e-survey

eME30

3D GNSS EXCAVATOR GUIDANCE SYSTEM

The eSurvey eME30 is designed with high accuracy and consumes less time by guiding excavator operations. It employs GNSS RTK technology to obtain the bucket's real-time and accurate 3D position information by reading multiple tilt sensors installed on the excavator. The eME30 features intuitive, easy-to-learn software that runs on the Android operating system. The state-of-the-art hardware and software help operators of all skill levels work faster and more efficiently than ever, especially in complex environments. To sum up, you can accomplish more in less time.

Machine Control

Adaptation Flexibility

Support global coordinate library, and provides multilingual versions for global users;
Supports CORS, radio, and other differential modes.
Support multi-project and multi-site management, can quickly switch between multiple sites;
Support backhoe, hydraulic breaker, drum cutter, face shovel, tilt bucket, and other accessories, with fast switching;
Supports bucket tooth tip wear compensation, allowing for high-precision positioning even on older buckets.

New Attachment Support

The eME30 system supports tilt buckets, twisting buckets, hydraulic breakers, drum cutters. Once set up, there is no need to measure again when changing attachments.

Operation Safety

No more traditional survey and stake out,bucket tip is your new tool.
Set up an e-fence as an avoidance zone to decrease accidents and economic compensation while also improving construction site safety.
System abnormal status reminder to prevent problems caused by sensor abnormality or improper operation.

Accomplishing More in Less Time

Quickly calibrate. A breakthrough new calibration procedure that takes only 15 minutes, requires no difficult operation, and can be completed by a single person and machine. It is easy, efficient, and accurate.
Horizontal guide auxiliary lines and horizontal offset display;
Point mark layout function, which can mark the position, perform point library management, and indicate the guidance to the target point;

True and Productivity

Independent innovation technology, the system accuracy reaches 3cm RMS , suitable for projects with strict standard.
Support the Cloud platform Data storage, playback,real-time supervisor and management.The data is real and effective, allowing for remote management of quality and progress.
The whole process data is automatically collected, distributed, and archived, making it convenient for data query, unified analysis, and decision-making assistance;
Construction process data visualized, real-time replay of construction process, intuitive, and construction outcome report can be found as inspection data.

Website & Social media

Product Specification

eME30

3D GNSS EXCAVATOR GUIDANCE SYSTEM

MDP-1 Display	
Product Parameters	
GPU	8 Cores, Supports OpenGLES 3.1
OS	Android 9.0
RAM	2 GB (Optional 4 GB)
ROM	16G ROM (Optional 64 GB), Support TF card (Expandable up to 256G)
Screen Size	10.1 inch TFT LCD
Resolution	1024 x 600
Brightness	750 cd/m^2
Touch panel	Capacitive(Supports five-finger touch)
Communications	2.4GHz/5.8GHz WiFi, IEEE 802.11 a/b/g/n/ac
	Supports WiFi hotspot sharing
	Supports Ethernet and 4G simultaneous online
	BT2.1+EDR/3.0/4.1LE/4.2BLE
	4G/LTE (Dual SIM optional)
	GNSS (GPS/BDS/GLONASS)
	Optional centimeter-level positioning board
	Optional inertial module
	Built-in microphone (optional)
	Built-in speaker
I/O Interface	RS-232*2
	RS-485*1
	Support 250K/500K CAN*1/2 (Support J1939,CANopen,ISO15765)
	DI*2, DO*2
	USB 2.0*1
	720p*4/1080p*2AHD camera inputs
	12V DC external power supply*2
	Ethernet*1

Product Parameters	
Power Management	9-36V DC input, support ignition detection
Water/dust Proof	IP65
Vibration Standards (at work)	MIL-STD-810
Shock Standards (at work)	IS016750
Humidity Resistance	95% Non-condensing
Operating Temperature	-20°C ~ +70°C
Storage Temperature	-40°C ~ +85°C
Dimension(W*H*D)	281 mm x 181 mm x 42 mm
Weight	1.5 kg
Function Buttons	Power on/off button*1, Customized function buttons*2
Connector	Standard industrial grade waterproof connector
	SMA female*2(GNSS & 4G)
	TNC female connector*2 (GNSS)

MDP-1 Display				
Performance Indicators				
Channels	1408 channels, based on NebulasIV			
Initialization	<5 seconds (Typical)			
Satellites Tracking	BDS:B1I, B2I, B3I, B1C, B2a, B26b			
	GPS:L1C/A, L1C, L2P (Y), L2C, L5			
	GLONASS:L1, L2			
	Galileo:E1, E5a, E5b, E6			
	QZSS:L1, L2, L5, L6			
Initialization Reliability	> 99.9%			
Differential Format	RTCM3.3/3.2/3.1/3.0			
Data Format	NMEA0183			
	Unicore			
Observation Data Update Rate	20 Hz			
Positioning Data Update Rate	20 Hz			
Orientation Precision (RMS)	0.2°/1m			
Timing Accuracy (RMS)	10 ns			
Velocity Accuracy (RMS)	0.03 m/s			
Positioning Accuracy (RMS)	RTK: H: 8 mm + 1 ppm; V: 15 mm + 1 ppm			
	Single: H: 1.5 m; V: 2.5 m			
Observation Accuracy(RMS)	BDS	GPS	GLONASS	GALILEO
B1I/B1C/L1C/L1 C/A/E1/G1 Code	10cm	10cm	10cm	10cm
B1I/B1C/L1C/L1 C/A/E1/G1 Carrier phase	1mm	1mm	1mm	1mm
B3I/L2P(Y)/L2C/G2 Code	10cm	10cm	10cm	10cm
B2/L2P(Y)/L2C/G2 Carrier Phase	1mm	1mm	1mm	1mm
Time to First Fix (TTFF)	Cold Start < 10s			
	Recapture < 1s			
Radio	Supported frequencies 410-470Mhz			
	Air baud rate 19200/9600			
	Protocol: TRIMTALK, TRIMMK3; TRANSEOT;SOUTH;SATEL			

Product Specification

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3D GNSS EXCAVATOR GUIDANCE SYSTEM

MA Rugged GNSS Antenna	
Signal Received	▪ GPS: L1/L2/L5 ▪ GLONASS: L1/L2/L3 ▪ BEIDOU: B1/B2/B3 ▪ Glileo: E1/E5a/E5b/E6 ▪ QZSS: L1/L2/L3/E6 ▪ IRNSS: L5 ▪ SBAS: L1/L5 ▪ L-band
Nominal Impedance	50Ω
Polarization	RHCP
Axial Ratio	≤3dB
LNA Gain	40±2dB
Operation Current	≤45mA
Dimension	Φ150×53mm
Connector	TNC female
Differential Transmission Delay	≤5ns
Temperature	Working temperature: -45~+85°C Storage temperature: -55~+85°C
Waterproof	IP69K
Weight	≤600g
Mounting	BSW5/8"-11 screw, depth10-11mm

MI-3 Dynamic Inclination Sensor	
Signal output	CAN 2.0
Water/dust Proof	IP68
Measuring Range	Pitch +- 80° Roll ± 180°
Absolute Accuracy	0.30°
Resolution	0.01°
Repeatability	<0.03°
Dynamic Accuracy	$0.01°±0.3°
Hysteresis	0.05°
Mounting Direction	Vertical
Supply Voltage	9- 36 VDC
Operating Temperature	-40°C (-40°F)- +75°C (+167°F)
Storage Temperature	-40°C (-40°F) - +85°C (+185°F)
Shock Resistance	s2000 g (half sine 0.5ms,)
Vibration Resistance	10 g (10 Hz to 2000Hz)

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