

Hydraulic Proportional Remote Control for Concrete Pump Truck Product Specification, System Architecture & Installation Manual

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EXECUTIVE SUMMARY & OVERVIEW

The Nomi Hydraulic Proportional Remote Control System for Concrete Pump Trucks, engineered by Henan Nomi Electronic Technology Co., Ltd., is an industrial-grade, heavy-duty wireless control solution specifically designed for concrete pumping machinery.

HYDRAULIC KIT

Remote control accessories display



Operating a concrete pump truck requires micro-meter precision, continuous boom adjustment, and zero-latency concrete flow management under extreme vibration and harsh construction environments. The Nomi remote control system converts manual or hydraulic joystick commands into precise high-frequency Pulse Width Modulation (PWM) or CAN-bus control signals. This enables pump operators to manipulate multi-section boom arms, swivel slewing, and main pumping hydraulics from a safe viewing distance, significantly reducing labor risks and maximizing concrete pouring precision.

TECHNICAL SPECIFICATIONS

Manufacturer and Brand: Henan Nomi Electronic Technology Co., Ltd. / Nomi Target Machinery: Concrete Pump Trucks, Boom Pumps, Trailer Concrete Pumps, Line Pumps
Signal Output Interface: PWM Proportional Output, On/Off Relay Output, CAN-bus (J1939/CANopen)
Operating Voltage Range: 12V DC - 32V DC (Wide-Voltage Transient Protection)
Wireless Frequency Range: 433 MHz / 868 MHz / 2.4 GHz (FHSS Frequency Hopping)
Control Distance: Up to 300 meters (984 feet) clear line-of-sight
Proportional Control Accuracy: Less than 1 percent nonlinearity
Response Time: Less than 15 milliseconds
Protection Rating: Receiver IP67 (Dust-tight and Waterproof), Transmitter IP65
Operating Temperature: -25 degrees C to +70 degrees C (-13 degrees F to +158 degrees F)
Battery Endurance: Up to 24 hours continuous operation on a single charge

KEY SYSTEM ADVANTAGES

3.1 Proportional Control Precision Dual multi-axis proportional joysticks allow fine-tuned micro-meter adjustments of boom speed. Pushing the joystick slightly yields minimal hydraulic oil flow for high-precision placement, while full deflection delivers maximum pumping velocity.

3.2 Advanced Anti-Interference Architecture Utilizing Frequency Hopping Spread Spectrum (FHSS) technology, the system continuously scans and switches channels in real time to defeat electromagnetic interference from high-voltage cables and heavy construction equipment nearby.

3.3 Industrial Grade Ruggedized Casing The transmitter features high-impact, glass-fiber reinforced nylon resin with rubberized corner bumpers. It withstands drops from up to 1.5 meters onto concrete, concrete splatter, and continuous outdoor rain exposure.

3.4 Integrated Safety Architecture Fully compliant with EN ISO 13849-1 Category 3 PLd safety standards. Features dual-CPU hardware redundancy and an instant mushroom-head Emergency Stop button that immediately closes the main hydraulic dumping valve upon activation.

COMPONENT PACKAGE CHECKLIST

Item 1: Wireless Transmitter Unit (Joystick Chest Pack with Shoulder Harness and 2 Rechargeable Lithium Batteries) Item 2: Heavy-Duty Industrial Receiver (Pre-potted Epoxy Circuit Board with Shock-Absorbing Rubber Mounts) Item 3: High-Gain Omnidirectional Antenna with Extension Cable Assembly Item 4: Color-Coded Pre-Wired Automotive Wiring Harness with Deutsch Waterproof Connectors Item 5: Battery Charger Station with 12V DC Vehicle Power Adaptor and 220V AC Power Cable Item 6: Technical Manual and Electrical Wiring Diagram Schematic

SYSTEM WIRING & INTERFACE DEFINITION

5.1 Electrical Wiring Definitions

Power Input Red Wire: Power Positive (+24V DC Input, Protected by 15A Inline Fuse)
Power Input Black Wire: Ground Negative (Common Vehicle Chassis Ground)
Emergency Stop Signal Yellow Wire: Emergency Stop Output (Triggers Hydraulic Dump Valve Relay)
Main Pump On Signal Green Wire: Main Concrete Pumping Engage Signal
Main Pump Reverse Signal White Wire: Pumping Anti-Block Reverse Action Signal
Boom Arm 1 Proportional Output Blue Wire: Section 1 Boom Up and Down PWM Control Signal
Boom Arm 2 Proportional Output Violet Wire: Section 2 Boom Extend and Retract PWM Control Signal
Slewing Swivel Output Orange Wire: Turret Clockwise and Counter-Clockwise Rotation PWM Signal
Engine Speed Control Gray Wire: Throttle Acceleration / RPM Increase Signal

5.2 Compatible Hydraulic Valve Systems

Electro-Hydraulic Proportional Valves: Fully compatible with Danfoss PVG32, Hawe PSL/PSV, Rexroth, and Parker valve blocks. Pump Truck Brand Adaptability: Plug-and-play compatible with Sany, Zoomlion, Schwing, Putzmeister, CIFA, and XCMG concrete pump trucks.

STEP-BY-STEP INSTALLATION & CALIBRATION GUIDE

Step 1: Receiver Enclosure Mounting Mount the Nomi receiver inside the electrical control cabinet or on the chassis frame using rubber vibration dampers. Position the external antenna on top of the vehicle cabin for optimal signal coverage.

Step 2: Electrical Cable Integration Connect the main power supply directly to the vehicle 24V battery circuit via a dedicated fuse. Route the pre-fabricated Deutsch wiring harness to the main hydraulic proportional valve coils and relay interface.

Step 3: Joystick Deadband & Max Flow Calibration Power on the receiver setup mode. Move each transmitter joystick through its full motion range to calibrate zero-position deadband and maximum hydraulic oil flow thresholds.

Step 4: Operational Safety Check Perform a functional test before mixing concrete: Verify that the Emergency Stop instantly cuts all boom hydraulics within 20 milliseconds, and test anti-block reverse pump function.

TROUBLESHOOTING & FIELD MAINTENANCE

Issue 1: Receiver Status LED Blinks Red Continuously Cause and Solution: Low vehicle input voltage or signal loss. Check if the battery voltage drops below 18V DC under load, and verify that the antenna cable is securely tightened.

Issue 2: Boom Movement is Jerky or Non-Linear Cause and Solution: PWM frequency mismatch or hydraulic valve contamination. Adjust the PWM output frequency setting inside the receiver menu to match the valve solenoid specification (typically 100 Hz to 200 Hz).

Routine Maintenance Schedule: Inspect wiring harnesses for wear every 100 operating hours. Clean hydraulic oil residue off the transmitter using a mild solvent or damp cloth.

COMPANY INFORMATION & TECHNICAL SUPPORT

Manufacturer: Henan Nomi Electronic Technology Co., Ltd.

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

Sales and Technical Email: sales@spiremade.com

Product Lineup: Concrete Pump Truck Remotes, Industrial Joystick Controls, Construction Crane Wireless Systems, Electro-Hydraulic Proportional Controllers.