

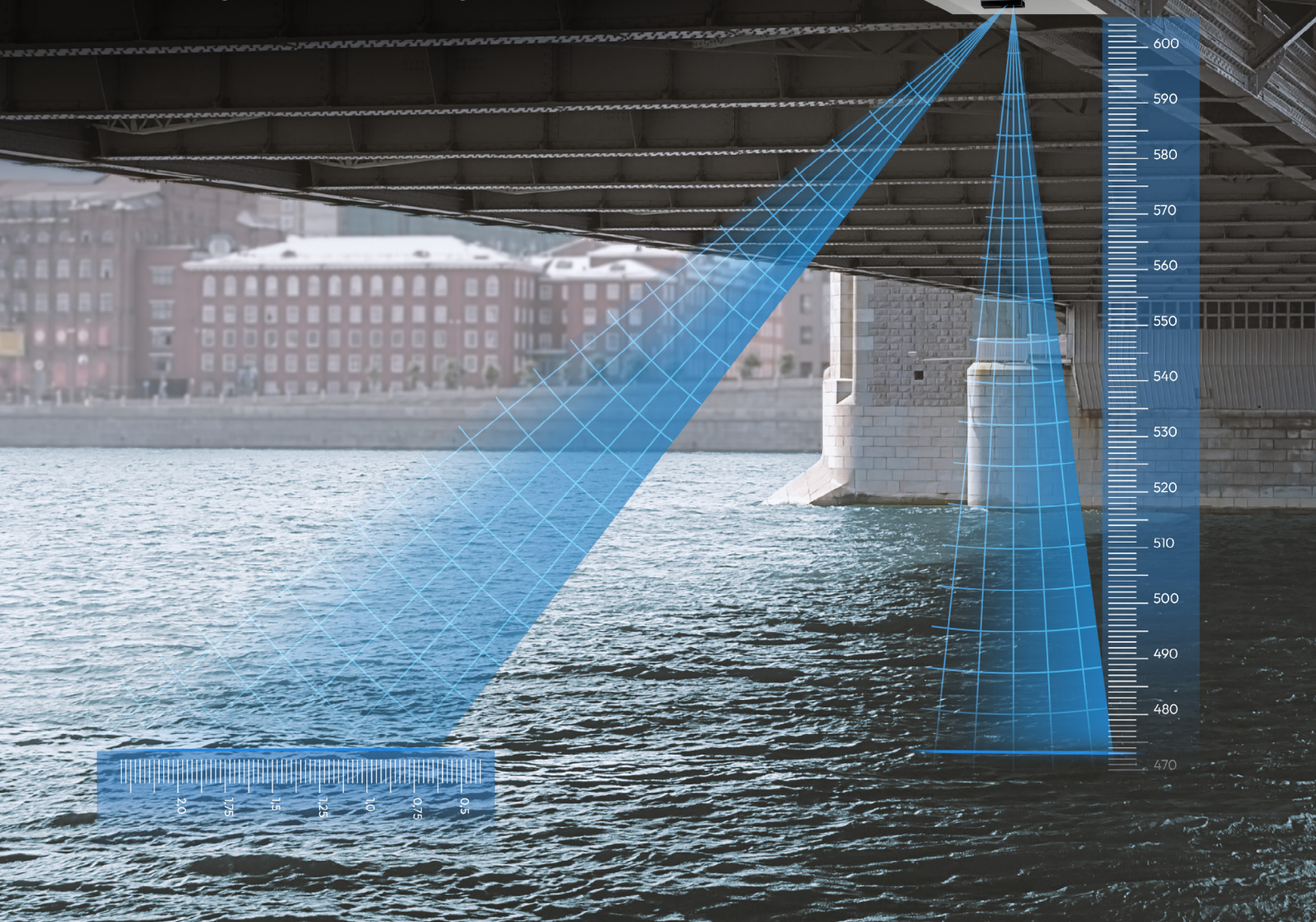


**HyQuant**

# Radar Level and Velocity Sensors

**KISTERS**  
Empowering decisions of tomorrow

## Compact, affordable and easy-to-use water radar sensors for versatile hydrological monitoring.



The HyQuant series comprises of small and compact easy-to-use water level and velocity radar sensors, suitable for a wide range of hydrological monitoring needs. These sensors effectively alleviate common issues encountered by users in environmental monitoring by offering essential system features at an affordable price point, presenting a cost-effective solution to industry challenges. With over six decades of experience in environmental applications and a team of expert scientists and engineers specialising in hydrology and radar technology, KISTERS has carefully developed HyQuant sensors to be your first port of call for robust, accurate and field-proven solutions you can trust to save you time, energy and money in the long run.

### Best suited for professionals working on:

- **Hydrology and water surface management** such as rivers, streams, open canals, channels (including irrigation), open flumes, open flumes, lakes, reservoirs, inland waterways, stilling wells.
- **Risk management:** Early warning, forecasting, urban flooding, rain retention basins, storm water, water quality, navigation, shipping, dam safety, water availability.
- **Agriculture:** irrigation, pump stations.
- **Operational efficiency** in hydropower plants.
- Other **industrial applications** such as mining.
- **Research**

# Designed with versatile applications in mind.



## **Flood forecasting and early warning.**

Authorities closely monitor changes in water activity, such as rising water levels and/or increasing water velocities, in real time to identify potential flood risks and implement mitigation measures, such as early warning and infrastructure planning, to enable communities to prepare and take timely action to protect lives and property.

## **Environmental balance.**

By assessing flow, erosion, sediment transport, water resource allocation and use, we prevent ecological damage. Environmental monitoring uses water level, velocity and discharge data to provide insight into historical water behavior during specific events over time, supporting conservation efforts and improving our understanding of aquatic life, water quality and ecosystem health.



## **Management and use of water resources.**

With a better understanding of water availability, it is possible to consolidate different water uses such as drinking, irrigation, hydropower and cooling. This data can lead to prospective benefits such as better decision making, equitable access to scarce resources, increased revenues, reduced costs and improved risk management.

### Linking quantity and quality.

Runoff and flow contribute to the production, transport and distribution of dispersed pollutants on water. Measuring surface water flow and water levels is essential to understanding the impact of these activities on water quality, as well as the influence of flow on flooding, stream geomorphology and aquatic life.



### Navigation and transport.

Assessing the appropriate flow and velocity of a river, together with its drought, is key to monitoring and assessing morphological changes in the water bed and ensuring safe use of watercourses for safe navigation and shipping, especially for larger vessels and cargo ships.

### Engineering.

Engineers and infrastructure planners rely heavily on hydrological and hydraulic modelling when designing bridges, culverts, dams and other river-related infrastructure to assess flow characteristics such as stage, volume and velocity during extreme weather conditions, and to ensure that this infrastructure can withstand the forces and expected volumes of flowing water without causing flooding or structural damage.



### Research.

Scientists, researchers, hydrologists and climatologists use water level and velocity data to study hydrology, climate patterns, environmental change and river behavior, contributing to a better understanding of natural processes.

**The HyQuant Series is designed to provide all the must-haves needed to solve the familiar frustrations of users faced with the challenges of environmental monitoring, but at an affordable price.**



**Experience exceptional benefits.**



**Global support.  
Local adaptation.**

With access to world-class support from KISTERS specialists around the globe, local certification and multilingual support, KISTERS is your reliable partner wherever you are. Adapt your HyQuant to any scenario and effortlessly monitor water where you need it, from narrow to wide bodies of water. The sensors are power efficient and have an unobtrusive anti-vandalism design for added flexibility in remote and urban applications.



**Exceptional accuracy,  
anywhere, anytime.**

HyQuant compensates for external interferences and uses advanced 60 GHz technology, special antennas and beam design, resulting in highly accurate and stable data over varying distances throughout the entire measurement range. This remains true despite environmental, site, or deployment conditions.



**Make installation easy  
and straightforward.**

HyQuant's lightweight yet rugged design, comprehensive range of mounting accessories and compatibility with various support structures make installation and correct positioning easy for anyone, regardless of the operator's experience or site constraints.



**Intelligent algorithms eliminate  
the need for expert manual tuning.**

HyQuant sensors are designed with an advanced capability to adapt to local monitoring conditions through easy-to-configure filters. The sensors are intuitive, with a visual and mouse-adjustable interface, providing a pleasant and effortless configuration experience. Save operator time by enjoying hassle-free configuration without the need for manuals.



**Reliable measurements.  
Even in flooded conditions.**

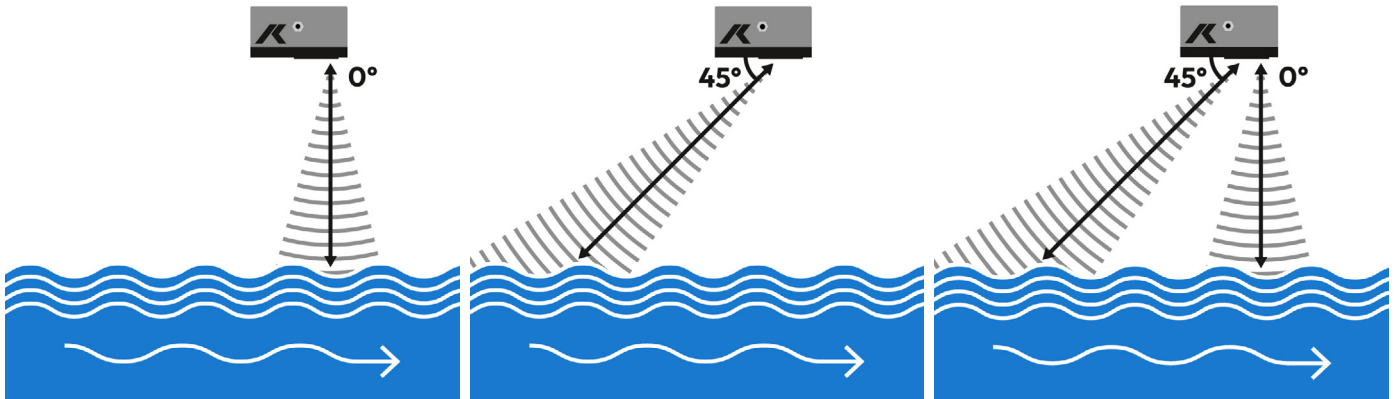
Every technical specification has undergone the necessary field testing to ensure consistent peak performance and reliability over long periods of time. The sensors are IP68 rated, submersible (no immersion sleeve required), housed in a rugged housing and manufactured from environmentally resistant materials, to ensure system integrity even in flooded conditions.

# Meet the range.

**K HyQuant L**  
 One of the most versatile and reliable non-contact level sensors.

**K HyQuant V**  
 An inventive yet affordable surface velocity radar with higher resolution.

**K HyQuant L+V**  
 Great things come in small packages.



KISTERS' HyQuant L sensor uses FMCW technology in the 60 GHz frequency band for water level measurement without direct contact. The HyQuant L radar water level sensor is compact, lightweight and IP68-rated with a narrow beam width, high precision, and built-in filter algorithms.

Available in two measuring ranges:

- 0.10 m to 20 m (L20)
- 0.15 m to 50 m (L50)

KISTERS' HyQuant V sensor utilizes Doppler technology within the 60 GHz frequency band to precisely measure water surface velocity without making contact. HyQuant V incorporates a small and easy-to-install IP68 sensor with a narrow beam width, exceptional accuracy, and pre-installed filter algorithms.

The all-in-one, non-contact radar sensor, where velocity meets level for the first time in a single and compact instrument, integrated in the smallest yet robust housing ever, is finally available.

- Why HyQuant L?**
- The streamlined design minimises vandalism, simplifies installation and reduces susceptibility to damage.
  - Customisable filters for convenient adaptation to accommodate diverse monitoring conditions.
  - Choose the sensor measurement range specific to your application.
  - High precision ensures measurements with accuracy  $\leq 2$  mm.
  - The  $8^\circ \times 8^\circ$  beam angle enhances the flexibility of installation in both wide and narrow bodies of water.

- Why HyQuant V?**
- The HyQuant V sensor redefines surface velocity measurement standards.
- Attractive pricing
  - Customizable filters
  - Improved power efficiency
  - Compact design
  - Versatile mounting bracket
- It boasts the additional distinction of being the first water surface velocity sensor to operate within the 60 GHz frequency band.

- Why HyQuant L+V?**
- No need to compromise on size or price anymore, with HyQuant L+V, you can have it all.
  - Radar-on-chip concept that seamlessly integrates two antenna pairs to acquire level and velocity data simultaneously.
  - Eliminates the need for additional housings to accommodate independent level and velocity sensors
  - Compact design
  - Attractive pricing

# Technical specifications.

K HyQuant Series					
60 GHz V-Frequency Band	Auto-correction filters	<b>IP68</b> Rated	12V *PC typ. < 15 mA, peak < 80 mA	<b>CE, FCC Class B, UL, RoHS</b> Compliance	160 mm x 97 mm x 91 mm 1.15 kg
SDI-12, Modbus, Wi-Fi	1 Hz Output rate	Imperial and Metric units	10 to 30 VDC	-40 °C to 80 °C	Mounting bracket, 10 m cable and torx key

	K HyQuant L	K HyQuant V	K HyQuant L+V		
<b>Radar</b>	FMCW Level	Doppler Pulsed Velocity	All-in-one L, V FMCW, Pulse		
<b>Minimum ripple</b>	—	2 to 3 mm			
<b>Beam angle</b>	8° x 8°	8° x 12° beam angle	L: 8° x 8° V: 8° x 12°		
<b>Accuracy</b>	<=2 mm	<b>1% oMV**:</b> 0.02 m/s to 4.5 m/s <b>2% oMV**:</b> 4.5 m/s to 15 m/s	L: <=2 mm	<b>1% oMV* V:</b> 0.02 m/s to 4.5 m/s	<b>2% oMV*V:</b> 4.5 m/s to 15 m/s
<b>Ranges</b>	L: 0.10 m to 20 m and 0.15 m to 50 m	V: 0.05 m/s to 15 m/s	L: 0.10 m to 20 m V: 0.05 m/s to 15 m/s		
<b>Resolution</b>	1 mm	1 mm/s	L: 1 mm	V: 1 mm/s	
<b>Blanking distances</b>	0.1 m and 0.15 m	0.1m			

\*PC: power consumption | \*\*oMV: of measured value

Specifications are subject to change without notice. Weights and dimensions are indicative. – © KISTERS 01.2024

## Enjoy the benefits of non-contact radar technology.



Impervious to environmental conditions and external influences typically affecting contact technologies.



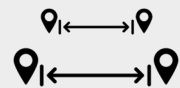
Measures up to the sensor face, even in flooded conditions.



Immune to dirt and debris, reducing maintenance.



The sensors can be concealed to prevent vandalism.



Superior signal propagation facilitates accuracy over varying distances.

Reseller

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