. What's the difference between a Classic sensor and a KIPTEC-enabled Edge sensor?

Classic and Edge sensors share the same core components and both can be powered via 12 VDC or an external solar kit (sold separately). However, they cater different customer needs. Classic sensors serve integration-heavy setups, while "Edge" versions add built-in components for greater autonomy and flexibility.

	KISTERS Classic sensor	KISTERS Edge sensor
How it works	Acquires data, requires an external logger and modem for logging and transmission.	Autonomous data handling and Telemetry-ready out of the box: embedded processing, dynamic event-based data transmission (LTE-Cat-M1 / NB-IoT), adaptative smart logging (onboard memory), and power management.
Best fit for	Flexibility for gradual network scaling.	Plug & play solutions - ideal for network densification.
	Standard datalogger-based monitoring stations, utilities, infrastructure-heavy setups, SCADA/PLC sites, legacy logger compatibility, sites with fixed enclosures and power. Best option whenever connection to a local data acquisition device is required.	Mobile and rapid-deploy networks, stationary setups, temporal installations that need minimal setup (no additional devices, cabinets, or electric boards) and interconnect remotely with post processing. Best option when autonomous operation and remote transmission is required.
	Reliable continuous data-acquisition for fixed monitoring sites operated over long periods.	Builds on that reliability with added autonomy. The 'single box plus power concept' makes both stationary and temporary deployments simple and practical.
	SDI-12 and Modbus for seamless integration with local dataloggers, RTU's and SCADA systems.	MQTTS, HTTPS and SFTP for secure, straightforward remote data transmission – whether to customer operated systems or KISTERS Cloud solution 'datasphere'.
	Multi-sensor networks built around a central logger or data acquisition device.	Single-sensor deployments capturing multiple parameters in one unit (model-dependent).
	Remote data transmission depends on the connected logger or data modem.	Comes with built-in modem and protocols to ensure flexible delivery to any properly configured IP endpoint - whether KISTERS' datasphere or a user-operated system.
	Best for sites with routine technician visits — inspections,	Suited for any site, but especially remote, abandoned, or hard-to-reach locations — with

	manual readings, firmware updates, and configuration changes are handled locally.	Over-The-Air (OTA) updates and remote configuration that minimise on-site visits.

Q5. Can Edge and Classic sensors work together?

Yes. They are designed to complement each other:

- KISTERS Classic sensors integrate with a data acquisition device, while KISTERS Edge sensors operate independently.
- Both models can be — and are regularly — deployed side by side* in the same monitoring networks. This gives you the flexibility to choose the right sensor type for each site.
- On-site, KISTERS Classic and KISTERS Edge sensors work seamlessly alongside other KISTERS or third-party sensors or dataloggers.

When does it make sense to use both?

- **Established networks with new expansion needs:** Classic sensors use existing infrastructure (fixed power, local data-acquisition), while Edge sensors extend coverage quickly where no infrastructure exists.
- **Dense catchment monitoring:** Use Classics for main stations and deploy Edge in between to densify monitoring networks with faster, lower-cost rollouts.
- **Mixed time horizons:** Classics are for permanent stations at bridges, dams and further infrastructure-heavy sites. Edge sensors add flexibility for temporary, mobile, or seasonal monitoring – or example during flood season, prolonged heavy rain, or natural disaster events that last days or weeks or for a time-limited study project.
- **Hybrid redundancy:** A Classic sensor can feed into the local datalogger as usual, while an Edge at the same site* provides backup through its own local storage and direct remote delivery. This ensures continuity of data, even if the logger or its communication link fails.

In short: Classics anchor the infrastructure, Edge brings flexibility. Together, they let customers build robust networks that scale and adapt to diverse site conditions.

Special considerations:
Once installed, a Classic cannot be converted into an Edge (or vice versa), but you're free to choose the best fit type for future projects.

* *Depending on the measurement technology and/or parameter, a minimum distance may be required when operating more than one KISTERS Edge sensor at the same site. See individual sensor datasheets for details.*

Q6. Which is better: a Classic or a KIPTEC-enabled Edge sensor?

It's not about "better" — it's about the right fit for the job.

- Classic sensors are the go-to when local integration with data-acquisition devices is a priority.
- Edge sensors shine when fast deployment, simplicity, and autonomy matter most — fewer components, faster rollout, greater independence.
- **In practice**: Many customers use both, choosing the model that best suits each site.

2. How KIPTEC compares.

Q7. What makes an KIPTEC-enabled Edge sensor different from IoT or traditional sensor setups?

Setting up a monitoring system can feel like solving a puzzle — sourcing components, making them fit, and hoping they work together.

- Traditional monitoring sites typically require a sensor, a logger, a modem, and a work, more cost, and more failure points.
- IoT setups often take the opposite route: a low-cost sensor node that simply transmits data in "shoot-and-forget" mode. It's inexpensive, but offers no local backup — so data consistency on the receiving server isn't guaranteed.

KISTERS Edge sensors solve both problems at once. They combine processing, logging, communication, and power management in a single unit — ready to deploy in minutes, with local storage ensuring no data is ever lost.

Q8. How does an KIPTEC-enabled Edge sensor save time during setup and maintenance?

With a KISTERS Edge sensor, deployment is faster and simpler — from unpacking to live data in minutes.

Installation is straightforward, and when using the KISTERS' cloud, built-in onboarding means it connects automatically — no complicated pairing, wiring, or field improvisation. Because sensing, logging, communication, and power management are all embedded, you only have one device to install, connect, maintain, or troubleshoot. This simplifies and speeds up on-site work, avoids coordination with multiple vendors, and reduces long-term service time.

3. Features in practice.

Q9. Are KIPTEC-enabled Edge sensors fully autonomous?

Once powered and connected, KIPTEC-enabled Edge sensors run fully on their own. They just need an external power source and network coverage at the installation site.

Your choice of power supply: Sensors can run on 12 V from a DC power supply or with the optional KISTERS Solar Power Kit (sold separately), which includes:

• A pole- or wall-mounted solar panel assembly
• A sensor mounting bracket
• Backup batteries for continuous operation

Wireless network coverage: For seamless data delivery, we recommend ensuring strong wireless network coverage with reliable signal quality at your site.

Q10. What do "embedded intelligence and connectivity" mean in practice?

It's like having a teammate in the field, working 24/7 — processing data and sending back insights without a need for constant supervision.

- **Smarter transmission**: The sensor ramps up reporting frequency during critical events, so information reaches you when it matters most.
- **Adaptive power use**: It adapts its own energy consumption to extend runtimes.
- **Timely information**: Faster, event-driven transmission cycles feed post-processing software, enabling alerts in time.

In short: Your KIPTEC-enabled Edge sensor doesn't just measure — it manages itself and provides insights you can rely on, so you can act faster and with confidence, right from your desk.

Q11. Does KIPTEC support offline workflows?

Yes. Even if the communication network goes down, your data is safe.

During a connection outage the sensor's internal logger keeps recording data in the onboard memory. Once the connection is restored, all stored data is forwarded – nothing is lost.

Q12. Does it offer alarming and notifications?

A KISTERS Edge sensor itself doesn't send alarms; it just ensures the data flow is fast enough so the remote system can. It can switch to a higher transmission interval when readings cross user-defined thresholds. This ensures the receiving software has timely data to trigger alarms.

However, if you need a proven alarm system, we offer the optional **KISTERS datasphere Alarming & Notification module,** which can send messages via email, SMS, or WhatsApp group channels.

Q13. Is KISTERS datasphere required to use KIPTEC?

No. While Datasphere is the default interface, it's not mandatory.
KIPTEC supports standard communication protocols like MQTTS, HTPPS and SFTP, so KISTERS Edge sensors can connect just as easily to user-operated systems as they do to KISTERS datasphere.

4. Purchasing & Lifecycle.

Q14. Is KIPTEC a product I can buy separately?

No. KIPTEC isn't an add-on.

It's embedded during manufacturing and it is only available in select devices, namely KISTERS Edge sensors. It cannot be added to third-party sensors or retrofitted into devices already deployed in the field.

Q15. Can I upgrade a Classic sensor to an Edge sensor?

No. While they share the same core components, KISTERS Edge sensors include additional embedded parts that make them more autonomous and intelligent.

A Classic cannot be converted into an Edge – but the good news is that both types work seamlessly together in the same monitoring network.

Q16. Can I switch between Edge and Classic sensors if my needs change?

Yes. You can choose either type depending on your project.

Many customers mix Edge sensors for rapid deployments or remote sites with Classic sensors for integration into existing infrastructure. Your mix can evolve as your projects change.

Q17. How long will a KIPTEC-enabled Edge sensor last in the field?

KISTERS Edge sensors are built for longevity with minimal maintenance.

Thanks to power optimisation, adaptive logging, and rugged construction, they are designed to operate season after season with little supervision - depending on site conditions and power setup.

Q18. How secure is the data from a KIPTEC-enabled Edge sensor?

Your data is protected from the moment it's measured until it reaches your system. Edge sensors are built on a secure-by-design architecture. Data delivery supports encryption and works with standard secure protocols – keeping your data safe, end-to-end.