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TOKNAV



Mechanical Control
TMC20
Excavator Guidance System

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Excavator Guidance System

TMC20 is an efficient excavator guidance system. It utilizes BeiDou satellite positioning to provide construction workers with intuitive real-time graphical and numerical information, enabling more precise and efficient construction. This system is suitable for various engineering scenarios, such as underwater riverbed excavation, riverbed dredging, riverbank slope trimming, and high-speed track construction at test sites. It can significantly reduce the number of on-site auxiliary personnel, achieve one-person-one-machine construction, and lower labor costs. It is a powerful tool for improving construction quality and efficiency.

CHARACTERISTIC

High-Precision Intelligent Display Screen

This industrial-grade vehicle-mounted computer is designed for rugged durability. It features an integrated high-precision GNSS module for accurate positioning and orientation. With an IP66 protection rating and superior shock resistance, it's built to withstand tough conditions. The device supports multiple communication methods, including dual-SIM full-network connectivity. Its high-resolution, high-brightness screen ensures clear visibility, making it ideal for a range of demanding work environments.

Dynamic IMU Sensor

This dynamic IMU sensor offers high precision and consistency in motion sensing, along with an ultra-wide temperature range. It's designed to meet the stringent environmental demands of engineering applications.

High Precision

TMC20 has a planar accuracy of up to 2cm, and a high accuracy of 3cm for fill and dig volumes. The high-precision guidance system reduces the risk of rework due to under-digging or over-digging. It meets various construction requirements (such as underwater riverbed excavation, riverbed dredging, riverbank slope trimming, high-speed track construction at test sites, etc.), and the construction quality is further enhanced.

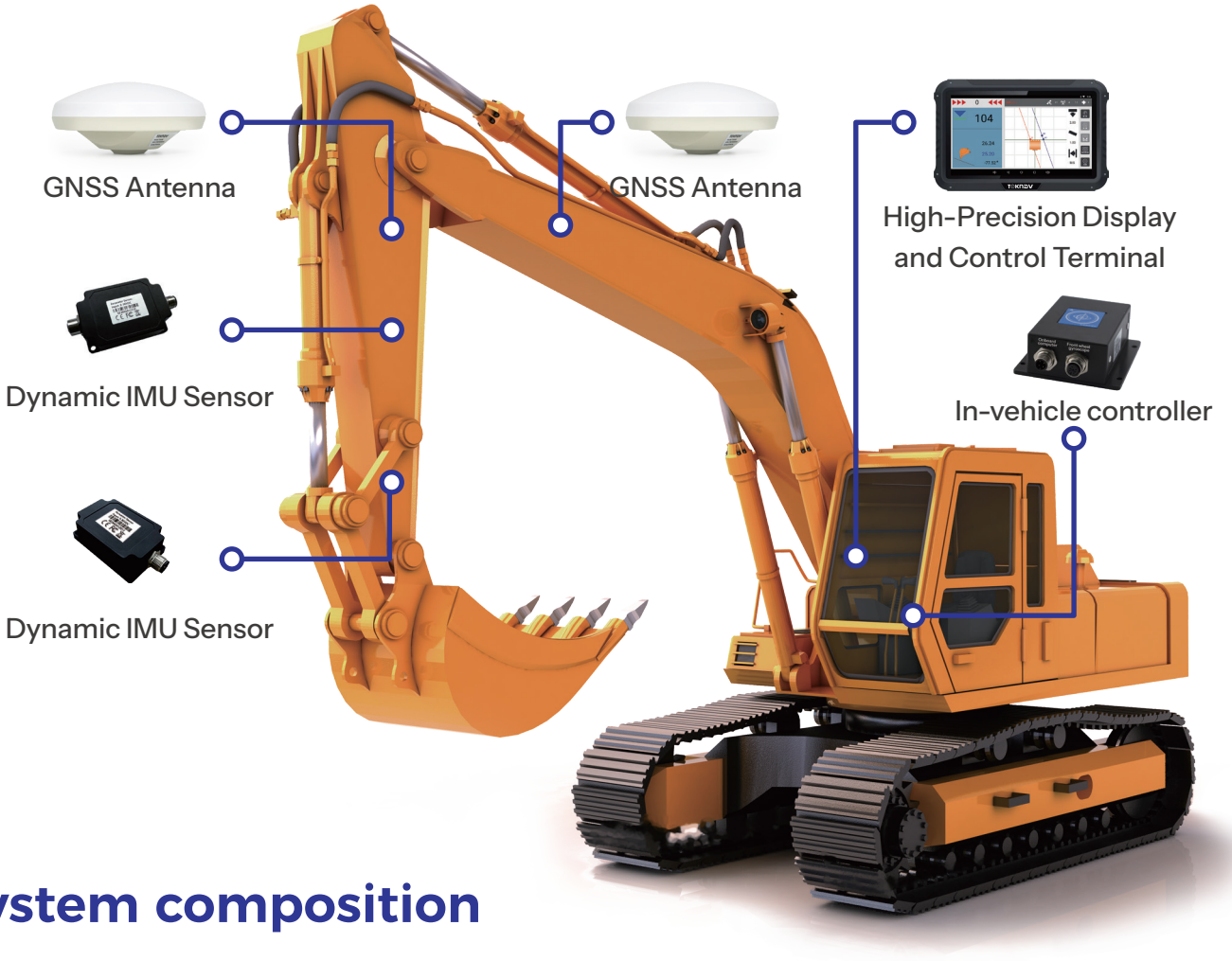
Multi-Scenario Application

Through inertial navigation and tilt sensing technology, combined with centimeter-level high-precision positioning, it obtains the three-dimensional coordinates of the boom, arm, and bucket to achieve precise construction guidance in all-weather and all-scenario conditions, such as ditch digging, slope trimming, riverbed excavation, night, rain, snow, and heavy fog.

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TMC20

Excavator Guidance System



System composition



Intelligent Display Screen



Dynamic IMU Sensor

Reduce rework costs due to over-digging and under-digging, save fuel, and reduce costs.

Construction is possible 24 hours a day, day and night.

Automatically calculates the area, making the working area clear at a glance.

SPECIFICATION

SATELLITE SYSTEM

BDS	B1I, B2I, B3I, B1C, B2a, B2b*
GPS	L1, L2, L5
GLONASS	L1, L2, L3
GALILEO	E1, E5a, E5b, E6
QZSS	L1, L2, L5, L6
IRNSS	L5
L-Band	

WORKING ENVIRONMENT

Environment	Operating Temperature: -40°C ~ +85°C Storage Temperature: -55°C ~ +85°C
Vibration Standards	Complies with national standards GBT-3871, GBT-2423, and GBT-28046 for vehicle vibration standards

VEHICLE MOUNTED COMPUTER

Display Screen	10.1-inch, Support 5-point capacitive touth
Brightness	750cd/m2
Resolution	1024*600px
I/O	RS232*2 RS485*1 CAN*1/2
Communication	4G WiFi 2.4G BT 4.2, BLE USB 2.0*1
Operating Temperature	-30°C ~ +70°C
Storage Temperature	-40°C ~ +85°C
Protection Level	IP65
Work Humidity	Humidity 95%, non-condensing
Vibration standard (Operational)	MIL-STD-810
Impact standard (Operational)	ISO16750
Power	5-36V DC Input ACC, State detection for ignition

SENSOR PERFORMANCE

Angle Measurement Range	Pitch Angle: ±80° Roll Angle: ±180°
Angle Repeatability	<0.05°
Angular Velocity Measurement Range	±450°/s
Resolution	0.01°
Dynamic Accuracy	0.7°
Acceleration Measurement Range	±6g
Update Rate	100Hz
Voltage Input	9-36 V
Power Consumption	0.1-0.24W
Interfaces	CAN/RS-485/RS-232/TTL
Connector Model	GX12 - 4 Pin (Male)
Product Dimensions	37.65524mm
Waterproof Rating	IP68
Operating Temperature	-40~85°C
Storage Temperature	-40~85°C

ACCESSORIES

Tablet	1 Unit
Gnss antenna	2 PCS
Dynamic IMU Sensor	2 PCS
In-vehicle controller	1 PCS
Antenna harness	2 PCS
Main Cable	1 PCS
Data Cable	2 PCS
Power cable	1 PCS
Screw Accessories Pack	1 PCS
Mount	1 PCS

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Manufacturers may update parameters at any time, please refer to the latest product information.

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