AMAZING
Roller Shutters

Installation Instructions

SE 14.21-25,40 ER CP970

115VAC 1PH

Date: 21.10.2013

Version: 1.1 SE115V 1PH

SAFETY DIRECTIONS

Basic Directions

This control has been built in accordance with **EN 12453 Industrial, commercial and garage doors and gates - Safety in use of power operated doors - Requirements and EN 12978 Industrial, commercial and garage doors and gates - Safety devices for power operated doors - Requirements and Test methods;** and left the factory in perfect condition from the point of view of safety. To maintain this condition and to ensure safe operation, the user must observe all the directions and warnings contained in these operating instructions.
In principle, only trained electrical technician should work on electrical equipment. They must assess the work which has been assigned to them, identify potential danger sources and take suitable safety precautions.

Reconstruction of or changes to CP 970 or the SE 14.21 operator are only permissible with the approval of the manufacturer. Original replacement parts and accessories authorized by the manufacturer guarantee safety. Liability ceases to apply if other parts are used. The operational safety of the unit is only guaranteed if it is used in accordance with the regulations. The limiting values stated in the technical data should not be exceeded under any circumstances (see corresponding sections of the operating instructions).

Specified normal use

The drive unit is intended for counter-balancing sectional doors. The safe operation is only guaranteed with normal specified use. The drive unit is to be protected from rain, moisture and aggressive ambient conditions. No liability for damage caused by other applications or non-observance of the information in the manual.

Spare parts

Use only original spare parts.

Symbols

Note - Important information!

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TECHNICAL DATA

SE14.21 CP 970

Output torque	140	Nm
Output speed	21	rpm
Output shaft / hollow shaft	25,40 / 1	mm/inch
Maximum holding torque	600	Nm
Maximum door weight	6000	N
Supply voltage	115V 1PH	VAC
Secondary Supply	24VDC, max load 150mA	
Operating current	2.6	AMPS
Operating frequency	60	Hz
Maximum movement per hour	16	
Class of protection	IP 65	
Fuses	1 x 2AMP Secondary 1 x 1AMP Accessories	
Temperature range	-5 / +40	°C
Operator Dimensions Control Panel enclosure dimensions	190 x 300 x 115 7.5” x 11.8” x 4.5”	Mm/Inch WxHxD
Cable length	10	Meter

Warning

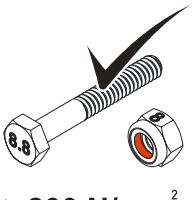
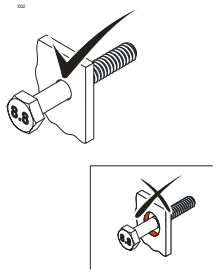
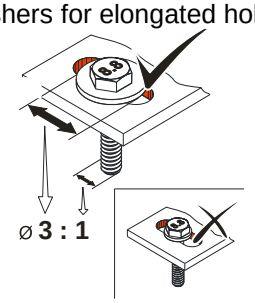
- Verify primary voltage before installing or wiring. Verify that the primary voltage matches main supply listed on the operator and control panel enclosure.

1. MECHANICAL INSTALLATION OF SE14.21 OPERATOR & PANEL

A. Prerequisites

The permissible loads on walls, fastenings, mountings and transmission elements must not be exceeded. For maximum holding torques or locking torques refer to technical data.

Fasteners:

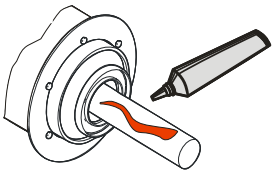
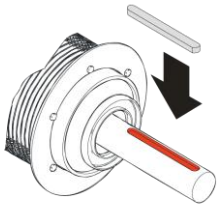
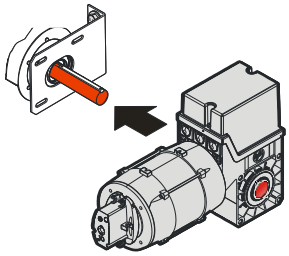
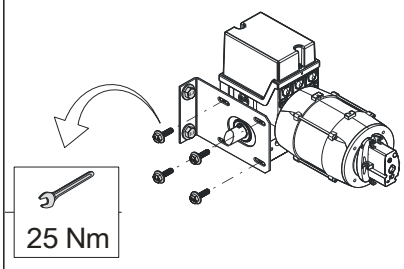
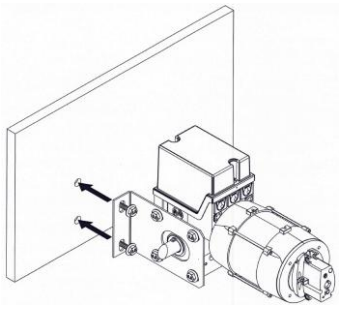
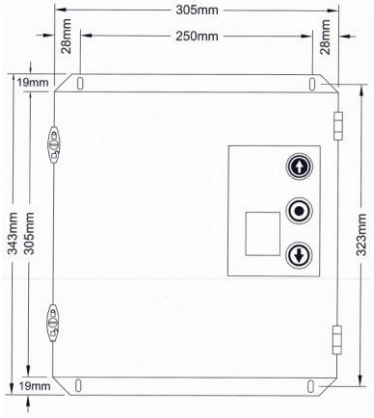
Self-locking fasteners with a minimum strength of 800 N/mm^2 (8.8) must be used.  	Utilize the hole diameter to the fullest.  	Use adequately dimensioned washers for elongated holes. 

B. Mounting the Operator

The descriptions below apply to general door specifications. The specifications of the door manufacturer must also be observed during installation.

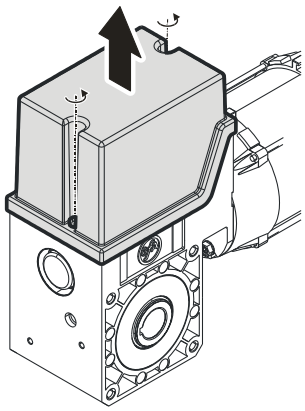
Warning

- During installation, be sure to use a lifting device that has a sufficient load-carrying capacity

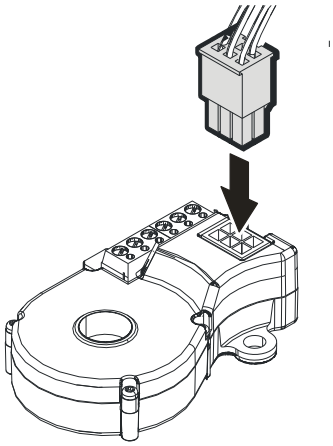
1. Thoroughly grease the door shaft 	**2.** Mount the Key (not supplied) 	**3.** Slide drive unit onto 1” shaft 
4. Install bolts (M8) with lock washer And tighten to 25Nm.  	**5.** Secure bracket to wall or support. Bracket fasteners are NOT provided. 	**6.** Mount control panel. Mounting fasteners are NOT provided. 

2. VERIFY ELECTRICAL CONNECTION OF LIMIT SWITCH AND MOTOR

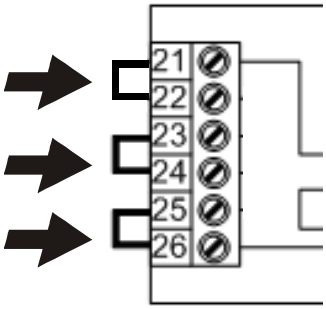
1. Remove limit cover



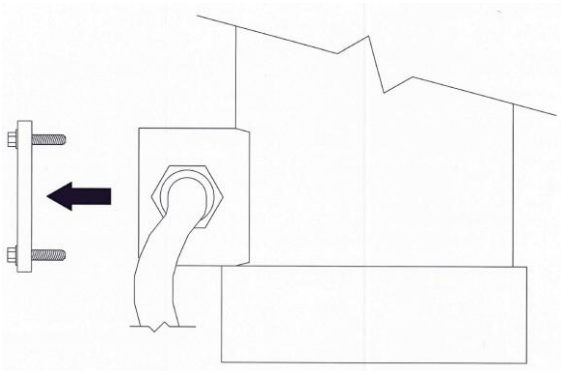
2. Verify limit switch plug is in



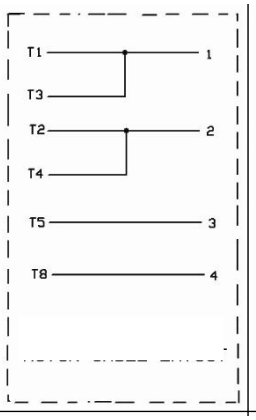
3. Verify limit jumpers are in place.



4. Remove motor cover



5. Verify wiring of motor cables.

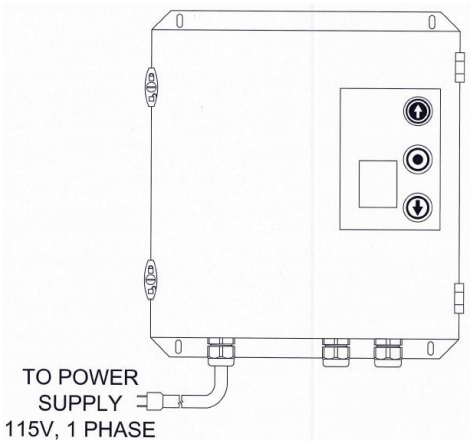
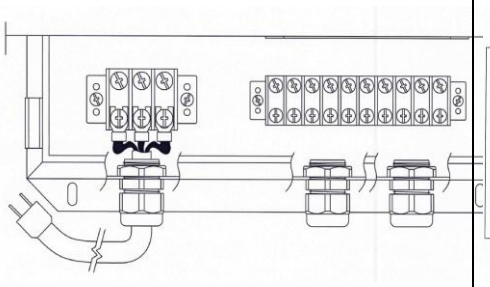
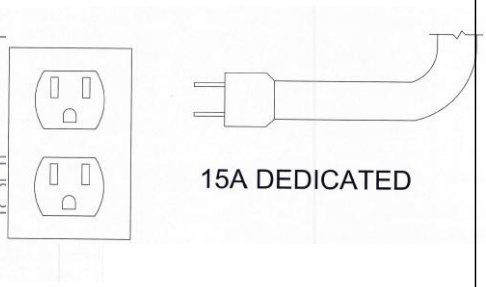
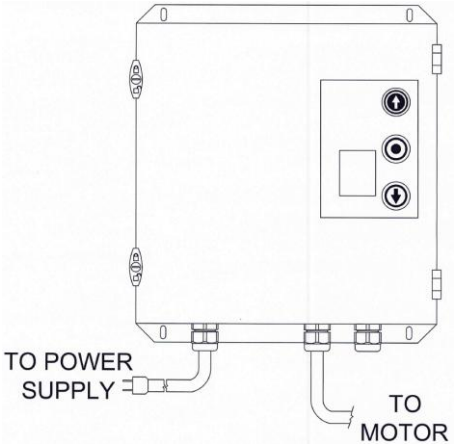
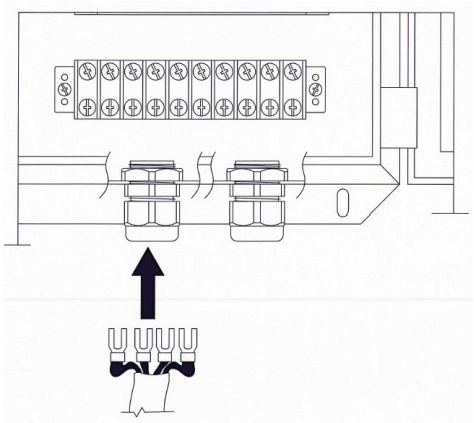
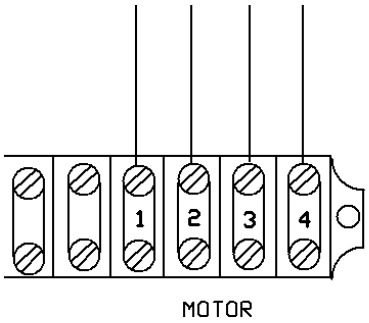
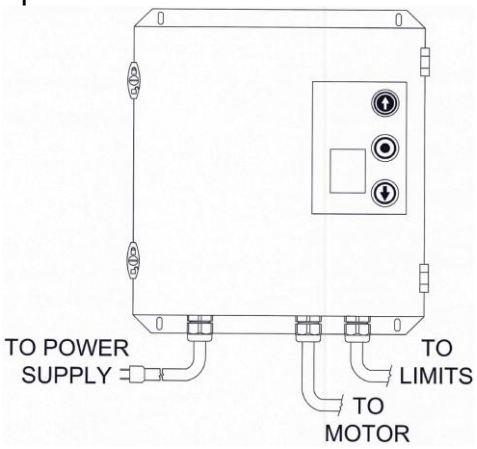
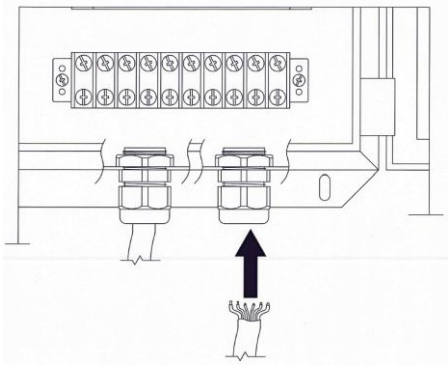
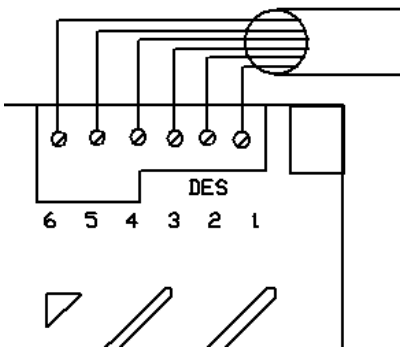


Note

- After verifying proper connections re-instal limit and motor cover.

- Switch the power OFF and check that the cables are de-energized
- Observe the applicable regulations and standards
- Make a proper electrical connection
- Use suitable tools

3. ELECTRICAL CONNECTIONS

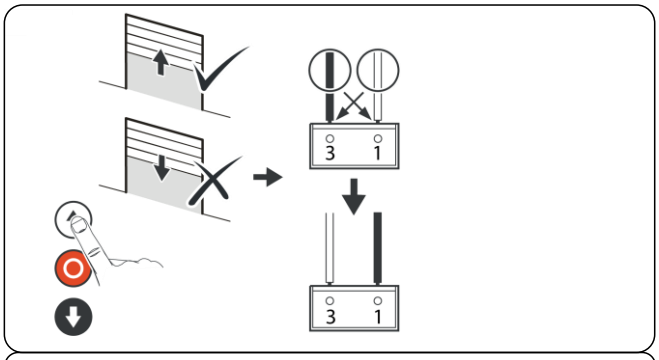
Confirm Primary Voltage 	Confirm power cord is wired properly 	Plug into dedicated 15AMP outlet within 3' of control panel 
Motor cable connection to operator & control panel overview 	Fit cable through the provided strain relief 	Wire motor cables into CP 970 panel 
Limit cable connection to operator 	Fit cable through provided strain relief 	Wire limit cables into CP 970 panel 

4. SETTING THE LIMITS

Warning
- First check motor rotation

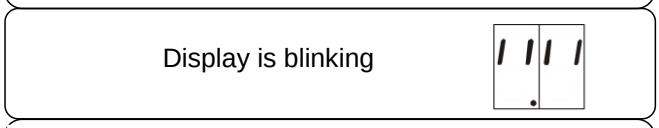
Turn power ON.

The door must open when the OPEN push button is operated. If the door closes, 3 and 1 of control panel must be exchanged with the power off.
See hardware overview on page 15.



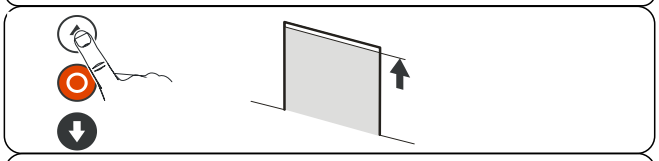
Note
- During setup the system will only run in Deadman

Confirm board is ready for programming the Limits. Display is Blinking.



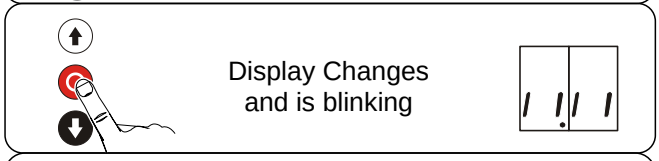
A. Program the OPEN limit

Push & Hold the OPEN button to open the door to the desired OPEN final limit position.



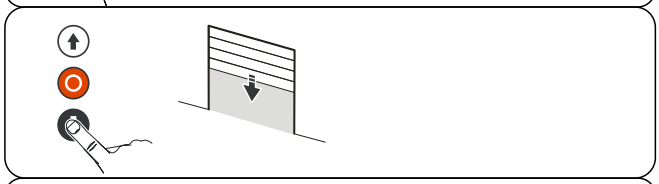
B. Memorise the OPEN limit

Push & Hold the STOP-button for 3 seconds, until the display changes.



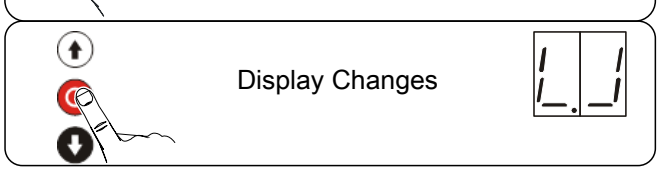
C. Program the CLOSE limit

Push & Hold the CLOSE button to close the door to the desired close final limit position.



Memorise the CLOSE limit

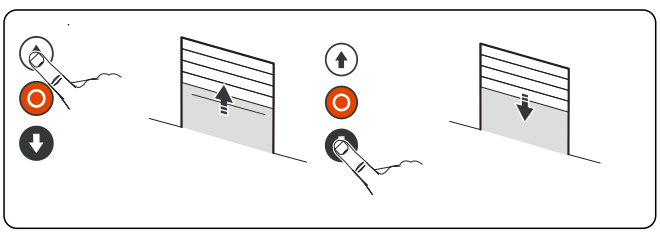
Push & Hold the STOP-button for 3 seconds, until the display changes.



Warning
- Door limits are now programmed. System will run in Deadman Only.

E. Test open and close cycle before adding any accessories

Push & Hold the OPEN button to check the full open position.
Push & Hold the CLOSE position to check the full close position.



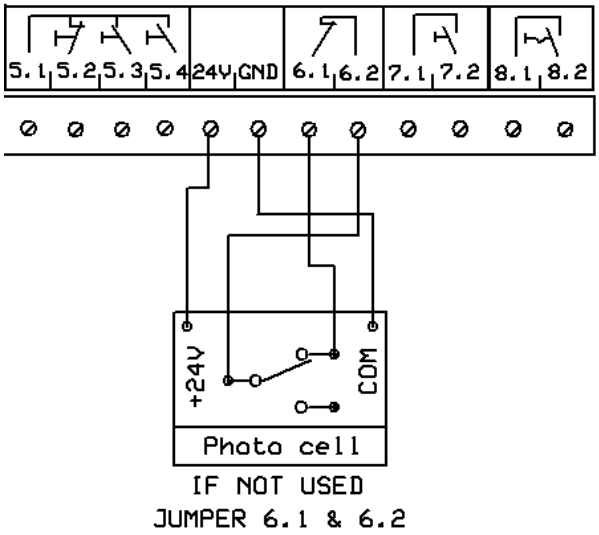
Note
- For further adjustments, such as momentary activation or timer to close see programming mode on page 10.

5. WIRING THE ACCESSORIES

The following wiring diagrams are for recommended and optional accessories.

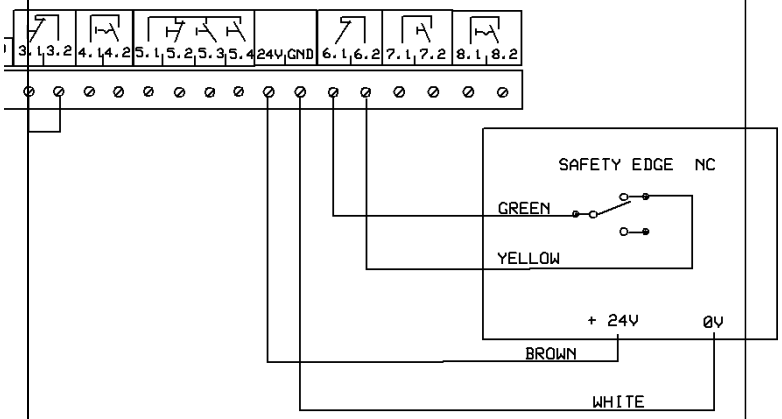
A. Safety Photocell

It is **recommended** to install a normally closed contact photocell to the CP 970. If not used Jumper 6.1 & 6.2.



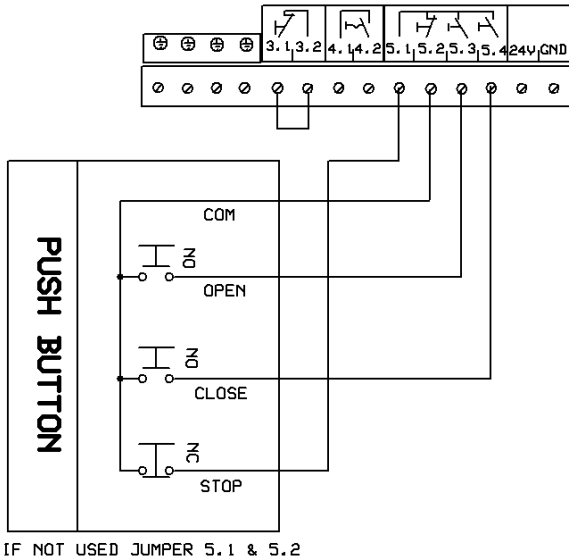
B. Safety Edge

It is **recommended** to install a normally closed contact Safety Edge to the CP 970. If used with photocell (A) wire in series 6.1 & 6.2



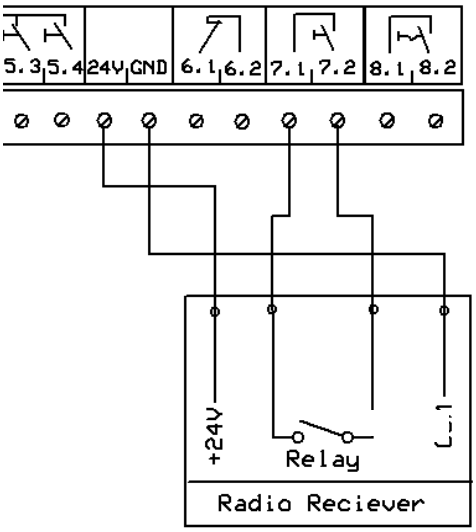
C. Push Button

To wire an external push button for open/close/stop activation. If not used Jumper 5.1 & 5.2.



D. Radio Control

To wire an external radio receiver for open or open & close activation based on programming.
See page 10 for programming options.



Note

- If Safety Photocell (5.A) and Safety Edge (5.B) are used together they must be wired in series. See complete wiring diagram on page 16.

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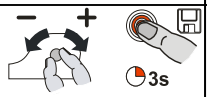
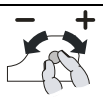
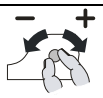
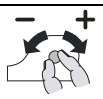
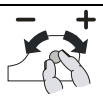
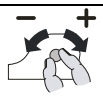
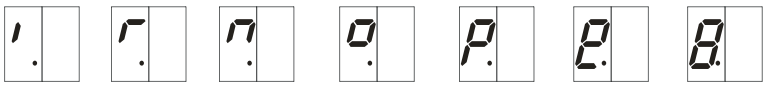
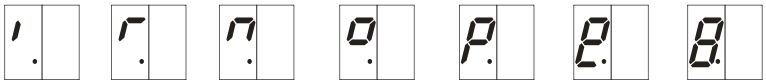
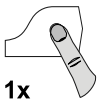
6. PROGRAMMING THE UNIT

1. Entering programming mode Open enclosure lid Press & Hold selector switch for 3 seconds until display = 0.0 	**2. Choose program and confirm** Turn selector AND Press & Hold selector switch for 3 seconds
3. Adjustment Turn selector switch 	**4. Memorize** Press & Hold selector switch for 3 seconds
5. Exit Programming Turn selector until display= 0.0 AND Press & Hold selector switch for 3 seconds 	

7. PROGRAMMING PARAMETERS

2. Choose program and confirm		3. Adjustment	4. Set
0.1 Door function **Warning -Do not enable momentary close without installing a Safety Photocells and/or Safety Edge**		.1 Dead man OPEN Dead man CLOSE .2 Momentary OPEN Dead man CLOSE .3 Momentary OPEN Momentary CLOSE .4 Do Not Use	 Press Selector
Door Position			
1.1 Final limit open coarse adjustment		-.- Move door upwards or downwards	 Press stop button
1.2 Final limit close coarse adjustment		-.- Move door upwards or downwards	 Press stop button
1.3 Final limit open Fine adjustment		-.0 Final limit open can change Without door movement using +/-	Press selector
1.4 Final limit close Fine adjustment		-.0 Final limit close can change Without door movement using +/-	Press selector
1.5 Do not use		Do not adjust	
1.6 Intermediate stop		Move to intermediate stop	 press stop button
1.7 Relay switch stop		Move to relay switch stop	 press stop button

2. Choose program and confirm		3. Adjustment	4. Set
2.1 Do not use		Do not adjust	
2.2 Do not use		Do not adjust	
2.3 Automatic closing feature		0.0 Time can be set between 1-240 sec. Ex. 1-6.2 = 162 sec.	1x Press stop button
2.4 Do not use		Do not adjust	
2.5 Relay Output “9.1, 9.2, 9.3“ *See program 1.6 and 1.7 to move switch contact position*		0.0 Off/Not used .1 Switch contact impulse signal .2 Switch contact continuous .3 Pre-Flash Open & Close 3 seconds with flash on movement .4 Pre-Flash Close three seconds with flash on movement .5 Constant pressure open & close three seconds constant movement	1x Press selector
2.6 Do not use		Do not adjust	
3.1 Do not use		Do not adjust	
3.2 Do not use		Do not adjust	
3.4 Do not use		Do not adjust	
8.5 Counter adjustment		0.0 01-99 correspond from 1,000 up to 99,000 count down cycles	1x Press selector

8.6 Reaction when reaching 0		.1 Display appears “CS“ and adjusted number of cycles .2 Changing to DEADMAN display appears “CS“ and adjusted number of cycles .3 Changing to DEADMAN same as 0.2 reset to about 500 cycles possible,press stop button for 3 seconds	
2. Choose program and confirm		**3. Adjustment**	**4. Set**
9.1 Info cycle counter 7-digit	1x selector	 **M HT ZT T H Z E** The cycles would be displayed as follow: M= 1.000.000 H= 100 HT= 100.000 Z= 10 ZT= 10.000 E= 1	
9.2 Info last 2 faults	1x selector	Last 2 faults would be alternately displayed.	
9.3 Info Program changes 7-digit	1x selector	 **M HT ZT T H Z E** The cycles would be displayed as follow: M= 1.000.000 H= 100 HT= 100.000 Z= 10 ZT= 10.000 E= 1	
9.4 Info program version	 1x	Program version will be displayed	
Reset			
9.5 RESET except cycle and program change counter	0.0 .1 RESET		3s Press stop button for 3 seconds

8. OPERATING STATUS DISPLAY

Report	Description	Measure to solve the problem
	Missing jumper	Insure jumper is in 2.1 & 2.2 on CP970
	Missing jumper	Insure jumper is in 21 through 26 on DES Limit
	Emergency stop activated	Check the emergency stop is activated, or whether the supply cable is broken
	Missing jumper	Insure jumper is in 2.1 & 2.2 on CP970
	Missing jumper	Insure jumper is in 2.1 & 2.2 on CP970
	Safety edge not recognized	Check the safety edge is connected correctly or the wrong type has been selected in the program
	Photocell activated	Check the photocell has been fitted properly, or whether the connecting cable is broken
	Safety edge operated in two consecutive cycles	Check for an obstacle or the connecting cable is broken or there is a short circuit in the cable
	Safety edge 8K2 activated	Check the safety edge is activated or there is a short circuit in the connecting cable
	Safety edge 8k2 defect	Check safety edge and connecting cable are not broken
	Limits not adjusted	Adjust limits
	Safety open limit operated	Turn mains supply OFF and move the door downwards - with the manual operator- until the limit is free or the open limit should be re-adjusted.
	Safety close limit operated	Turn mains supply OFF and move the door upwards - with the manual operator- until the limit is free or the close limit should be re-adjusted.
	Door load monitor has activated	Check to see if the door moves freely.
	Missing jumper	Insure jumper is in 2.1 & 2.2 on CP970
	ROM - Fault	Fault acknowledgement: switch OFF and ON the main power.
	Internal fault report	Fault acknowledgement: switch OFF and ON the main power.
	RAM - Fault	Fault acknowledgement: switch OFF and ON the main power.
	Internal control fault	Fault acknowledgement: switch OFF and ON the main power.
	DES – no response	Check electronic limit DES connection. Fault acknowledgement: switch OFF and ON the main power.
	Drive unit does not work	Check the door movement. Check the limit shaft for turning. Check phase rotation.
	Phase rotation failure	Check main supply phase rotation turns right Solution: Reverse 1 & 3 on DC970

OPERATING STATUS DISPLAY

Report	Command Acknowledgements
E. 11	
12	
13	
C5	Cycles for maintenance reached
Report	**Status**
Flashing r7	Opening
Flashing L. J	
H. 4	
r7	
L. J	Door stopped at lower limit

Note

- If any other fault codes appear please consult factor.

9. MANUAL OPERATION - ER (release)

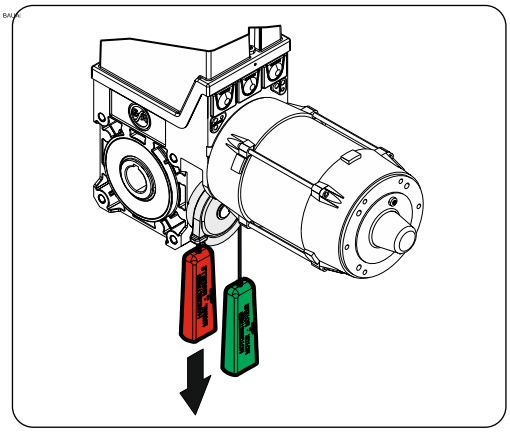
The manual operation is provided as a means of opening or closing the door when power is unavailable or an error has occurred.

Warning - Injury through improper operation!

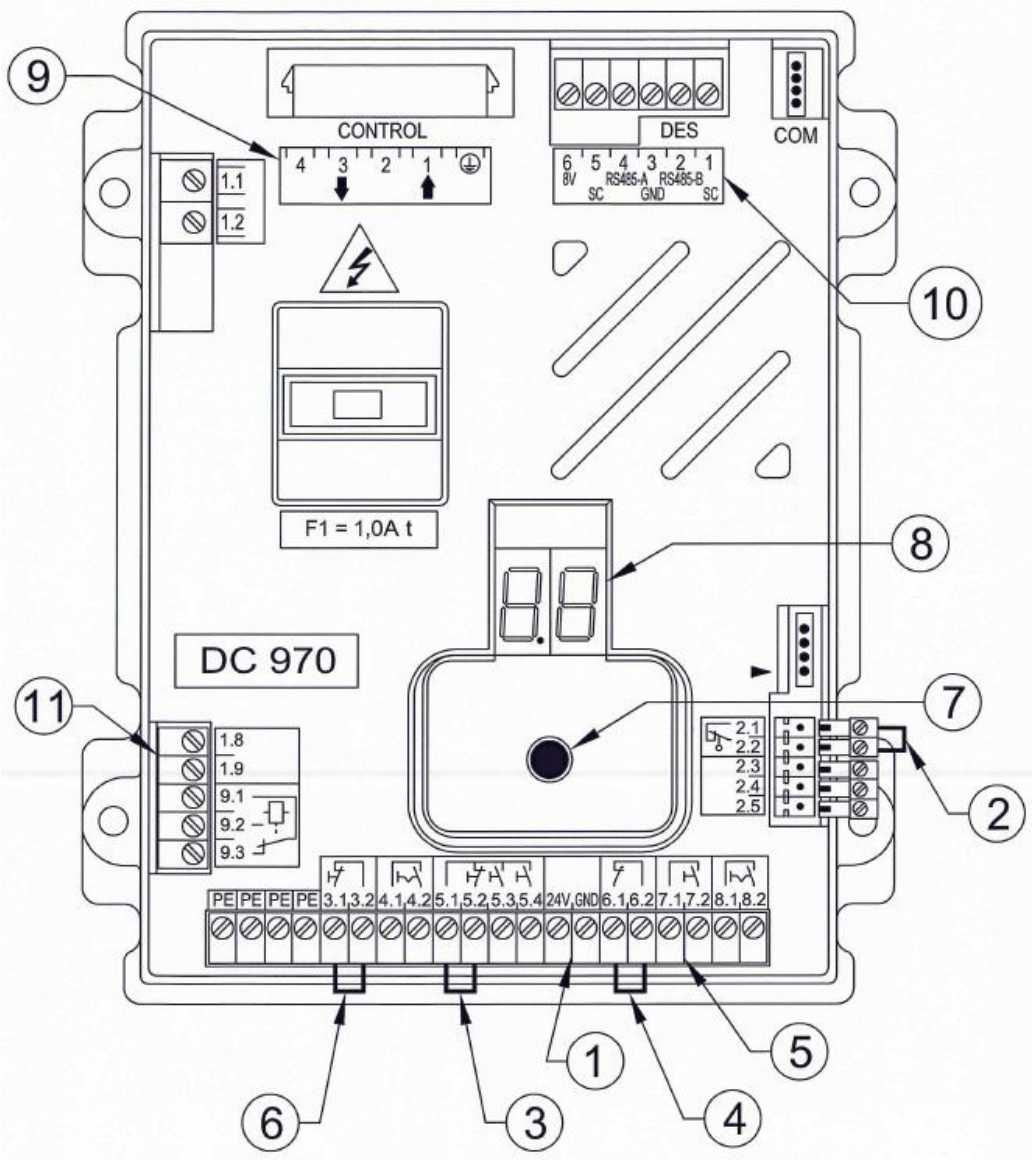
- Disconnect the power
- Door movement is only possible after release

Pull the red grip to disengage the drive. Open or close the door manually.

Pull the green grip to engage the drive.

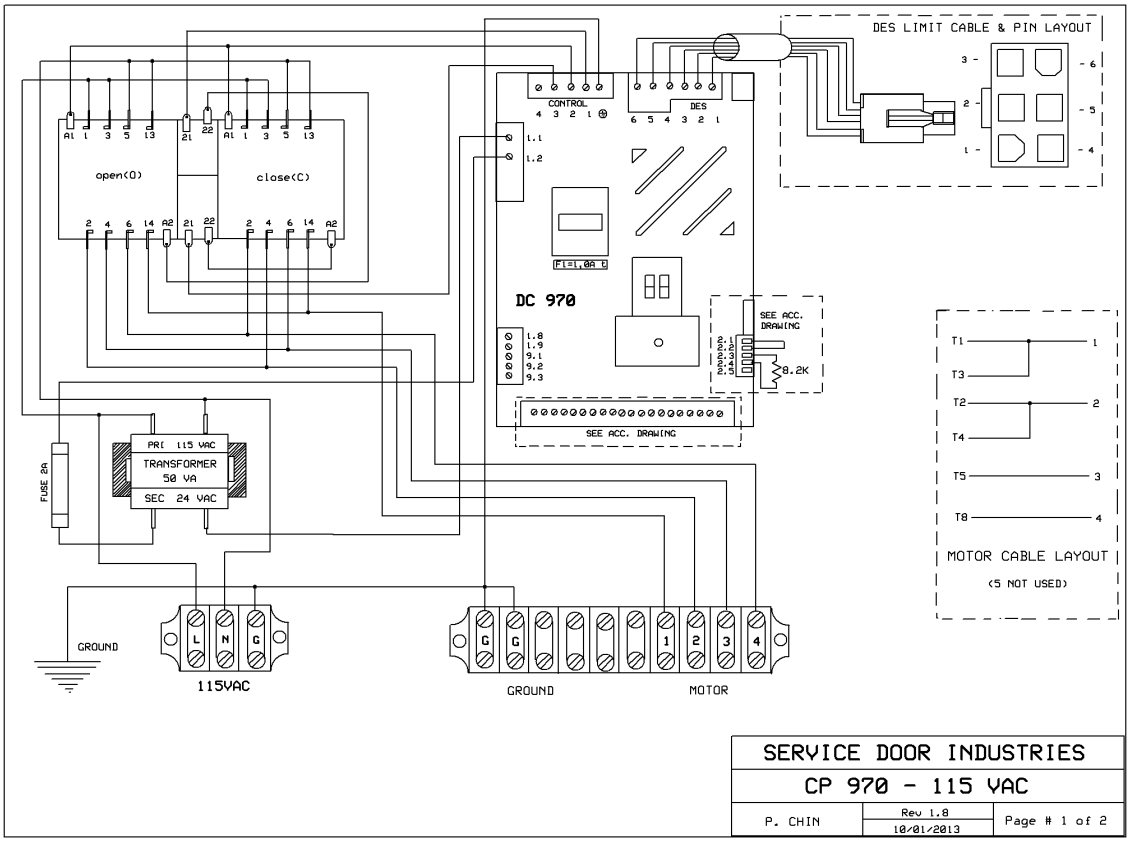


10. HARDWARE OVERVIEW CP970

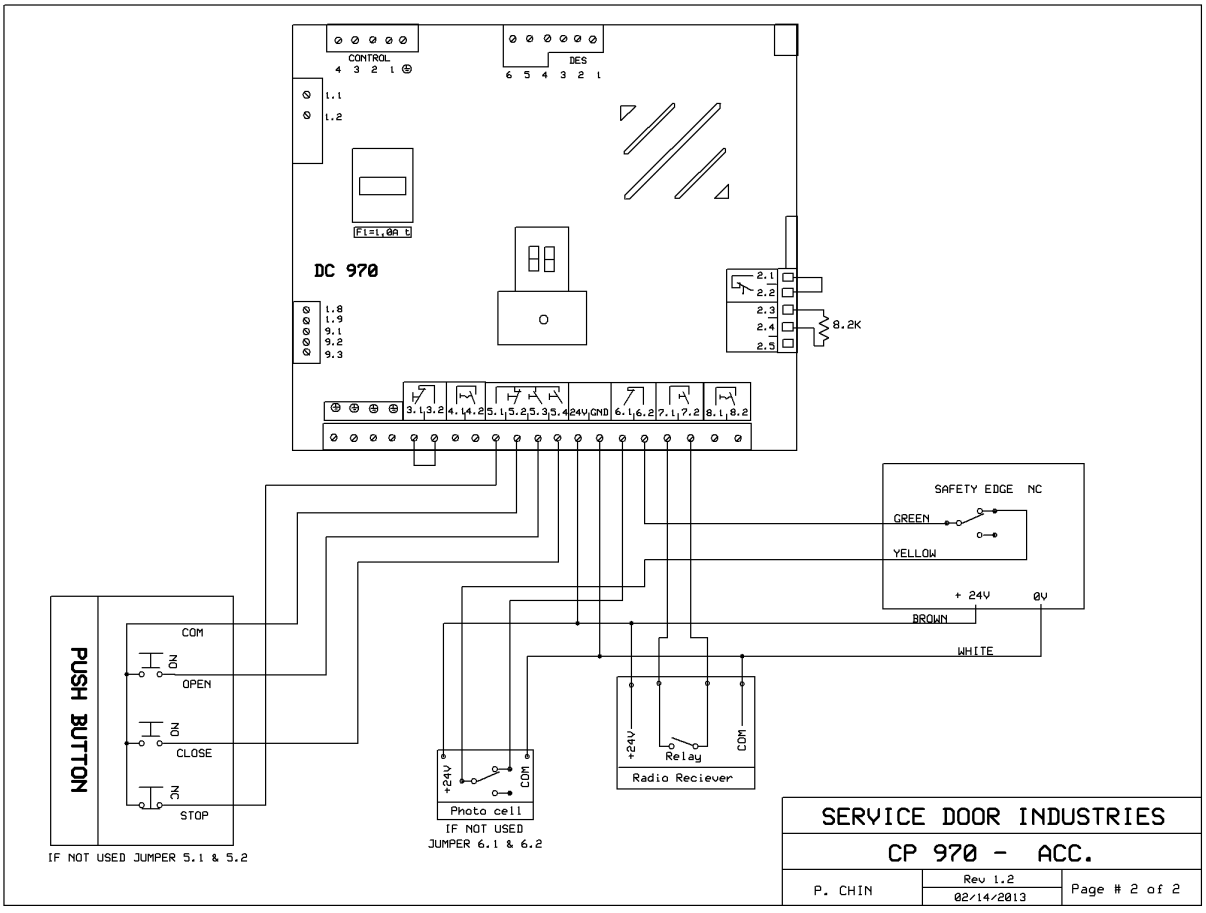


1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
	24VAC 1.8 & 1.9

11. CP 970 POWER, MOTOR AND LIMIT WIRING DIAGRAM

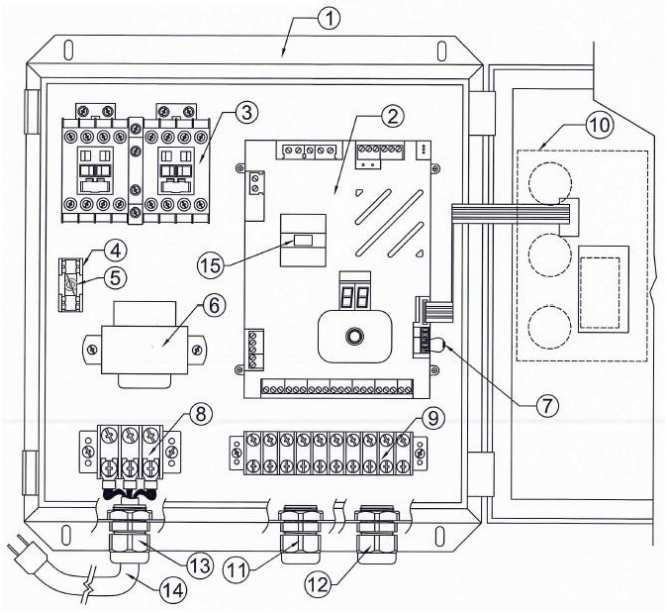


12. ACCESSORIES WIRING DIAGRAM



13. OPERATOR AND PANEL PARTS BREAKDOWN

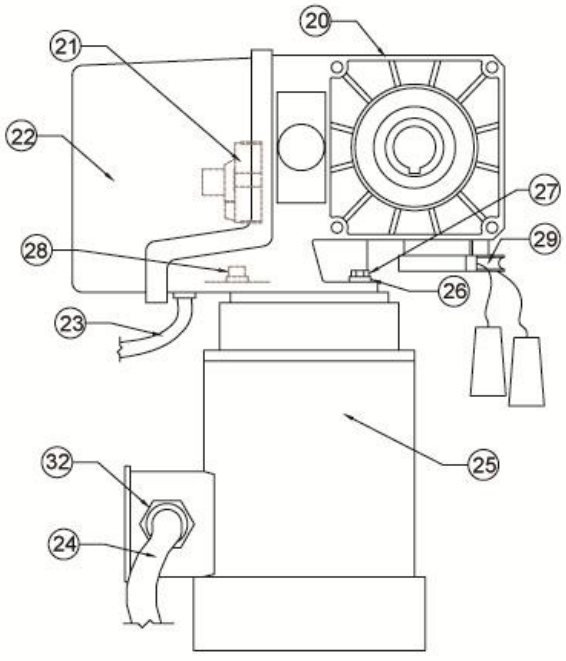
CONTROL PANEL

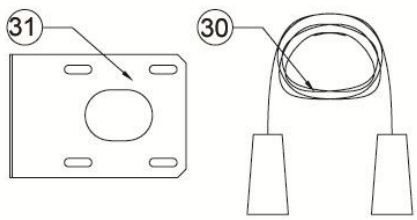


PART DESCRIPTION

1. ENCLOSURE
2. CP970 CONTROLLER
3. CONTACTOR 24VAC
4. FUSE HOLDER
5. FUSE – 2 AMP
6. TRANSFORMER 115V-24VAC
7. RESISTOR- 8K2
8. TERMINAL STRIP 3C
9. TERMINAL STRIP 10C
10. FOIL PUSH BUTTON W/ CABLE
11. STRAIN RELIEF- MOTOR CABLE
12. STRAIN RELIEF- LIMIT CABLE
13. STRAIN RELIEF- POWER CABLE
14. PRE-WIRED POWER CABLE
15. FUSE – 1 AMP
16. WASHER
17. ¾ SCREW
18. ½ SCREW
19. NUT

OPERATOR





PART DESCRIPTION

20. GEAR REDUCER
21. DIGITAL LIMIT
22. LIMIT COVER
23. LIMIT CABLE
24. MOTOR CABLE
25. MOTOR
26. M6 LOCK WASHER (X4)
27. M6 x 1.0 x 25mm HEX HEAD SCREW (X2)
28. M6 x 1.0 x 25mm SOCKET HEAD CAO SCREW (X2)
29. EMERGENCY RELEASE
30. ROPE EXTENSION
31. MOUNTING BRACKET
32. STRAIN RELIEF

AMAZING
Roller Shutters