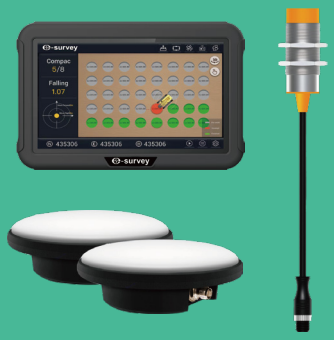
e-survey

eMC10

3D GNSS CRANE GUIDANCE SYSTEM



The eSurvey eMC10 Crane Intelligence System integrates multi-constellation precise positioning with real-time 3D guidance via sensor fusion, accurately tracking the crane hook's coordinates in real time.
Using coordinate files as design blueprints, it swiftly meets design specifications, bypassing conventional surveying.
It allows the operator to complete tasks quickly and precisely, reduces rework, increases productivity, and raises project profitability.

Machine Control

Flexible Adaptation

Adaptable to different brands and types of cranes with no system limitations.
Support global coordinate library, multi-project, multi-site management, and network differential.

Data Tracing and Platform Communication

Automatically collect and flow all process data, electronically archiving it for easy data query, statistical analysis, and decision-making support.
Construction process data visualization displays in real time, allowing for playback of the construction process.
Communicate with the digital construction management platform in two directions ways. Remotely send out construction tasks and visualize construction work data.

Operation Convenience

Allow clients to create design files locally, eliminate the need for complex design processing conversion on PC software.
Enable fast construction.
It is unaffected by the environment and allows 24-hour construction.
Automatically identify ramming points and record key data such as the number of ramming strokes, ramming distance, and ramming sedimentation.

Security

Stakeless construction enhances site safety by eliminating the need for surveyors to sample the datum line. The electronic fence also enables the setup of danger avoidance zones.

Quality Monitoring

Allow remote monitoring of the construction process, quality, and progress.
Enable prompt detection of deviations and provide early warning for corrective action.
Real-time recording and transmission of key parameters of the construction process to ensure construction quality.

Wide Application

Widely used in foundation reinforcement projects for residential buildings, highways, airports, railroads, squares, stadiums, industrial plants, ports, wharves, warehouses, petrochemical plants, and nuclear power plants.

Website & Social media

Product Specification

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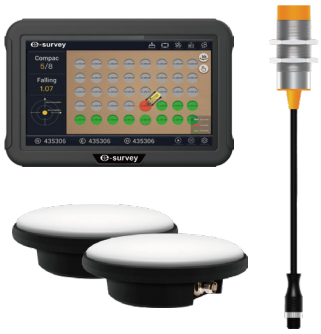

MA-4 GNSS Antenna	
Signal Received	■ GPS: L1/L2/L5 ■ GLONASS: L1/L2/L3 ■ BEIDOU: B1I/B2I/B3I/B1C/B2a/B2b ■ Glileo: E1/E5a/E5b/E6 ■ QZSS: L1/L2/L3/E6 ■ IRNSS: L5 ■ L-band
Nominal Impedance	50Ω
Polarization	RHCP
Axial Ratio	≤3dB
Horizontal Coverage Angle	360°
LNA Gain	L1 band:38±2 dB; L12 band:38±2 dB
Operation Current	≤45 mA
Dimension	Φ 150 mm × 62.2 mm
Connector	TNC female
Differential Transmission Delay	≤5 ns
Temperature	Working temperature: -45 - +70℃ Storage temperature: -55 - +70℃
Waterproof	IP69K
Weight	≤450 g
Mounting	BSW5/8"-11 screw, depth12-14 mm
Operating Voltage	+3.3 - +18 VDC
Humidity	95% Non-condensing

eDS-2 Drop Sensor	
Operating Frequency	13.56 MHz
Support Protocol	ISO 15693 standard
Read/write Distance	0 - 25 mm
Communication Interface	RS485
Communication Rate	9600~115200 bit/s
Power Supply Voltage	24V DC(9 - 30 V)
Maximum Current	<0.07A@24V DC
Indicator	2 LED indicators
Dimension	φ30 mm x 87.5 mm
Weight	100g
Fixing Method	Thread screwing or nut fixing
Shell Material	Nickel-plated brass
Shell Color	Silver
Working Temperature	-40°C - +85°C
Working Humidity	≤ 65 mA @ 10 V DC, ≤ 60 mA @ 24 V DC
IP Rating	IP67

eDS-2 Tension Sensor (Optional)	
Range	1T, 2T, 3T, 5T, 10T, 20T, 50T
Rated Output	2.000 ± 0.0005 mV/V
Non-Linear	0.05%FS
Hysteresis	0.05%FS
Repeatability	0.05%FS
Operating Temperature Range	-20℃ - 80℃
Zero Temperature Drift	0.03%FS
Input Resistance Value	400 ± 50 Ω
Output Resistance Value	350 ± 5Ω
Insulation Resistance Value	〉2000MΩ
Operating Excitation Voltage	100VDC
Maximum Excitation Voltage	15VDC
Safety Overload Capacity	120%
Wire Length	3 meters, 5 meters
Wiring Method	Red line: Power positive Black line: Power negative
	Green wire: signal positive White wire: signal negative

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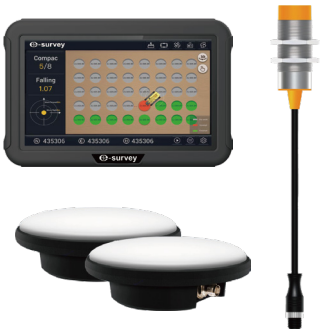

MDP-1 Display	
Product Parameters	
GPU	8 Cores, Supports OpenGLES 3.1
OS	Android 9.0
RAM	2 GB (Optional 4 GB)
ROM	16G ROM (Optional 64 GB), Support TF card (Expandable up to 256G)
Screen Size	10.1 inch TFT LCD
Resolution	1024 x 600
Brightness	750 cd/m^2
Touch Panel	Capacitive(Supports five-finger touch)
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			

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