

Installation and Maintenance Manual

Commercial Drive Bolt

Model: GDS DB

Made in Australia from Australian & quality imported components



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May 2014

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1. Product description:

The drive bolt controls are specifically designed to be used in conjunction with the ATA CB-6 control board, and some others in the ATA range.

It can be adapted to be connected to other control boards as long as they have the following.

- A lock output with N/C dry contacts.
- An adjustable lock pre activation time before the motors start.
- Be able to hold the lock output on for the complete gate travel time.
- Have N/C limit inputs
- Be able to adjust the delay between gate leafs on dual swing gates.

Operation of drive bolt with gate starting from closed position.

Upon a command to open the gate, the lock relay activate, changing from N/C to open state driving the bolt up. After the pre programmed time delay, motor 1 will start and the M1 limit switch will have changed from open to its N/C state, then, in turn motor 2 will start up in the case of a dual gate set up.

Upon reaching the full open position, the CB-6 lock relay will change back to its N/C state but the bolt will remain up and will always stay up while the closed limit switch is in its N/C state.

Once gate leaf 1 has returned to its full closed position, the M1 limit switch will have changed to an open state, the CB-6 lock relay will have changed back to N/C and after a delay of a few seconds, the bolt will drive down.

If the PE cells are activated while the gates are closing, depending on the setting on the CB-6 board, the gate will stop, delay for the pre programmed time equal to delay at start up, then return to the full open position then waiting for its next command. The drive bolt will again stay up until gate leaf 1 reaches its closed position again.

If the drive bolt is miss aligned with its locating hole while driving down, the current sensor will trigger the bolt to go back up and stay up until the current monitor has been reset either by manually pressing the relay button on the current board, or some other remote or automatic reset switch arrangement external to the drive bolt controls.

*If required, the controls can be connected in such a way as let the bolt drive down in the open position as well.

2. Installation details

1. The drive bolt is controlled by relays and functions of the CB-6 control board.
2. It requires a minimum .75mm 2 core cable to be run between the din rail terminals marked brown and blue, corresponding to the brown and blue wires on the drive bolt assembly. If the cable run is over 15m use 1.5mm cable.
3. In the case of a single swing gate set up, instead of connecting the M1 limit switch close and open wires to the CB-6 (com,cl,op) connections, they have to be connected to the din rail limit switch terminals at the drive bolt controls. (terminal 3,4 for close limit)(terminal 5,6 for open limit). In doing this, if the limits are wired up with the common being already connected between the open and closed switches, (3 wire connection), that common connection will have to be separated and separate common wire be installed between terminal 3 and the limit switch. This is to totally separate any common connection between the two switches, so will now be a 4 wire connection **(If the controls are supplied the operators at same time the open and closed limit switches will have already been done)**.
4. In the case of a dual swing gate set up, M1 limit switch connections are same as above. But the M2 limit switch connections are made at the CB-6 control board marked (M2 com, op, cl). And will be standard 3 wire limits.
5. The drive bolt is protected by a motor current sensor and a 3A fuse located with the drive bolt controls.
It senses the current drawn by the drive bolt and if the bolt gets miss aligned with locating hole, the increased motor current will be detected and in turn will retract the bolt back up and will stay up until manual reset button is pressed on the current sensing board. (details on current sensing board provided later in manual)
6. The CB-6 board has been set with a special program (time that the lock release output activates to when motors are started) done through the special adjustments settings for the CB-6. This time delay has been set at 3 seconds, but if that time is not suitable for your application this setting can be changed, details are provided further on.

This programmed time delays the motors from starting until 3 seconds after the bolt has started to retract.

Mechanical installation

-This drive bolt has been designed to extend into its locating hole only when the gate has come to its fully closed position. *the controls can be connected in such a way to let the bolt drive down in the open position if required.

-The total travel of the bolt is 130mm in both directions and is not adjustable.

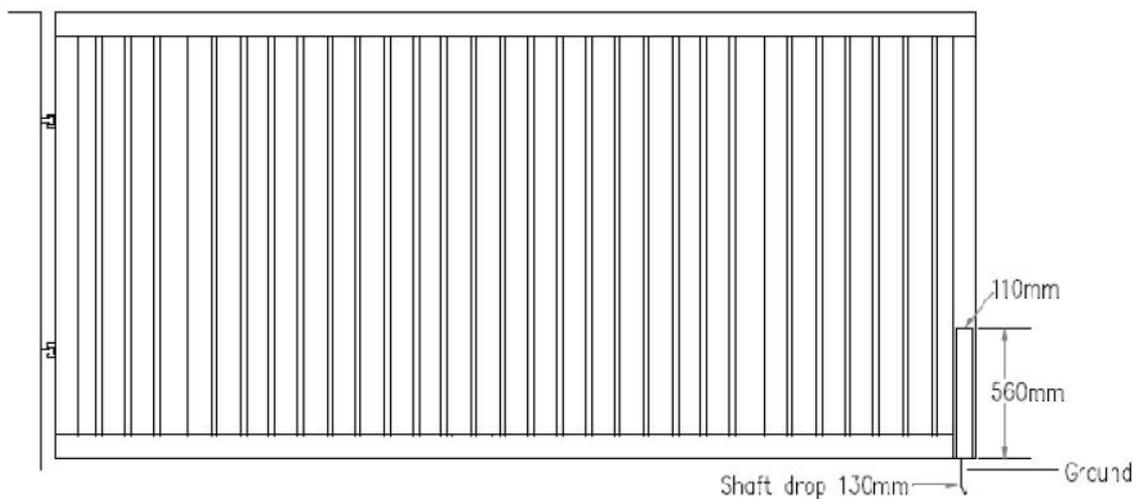
-It can be mounted vertically or horizontally depending on application. A suitable locating hole or catcher bracket has to be made and fitted to suit as every installation site is different.

- A gate stop also has to be fitted to the ground for a dual swing gate set up, or on the receiving post if in the case of a single swing gate, so that the gate leaf can stop in the correct position before the bolt extends.

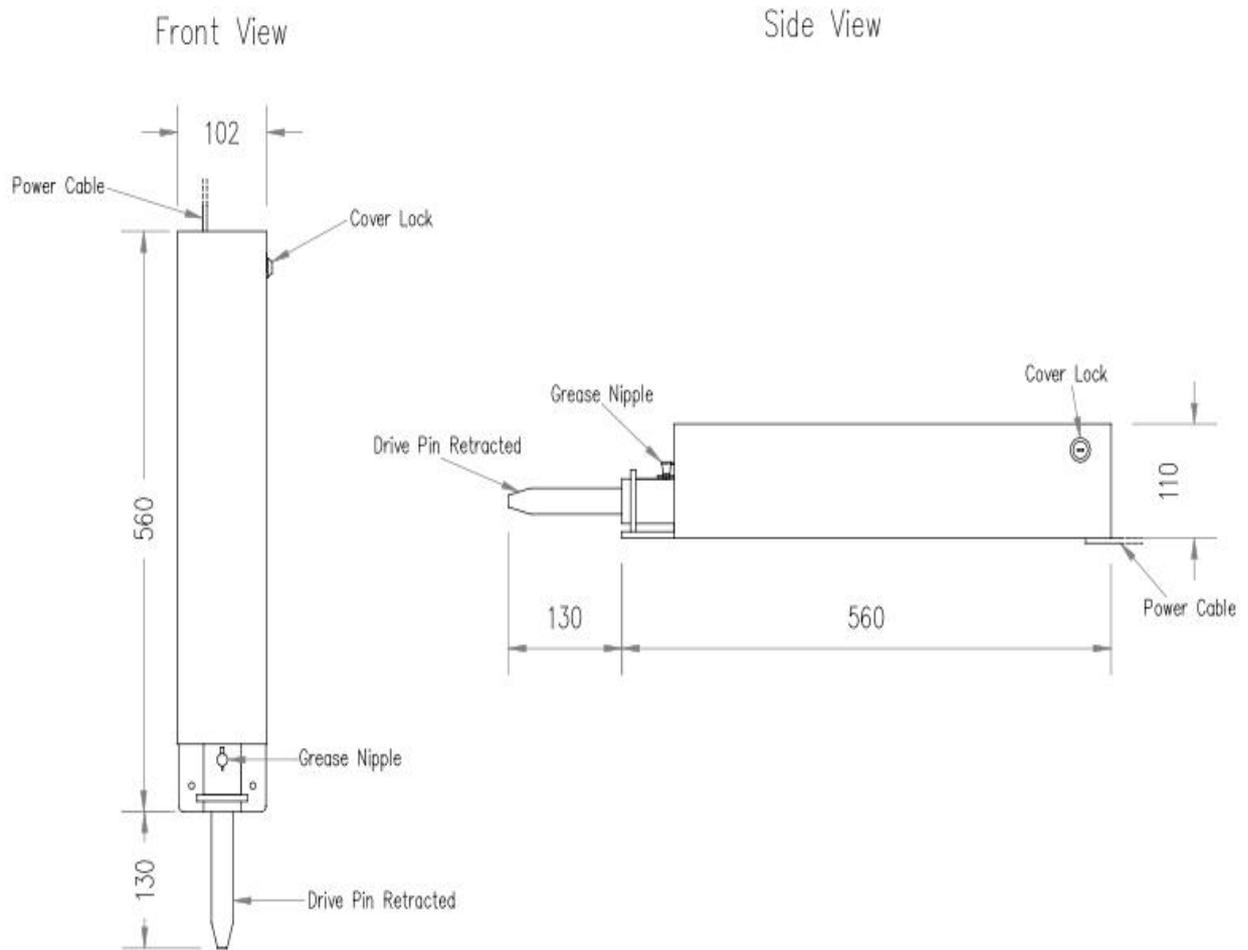
A) Prepare a suitable mounting position on the gate frame, and fix suitable gate stop in position.

b) Determine the mounting height of the operator by ensuring that, with the bolt fully retracted, there is suitable clearance between the end of the bolt and the ground throughout the complete travel of the gate. Also keeping in mind if the assembly has to be mounted higher, that you still have enough of the bolt located into the hole when the bolt is extended.

c) Run the power cable between the controls and the drive bolt operator and connect the brown and blue wires correspond to the terminal marked brown and blue at the controls.



GDS DB Dimensions

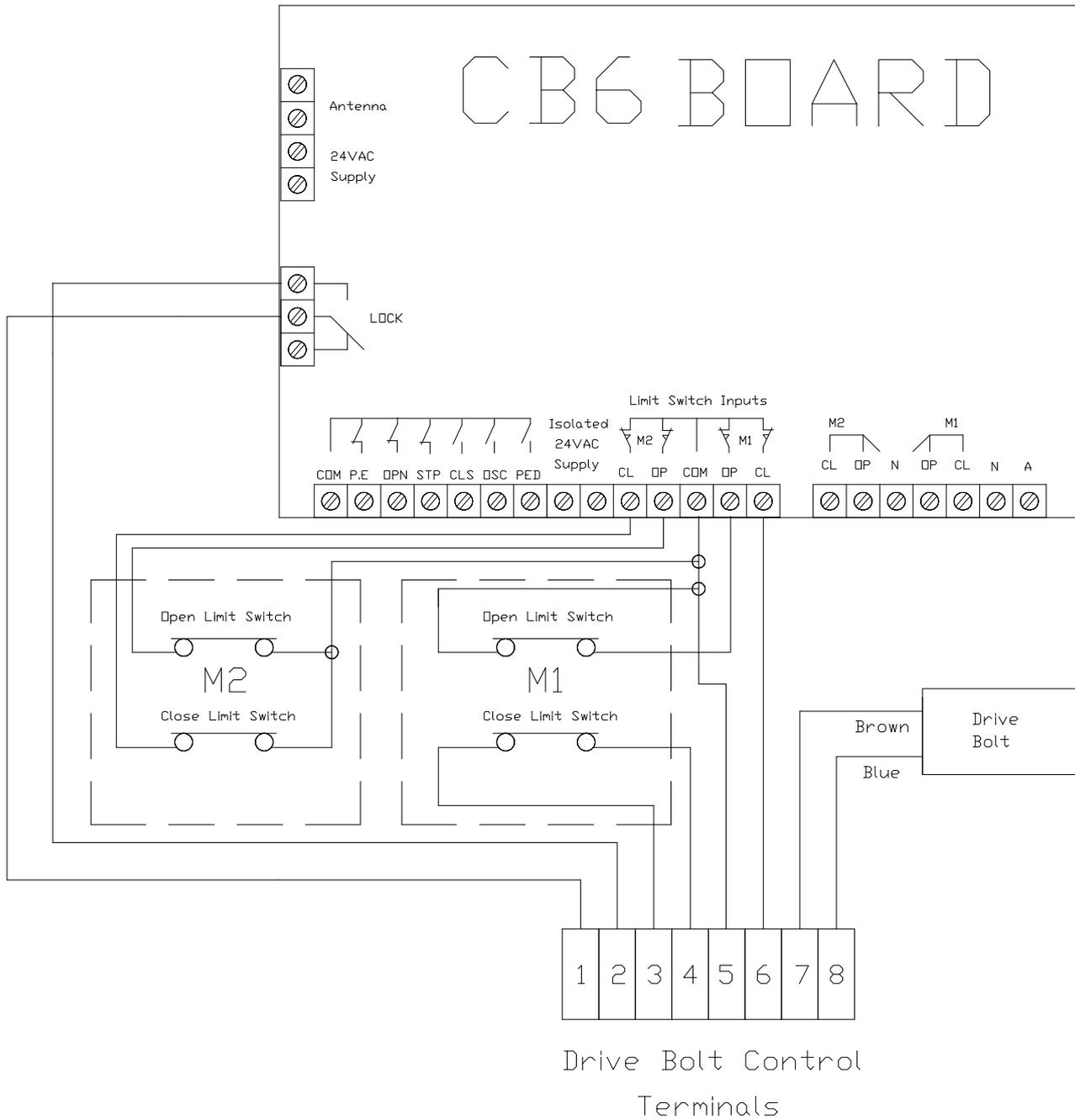


Specifications of drive bolt operator

Power Supply	24v d.c 1.8 amp max
Push Pull Force	300N
Bolt size	25mm diameter with 130mm set travel
Weight	9.5 kg

*Optional 45mm diameter bolt size or 50mm travel available upon request

Connections Between Drive Bolt Controls and ATA CB-6 Board



1 - To lock relay common

2 - To lock relay N/O

3 - To closed position limit switch common M1

4 - To closed position limit switch N/C M1

5 - To gate controller (CB-6) common limit terminal

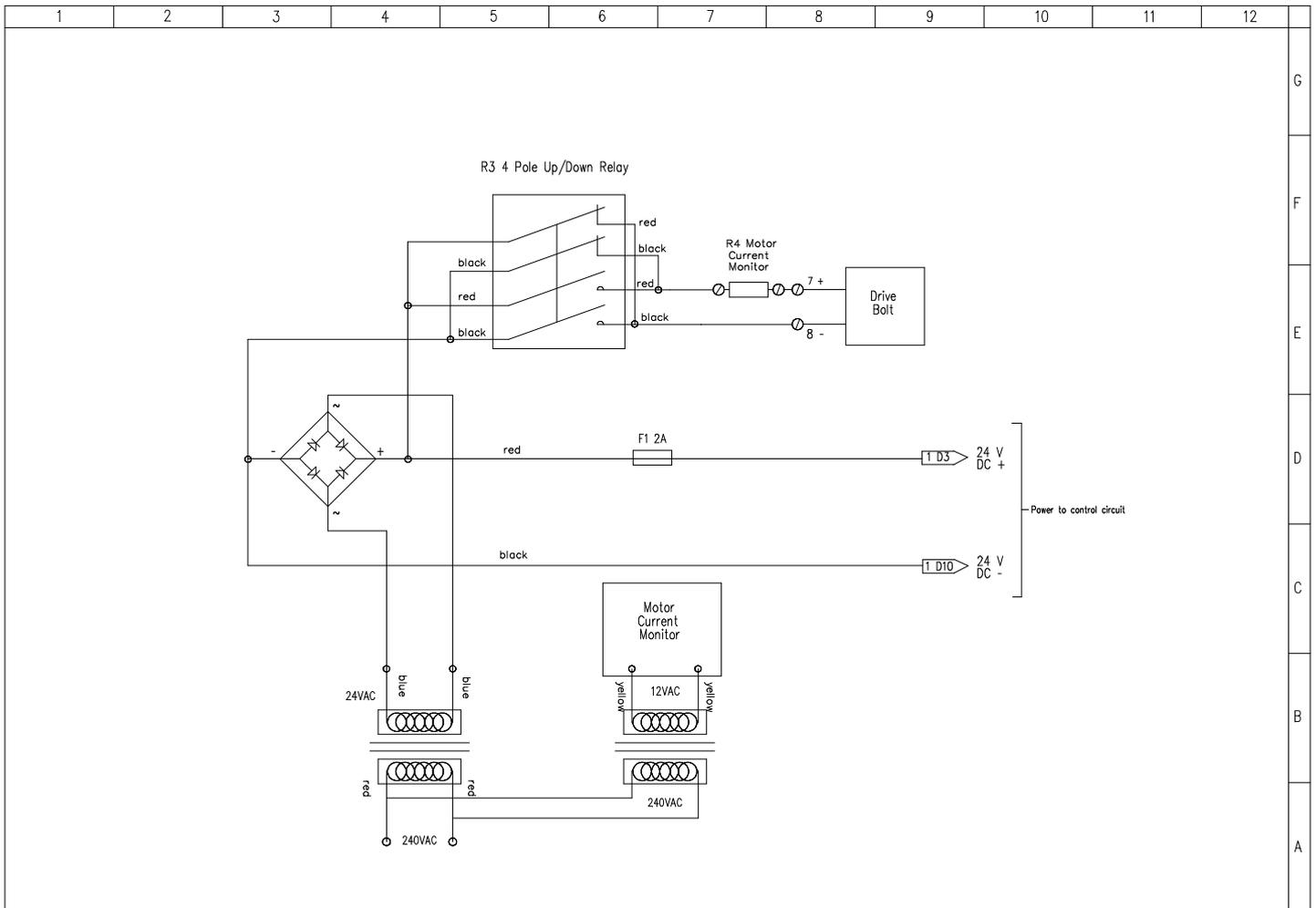
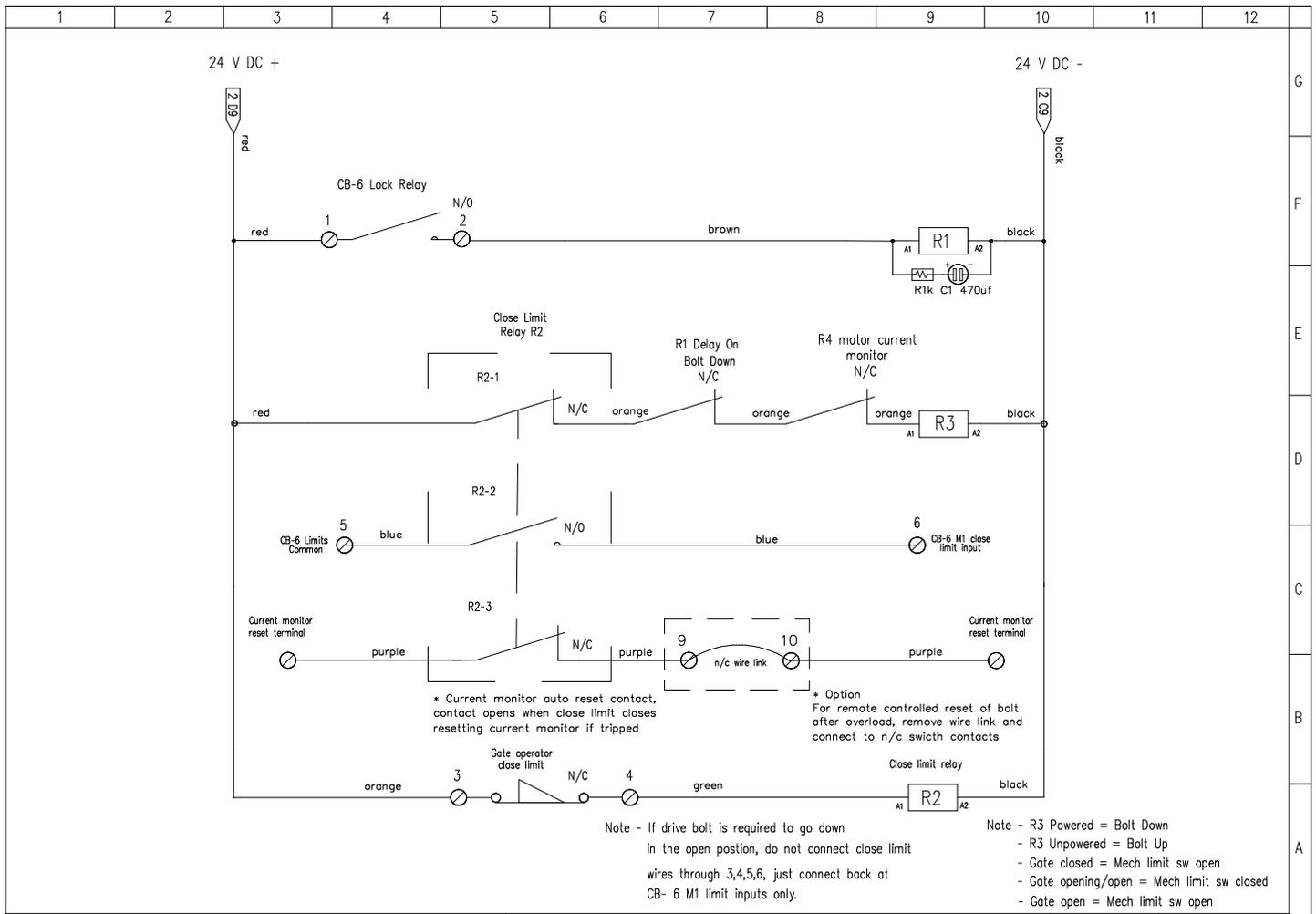
6 - To gate controller (CB-6) close limit terminal

7 - Drive bolt operator + (brown)

8 - Drive bolt - (blue)

* Motor 2 limit switch connections shown
for a dual set up only

* If drive bolt is to be allowed to drive down in the open position, do not
connect close limit wiring. So leave terminals 3,4,5,6 un terminated.



5. Description of control logic

From closed to open position

- Open signal received by CB-6 board.
- CB-6 lock relay contact closes.
- R1 energises opening R1-1 contact.
- R3 energises switching reverse voltage to drive to drive the bolt up.
- After a programmed delay time the CB-6 board drives the gate motors.
- As the gates open the close limit switch changes from open to close.
- R2 energises opening R2-1 contact and closing R2-2 contact.
- Once the gate is fully open, the CB-6 lock relay de energises R1, but because R2-1 contact is open, R3 remains de energised and the bolt stays up as long as R2-1 contact is held open via the close limit switch.

From open to closed position

- CB-6 board, receives a signal to close, or has timed out through its auto close setting.
- CB-6 lock relay contact closes.
- R1 energises opening R1-1 contact.
- After a programmed delay time the CB-6 board drives the gate motors.
- As the gates reach the closed position, the close limit switch opens.
- R2 de energises closing R2-1 and opening R2-2.
- The CB-6 lock relay contact opens turning power off to R1.
- Capacitor C1 discharges through R1 causing a delay time before R1 de energises closing the R1-1 contact.
- R3 energises, switching forward voltage to drive the bolt down.

6. MOTOR CURRENT MONITOR

This circuit is designed to monitor the current drawn by a dc motor. If the exceeds the set level for greater than the set time, the relay is energised until manually reset.

Inputs

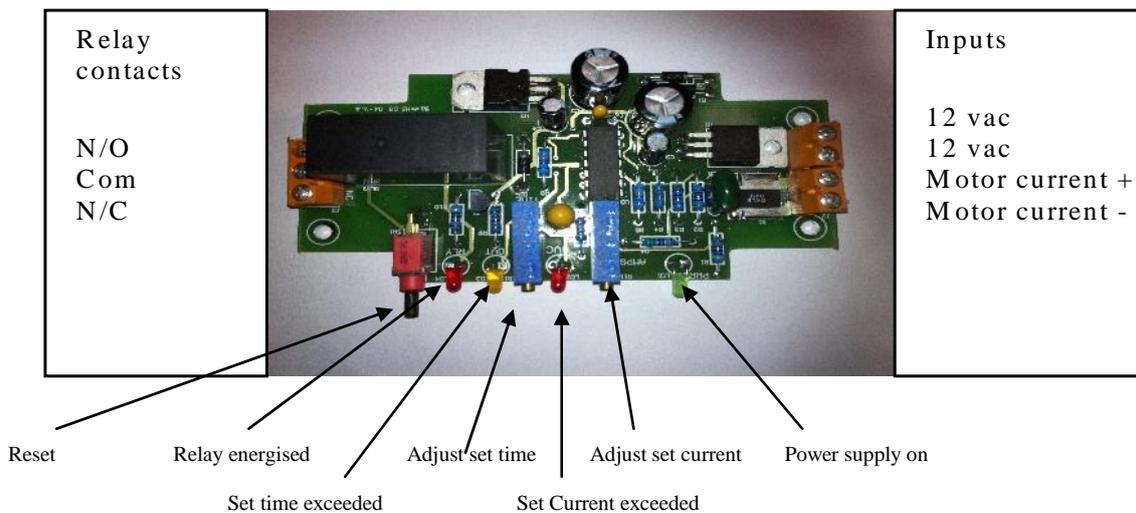
12 v ac supply (isolated from motor supply circuit)
DC motor current 10A max continuous

Outputs

Change over relay contact terminals 5A 30v dc max

Adjustments

- Set Current level multi turn trimpot. Clockwise to increase set current.
- Set Time level, multi turn trimpot. Clockwise to increase set time.



Set up

- Adjust the Current level so that the Current led is on for 1 sec at motor start up. As the motor is effectively stalled at start up, this point is a good indicator of stall current.
- Initially, find the Time level at which the Time led is briefly on at motor start up. From this point, increase the Time setting to create a safety margin, such that the Time led does not come on at motor start up, but will in a sustained motor stall condition.
- Final adjustments may need to be made on site, as cable resistance will affect motor stall current.
- If found that this initial setting is too low for your particular installation try adjusting current setting up one turn at a time and testing again, only adjust time setting longer if needed.

Programming CB-6 for motor start delay

A 3 second delay has been programmed at the factory, if a different time is required follow these instructions to changed, or alternatively, the ATA PG-3 universal hand held programmer can used.

SPECIAL ADJUSTMENTS.

This section gives instructions on how to make some of the less common adjustments. To do this the controller must be placed in the special adjustment mode. This is done by following the steps below.

- a) Turn the control board's power off
 - b) Place the slide switch [26] into the "set" position
 - c) Press and hold the CLS button [31]
 - d) Turn the control board's power on. (Keep holding the CLS button)
 - e) Wait until both the status L.E.Ds [25] turn off and then release the CLS button [31].
 - f) Both the status L.E.Ds [25] will come on to indicate that the special adjustment mode is selected.
- The controller is now ready to adjust the special parameters. Make sure the slide switch [26] is placed into the "RUN" position after adjustment. To aid adjustment the status L.E.Ds [25] will both be turned off when timer adjustment starts and the CLS status led [25] will flash at one second intervals while the button is pressed.

SETTING TIME FROM WHEN LOCK RELEASE OUTPUT IS ACTIVATED TO WHEN MOTORS ARE STARTED.

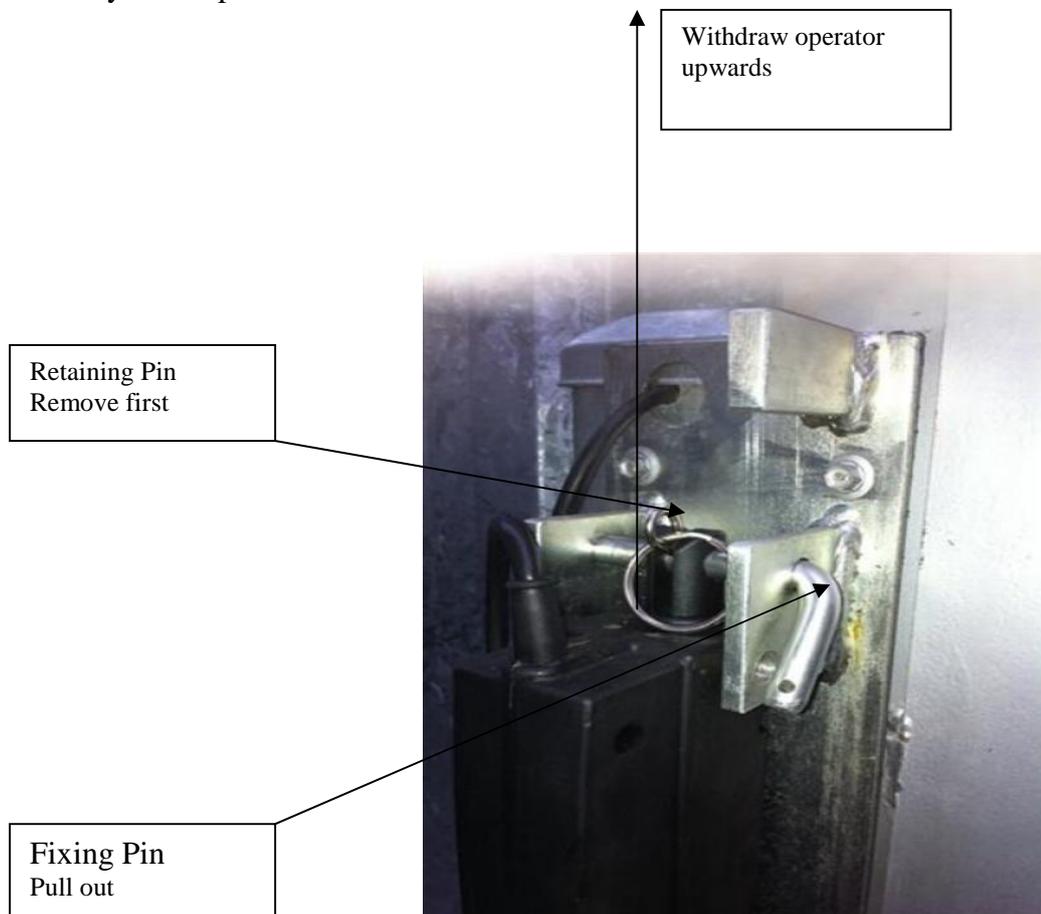
The controller can be made to activate the lock release output before the motors are started. To set the duration of the pause - Press and hold the OSC button [28] for the required pre-drive lock activation time.

7. Maintenance

1. Check that locating hole is clear and clean out as necessary.
2. Make sure gate limits are set correctly and gate stop isn't loose and make adjustments as necessary.
3. Make sure drive bolt is greased, a grease nipple is provided.
4. Make sure current sensing feature is working, try blocking the locating hole, once the bolt starts extending and coming up against the obstacle, it should return back again within 1-2 seconds, if not, make adjustments as explained in section 4.

8. Manual release of drive bolt

- a) Using the key provided, insert into lock and turn clockwise.
- b) Once turned lift cover upwards and remove.
- c) Pull out the retaining pin from the fixing pin.
- d) Pull out the fixing pin.
- e) Pull drive pin operator upwards to withdraw drive bolt out of its locating hole. The gate is now ready to be opened.



8. WARRANTY

- a. Gate Drive Systems Australia warrants that the goods manufactured by it shall be free from defect in manufacture for a period of 12 months from the date of invoice. Should any fault occur within that period as a result of faulty workmanship or materials, Gate Drive Systems Australia will at its discretion, replace the product at no charge to the Customer except for installation & freight. The appropriate Serial Number must be quoted for all warranty claims.
- b. For the goods not manufactured by Gate Drive Systems Australia, we shall pass on the manufacturer's warranty to the Customer from the date of invoice. It is the manufacturer's discretion to repair or replace goods deemed to be defective as a result of faulty workmanship or materials.
- c. All goods must be returned to Gate Drive Systems Australia or its representative for inspection or testing to assess if a claim is justified. It is the responsibility and at the cost of the Customer, to remove & return the goods for inspection and freight costs are the responsibility of the Customer.
- d. The warranty is negated and will not apply in the following circumstances:-
 - i. If no proof of date of purchase can be produced.
 - ii. If the product has been used in a manner beyond its design parameters.
 - iii. If the product is tampered with or repaired by personnel not authorised to do so.
 - iv. In respect of loss or damage caused by rough treatment.
 - v. If the product is not used and maintained in accordance with instructions or recommendations listed in this Installation and Maintenance Manual.
 - vi. In respect of loss or damage caused by an Act of God or any other cause not within the manufacturer's control.
- e. Goods returned under warranty for repair or testing will incur a charge to be fixed by the manufacturer if no fault is found.
- f. The Customer shall bear freight charges for removing & returning the goods for inspection and for the delivery & installation of any replacement or repaired product from a justified warranty claim.
- g. Save for the express conditions and warranties herein contained all other conditions or warranties (whether as the quality, fitness for purpose or any other matter) expressed or implied by statute, common law, equity, trade custom, usage or otherwise are hereby expressly excluded provided that nothing in these terms and conditions shall exclude or limit any breach or condition implied by law, the exclusion or limitation of which is not permitted by law.