

Package contents

- 1x HyQuant Sensor Unit
- 1x two-part mounting bracket (tilt and swivel)
- 1x 10 m cable w/ 8-pin female connector and open-ended wires
- 1x Torx key
- 1x Magnet
- 1x Test Certificate
- 1x Quick installation guide

Specifications summary

Radar frequency: 60 GHz
Radar band: V

Radar modulation:

- FMCW (level)
- Doppler (surface velocity)

Dual antenna:

- Looking 0° downwards for level
- Looking 45° downwards for velocity

Beam angle (azimuth x elevation)

- Level: 8° x 8°
- Surface velocity: 8° x 12°

Measuring range (model dependent):

- L20: 0.10 m ... 20 m / 0.32 ... 65.61 ft
- L50: 0.15 m ... 50 m / 0.49 ... 164.04 ft

Operating voltage: 10...30 V DC

Power consumption @ 12V:

- Typical < 15 mA
- Peak < 80 mA

Operating temperature range: -40 °C / -40 °F ... +80 °C / 176 °F

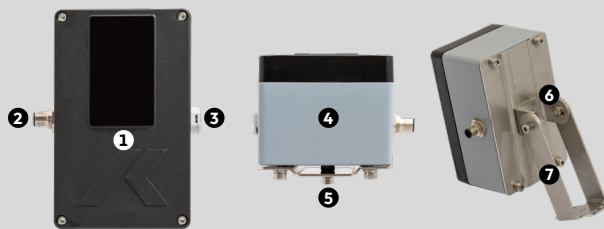
Signal connector: M12 8-Pin male

Rating: IP68*

Compliance

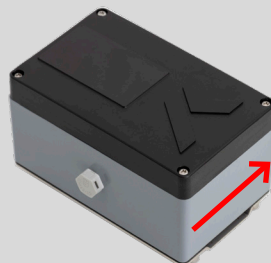
CE, RoHS, FCC Class B, UL

Main parts



- 1 Cover with integrated radome
- 2 M12 8-pin male connector for signal cable (supplied)
- 3 Pressure compensating gland
- 4 Die-cast aluminium housing
- 5 Rear mounting plate
- 6 U-bracket
- 7 Mounting bracket
- 8 Optional: pole mounting bracket 1"/2"

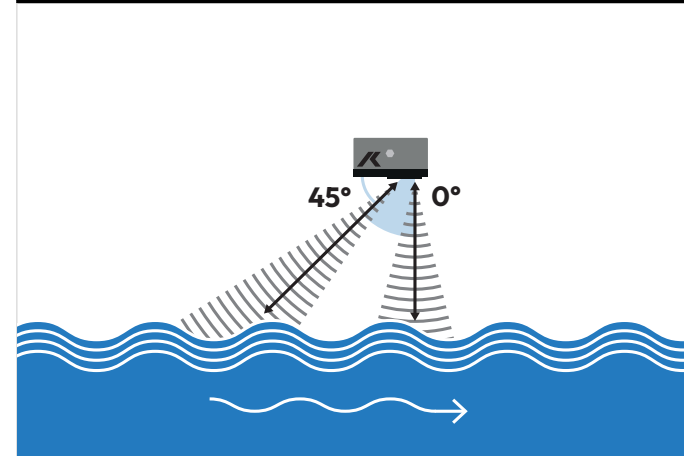
Enable local Wi-Fi communication



1. Manual activation: swipe the supplied magnet along the red arrow (↑)
2. Enable via SDI-12: use extended command **αXWIFI!**
3. Modbus: Write '1' to holding register (FC06) 81
4. Power Cycle: Wi-Fi hotspot is activated when the device is switched on.

If there is no Wi-Fi connection to an external device, the system will automatically switch off after a few minutes to save power.

Mounting instructions



Positioning:

- 1 Install sensor with black lid parallel to water surface
- 2 The "K" on the cover should always face upstream

Mounting:

HyQuant is supplied with a standard tilt and swivel mounting bracket to allow correct adjustment relative to the water surface and flow direction.

Affix the mounting bracket to the supporting structure: Use M6 screws to secure the bracket.

Use the supplied bolt and torx key to attach the U-bracket to the HyQuant backplate.

Tilt and swivel the device until it is in the correct position: parallel to the water surface, "K" facing upstream.

*IP68: both dustproof and protected against continuous immersion in water; max. depth: 1.5 m; max. 3 hours. No protection from other liquids. Caution: only with the M12 8-pin connector inserted and securely fastened.

Safety instructions

- Read the user manual including all operating instructions prior to installing, connecting and powering up the KISTERS HyQuant. The manual provides information on how to operate the product. The manual is intended to be used by qualified personnel, i.e. personnel that have been adequately trained, are sufficiently familiar with installation, mounting, wiring, powering up and operation of the product.
- Keep the user manual at hand for future reference.
- Please contact the manufacturer or its authorised distributor for support if you have any problems understanding the information in this manual (or any part of it).
- HyQuant is a hydrographic sensor that uses radar technology for contactless measurement of either water stage or water surface velocity or both. Do not use the sensor for other applications. At all times respect the specifications for use, deployment, maintenance and repair described in the present manual.
- Whether you are installing or deploying the sensor, please note and follow the detailed safety information provided for each work step.
- HyQuant must not be used in areas where there is a risk of explosion!
- Working on electrical systems requires special knowledge and training. For this reason, the electrical installation of the HyQuant may only be carried out by a suitably trained specialist.
- Electrical, technical and climatic specifications must be respected at all times.
- Modifications or retrofitting to the HyQuant will void the warranty and the RF approval required for safe operation of the device.
- Comply with electrical safety standards.
- Comply with Health, Safety and Environment regulations and directives.
- Working over or near to water: Life jacket/ buoyancy aid should be provided to and worn by workers with risk of falling into water. Life jacket should be thoroughly checked by the user prior to use.

For detailed safety instructions, please refer to the User Manual available for download from the product web page.

Configuration Software

HyComm is KISTERS software utilized for local communication between a computer or portable device and the HyQuant radar sensor.

To connect:

1. Switch on the mobile hotspot in the HyQuant sensor by swiping a magnet across the lower bottom of the KISTERS K on the cover.
2. Click on the Wi-Fi icon in your computer's taskbar.
3. Select the Wi-Fi access point named HYRY-NNNN from the provided list, where YY-NNNN is the serial number of the HyQuant device.
4. Enter the password for the HyQuant hotspot. The default PW of a new HyQuant is **Kisters123!** For IT security, we recommend that you change it to a strong password of your choice.
5. The computer connects to the Wi-Fi hotspot.

SDI-12 Extended Commands

| Name | Command | Response | Details |
|----------------------------------|----------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Enable Wi-Fi | aXWIFI! | a0<CR><LF> | a - sensor address Enable HyQuant Wi-Fi to configure via HyComm |
| Set staff gauge | aXSGs! | ad<CR><LF> | a - sensor address s - the current staff gauge value d - the new value of sensor height above riverbed stored in the sensor |
| Set sensor height above riverbed | aXSHARs! | ad<CR><LF> | a - sensor address s - the measured sensor height above riverbed d - the new value of sensor height above riverbed stored in the sensor |

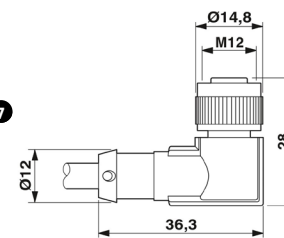
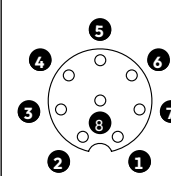
Modbus default settings

| | | | | |
|-------------|---------------------------|---|--------------|------------|
| Parameter: | default | - | Baudrate: | 9600 |
| Parity: | none | - | Data bits: | 8 |
| Stop bits: | 1 | - | Byte order: | big endian |
| Float/unit: | 32 word order; big endian | - | Slave Addr.: | 1 |

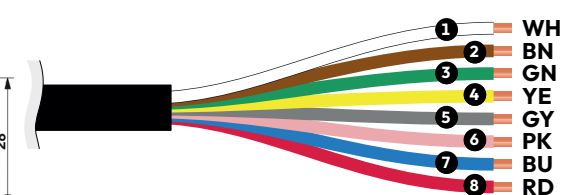
Cable and connector pinout

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|-------------|-------------|------------|-------------|--------|--------|----|----|
| Power VCC + | Power GND - | SDI-12 GND | SDI-12 Data | RS485A | RS485B | NC | NC |

Pin assignment (female view)



Connection diagram



⚠ Caution: Incorrect or faulty connection can damage the device. All interface and power cables are protected against reverse polarity, but incorrect connection of power cables to interface cables can damage the device.