

NOVECOM SYNAPTIX FLOW

Open Channel Flow Monitoring (102533)

SPECIFICATIONS – WATER LEVEL

Measurement range	0.10 m to 20 m Distance from sensor to water surface
Accuracy	±5 mm Across the specified range
Minimum measurement distance	0.10 m Blind zone between radar face and water

SPECIFICATIONS – SURFACE VELOCITY

Detectable range	0.3 m/s to 15 m/s Dependent on surface waves and flow conditions
Accuracy	1% of measured value, 0.02 to 4.5 m/s 2% of measured value, 4.5 to 15 m/s
Minimum surface ripple	2 mm to 3 mm Required for reliable velocity detection

SPECIFICATIONS – VOLUMETRIC FLOW

Accuracy	Approximately ±10% Depends on the accuracy of the surface velocity, the channel cross-section survey and the k-factor estimate
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FUNCTIONAL OUTPUTS

Water level
Surface velocity and flow direction
Instantaneous volumetric flow rate (L/s or ML/day)
Average flow
Accumulated volume
Sensor status and diagnostic information



DESCRIPTION

The Novecom SynaptiX® Flow is a self-contained instrument for continuous, non-contact measurement of water level, surface velocity and calculated volumetric discharge in open channels and natural waterways.

A 61 GHz radar sensor mounted above the water uses two antenna pairs, one for water level and one for surface velocity. Nothing enters the water, and no weir or flume is required.

The radar sensor is paired with a SynaptiX Collector (IOT+LTE+LRM+MET), which provides local power management, solar charging, Cat M1 and LoRa telemetry, and an Ethernet-based field interconnection. Discharge is calculated from measured surface velocity, measured water level and the channel cross-section surveyed at installation.

The system is part of an ecosystem of IIoT products from Novecom. Contact us for variants that suit your application.



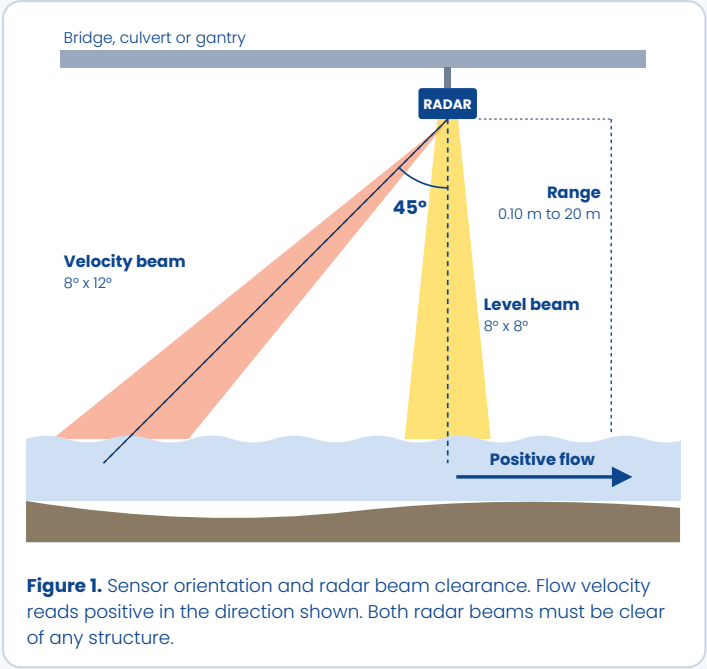
SPECIFICATIONS – RADAR

Radar frequency	61 GHz (V-band)
Measurement method	FMCW for water level Doppler for surface velocity
Beam angle (azimuth x elevation)	Level: 8° x 8° Velocity: 8° x 12°
Measurement update rate	Approximately every 5 seconds Measurement is continuous

SPECIFICATIONS – ENVIRONMENTAL AND MECHANICAL

Operating temperature	0 °C to +50 °C
Relative humidity	0 to 100%
Ingress protection	IP65
Weight	4.5 kg
Installation	Mounts to an existing bridge, gantry, culvert or headwall, or a bank-mounted pole or bracket
Channel survey	Cross-section survey required at installation, completed by Novecom or by the customer using Novecom’s survey guide

TYPICAL INSTALLATION



SPECIFICATIONS – COMMUNICATIONS

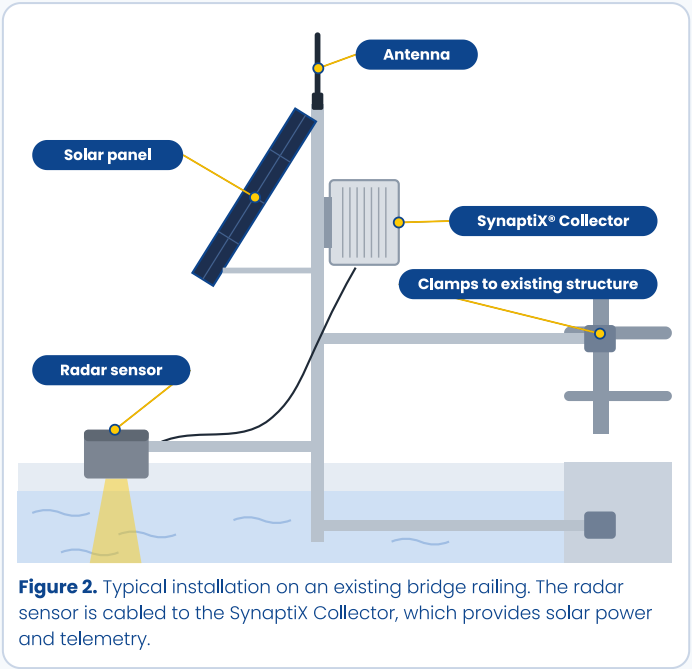
Cellular	LTE Cat M1 (4G) Bands B3/B8/B20/B28 Primary telemetry to the SynaptiX platform
LoRa mesh	915.125 to 927.125 MHz Low-power local or private network telemetry
Ethernet	100BASE-TX Access to the configuration interface

SPECIFICATIONS – POWER

Architecture	Solar-charged DC battery system for autonomous, off-grid operation
Battery	12.8 V 84 Wh LiFePO4
Solar panel	12 V nominal, 30 W to 120 W Sized to the installation
Protection	Charge control, low-voltage, overcurrent, polarity and surge protection appropriate to the installation

CONFIGURATION, CONNECTORS AND PINOUTS

The system is configured on site through a graphical interface accessed over Ethernet. For SynaptiX Collector connectors, pinouts and full electrical specifications, please refer to the datasheet for the Novecom 101642.



ORDERING DETAILS – NOVECOM PARTS

PART NUMBER	DESCRIPTION
102533	Novecom SynaptiX Flow, Open Channel Flow Monitoring (complete field unit)
101642	SynaptiX Collector (IOT+LTE+LRM+MET) (replacement part)
100537	SynaptiX Collector Ethernet Cable (3m) to RJ45 (configuration cable)