Tersus GNSS

INS200

High-precision Inertial Navigation System

Overview

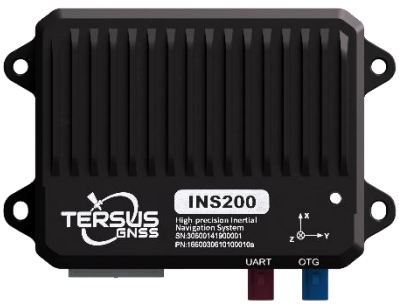
The INS200 is a multisensor Inertial Navigation System combining an industrial grade IMU with the industry leading Tersus Extreme RTK™ GNSS engine.

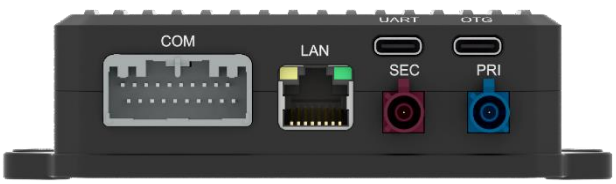
The INS200 consists of a built-in array of IMU sensors coupled with the ability to use an external odometer. This provides accurate and reliable real-time attitude, velocity and position information under demanding conditions such as urban canyons, tunnels, and other obstructed areas.

The INS200 provides raw RTK observations combined with spatially and temporally synchronized IMU data. This allows for high precision post-processing and data validation.

Key Features

- ✓ Multiple constellations and frequencies
  - GPS L1 C/A, L2C, L2P, L5
  - GLONASS L1 OF, L2 OF
  - BeiDou B1I, B2I, B3I
  - Galileo E1, E5a, E5b
  - QZSS L1, L2, L5
- ✓ 1792 channels
- ✓ Built-in high-precision IMU module
- ✓ Internal storage of log data
- ✓ RTK raw observation and ephemeris logging
- ✓ Supports external odometer
- ✓ High-precision post-processing available
- ✓ Convenient and diversified differential data importing methods, including Ethernet and 4G modules to acquire differential data





Tersus GNSS
INS200

Technical Specifications

RTK Performance

Signal Tracking:	
GPS L1 C/A, L2C, L2P, L5 GLONASS L1 OF, L2 OF BDS B1I, B2I, B3I Galileo E1, E5a, E5b QZSS L1, L2, L5	
Channels:	1792
Single Point Positioning Accuracy (RMS):	
- Horizontal:	1.5m
- Vertical :	2.5m
DGPS Positioning Accuracy (RMS):	
- Horizontal:	0.4m
- Vertical:	0.8m
Real Time Kinematic (RMS):	
- Horizontal:	8mm+1ppm
- Vertical:	15mm+1ppm
Initialization (Typical):	<5s(1)
Initialization Reliability:	>99.9%(2)
Observation Accuracy (Zenith Direction):	
- C/A Code:	10cm
- P Code:	10cm
- Carrier Phase:	1mm
Time To First Fix (TTFF):	
- Cold Start:	<30s
- Warm Start:	<10s
Re-acquisition:	<1s
Heading Accuracy:	0.1°/2m baseline
PPS Accuracy (RMS):	20ns
Velocity Accuracy (RMS):	0.02m/s
Data Update Rate:	20Hz

IMU Performance

Gyro Range:	±300°/s
Gyro Bias Instability:	1.8°/hr
Angular Random Walk: - XY: - Z:	 0.10 °/√hr 0.09 °/√hr
Accelerometer Range:	±6g
Accelerometer Bias Instability:	0.015mg
Velocity Random Walk:	0.035 m/s/√hr
Update Rate:	100Hz

Integrated Navigation System

GNSS Interruption Time(0s)	
- Position Accuracy(2σ):	2cm
- Roll Accuracy(2σ):	0.1°
- Pitch Accuracy(2σ):	0.1°
- Heading Accuracy(2σ):	0.1°
- Speed Accuracy(2σ):	0.02m/s
GNSS Interruption Time(60s With tachometer combination)	
- Position Accuracy(2σ):	2.0‰
- Roll Accuracy(2σ):	0.15°
- Pitch Accuracy(2σ):	0.15°
- Heading Accuracy(2σ):	0.15°
- Speed Accuracy(2σ):	0.1m/s
Update Rate:	100Hz

Interface

RS232:	x3
CAN(A):	x1
CAN FD(B):	x1
LNA Ethernet Port:	x1
GNSS Antenna Connector:	x2
Power Connector:	x1
PPS:	x1

Technical Specifications

Electrical

Input Voltage:	
- Range:	9~24V DC
- Typical:	12 V DC
Power Consumption:	
- Range:	1.5~2.5 W
- Typical:	2.0 W

Physical

Dimension:	116x85.9x28mm
Weight:	263g(3)
Operating Temperature:	-40℃ ~ +85℃
Storage Temperature:	-40℃ ~ +95℃
Relative Humidity:	100% not condensed
Dust & Waterproof:	IP67

Note:
(1) The initialization time depends on various factors, including the number of satellites, observation time, atmospheric conditions, multi-path, obstructions, satellite geometry, etc.
(2) The initialization reliability may be affected by atmospheric conditions, signal multipath, and satellite geometry.
(3) The actual size/weight may vary depending on the manufacturing process and measurement method.

Website: www.tersus-gnss.com
Sales Inquiry: sales@tersus-gnss.com
Technical Support: support@tersus-gnss.com