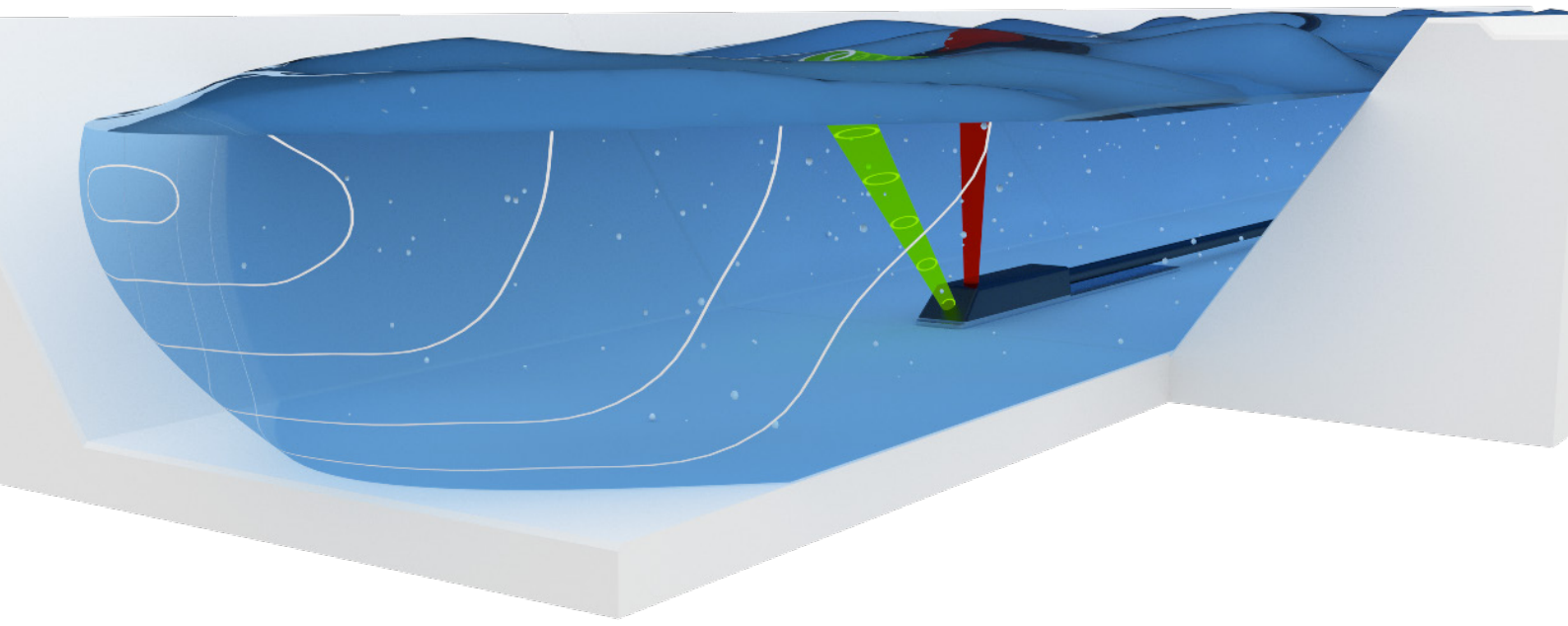
HydroVision

Stationary Flow Meter for Pipes and Open Channels

Q-Eye PSC MT

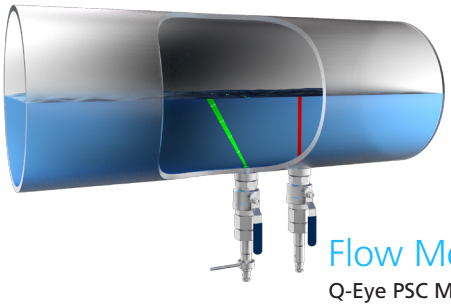


Q-Eye PSC MT

The **Q-Eye PSC MT** permanent velocity area flow meter is designed for applications in full or partially full pipes 100 - 2000 mm (4 – 80 inches) in diameter, or open channels with flow depths 40 – 2000 mm (1,5 - 80 inches).

It uses advanced Doppler profiling technology to directly measure velocity profiles making it the best choice for sites with non-uniform, rapidly changing, backwatered, near zero, negative or reverse flow conditions. This eliminates the need for on-site calibration, thereby reducing significantly the cost of installation.

Combined with an integral upward looking ultrasonic or a secondary external pressure sensor (optional) for determining the depth, the meter is using a numerical model for averaged velocity in the entire cross section and the continuity equation to calculate flow.

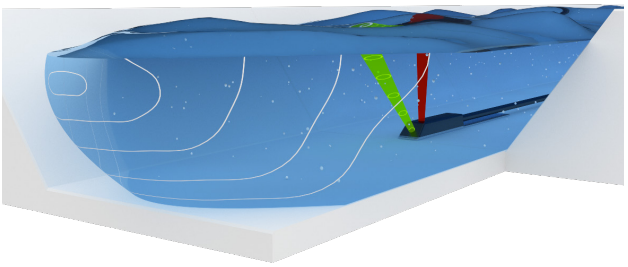


Flow Meter
Q-Eye PSC MT (Insertion)

The system can be equipped with up to 4 analog inputs, up to 4 analog outputs, 2 digital outputs and 4 relays.

Data Transmission

Automatic data transmission via GPRS communication is an option and can be used worldwide. The logged data can be sent to any host computer (FTP-Server) or to HydroVision's web-based HydroCenter at a user-selectable frequency (typically 4 times a day, once a day or once a week). Alternatively, WLAN and Ethernet are available.



Profiling Technology

Pulsed wave Doppler systems use a transducer that transmits short acoustic pulses. The received echo is range-gated to provide velocity measurements selectively from a small segment along the acoustic beam, step by step over the entire velocity profile.

Reflections of particles in other areas do not have any influence on the velocity measurement. Additionally the 1 MHz sensor provides higher data resolution by detecting smaller particles.

The Q-Eye PSC MT is ideal for permanent flow monitoring studies/surveys:

» Wastewater collection systems
(Infiltration studies, hydraulic model calibration, event notification, long term trend analysis)

» Combined sewer systems (Characterize combined sewer overflow (CSO) impacts)

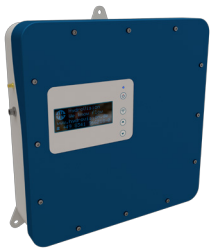
» Wastewater treatment facilities
(Influent measurement, real-time process control, effluent measurement)

» Irrigation channels (Supply management)

» Industrial flows (Flow measurement, process optimization)

» Storm water runoff monitoring

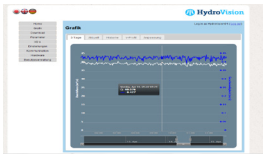
Technical Information



Q-Eye PSC MT

Transmitter

Q-Eye PSC MT is a major improvement in open channel flow measurement. It's the latest entry in the HydroVision family of high accuracy metering products. This flow computer incorporates all of the required algorithms and software to ensure accuracy and repeatability. The IP65 (NEMA 4X) compact flow display computer has a 4x20 alphanumeric LCD display and a 4 button keypad. All configuration data and measured and calculated data are stored inside an 16GB Micro-SD card. It controls the measurements, calculates the flow rate and provides freely programmable current outputs, status alarm, frequency outputs and totalizer readings.



Software

Parameterization of the measurement site and data visualization is easily possible using the standard web-browser of your already existing smartphone, tablet PC or notebook – there is no need for any additional software or App. The interface is graphical and menu-driven for rapid comissioning. Your flow meter can be accessed from anywhere - anytime 24/7.

Insertion Type

Low Profile
Velocity Area Sensor

Sensors

The submergible depts and velocity sensor which measures only 15x25x108 mm is the smallest sensor of this type currently available. A low profile means less interference, which results in more accurate velocity measurements, especially in low-flow situatuons. The **insertion** sensor is used, when the pipe is accessible from the outside only. For use in full pipes or partially full pipes when used in conjunction with an ultrasonic pressure depth sensor. These sensors can be installed into existing pipework through an 2" ball valve.

Mounting Systems

Mounting Plate, Spring Ring and Scissors Rings

All sensors can be attached to a mounting plate, spring and scissors rings to install the sensors in minutes and reducing time in the manhole. The sensor is first attached to a carrier and can than slide onto any of the compatible mounting systems. This maintains a height, suitable for measuring flow rates and velocities at very low water levels. To install the sensors in rectangular, trapezoidal or earthen channels, we recommend the sensor mounting plate. Stainless steel spring rings simplify sensor installation in cylindrical pipes. 6 standard diameter sizes from 200 mm (8 inches) to 600 mm (24 inches) are available. You can install the sensor and fasten the cable to the downstream edge of the ring in place before you enter the manhole. The self-expanding device is tight by expanding the band for a friction fit inside the pipe. The adjustable scissors ring is installed in large diameter pipes from 500 mm (20 inches) to 1450 mm (57 inches) in diameter. It consists of a base section, one or more pairs of extensions to fit the size of the pipe and a scissors mechanism.

WEB Data

hosted via the HV HydroCenter

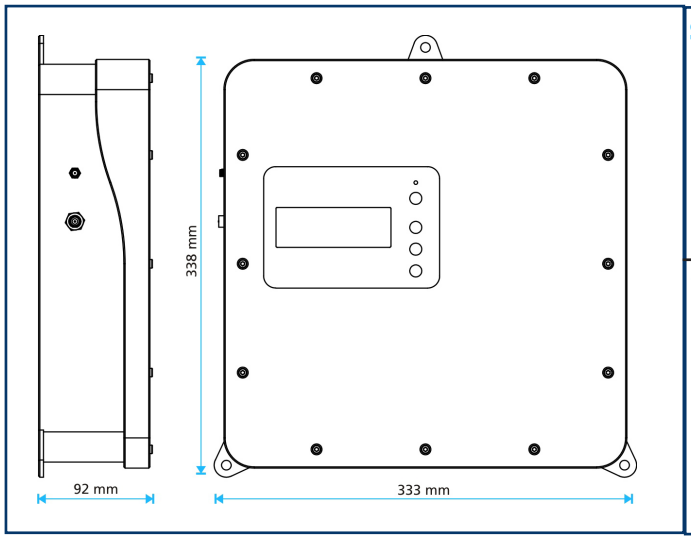
Web-based data logging

HydroVision's web-based data logging system enables real-time remote access to your data.

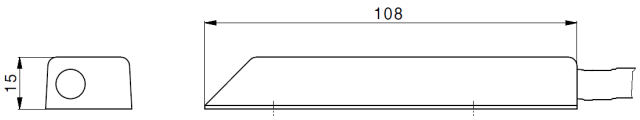
HydroCenter is our web-based graphing and analysis platform that provides 24/7 web access to data collected with your flow meter. Go to www.hydrocenter.de

Technical Data

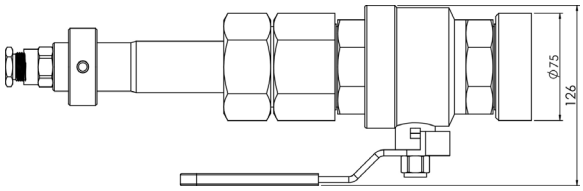
Transmitter



Sensor - Mouse Type



Sensor - Insertion Type



Q-Eye PSC MT

Specifications Transmitter	
Sensor:	1 x velocity 1x water level
Frequency:	1 MHz
Number of Cells:	max. 18 cells (Q-Eye PSC MT Pro)
Display:	4 lines, 20 characters
Keyboard:	4 keys
Datalogger:	16GB Micro SD card
Communication:	RS485 MODBUS (RS232 or RS485) WLAN GPRS Ethernet 10/100 Mbps
Inputs:	max. 4 x 4-20 mA 2x digital
Outputs:	max. 4 x 4-20 mA 2x digital 4x Relay
Power Supply:	85-260 V_{AC} (48-60 Hz) or 9-36 V_{DC}
Approval:	IP 65
Enclosure:	ABS, wall mounted

Area Velocity Sensor

Sensor:	1x velocity, 1x water level
Frequency:	1 MHz
Range:	velocity ± 5,3 m/s water level (ultrasonic) 0,04 -1,3 m expandable via external 4-20 mA sensor
Accuracy:	± 1% of measured value for v and h (ultrasonic) ± 2% for flow
Cable Length:	10 m incl. (max. 80m)
Particle Concentration:	> 50 ppm
Material:	Epoxy
Protection Class:	IP68 (NEMA 6P)
Dimensions:	108 x 25 x 15 mm (LxWxH)

Insertion Sensor

Sensor:	1D velocity for full-filled pipes incl. 2" ball valve
Frequency:	1 MHz
Range:	± 5,3 m/s (velocity)
Accuracy:	< 0,5 % FS (for v > 1 m/s) < 0,5 % FS ± 0,0025 m/s (for v < 1 m/s)
Cable Length:	10 m incl. (max. 80m)
Material:	Stainless steel
Dimensions:	diameter: 2" ; length: 350 mm

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