# RAVEN-EYE®

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

The RAVEN-EYE® ATEX 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® ATEX in combination with the RTQ-2000 flow logger for portable monitoring and for permanent monitoring with the IFQ MONITOR™ which display flow rate, velocity, level and more.

The RAVEN-EYE® ATEX 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® eliminates accuracy and reliability problems inherent with submerged sensors, including sensor disturbances and sensor fouling.

The RAVEN–EYE® ATEX is ideal for monitoring flows from corrosive liquids or with high solids content.

## Technical Specifications

The RAVEN-EYE® ATEX is a universal non-contact level/velocity flow sensor that can be connected to the RTQ-2000 or the IFQ MONITOR™. The use of a barrier box between the IFQ MONITOR™ and the RAVEN-EYE® ATEX is mandatory to comply with electrical parameters.

**Velocity Measurement**

| | |
|---|---|
| Method | Radar |
| Range | ±0,15 to ±9 m/s (bi-directional) |
| Accuracy | ±0,5%, + zero stability |
| Zero Stability | ±0,02 m/s |
| Resolution | 0,001 m/s |

**Optional Combined Level Measurement (Radar)**

| | |
|---|---|
| Method | Radar |
| Range | 0,01 to 15 m |
| Accuracy | ±2 mm of reading |
| Resolution | 1 mm |
| Mounting | Separate |
| Approval | CE, ATEX (II 1G, 1/2G, 2G Ex ia IIC T6 Ga, Ga/Gb, Gb) – barrier box needed |

**Optional Separate Level Measurement**

| | |
|---|---|
| Method: | Any 4-20 mA loop powered sensor fulfilling the necessary ATEX requirements |

**Flow Measurement**

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

**Communication**

RS-485 communications port with Modbus ASCII slave communication protocol

**Power Supply**

Supplied by IFQ MONITOR™ for ATEX sensors via ATEX barrier or RTQ-2000

**Safety parameters**

| Power supply | RS485 | |
|---|---|---|
| Ui = 8,7 V | Ui = 8,7 V | Uo = 5,88 V |
| Ii = 0,73 A | Li = 0,73 A | Lo = 0,24 A |
| Pi = 1,6 W | Pi = 1,6 W | Po = 35,21 mW |
| Ci = 10,6 µF | Ci = 0 µF | Co = 24, 5 µF |
| Li = 4,7 µH | Li = 0 µH | Lo = 30 µH |
| | | Lo/Ro = 3,99 µH/Ohm |

FLOW-TRONIC nv

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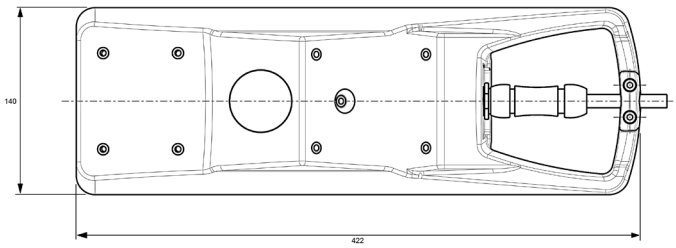


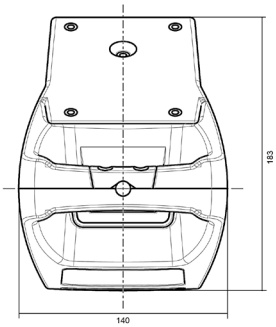


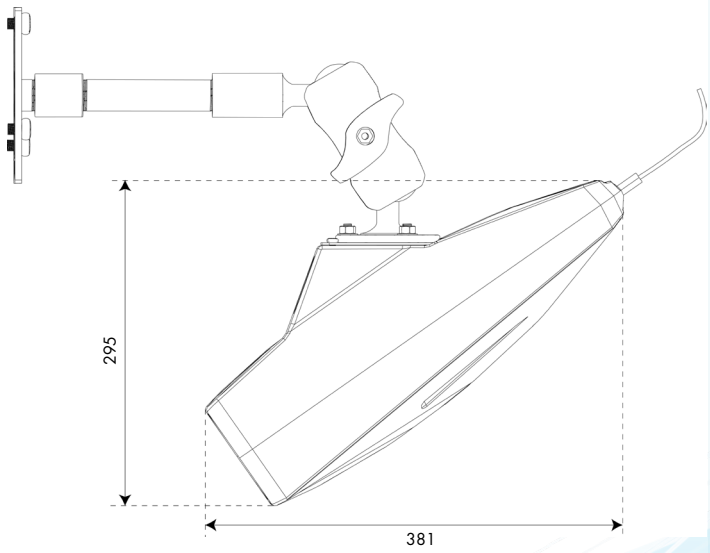


# Technical Specifications

**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 to1500 HPa |

**Material & Dimensions**

| | |
|---|---|
| Enclosure | Polyurethane (PU), PU ESD-dissipative paint |
| Dimensions | 422 mm L, 140 mm W, 183 mm H |
| Weight | 3,85 Kg (without the cable, level sensor and mounting accessories) |
| Protection rate | IP68 |

**Environmental Conditions**

| | |
|---|---|
| Operating temperature range | -20° to 50° C |
| Storage temperature range | -30° to 60° C |

**Certifications**

CE

| | |
|---|---|
| ATEX | ATEX Directive 94/9/EC<br>EN60079-0 : 2012 + A11 : 2013 (CEI 60079-0 : 2011)<br>EN60079-11 : 2012 (CEI 60079-11 : 2011)<br><br>Marking: Ex II 2 G Ex ib IIB T4 Gb |

**Sensor Cable**

| | |
|---|---|
| Material | Polyurethane jacketed |
| Length | Standard: 10 m<br>Optional lengths on request |

*Specifications are subject to change without notice*
*Updated: May 2016*

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