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.
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
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

<table>
<thead>
<tr>
<th>Power supply</th>
<th>RS485</th>
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<tbody>
<tr>
<td>Ui = 8,7 V</td>
<td>Ui = 8,7 V</td>
</tr>
<tr>
<td>li = 0,73 A</td>
<td>Li = 0,73 A</td>
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<tr>
<td>Pi = 1,6 W</td>
<td>Pi = 1,6 W</td>
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<tr>
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<tr>
<td>Li = 4,7 µH</td>
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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 to 1500 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 Directive 94/9/EC
EN60079-0 : 2012 + A11 : 2013 (CEI 60079-0 : 2011)
EN60079-11 : 2012 (CEI 60079-11 : 2011)
Marking: II 2 G Ex ib IIB T4 Gb

Sensor Cable
Material: Polyurethane jacketed
Length: Standard: 10 m
Optional lengths on request

Specifications are subject to change without notice
Updated: May 2016