

# Curtain Motor

## Instruction Manual



MWC1-BP.10

Before using this product, please read this manual carefully and keep it properly!

Document Version: V1.0

## ◆ Overview

**Curtain Motor** (Model: MWC1-BP.1; hereinafter referred to as the “product” or “device” ) is designed to drive curtain track, such as open or close the curtain cloth. Additionally, the device is compatible with commissioning software and mobile APP. Upon proper installation and commissioning, it is able to integrate the device into smart room system, helping end users easily and conveniently remote control their curtains.

Note: The pictures and illustrations provided in this instruction manual are for reference purposes only, and the actual product may differ.

### Key Functions:

- HDL Buspro communication protocol
- **Curtain control:** Open / close / stop / open or close at specific percentage
- **Touch start:** The device supports "Touch Start" by default. This means, when users gently pull the curtain cloth towards any direction, curtain motor will be activated to work and automatically complete the pre-set travel.
- **Auto travel limit:** After setting the motor travel limit, the motor will automatically complete the preset travel.
- **Auto modification while detecting obstacles:** When single side of curtain cloth encounters obstacles, the motor will automatically modify its travel limit.
- **Auto pause while detecting obstruction:** When curtain cloth encounters obstruction, the motor will automatically stop running.
- **Soft start / stop:** The motor slows down before it reaches the travel limit point, which is designed to effectively protect the motor and lengthen its service life, as well as reduce motorised noise.
- When the device starts up for the first time after power off then on, it will automatically proceed travel calibration.
- Factory setting can be restored by commissioning software or programming button.
- Through commissioning software, users can proceed advanced settings for the device, including functional configuration, data backup, data upload or download.
- On-line / Manually update for device firmware
- Compatible with bi-channel or multi-channel remote controllers (optional)

## ◆ Appearance

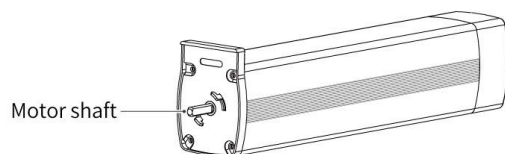


Figure 1

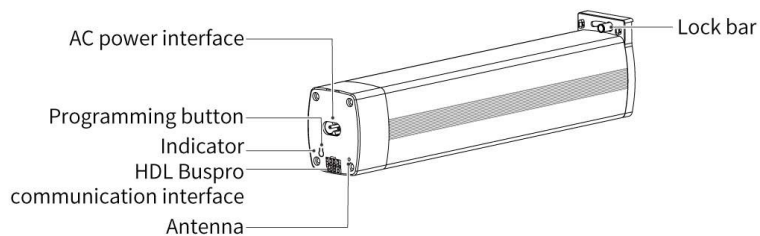


Figure 2

## ◆ Technical Data

|                            |                        |
|----------------------------|------------------------|
| Motor input voltage        | 100 - 240V AC, 50/60Hz |
| Motor rated consumption    | 22W                    |
| BUS input voltage          | 12 - 30V DC            |
| BUS rated voltage          | 24V DC                 |
| BUS rated current          | 10mA/24V DC            |
| Motor torque               | 1.2 N · m              |
| Motor rotate speed         | 90rpm                  |
| Motor maximum load-bearing | 50kg                   |
| Motor sound level          | <30dB at silent mode   |
| Communication protocol     | Buspro                 |
| Working temperature        | -5°C~45°C              |
| Working relative humidity  | ≤90%RH, non-condensed  |
| Storage temperature        | -20°C~60°C             |
| Storage relative humidity  | ≤93%RH                 |

## ◆ Specifications

|                                     |                                  |
|-------------------------------------|----------------------------------|
| Dimensions (W X H X D)              | 296×71×50.6mm (See Figure 3 - 5) |
| Net weight                          | 724g                             |
| Housing material                    | PC, aluminium                    |
| Installation                        | Guide rail (See Figure 7 & 8)    |
| IP degree (compliant with EN 60529) | IP41                             |
| Insultation grade                   | F                                |

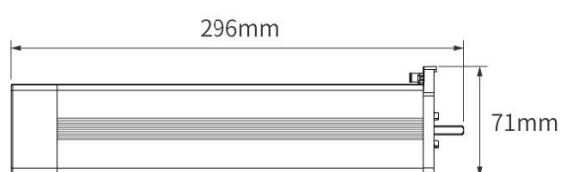


Figure 3

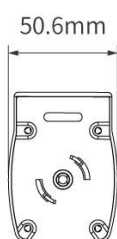


Figure 4



Figure 5

## ◆◆ Safety Precautions

### **Danger:**

- Please do not privately disassemble or replace any parts of the product. Otherwise, it may cause mechanical fault, electric shock, fire or personal injuries.

### **Warning:**

- The installation and testing for the product must be carried out by HDL Automation Co., Ltd. (hereinafter referred to as HDL) or its appointed service agencies. The electric construction shall comply with local laws and safety regulations.
- HDL will not be responsible for any consequence caused by the inexperienced or faulty installation and wiring methods, which are not in accordance with the instructions contained in this datasheet.
- Please contact HDL after-sales departments or our designated service agencies for your maintenance service. Product failures caused by private disassembly are not subject to the warranty.

### **Caution:**

- Before performing any installation or disassembly procedures, any maintenance or cleaning procedures on the device, it is crucial to disconnect the device from all voltage sources. This step is necessary to ensure the safety of the technician and prevent any potential damage to the device.
- Do not use corrosive liquid to wipe the device body, especially the interface, so to avoid damage to the device.
- Do not wipe the device with a damp cloth.
- Prior to performing maintenance or cleaning on the device, disconnect the device from all voltage sources, to avoid electric leakage and electric shock.
- Kindly take note that the installation of the aforementioned device is recommended to be conducted in an indoor environment, with due consideration given to the avoidance of exposure to external factors such as humidity and high temperatures.
- Buspro cable: CAT5E or HDL Buspro cable
- For Buspro connection, a hand-in-hand connection is recommended.
- After all of the cables are terminated, check for correct and good terminations.
- Kindly take note that the installation of the aforementioned device is recommended to be conducted in an indoor environment.
- It is strictly forbidden to apply any extra items whose weight exceed the motor or guide rail maximum load-bearing to the curtain track; DO NOT climb the curtain.
- When installing the motor onto the guide rail, be sure to check if the motor has been tightly attached in place. Otherwise, it will cause the motor to fall, resulting in product damage or personal injury.

## ◆ Wiring

**Tips:** For Buspro connection, a hand-in-hand connection is recommended.

**Note:** In addition to Buspro connection, please note to connect the device with 220V AC power supply.

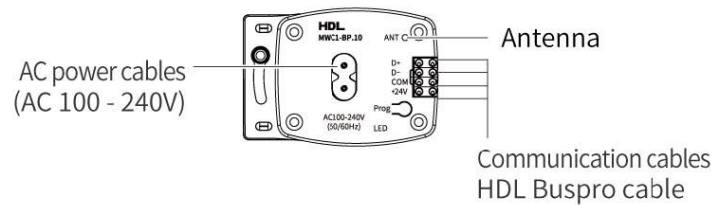


Figure 6

### HDL Buspro Cable Guide

| Inner Buspro | HDL Buspro Cable | CAT5/CAT5E               |
|--------------|------------------|--------------------------|
| DATA+        | Yellow           | Blue/Green               |
| DATA-        | White            | Blue white/Green white   |
| COM          | Black            | Brown white/Orange white |
| 24V DC       | Red              | Brown/Orange             |

## ◆ Installation

**Warning:** Before performing any installation procedures on the device, it is crucial to disconnect the device from all voltage sources. This step is necessary to ensure the safety of the technician and prevent any potential damage to the device.

**Tips:** The device should be mounted onto the guide rail. Thus, please make sure the guide rail has been installed properly.

**Step 1.** Pull the lock bar out, then slide it in the direction indicated by arrow 1.

**Step 2.** Insert the motor shaft to the guide rail.

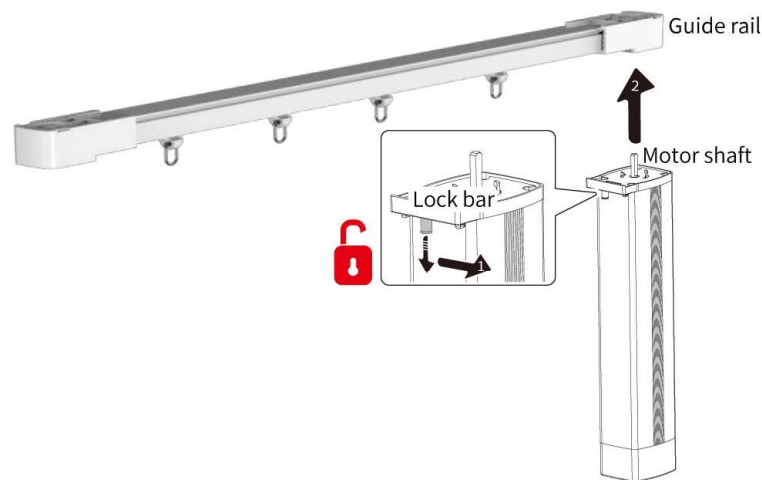


Figure 7

**Step 3.** Make sure the motor is tightly attached with the guide rail, then slide the lock bar back in the direction indicated by arrow 3. In this way, the motor can be locked.

**Note:** After installation, check for correct and good terminations. Before powering on, please ensure the device is completely mounted onto the guide rail.

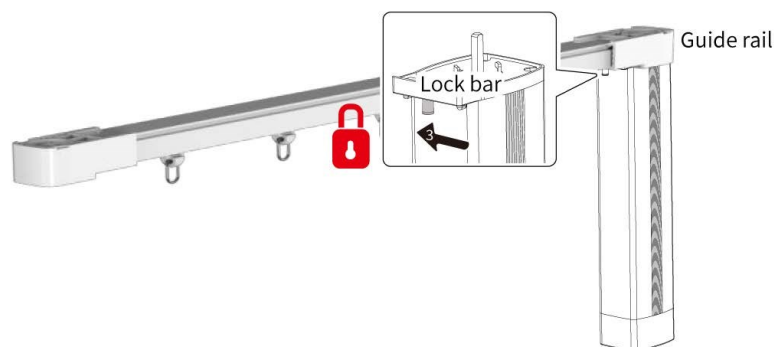


Figure 8

## ◆ Operation

The device is configured with one programming button and indicator, as described below.

**Note:** All operation and settings described as below should be carried out when the device is running normally.

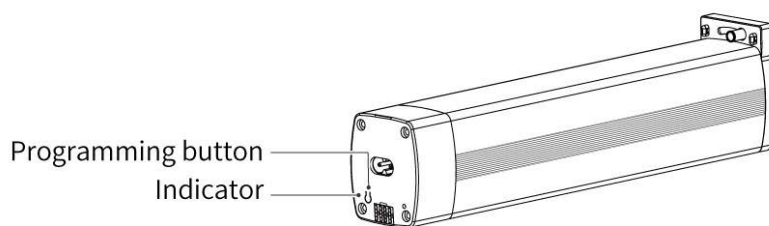


Figure 9

## 1. Basic Operation

### 1.1. Switch Power-on to Quick Start

| Operation                                                            | Status of Indicator               |
|----------------------------------------------------------------------|-----------------------------------|
| Connect the device to power supply, then it starts running normally. | Red light is on for 10s then off. |

### 1.2. Test Motor Travel

| Operation                                                                                                    | Status of Motor                                                                        |
|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Reconnect the device to power supply. When it restarts, pull the curtain cloth gently towards any direction. | Curtain motor will be activated to work and automatically complete the pre-set travel. |

### 1.3. Control Curtain Cloth

| Function                                                   | Operation                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Open / close / stop / open or close at specific percentage | Users can achieve these remote control through smart panels, remote controllers, mobile APP.                                                                                                                                                                                                                                                                                                                                                                   |
| Touch start                                                | <p>The device supports "Touch Start" by default, which can be enabled or disabled through commissioning software or the remote controller used.</p> <ul style="list-style-type: none"><li>"Touch Start" enabled: When users gently pull the curtain cloth, curtain motor will be activated to work and automatically travel towards that pulling direction.</li><li>"Touch Start" disabled: It requires users to manually operate the curtain cloth.</li></ul> |
| Obstruction detection                                      | <p>When curtain cloth or motor encounters obstacles, in order to avoid damage to the motor or obstacles, the motor will automatically stop running then modify its travel limit.</p> <p><b>Tips:</b> If users need to adjust the motor travel limit, please remove those obstacles then erase travel limit (see Section <a href="#">2.4. Erase Travel Limit</a>). Afterwards, users can proceed re-setting and testing motor travel.</p>                       |

## 2. Advanced Settings

There are three options for users to proceed advanced settings for curtain motor. In this section, it gives information about part of the settings rather than all.

- **Commissioning software:** HDL Studio is the software applicable for users to proceed advanced settings for curtain motor, which is highly recommended.
- **Programming button:** It can be used for motor rotation setting, restore factory setting, firmware updating, as well as erasing motor travel.
- **Remote controller:** The device is compatible with remote controllers which support learning codes (see Section [2.7. Learning Codes in Remote Controller](#)).

### 2.1. Position Device

| Operation                                           | Status of Indicator | Status of Motor | Remark                                      |
|-----------------------------------------------------|---------------------|-----------------|---------------------------------------------|
| Position the device through commissioning software. | Red light flashes.  | Rotate 3 times. | Status of indicator and motor last for 10s. |

### 2.2. Modify Device ID

| Function                  | Operation                                                                                                                                         | Status of Indicator | Status of Motor | Remark                                                          |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------|-----------------------------------------------------------------|
| On-line modify device ID  | Modify device ID through commissioning software.                                                                                                  | /                   | /               |                                                                 |
| Manually modify device ID | Long press programming button for 3s, then immediately release until the indicator is red. Next, modify device ID through commissioning software. | Red light is on.    | /               | If no operation within 15s, it will exit setting automatically. |

### 2.3. Set Motor Rotation

**Tips:** Motor rotation can be set by commissioning software or programming button. In this section, it only gives information about the latter.

| Operation                                           | Status of Indicator         | Status of Motor                                 | Remark                                                                                |
|-----------------------------------------------------|-----------------------------|-------------------------------------------------|---------------------------------------------------------------------------------------|
| Step 1: Short press programming button once         | Red light flashes quickly.  | /                                               |                                                                                       |
| Step 2: Short press programming button once again.  | Red light flashes slowly.   | /                                               |                                                                                       |
| Step 3: Long press programming button for 3s.       | Red light is on.            | /                                               |                                                                                       |
| Step 4: Long press programming button for 3s again. | Red light flashes then off. | After successfully set, the motor rotates once. | If no operation on programming button within 15s, it will exit setting automatically. |

## 2.4. Erase Trave Limit

**Tips:** Travel limit can be erased by commissioning software or programming button. In this section, it only gives information about the latter.

| Operation                                                                                           | Status of Indicator            | Status of Motor                                 | Remark |
|-----------------------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------|--------|
| Long press programming button for 5s, then immediately release until the indicator is flashing red. | Red light is on then flashing. | After successfully set, the motor rotates once. |        |

## 2.5. Restore Factory Setting

**Tips:** Factory setting can be restored by commissioning software or programming button. In this section, it only gives information about the latter.

| Operation                                                                       | Status of Indicator                        | Status of Motor                                 | Remark |
|---------------------------------------------------------------------------------|--------------------------------------------|-------------------------------------------------|--------|
| Long press programming button for 10s, then release until the indicator is off. | Red light is on then flashing, lastly off. | After successfully set, the motor rotates once. |        |

## 2.6. Update Firmware

| Function        | Operation                                                                                                                                                                                             | Status of Indicator | Status of Motor | Remark |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-----------------|--------|
| On-line update  | Upgrade device firmware through commissioning software.                                                                                                                                               | Red light flashes.  | /               |        |
| Manually update | Press programming button, and simultaneously connect the device to power supply. At this moment, [Manually Update] can be enabled.<br>Next, proceed firmware updating through commissioning software. | Red light flashes.  | /               |        |

## 2.7. Learning Codes in Remote Controller

There are two options for pairing the device with remote controller, as described below. Regarding operations about further learning codes, please refer to the datasheet of the remote controller used.

**Tips:** Inside the remote controller used, users will see each side of the battery compartment has a channel setting button (see Figure 10), which is used for pairing the remote controller and the corresponding motor, then receiving and processing further learning codes. The illustration provided as below is for reference purposes only, and the actual remote controller may differ.



Figure 10  
Battery Compartment of a Remote Controller

| Function                                                   | Operation                                                                                                                                                  | Status of Indicator         | Status of Motor                                 | Remark |
|------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------------------------------|--------|
| <b>Option 1:<br/>Pairing by<br/>programming<br/>button</b> | Step 1: Long press programming button for 3s, then release until the indicator is red. At this moment, the device is entering the status of learning code. | Red light is on.            | /                                               |        |
|                                                            | Step 2: Press the channel setting button on the remote controller (see Figure 10).                                                                         | Red light flashes then off. | After successfully set, the motor rotates once. |        |
| <b>Option 2:<br/>Pairing by<br/>switching<br/>power-on</b> | Step 1: Switch the device power off then on. At this moment, the device is entering the status of learning code.                                           | Red light is on.            | /                                               |        |
|                                                            | Step 2: Press the channel setting button on the remote controller (see Figure 10).                                                                         | Red light flashes then off. | After successfully set, the motor rotates once. |        |

## ◆ Packing List

- Curtain Motor\*1
- Terminal block\*1
- 4-pin connector\*1
- Power cable\*1
- QR code card\*1

**Note:** After unpacking, please check if the product and the parts are complete.

## ◆ Legal Statemen

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### Update History

The form below contains the information of every update. The latest version contains all the updates of all former versions.

| Version | Update Information | Date            |
|---------|--------------------|-----------------|
| V1.0    | Initial release    | August 28, 2023 |
|         |                    |                 |
|         |                    |                 |

## ◆ Technical Support

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