Project model: General external interface485Agreement (opening and closing curtains)	Protocol version:A4	
Responsible engineer:	time:2015-1-6	Supervisor review:

new version update:

2015-01-10： Reformat

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1 Function introduction

Universal 485 protocol suitable for opening and closing curtains (see General Provisions for basic format)

2 Applicable read and write address descriptions

Data address	describe	Data Format	Readable and writable	
0x00	ID_L	0x01~0xfe	writable	*
0x01	ID_H	0x01~0xfe		*
0x02	Current location (percentage)	0x00~0x64 (0xff means no stroke is set) When UP reaches the stroke point, it is 100% When OFF (DOWN) to the stroke point, it is 0%	read only	M
0x03	Motor default direction	0x00—Default direction 0x01—Reverse direction	Readable and writable	M
0x04	Manual start enable	0x00—enabled by default 0x01—Close, no pull function	Readable and writable	M
0x05(A3 Version)	Motor status	0x00—STOP 0x01—OPEN 0x02—CLOSE 0x03—SETTING	read only	M
0x27 (A1)	Passive external switch type	0x01—Default double bounce switch 0x02—Double non-bounce switch 0x03—DC246 electronic switch 0x04—Single key cycle switch	Readable and writable	M
0x28 (A1)	High current external switch type (Only EV type motor with 5 core power cord)	0x00—High power double-key non-rebound mode (default) 0x01—Hotel mode (card power switch) 0x02—Powerful double-key rebound mode	Readable and writable	M
0xe0-0xef	information	For host to read and write *(Note 1)*	Readable and writable	*
0xF0	Equipment type	0x01 opening and closing curtain *(Note 1)*	read only	*
0xf1	Number of module channels	1-15 *(Note 1)*	read only	*
0xfd	Software version	0-255 *(Note 1)*	read only	*
0xfe(A1)	Protocol version	0xA4	read only	*

3 Description of applicable control instructions

instruction *(Note 2)*	describe	Command parameters	Remark
0x01	open command	none	
0x02	close command	none	
0x03	stop command	none	
0x04	Percent command	0~100(percentage)	
0x07	Delete trip	None (delete all)	*
0x08(A1)	reset	none	*
0x09(A2)	Set profile	See general instructions	
0x0A(A2)	Run profile	See general instructions	
0x0B(A2)	Delete profile	See general instructions	
0x0f(A4)	negate command	None. If the last execution was an open command, then the close command will be executed. Otherwise, the open command will be executed.	

4 other instructions

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5 for example

5.1Control command (0x03)

5.1.1 Control command-Open

	Start code	Device address		Function	Data address	CRC16	
Host sends	55	12	34	03	01	AD	8A
device returns	55	12	34	03	01	AD	8A

	Start code	Device address		Function	Data address	CRC16	
Host sends	55	00	00	03	01	E9	3C
device returns	none						

Group control

5.1.2 Control command-Close

	Start code	Device address		Function	Data address	CRC16	
Host sends	55	12	34	03	02	ED	8B
device returns	55	12	34	03	02	ED	8B

	Start code	Device address		Function	Data address	CRC16	
Host sends	55	00	00	03	02	A9	3D
device returns	none						

Group control

5.1.3 Control command-stop

	Start code	Device address		Function	Data address	CRC16	
Host sends	55	12	34	03	03	2C	4B
device returns	55	12	34	03	03	2C	4B

	Start code	Device address		Function	Data address	CRC16	
Host sends	55	00	00	03	03	68	FD
device returns	none						

control

5.1.4 Control command-percentage (30%)

	Start code	Device address		Function	Data address	Data information	CRC16	
Host sends	55	12	34	03	04	1E	C8	E5
device returns	55	12	34	03	04	1E	C8	E5
	55	12	34	03	04	FF*	08	AD

(*) When the device does not set a stroke, it returns 0xFF and the motor does not move.

When the device is powered off and then powered on again, there is no travel at this time and cannot be controlled by percentage commands. You can execute the open or close command to restore the stroke before executing the percentage command control.

	Start code	Device address		Function	Data address	Data content	CRC16	
Host sends	55	00	00	03	04	1E	7E	D6
device returns	none							

Group control

5.1.5 Control command-delete trip

	Start code	Device address		Function	Data address	CRC16	
Host sends	55	12	34	03	07	2D	88
device returns	55	12	34	03	07	2D	88

5.1.6 Control command-restore factory settings

	Start code	Device address		Function	Data address	CRC16	
Host sends	55	12	34	03	08	6D	8C
device returns	55	12	34	03	08	6D	8C

After restoring to factory settings, all motor settings will be restored to their default state, and all saved data will be cleared. The device address is restored to 0xfefe and the itinerary is deleted.

5.1.7 Control command-set scene mode

	Start code	Device address		Function	Data address	Data content	CRC16	
Host sends	55	12	34	03	09	01	8D	BD
device returns	55	12	34	03	09	01	8D	BD
						FF*	0C	3D

Each motor can set up to 20 scene modes (the data content is the scene mode number). When the device does not set a schedule, the profile mode cannot be set and 0xFF is returned. When the device is powered off and then powered on again, the profile mode cannot be set at this time. You can first execute the open or close command to resume the trip, and then the profile mode can be set.

	Start code	Device address		Function	Data address	Data content	CRC16	
Host sends	55	00	00	03	09	01	3B	8E
device returns	none							

Group control

5.1.8 Control command-Run situation mode

	Start code	Device address		Function	Data address	Data content	CRC16	
Host sends	55	12	34	03	0A	01	8D	4D
device returns	55	12	34	03	0A	01	8D	4D
						FF*	0C	CD

When the motor is allowed to run without setting the scene, the motor will not run and 0xFF will be returned. When the motor has no set stroke, the scene mode cannot be run and 0xFF is returned. When the device is powered off and then powered on again, the profile mode cannot be run at this time. You can execute the open or close command to restore the schedule before running the profile mode.

	Start code	Device address		Function	Data address	Data content	CRC16	
Host sends	55	00	00	03	0A	01	3B	7E
device returns	none							

Group control

5.1.9 Control command - Delete profile

	Start code	Device address		Function	Data address	Data content	CRC16	
Host sends	55	12	34	03	0B	01	8C	DD
device returns	55	12	34	01	0B	01	8C	DD

	Start code	Device address		Function	Data address	Data content	CRC16	
Host sends	55	00	00	03	0B	01	7A	EE
device returns	none							

Group control

5.2**Read command (0x01)**

5.2.1 Read command-position (percentage)--0x02

	Start code	Device address		Function	Data address	Data length	CRC16	
Host sends	55	12	34	01	02	01	2B	4D
	Start code	Device address		Function	Data length	Data content	CRC16	
device returns	55	12	34	01	01	1E*	6A	75
						FF*	AA	3D

*When the device has a set stroke, the device returns to the current stroke (0x00~0x64), 0x00 means fully closed, and 0x64 means fully open.

* When the device does not set the stroke, the device returns 0xFF

5.2.2 Read command-direction status--0x03

	Start code	Device address		Function	Data address	Data length	CRC16	
Host sends	55	12	34	01	03	01	2A	DD
	Start code	Device address		Function	Data length	Data content	CRC16	

device returns	55	12	34	01	01	00*	EA	7D

* 0x00-default direction, 0x01-reverse direction

* This direction is used to determine the opening and closing direction of the curtain. For example, the curtain is closed when the open control command is sent. At this time, please read the direction, and then write the opposite direction to reverse the direction, so that the control command is consistent with the actual operation of the motor.

5.2.3 Read command-hand pull state--0x04

	Start code	Device address		Function	Data address	Data length	CRC16	
Host sends	55	12	34	01	04	01	28	ED
	Start code	Device address		Function	Data length	Data content	CRC16	
device returns	55	12	34	01	01	00*	EA	7D

* 0x00-can be started by hand by default, 0x01-cannot be started by hand

5.2.4 Read command-motor status--0x05

	Start code	Device address		Function	Data address	Data length	CRC16	
Host sends	55	12	34	01	05	01	29	7D
	Start code	Device address		Function	Data length	Data content	CRC16	
device returns	55	12	34	01	01	00*	EA	7D

* 00-Indicates the motor stops. 01-means the motor is on. 02-Indicates the motor is off. 03-Indicates that the motor is in setting status

5.2.5 Read command-weak current switch type--0x27

	Start code	Device address		Function	Data address	Data length	CRC16	
Host sends	55	12	34	01	27	01	31	DD
	Start code	Device address		Function	Data length	Data content	CRC16	
device returns	55	12	34	01	01	01*	2B	BD

* 0x01 - Default double rebound switch (open button, press once to open, press again to stop)

* 0x02-Double non-rebound switch (open key, press to open, lift to stop)

* 0x03-DC246 electronic switch (open button, press once to open, press again to stop)

* 0x04-Single-key cycle switch (one button, press it once to open, press it again to stop, press it again to close, press it again to stop)

5.2.6 Read command-power switch type--0x28

	Start code	Device address		Function	Data address	Data length	CRC16	
Host sends	55	12	34	01	28	01	34	2D
	Start code	Device address		Function	Data length	Data content	CRC16	
device returns	55	12	34	01	01	00*	EA	7D

* 0x00 - Default is an ordinary two-wire high-voltage switch (the white wire is connected to the live wire to open, the black wire is connected to the live wire to close, and the disconnection stops)

* 0x01-Hotel mode (the white wire is connected to the live wire and the motor turns on, and the white wire is disconnected and the live wire motor is turned off)

5.2.7 Read command-protocol version--0xfe

	Start code	Device address		Function	Data address	Data length	CRC16	
Host sends	55	12	34	01	fe	01	6A	4D
	Start code	Device address		Function	Data length	Data content	CRC16	
device returns	55	12	34	01	01	A3*	AA	04

5.3**Write command (0x02)**

5.3.1 Write command-write device address* --0x00

	Start code	Device address		Function	Data address	Data length	data	data	CRC16	
Host sends	55	00	00	02	00	02	12(ID_L)	34(ID_H)	50	7F
	Start code	Device address		Function	Data address	Data length	CRC16			
device returns	55	12	34	02	00	02	9A	2C		

* ID_H cannot be set to 0x00, 0xff, and ID_L cannot be set to 0x00, 0xff. The default address is 0xfefe (restore factory settings).

* Before writing the device address, press and hold the motor setting button for 5 seconds and wait until the LED flashes twice before executing. After success, the LED will flash 5 times continuously. If the operation is unsuccessful, the device address remains unchanged.

*Default address 0xfefe

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5.3.2 Write command-set direction--0x03

	Start code	Device address		Function	Data address	Data length	data	CRC16	
Host sends	55	12	34	02	03	01	01*	9D	5B
	Start code	Device address		Function	Data address	Data length	CRC16		
device returns	55	12	34	02	03	01	DA	DD	

* 0x01 is set to the reverse direction

5.3.3 Write command-set manual enable--0x04

	Start code	Device address		Function	Data address	Data length	data	CRC16	
Host sends	55	12	34	02	04	01	01*	2C	9A
	Start code	Device address		Function	Data address	Data length	CRC16		
device returns	55	12	34	02	04	01	D8	ED	

* Set to start without hand pull function.

5.3.4 Write command-set weak current switch type--0x27

	Start code	Device address		Function	Data address	Data length	data	CRC16	
Host sends	55	12	34	02	27	01	02*	9D	51
	Start code	Device address		Function	Data address	Data length	CRC16		
device returns	55	12	34	02	27	01	C1	DD	

* 0x02 Set to double-key non-bounce switch mode

5.3.5 Write command-set strong power switch type--0x28

	Start code	Device address		Function	Data address	Data length	data	CRC16	
Host sends	55	12	34	02	28	01	01*	ED	53
	Start code	Device address		Function	Data address	Data length	CRC16		
device returns	55	12	34	02	28	01	C4	2D	

* 0x01 is set to single firewire switch mode (card power switch)

5.4**Slave request command (0x04)**

	Start code	Device address		Function	Data address	CRC16	
Send from the machine	55	FE	FE	04	01	BB	14

	Start code	Device address		Function	Data address	Data length	data	data	CRC16	
Host sends	55	00	00	02	00	02	12(ID_L)	34(ID_H)	50	7F
	Start code	Device address		Function	Data address	Data length	CRC16			
Return from the machine	55	12	34	02	00	02	9A	2C		

When the motor is powered on, press and hold the motor setting button. After the indicator light flashes twice (about 5 seconds), release the button. The slave will actively send a command requesting address allocation to the host. Within 10 seconds, the host can send the command to the slave. Send a write address command to change the slave device address.