

Industrial Overhead Crane Wireless Remote Control System

Product Specification, Wiring Matrix & Integration Manual

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1. EXECUTIVE SUMMARY & OVERVIEW

The Nomi Industrial Overhead Crane Wireless Remote Control System, engineered by Henan Nomi Electronic Technology Co., Ltd., is an heavy-duty radio control system built specifically for bridge cranes, overhead travelling cranes, dual-hoist systems, and complex material handling setups.

PRODUCT PARAMETERS

F21-E1 >

212MM



80MM

RECEIVER

205MM



57MM

TRANSMITTER

Working voltage: 12 V / 24 V / 36 V/48 V / 110 V / 220 V / 380 V

Remote control distance: 100M

Sensitivity: -110 dBm

Output: 6 action outputs

Batteries: AA *2

Working mode: Radio wave signal

Power: ≤10dBm

Frequency:315MHz/868MHz/50-60HZ

Operating overhead cranes via tethered wired controllers exposes shop-floor operators to dangerous blind spots, restricted mobility, and direct proximity to suspended heavy loads. The Nomi remote control solution frees operators from cable limitations, allowing precise maneuvering from an optimal vantage point up to 100 meters away. Built with dual-speed joystick/pushbutton options, advanced anti-collision frequency hopping, and IP65 ruggedized casing, this system maximizes productivity while ensuring strict adherence to industrial lifting safety standards.

2. TECHNICAL SPECIFICATIONS

Technical Parameter	Specification & Engineering Value
Manufacturer & Brand	Henan Nomi Electronic Technology Co., Ltd. / Nomi
Target Machinery	Single/Double Girder Overhead Cranes, Bridge Cranes, Gantry Cranes
Control Interface	6 / 8 / 10 / 12 Buttons (Single/Dual Speed) or Dual Multi-Axis Joysticks
Radio Frequency Range	VHF: 310–331 MHz / UHF: 425–446 MHz (FHSS Anti-Interference)
Operating Distance	Up to 100 meters (328 feet) unobstructed line-of-sight
Transmitter Power	2 x AA 1.5V Batteries (Low power consumption, up to 100 hours)
Receiver Input Voltage	24V / 48V / 110V / 220V / 380V AC (50/60Hz Self-Adapting)
Output Relay Capacity	5A / 250V AC Heavy-Duty Dry Contacts
Protection Rating	Receiver IP67 / Transmitter IP65 (Glass-Fiber Reinforced Nylon)
Operating Temperature	-35°C to +85°C (-31°F to +185°F)

3. KEY SYSTEM FEATURES & ADVANTAGES

Dual-Speed Precision Control: Two-stage pushbuttons or analog joysticks provide smooth acceleration control for hoisting (Up/Down), trolley travel (East/West), and long-bridge travel (North/South), minimizing load swing.

32-Bit Smart Security Encoding: Incorporates over 4.3 billion non-repeating security ID codes with advanced Hamming code error checking, preventing signal crosstalk or accidental activation from adjacent factory cranes.

Extreme Environment Durability: Constructed from 30% glass-fiber reinforced polymer with rubber corner bumpers. Resistant to high impacts, acid splashes, industrial oil, and extreme vibration.

Hardware Redundancy & E-Stop Safety: Fully compliant with EN ISO 13849-1 Category 3 PL d standards. Features a mushroom-head Emergency Stop button that cuts off main power relays in under 20 milliseconds upon activation.

4. SYSTEM PACKAGE COMPONENTS

Item Number	Component Description	Quantity Included
1	Handheld / Chest-Pack Wireless Transmitter	1 Unit (Optional Master/Slave Dual Transmitters)
2	IP67 Heavy-Duty Industrial Receiver Box	1 Unit
3	High-Gain Omnidirectional Antenna & Extension Lead	1 Assembly
4	Pre-Wired Multi-Core Cable Harness with Numbered Leads	1 Set
5	Protective Leather Case, Shoulder Strap & Mounting Kit	1 Set
6	Wiring Schematic Diagram & Installation Manual	1 Copy

5. SYSTEM WIRING ARCHITECTURE & PINOUT MATRIX

5.1 Receiver Wiring Lead Assignments

Lead Wire Color / Label	Signal Function	Target Connection Point	Operation Logic
Red / Black	Main System Power	220V / 380V AC Power Terminal	Powers Receiver Internal Controller
Orange (K0)	Main Power Contactor	Main Line Contactor Relay Circuit	Closes Main Contactor on E-Stop Release
Pink (COM)	Common Line Input	Control Voltage Supply (24V/110V AC)	Feeds Power to All Output Relay Contacts
Yellow (Wire 1/2)	Hoist UP (1st/2nd Speed)	Hoist Upward Magnetic Contactors	Engages Slow / Fast Hoist Upward Lifting
Green (Wire 3/4)	Hoist DOWN (1st/2nd Speed)	Hoist Downward Magnetic Contactors	Engages Slow / Fast Hoist Downward Lowering
Blue (Wire 5/6)	Trolley EAST (1st/2nd Speed)	Cross-Travel Left/East Contactors	Controls Trolley Cross-Travel Motion
White (Wire 7/8)	Trolley WEST (1st/2nd Speed)	Cross-Travel Right/West Contactors	Controls Trolley Cross-Travel Motion
Gray (Wire 9/10)	Bridge NORTH (1st/2nd Speed)	Long-Travel Forward Contactors	Drives Crane Long-Travel Bridge Motion
Brown (Wire 11/12)	Bridge SOUTH (1st/2nd Speed)	Long-Travel Reverse Contactors	Drives Crane Long-Travel Bridge Motion

5.2 Motion Control Speed Logic

Motion Command	Half-Press Action (Stage 1)	Full-Press Action (Stage 2)
Up / Down Motion	Triggers Inching / Slow Speed Contactor	Triggers High-Speed Acceleration Relay
East / West Motion	Triggers Slow Trolley Positioning	Triggers High-Speed Trolley Travel
North / South Motion	Triggers Slow Bridge Alignment	Triggers High-Speed Long Travel

6. STEP-BY-STEP INSTALLATION & COMMISSIONING

Receiver Unit Mounting: Turn off the main power to the crane electrical box. Mount the receiver box vertically outside the metal control panel using rubber vibration isolators. Point the antenna upward for clear signal transmission.

Control Wiring Integration: Wire the power input (Red/Black) to the transformer secondary circuit. Connect the output relay leads (Numbered Wires) to the corresponding coil terminals of the crane magnetic contactors according to the wiring matrix.

Power-On & Pairing Setup: Insert 2 AA batteries into the transmitter. Release the Emergency Stop switch and turn the rotary safety key. The LED indicator will flash green, signaling active radio pairing with the receiver.

Safety System Validation: Test the Emergency Stop button during crane movement to ensure all magnetic contactors release immediately within 20 milliseconds.

7. TROUBLESHOOTING & MAINTENANCE

Issue 1: Receiver Status LED Remains Dark

Cause & Solution: No AC power supply input or blown internal control fuse. Check control panel circuit breakers and replace the receiver's internal 0.5A fuse if necessary.

Issue 2: Transmitter LED Flashes Red Continuously

Cause & Solution: Low battery voltage or Emergency Stop button depressed. Replace AA batteries and ensure the mushroom E-Stop button is pulled out.

Routine Maintenance: Inspect wiring cable entry glands every 3 months to preserve IP67 waterproof integrity. Clean industrial grease off pushbuttons using a clean dry cloth.

8. COMPANY INFORMATION & TECHNICAL SUPPORT

Manufacturer: Henan Nomi Electronic Technology Co., Ltd.

Official Website: <https://www.spiremade.com>

Sales & Technical Email: sales@spiremade.com

Product Specialization: Overhead Crane Remotes, Electric Hoist Controllers, Hydraulic Wireless Systems, Concrete Pump Truck Remote Controls.