

# Flow Meter Q2

## Dual channel flow meter for open channels



- Calculation of instantaneous flow from the measured level - 4 inputs for ultrasonic and immersion level sensors
- Preset consumption equations for Parshall flumes and specific spillways
- Possibility to stop the flow reading during the backflow in the measuring trough
- Daily, monthly and annual flow volumes accessible via keyboard and display
- Touch color display, aut. controlled brightness
- Intuitive MENU, language versions
- Internal GSM/GPRS module (Q2-G)
- Data collection and parameterization via the Internet
- Power supply from a 24 VDC source (230 VAC) or from a battery for up to 6 months.
- Extensive self-diagnostics (voltage, current to sensors, RH inside the device)
- Metal cast housing, high protection IP67
- Cabinets for outdoor installation with space for a battery

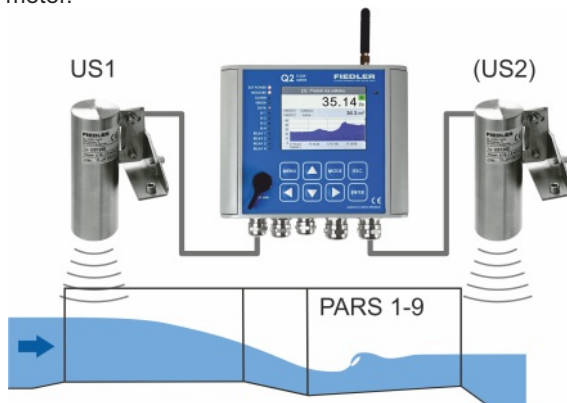
### Basic description

The two-channel flow meter Q2 allows the connection of up to 4 ultrasonic or other level sensors and continuously calculates the instantaneous and accumulated flow based on predefined consumption equations.

The device contains consumption equations for all common types of Parschall or Venturi troughs and for standard specific overflows. The flow can also be calculated on the basis of the table-dependent dependence between the level and the flow.

The measured values are stored in the internal memory of the device and can be transferred to the database on the server via the internal GPRS module (Q2-G).

The robust design of the metal housing with high IP67 protection and a number of self-diagnostic procedures contribute to the high operational reliability of the flow meter.

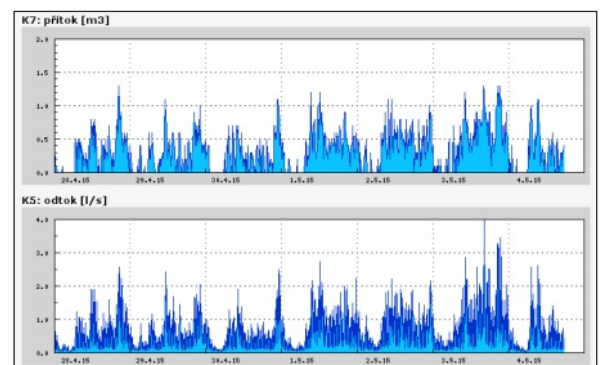


### Data hosting on the server

The flowmeter Q2-G use data hosting set up on the manufacturer's server. After transferring to the server, the measured data are stored in the database and are accessible to clients via a standard web browser.

The basic server services include:

- Creating graphs and tables for a selected period
- Creating printable overview monthly reports (daily flows, max., Min., Graph, ...)
- Exports of selected data to the client's PC
- Sending warning and information e-mails
- Remote parameterization of the flow meter (only user-accessible parameters can be changed)
- Display of the flow log operating log



## Basic functions and features

### Connection of sensors, display of measured values

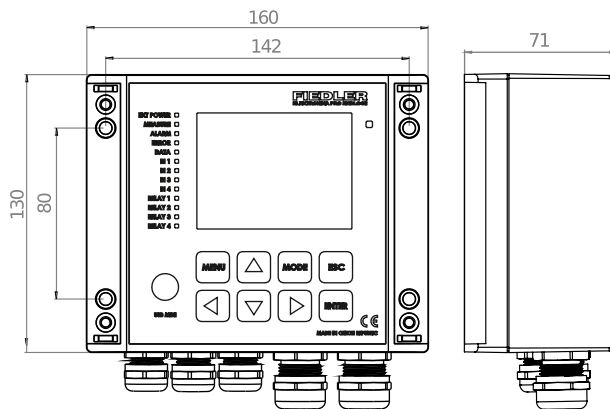
- Connection of sensors via RS485 interface (Modbus RTUa FINET) or via universal inputs DAV1 .. DAV4 (4-20 mA, DCL).
- Adjustable flow blocking during backflow.
- Adjustable delayed measurement required for the start-up of ultrasonic and radar sensors (0 to 250 sec).
- Control of the unit via touch screen or keyboard.
- Along with the instantaneous flow, the display also shows the measured level and the total flow rate since installation.
- Possibility of simultaneous display of values of channels in one screen or cyclic alternation of meas. values and graphs.
- An archive of daily, monthly and annual amounts can be called up on the display.
- Display of preset limits in the graphical display.
- Display brightness adjustment according to ambient light.

### Binary outputs - relays:

- Two relays, switching contact 250 V / 4 A, open at rest.
- Two solid state relays, output 0/12 V-2A, at rest 0 V.
- Possibility to control other relays in external modules.
- Limit, time and logic control of own and external relays.
- The sampler function briefly closes the relay after the set water volume has passed

### Analog outputs 4-20 mA

- Two active 4-20 mA current outputs.
- Output settings 0/4 - 20 mA, resolution <0.001 mA.
- Possibility to control other current outputs in external modules MAV421 and MAV422.



### Interface

- USB (mini) for parameterization and reading of archived data.
- RS485 for connecting sensors and controlling external modules.
- RS485 for data transfer to the superior system (Modbus RTU).

### Data recording into internal data memory

- Data memory for > 500,000 values
- Adjustable archiving interval from 10 s to 24 h.
- Possibility to call up archived data on the display of the unit
- Recording the status of binary channels (object entry, ...).
- Recording of status events (eg failures, sensor failures).
- Measurement and data recording active even during external power failure.

### Warning, info and control SMS system (Q2-G):

- Telephone directory for 48 recipients, grouping into 3 groups.
- 48 configurable warning SMS messages activated. reaching the limit value, failure of eg, sep / roz Bl, ...).
- Informative SMS compiled on the basis of command line or query SMS (current values, maximums, minimums, amounts, ...).
- Command commands and SMS for control and simulation of outputs (binary and analog), forced sending of data to the server.

### GPRS (Q2-G) Automatic sending of data to the server.

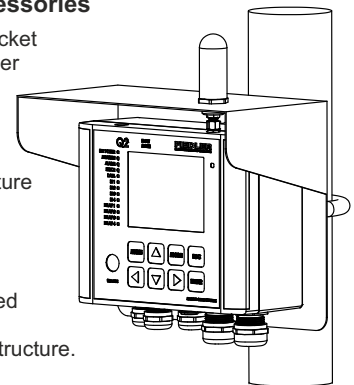
- Switch to more frequent transmissions after evaluation of the alarm condition.
- Sending data directly to email or FTP server (daily reports).
- Parameterization and upgrade of FW via server.
- Backup of current parameter files on the server.

### Optional mounting accessories

Mounting stainless steel bracket  
The KR2-V also forms a cover appliances before the rain and sunlight.

Holder upright  
fastens the supporting structure using one caliper  
1.5", 2" or 2.5".

Together with flow meter Q2 assembly can also be ordered holder KR2-H adapted for horizontal load-bearing structure.



## Selected technical parameters

- Number of measuring channels:** 2x flow + 2x levels
- Data memory:** more than an yearly record, cyclic scrolling
- Display:** RGB 3.5", resolution 320x240 px., Controlled backlight
- Keyboard:** 8 fingerboards, mechanical press response
- Analog inputs:** 4x 4 (0)-20mA, DCL (for USX000 sensors)
- Binary inputs:** 4 inputs, active state-switching with GND (OC-NPN, contact)
- Binary outputs:** 2x relay 250 V, 4A; 2x half relay 0/12 VDC, 2A
- Analog outputs:** 2x active galvanically isolated 4-20 mA output
- Optional power supply system:** 12-24 VDC, 180-250 VAC / 50 Hz or only battery 12V / 7-45Ah with / without solar. panel (Q2-G)
- Battery operation time:** up to 6 months depending on the frequency of transmissions data to a server (Q2-G)
- Power supply of connected sensors:** 2 sections, 6 to 18 V DC
- Self-diagnostics:** current from the source and current taken by sensors, supply voltage, temperature and rel. humidity inside the flow meter, ...
- Waiting for the onset of ultrasound and radar. sensors:** 0-240 s
- Real time clock:** continuous synchronization via GPRS
- GSM modem:** Quad-band 850/900/1800 / 1900MHz (Q2-G)
- Working temperature range:** -20 to +60 °C
- Dimensions (h x w x d):** 130 x 160 x 85 mm
- Weight:** 1480 g including backup Li-Ion battery
- Protection:** IP67, metal casting

## Recommended types of sensors and probes

### Ultrasonic level sensors:

The most commonly used level sensors. Contactless method, high accuracy and reliability of measurement. We offer various types of holders adapted for Parshall flumes, specific overflows and bridge structures when measuring levels and flows in rivers (LWS - Local Warning System). Measuring range graduated according to the type of sensor from 0..1 to 0..25 m.



**Us1200 to US4200/RK**  
FINET, DCL, T<3 s  
0,15 .. 1,2 až 4,2 m



**SPA5A0-4**  
4-20 mA, T<30 s  
0,15 .. 3 m