DIHOOL DHM1B-2P-160A-3

DIHOOL Main 160 Amp DC Circuit Breaker User Manual

Model: DHM1B-2P-160A-3

Introduction

This manual provides comprehensive instructions for the safe and effective installation, operation, and maintenance of the DIHOOL Main 160 Amp DC Circuit Breaker. This device is designed to provide thermal magnetic trip protection, circuit overload protection, and short circuit protection, as well as isolation for DC applications such as photovoltaic systems, UPS, battery banks, and data centers. Please read this manual thoroughly before installation and use to ensure proper functionality and safety.

Safety Information

WARNING: Electrical shock hazard. Installation and servicing should only be performed by qualified personnel. Failure to follow these instructions may result in serious injury or death.

- Always disconnect power before installing or servicing the circuit breaker.
- Ensure the circuit breaker's voltage and current ratings match your application's requirements.
- Use appropriate personal protective equipment (PPE) when working with electrical systems.
- Verify all connections are secure and properly insulated to prevent short circuits.
- Do not operate the circuit breaker if it appears damaged.
- This circuit breaker is designed for DC applications. Do not use in AC circuits unless explicitly stated for dual use.

Product Overview

The DIHOOL Main 160 Amp DC Circuit Breaker (Model DHM1B-2P-160A-3) is a robust 2-pole device designed for high-current DC applications. It features a thermal magnetic trip mechanism for reliable protection against overloads and short circuits.

Image: Front view of the DIHOOL 160 Amp DC Circuit Breaker, showing the ON/OFF handle and product labeling. The label indicates "DIHOOL DHM1B-300 160A" and various electrical specifications.

Image: This image illustrates the superior properties of the Bakelite enclosure used in DIHOOL circuit breakers compared to PA66 enclosures. Bakelite maintains structural stability above 150°C, offers excellent insulation performance unaffected by humidity, and is less prone to aging and cracking. PA66 may soften above 100°C, has reduced insulation resistance in high humidity, and can suffer surface detachment from chemical corrosion.

Image: A comparison highlighting the high-quality thickened copper parts used in DIHOOL circuit breakers versus inferior copper contacts. DIHOOL uses silver contacts for larger conductive contact area and stronger current-carrying capacity, ensuring enhanced conductivity and extended service life. Low-cost plastic cases with thin copper contacts have poor conductivity, corrosion resistance, and are susceptible to overheating under load.

Specifications

Key technical specifications for the DIHOOL DHM1B-2P-160A-3 DC Circuit Breaker:

- **Current Rating:** 160 Amps
- **Poles:** 2P
- **Rated Voltage Ue:** DC 12V-500V
- **Insulation Voltage Ui:** 1000V
- **Rated Impulse Withstand Voltage (Uimp):** 6kV
- **Rated Breaking Capacity (Ics):** 25kA
- **Thermo-Magnetic Release Characteristic:** Curve (4-6In)

- **Electrical Life:** 1,000 Cycles
- **Mechanical Life:** 2,000 Cycles
- **Installation:** Panel Screw Installation
- **Ambient Temperature:** -5°C to +70°C
- **Terminal Connection Type:** Hexagon Screw
- **Tightening Torque:** 5.0 N.m
- **International Standard:** IEC/EN 60947-2
- **Product Dimensions:** 73mm (W) x 163mm (H) x 86mm (D)
- **Weight:** Approximately 3.35 Pounds

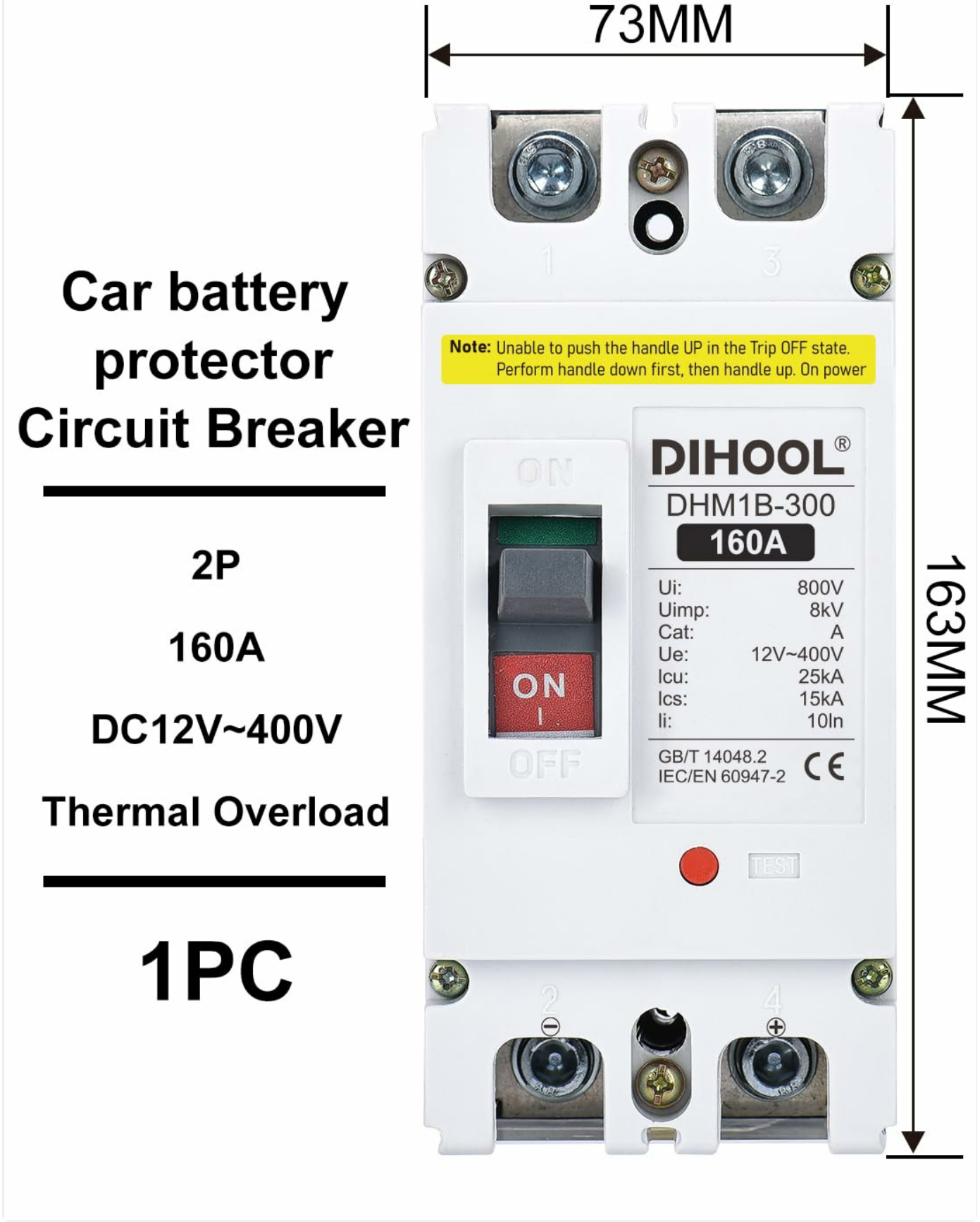


Image: The DIHOOL 160 Amp DC Circuit Breaker shown with its primary dimensions: 73mm width and 163mm height. This view also reiterates its function as a car battery protector circuit breaker, 2P, 160A, DC12V~400V, with thermal overload protection.

Image: A side view of the DIHOOL 160 Amp DC Circuit Breaker, indicating a depth of 86mm from the mounting surface to the front of the unit. This provides crucial information for enclosure and panel design.

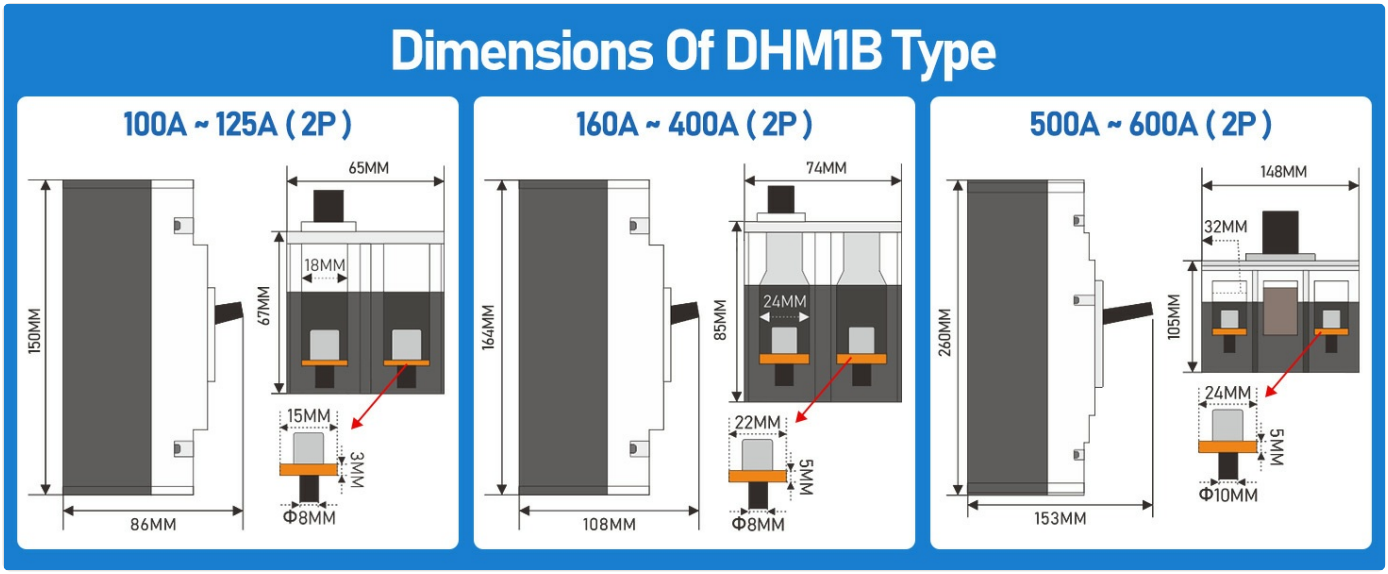


Image: Detailed technical drawing showing the dimensions of DHM1B type circuit breakers across different current ratings (100A-125A, 160A-400A, 500A-600A). The 160A model falls under the 160A-400A category, showing specific measurements for width, height, depth, and terminal sizes, including a width of 74mm and a height of 164mm for the main body, and terminal dimensions for M8 screws.

DHM1B	
Rated Current:	100A~400A
Poles:	1P/2P
Rated Voltage Ue:	DC12V~500V
Insulation Volage Ui:	1000V
Rated Impulse Withstand Voltage(1.2/50)Uimp:	6kV
Rated Breaking Capacity(Ics):	25kA
Thermo-Magnetic Release Characteristic:	Curve (4-6In)
Electrical Life:	1,000 Cycles
Mechanical Life:	2,000 Cycles
Installation:	Panel Screw Installation
Ambient Temperature:	-5°C ~ +70°C
Terminal Connection Type:	Hexagon Screw
Tightening Torque:	5.0N.m
International Standard:	IEC/EN60947-2

Image: A table detailing the specifications for the DHM1B series of circuit breakers, including rated current range (100A-400A), poles (1P/2P), rated voltage (DC12V-500V), insulation voltage (1000V), rated impulse withstand voltage (6kV), rated breaking capacity (25kA), thermo-magnetic release characteristic (Curve 4-6In), electrical and mechanical life cycles, installation method, ambient temperature range, terminal connection type, tightening torque, and international standard compliance.

Installation

The DIHOOL DC Circuit Breaker is designed for panel screw installation. Ensure adequate space for ventilation and access to terminals.

Wiring Diagram

Refer to the following diagram for typical wiring in a DC power system, such as a battery bank with an inverter.

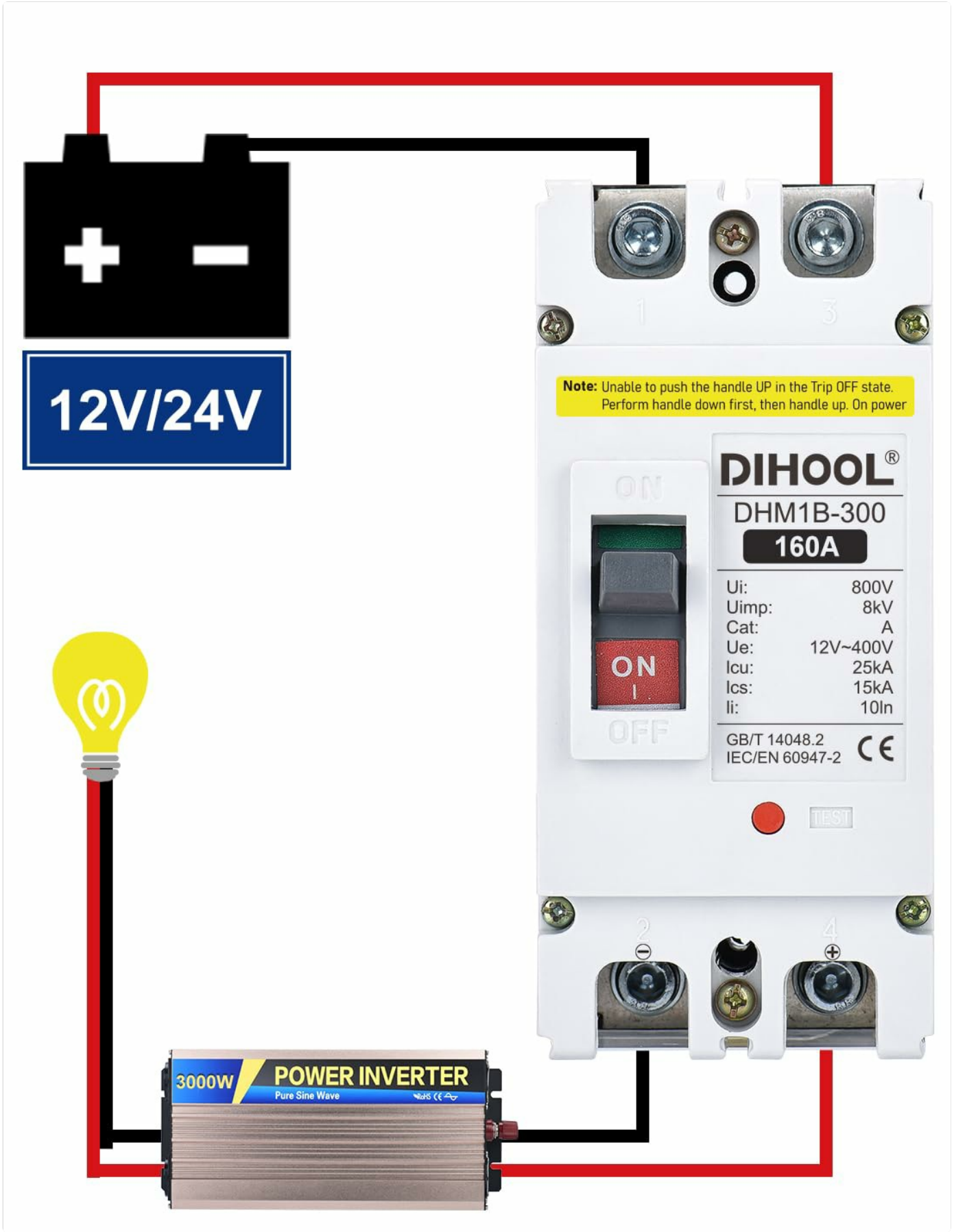


Image: A wiring diagram illustrating the connection of the DIHOOL 160 Amp DC Circuit Breaker within a 12V/24V battery system. The circuit breaker is placed between the battery and a power inverter, which then connects to a load (represented by a light bulb). This setup demonstrates its role in protecting the circuit from the battery to the inverter.

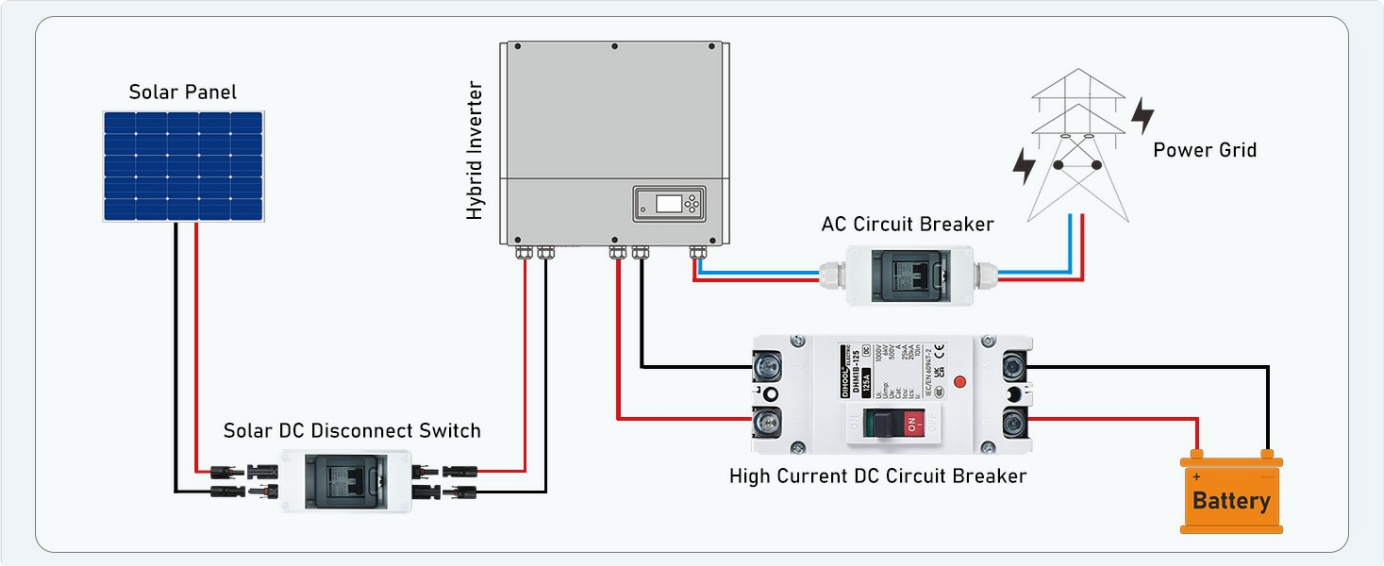


Image: A comprehensive wiring diagram for a solar power system, showing the integration of a solar panel, hybrid inverter, power grid, battery, solar DC disconnect switch, and a high current DC circuit breaker. The high current DC circuit breaker is positioned between the battery and the hybrid inverter, providing essential protection for the battery bank.

Terminal Connections

The circuit breaker supports wire sizes from 16-70mm² (6AWG-2/0AWG). Ensure proper crimping and tightening of terminals.

Image: A perspective view of the DIHOOL 160 Amp DC Circuit Breaker with thick red and black wires connected to its terminals, demonstrating the appropriate wire gauge for high current applications. The image also indicates the supported wire range of 16-70mm² (6AWG-2/0AWG).

This circuit breaker features non-polarity design, meaning both the left/right polarity sequence and the cable in/out direction are reversible. This makes it suitable for applications where polarity may reverse or for flexible installation.

Image: A close-up view of the top terminals of the DIHOOL DC Circuit Breaker, indicating "No Polarity" for the positive (+) and negative (-) connections. This highlights the flexibility in wiring without concern for specific terminal polarity.

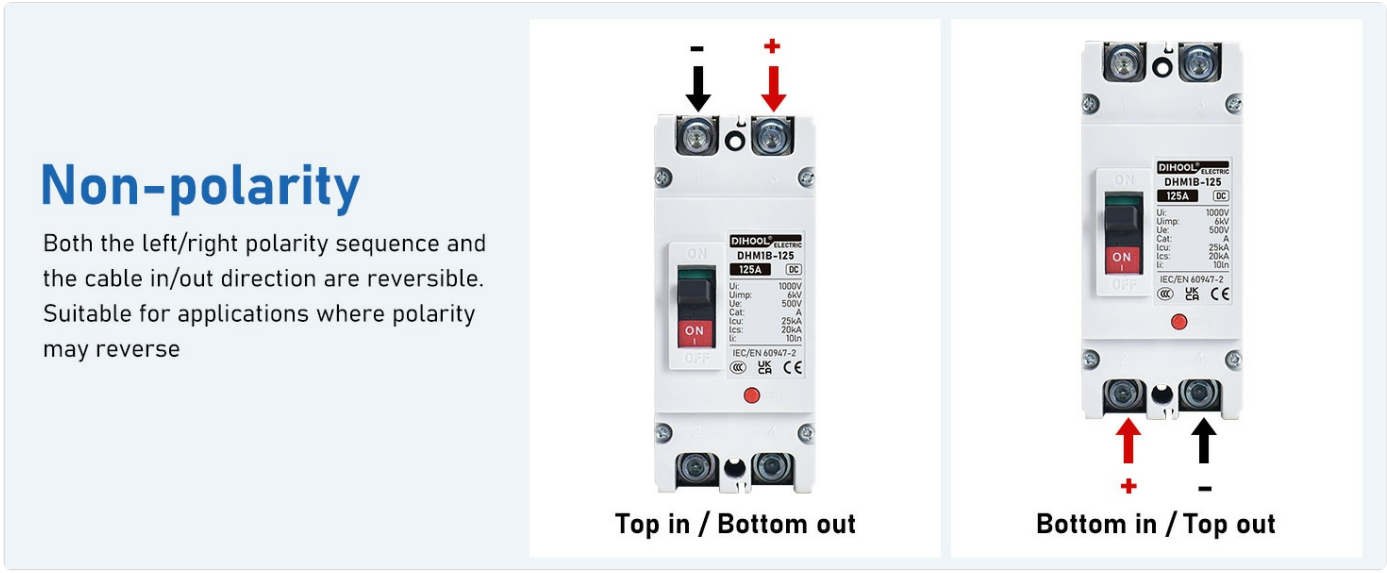


Image: This graphic demonstrates the non-polarity feature of the circuit breaker, showing that both "Top in / Bottom out" and "Bottom in / Top out" wiring configurations are acceptable. This flexibility simplifies installation and ensures proper function regardless of current direction.

Mounting Methods

The circuit breaker can be mounted using screws directly to a wall, wooden panel, or inside a distribution box.

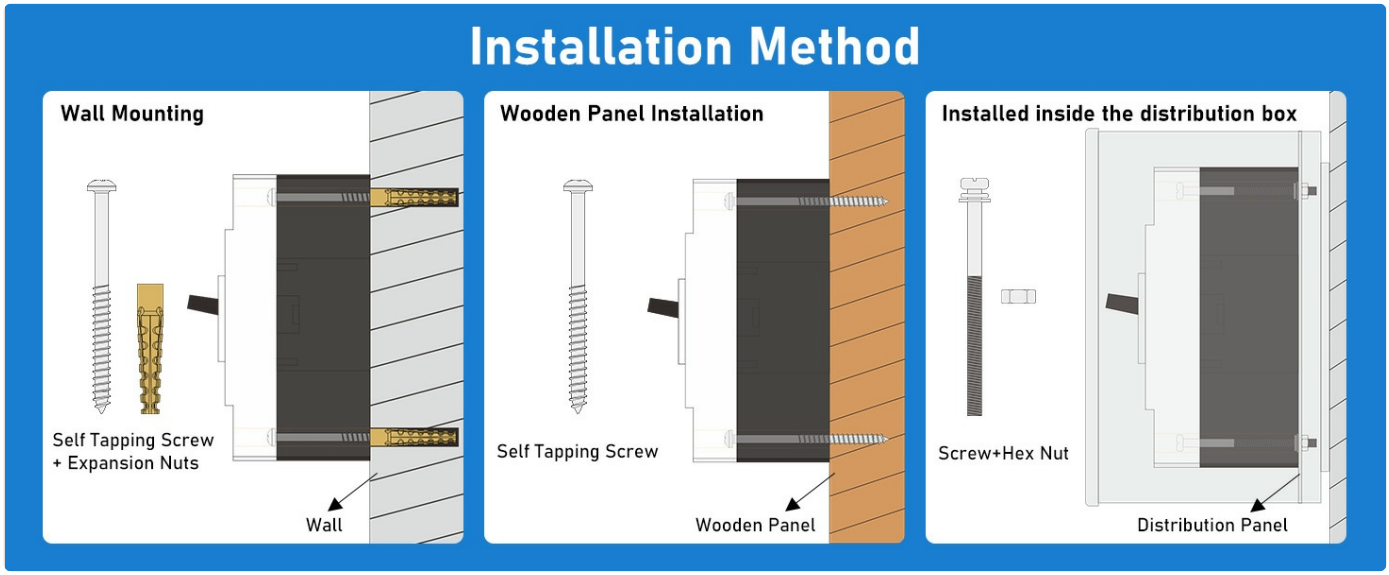


Image: Illustrations demonstrating three common installation methods for the circuit breaker: Wall Mounting (using self-tapping screws and expansion nuts), Wooden Panel Installation (using self-tapping screws), and Installation inside a Distribution Box (using screws and hex nuts). Each method shows the appropriate hardware for secure mounting.

Included Accessories

The product includes matching copper terminals to ensure proper and secure connections without additional purchases.

Image: The DIHOOL 160 Amp DC Circuit Breaker displayed alongside an Allen key, indicating that this tool is included for terminal tightening during installation.

Comes With Matching Copper Terminals

Corresponding terminals are provided – no additional purchase required.

Current \ Model	DHM1B	DHM1X	DHM3Z
100A	≤ 6 AWG	≤ 6 AWG	≤ 3 AWG
125A	≤ 3 AWG	≤ 3 AWG	≤ 2 AWG
160A	≤ 2 AWG	≤ 2 AWG	≤ 1/0 AWG
200A	≤ 1/0 AWG	≤ 1/0 AWG	≤ 2/0 AWG
250A	≤ 1/0 AWG	≤ 2/0 AWG	≤ 2/0 AWG
300A	≤ 2/0 AWG	≤ 4/0 AWG	≤ 2/0 AWG
400A	≤ 2/0 AWG	≤ 250 MCM	≤ 250 MCM
600A	≤ 250 MCM	≤ 350 MCM	≤ 350 MCM

Image: A table detailing the recommended wire gauges (AWG/MCM) for different current ratings (100A to 600A) across DHM1B, DHMIX, and DHM3Z models, confirming that corresponding terminals are provided. For the 160A DHM1B model, it indicates support for up to 2 AWG wire.

Operation

Operating the DIHOOL DC Circuit Breaker involves simple ON/OFF switching and understanding its trip mechanism.

Switching On/Off

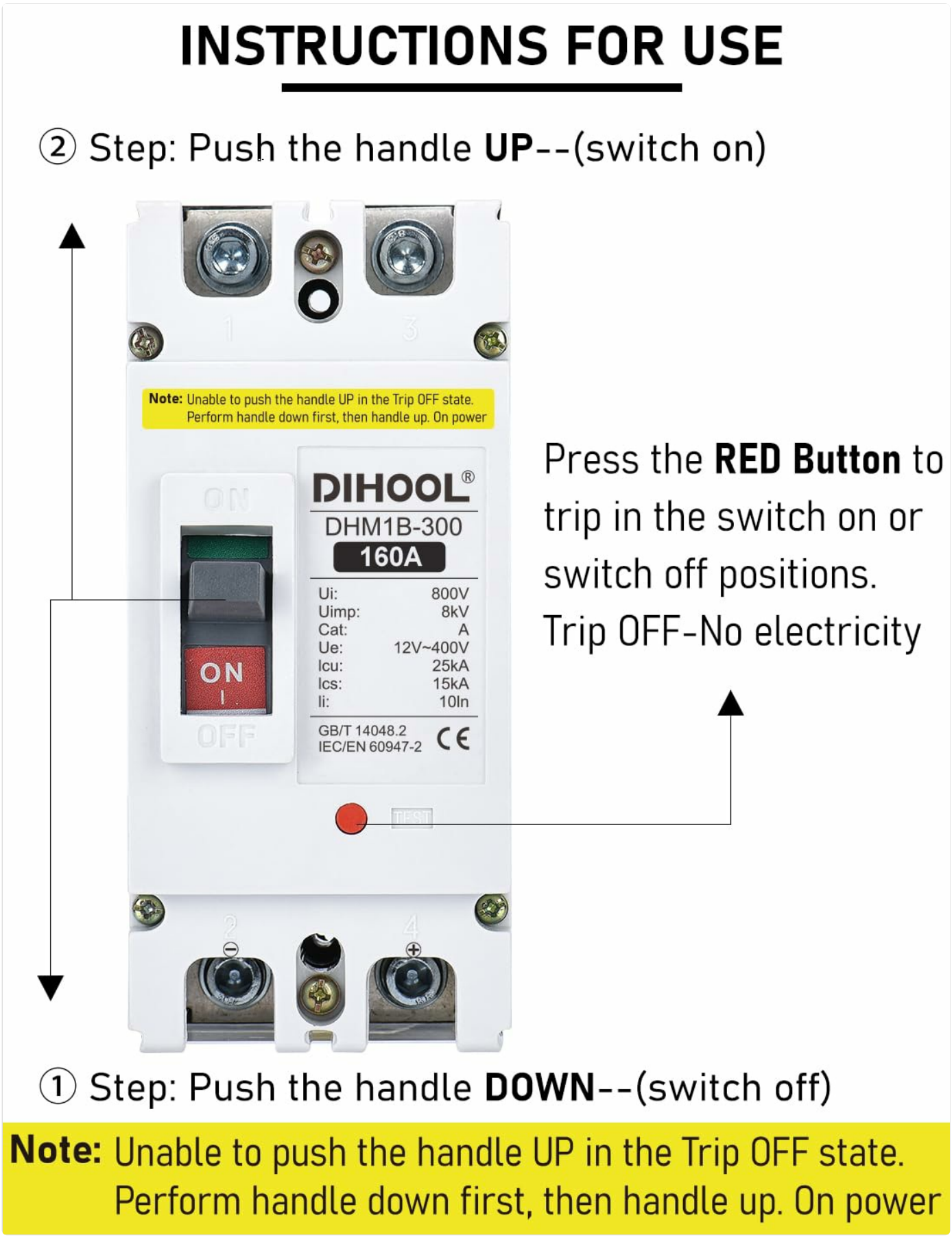


Image: A diagram illustrating the operational steps for the circuit breaker. Step 1 shows pushing the handle DOWN to switch OFF. Step 2 shows pushing the handle UP to switch ON. A crucial note states: "Unable to push the handle UP in the Trip OFF state. Perform handle down first, then handle up. On power." It also indicates that pressing the RED button will trip the switch from either ON or OFF positions, resulting in "Trip OFF - No electricity."

- **To Switch OFF:** Push the handle downwards to the "OFF" position.
- **To Switch ON:** Push the handle upwards to the "ON" position.

- **Resetting After Trip:** If the breaker trips (handle is in an intermediate or "Trip OFF" state), you must first push the handle fully DOWN to the "OFF" position before pushing it UP to the "ON" position to restore power.
- **Manual Trip:** Press the red button located on the front of the circuit breaker to manually trip the device. This will disconnect the circuit.

Maintenance

Regular maintenance ensures the longevity and reliable operation of your DIHOOL DC Circuit Breaker.

- **Periodic Inspection:** Visually inspect the circuit breaker and its connections regularly (e.g., every 6-12 months) for any signs of damage, discoloration, loose connections, or overheating.
- **Cleaning:** Ensure the circuit breaker is clean and free from dust, dirt, or moisture. Use a dry, non-abrasive cloth for cleaning. Do not use solvents or harsh chemicals.
- **Terminal Tightness:** Periodically check and re-tighten terminal screws to the specified torque (5.0 N.m) to prevent loose connections, which can lead to overheating and poor performance. Always disconnect power before checking terminals.
- **Environmental Conditions:** Ensure the operating environment remains within the specified ambient temperature range (-5°C to +70°C) and is free from excessive humidity or corrosive substances.

Troubleshooting

This section addresses common issues you might encounter with your DC circuit breaker.

Problem	Possible Cause	Solution
Circuit breaker trips frequently.	Overload, short circuit, incorrect breaker rating, or faulty appliance/wiring.	Reduce the load on the circuit. Inspect wiring and connected devices for short circuits or faults. Verify the circuit breaker's current rating is appropriate for the connected load. If the issue persists, consult a qualified electrician.
Circuit breaker does not reset.	Still an active fault (overload/short circuit) or internal damage to the breaker.	Ensure the handle is pushed fully to the "OFF" position before attempting to push it to "ON". Disconnect all loads from the circuit and attempt to reset. If it still doesn't reset, the breaker may be faulty and require replacement.
Breaker feels hot to the touch.	Overload, loose connections, or undersized wiring.	Immediately disconnect power. Check for loose terminal connections and re-tighten to specification. Verify wire gauge is sufficient for the current load. Reduce the load on the circuit.

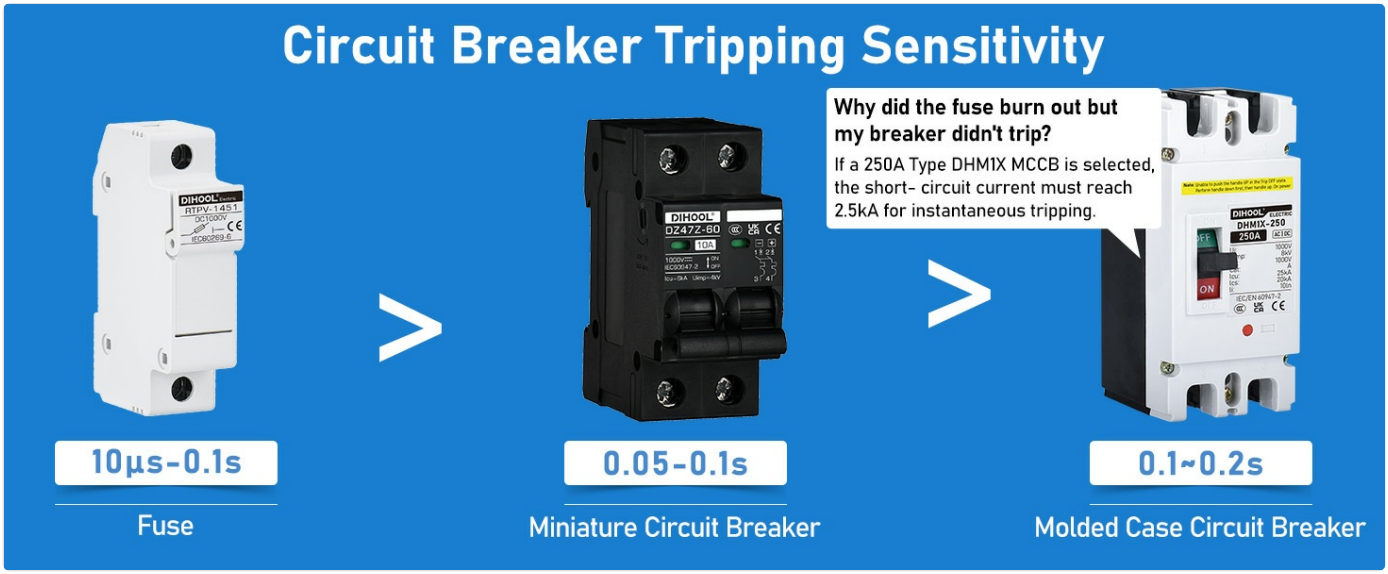
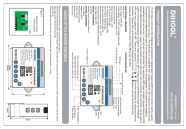


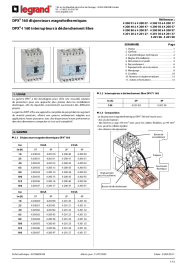
Image: This graphic compares the tripping sensitivity of different protective devices: Fuses (10μs-0.1s), Miniature Circuit Breakers (0.05-0.1s), and Molded Case Circuit Breakers (0.1-0.2s). It addresses the question "Why did the fuse burn out but my breaker didn't trip?" explaining that for a 250A Type DHMIX MCCB, the short-circuit current must reach 2.5kA for instantaneous tripping, indicating different response characteristics for various protection types.

Warranty and Support

DIHOOL products are manufactured to high-quality standards. For specific warranty details, please refer to the product packaging or contact DIHOOL customer support directly. In case of technical issues or questions not covered in this manual, please reach out to the manufacturer for assistance.
Manufacturer: DIHOOL ELECTRIC
For support, visit the official DIHOOL store on Amazon:DIHOOL Store

Related Documents - DHM1B-2P-160A-3

	DIHOOL IPS-S2 DC Motor Controller: Features and Operation Discover the DIHOOL IPS-S2 DC Motor Controller, a versatile device for electric linear actuators. Learn about its integrated photoelectric, RF, and Wi-Fi controls, technical specifications, and setup options for automated systems.
	HOBBYWING Seaking Pro 160A Brushless Electronic Speed Controller User Manual This user manual provides detailed information on the HOBBYWING Seaking Pro 160A Brushless Electronic Speed Controller, including its features, specifications, setup procedures, programming options, LED status explanations, protection mechanisms, and troubleshooting guide for marine applications.

	[ABB TEYF3100 3-Pole 100A Circuit Breaker Data Sheet] Technical specifications and details for the ABB TEYF3100, a 3-pole, 100 Amp molded case circuit breaker designed for lighting panel applications. Features include bolt-on mounting, quick-make/quick-break mechanisms, and standard trip functions.
	[Terasaki TemBreak PRO P160N23125TM MCCB: Specifications, Features, and Accessories] Comprehensive datasheet for the Terasaki TemBreak PRO P160N23125TM Moulded Case Circuit Breaker (MCCB). Details include electrical and mechanical specifications, dimensions, environmental ratings, certifications, and a list of compatible accessories.
	[WA-160A Water Activity Meter User Manual and Technical Specifications] Detailed user manual and technical specifications for the WA-160A portable water activity meter, covering operation, features, and troubleshooting for food quality assessment.
	[Legrand DPX³ 160 Magnetic Thermal Circuit Breakers and Free Release Miniature Circuit Breakers] Technical datasheet for Legrand DPX³ 160 magnetic thermal circuit breakers and DPX³-I 160 free release miniature circuit breakers, covering technical specifications, installation guidelines, dimensions, accessories, and standards compliance.