

# RAVEN-EYE® 2+

## New Generation Open Channel Non-Contact Radar Flow Meter



The RAVEN-EYE® 2+ is the newest non-contact RADAR area/velocity flow meter for open channel flow measurements from FLOW-TRONIC. The new sensor combines advanced digital Doppler radar velocity sensing technology with most modern and powerful DSP processor technology allowing a patent pending self-learning average velocity calculation. The need for empirical models or time-consuming site calibration become obsolete.

Use the RAVEN-EYE® 2+ in combination with the IFQ LOGGER for portable monitoring and for permanent monitoring with the IFQ MONITOR which display flow rate, velocity, level and much more.

The RAVEN-EYE® 2+ provides the user with highly accurate flow measurements under a wide range of flow and site conditions. By measuring the velocity of the fluid above the water surface, the RAVEN-EYE® 2+ eliminates accuracy and reliability problems inherent with submerged sensors, including sensor disturbances and sensor fouling.

The RAVEN-EYE® 2+ is ideal for monitoring flows from corrosive liquids or with high solids content.

The RAVEN-EYE® 2+ comes up with FUZION, the configuration software for FLOW-TRONIC flow systems.

## Technical Specifications

The RAVEN-EYE® 2+ is a universal non-contact level/velocity flow sensor that can be connected to the IFQ flow logger series. Optionally it can also be connected to any device using the Modbus ASCII/RTU communication protocol.

### Velocity Measurement

Method	Radar
Range	±0,08 to ±15 m/s (bidirectional)
Accuracy	±0,5%, + zero stability
Zero Stability	±0,02 m/s
Resolution	0,001 m/s

### Analog Input for Level Measurement

Input	1x 4-20 mA input (active 16 VDC) for loop powered analog level sensor
Impedance	5 Ω

### Optional Combined Level Measurement (Ultrasonic)

Method	Ultrasonic pulsed echo
Range	0,00 to 1,75 m (with ULS-02/RAV-0002) 0,00 to 5,75 m (with ULS-06/RAV-0006)
Accuracy	±0,2% of reading (with ULS-06/RAV-0006) ±0,3% of reading (with ULS-02/RAV-0002) Includes non-linearity and hysteresis
Temp. Error	max. 0,04%/K
Resolution	1 mm

### Optional Combined Level Measurement (Radar)

Method	Radar
Range	0,01 to 15 m
Accuracy	±2 mm of reading
Resolution	1 mm

### Flow Measurement

Method	Conversion from surface velocity measurement to average velocity based on patent pending self-learning model using velocity distribution measurements. Conversion of water level and pipe size to fluid area. Multiplication of fluid area by average velocity to obtain the flow rate.
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Conversion Accuracy	±5% of reading Assumes pipe is 0 to 90% full
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### Communication

RS-485 communications port with Modbus ASCII/RTU slave communication protocol. Automatic recognition between protocols.



# FLOW-TRONIC

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## Technical Specifications

### Outputs

4-20 mA

1 for flow (Q), validated surface velocity (vQP) or validated surface velocity including median filter (vQPMF)

### Internal Temperature Measurement

Method Digital sensor  
Range -40° to 80° C

### Internal Humidity Measurement

Method Digital sensor  
Range 0 to 100 %

### Internal Pressure Measurement

Method Digital sensor  
Range 0 to 1500 hPa

Auto diagnostic system using internal sensors (Humidity, pressure, temperature)

### Internal Angle Measurement

Accelerometer Pitch and roll angle measurements

### Material & Dimensions

Enclosure Polyurethane (PU)  
Dimensions 422 mm L, 140 mm W, 183 mm H  
Vertical blocking when mounted: 300 mm  
Weight 3,65 Kg (without the cable, level sensor and mounting accessories)  
Protection rate IP68

### Environmental Conditions

Operating temperature range -30° to 70° C  
Storage temperature range -30° to 80° C

### Certifications

Sensor CE

### Sensor Cable

Material Polyurethane jacketed  
Length Standard: 10 m  
Optional: 20 m, 30 m or length as needed up to 300 m

### Communication cable (optional)

RAV-4005 Communication cable for RAVEN-EYE® 2+ (USB)

### Software (included)

FUZION Configuration software for FLOW-TRONIC flow systems

Specifications are subject to change without notice.  
Updated: June 2023

