

## **User Manual**

Dry Contact Sensors HDL-MSD08.40/HDL-MSD04.40





# buspro

www.hdlautomation.com



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## 1. Overview

#### 1.1 General Information

#### 1.1.1 Description

HDL's version 4 Dry Contact modules, 8 channel dry contact module - HDL-MSD08.40 and 4 channel dry contact module - HDL-MSD04.40

The dimension of this product is 45\*45\*16, quite small and so is suitable to be used in a retrofit project where end-user would like to equip HDL-BUS smart system but would also like to reserve their existing Switch (normal one).

#### 1.1.2 Serial Numbers



MSD04.40

- 4 Channels
- 4 LED output function



MSD08.40 • 8 Channels

## 1.2 Function Qualities Description

#### 1.2.1 Common functionalities

- 4/8 channels Dry Contact Input with tamper detection function.
- Support Switch type : Mechanical Switch ,Single On ,Single Off, Single On/Off , Combination On, Combination Off, Combination On/Off, Multi-function, Parallel switch.
- Support switch mode: Switch mode, Dimmable two-way, dimmable increase, dimmable reduced.
- Control Target type : Scene, Sequence, Universal Switch, Single channel lighting control, Broadcast Scene, Broadcast channel, Curtain Control, Panel Control, GPRS control, Security Module, TT player etc.
- Tamper-proof, need 1K Ohm resister in parallel to dry contact .
- Security function, need to be used with the security module.
- Support online upgrading by HDL Bus.

HDL

#### 1.2.2 Device Description



- a. four channels input
- b. HDL-Buspro
- c. LED indicator
- d. programming button
- e. four LED output, corresponding to the four channels input

a. eight channels input

- b. HDL-Buspro
- c. LED indicator
- d. programming button

## 2. Technical Data

Electric Parameters:	
BUS power supply	DC12-30V
BUS power consumption	10mA/DC24V
Environmental Conditions:	
Working temperature	0°C~45°C
Working relative humidity	Up to 90%



Storage temperature	-20℃~+60℃				
Storage relative humidity	Up to 93%				
Approved					
CE					
RoHS					
Production Information:					
Dimensions	45×45×16(mm)				
Weight	MSD04.40: 57(g); MAS08.40: 45(g)				
Housing material	ABS				
Installation	Screw fix installation				
IP Protection	IP20				

## 3. Installation

Screw fix installation

## 3.1 HDL BUS Pro Description

#### **Connector Information**

buspro							
DC24V	Red						
COM	Black						
DATA-	White						
DATA+	Yellow						

### 3.2 Commissioning

#### Method One:

- a) open the HDL-BUS Pro Setup tool.
- b) Keep pressing the programming button for 3 seconds, it turns to red color.
- c) on the software, click the "Address management", and select the "Modify address (when device button is pressed)", it will show a window like this:

indi dddress or equipme	SIR	
Subnet ID		Indicate initial address
Device ID		Modify initial address



d) click the "Indicate initial address", then it will show the ID of this device. If you want to modify the address, fill in the new address, and click the "Modify initial address". Click the "+Add" button, the device will be add in "ON-line devices" list.

Method Two:

- a) open the HDL-BUS Pro Setup tool.
- b) click the search button, it will show a new window, click search button, search the online devices. Click the "Add all" button, the devices which be searched will be add in "ON-line devices" list.

## 4. Software Configuration

#### 4.1 Basic setting

d 🗱 Sensor Input	: Module	J	
Basic information Conf	guration Security Setting		
Select device		Model picture	
Device	1-13HDL-MSD04.40 (YY MSD04.40)		
Device configuration			
Model	HDL-MSD04.40		
Subnet ID	1 Device ID 13		
Device remark			
Remark	YY MSD04.40		
MAC address			
MAC	00. 00. 01. 33. 71. 40. 04: 00		
<u></u>			
- Madžu a knat ID and	la vice ID secondar to MAC	Picture upload	
Subnet ID	Device ID Save	Upload. 🔅 Delete	

#### 4.1.1 Change the ID of the device

Every HDL-BUS device has one Subnet ID and one Device ID, the Device ID should be unique in its Subnet and the Subnet ID should be kept consistent with the Gateway (typically the SB-DN-1IP or HDL-MBUS01IP.431).

#### 4.1.2 Remark

Generally set it like "for living room" to indicate some info.



## 4.2 Configuration

nformatii	on Configuration	Security Setting	1											
ct devic	e													Setting For Keys
evice	1-13-HD	L-MSD04.40 (YY M	ISD04.40	)			Current status		N/A	Currer	nt mode	Switch mode		set
nt switci	n No.	1					Input target	No. from	1	То	5	Confirm		Edit switch
ch inforr	nation					П	arget informatio	on of the currer	t state of the cur	rent switch				Bemark
ritch No	Туре	Mode	Status	Remark	Delay(mm:ss)		Object no.	Subnet ID	Device ID	Туре	Parameter 1	Parameter 2	Parameter 3	
	Combination On	Switch mode	N/A		N/A	Ī	1	1	78	Universal switch	21(Switch no.)	On(Switch Status)	N/A	Switch type
	Single Off	Dimmable increase	NZA NZA		N/A		2	0	0	Invalid	1	0	N/A	Unqualifiedde
	Single On	Dimmable increas	N/A		N76		3	0	0	Invalid	2	0	N/A	Delay time
	ongie on	o minazio regaco.			100		4	0	0	Invalid	1	0	N/A	
							5	0	0	Invalid	1	0	N/A	Dimming
														Edit target object
														Target
														Distance and the
														Dimming setting
														Low limit
														Exit

The setting interface is shown above, setting it is same as setting a HDL-BUS panel - select mode for each key, and set targets/objects to each key. Some modes are unique and you cannot find them in HDL-BUS panel, though.

#### 4.2.1 Remark

Remarks of dry contacts, you may make remarks according to the installation places.

#### 4.2.2 Switch type

#### Two different Switch types - Momentary and Toggle

You can find two different types of switch from the market.

Momentary Switch - When pressed, it is on, when released, it is off.



If "Mechanic switch" is selected for this kind of switch, a momentary effect can be produced.



Toggle Switch – It is bi-stable switch, you can set it on or off.



Generally select "Mechanic switch" mode for this kind of switch.

#### Available modes

Mechanic switch	~
Mechanic switch	
Single On	
Single Off	1
Single On/Off	
Combination On	1
Combination Off	
Combination On/Off	
Multi-function	
Parallel switch	

#### **Mechanic Switch**

Send out a command (generally the on command, e.g., light on.) when Switch is connected, send out another (generally the off command) when the Switch is disconnected.

#### Single on

Assign the Switch can turn on one object only (one channel, or one scene, or one sequence, etc.)

#### Single off

Assign the Switch can turn off one object only (one channel, or one scene, or one sequence, etc.)

#### Single on/off

Assign the Switch can turn on/off one object only (one channel, or one scene, or one sequence, etc.)

#### Combination on

Assign the Switch can turn on multiple objects (channels, scenes, sequence, etc.)



#### **Combination off**

Assign the Switch can turn off multiple objects (channels, scenes, sequence, etc.)

#### Combination on/off

Assign the Switch can turn on/off multiple objects (channels, scenes, sequence, etc.)

#### **Multi-function**

Long press – combination off (or dim, if dimming is enabled in the Dry Contact module. Dim the first object only, though.)

Short press – single on/off

Double click - Combination on

This mode can be used in, maybe, meeting, by double-click all the lighting can be on, by long-press, all lighting can be off, this can avoid mishandling and so it is **more secure**. **Parallel Switch** 

This key mode is originally designed for retrofit project where the end-users want to

implement smart system - HDL-BUS, but they want to reserve the existing toggle buttons,

the toggle buttons are to control one public area lighting (e.g., stair lighting) from multiple places



#### Wiring

Connect the two toggle buttons to two different dry contact channels

#### Setting

Select "Parallel switch" for both dry contact channels



#### 4.2.3 Unqualifiedde

Subnet ID	Device ID 13					
Model	IDL-MSD04.40					
lodify synchronously vitch mode setup						
Switch No.	Mode					
1	Switch mode					
2	Dimmable two-way					
3	Dimmable increase					
4	Dimmable reduced					
	Switch mode Dimmable two-way Dimmable increase Dimmable reduced					
	Smithable reduced					

Each channel can set the mode

Switch mode: on/off control

Dimmable increase: long press to dim up

Dimmable reduced: long press to dim down

Dimmable two-way: long press to dim up, long press again can dim down

#### 4.2.4 Delay time

		HDL-M5D04.40			
ibnet ID		1	Device ID	13	
emark		YY MSD04.40			
nchronous	: modifie	cation			
~off~ delay t	ime				
Switch No	Status	Remark	Delay(m	nm:ss)	
4	ON		0.0		
4	OFF		0:0		

Just the "Mechanic switch" switch type has the delay time.



#### 4.2.5 Dimming

Model	HDL-MSD04.40	
Subnet ID	1	Device ID 13
Remark	YY MSD04.40	Button LED setup 1
Keystroke info		
Key no.	Dimming value	
1	Toggle	
2	Toggle	
3	Toggle	
4	Toggle	
	Toggle Memory	
	includy	

Key no. : channel no./ switch no.

#### Dimming value:

**Toggle-** when turn on light, the brightness will go to 100%

**Memory-** save the brightness, when turn on light, the brightness will go to last brightness before turn off

#### 4.2.6 Target

11	Sensor	Input Modu	le	😫 Edit object							×			
Ba	sic informatio	on Configuration	Se	Basic information							_			
Select device			Data acquisition	node	Device	Model		HDL-MSD04.40			Setting For Keys			
	Device 1-13-HDL-MS		MS	Subnet ID	1		Device ID		13			set		
				Remark	YY MSD04.	40	Current switch No	u i	1					
D	urrent switch	n No.		Current status	ON							Edit switch		
-9	Switch inform	nation		Modify subnet I	D synchronously			Modify	y the intensity synchronous	ly		Preset		
	Switch No	Туре	Moc	Modify device I	D synchronously			Modify	y the running time synchron	nously				
	1	Combination On	Swi	Modify type syr	chronously							Switch type		
	2	Single On/Off	Dim	Edit target informatio	n lou un	lo : in	1.	10	10		7	Ungualifiedde		
	3	Single Off	Dim	Ubject no.	Subnetitu	Device ID	Type	Parameter I	Parameter 2	Parameter 3	_			
	4	Mechanic switch	N/A	1	1	78	Universal switch	21(Switch no.)	Un(Switch Status)	N/A		Delay time		
	4	Machanic suitch	NZA	2	n	3	Single channel lighting control	1(Channel no.)	100(Intensity)	0:0(Running time(mm ss))				
	ľ	incondine serveri	11/2	3	0	0	Invalid	2	0	N/A		Dimming		
				4	0	0	Invalid	1	0	N/A	<b>*</b> •	Edit target object		
				5	0	0	Invalid	1	0	N/A				
												Target		
												Dimming setting		
												Low limit		

Can set each channel's targets, the target's range is 1~99.

4.2.7 Low Limit



Basic information					
Model:	HDL-MSD	004.40			
Subnet ID:	1			Device ID:	13
Remark:	YY MSD0	04.40			
Minimum Dimming Minimum Dimmi	Value setting ng Value:	<	un	>	50%

Set the dimming lower limit.

The Lower limit is useful if you would like to skip the low level segment and dim from a certain level, say 50%. You want to skip it because maybe lower than 50% is impractical for you or maybe the load quality is not so good and trembles when at low level segment.

#### 4.2.8 Setting For Keys

88. Sens	or Input Nodu	ıle									
Basic inform	ation Configuration	Security Setting									
Select de	vice										Setting For Keys
Device	1-13-HD	L-MSD 04.40 (YY 1	dSD04.	40) 💌	Current status	N/A	Current mode		Switch mode		set
Current sw	itch No. ormation	1		Key Enable ▼ Key no.1 ▼ Key no.2 ▼ Key no.3 Key no.4			4-		Confirm	_	Edit switch
Switch	No Type	Mode	Stat					1	Parameter 2	Parameter 3	Hemark
1	Combination On	Switch mode	N//4					no.)	On(Switch Status)	N/A	Switch type
2	Single On/Off	Dimmable two-w	×N/A					no.)	100(Intensity)	0:0(Running time(mr	Unqualifiedde
3	Single Off	Dimmable increa	s N/A	L				-	0	N/A	
4	Mechanic switch	N/A	ON	Panel Lock Key Enable				-	0	N/A	Delay time
4	Mechanic switch	N/A	OFF	Key no.2 Key no.3					0	N/A	Dimming
				Key no.4		Exit					Edit target object Target Dimning setting Low limit

Key Enable: enable/disable the channels

Panel Lock Key Enable: If be selected, can use panel to lock/unlock this channel



## 4.3 Channel parameter

💥 Sensor Input Module						
Basic information Configuration Security Setting						
Device configuration		Advance Se	łup			
Subset ID 1 Device ID	13	Switch	Enable	Connected(0-100)	Disconnected(0-100)	Alarm Commands
		1	<b>V</b>	10	41	>>
Model HDL-MSD04.40 (YY MSD04.40)		2	~	0	100	>>
		3	<b>V</b>	0	100	>>
Basic Set		4	<b>V</b>	0	100	
Select Key: 1 Memark	window1					
Enable County						
Citable Secury						
Subnet ID Device ID	Area	Hint: If you that	want to use this	s function, please connect	the third-party devices we	Il,read the analog voltage
Security Module: 1 12	1	trigger com	mands.	unected.n the time party o	STICES IS ICHIOTED OF HOLT	ten connected, diytz min
				Diterre i	D Dtioup i	
				UFF Read	UN Head	Save
	Save					

#### 4.3.1 For Security Module

Can use channels of dry contact to trigger security, like the window state, door state.

Select Key: 1		~	Remark	window1
Enable Security				
	Subnet ID	Device ID		Área
Sana uitu Maadadar	1	12		1

If use dry contact 1 to detect the door state for security, the setting steps as follow:

- a) Select 'key 1' here and type in the remark.
- b) Enable security function.
- c) Input the security module's Subnet/Device ID, totally 8 areas can be selected, here is

area 1.

For further configuration, please turn to security module's user manual.

#### 4.3.2 Tamper proof

When the wire is cut off, the Dry Contact module can report the status to the Security module and trigger the alarm by Security module.





#### Wiring

As above diagram shows, connect a 1K Ohm resistor in parallel to the Sensor (generally a magnetic contact).

#### Setting

When the Sensor is connected (e.g., close/open the window), click the "ON Read" button and you will get a value for "Connected (0-100)", when the Sensor is disconnected, click the "OFF Read" and you will get a value for "Disconnected (0-100)", save.

If every time you read the value, the values changes dramatically, e.g., from 5, to 10, to 30, to 15 again, this means the contact is not reliable, you probably need to check the screws (both the ones on the Dry Contact module and the ones on the sensor), maybe they are not tight enough.

🎎 Sensor Input Loc	iule								
Basic information Configuratio	n Security Setting								
Device configuration				Advance Se	tup				
Subnet ID 1	1	Device ID	13	Switch	Enable	Connected(0-100)	Disconnected(0-100)	Alarm Commands	
				1	<b>v</b>	10	41	>>	J
Model I	HDL-MSD04.40 (YY MSD0	14.40)		2		0	100	>>	ו
				3		0	100	>>	ון
Basic Set				4		0	100	>>>	]
Select Key:	1	Remark	window1						
Security Module:	Subnet ID	Device ID 12	Area 1 w	Hint:If you both conne trigger com	want to use thi cted and disco mands.	is function, please connect onnected.If the third-party of OFF Read	the third-party devices we devices is removed or not v	Il,read the analog voltage vell connected, dry4z will	
			Save						

When the status of Sensor (the Magnetic Contact) in channel 1 is changed, no matter it is on or off, it will report to the Security module (the 1/12) and it is up to the Security module to trigger the alarm or not (based on the Sensor type set in Security module - Normally Closed type or Normally Open type). When the wire is cut off, we regard this is a more emergency situation, you can set the "Alarm Commands",

Ĺ	Advance Setup							
	Switch	Enable	Connected(0-100)	Disconnected(0-100)	Alarm Commands			
	1	<b>v</b>	10	41	>>			

Normally you can set it like this,



Object no.	Subnet ID	Device ID	Туре	Parameter 1	Parameter 2	Parameter 3
1	9	230	Security Module	1(Area no.)	Emergency	N/A
2	0	2	Invalid	37	130	N/A
3	0	2	Invalid	37	130	N/A
4	0	2	Invalid	37	130	N/A
5	0	2	Invalid	37	130	N/A
6	0	2	Invalid	37	130	N/A
7	0	2	Invalid	37	130	N/A
8	0	2	Invalid	37	130	N/A

PS: You need to authorize the ID (of the Dry Contact module) in Security module, for more setting about Security module, please turn to corresponding doc.

## 5. FAQ

## 5.1 DryContactFAQ001\_HDL-BUS

Q:

HDL-MSD04.40 has indicators for four channels output, but where is the appropriate place to put those indicators?

A:

Some 3<sup>rd</sup> party panel has a hold, can put the indicator of MSD04.40 in the hold.

_		
	٠	
_		

5.2 DryContactFAQ002\_HDL-BUS

Q:

MS04.40 has four led output, what's the type of led can I connect?

A:

Each led channel is 5V 10mA, so you can connect the appropriate led.



## 6. NOTES

Since 1095
SINCE 1905