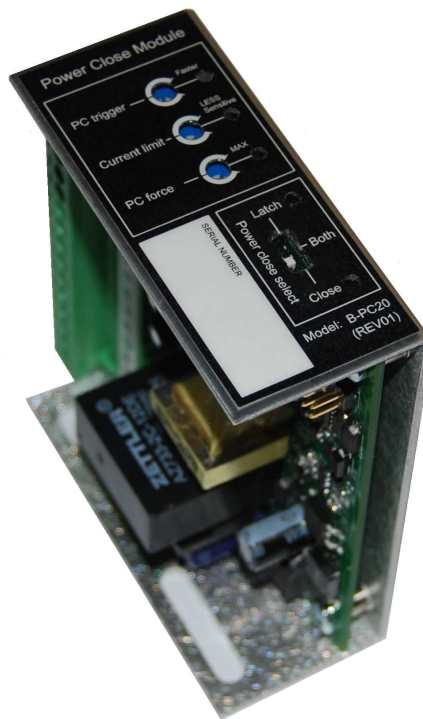

B-PC20

Power Close Module

Instruction Manual

Document number: B-PC20-C
Release: V1.2
Date: OCT 12,2011





This control must be adjusted/serviced by a qualified person. The service technician must be familiar with the latest ANSI A159.10/19 standards. To provide additional safety, a presence sensor should be installed on the push side of the entrance and connected to the cancel input of the PCM (Power close module).

NEVER sacrifice the safe operation of the automatic door for an incomplete solution. Call the factory for technical support.

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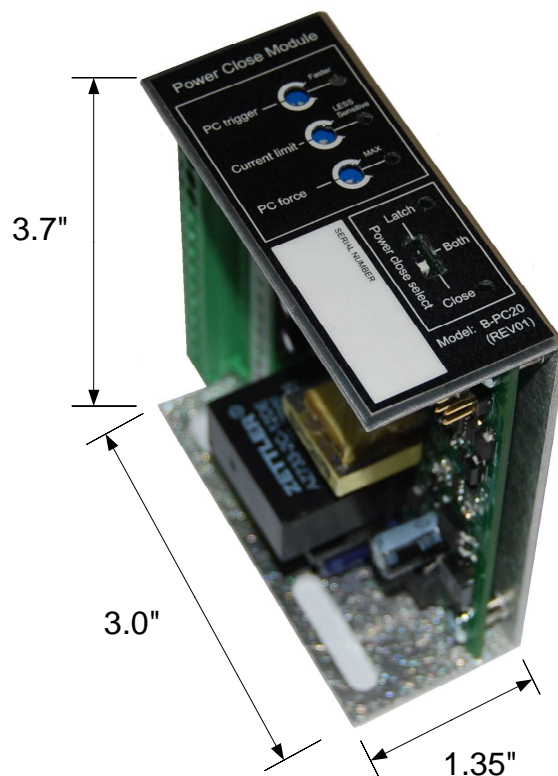
The B-PC20 Power Close module can be used where automatic door operators are installed. Where the building/room or wind pressure is too high, the Power Close module will ensure that the door will fully close properly. This control is user friendly and simple to install and set.

The B-PC20 module is to be installed between the main door operator control and the DC motor. Visual indicators allows the installer to view the key points of the power close cycle. All settings are adjusted/updated in real-time which makes this control very simple to tune to the desired values.

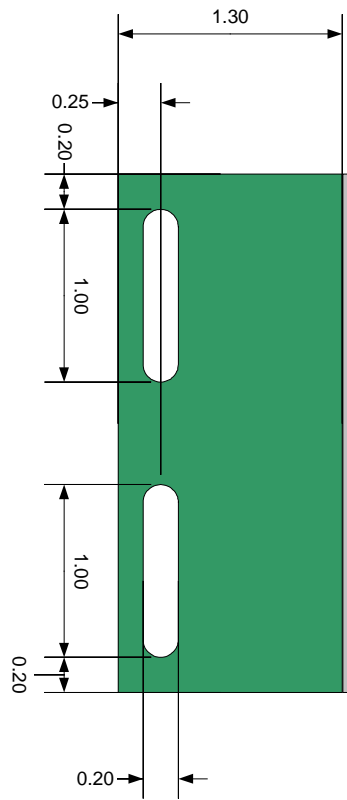
This module can be used on 75 to 160 Volts DC motors.

1 Module Physical Information

1.1 Module Dimensions

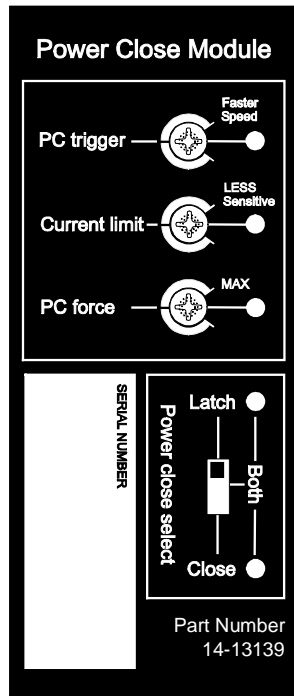


1.2 Mounting holes (Dimensions in inches)



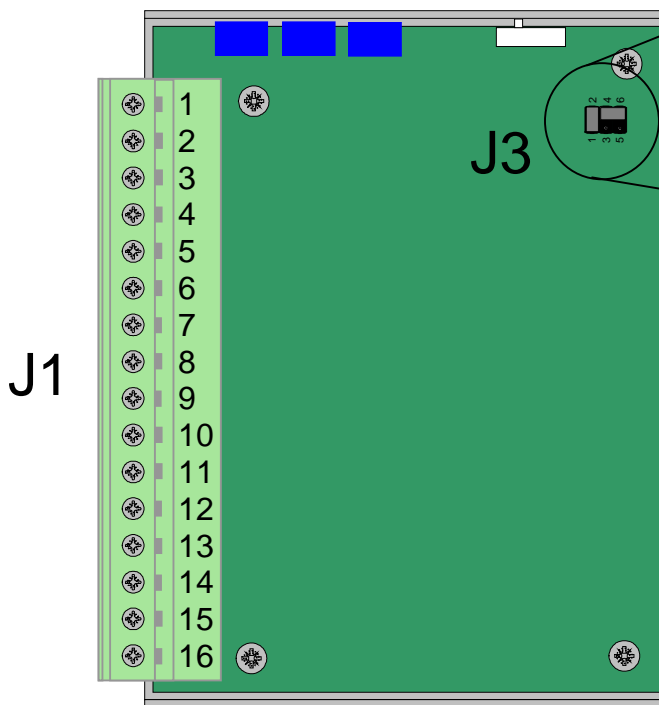
1.3 Module Physical Description

(FRONT VIEW)



- ← PC trigger potentiometer/Indicator
- ← Current limit potentiometer/Indicator
- ← PC force potentiometer/Indicator
- ← Indicator for Latch PC
- ← Select switch (Engage power close at)
 - ├── Latch (Switch at top)
 - ├── Both (Switch at center)
 - └── Close (Switch at bottom)
- ← Indicator for Close PC

(SIDE VIEW)

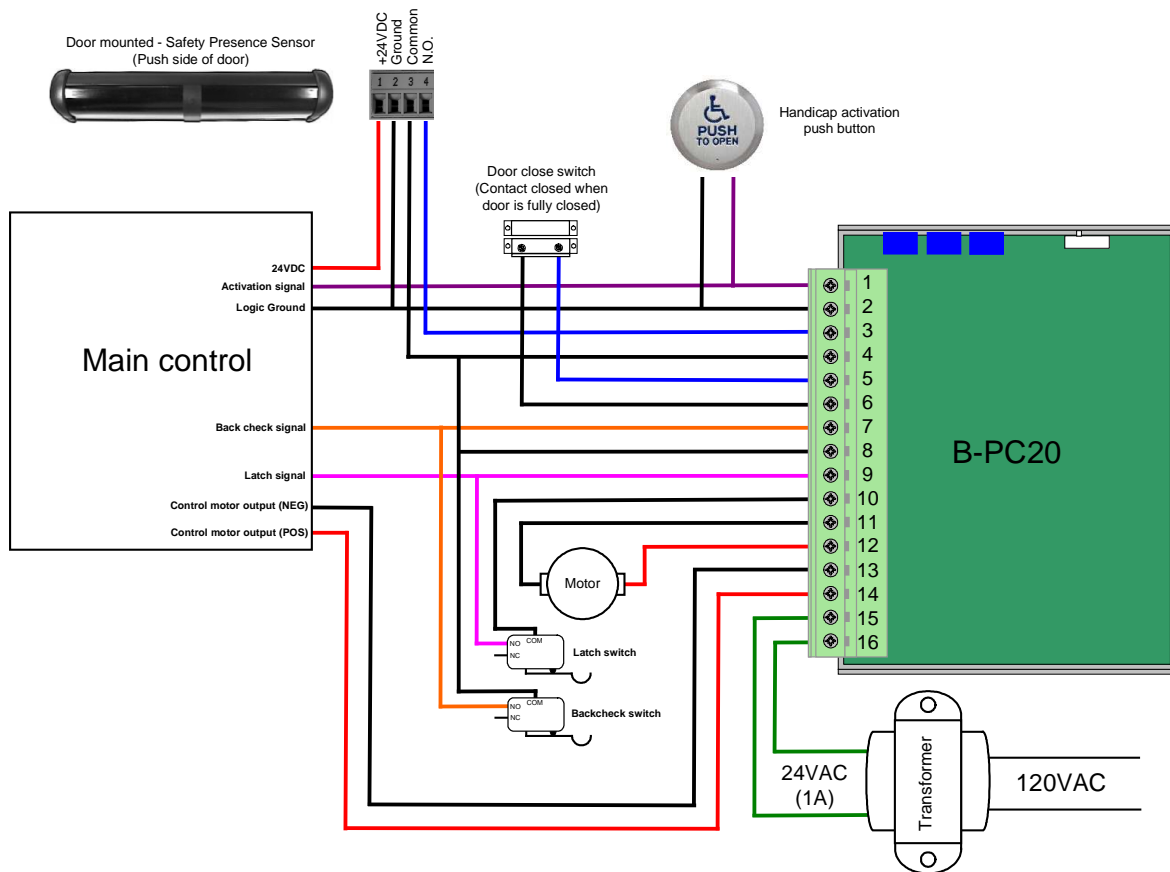


J3 Options		
Option	Condition	Jumper
Power close at back check	Enabled	Insert jumper between pins 1 & 2
	Disabled	Remove jumper between pins 1 & 2
Hold close	Enabled	Insert jumper between pins 4 & 6
	Disabled	Remove jumper between pins 4 & 6

1.4 Electrical Characteristics

Parameter		MIN	TYP	MAX	Unit
Power IN	AC	12	24	36	V
	DC	16	32	50	V
Motor PC output	Close	3	-	70	%PWM
	Latch	2	-	35	%PWM
	Hold	2	-	18	%PWM
PC timeout	BK	-	22	-	S
	Close	-	15	-	S
	Latch	-	4	-	S
Logic input Voltage range		-	-	75	V
Logic output sink current		-	-	400	mA
Operating Temperature		-40	-	85	°C
Dielectric strength (Between motor IN/OUT and logic IN/OUT)		-	1500	-	V

1.5 Typical Installation



2 Signal Descriptions

2.1 Activation Input/Output

Use to cancel power close and to activate the door to re-open if the door pushes too hard on an object.

Input - When active (circuit is closed), the activation input cancels the power close cycle to allow the door to open. The module has a PWM detector which also can cancel the power close cycle in the presence of a PWM signal and allow the door to open.

Output - Activation output is used to activate the door to re-open if the door pushes too hard against an object. (See Current Limit Potentiometer)
To use this feature the activation output must be connected to the activation of the main control.

2.2 Cancel Input

Use to cancel power close when a push side door mounted presence sensor is active.

When active (circuit is closed), the cancel input disables the power close module. This input can be used with a sensor to shut the module down when the door is approached from the push side and used manually or to control the module with an ON/OFF switch.

2.3 Door Close Switch Input

This connection signals the PCM that the door is closed.

When active (circuit is closed), the door close switch input indicates that the door is fully closed and terminates the power close cycle. If a jumper is installed on J3 pin 4 and 6, the door will hold closed when the door close switch input is active.

2.4 Back Check Input

This connection signals the PCM that the door has reached back check.

When active (circuit is closed), this signal is used to prevent power close to engage while the door is in the back check area.

This feature can be disabled by installing a jumper on J3 pin 1 and 2.

2.5 Latch Input

This connection signals the PCM that the door has reached latch check.

This signal allows power close to engage at latch and/or at close when PC trigger is met. During power close, at the latch area, the door close speed is monitored to regulate the speed while still creating the proper force.

3 Potentiometer Descriptions

3.1 PC Trigger Potentiometer

This potentiometer adjusts at what closing speed the PC will engage.

This potentiometer adjusts the sensitivity of power close trigger. This setting is compared to the closing speed of the door. When the trigger is achieved the corresponding green indicator will flash.

3.2 Current Limit Potentiometer

This potentiometer tells the PCM how hard the door should push against an object before it re-opens.

This potentiometer adjusts the sensitivity of the current monitor. During power close, the current to the motor is monitored. If the current exceeds the allowed limit, power close is canceled and disabled for 3 seconds, the current limit red indicator is lit and a re-activation signal is generated on the activation output. This setting should be adjusted to prevent the PCM from pushing too hard against an object.

3.3 PC Force Potentiometer

This potentiometer adjusts how hard the PCM will push against an object while closing.

This potentiometer adjusts the power close strength. Power close force at latch is reduce by 50%. Hold closed force range is 2-18%. When PC is active, the PC force green indicator is lit.

4 Feature Descriptions

4.1 PC Activate Delay

This feature determines how long the door will push against an object before PC kicks in.

When the door is closing and encounters enough resistance to trigger the PCM, a delay of 3 seconds will begin. The PCM will engage after the 3 second time delay. During the delay, if the resistance disappears, the delay and power close will be canceled. When the resistance is met again, the delay will restart at 3 seconds.

4.2 PC Timeout

This feature determines how long the PCM stays engaged during closing.

When power close is engaged a timeout timer is loaded. When the timeout delay expires the power close is canceled. The value of the timer is 22 seconds for back check, 15 seconds for close and 4 seconds for latch.

4.3 Hold at Closed Option

This jumper enables the PCM to hold the door closed.

When the door is fully closed (Door close switch is closed) and jumper J3 is present on pin 4 and 6, a hold force is applied to keep the door closed.

4.4 PC at Back Check Option

This jumper enables the PCM to engage PC during the complete closing cycle.

To make power close available at back check, install a jumper on J3 pin 1 and 2.

5 Terminal Block – J1 Pinout Descriptions

PIN	Signal	Definition
J1.1	Activation IN/OUT	Connect this signal to the activation input on the door control.
J1.2	Ground B	Isolated ground reference B
J1.3	Cancel input	Connect this signal to the push side door mounted sensor. This signal cancels power close when tied to ground B.
J1.4	Ground B	Isolated ground reference B
J1.5	Door close switch input	This signal tied to ground B will halt the power close cycle and if the Hold Closed option is selected, a hold force will be created. The hold force will be removed if an activation signal is received, if cancel signal is closed, if the door closed switch becomes opened or by removing the J3 jumper between pin 4 and 6.
J1.6	Ground B	Isolated ground reference B
J1.7	Back check signal	Connect the back check switch between pin J1.7 and J1.8 This signal tied to ground A will prevent power close to engage while the door is held fully opened (At back check). This feature can be disabled by adding a jumper to J3 pin 1 and 2.
J1.8	Ground A	Isolated ground reference A
J1.9	Latch signal	Connect the latch switch between pin J1.9 and J1.10 During closing, this signal allows power close to engage at latch and/or at close when the PC trigger level is met.
J1.10	Ground A	Isolated ground reference A
J1.11	Motor + (NEG)	Connect to the motor negative
J1.12	Motor - (POS)	Connect to the motor positive
J1.13	Control + (NEG)	Connect to the main control motor negative output
J1.14	Control + (POS)	Connect to the main control motor positive output
J1.15	24VAC/DC (1A) input	Connect to a 24VAC (1A) transformer
J1.16		

6 Select Switch Definitions

Switch Position	Definition
Latch	Power close at latch only
Both	Power close at latch and close
Close	Power close at open only

With the option switch in the "Latch" position, power close will be possible at the "Latch" area only. With the option switch in the "Close" position, power close will be possible at the "Close" area only. And with the option switch in the "Both" position, power close will be possible at the "Latch" and the "Open" areas.

7 J3 Hold Option

J3 Jumper	Definition
No jumper (on pins 4 and 6)	Hold closed option disabled
Jumper on pins 4 and 6	Hold closed option enabled

With the door fully closed (Door close switch contact closed) the power close module will apply a constant pressure to keep the door closed. The hold force can be canceled by opening the contacts of the door close switch, with the cancel signal, an activation or by removing the J3 jumper between pins 4 and 6. When the hold feature is active the PC force LED will flash.

8 J3 Power Close at Back Check Option

J3 Jumper	Definition
No jumper (on pins 1 and 2)	PC at Backcheck option disabled
Jumper on pins 1 and 2	PC at Backcheck option enabled

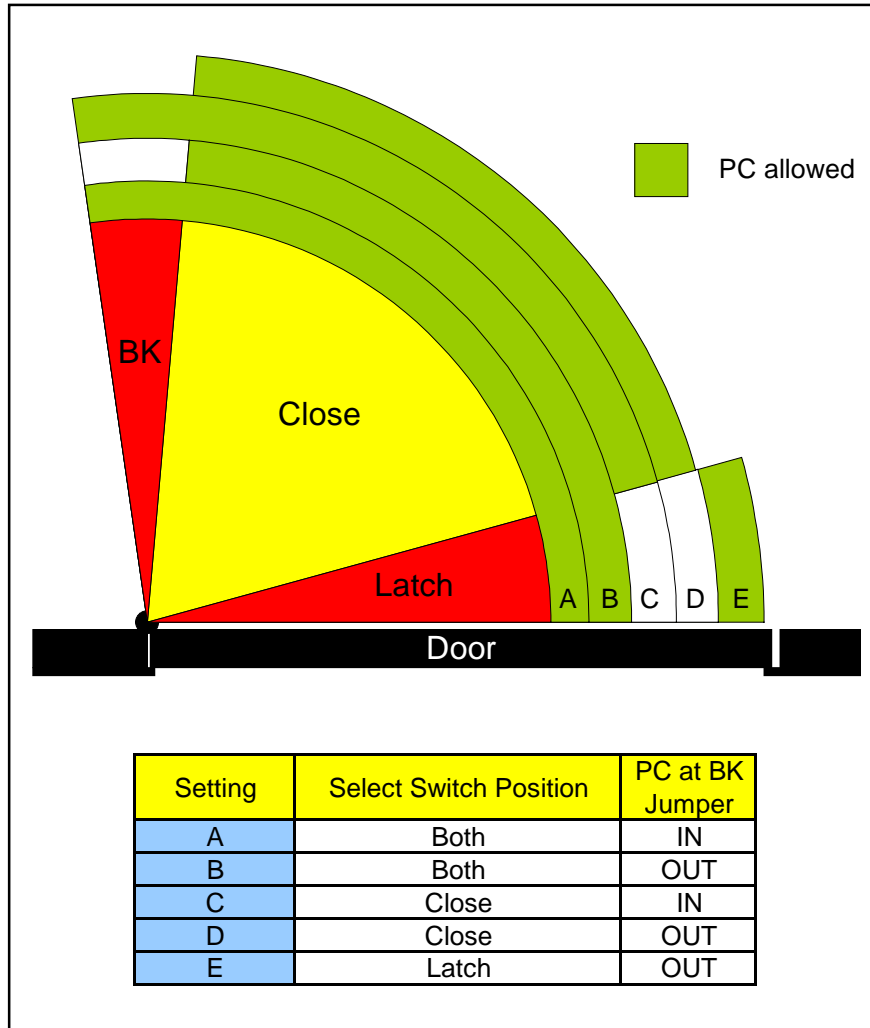
With the jumper installed on J3 pins 1 and 2, the module will provide power close at back check if the option switch has "Close" selected.

Note: If this option is used, additional door mounted safety sensor(s) should be installed to prevent the door from closing when a pedestrian is near the entrance.

9 Setup Procedures

Before applying power to the operator, make all necessary connections (Refer to the wiring diagrams at the end on the document as an example).

The figure below shows the PC allowed areas for different settings.



9.1 Module Adjustment

9.1.1 Power Close Select

Set the slide switch to the desired power close setting. The yellow lights indicate the selection. The possible options are; power close at latch, at close or at both (at close and latch). PC at back check is also available by adding a jumper. (Refer to the figure above for details).

Note: 1- Power close on "Close" will be possible only after the control detects the present of a back check switch.

2- A power close time-out will cancel power close when the timer expires.
The timeout value are 4 seconds for power close at latch and 15 seconds for power close at close or at both (at close and latch).

9.1.2 Power Close Settings

9.1.2.1 Power Close Trigger

During the closing cycle, adjust the "PC trigger" potentiometer so that the "PC trigger" green light comes "ON" at the desire speed. (This setting must be adjusted at the door position in reference to the selection made to the power close option switch.)

9.1.2.2 Power Close Force

During a power close, adjust the "PC force" potentiometer to get the desire closing force. Make the adjustment when the "PC force" green light is "ON".

9.1.2.3 Current Limit

During a power close, obstruct the door (using a heavy object) and adjust the "Current limit" potentiometer to get a "Current limit" failure (A red light will come "ON", power close is cancelled and the door will re-open if the "Activation IN/OUT" is connected to the main control).

9.1.3 Hold Feature

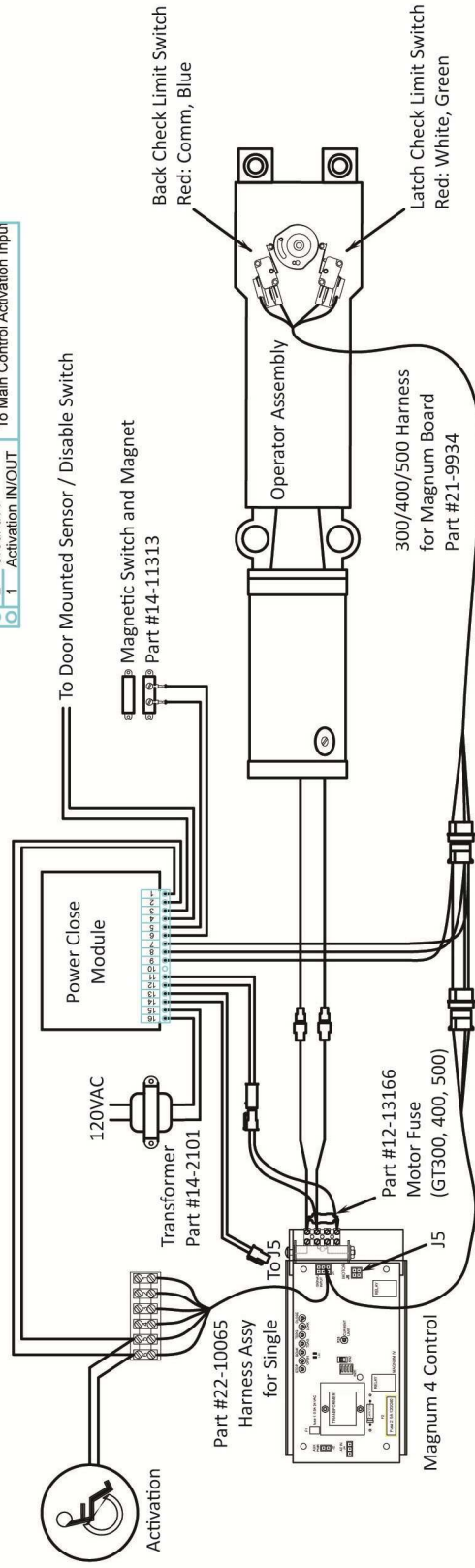
If the hold closed feature is required install/move the jumper to J3 on pins 4 and 6. A door close switch must be installed for this feature. When the hold feature is active the PC force LED will flash.

For further information contact technical support

GT-300/400/500 Swinger - Kit Part Number: 11-13140

Power Close Module Terminal Assignment

16	Power IN (24VAC/DC 1A)
15	Control Motor POS
14	To Main Control Motor Output
13	Control Motor NEG
12	Motor POS
11	Motor NEG
10	Ground B
9	To Latch Switch
8	Ground B
7	To Backcheck Switch
6	Ground A
5	To Door Closed Switch
4	Ground A
3	To Cancel Switch/Sensor
2	Ground A
1	To Main Control Activation Input

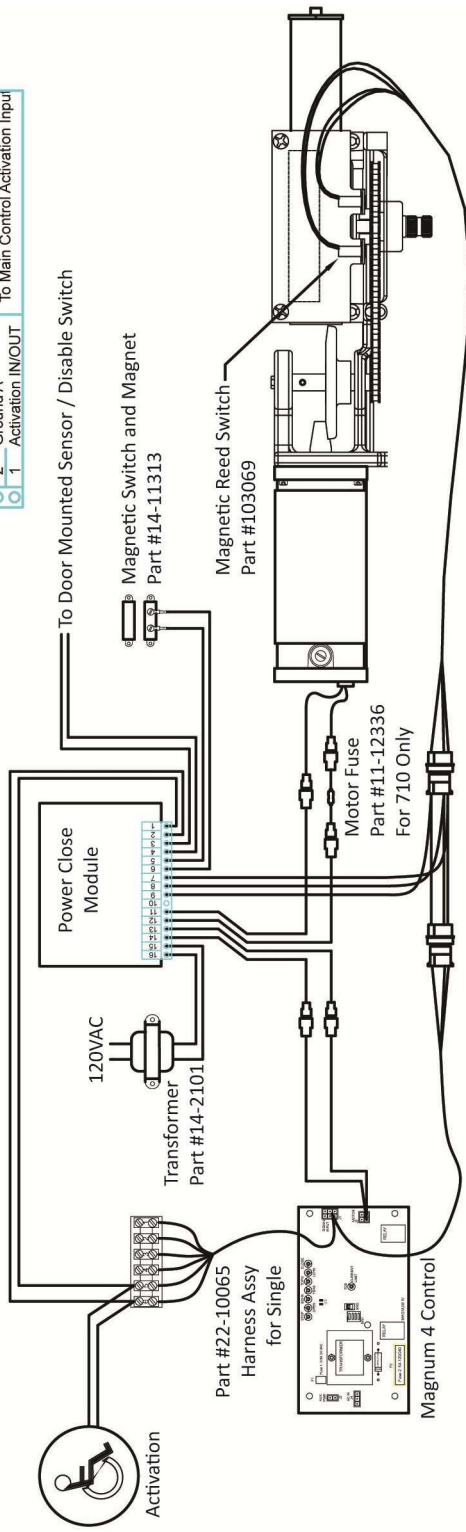


DN 0357

GT-710 Swinger - Kit Part Number: 11-13141

Power Close Module Terminal Assignment

16	Power IN (24VAC/DC 1A)
15	Control Motor POS
14	Control Motor NEG
13	To Main Control Motor Output
12	Motor POS
11	Motor NEG
10	To Latch Switch
9	Ground B
8	Ground A
7	To Backcheck Switch
6	Ground A
5	To Door Closed Switch
4	Ground A
3	To Cancel Switch/Sensor
2	Ground A
1	To Main Control Activation Input



DN 0357