

RS-INS-001-01 / 01 Overview

Dual-Antenna Aided Navigation System

Brand: ROGERSENSE

Model: RS-INS-001-01

Document version: 1.0

Hardware / firmware revision: TBD



Product presentation. Delivered configuration: TBD.

Key functions

Parameter	Value / conditions	Rev.
Architecture	Dual-antenna GPS/INS with IMU fusion Manufacturer product introduction	1.0
Roll / pitch	0.2 deg (1 sigma)	1.0
GNSS heading	0.08 deg (1 sigma) 2 m antenna baseline; not a free-inertial heading claim	1.0

Delivery configuration

Configuration and delivery contents are confirmed in the integration project; no online sample offer.

Application scope

Reference specifications for project evaluation. Final delivery is subject to the agreed hardware, firmware, accessories and acceptance conditions. Presentation imagery does not define manufacturing geometry.

RS-INS-001-01 / 02 Technical data

Documented values and operating conditions. Conflicting or unavailable values are marked TBD.

Parameter	Value / conditions	Rev.
Architecture	Dual-antenna GPS/INS with IMU fusion Manufacturer product introduction	1.0
Roll / pitch	0.2 deg (1 sigma)	1.0
GNSS heading	0.08 deg (1 sigma) 2 m antenna baseline; not a free-inertial heading claim	1.0
GNSS position	1.2 m CEP; RTK 2 cm + 1 ppm Fix / correction conditions must be defined for the order	1.0
Gyroscope range	300 deg/s as listed Sign / full-scale definition TBD	1.0
Accelerometer range	4 g as listed Do not transfer specifications from another IMU	1.0
Input voltage / current	12 V; 0.55 A Confirm permissible voltage tolerance	1.0
Main unit	120 x 120 x 55 mm; 708 g Main unit only; antennas and cables are additional	1.0
Connector	10-pin aviation connector Pinout and communication electrical level TBD	1.0
GNSS heading condition	0.08 deg, 1 sigma, with 2 m antenna baseline	1.0
Velocity accuracy	0.03 m/s, 1 sigma	1.0
GNSS dropout / vehicle condition	CEP drift 0.2% over 1 km or 3 min with odometer; heading drift 0.15 deg per 1 min	1.0
GNSS signals	GPS L1/L2/L2C; BDS B1/B2	1.0
Antenna / cable reference	152 x 152 x 62.2 mm, 433.5 g each; cable 5 m, 30 g each	1.0

RS-INS-001-01 / 03 Electrical interface

Pin / terminal definitions

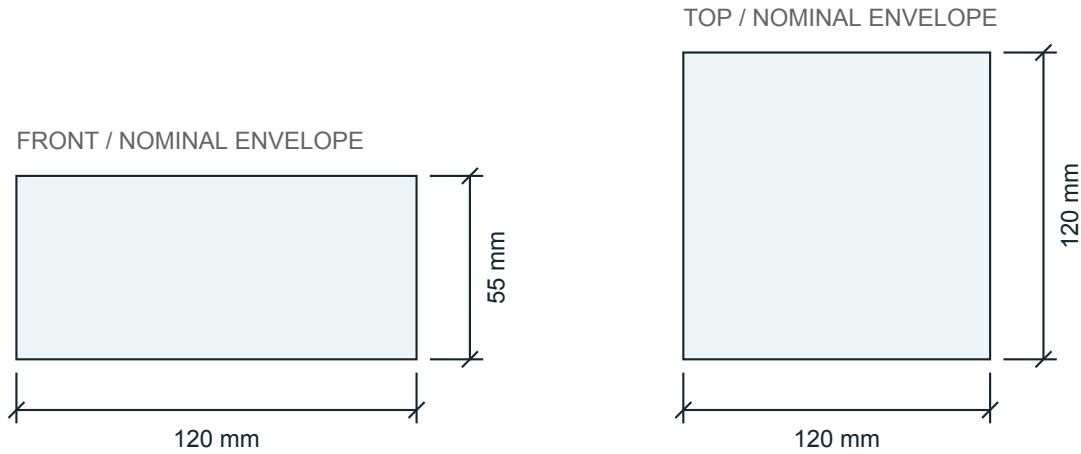
Parameter	Value / conditions	Rev.
Data interface / pinout	TBD: official interface control document required	1.0

Electrical conditions

Item	Value / condition	Rev.
Pin viewing orientation	TBD unless identified in the approved wiring drawing	1.0
Harness / logic compatibility	TBD; confirm against the delivered hardware before wiring	1.0
EMC / isolation / load derating	TBD; component ratings do not establish system ratings	1.0

RS-INS-001-01 / 04 Mechanical & installation

Dimensions / unit: mm



Unit: mm. Not to scale. Holes / datum / unspecified tolerances: TBD.

Item	Value / condition	Rev.
Main length x width x height	120 x 120 x 55 mm	1.0
Mounting grid	108 x 108 mm	1.0
Mounting holes	4 x diameter 5.30 mm; source calls for M5 screws	1.0
Base / main mass	8 mm / 708 g	1.0
Connector	10-pin aviation connector; mating orientation / pinout TBD	1.0

Installation control

Confirm mounting datum, clearance, connector access and the exact delivered revision. Drawing spans listed in the table require an approved drawing to establish orientation. Unspecified geometry and tolerances: TBD.

RS-INS-001-01 / 05 Protocol & software

Native interfaces and protocol

Item	Value / condition	Rev.
Navigation outputs	Attitude, heading, 3D position / velocity, inertial channels	1.0
Configuration software	Public V1.5 entry; downloaded build / compatibility: TBD	1.0
Output protocol / rate / port pinout	TBD	1.0
Antenna / odometer input	Configuration and exact wiring TBD; dropout figures require odometer condition	1.0

ROGERSENSE integration services

MQTT connectivity, OTA firmware updates, gateways and cloud platform are available for delivery. Model-specific controllers, interfaces and adaptation are agreed per project. These services do not imply native MQTT or OTA support inside every sensor.

Platform: <https://iot.rogersense.com>

Item	Value / condition	Rev.
Gateway / firmware build	TBD	1.0
MQTT topic / payload / credentials	TBD	1.0
OTA signing / rollback / access control	TBD	1.0

RS-INS-001-01 / 06 Delivery & verification

Configuration and acceptance record

Item	Value / condition	Rev.
Document version	1.0	1.0
Brand / model	ROGERSENSE / RS-INS-001-01	1.0
Hardware / firmware revision	TBD	1.0
Serial number / calibration report	TBD	1.0
Approved mechanical drawing	TBD	1.0
Inspection / acceptance report	TBD	1.0
Packing / harness / accessories	TBD; confirm the ordered configuration	1.0
Certification / compliance evidence	TBD unless identified in the delivery agreement	1.0

Open items

Every TBD item and any conflicting supply, accuracy, dimensional or revision requirement must be resolved in the approved delivery configuration. Calibration conditions, wiring orientation, installation datum and application suitability require project verification.

After-sales

After-sales follows the existing ROGERSENSE policy and the approved order. <https://rogersense.com/returns>

RS-INS-001-01 / 07 Appendix A

Sensor performance reference

Item	Value / condition	Rev.
Gyro range / bandwidth / delay	300 deg/s / 200 Hz / <2 ms	1.0
Gyro bias instability	10 deg/h, Allan method	1.0
Gyro bias stability / repeatability	15 deg/h with 1 s smoothing / 15 deg/h	1.0
Gyro full-temperature bias	0.1 deg/s	1.0
Gyro scale nonlinearity / repeatability	200 / 200 ppm	1.0
Gyro resolution / acceleration sensitivity	<0.01 deg/s / <0.0028 deg/s/g RMS	1.0
Angular random walk	0.15 deg/sqrt(h)	1.0
Accelerometer range / bandwidth	4 g / 200 Hz	1.0
Accelerometer bias / full-temperature bias	0.2 / 1.7 mg	1.0
Accelerometer scale repeatability	200 ppm	1.0
Accelerometer resolution / nonlinearity	0.1 mg / 0.1%	1.0
Navigation angular range	Roll +/-180 deg; pitch +/-90 deg; heading +/-180 deg	1.0

Reference information from the existing ROGERSENSE specification. Use the approved hardware, firmware, harness and calibration revision; unlisted implementation details remain TBD.