HDL®

User Manual

BUS Enabled Motorized Curtain

HDL-MWM70B.12

HDL-MWM70S.12

- Valid also for version 12.22
- Functions are the same for wireless version MWM70-RF.12.
- Version MWM70S.12 does not exist anymore.
- Manual describes the snapshots taken in the previous version of the module and using older HBST program. In HBST2, the graphic appearance is slightly different but the functions remain the same

buspro

www.hdlautomation.com

Document updates:

| Version	Date	Description
V1.0	2015.05.06	Finish new document

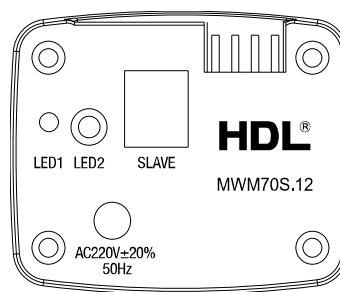# INDEX

1. Overview

1.1 General Information

1.1.1 Description

HDL-MWM70B.12, HDL-MWM70S.12 the motorized curtain contains master and slave. It is a professional curtain controller, the master is enabled by HDL Buspro. Support manual mode, it has the function of over load protection and over heat protection.

1.1.2 Serial Numbers
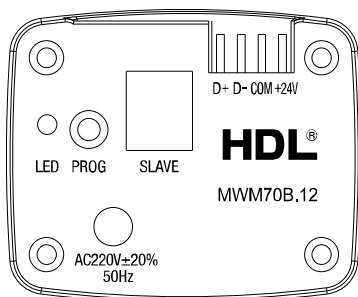
MWM70B.12
Master

MWM70S.12
Slave

1.2 Function Qualities Description

- Test the distance of the curtain automatically
- Manual mode: long drag, short drag, drag no action
- Percentage control
- Control by HDL Buspro
- Support HDL Buspro online upgrading
- Support easy programming
- Built-in new generation clutch, precise planetary reduce, noise level 40dB.
- Be suitable for all small to medium-scale curtain applications, linear and arched, one-and two-side opening

1.3 Device Description
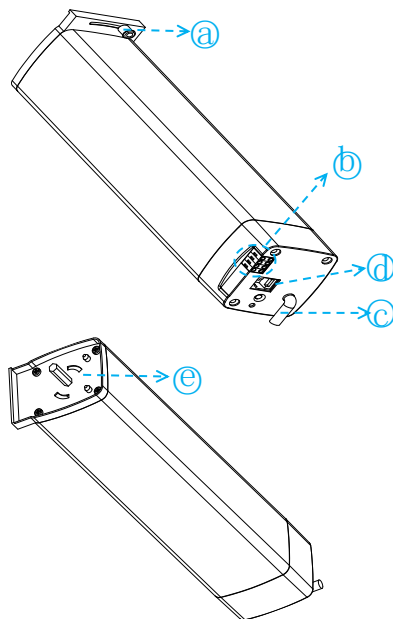
a. latch

b. Master: HDL Buspro interface
   Slave: invalid

c. AC230V Power cable, 1 meter
   (Brown for L, Blue for N, Y/G for PE)

d. RJ11 6P6C network port, connect to the master and slave. It supplies the control signal from Master to Slave

e. Motor terminal: pull the latch to unlock direction, and then insert the motor terminal into the Drive Unit. Finally, switch the latch back to the locket position

f. unlock

g. latch

h. locked
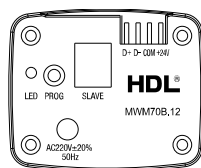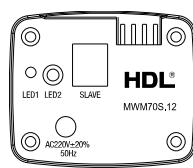
Master: MWM70B.12   Slave: MWM70S.12
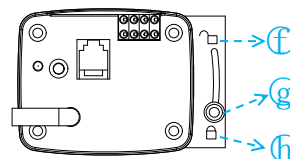
2. Technical Data

Electric Parameter ：		
Type	MWM70B.12	
	MWM70S.12	
Rated voltage	AC220V 50Hz	
Voltage range	AC220±20% 50Hz	
Working voltage	DC24V (Master)	
	DC12V (Slave) from Master	
Bus power consumption	40mA/DC24V (Master)	
	33mA/DC12V (Slave)	

Slave interface	6P network port
Rated power	70W
Rated torque	1.0Nm
Rated speed	112rpm
Rail belt speed	16cm/s
Communication	HDL Buspro (Master)
Environmental Condition：	
Working temperature	0℃~45℃
Working relative humidity	Up to 90%
Storage temperature	-20℃~+60℃
Storage relative humidity	Up to 93%
Approved	
CE	
RoHS	
Production information：	
Dimensions	284×70×50 (mm)
Weight	1554g (Master)
	1543g (Slave)
Housing material	ABC, aluminum
Installation	Wall Hanging
Protection degree	IP41
Insulation degree	E

3. Curtain Rail Installation

3.1 Characteristic

■ AC power input, make the operation more stable and reliable

- Built-in a new generation of clutch, system operating noise no more than 40dB
- The curtain's horizontal pull reaches 8KG
- Use HDL-BUS port as interface, DLP panel to control the curtain, easy to use

3.2 Notice

- Read all instructions in detail before use
- Non-Contact with the liquids or inflammable gas and object when using
- Make sure there is no short-circuits or wiring errors before power on
- Power off before install and uninstall
- When install the motor to the drive unit, please check and make sure that the latch has switched back to the locket position.
- After the installation, please don't pull the curtain forcibly, don't put any additional weight on the curtain rail; please don't climb the curtain or hang anything on it; otherwise the rail and the motor will fall down then lead to personal injury and product damage
- Pay attention to water-proof, steam-proof
- Please use the dry cloth to wipe when cleaning, can't use the damp or corrosive stuff for wiping
- Has any abnormal situation, please stop the operation and turn off the power, then contact with the technical service or our company

3.3 Connecting

Please follow the connecting showed below strictly.
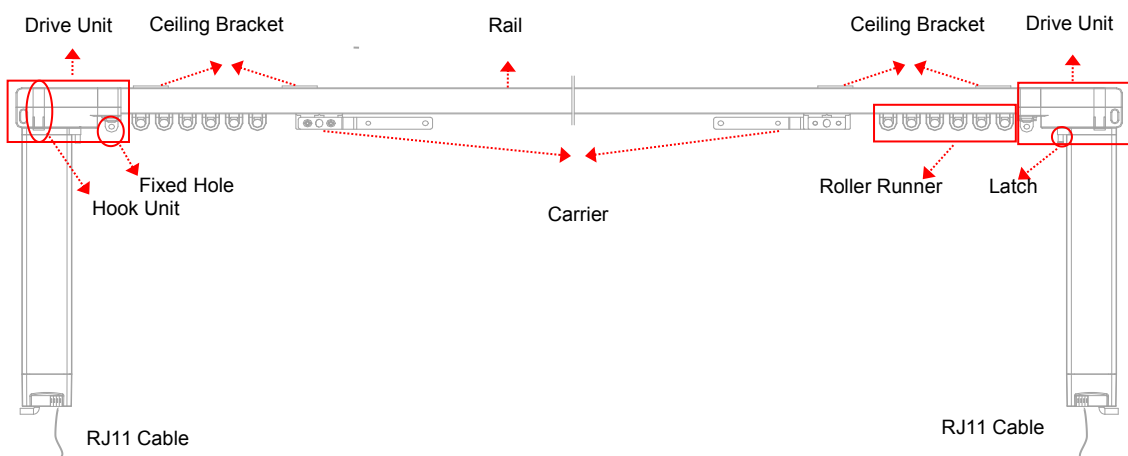
■ Master, Slave:

The Master is connected to the Buspro port and AC220V, and it provides DC12V to the Slave by the RJ11 6P6C. HDL provides the 1 meter RJ11 cable.

■ Ceiling Bracket's mounting distance：

On the top of rail, recommend every 600 mm installing a Ceiling Bracket.

3.4 Curtain Rail Accessories

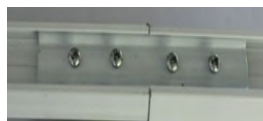| Hook Unit | Belt | Roller Runner | Fixture | Rubber |

| Ceiling Bracket | Insertion | Clamp | Carriers and its handles |

| RJ11 6P6C | Track Joiner |

| Motor | Motor Base Socket | Master | Slave |

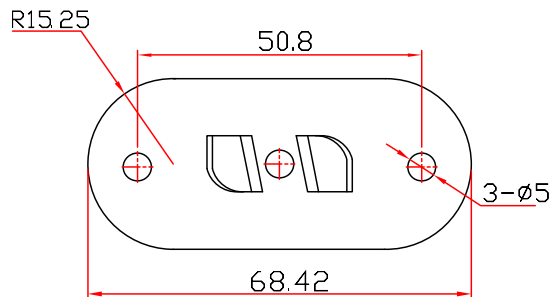| Drive Unit and Roller Runner | Drive Unit and Hook Unit | Motor Lock |

## 3.5 The dimensions of ceiling bracket

3.6 Installation steps

a)   The length of the rail and the belt need to customize according to the size of the window.

b)   Turn to the reverse side of the rail, put the Track Joiner to the rail.

c)   Turn to the forward side of the rail. Take the Belt, thread it into one of the rails (left side), drag it to the Drive unit, then pull it out. At the end of the Belt, insert the Clamp1, then plug the Fixture1.
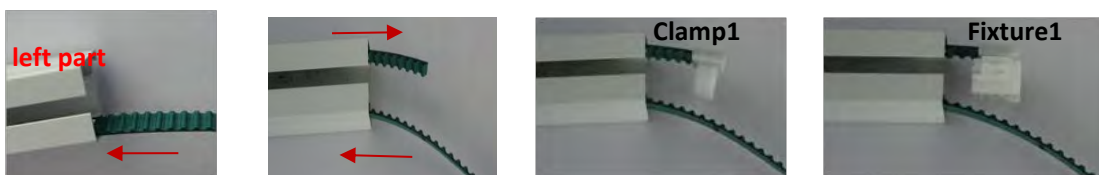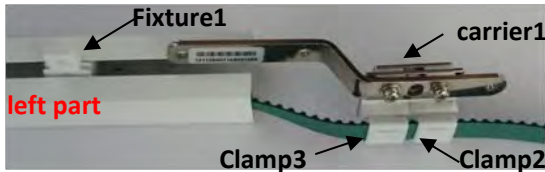

d)   Adjust the Belt's position of the Fixture1 (as shown in figure), and insert the Clamp2 to the other side of the belt, next to the Fixture1.
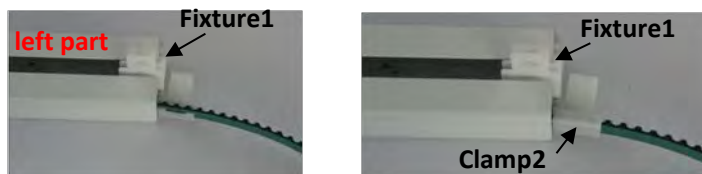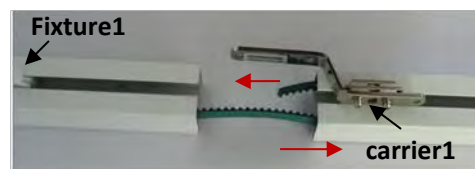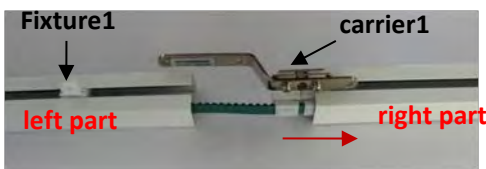

e)   Adjust the Belt's position, insert the Clamp3 between the Fixture1 and the Clamp2, next to the Clamp2.
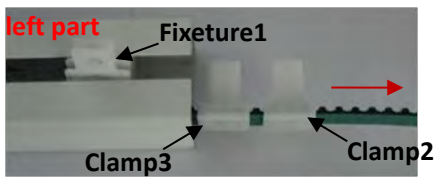
f) Adjust the Belt's positions according to the figure, put the Carrier1 onto the Clamp2、3, its handle should point to the Fixture1.

g) Thread the other side of the belt into the right path rail, drag it to the Drive unit, then pull it out. At the same time, push the carrier1 into the rail.

h) At the end of the belt, insert the Clamp4, then plug the Fixture2.
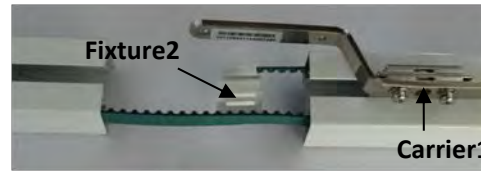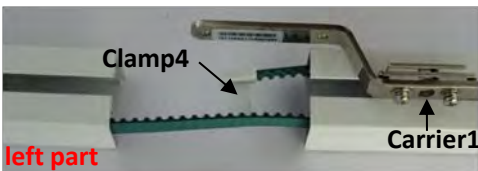
i) Adjust the belt, make the Fixture1 and Fixture2 closer, and place the Rubber (the Rubber can buffer the collision between two Handles of the Carrier)
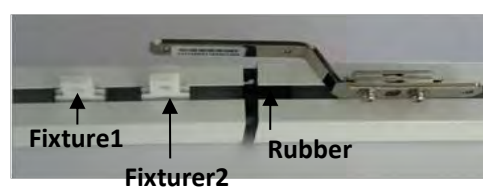
j) Insert an Insertion between the Fixtue1 and Fixture2, and install the Handle onto the Insertion.

k) Face to the reverse side of the rail, adjust the position of the Track Joiner, make its middle part located in the gap of two rails, then outward stretch the rails with hands (Purpose: to let the belt running smoothly), meanwhile tighten the screws of the track joiner.

l) Turn to reverse side of the rail, can install in more than one Ceiling Brackets (Recommended every 600 meters using one Ceiling Bracket), install the Ceiling Brackets on the wall, need to use other fixed devices, about the fixed devices, need to turn to 3rd party.
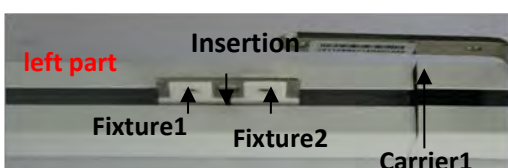

m) Screw the motor into the Drive Unit, then clamp tightly and lock it (Notice: the Master motor should be installed to the side with the power supply; need to connect the master and slave by the RJ11 6P6C, HDL provides the RJ11 cable is 1 meter. If this 1 meter of RJ11 cable is not suit for you project, you can make the other RJ11 cable, about the Clamping Tool of RJ11, please see this:
http://www.alibaba.com/product-detail/Round-LAN-Wire-Stripper-6P6C-RJ11_60076618303.html

n) Hang the Hook Unit on these two Drive Units(Notice: each Drive Unit has four holes, the Hook Units make the curtain better to shield the window, as well as the motor, make it look beautiful). Install the curtain rail on the wall, and hang the curtain to the corresponding position. Finish the installation.
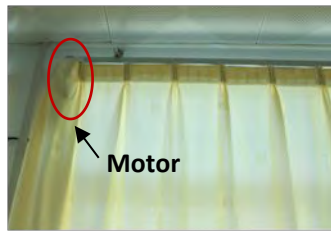
3.7 HDL BUS Pro Description

Connector Information

buspro	
DC24V	Red
COM	Black
DATA-	White
DATA+	Yellow

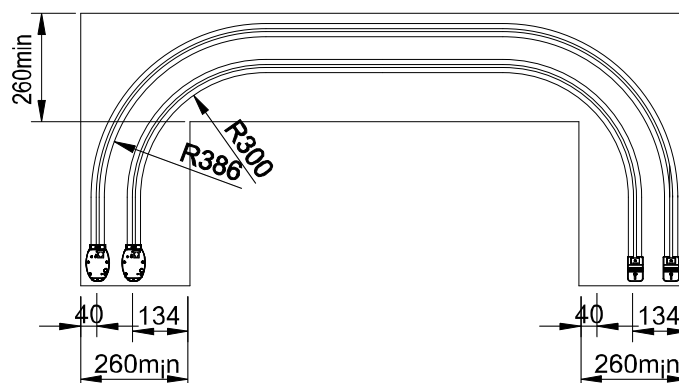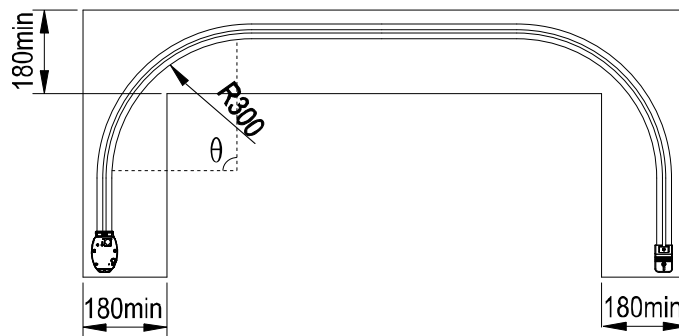# 4. Curved Rail

HDL provides the curved rail. But has some limits.

θ<=90° and R>=300mm curtain rail is available.

5. LED Indication

Function	LED status	enter into the status	exit the status
Working fine	LED turns ON 1 time per 2s	— —	— —
Modify the address of motor	LED turns on	long press the button 3s	long press the button 3s / no operation 2minutes
Testing for installation	LED turns OFF 1 time per 2s	long press the button 5s	long press the button 5s / no operation 20minutes
Easy programming	LED Turns OFF 2 times per 2s	long press the button 10s	long press the button 10s / no operation 20minutes

Note: the above operations are carried out in normal work.

6. Software Configuration

6.1 Workflow

a) When power on, test the distance of the curtain by itself, then, short press PROG button and control the curtain, make sure the curtain is working properly.

b) Change the address of curtain by HDL-BUS pro or HDL Easy Engineering Editor software.

c) Confirm the motor's running mode, forward or reverse.

d) Set the work mode: long drag, short drag, drag no action.

e) Set the reserved distance. (Don't change after setting.)

f) Set the panel's target and control the curtain.

Note: the Step c), d), e) are set by HDL Easy Engineering Editor software.

6.2 Modify address of motor

Long press the button 3s, the LED will turn ON, then you can modify the address by HDL Easy Engineering Editor software. Press the button 3s again or has no action after 2min, it

will exit the programming mode.
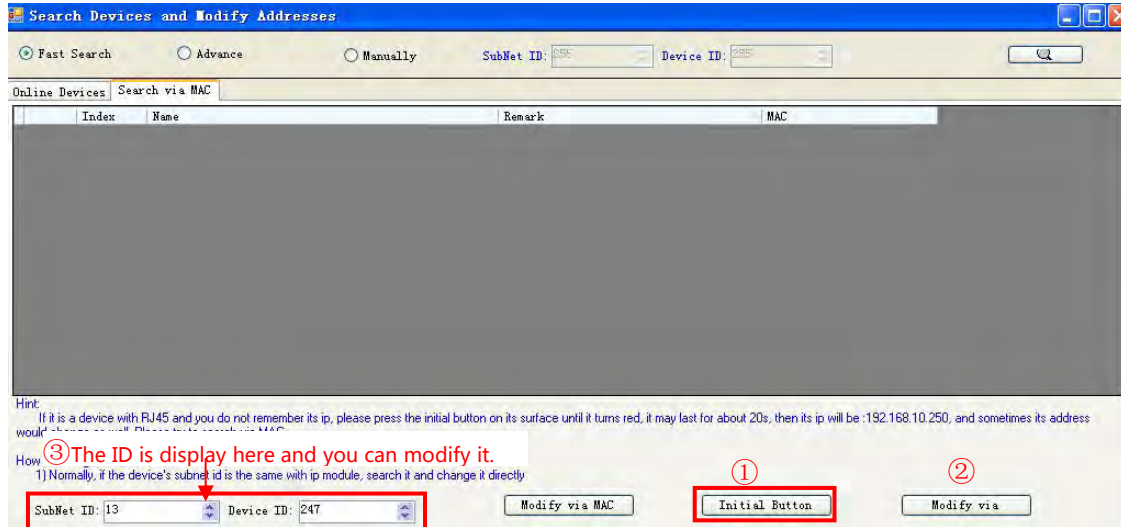
6.3 Confirm motor running mode

Motor running mode：Forward or Reverse

Confirm motor running mode by HDL Easy Engineering Editor software.

A.   Input motor's Subnet ID and Device ID

B.   Download the information of Curtain, the default running mode is FWD.

C.   Select OPEN ,

D.   Click Test, then to observe the Curtain's open direction is correct or not.

There are two results:

a) If the curtain opens, that means the setting (Step B) is right, no need to change.

b) if the curtain closes, that means you have to set REV in Step B.

E.   Save and upload the setting.
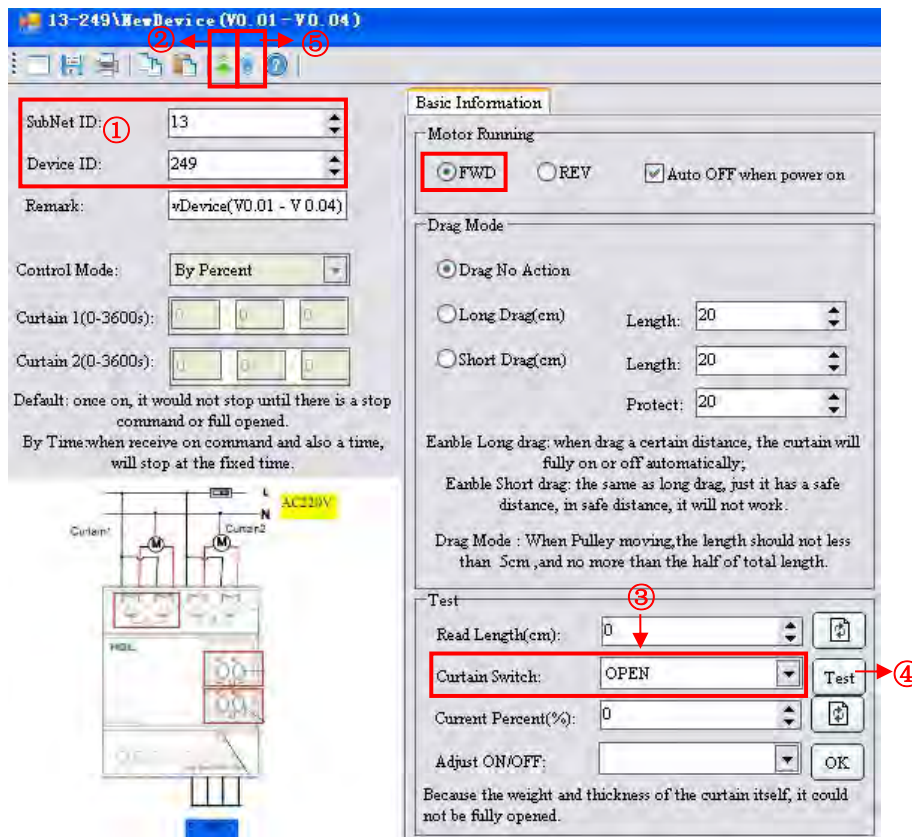
6.4 Testing for Installation (very important)

Long press the PROG button 5s, the LED will turn OFF 1 time per 2s, the curtain

enters the installation mode. It will measure movable distance for the rail

automatically; short press the button to manually open and close after the measuring

is done.   (short press: open->stop->close->stop->open…)

Press the button 5s to exit the installation mode and enter the normal working mode,

it will also exit the installation mode after 20min without operating.

Automatic detection (see Section 6.4)   User setting (see Section 6.5)

Installation mode length   User run-time length
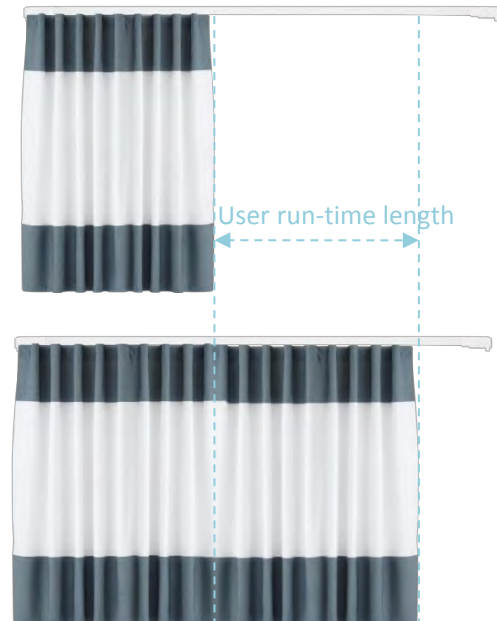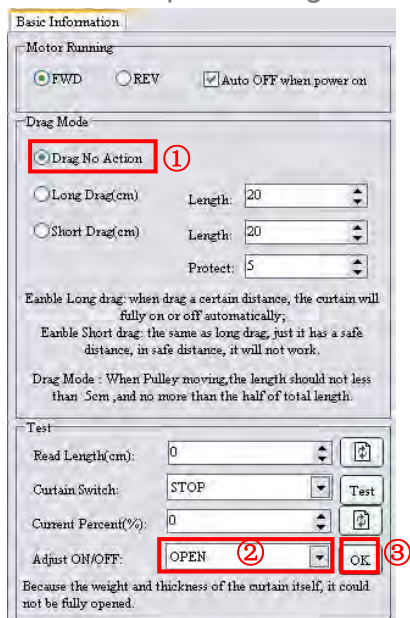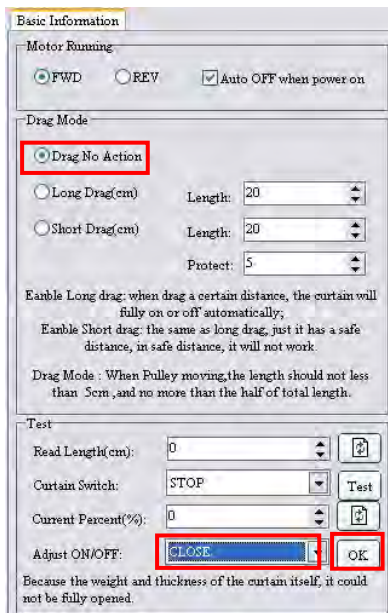
6.5 Set position of open and close

6.5.1 Position open setting

a) Select Drag NO Action mode, then manually drag the curtain to the limit position of curtain-open which is the end-user wants.

b) Select Open, then click OK, now the limit position of Open is saved, it is a new different position from the detected limit position in Section 6.4.

6.5.2 Position close setting

a) Select "Drag NO Action" mode, Save and Upload, then manually drag the curtain fabric to the limit position of curtain-close which is the end-user wants.

b) Select Close, then click OK, now the limit position of Close is saved, it is a new different position from the detected limit position in Section 6.4.

6.6 Set the curtain mode

Select drag mode
Set the safe distance
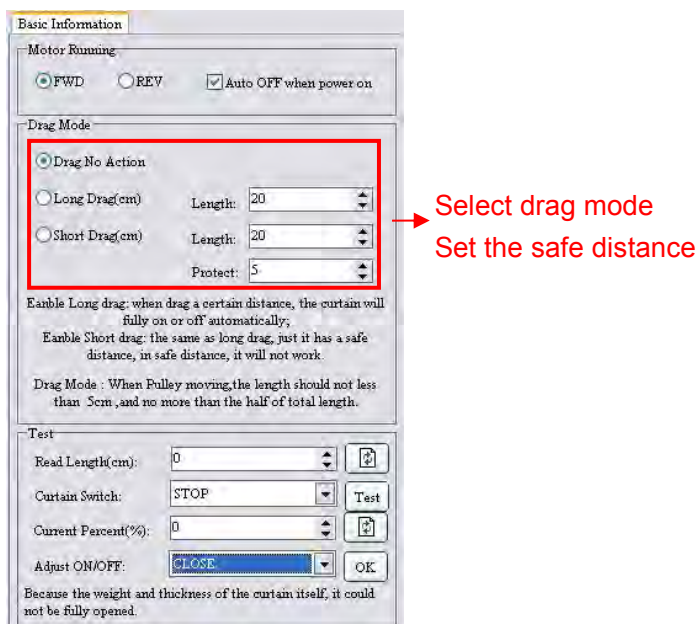
Manual mode：long drag，short drag，drag no action.

Long drag：Drag the certain fabric for certain distance (longer than the setting *Length*) and let go, the curtain will fully open or close automatically according to the direction you drag, the default Long drag *Length* is 20cm.

Short drag：Drag the certain fabric for certain distance, (the distance shall be more than the protect *Length* and less than the short drag *Length)*, the curtain will open or close automatically according to the direction you drag, the default protect *Length* is 5cm，in order to avoid misoperation or curtain flap, you can set the protect *Length*. The default Short drag *Length* is 20cm.

Drag no action：free mode, end-user can manually drag the curtain to any position freely.

Note: long drag and short drag are depend on you habit. When pulley moving, the length should longer than protect *Length*, and no more than half of total length.

6.7 Set curtain's action after power on

Even there is power failure, you still can control the curtain manually, the curtain is not locked mechanically.

**Set the curtain's action after power on: Auto close or no action.**

Auto OFF when power on：If this option is checked, after power on, the curtain will close automatically. If this option is unchecked, when power on, it will stay still, and wait for the end-user's command, say 40%, the curtain will fully close automatically(to initialize the curtain position), and then it reaches the desired position, 40%.
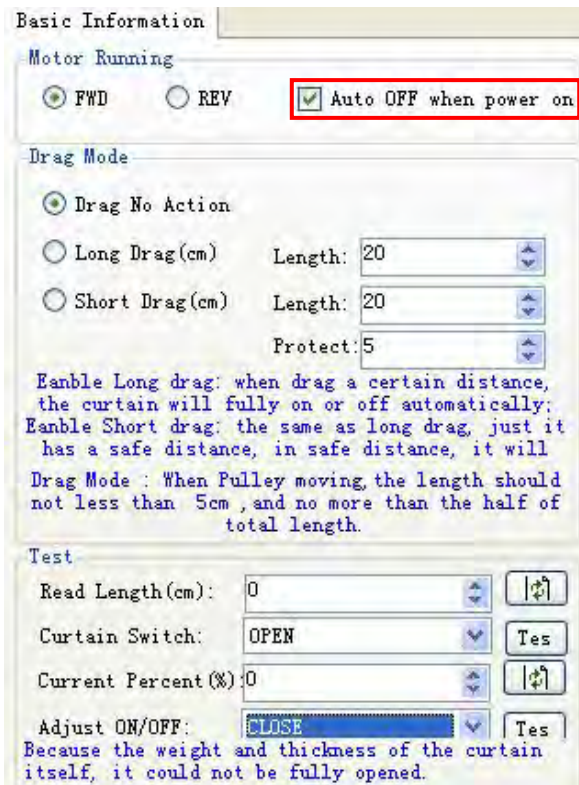
6.8 Panel Setting

The curtain can be controlled by 2 different kinds of commands.

1：The button's setting as following. (HDL-BUS software)
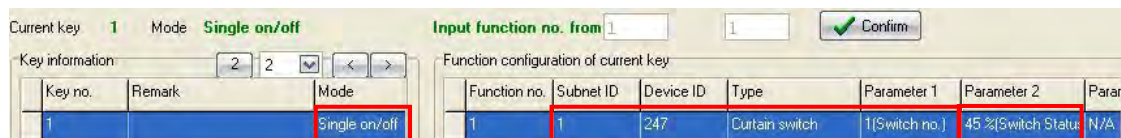
Operation:

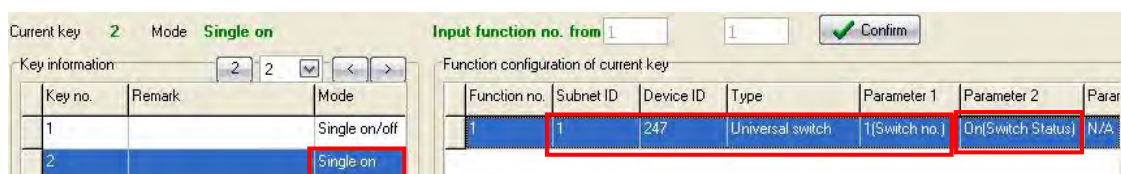Long press the button, open or close the curtain, when loosen the button, it will stop

running (If the curtain reaches the fully open or close position, and you have not loosen

the button, it will stop automatically for protection.)

Short press the button, it will go to the desired position, 45%. Short press again, the

curtain will stop.

2：The button's setting as following. (HBST software)

Operation: With only one button, you can control the curtain's open, close and stop.

6.9 Easy programming mode

Long press the button 10s, the LED will turn OFF 2 times per 2s to indicate the curtain. It has entered into easy programming mode.

Now, the panel appears "programming", then keep pressing the page up, page down button (button 9 and 10) of DLP switch together, the panel will appears "external programming".

In this mode, you can control the curtain by PROG button, and switch panel can record the status from curtain motor by long press or short press buttons in panel. Long press the panel's button, it will cover the original targets and it is only controlling the curtain. Short press the button, it will add the curtain control.

Long press the button of motor for 10s, it can exit this status. If it is no action, it will exit automatically after 20min without operation.

This function is to be used with new generation of DLP, HDL-MPL8.48.

7. FAQ

7.1 CurtainFAQ001_Buspro

Q:

How does the Master Motor control the Slave Motor?

A:

The Master is connected to the HDL Buspro port and AC220V, and it provides DC12V to the Slave motor by the RJ11 6p6c. When the Master is forwarding or reversing, will control the Slave via the RJ11 line at the same time.

7.2 CurtainFAQ002_Buspro

Q:

Are all fixing accessories provided by HDL?

A:

No, HDL just provides the Ceiling Brackets (See section 3.4), you need to find other fixing accessories from 3rd party providers.

7.3 CurtainFAQ003_Buspro

Q:

Why and when we need the Slave Motor?

A:

When the curtain fabric is heavy, you may need to use Slave Motor, see the below curve.

8. NOTES