

Alpha 6000

Industrial Radio Remote Control Systems



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The Alpha 6000 is a highly sophisticated industrial radio remote control system. The versatile features of Alpha 6000 permit its usage in a wide range of industrial applications. The system can be used to control all types of industrial cranes, tower cranes, building construction equipment, automatic control systems, mining equipment, and many others.

The Alpha 6000 incorporates numerous advanced safety features and software programming that will ensure maximum security and safety in the workplace.

Multi-Safety Loop Design

Advanced System Software

The system is equipped with auto shutdown function that is able to shut down the entire system within 1 second when the transmitter transmission is interfered or interrupted. This is to ensure operation safety.

Secure Operation

1. The utilization of unique 20-24 bits security ID codes will ensure that only commands from a matching control transmitter can be carried out without any interference from other radio systems.
2. The system is EN ISO 13849-1 · Category 3 and CE approved. The system utilizes dual independent loops, emergency stop contact and MAIN relay control to ensure the system reliability. The ESD (Electrostatic Discharge) protection is more than 15KV.

Emergency Stop Button Press-and-Release Checking

Prior to the transmitter startup, press and release the emergency stop button to ensure the emergency stop button function normally.

System Dynamic Self-Checking

The system MAIN relay is equipped with dynamic self-checking function to ensure the emergency stop function is activated safely.

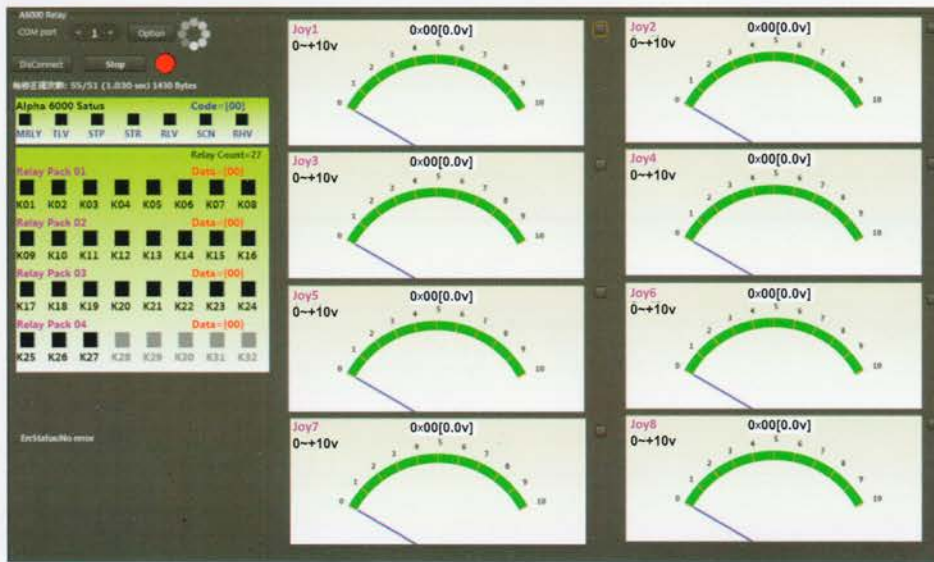
Tilt and Fall Protection

Whenever the transmitter tilts or falls, the tilt and fall protection is able to provide system protection.

Receiver & Transmitter Special Design

Durable and Waterproof

1. The transmitter casing is composed of special rubber which features wearable, high temperature resistance, anti-UV, oil, acid, water, dust and alkaline proof. The self-developed no contact joystick excludes the disadvantages of friction and direct contact operation. The operating life and reliability are for a minimum of 1 million operating cycles, no electronic life. The upgraded transmitter guardrail is rugged and durable.
2. The receiver enclosure is made of 100% aluminum alloy. It may exclude the static resources completely and avoid interference from radio radiation. The isolating analog output also with better anti-interference performance.

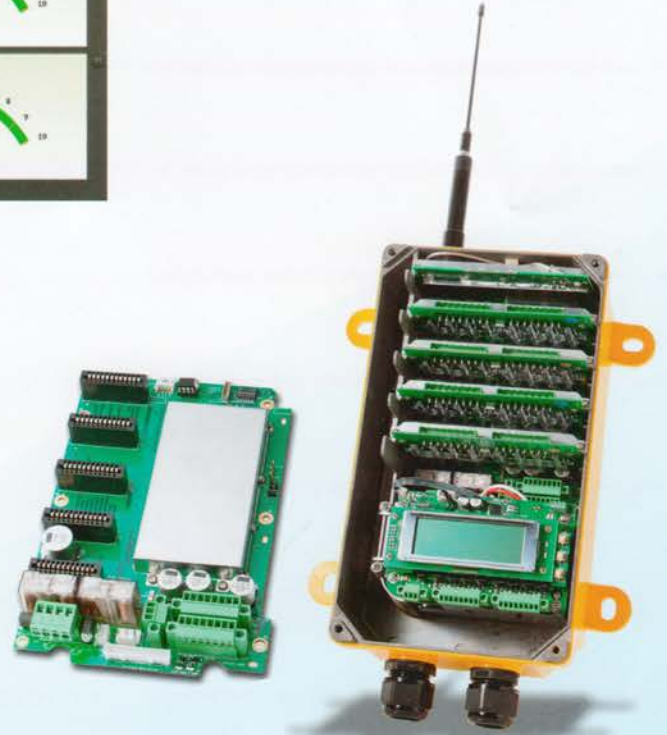


RS485 Interface

By working with proportional output board, the relay and proportional joystick output can be delivered via an RS485 interface card (optional). The remote control output can be extended to PLC and PC interface for the application of net type control.

Modularized Construction

Receiver internal circuit is completely modularized, including: receiving RF module, decoding module, relay module, proportional output module, LCD display module, power module and digital joystick extension relay module. It is easy for the users to replace and extend by themselves.



LCD display module shows the current receiver status, including: every relay output, proportional output, receiving signal strength, error messages...etc.

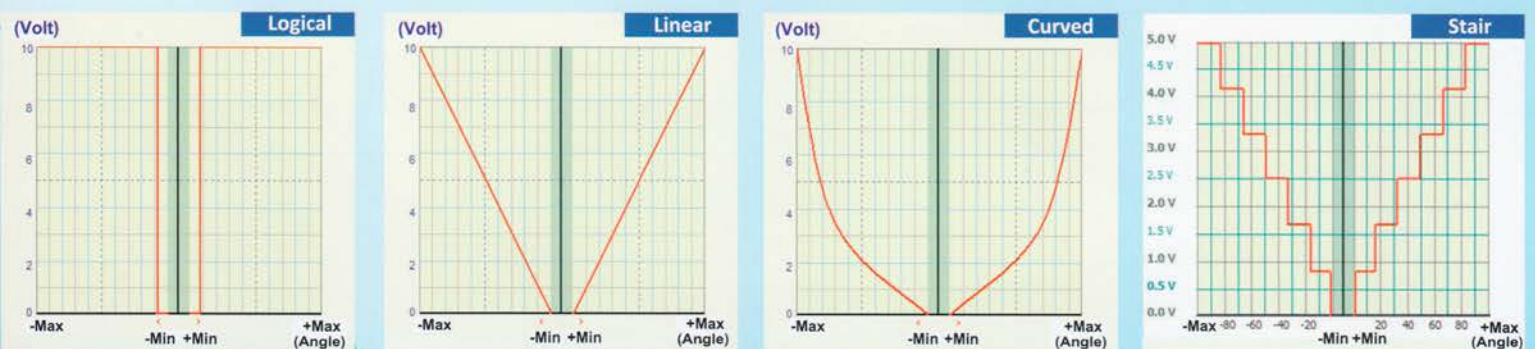


System Programming

All the Alpha 6000 function setting and selection can be programmed via the Alpha 6000 software and in-house designed programmer.

Proportional output curve can be compiled and relay can be allocated as will. There are 15 types of joystick mode and 8 types of proportional joystick output for output curves to choose from. Optional multi-voltage/current is available, no need to replace the hardware.

The software setting is available with special modes and function, such as: receiver auto-scan, random, tandem, pitch & catch modes and sick laser function.



Alpha 6000 - Transmitter

Frequency Range : PLL 433MHz
Transmitting Range : over 100 Meters
Continuous Operating Time : 30+ Hours (2050mA)
Operating Current : approx. 70mA
Sleep Mode Current : approx. 10mA
Security ID Code : 1,048,576 sets (20 bit)
Channel Spacing : 25KHz
Frequency Control : VTCXO + Synthesizer (PLL)
Frequency Drift : < 3ppm @ -10°C ~ 70°C
Frequency Deviation : < 1ppm @ 25°C
Spurious Emission : > 60dBc
Transmitting Power : 1.0mW
Emission : 2FSK
Antenna Impedance : 50 ohms
Enclosure Rating : IP-65
Source Voltage : 7.2 V (2050mA low self-discharge
NiMH battery pack)
Operating Temperature : -10°C ~ +50°C
Shock Resistant : 50G
Dimension : 268mm X 162mm X 178.5mm
Weight : 1,600g (with 2050mA battery pack)

Alpha 6000 - Receiver

Frequency Range : PLL 433MHz
Channel Spacing : 25KHz
Frequency Control : VTCXO + Synthesizer (PLL)
Frequency Drift : < 3ppm @ -10°C ~ 70°C
Frequency Deviation : < 1ppm @ 25°C
Sensitivity : $\leq -120\text{dBm}$
Decoding Reference : 2FSK
Antenna Impedance : 50 ohms
Data Decoding Ref : Quartz Crystals
Radiation Leakage : < -75dBm
Proportional Voltage Output Impedance : $\geq 1\text{k}\Omega$
Proportional Current Output Impedance : $\geq 250\Omega$
Responding Time : 45mS ~ 150mS
(pushbutton / EMS / joystick)
Enclosure Rating : IP-65
Source Voltage : 100 ~ 240VAC @ 50/60 Hz. (standard)
Power Consumption : 32W
Operating Temperature : -10°C ~ +60°C
Shock Resistant : 40G
Output Contact Rating : 250V @ 6A
Dimension : 300mm X 171mm X 115mm
Weight : 4,500g (include the cable gland)

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