

Smartpower

AC Motors Users Manual

Type – Side Motors (A & B type)

Thank you for your choosing *Smartpower* roller shutter door motor. SM ACM-series devices of roller shutter door motor introduce the latest driving system, which is adopted the 21st century advance electronic control technology. Allow you to operate with several ways, for example: electronic control, remote control, and manual control. Apart from the guard against burglary function, below advantage ensures you enjoy choosing SM ACM products: low noise, light vibration, beautiful outlook, safety and reliability, easily to install and operate. The roller shutter door motor is widely applied in exhibitions, hotels, theaters, stores, factories, warehouse, garages and so on. It is considered the ideal installation for rolling door and fire prevention door.

The drive system of roller shutter door motor is belong to the newest utility product. There have no uniform standard to regulate the marketing. In order to sure your jus legitimate, please read these instructions seriously and install by professional person.

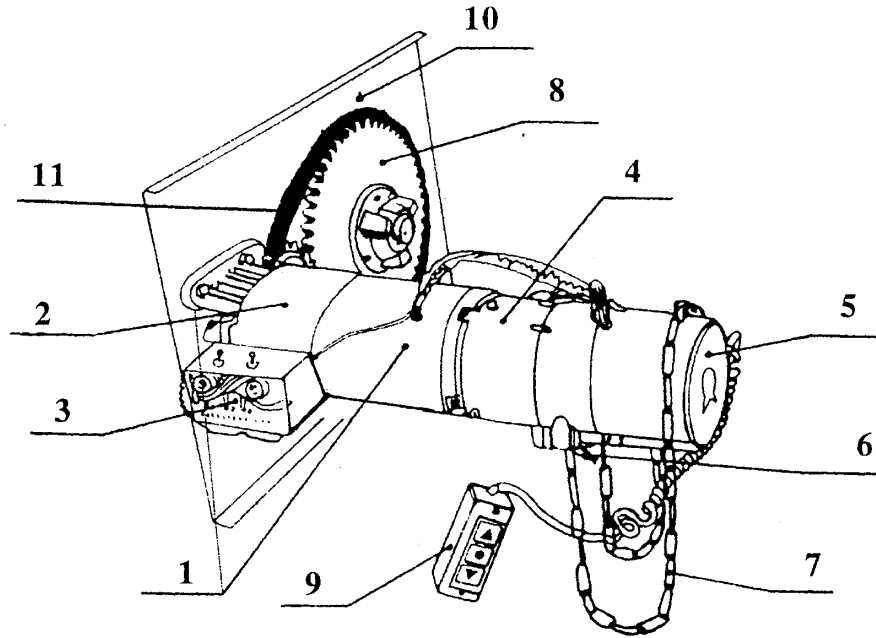
The instruction is currency edition of roller shutter door motor series. You chose outlook of roller shutter door motor and other part may be different with the instruction. But it won't influence your use.

Our company keep the right of improve the product technical, if need to amend, sorry that we won't be notice to you again.

I、 Main structure:

The drawing 1 is chain-drive series (B) direction. It's including motor, reduction gear-box, automatic limited switch, manual operation mechanism, electronic operation mechanism, button switch, remote control transmitter, remote control receiver, fixed installation iron board, chain-drive mechanism, preventive - break chain device. (chart 1-1)

The drawing 2 is gear-drive series (A) direction. It's including motor, reduction gear-box, automatic limited switch, manual operation mechanism, electronic operation mechanism, button switch, remote control transmitter, remote control receiver, fixed installation iron board, gear-drive mechanism. (chart 1-2)



Motor Type – B (Chain type)

Chart 1-1

Item	Name	Item	Name
1	Motor	7	Manual operation chain
2	Reduction gear-box	8	Big sprocket
3	Limit switch	9	Button switch
4	Bread and releser body	10	Installation iron board
5	Electric box	11	Gear chain
6	Manual operation mechanism		

Motor Type – A (Gear type)

Chart 1-2

Item	Name	Item	Name
1	Motor	7	Manual operation chain
2	Reduction gear-box	8	Drive-gear
3	Limit switch	9	Button switch
4	Bread and releser body	10	Installation iron board
5	Electric box	11	Transition Gear
6	Manual operation mechanism		

Drawing 3 is the installation. The parts list as chart 1-3.

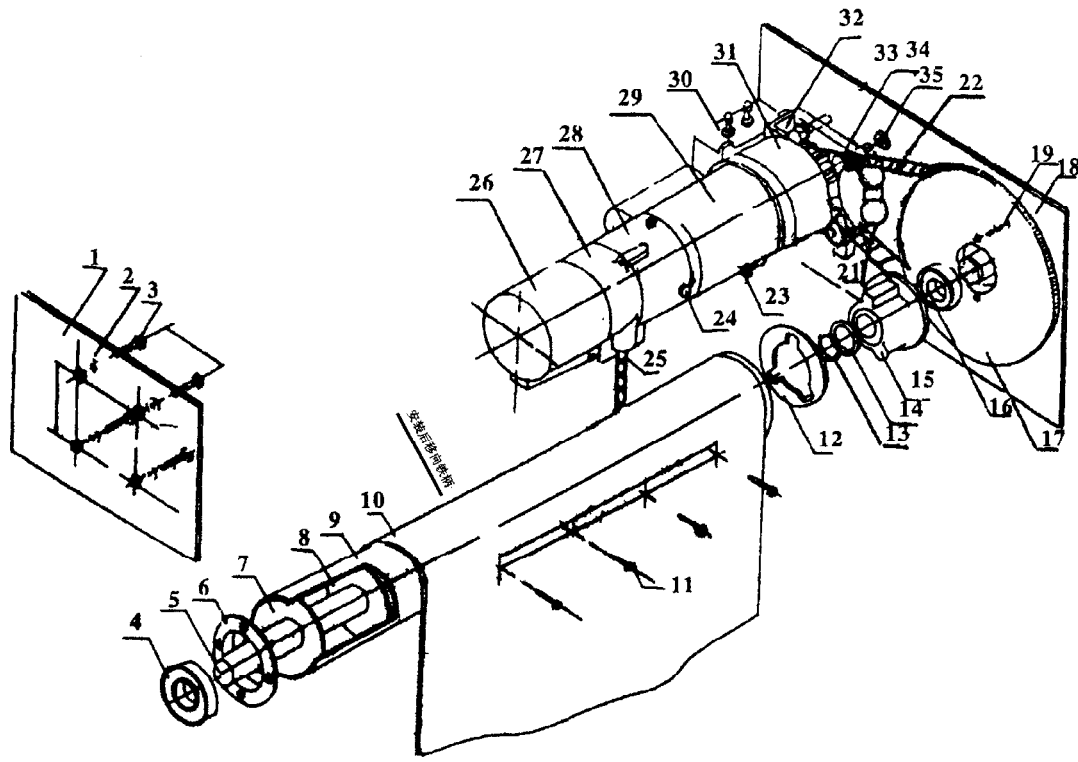


Chart 1-3

Item	Name	Item	Name	Item	Name
1	Installation iron board 1	13	Shield	25	Manual operation chain
2	Washer	14	Press ring	26	Electric box
3	Bolt	15	Bearing prop	27	Chain box
4	Bearing	16	Bearing	28	Brake device
5	Axial shaft	17	Big sprocket	29	Motor
6	Bearing cover	18	Installation iron board 2	30	Automatic limited switch
7	Ringer 1	19	Bolt	31	Reduction gear-box
8	Ringer 2	20	Small sprocket	32	Support prop
9	Iron roller	21	Preventive-break chain device	33	Bolt
10	Rolling door	22	Chain	34	Washer
11	Screw	23	Bolt	35	Nut
12	Sprocket ring	24	Bolt		

Note: there have no parts 13,14,15,16,19 if use the cast iron big sprocket.

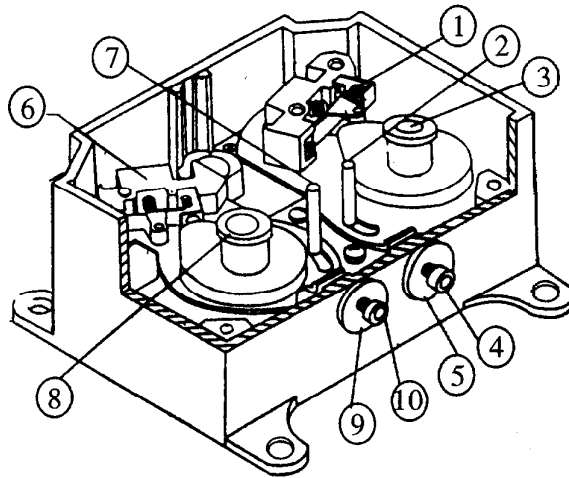
The request for install precision :

- 1) The deviation for the pipe level and vertical depth like that : when the door width is under 3 meter , the deviation should be less than 3mm, when the door width is more than 3meter . The deviation should be less that 5mm.
 - 2) No space for the install iron board and the wall . Make sure the big sprocket and the install iron board is relative balance . The small sprocket and the big sprocket should be in the same plane surface. So that the gear chain can be moving smoothly .
 - 3) In order to reduce the noise from the motor, there should be no space for the install iron board and the wall.
2. Connect the ringer and axial shaft:
- 1) It must measure the connect place before connection, and keep the length of axial shaft is enough to install the bearing. Make sure the length of bearing and door operate will not distribute.
 - 2) It should be make sure the horizontal of axial shaft and ringer when you connect the ringer and axial shaft.
3. Connect the bearing and bearing cover: put the bearing cover into the axial shaft, and then press the bearing into the axial shaft.
4. Weld the sprocket ring into the right side of the iron pipe . Note that the welding place should be keep more than 1cm space between the shutter door and the sprocket.
5. Put the bearing which have the axial shaft into iron pipe →holding the iron pipe →put the iron pipe which the side have the sprocket ring into big sprocket→use the other side fix axial shaft and bearing cover on the bolt of installation iron board→prop the bolt of bearing cover→weld the inside and outside sprocket ring together with the iron pipe.
6. Install motor: connect the motor and iron board with bolt. Adjust the distance between the two sprocket, make sure the chain clench the teeth, then adjust the preventive-break chain mechanism until the gyro wheel is always push the top of the chain. (as drawing 4)
7. Install rolling door: drill hole on the rolling door and iron pipe. Connect rolling door and iron pipe with screw.

III、 Adjustment step

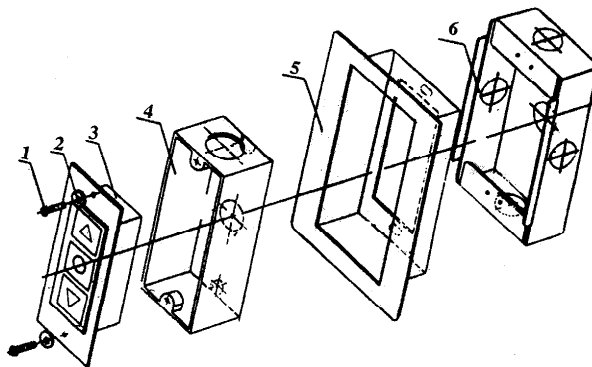
1. Adjust the tightness of drive-chain: After release the installation nut of motor, and release the nut which adjust bolt of sprocket center distance. And then joint (release) two piece of adjust bolt of sprocket center distance. Adjust the distance between the two sprocket, make sure the chain clench the teeth, then screw down the nut of adjust bolt of sprocket center distance and the nut of motor.
2. Adjust the rolling door upwards and downwards travel: Please make sure which type of limit switch you are choose. The adjust way of drawing 5 (single limited) and drawing 6 (double limited) is: First adjust rough, make the door go up to the appropriate height (about 100mm from floor), take up and turn the accessory 3, then release the accessory 2,5, and adjust accessory 4 until you feel satisfied. Make the door go down to the appropriate height (about 100mm from floor), take up and turn the accessory 8 to the limit switch, then release the accessory 7,9, adjust accessory 10 until you feel satisfied. (If the motor install on the left of the door, the direction of accessory 3,8 and 10, 4 is opposite).
The adjust way of drawing 7(single limited) and drawing 8(double limited) is: First release the accessory 1,3, then manual turn the accessory 2,4, to the suitable place.

Repeat it until you feel satisfied and then screw down the accessory 1,3 will be OK.

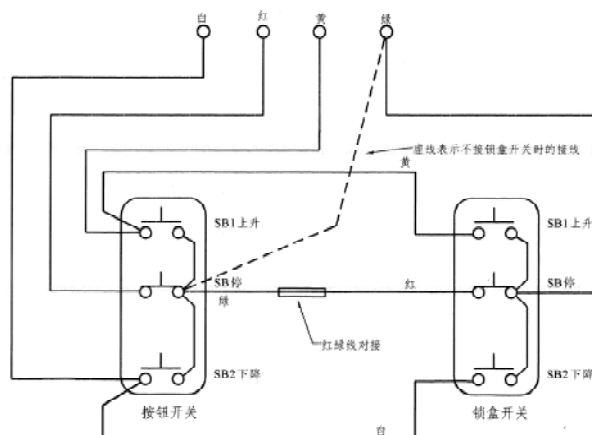


3. Adjust the manual operation mechanism: release the bolt of the brake and release body and motor, turn the brake and release body, make the chain is in vertical downward direction. And the screw down the bolt.
4. Install button switch: take way the accessory 3, push 2 into 4, connect the 2,4,5, and fix them on the wall, the two switch can be fix parallel either inside or outside the wall. (See the drawing 9)

1.bolt, 2.washer, 3.switch board, 4.outside cover, 5.switch box

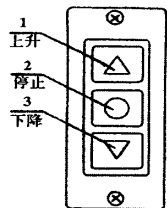


5. Wiring for two button switch: First connect the yellow and white wire of lock box switch and the button switch, then connect the green wire of button switch to the red wire of lock box switch. And pack the insulate adhesive tape. At last, connect the green wire of lock box switch to the green wire of button switch. (See drawing 10)



IV、IMPORTANT NOTICE

1. The rated elevate weight of motor is according the rated output torque of motor under the standard of iron pipe to design. It's including rolling shutter quality, iron pipe quality, the resistance of door operating and the resistance cause by installation error and so on. Recommend according to 70% of the rated elevate weight to choose motor. Please attention it before you choose the motor.
2. The rolling motor can be installed on both sides of the door, first make sure the motor installed right side or left side. You can directly install if the rolling motor is install on the right side door. If you install the motor on the left side, please release the bolt, which connects the brake body and motor, then turn the brake body 180° the bolt. At last, exchange the yellow and white wire of the button and remote control. If choose B module (chain-drive), you must change the spring which preventive-break chain mechanism to the spring use for left side motor. And then adjust the direction of roller wheel and keep it to the pull up side.
3. Keep the iron pipe balance, make sure the flexibility of iron pipe. Please keep some distance between iron pipe and iron board, in order to avoiding interference.
4. In order to avoid happen accident, please connect the motor outside cover on the earth fastness.
5. It must be check the connection wire whether accurate and fastness before testing the motor. If there have release, or connect no fastness, it will be cause short circuit, even if fire.
6. Strictly prohibit anybody and car cross the door when the door is operating.
7. Make sure press the stop button before the rolling door from rising to descending or from descending to rising (as drawing 11)



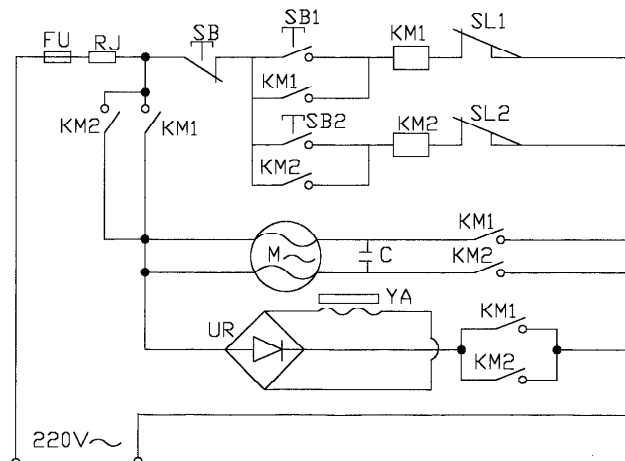
8. Using the manual operation mechanism to operate the door when the power is cut off or the electronic operation is out of control.
9. Recommended not to continuously work for 8 minute.
10. Available for your convenience is there are 2 switches for your choice

V、

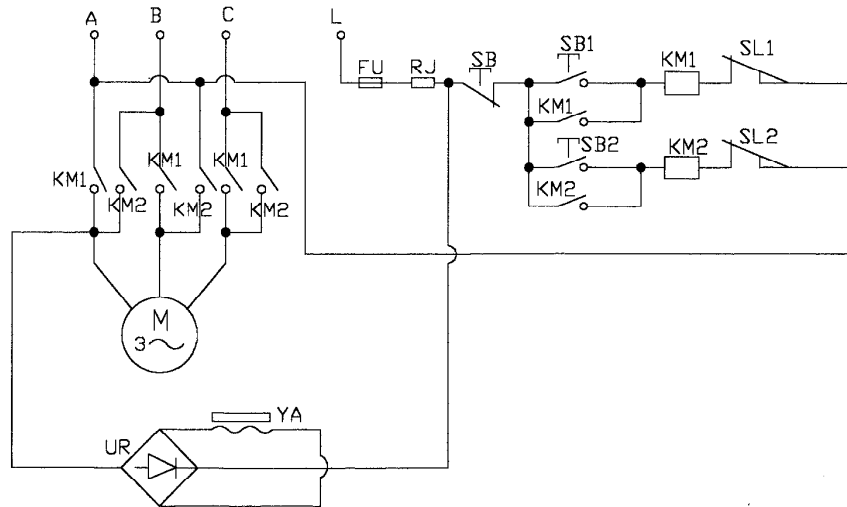
PRINCIPLE

OF

ELECTRONIC CONTROL



Drawing 12 is SM ACM series motor connection and principle (electric double limit)
 Suitable for SM ACM-250, SM ACM-350, SM ACM-500, SM ACM-600, SM ACM-800,
 SM ACM-1000 (current is AC 220V50HZ)



Drawing 14 is SM ACM-380V series motor connection
 Suitable for SM ACM-600, SM ACM-800, SM ACM-1000, SM ACM-1300, SM ACM-1500
 (current is AC380V,three phase)

Instruction: This motor is through double control way which combine manual button switch and remote control switch. (remote controller must be buy extra). Press the button ▲ ---electrify alternating current contactor KM1---move direct current magnet, release the brake clutch---door goes up. Press the button ▼ ---electrify alternating current contactor KM2---move direct current magnet, release the brake clutch---door goes down. When press button ■, in despite of door opening or closing---cut off the electricity---close the brake clutch---motor stop turning.

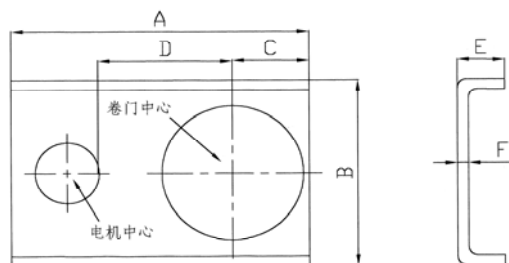
VI、 installed fix board measurement

The installation measurement of accessory (see chart 6-1), the max-elevated weigh will descending, when the diameter iron pipe you choice bigger than the rated diameter-iron pipe.

$$G=G^*D/D$$

D--read diameter iron pipe, D'--actual diameter iron pipe, G--rated max elevated weight,

G'--actual max elevated weigh



Drawing 17 (D for the distance from roller center to motor)

Chart 6-1

Type	A	B	C	D	E	F
TJ-200B	500	250	125	230	18	3.5
TJ-500B	500	285	132	235	18	3.5
SM ACM-250A	500	330	165	208	16	4
SM ACM-250B	500	330	165	210	16	4
SM ACM-350A	500	330	165	200	20	4
SM ACM-350B	530	330	165	235	16	4
SM ACM-500A	600	400	200	235	25	4
SM ACM-600B	530	330	165	235	16	4
SM ACM-800B	630	200	138	322	/	8
SM ACM-1000B	630	200	138	322		8
SM ACM-1300B	630	200	138	322		8
SM ACM-1500B	630	200	138	322		8
SM ACMZ-350B	530	330	165	235	16	4

VII、 Technical data

see 7-1 and 7-2 use environment $-15^{\circ}\text{C}\sim+40^{\circ}\text{C}$

chart 7-1

Type	Max elevate weight	Max elevate height	Roller speed	Door operating speed	Roller diameter	Drive-chain	The rate for the motor and iron pipe	Motor weight
TJ-200B	200kg	5m	7r/min	0.06m/s	4''	08B78	207:1	6.8kg
TJ-500B	500kg	6m	6.8r/min	0.07m/s	4''	10A68	210:1	12.3kg
SM ACM-250A	250kg	5m	6.7r/min	0.06m/s	4''	M4 60	143.75:1	13.5kg
SM ACM-250B	250kg	5m	6r/min	0.052m/s	4''	08B72	159.7:1	13kg
SM ACM-350A	350kg	5m	4.9r/min	0.043m/s	4''	M5 50	197.3:1	17.2kg
SM ACM-350B	350kg	6m	5.6r/min	0.05m/s	4''	10A68	170:1	17.2kg
SM ACM-500A	500kg	7m	5.9r/min	0.062m/s	5''	M5 50	162:1	17.5kg

SM ACM-600B	600kg	6m	5r/min	0.05m/s	5''	10A68	194:1	18kg
SM ACM-800B	800kg	10m	5.4r/min	0.06m/s	6''	12A74	187:1	29kg
SM ACM-1000B	1000kg	10m	5.4min	0.06m/s	6''	12A74	187:1	29kg
SM ACM-1300B	1300kg	10m	5r/min	0.055m/s	6''	12A74	190:1	30kg
SM ACM-1500B	1500kg	10m	5r/min	0.055m/s	6''	12A74	190:1	30.5kg
SM ACMZ-350B	350kg	6m	4.9r/min	0.043m/s	4''	10A68	306:1	15kg

Chart 7-2

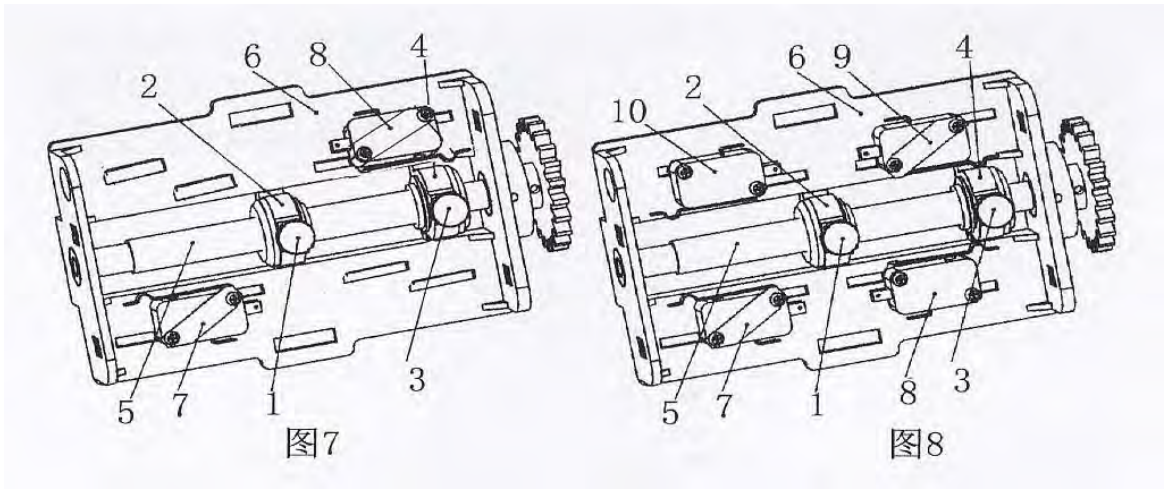
Type	Rated voltage	Load current	Rated power	Running speed of motor	Insulation	Heat-protect Temperature	Protection grade
TJ-200B	220V50HZ	1.20A	120W	1400rpm	B	130°C	IP44
TJ-500B	220V50HZ	2.60A	370W	1400rpm	B	130°C	IP44
SM ACM-250A	220V50HZ	1.8A	150W	960rpm	B	130°C	IP44
SM ACM-250B	220V50HZ	1.8A	150W	960rpm	B	130°C	IP44
SM ACM-350A	220V50HZ	2.1A	180W	960rpm	B	130°C	IP44
SM ACM-350B	220V50HZ	2.1A	180W	960rpm	B	130°C	IP44
SM ACM-500A	220V50HZ	2.6A	370W	960rpm	B	130°C	IP44
SM ACM-600B	220V50HZ	3.1A	370W	960rpm	B	130°C	IP44
SM ACM-800B	220V50HZ	5.5A	450W	960rpm	B	130°C	IP44
SM ACM-1000B	220V50HZ	5.8A	550W	960rpm	B	130°C	IP44
SM ACM-600B	380V50HZ	0.95A	370W	960rpm	B	130°C	IP44
SM ACM-800B	380V50HZ	1.4A	450W	960rpm	B	130°C	IP44
SM ACM-1000B	380V50HZ	1.4A	550W	960rpm	B	130°C	IP44
SM ACM-1300B	380V50HZ	1.75A	650W	960rpm	B	130°C	IP44
SM ACM-1500B	380V50HZ	2.0 A	750W	960rpm	B	130°C	IP44
SM ACMZ-350B	DC24V	9A	180W	1600rpm	B	130°C	IP44

VIII、Accessory

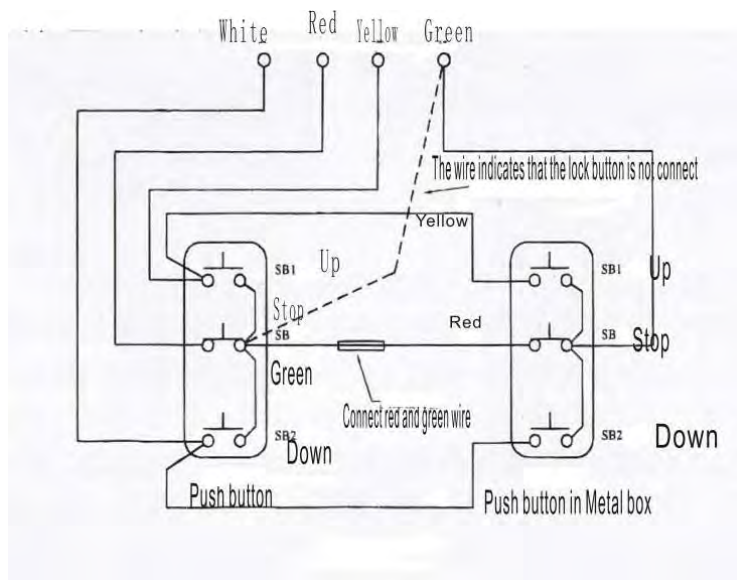
ITEM	NAME	PLASTIC	ITEM	NAME	PLASTIC
1	Bearing	1	9	Lock switch	1
2	Bearing cover	1	10	Screw M10X35	4
3	Fixed board	1	11	Nut M10	4
4	Small sprocket	1	12	WasherΦ10	4
5	Axial shaft	1	13	Screw M10X20	4
6	Ringer	2	14	Nut M10	4
7	Sprocket ring	1	15	WasherΦ10	4
8	Spring for left side motor	1	16		

IX、TROUBLE SHOOTING

SYMPTOM	PROBABLE CAUSES	REMEDY
The motor does not work or out of control	<ol style="list-style-type: none"> 1, No power supply 2, Switch button not control well (single direction) 3, Motor run too long cause over heated 4, Button switch is not responds while the motor has been electrify 5, Button switch lost control after the motor has been electrify 6, Rolling door limit stop position level lost control different from setting level 	<ol style="list-style-type: none"> 1, Check power supply 2, Clean up the rubbish in the button box 3, Reset motor after temperature goes down to 70°C 4, Replace the fuse, plug in the green and red remote control wire correctly 5, Change the contactor or relay 6, Tighten accessory 2,7,5,9 after adjust the limited switch
Machine brake system	<ol style="list-style-type: none"> 1, Sliding distance exceed 2, Rolling door auto slipping down after cut off power 3, Sliding phenomenon occur 	<ol style="list-style-type: none"> 1, clean up the rubbish in the brake handle 2, replace the brake plate 3, tighten the gear chain
Manual mechanism is difficult to operate	<ol style="list-style-type: none"> 1, The manual operation chain blocked up the cross 2, The manual operation chain jam the chain plate 	<ol style="list-style-type: none"> 1, Check the manual operation chain 2, Take apart the chain plate and gear chain
Vibration noise	<ol style="list-style-type: none"> 1, The teeth clenched too tight or too loose 2, The noise is too high 3, The iron board is loose 4, The ball of bearing broken 	<ol style="list-style-type: none"> 1, Adjust the distance between motor big sprocket and transmission gear 2, Add the lubrication oil between the chain and the big sprocket. 3, Readjust the motor nut 4, Change bearing



Limit Switch (Metallic Fire Redundant type)



Warranty Policy

Computer Center (*Smartpower*) warrants each of its motors and controllers to be free of defects related to workmanship or material.

- 1) Computer Center (*Smartpower*) will provide warranty & service support within the frame work & guideline of the Purchase order nodated
- 2) All the Motors supplied will cover a Warranty Period of 24 months from the date of installation or 30 months from the date of inspection, whichever is earlier.
- 3) The scope of warranty is limited up to the goods supplied by the company, eg. The AC Motors.
- 4) The company will repair AC Motor / replace parts in case of any malfunction within the stipulated warranty period.
- 5) The company will keep necessary spare parts stock at the buyers premises (as per purchase order), for that the buyer has to provide warehouse support with access to it within normal working hours.
- 6) The scope of warranty is limited up to the use of the goods under normal / ideal working conditions, in this case the AC motors is used to lift Rolling Door, the normal / ideal working conditions means -
 - i) The Rolling Door should be in proper working condition by manual operation. (i.e, the door & its accessories, eg, spring system / guide plates / bearings / profiles etc), are working normally.
 - ii) AC Power supply (3 Phase sequence) is maintained properly. In case of phase sequence reversal the AC Motors will stop working.
 - iii) The **safety stopper** at the top (both side) of the rolling door is present & strong enough to protect the door from going upwards (in case of any limit switch malfunction).
 - iv) The safety manual locks (on both side of bottom of the door) to be released before the Power UP / Down switch of AC Motor is used.
 - v) The AC Motor should be protected against Rain water / external water / fire / physical damage etc. Warranty will be VOID in case of water damage / External fire / or physical damage.
 - vi) For proper & prompt service support, staircase & sufficient space is needed.
 - vii)
 - viii)

The motor and/or controller has received normal use and service. Stalled motor conditions, which are illustrated by the condition of lifted commutator bars, are not warranted. Nor are any broken terminal bolt connections. (Often can occur if over-torqued!)

B • The motor and/or controller has not been taken apart, repaired or altered for the application without the prior consent of D&D Motor Systems Inc.

C • Each motor and/or controller returned must be accompanied with a description of the problem, the part number and the serial number.

D • The application of the motor and/or controller has been approved by D&D Motor Systems, Inc.

E • The motor and/or controller has been installed properly and the vehicle has not gotten into an accident or has been misused.

It is the responsibility of Computer Center (Smartpower) to validate the ship date of the motor and/or controller.

Component parts that are subject to normal wear are not covered by this policy. (ie: brushes, bearings, and seals)

The motor and/or controller has been installed properly and the vehicle has not gotten into an accident or has been misused.

This warranty does not cover any damage to the vehicle, any compensation for loss of time or inconvenience and does not provide for any liability for incidental or consequential damage arising from the use of the product by the buyer, its assignees, customers, agents or employees.

Computer Center (Smartpower) will provide warranty disposition by:

A • Evaluation of the motor and/or controller after it has been returned to D&D Motor Systems.

(OR)

B • Mutual evaluation of the motor and/or controller at the customer's facility.

D&D Motor Systems will reserve the right to choose which of the above methods to be utilized. The routing of such material shall be at the discretion of D&D Motor Systems, Inc.

As long as all the necessary documentation has been submitted and D&D Motor Systems accepts the warranty claim, D&D Motor Systems will issue a credit for the failed motor and/or controller. Customers ARE NOT allowed to take any credits unless & until formal acceptance and communication has been made by D&D Motor Systems. The customer must reference our Credit # when applying the credit!

Rajiv K Poddar, CEO, Smartpower