

## UltraACS50 with Breakaway Install & Owner's Manual



## INTRODUCTION

The contents of this manual are designed to help you install and setup Albany UltraSlim™ high speed doors. **DO NOT operate or perform maintenance on the high speed door unless you have read through the instructions in this manual.**



The safety alert symbol is used to identify safety information about hazards that can result in personal injury. A signal word (DANGER, WARNING, or CAUTION) is used with the safety alert symbol to indicate the likelihood and the potential severity of injury. In addition, a hazard symbol may be used to represent the type of hazard.



**DANGER** indicates a hazard that, if not avoided, will result in death or serious injury.



**WARNING** indicates a hazard that, if not avoided, could result in death or serious injury.



**CAUTION** indicates a hazard that, if not avoided, might result in minor or moderate injury.



**CAUTION**, when used without the alert symbol, indicates a situation that could result in damage to the door.



**NOTICE** is used to inform you of a method, reference, or procedure that could assist with specific operations or procedures.

Other symbols that may be used in this manual are:



Lock Out / Tag Out



Crushing



Fire

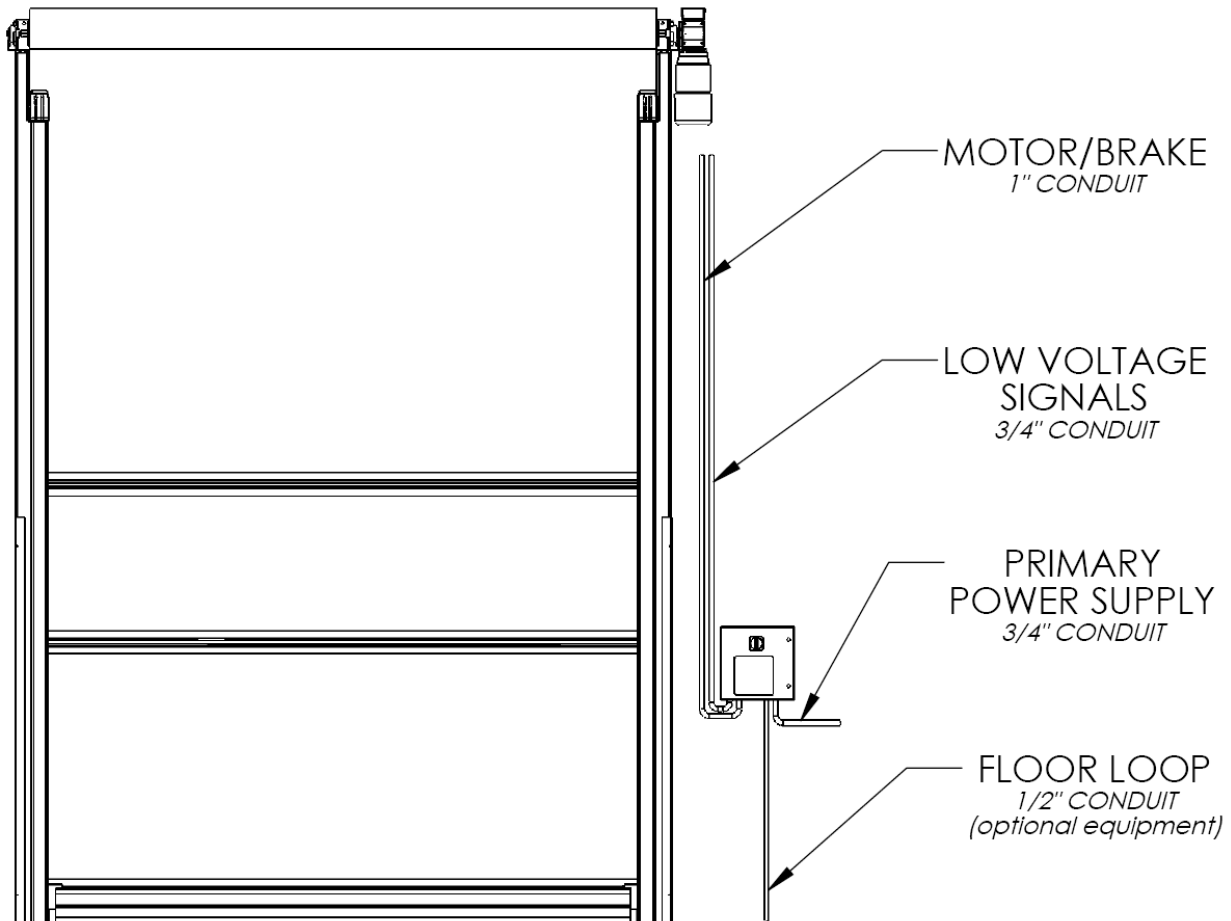


Shock



Read Manual

## ELECTRICAL CONNECTIONS



- REFER TO INDIVIDUAL DOOR SCHEMATICS FOR SPECIFIC DETAILS ON OPTIONAL EQUIPMENT..

### CONDUIT ROUTING

## NOTICE

All conduit and electrical connections must come in through the bottom of the control box.

- A- Motor/Brake - 1" Conduit
- B- Low Voltage Signals - 3/4" Conduit
- C- Primary Power Supply - 3/4" Conduit
- D- Floor Loop - 1/2" Conduit (optional)
- E- Optional Photoeye—1/2" Conduit (not shown)

## UltraACS-50 CONTROLLER SPECIFICATIONS

SPECIFICATION	VALUE
SUPPLY VOLTAGE:	208VAC 3-PHASE 2 speed N/A 208-240 VAC 3-PHASE 440-480 VAC 3-PHASE 575-600 VAC 3-PHASE
MAXIMUM CURRENT:	10 AMPS
TEMPERATURE, MINIMUM:	-4 F°, -20 C°
TEMPERATURE, MAXIMUM:	+131 F°, +55 C°
ENCLOSURE PROTECTION CLASS:	NEMA 1, 3R, 4, 12 AND 13 NOTE: 4X STAINLESS OPTIONAL
DIMENSIONS:	11.8"W X 15.75"H X 8.25" DEEP
WEIGHT:	24 LBS

## ACS-50 BEST PRACTICES

### ⚠ WARNING

The ACS-50 control box contains high voltage. Only qualified electrical personnel should perform the following procedures. Wiring and control panel mounting (anchoring) must meet all applicable local, state, federal, international, or other government agency codes. Failure to do so could result in serious injury or death.

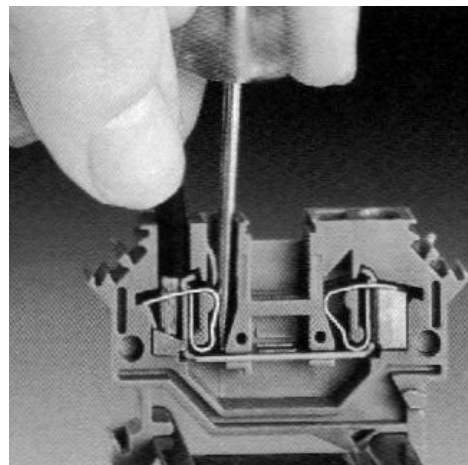
### ⚠ WARNING

A separate fused disconnect is required for protection of the drive and control system. This disconnect is to be supplied by others. The disconnect provided on the control box is non-fused.

### NOTICE

Reference the following figure as a guide for making wire connections to the unique Wago-style terminals.

1. Insert a mini screwdriver in the operating slot, located on the top of the terminal, up to the stop.
2. The screwdriver blade holds the clamping spring open automatically so that the conductor can be introduced into the clamping unit
3. Insert the wire into the block.
4. Withdraw the screwdriver – the conductor is automatically clamped.



## UltraACS-50 Fusing Size Chart

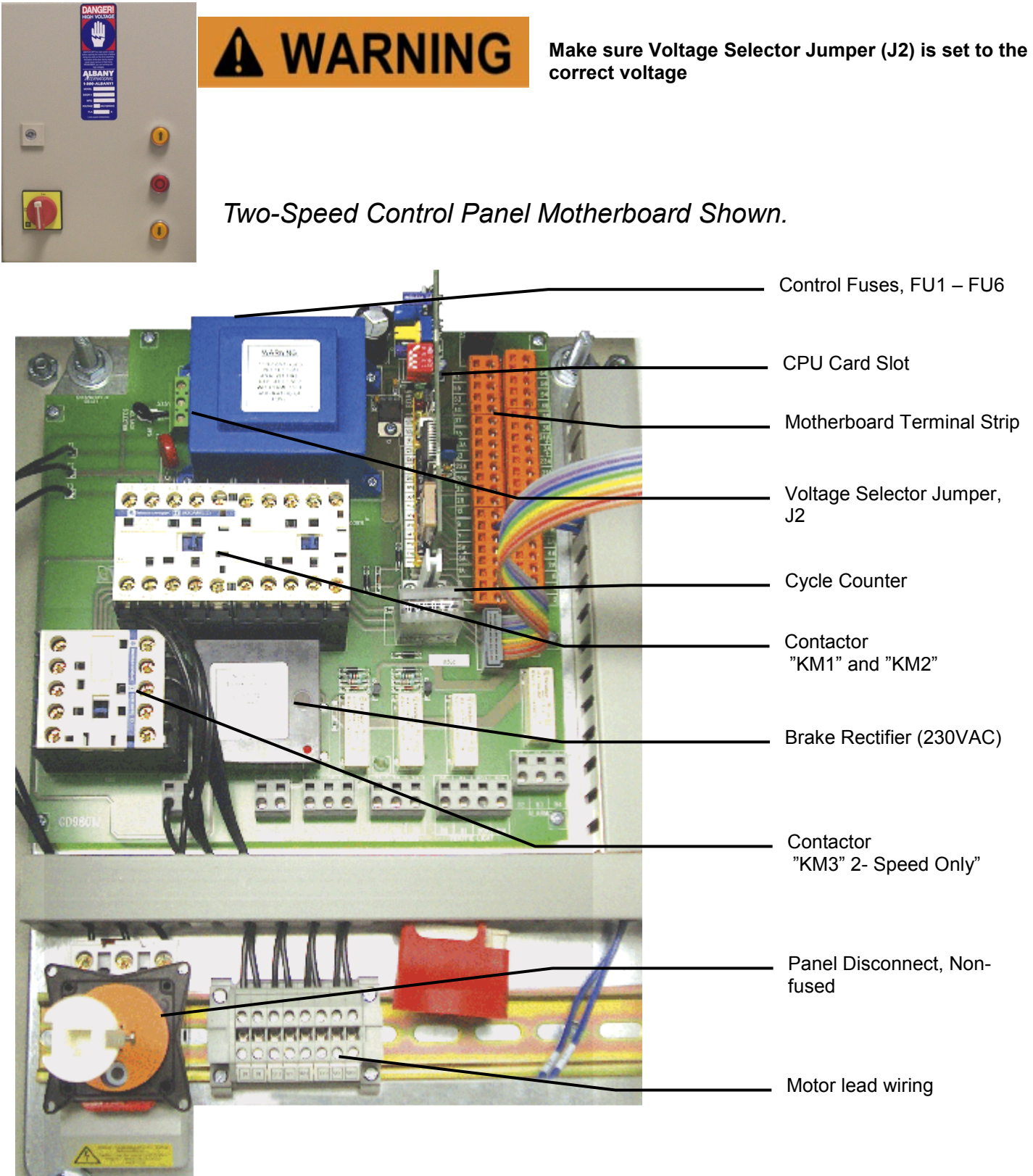
Voltage	Motor Type	Motor HP	Motor FLA	Panel FLA	Panel Main Fuses
<b>208V</b>	<b>1-Speed</b>	2.0HP	6.36	6.60	10A 208V 3-Phase
		1.0HP	4.05	4.29	10A 208V 3-Phase
		<b>2-Speed</b>			
	<b>Not available</b>				
<b>230V</b>	<b>1-Speed</b>	2.0HP	6.34	6.56	10A 230V 3-Phase
		1.0HP	3.66	3.88	5A 230V 3-Phase
		<b>2-Speed</b>	2.0HP	6.34	6.56
	1.0HP		3.66	3.88	5A 230V 3-Phase
	<b>460V</b>	<b>1-Speed</b>	2.0HP	3.17	3.28
1.0HP			1.83	1.94	5A 460V 3-Phase
<b>2-Speed</b>			2.0HP	3.17	3.28
		1.0HP	1.83	1.94	5A 460V 3-Phase
<b>575V</b>		<b>1-Speed</b>	2.0HP	2.54	2.63
	1.0HP		1.46	1.55	5A 575V 3-Phase
	<b>2-Speed</b>		2.0HP	2.54	2.63
		1.0HP	1.46	1.55	5A 575V 3-Phase

## ACS-50 GENERAL CONTROL PANEL LAYOUT

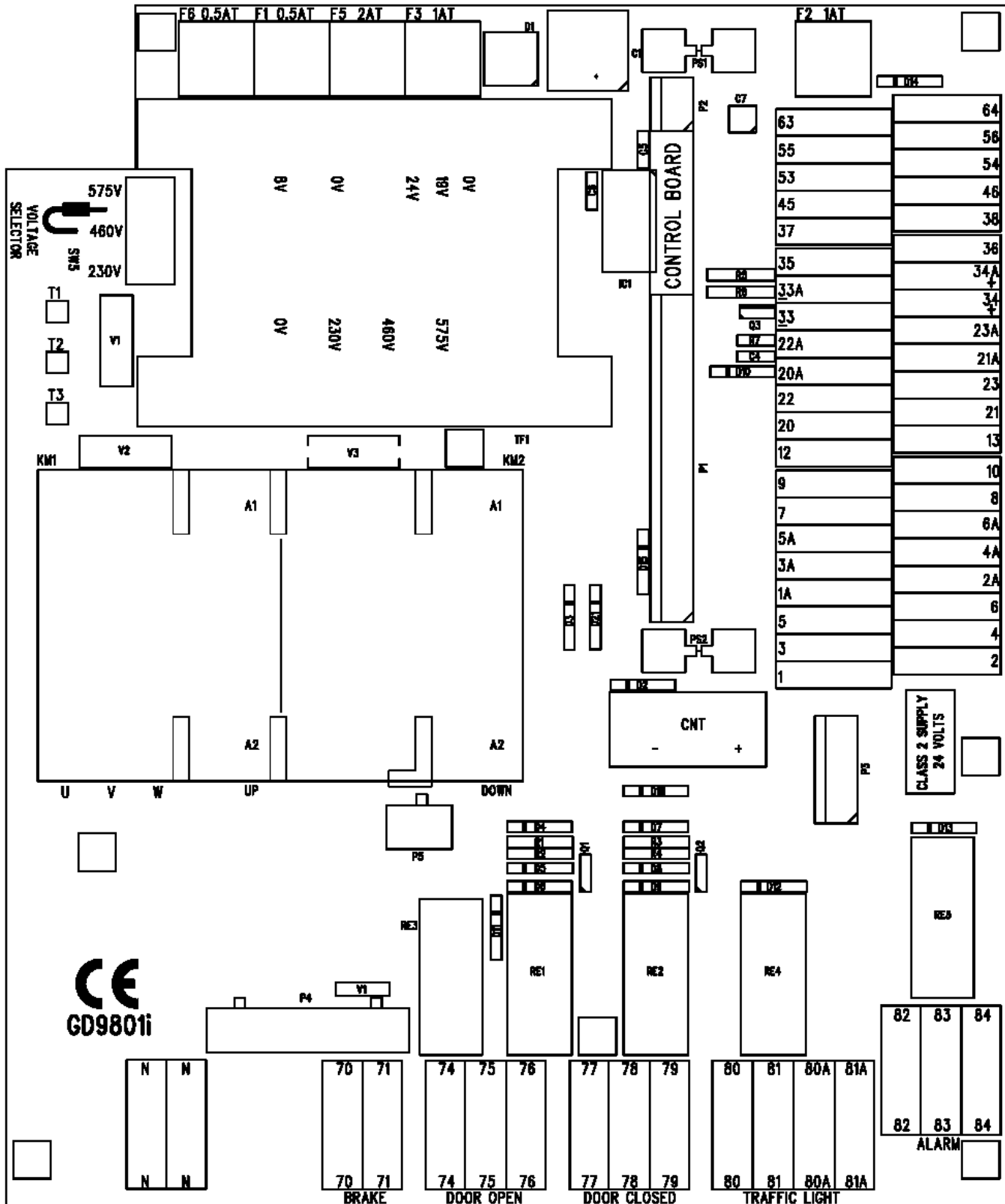
**⚠ WARNING**

Make sure Voltage Selector Jumper (J2) is set to the correct voltage

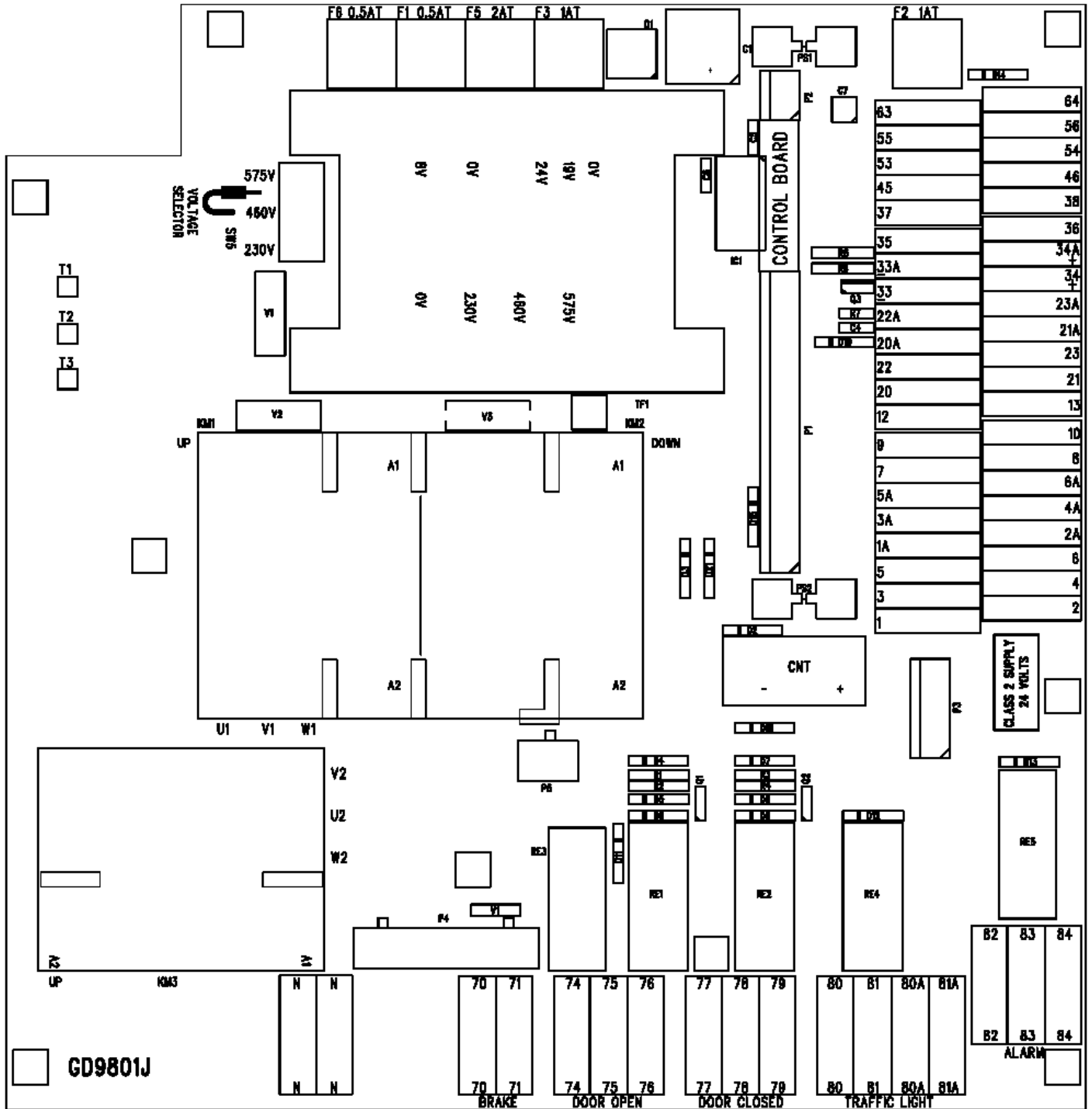
*Two-Speed Control Panel Motherboard Shown.*



# ACS-50 SINGLE-SPEED MOTHERBOARD



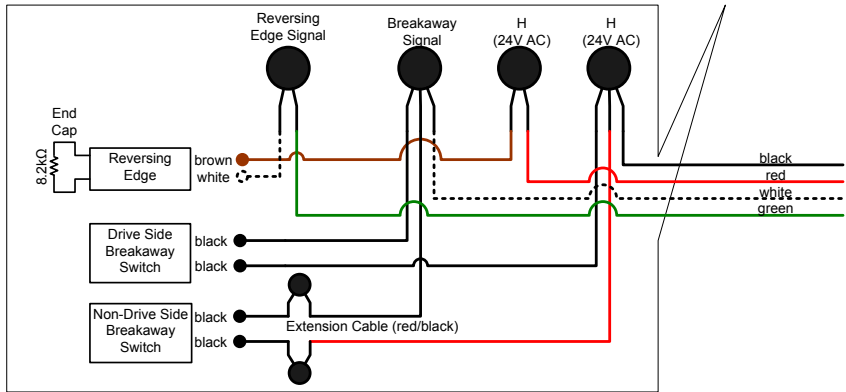
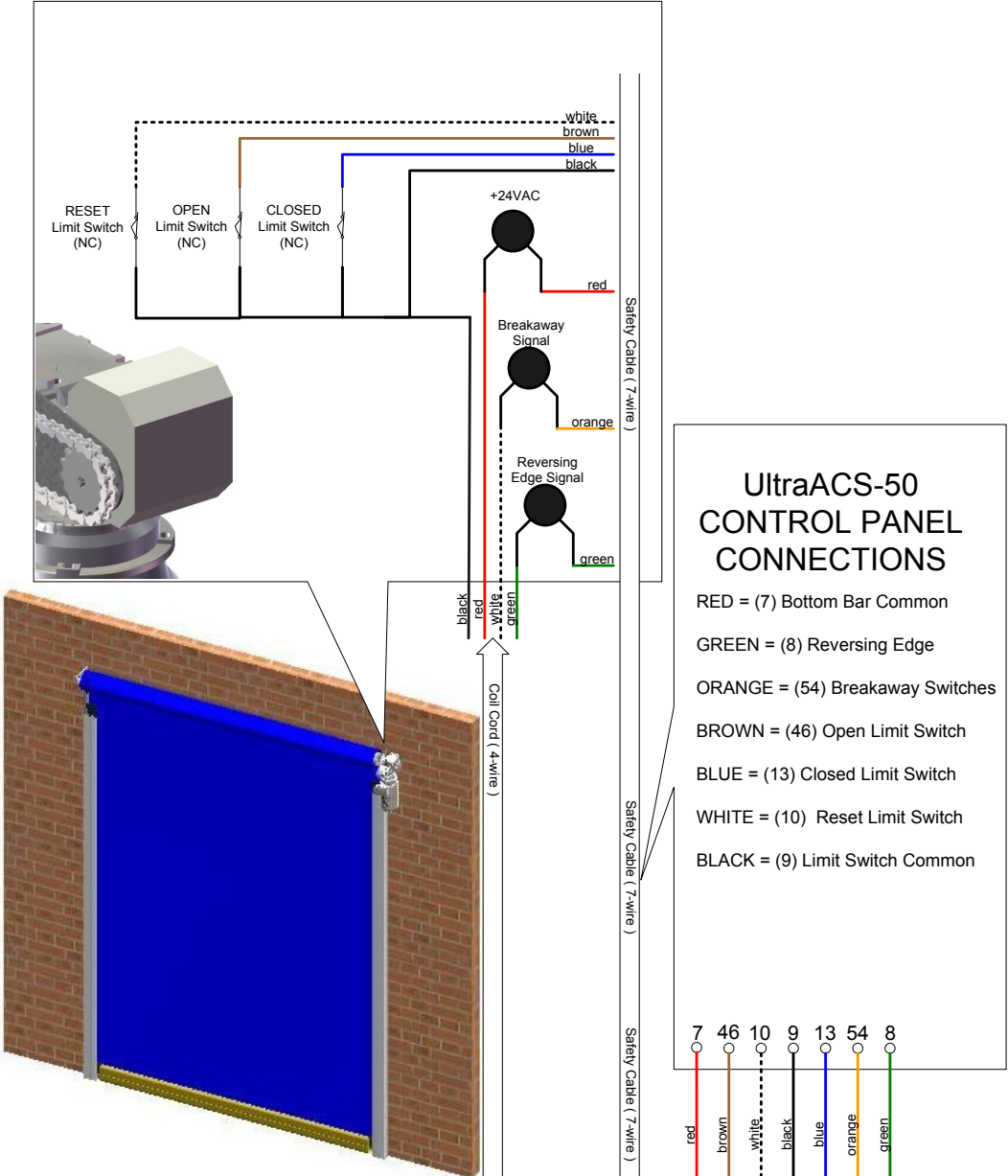
# ACS-50 TWO-SPEED MOTHERBOARD



# UltraACS-50 GRAPHICAL WIRING GUIDE

Motor Wiring (1-Speed)		
Control Panel	Wire	Motor
U1	red	U1
V1	white	V1
W1	blue	W1
not used	red/black	not used
not used	white/black	not used
not used	blue/black	not used
ground bar	green	ground bar
70	orange	brake
71	black	brake
35	orange/black	thermos
36	black/white	thermos
not used	green/black	not used

Motor Wiring (2-Speed)		
Control Panel	Wire	Motor
U2 (high-speed)	red	U1
V2 (high-speed)	white	V1
W2 (high-speed)	blue	W1
U1 (low-speed)	red/black	U2
V1 (low-speed)	white/black	V2
W1 (low-speed)	blue/black	W2
ground bar	green	ground bar
70	orange	brake
71	black	brake
35	orange/black	thermos
36	black/white	thermos
not used	green/black	not used



## UltraACS-50 WIRING CONNECTIONS

TERMINAL	NOTICE	DESCRIPTION
T3, N, N	NOT USED	Mains output ( <b>NOT USED</b> )
U1		Motor (Single Speed)
V1		Motor (Single Speed)
W1		Motor (Single Speed)
U2	Used only with 2 speed motors	Motor (Two Speed)
V2		Motor (Two Speed)
W2		Motor (Two Speed)
1 & 2		Stop1
1A & 2A		Stop2
3 & 4		Open
3A & 4A		Open
5 & 6		Close
5A & 6A		Close
7		Electric Safety Edge, 8,2kOhm Resistor
8		
9 & 10		Limit switch "Full Open after break away"
12 & 13		Limit switch "Door Closed"
20	See page 21 for details	Safety photocell 1 – power (DC-)
21		Safety photocell 1 - power (DC+) Switched for self test
22		Safety photocell 1 - power (DC+)
23		Safety photocell 1 - Signal
20A	See page 21 for details	Safety photocell 2 – power (DC-)
21A		Safety photocell 2 - power (DC+) Switched for self test
22A		Safety photocell 2 - power (DC+)
23A		Safety photocell 2 - Signal
33 & 33A	Optional	Output, 24VDC Negative
34 & 34A	Optional	Output, 24VDC Positive
35 & 36		Thermal switch contact (jumper if not used)
37 & 38	Optional	Disengagement Switch (jumper if not used)
45 & 46		Limit switch "Door Open" for Normal Operation
53 & 54		Breakaway Switches (N.O.)
55 & 56	Optional	Reserve, output
63 & 64		Output, 24V AC
70 & 71		BRAKE
74	Optional	"Door opened" Dry Contact (Common)
75	Optional	"Door opened" Dry Contact (N.O.)
76	Optional	"Door opened" Dry Contact (N.C.)
77	Optional	"Door closed" Dry Contact (Common)
78	Optional	"Door closed" Dry Contact (N.O.)
79	Optional	"Door closed" Dry Contact (N.C.)
80 & 80A	Optional	"Warning light" Dry Contact
81 & 81A	Optional	"Warning light" Dry Contact
82	Optional	"Alarm, Door not ready to work" Dry Contact (N.O.)
83	Optional	"Alarm, Door not ready to work" Dry Contact (Common)
84	Optional	"Alarm, Door not ready to work" Dry Contact (N.C.)

## ACS-50 SETTING OF OPENING AND CLOSING FUNCTIONS

In the table below, SW1.1 means switch position 1 on the SW1 dipswitch. Likewise, SW1.2 means switch position 2 on the SW1 dipswitch. The highlighted section below refers to the factor default settings.

SW 1.1	SW 1.2	SW 2	Terminal 3(A),4(A) (Remote Activation)	Terminal 5(A),6(A) (Remote Activation)	Panel Buttons UP	DOWN
ON	ON	0	UP – DOWN	UP – DOWN	UP	DOWN
ON	ON	1-F	UP – AUTO. + CAP	UP – DOWN	UP- AUTO	DOWN
ON	OFF	0	UP	UP – DOWN	UP	DOWN
ON	OFF	1-F	UP – AUTO.	UP – DOWN	UP - AUTO	DOWN
OFF	ON	0	UP + CAP	DOWN	UP - CAP	DOWN
OFF	ON	1-F	UP – AUTO.	UP – AUTO.	UP - AUTO	DOWN
OFF	OFF	0	UP	DOWN	UP	DOWN
OFF	OFF	1-F	UP – AUTO.	DOWN	UP - AUTO	DOWN

SW1.3 Settings:

**OFF** - Does not require reset after safety edge trip

**ON** - Requires reset after safety edge trip. Must reset by hold to close by pressing DOWN button and fully closing the door

**AUTO** - Automatic closing from open position. Delay before close time is adjustable from 1 sec to 60 seconds depending on SW2 setting as specified in the above table. The UP button (3A & 4A remote) will reset the timer, and prevent the door from closing until released.

**CAP** - Automatic “closing after passing” the door photocell. The door will remain open until the photocell beam is broken and re-established. If the door is in UP – AUTO. + CAP mode, it will then close after a fixed 2-second delay (not adjustable.) If the door is in UP –CAP mode, the door will then close after the UP (3A & 4A remote) or DOWN (5A & 6A remote) buttons are pressed.

**UP – DOWN** - When the door is open, an impulse of the UP button (3A & 4A remote) will close the door when in this mode.

**Rotary Selector Switch for Closing Time (SW2)** - Automatic closing can be set from 1-60 seconds. The SW2 setting in combination with the SW1 setting also has an effect on the operation sequence as shown in the following table.

SW2 Position	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Close Time	↑	1	2	3	4	5	7	10	13	16	19	22	25	30	45	60

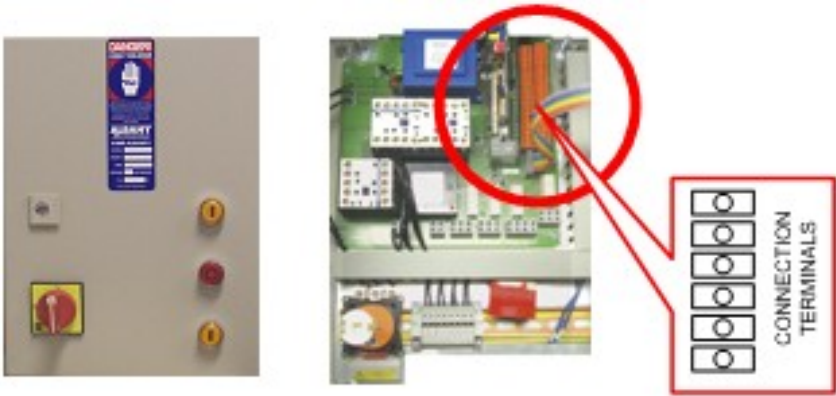
**Note:** When SW2 is set in position 0, the door will not automatically close. A new impulse of an OPEN device or CLOSE device will be needed to close the door.

## UltraACS-50 CPU CARD LED INDICATIONS

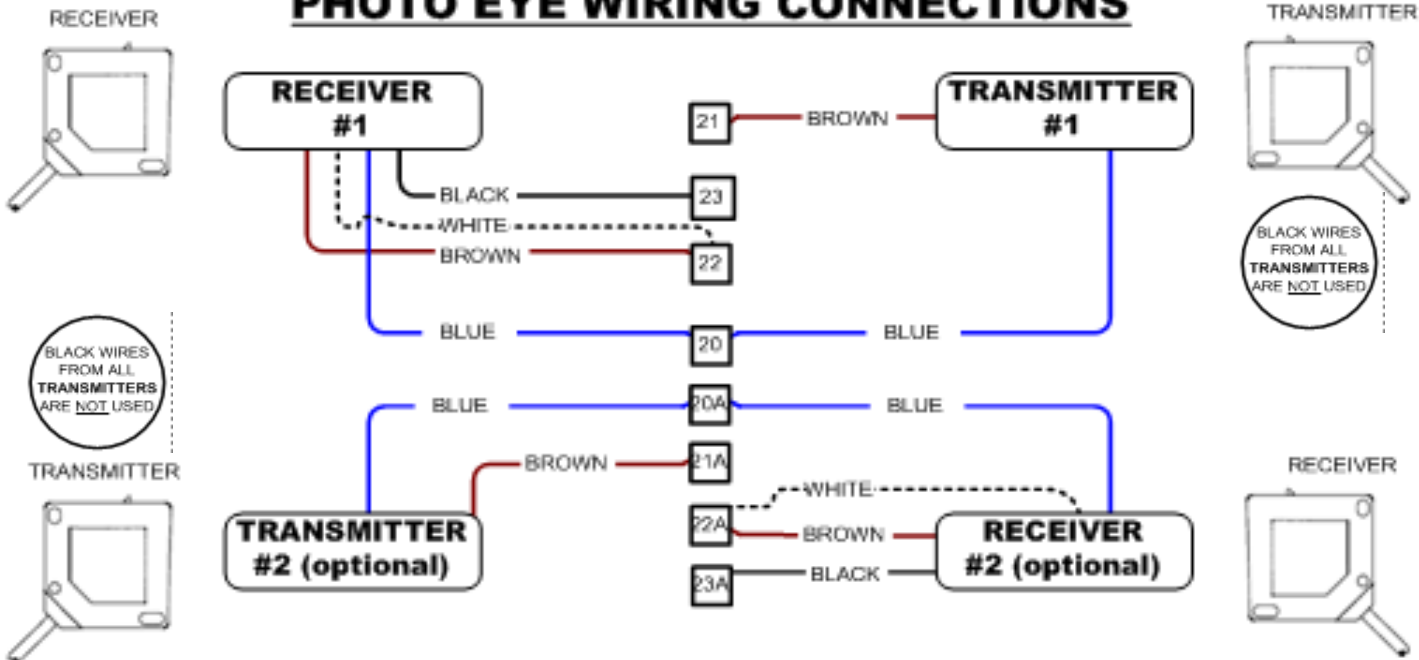
### CPU Card



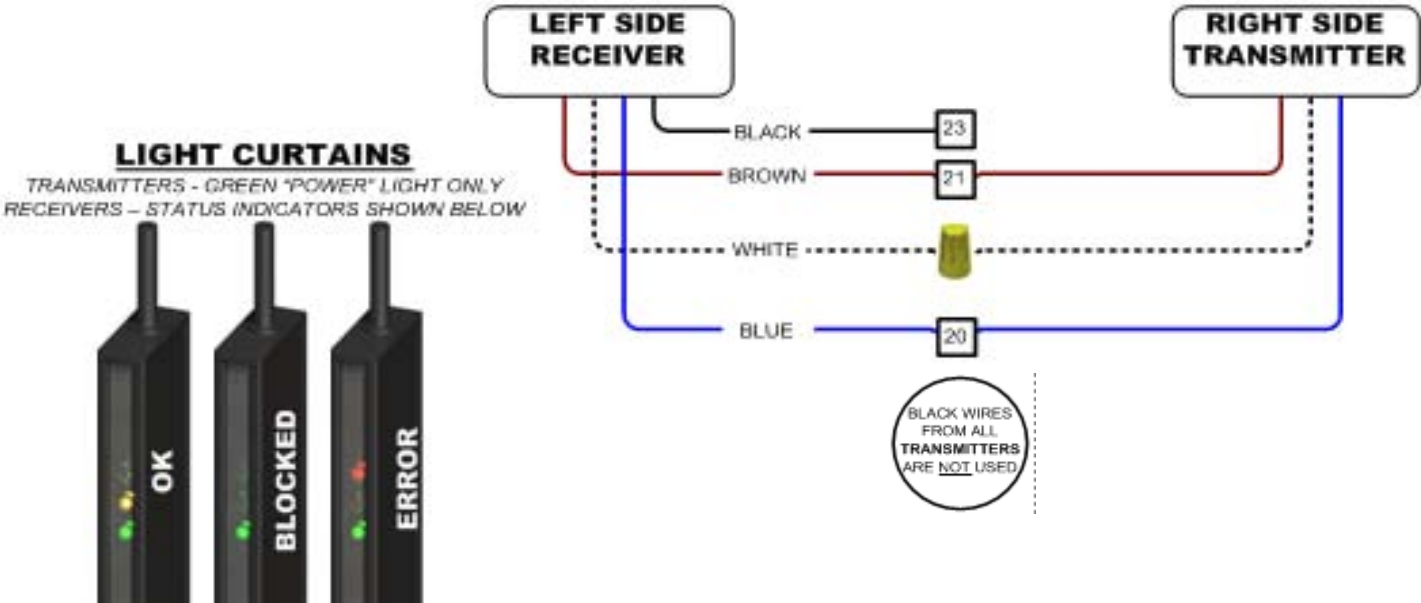
LED #	LED COLOR	Wiring Terminals / Notes	Function	Status (Open)	Status (MID)	Status (Closed)
1	Yellow	3(A) & 4(A)	Signal Open (Momentarily on when activated)	OFF	OFF	OFF
2	Green	1 & 2 or 1A & 2A (Jump if not used)	Signal Stop (Momentarily off when activated)	ON	ON	ON
3	Yellow	5(A) & 6(A)	Signal Close (Momentarily on when activated)	OFF	OFF	OFF
4	Yellow	9 & 10	Crash Limit switch "Door opened after CRASH"	ON	OFF	OFF
5	Yellow	12 & 13	Limit switch "Door closed"	OFF	OFF	ON
6	Red	7 and 8 (8.2KW resistor to bypass for testing only)	Safety edge (on if activated)	OFF	OFF	OFF
7	Green	20,21,22,23 (Jump 21 to 23 to bypass for testing only)	Safety photocell 1 (off if beam is blocked or not aligned)	ON	ON	ON
8	Green	35 & 36 (Jump if not used)	Thermal contact	ON	ON	ON
9	Green	37 & 38 (Jump if not used)	Manual lever	ON	ON	ON
10	Yellow	Ribbon cable	Open button on the control box	OFF	OFF	OFF
11	Green	45 & 46	Standard top position "Door opened"	OFF	ON	ON
12	Red	53 & 54 Normally open	Crash (NO) (on momentarily when crash activated)	---	OFF	OFF
13	Yellow	On while door is closing	Test of "close"-relay	OFF	OFF	OFF
14	Yellow	Ribbon Cable	Close button on the control box	OFF	OFF	OFF
15	Green	20A, 21A, 22A, 23A (Jump 21A to 23A to bypass)	Safety photocell 2 (off if beam is blocked or not aligned)	ON	ON	ON
16	Yellow	Not Used	Not Used - Safety Edge – Electric Option	OFF	OFF	OFF
17	Yellow	Open Contactor	Relay "Open" (On when opening only)	OFF	OFF	OFF
18	Yellow	Close Contactor	Relay "Close" (On when closing only)	OFF	OFF	OFF
19	Yellow	70 & 71 – (Measure 180 VDC)	Brake	OFF	OFF	OFF
20	Red	Red illuminated stop button on the front of the control box	Red lamp onto the control box (FLASHES FOR 3 SECONDS ON STARTUP)	OFF	OFF	OFF
21	Yellow	80 & 81 80a & 81a ( DRY CONTACT ONLY / 250V, 10AMP )	Traffic light (On opening & 2Sec prior to and closing)	OFF	OFF	OFF
22	Green	82 & 83 N.O. or 83 & 84 N.C. ( DRY CONTACT ONLY / 250V, 10AMP )	Alarm-contact	ON	ON	ON
23	Yellow		Optional output		OFF	OFF
24	Green		Test of the photocell	ON	ON	ON
25	Red	Check photo wiring for bad connections	Error indicator – Photocell has a short circuit	OFF	OFF	OFF
26	Red	Dip switch SW 1.3 is set to on	Error indicator – Safety edge requires reset (see SW1.3)	OFF	OFF	OFF

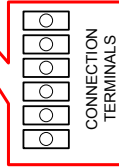
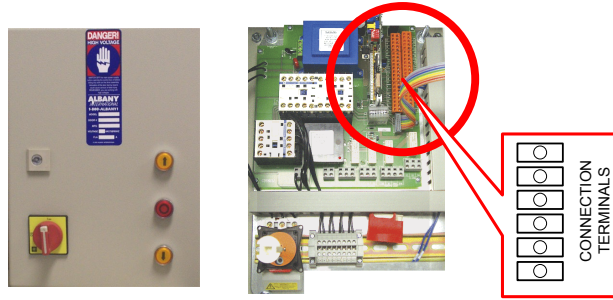


### PHOTO EYE WIRING CONNECTIONS



### LIGHT CURTAIN WIRING CONNECTIONS

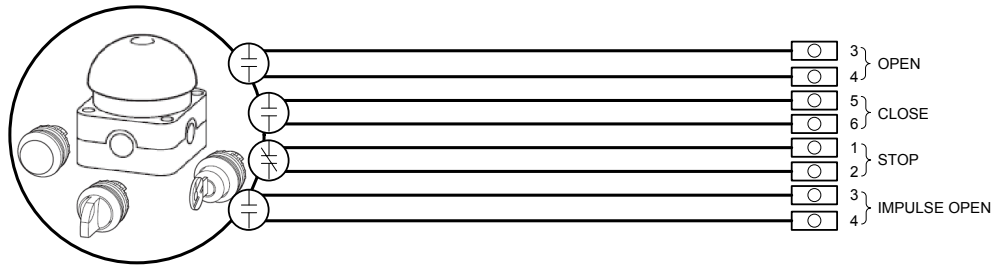




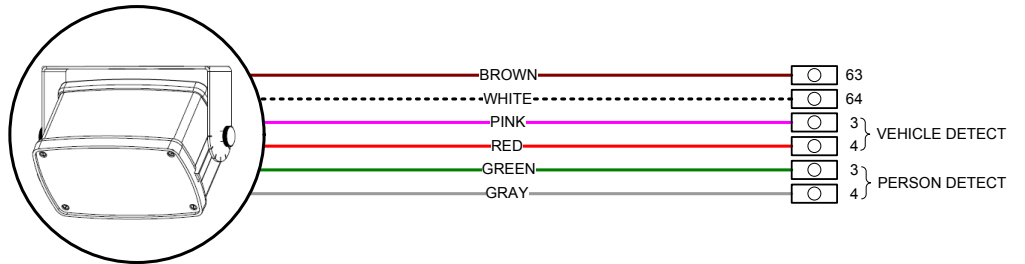
## MANUAL ACTIVATORS

CONNECT AS "NORMALLY OPEN"

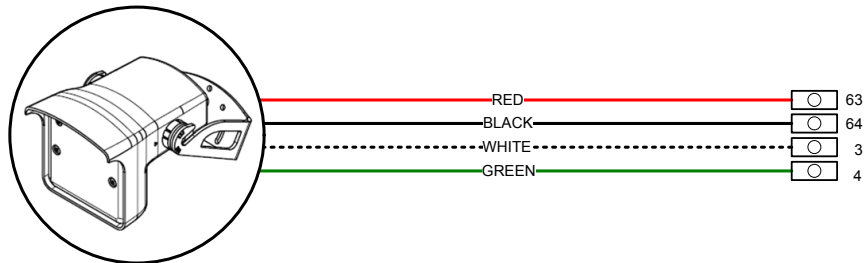
*Reference the table for setting the SW1 & SW2 switches for desired function of the door*



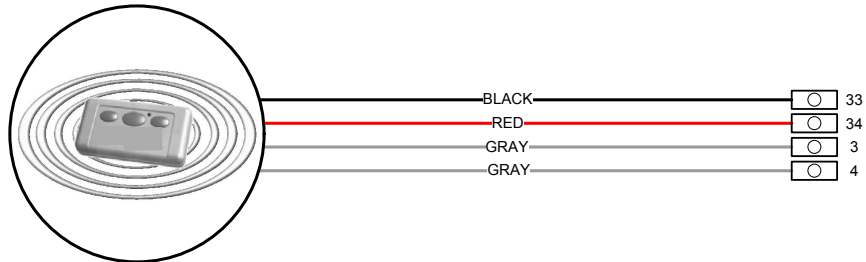
## HERKULESTM MOTION SENSOR



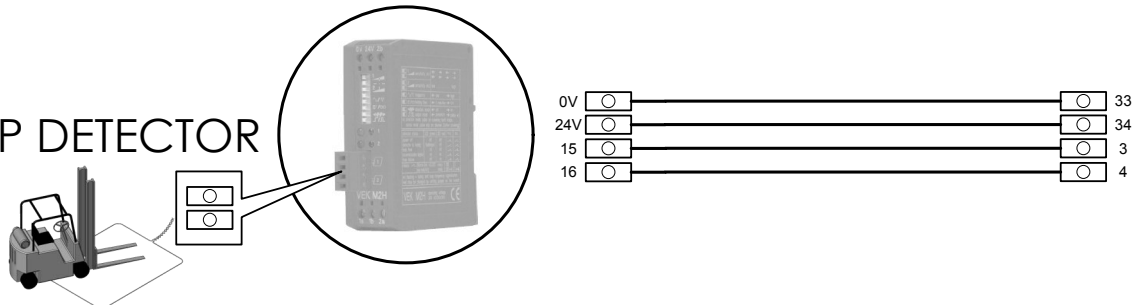
## FALCONTM MOTION SENSOR



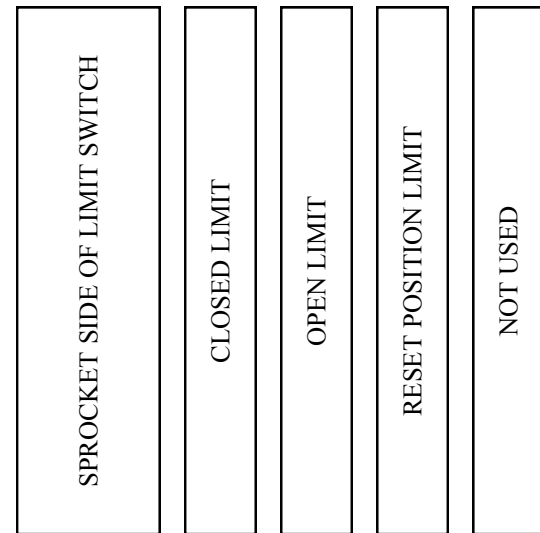
## REMOTE CONTROL



## LOOP DETECTOR



## UltraACS-50 LIMIT SWITCH SETUP



### CAUTION

Rotation of the top limit cam in the wrong direction may cause the bottom beam assembly to jam in the top roll.

1. Remove the limit switch box cover, and manually bring the door down to the halfway point. Observe the rotation direction of the limit cams while the door moves.
2. Rotate the adjustment screws on the **Open limit cam** (brown & black wires) and **Reset Position limit cam** (white & black wires) until each makes contact with its associated micro switch.
3. Move the door to one foot from the fully closed position. Observe the rotation direction of the limit cams while the door moves.
4. Rotate the **Closed limit cam** (blue & black wires) until it makes contact with its associated micro switch.
5. When the door controller has been wired correctly, the switch **SW1** and **SW2** settings are complete, and the coarse limit adjustment is complete, the power may be turned on. Upon power up, the door controller will do an initial test for 3 seconds to see whether the software and the RAM are working properly. During this 3-second test, the controller will not respond to any open or close signals and the door will not open or close and the red illuminated button on the control box will flash 3 times.  
If the test detects a failure, the red illuminated button will illuminate constantly, the alarm relay will be activated, and the door controller becomes locked.
6. The red illuminated button will go out completely once all start-up checks are correct and the control is ready to run.

Tap the Open button and ensure that the door moves in the up direction. If the door closes, then the phase rotation on the drive unit is backwards. Swap two of the three incoming power leads in the panel to change the motor rotation (terminals T1, T2, and T3).

Two speed controls may require swapping high speed motor leads in conjunction with the supply power leads to make the door run open at high speed and closed low speed.

## CAUTION

**Be prepared to press the stop button if the door appears to overshoot the limits.**

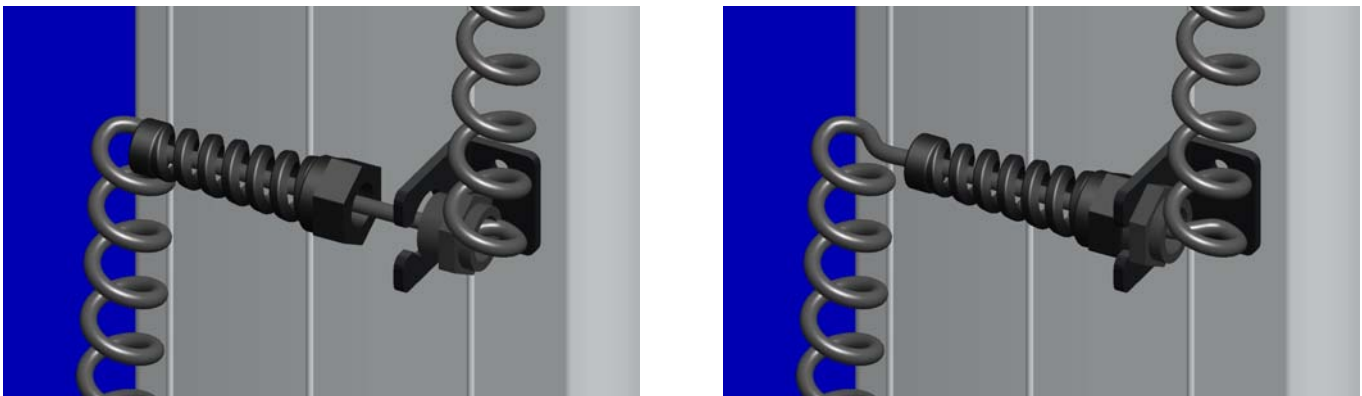
7. Press the open pushbutton on the front of the panel. The door will open at full speed. Press the close pushbutton again and the door will close. Observe the door limits (open and closed).
8. Continue to finely adjust each cam until the desired door limits are attained. Once the door limits are adjusted correctly and the door is operating satisfactorily. Replace the limit switch box cover.

## CAUTION

**If door breakaway is activated and power is turned off, the reset of breakaway is cancelled. Then upon power up, door will open to normal open position at normal speed, unless breakaway is reactivated.**

### Coil Cord Strain Relief Bracket Installation Instructions

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1. Mount strain relief bracket as shown as above (approximately half way up door opening)
2. Slide coil cord and strain relief through the slot in the bracket.
3. Once in place tighten nut to strain relief.

## **Resetting the door after impact or break-away**

### **CAUTION**

If door breakaway is activated and power is turned off, the reset of breakaway is cancelled. Then upon power up, door will open to normal open position at normal speed, unless breakaway is reactivated.

- Upon impact of the bottom beam on the door the break-away function of the control will activate. The control goes into a break-away fault condition and will illuminate the red stop button on the face of the control panel.
- You will need to bring the fabric panel to the front of the door if it broken out to the rear by forcing the bottom beam back through the door opening by pulling on the bottom beam or lifting the bottom beam at a angle to bring it back to the front of the door. A quick inspection should be made at this time for possible damage to the end tabs of the bottom beam, curtain and side frames. Make repairs as needed.
- Press and hold the open button on the control panel to open the door to the break-away reset limit. This should bring the bottom beam end tabs above the black plastic retract flaps at the top of the side frames.
- Once the break-away reset limit is made the fault condition will be reset and the door is ready for normal operation.
- Cycle the door through a couple of cycles to verify the function of the door.

### Hold-to-Run-Function

If the safety edge or safety photocells (safety circuits) have any fault(s), the door will no longer close automatically, and the system will go into Hold-to-run mode. An illuminated Stop button on the control panel indicates hold-to-run mode.

If the Hold-to-run-mode is activated, it is not possible to close the door via external activators or signals. Only the control panel buttons will respond to a constant pressure to run the door.

It is necessary to push the “Close” button to reset the door controller. Every other signal to reset will not have any effect.

Reset of the Hold-to-run mode will occur when both safety circuits are working again and pushing the CLOSE button on the control panel successfully closes the door.

### Input Device Check

Press the STOP button to prevent the door from moving. Operate each applicable input device as listed in LED Indications chart to verify device wiring. When finished, restore the door from hold to run mode as described above.

### Runtime Monitoring

The controller has an internal timer to measure the door run time when opening or closing. The timer expires after the door runs continuously for 40 seconds. If this occurs, the door will immediately stop and the red button on the panel will be lit solid. To reset this condition, disconnect main power (off). Verify that the door is not binding or you have a motor/gearbox problem. After this check, then reapply power.

## Control Panel Replacement Parts

<b>PART #</b>	<b>PART DESCRIPTION</b>
4903T0005	Control Panel, UltraACS50, 208/220/480/600v, 1-Speed CUL
4903T0006	Control Panel, UltraACS50, 208/220/480/600V, 2-Speed CUL
4903T0007	Control Panel, UltraACS50, Stainless Steel 208/220/480/600V, 1-Speed
4903T0008	Control Panel, UltraACS50, Stainless Steel 208/220/480/600V, 2-Speed
4906T0016	ACS50 Steel Enclosure With Prepunched Holes
4908T0011	Fuse Holder, ACS50
4909T0001	Rectifier, ACS50, 220 Volt, CUL
4911T0012	Terminal Block, 6mm, 35mm Din Rail
4911T0013	Terminal Block, End Stop, 35mm Din Rail
4920T0001	Motherboard, ACS50, CUL, One Speed (Does not include CPU card or rectifier)
4920T0002	Motherboard, ACS50, CUL, Two Speed (Does not include CPU card or rectifier)
4920T0010	CPU CARD, ACS50 w/ 4916T0004 Crash Eprom
980072-7504	Disconnect, Rotary Switch, Rod And Handle Included
980072-9500	FUSE, ACS50, 250V1A, F2 & F3 position
980072-9501	FUSE, ACS50, 250V 0.5A F1 & F6 position
980082-7505	Push Button, Red, ACS50
980082-7506	Push Button, Amber, Open/Close, ACS50
4904.415	Loop Detector, 24 VDC/AC, FEIG

