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

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

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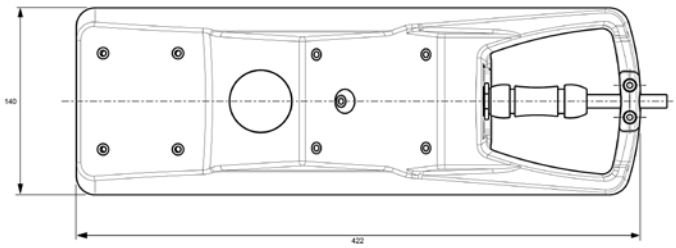

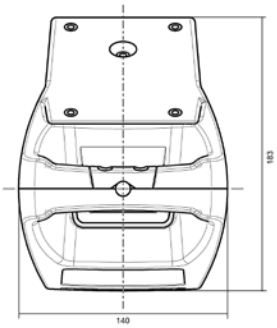

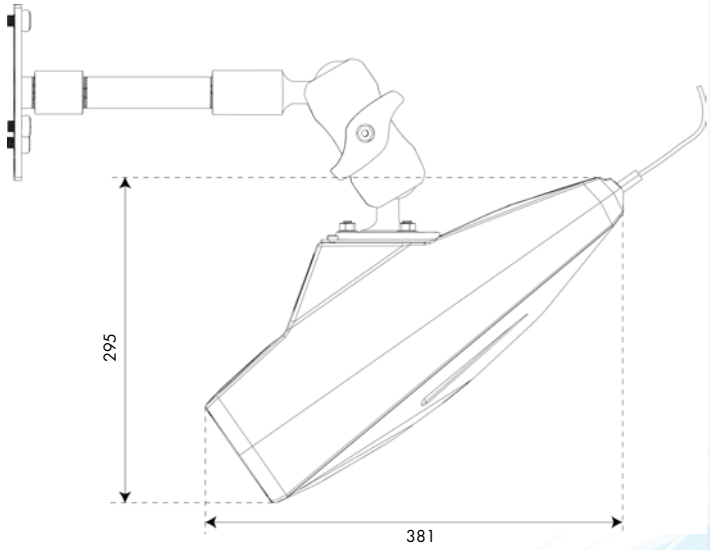

Technical Specifications

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 EN60079-0 : 2012 + A11 : 2013 (CEI 60079-0 : 2011) EN60079-11 : 2012 (CEI 60079-11 : 2011) Marking: Ex 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

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