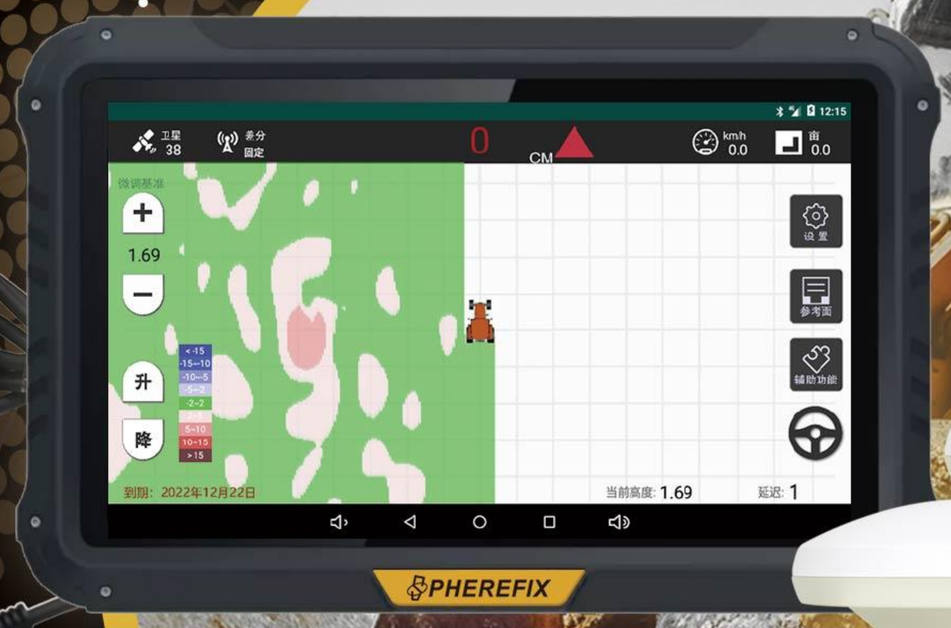
PHEREFIX

SMC10

Mechanical Control

Dozer Control System



SMC10 Dozer Control System

SMC10 Dozer Control System is a smart control solution that enhances dozer precision, efficiency, and safety. It integrates high-precision positioning, sensors, and computing units to provide real-time blade positioning and guidance. Using global navigation and embedded technologies, it supports real-time monitoring and remote control, improving construction quality and reducing labor intensity. It is ideal for land grading, road building, airport runway construction, and other heavy earthmoving tasks, enabling stakeless and coordinated multi-machine operations.

High Precision

It leverages high-precision GNSS positioning, integrating attitude sensing technology, model algorithms, and electro-hydraulic control to achieve centimeter-level accuracy. This integrated approach ensures precise operation of the dozer, meeting pre-defined design specifications even in complex environments.

Stakeless Operation

It offers real-time positioning and guidance by integrating with advanced algorithms with digital design blueprints.It allows operators to work without the need for physical stakes or surveyors, enabling faster land leveling and significantly reducing labor costs and increasing efficiency by up to 50%.

24/7 Continuous Operation

It enables round-the-clock operation, unaffected by low visibility conditions. It allows engineering teams to optimize their schedule, making the most of night-time hours to boost productivity while maintaining safety.

Real-time Monitoring & Control

It provides real-time monitoring of the blade and construction environment. It uses sensor data to adjust the blade position with precision, ensuring optimal performance at all times.

Characteristic

- It uses RTK positioning technology with the positioning accuracy of up to 2 cm.
  It uses valves to adjust the blade height based on guidance.
- It supports the import of design data for seamless conversion and integration.
  A single button press sets the elevation plane, making it simple and fast.
- It provides 3D terrain visualization to assist operators with earthmoving and route planning.
- It is easy to install and operate, allowing farmers to quickly master.
  The intuitive interface simplifies tasks for operators, reducing technical demands.

System composition

GNSS Antenna*2

High-Precision Display and Control Terminal

Gyroscope

ITEM		SPECIFICATION	REMARKS
SATELLITE SYSTEM	GPS	L1, L2, L5	
	GLONASS	L1, L2, L3	
	BDS	B1I, B2I, B3I, B1C, B2a, B2b*	
	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 TABLET	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 ignitio	
GYROSCOPE	Range	±400°/s	
	Resolution	0.000055(°/s)/(LSB)	Condition: ±400°/s
	Zero-drift at Rest	±1°/s	Condition: Horizontal Placement
	10s Smoothing (Zero Bias Stability)	2.03°/h	Condition: Horizontal Static Placement
	Allan Variance (Zero Bias Instability)	1.80°/h	Condition: Horizontal Static Placement
HEADING ANGLE	Range	Z:±180°	
	Heading Accuracy	0.1°	
	Resolution	0.0055°	Condition: Horizontal Placement
MODULE	Communication Interface	4800bps ~ 230400bps	Condition: UART Default: 115200bps
	Output Content	Angular Velocity, Angle	
	Output Rate	0.2Hz ~ 500Hz	Default: 10Hz
	Stratup Time	1000ms (Max Value)	
	Operating Temperature	-40°C~85°C	
	Storage Temperature	-40°C~100°C	
ELECTRICAL PARAMETERS	Supply Voltage	3.3V~5.5V	Typical: 5V
	Operating Current	9.5mA (Typical)	Condition: Operating (5V)
ACCESSORIES	Tablet	1 Unit	
	ECU	1 PCS	
	Gyroscope	1 PCS	
	Gnss antenna	2 PCS	
	Main Cable	1 PCS	
	Data Cable	1 PCS	
	Tablet Power Cable	1 PCS	
	Antenna harness	2 PCS	
	Mount	1 PCS	
	Screw Accessories Pack	1 PCS	
	Support Rod Kit	1 PCS	

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

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