

Tuhorse TCB50M230DLX

Tuhorse 5HP 230V 1-Phase Deluxe Control Box Instruction Manual

Model: TCB50M230DLX

[Overview](#)

[Safety](#)

[Specifications](#)

[Setup](#)

[Operation](#)

[Maintenance](#)

[Troubleshooting](#)

[Warranty & Support](#)

1. PRODUCT OVERVIEW

The Tuhorse 5HP 230V 1-Phase Deluxe Control Box is designed for use with major North American single-phase submersible motors in deep well pump applications. This control box serves as a compatible replacement for Franklin part# 2821139310, Goulds CB50412MC, and Pentek Sta-Rite SMC-CRP5021.

Key features include a built-in magnetic contactor with a 24V coil, powered by an internal 230V to 24V transformer or an external 24V irrigation controller signal. It provides 24V low voltage pilot power to the pressure switch or float switch, enhancing safety and allowing for thinner gauge wiring. The robust steel casing is NEMA 3 rated for both indoor and outdoor use.



Image 1: Tuhorse Deluxe Control Box showing external dimensions (14.25" x 10.25" x 6.5").

2. SAFETY INFORMATION

WARNING: Always disconnect the electrical power source before opening the control box cover or performing any maintenance or installation procedures. Failure to do so can result in serious injury or death from electrical shock.

- Installation and servicing must be performed by qualified personnel only.
- Ensure all local and national electrical codes are followed.
- Verify that the power supply voltage matches the control box specifications (230V).
- Do not operate the control box if it is damaged.
- Keep the control box dry and protected from environmental elements beyond its NEMA 3 rating.

DELUXE CONTROL BOX WITH MAGNETIC SWITCH												
IP54	HP	1.5	2.0	3.0	4.0	5.0	7.5	10	15			
	Power voltage	V220			V230			50/60Hz				
	1-Phase				●			●				
	Capacitor (Run)	MFD(μF)										
		10	15	20	25	30	35	45	60	70	80	135
Capacitor (Start)	MFD(μF)											
	40	50	70	90	120	200	230	290	530	670		
Overload Protection (Main)	Amp.											
	6	7	8	10	11	15	20	35	50	60	70	90
Overload Protection (Start)	Amp.											
	7	8	9	10	15	18	20	25				
Warning! Disconnect the electrical power source before opening the cover												
Attention! Débranchez la source d'alimentation électrique avant d'ouvrir le capot												
Atención! Desconecte la fuente de alimentación antes de abrir la tapa.												

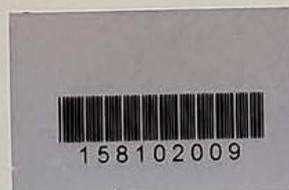
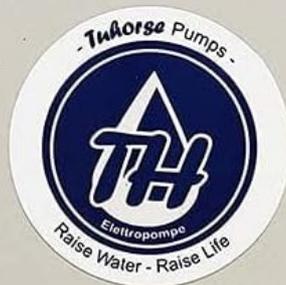


Image 2: Top view of the control box lid, displaying the internal specification label and warning regarding power disconnection.

3. SPECIFICATIONS

Model Number	TCB50M230DLX
Horsepower	5 HP
Voltage	230V AC
Phase	1-Phase
Amperage Capacity	35 Amps
Wattage	3700 Watts
Material	Steel Casing
Dimensions (L x W x H)	14.25 x 10.25 x 6.5 inches
Item Weight	16 pounds
NEMA Rating	NEMA 3 (Indoor and Outdoor Use)
Knockouts	2 x 1"/1.25" tangential for power, 1 x 1/2" for pilot signal
Compatible Replacements	Franklin Part# 2821139310, Goulds CB50412MC, Pentek Sta-Rite SMC-CRP5021

4. SETUP AND INSTALLATION

Before beginning installation, ensure the main power supply to the pump system is disconnected. This control box is designed for easy integration into existing deep well pump systems.

4.1 Wiring Connections

The control box features terminal strips that accept up to #4 wire. Utilize the provided knockouts for power and pilot signal wiring. The 24V low voltage pilot power circuit allows for the use of thinner gauge wires for control signals, reducing installation complexity and increasing safety.

- **Power Input:** Connect the 230V AC power supply to the designated terminals (L1, L2).
- **Pump Output:** Connect the submersible pump motor wires (Yellow, Black, Red) to the corresponding terminals.
- **Control Signal:** Connect your pressure switch, float switch, remote switch, irrigation controller, or timer to the 24V control signal terminals (GND, CONTROL SIGNAL). The contactor coil is powered by an internal 24V transformer, eliminating the need for external power to the pilot control switch.
- **Bypass Option:** The internal 24V transformer can be bypassed if using an external 24V signal from devices like Rain Bird or Hunter timers/zone controllers.

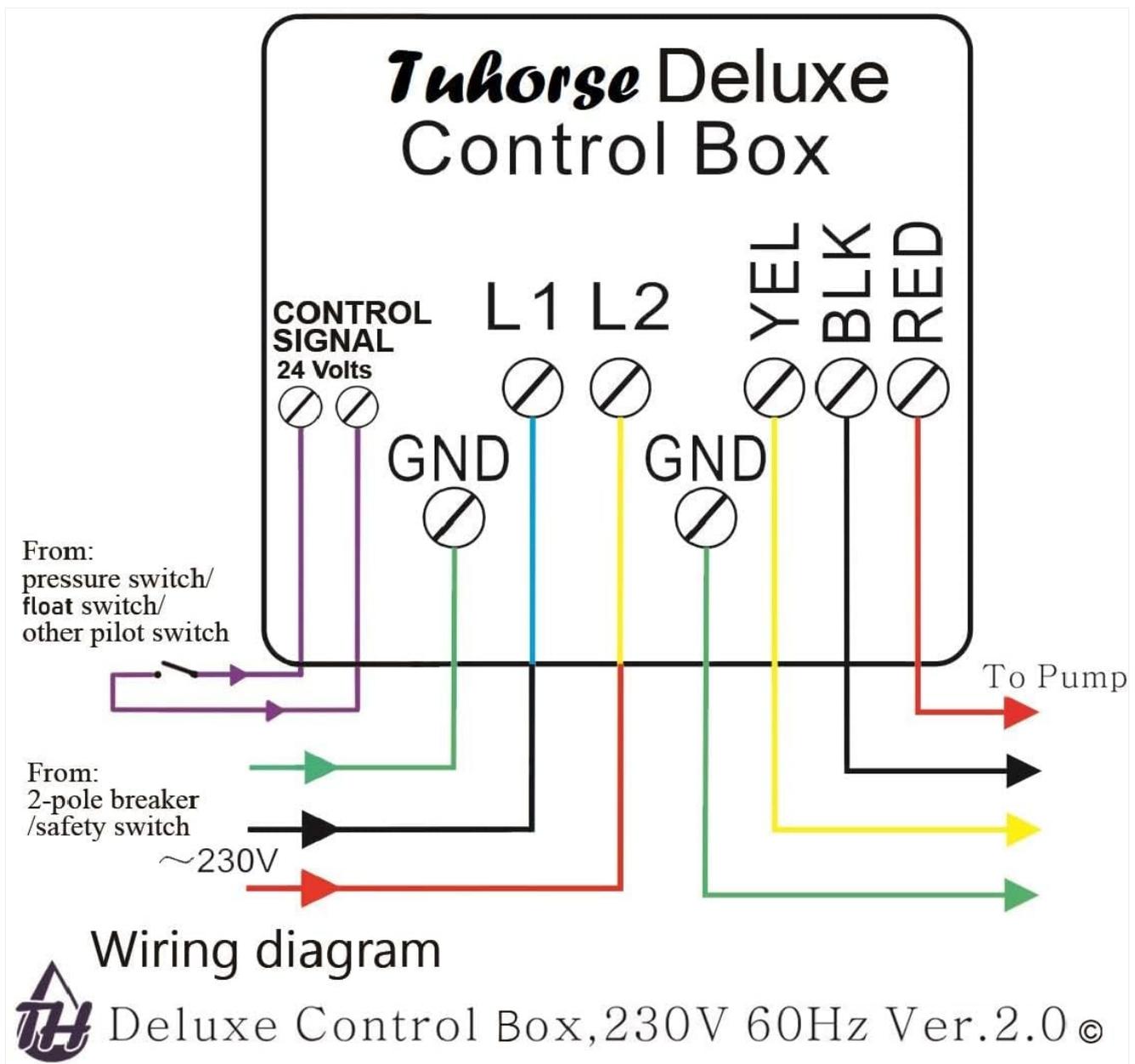


Image 3: Detailed wiring diagram illustrating connections for power input, pump output, and 24V control signal from various pilot switches.

4.2 Mounting

Mount the control box securely in a location that is easily accessible for servicing but protected from direct impact. Ensure adequate ventilation around the unit. The NEMA 3 rating allows for both indoor and outdoor installation, but protection from extreme weather conditions is recommended to prolong lifespan.

5. OPERATING INSTRUCTIONS

Once properly installed and wired, the Tuhorse Deluxe Control Box operates automatically based on the signal from your connected pilot control device.

1. **Power On:** After completing all wiring and ensuring safety, restore power to the control box.
2. **Pilot Signal Activation:** The pump will activate when the connected pilot control device (e.g., pressure switch, float switch, remote switch, irrigation controller, or timer) sends a signal to the 24V control input.
3. **Pump Operation:** The magnetic contactor inside the control box will engage, supplying power to the deep well pump motor.
4. **Pump Deactivation:** The pump will turn off when the pilot control device discontinues the signal.

The low amp control current through the pilot switch increases the reliability and lifespan of the control system.

6. MAINTENANCE

Regular maintenance ensures the longevity and reliable operation of your Tuhorse Deluxe Control Box. Always disconnect power before performing any maintenance.

- **Annual Inspection:** At least once a year, with power disconnected, open the control box and visually inspect all wiring connections for tightness and signs of corrosion or wear.
- **Cleanliness:** Keep the interior of the control box clean and free from dust, debris, and moisture. Use a dry, soft cloth for cleaning.
- **Environmental Protection:** Ensure the control box remains sealed and protected from excessive moisture or direct sunlight, even with its NEMA 3 rating.
- **Component Check:** Periodically check the magnetic contactor for proper operation and any signs of arcing or damage.

7. TROUBLESHOOTING

If you encounter issues with your Tuhorse Deluxe Control Box, refer to the following common troubleshooting steps. Always disconnect power before inspecting internal components.

Problem	Possible Cause	Solution
Pump does not start	No power to control box Faulty pilot control switch Loose wiring connections Motor overload	Check main circuit breaker and power supply. Test pilot switch for continuity. Inspect and tighten all terminal connections. Check motor for issues; reset any thermal overloads if present.
Pump runs continuously	Pilot control switch stuck in ON position Wiring short in control circuit	Inspect and test pilot switch; replace if faulty. Check control signal wiring for shorts or damage.
Control box hums but pump doesn't start	Motor issue Capacitor issue (if applicable to pump motor)	Consult pump motor manual; check motor windings. Have a qualified technician inspect or replace capacitors.

If problems persist after following these steps, contact a qualified electrician or Tuhorse customer support.

8. WARRANTY AND SUPPORT

Specific warranty details for the Tuhorse 5HP 230V 1-Phase Deluxe Control Box are typically provided at the point of purchase or on the official Tuhorse website. Please retain your proof of purchase for warranty claims.

For technical assistance, troubleshooting beyond this manual, or warranty inquiries, please contact Tuhorse customer support through their official website or the retailer where the product was purchased.

Tuhorse Store Link: [Visit the Tuhorse Store on Amazon](#)

