

BELUGA™

Open Channel Digital Acoustic Flow Meter Sensor



BELUGA™ 45° & BELUGA™ 20°

The BELUGA™ is the newest ultrasonic Doppler area/velocity flow meter sensor for open channel flow measurements from Flow-Tronic. The new sensor combines advanced digital Doppler ultrasonic velocity sensing technology with most modern and powerful DSP processor technology allowing real-time spectral analysis of the velocity distribution through the cross-sectional area.

Use the BELUGA™ in combination with the IFQ LOGGER™ flow logger series for portable monitoring and for permanent monitoring with the IFQ MONITOR™ which display flow rate, velocity, level and much more.

Technical Specifications

Velocity Measurement

Method	Ultrasonic Doppler
Frequency	1 MHz
Range	-2 to +6 m/s
Measurement	Bi-directional
Accuracy	Better than 1% + zero stability (according to hydraulic and installation conditions compliance)
Zero Stability	±0,01 m/s
Resolution	0,001 m/s

Optional Combined Level Measurement (Ultrasonic)

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

Optional Combined Level Measurement (Radar)

Method	Non-contact Pulsed Radar
Range	0,00 to 15 m
Accuracy	±2 mm of reading
Resolution	1 mm

Optional Separate Level Measurement

Method	Any 4-20 mA loop powered sensor
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Flow Measurement

Method	Conversion from measured velocity to average velocity based on integrated spectral analysis of the velocity distribution in the cross-sectional area. 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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Communication

RS-485 communication port with Modbus ASCII slave communication protocol.

Outputs (optional)

4-20 mA	1 for validated velocity (vQP) or validated velocity including median filter (vQPMF).
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Internal Temperature Measurement

Method	Internal temperature sensor
Range	-40°C to 80°C

Technical Specifications

Material & Dimensions

Enclosure	HIGH IMPACT PVC-C
Dimensions	190 mm L, 48 mm W, 28 mm H
Weight	0,26 kg (without cable, level sensor and mounting accessories)
Protection rate	IP68

Environmental Conditions

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

Supply Voltage Required

4 to 26 VDC (max. 130 mA @ 12 VDC) or supplied by IFQ MONITOR™ or IFQ LOGGER™

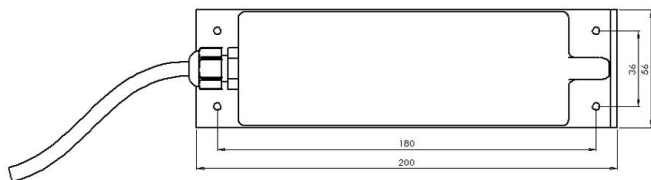
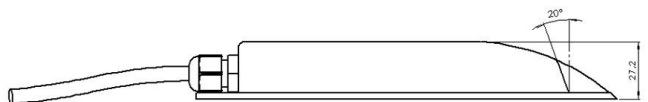
Power Consumption	Sleep: 60 mA @ 12 VDC Measuring: 120 mA @ 12 VDC
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Certifications

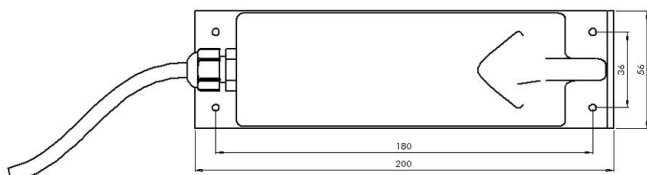
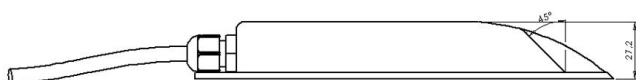
Sensor	CE
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Sensor Cable

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



BELUGA™ 20°



BELUGA™ 45°



FLOW-TRONIC NV

www.flow-tronic.com

*Specifications are subject to change without notice
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Rue J.H. Cool 19a | B-4840 Welkenraedt | BELGIUM
Tél.: +32 (0)87 899 799 | Fax: +32 (0)87 899 790
E-mail: info@flow-tronic.com