SQ-R

Discharge Measurement System

Environmental monitoring equipment by Sommer Messtechnik

Contact-free discharge monitoring in waste water treatment, sewage networks and industrial waters

What is it?

The sensors of the SQ-R-series continuously measure the water and effluent flow through ducts, semi-filled pipes and channels in sewer networks, water treatment plants and industrial facilities.

Water level and flow velocity are detected with contact-free, state of the art radar sensors enclosed in a single, water proof housing.

With different sensor combinations the SQ-R can be applied to a large spectrum of applications.

FEATURE

In combination with a proven hydraulic flow model the discharge is calculated in real time.

VERSIONS

- SQ-R with radar level and velocity sensors
- SQ-ATEX with radar level and velocity sensors for explosive environments
- SV with a single radar velocity sensor for existing gauging station

How does it work?

Flow velocity

A 24 GHz radar sensor measures the velocity of the water surface. Radar impulses are transmitted at an angle towards the water surface where ripples and waves induce a Doppler frequency shift that is detected by the SQ-R.

Water level

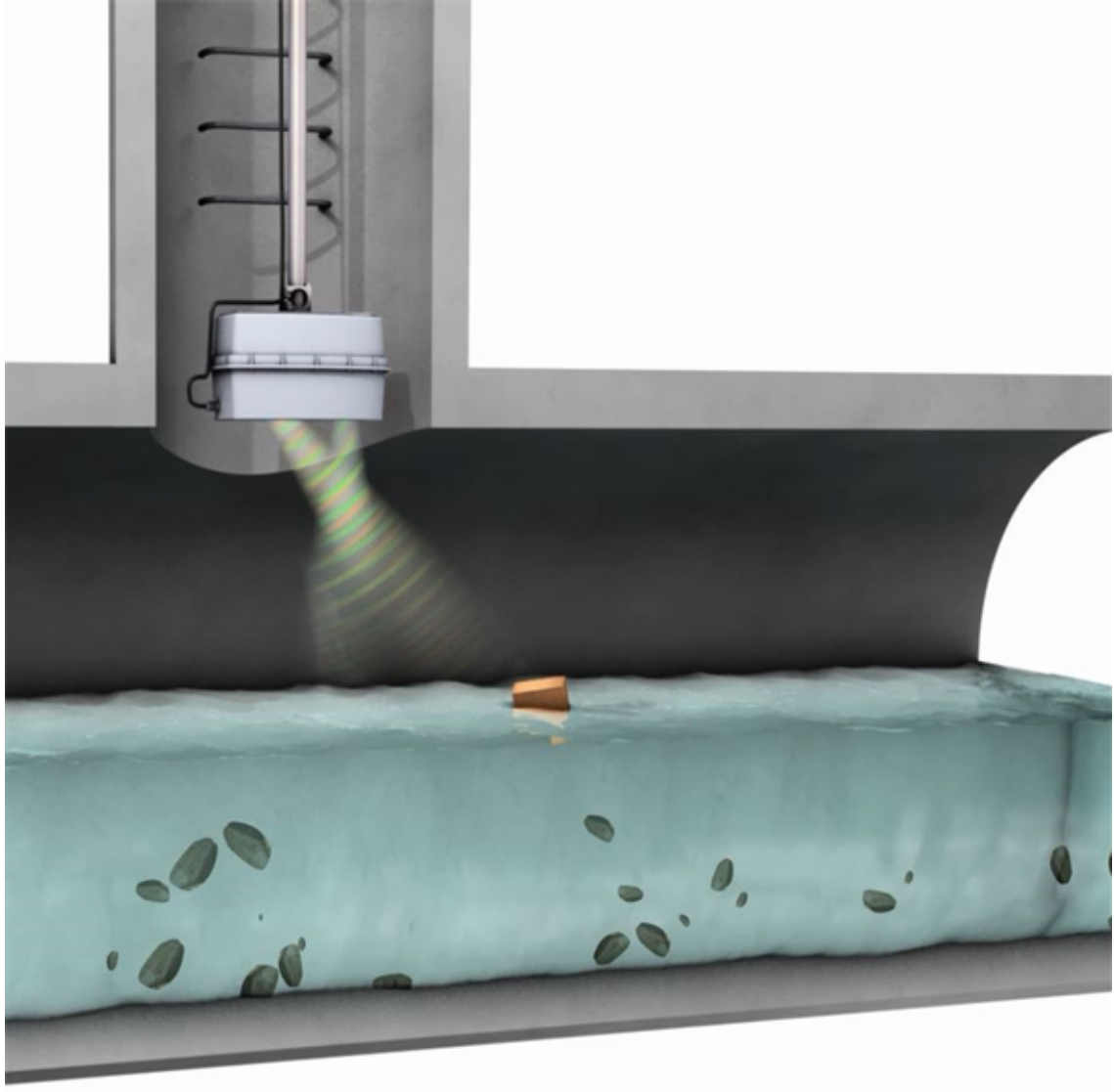
A radar sensor measures the distance between the SQ-R and the water surface by registering the travel time of an impulse sent towards the water surface.

An ultrasonic level sensor is available on request.

Water discharge

The discharge Q is computed by the SQ-R:

$$Q = v_m \cdot A(h)$$



Features

- Contact-free radar method prevents soiling and damage
- Maintenance-free operation reduces down times and increases reliability
- Velocity and level sensors within one housing enables easy installation
- Robust IP68 housing with enhanced seals prevents corrosion by acids, aging by sunlight, and sustains temporary submersion
- New, flexible sensor plug prevents incorrect handling
- ATEX-version certified for use in explosive atmospheres
- New application software SQcommander offers quick sensor setup and operation

METAS
Federal Office
of Metrology

Certified radar velocity sensor

Installation options

Due to its compact design, its waterproof and chemical-resistant housing the SQ-R can be installed in various locations such as open canals or semi-filled pipes and ducts.

A versatile bracket allows mounting in different positions

Application range

SELF-TEST

The SQ-R has a self-test option to report abnormal operation and any malfunction. This simplifies installation and provides live information about system status and data quality.

Advantages

- No installation below water table
- Resistant to aggressive fumes and liquids
- Waterproof housing
- Simple mounting and versatile installation options
- Save installation and minimum risk of damage
- Simple integration into existing data acquisition and control systems
- Easily linked to data loggers
- Multiple data interfaces: RS-485, SDI-12, Modbus, analog, pulse
- High data quality through self-check function

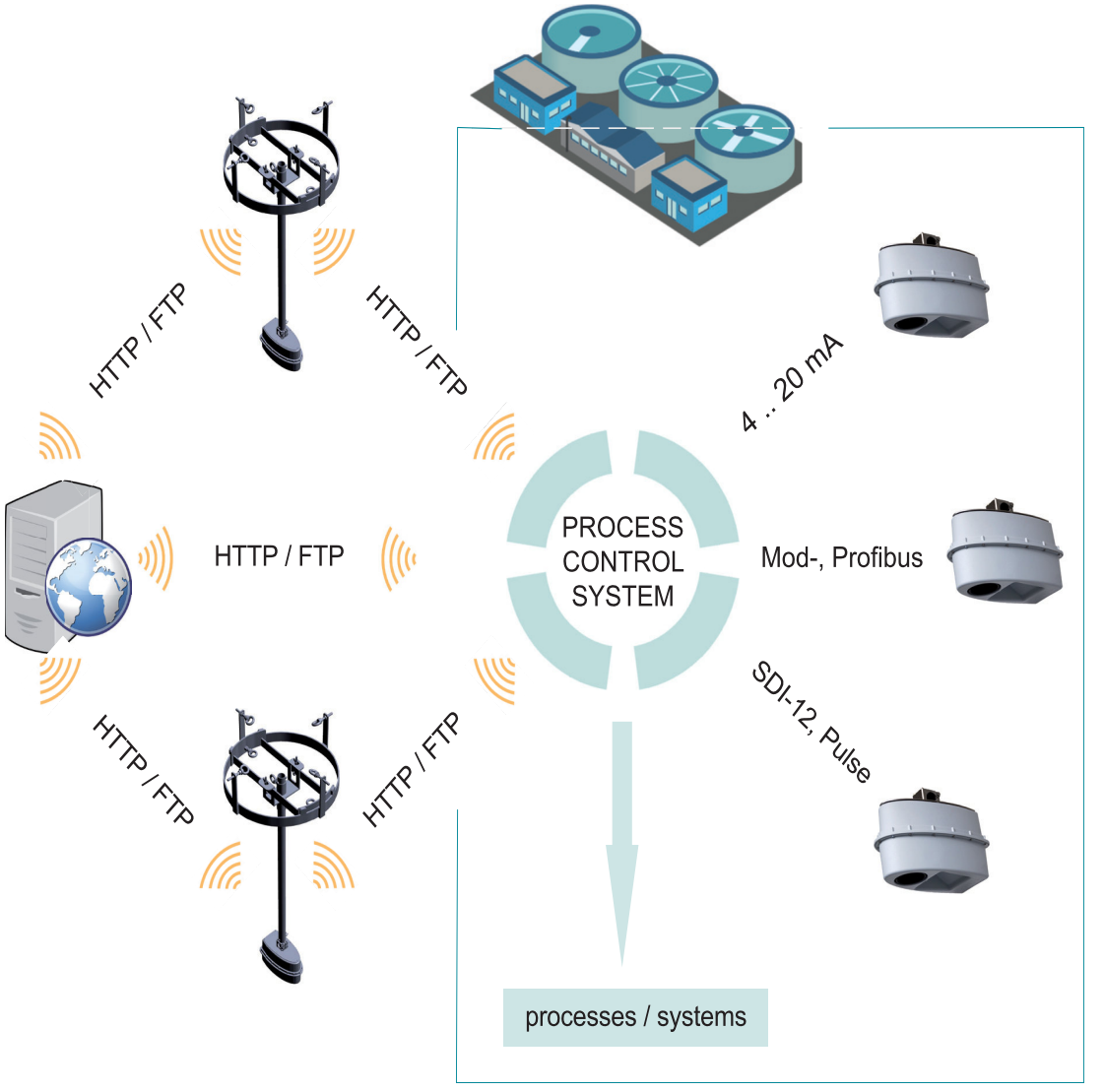
sq-commander

PLC integration

The SQ-R can be easily integrated into a process control unit (PLC) by its digital and analog interfaces.

INTERFACES

- RS-485, Modbus RTU
- SDI-12
- 4 ... 20 mA
- Pulse

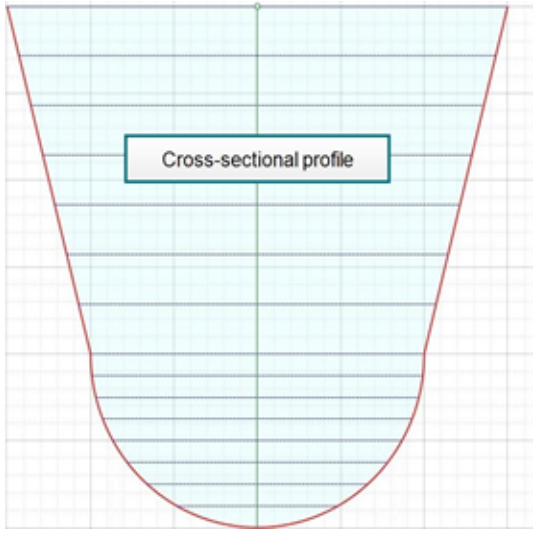


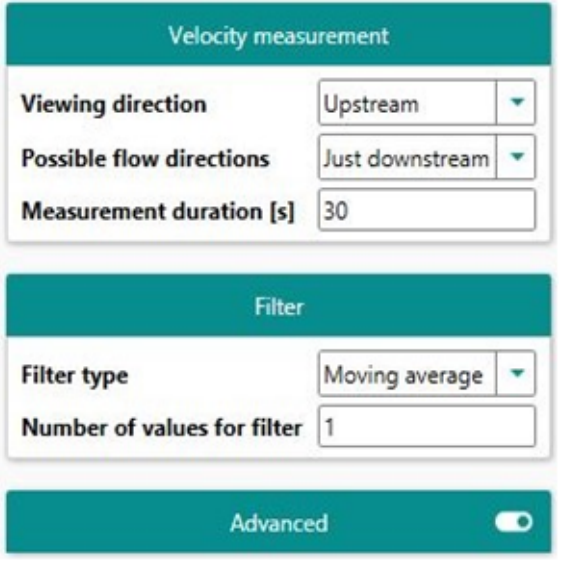
SQ-Commander software

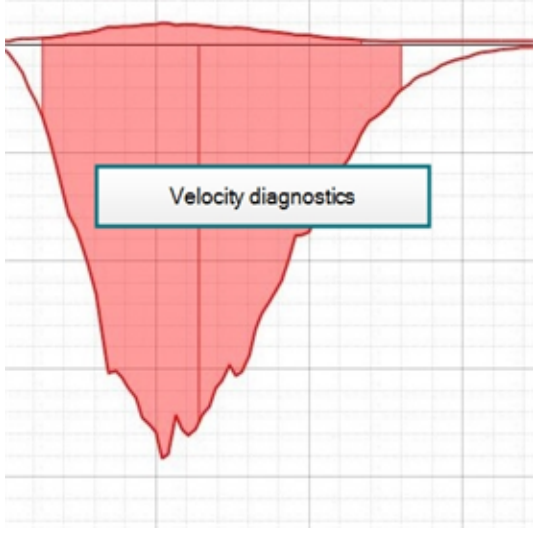
The SQ-Commander manages all your monitoring and configuration tasks with an attractive user interface.

FEATURES

- Create or import a cross-sectional profile
- Communicate with your SQ-R locally and remotely
- Configure and update the sensor settings
- View your measurement data
- Validate your data with the velocity diagnostics tool
- Transfer data files to HTTP and FTP servers







Option: Data logger

Collect, process and transmit your monitoring data with the Sommer Messtechnik MRL-7 data logger.

FEATURES

- Waterproof IP67
- Integrated data transmission by 3G and 4G
- Remote access to logger and SQ-R by mobile internet
- Data acquisition from RS-485, SDI-12 and analog sensors
- Solar charger for internal or external battery
- Very low power consumption
- Display for on-site data checks
- Configuration by RS-232 or Bluetooth
- Extended memory on USB-stick

Remote adjustment, data retrieval and maintenance by mobile internet saves time and money.

Option: Mobile SQ unit

The SQ-mobile is a compact, autonomous measurement unit for remote applications such as discharge monitoring in sewage networks.

It contains:

- SQ-R sensor
- MRL-7 data logger with mobile data transmission
- 22-Ah rechargeable lead-acid battery

GADGET

With a flexible extension device the SQ-R can be installed in a manhole from outside.

Option: SQ-R station

The SQ-R station is a data acquisition unit with a MRL-7 data logger in an IP67 stainless steel or fiberglass housing. It can be operated by mains or solar power.

FEATURES

- Autonomous station with solar power supply
- Weather proof
- Includes data logger, data transmission unit, batteries and solar charger
- Opional data transmission by satellite modem
- Optional expansion with analog and digital sensors like Sommer Messtechnik SOMQUALITY water quality sensors
- Optional integration of a time lapse camera

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