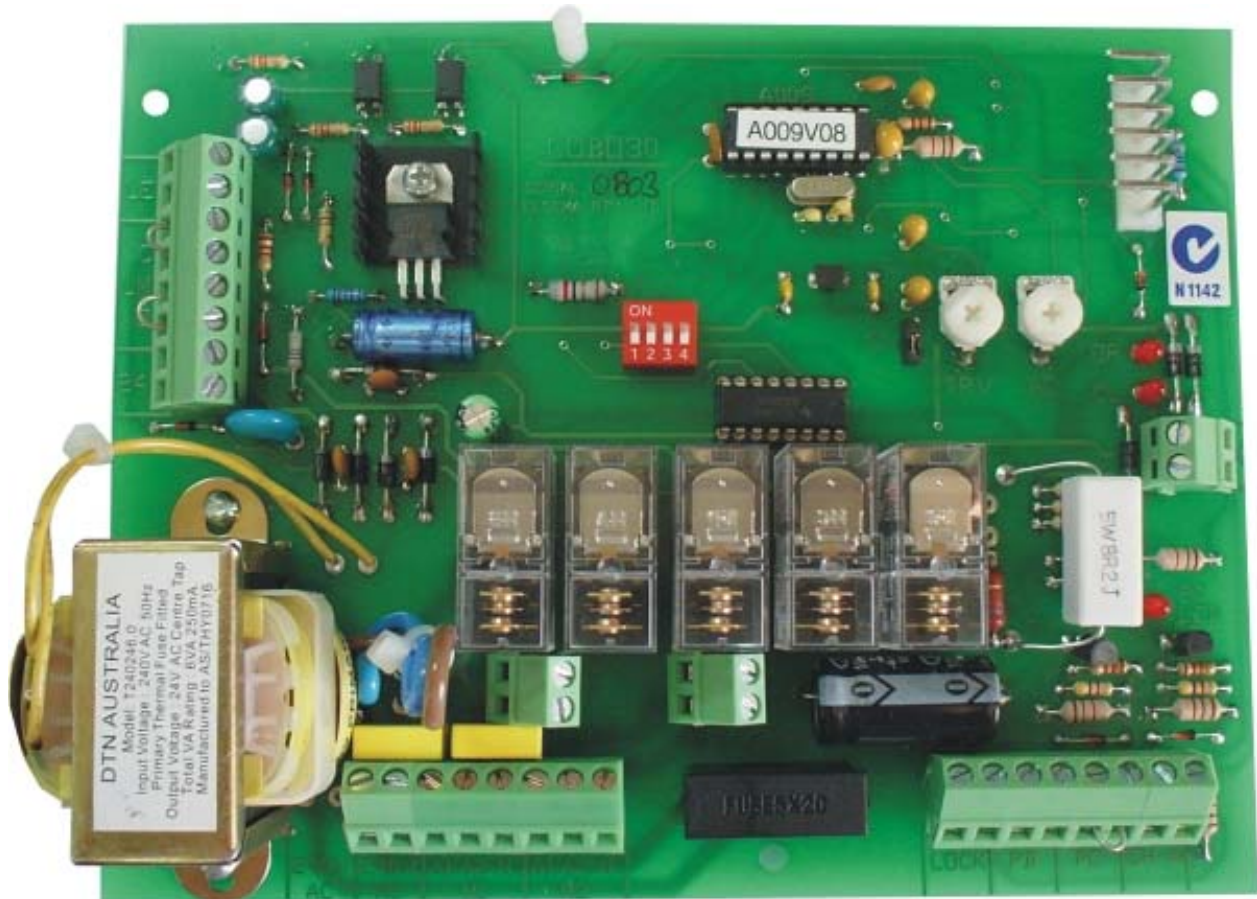


## COBO30 AND COBO30E

### Double 240V Motor Drive Controller

The COBO30 is an upgrade of the older COBO20. The COBO30 has built-in transformer, auto close, open only, security close and extended lock pulse.

The COBO30 card is used to control automatic door/gate that have 240VAC motor with limit switches. It can be used for either single or double gates. Even hydraulic doors can be wired to the COBO30 card. Hydraulic doors have overflow fluid limits which requires the COBO30 to disable the electronic limit switches. This is selectable by linking the limit switches. Limit switches are linked as factory defaults.



The COBO30 has a built-in lock control, push button, photocell control, wireless operation with a remote control transmitter, door open indicator (LED Output), limit switch connection and 24VAC Output.

Options, Auto Closing, Open Only, Security Closing and Extended Lock Pulse are user selectable using the on board 4-way dip switch. See table below:

Switch on 4-way code switch	ON	OFF
<b>Switch 1</b>	Enables Auto Close	Disables Auto Close
<b>Switch 2</b>	Enables Auto Close and Open Only	Disables Auto Close and Open Only
<b>Switch 3</b>	Enables Auto Close, Security Close and Open Only	Disables Auto Close, Security Close and Open Only
<b>Switch 4</b>	Extended Lock Pulse	Normal Lock Pulse
<b>Switch 1 and 2</b>	Enables Auto Close, Special Security Close and Open Only	Disables Auto Close, Special Security Close and Open Only

### Auto Closing

Enabled when switch 1 is on. The AC timer can be adjusted from 3 to approximately 30 seconds by the on board trimpot called AC. Auto Close timer starts when the door has opened and stopped. Input from the Photo Cell terminal will hold-off the closing cycle.

### Open Only

Enabled when switch 2 is on. This feature enables the user to open the door/gate but when the door/gate is opening the remote control is disabled and the door will fully open. Door closes when auto close timer expires.

### Security Closing

Enabled when switch 3 is on. The door/gate immediately closes after the photo beam is broken and the vehicle moves away from the photo beam, even if the door/gate is not fully open.

If the door/gate is opening and no vehicle passes through the door/gate then Auto Close will close the door/gate. An Auto Close time of 3 to 30 seconds can be set on the COBO board using the trimpot marked AC.

### Extended Lock Pulse

Enabled when switch 4 is on. Lock pulse provides a 2 second pulse on opening and closing cycle on a standard 12-volt lock. When extended lock pulse is enabled an additional 2 seconds is provided, bringing the total lock pulse to 4 seconds. This will result in a 4 second closing and opening delay, between motor 1 and 2.

To use the 2 or 4-second pulse feature, a suitable transformer needs to be connected to the COBO30. This transformer will supply the extra current that will operate the lock. Recommend transformer size is 60VA to 100VA. Also a link has to be placed beside the 1N4004 diode. Refer to the picture below for the location of the link. **Updated March 2008.**

If your existing card does not have white cement 8.2 ohm, 5 Watt resistor, please contact Elsema and we will provide you with this resistor for free.



### Special Security Close

Enabled when switch 1 and 2 are on. Same as Security Close except door does not reverse to open when Photo beam is broken. This is to prevent car-tailing on more secure sites.

## Other Features

### Pedestrian Access

In opening direction the door/gate can be stopped when it is opening. This allows the user to open the door/gate partially to give pedestrian access.

### Red Led

Red OP and CL LED indicate that the motor is running, when the led is on. If motor is not running and either one of the LED's is on check motor wire connections. *(Note: This feature will only work if the Limit Switches are used)*

### Travel Timer (TRV pot)

The travel timer is factory preset to maximum (30 seconds) and should not be adjusted when motors with limit switches are used. When Hydraulic operation, i.e. no limit switches is used, then you will need to adjust the travel timer. Set the travel-timer to stop relays as indicated by red OP and CL led. We recommend approximately 3 seconds after the door/gate is fully opened or closed. The OP or CL led should go off after 3 seconds when door/gate is fully opened or closed.

If an extra 30 seconds travel time is required, switch the one-way switch (S1) next to the TRV trimpot to 'on'.

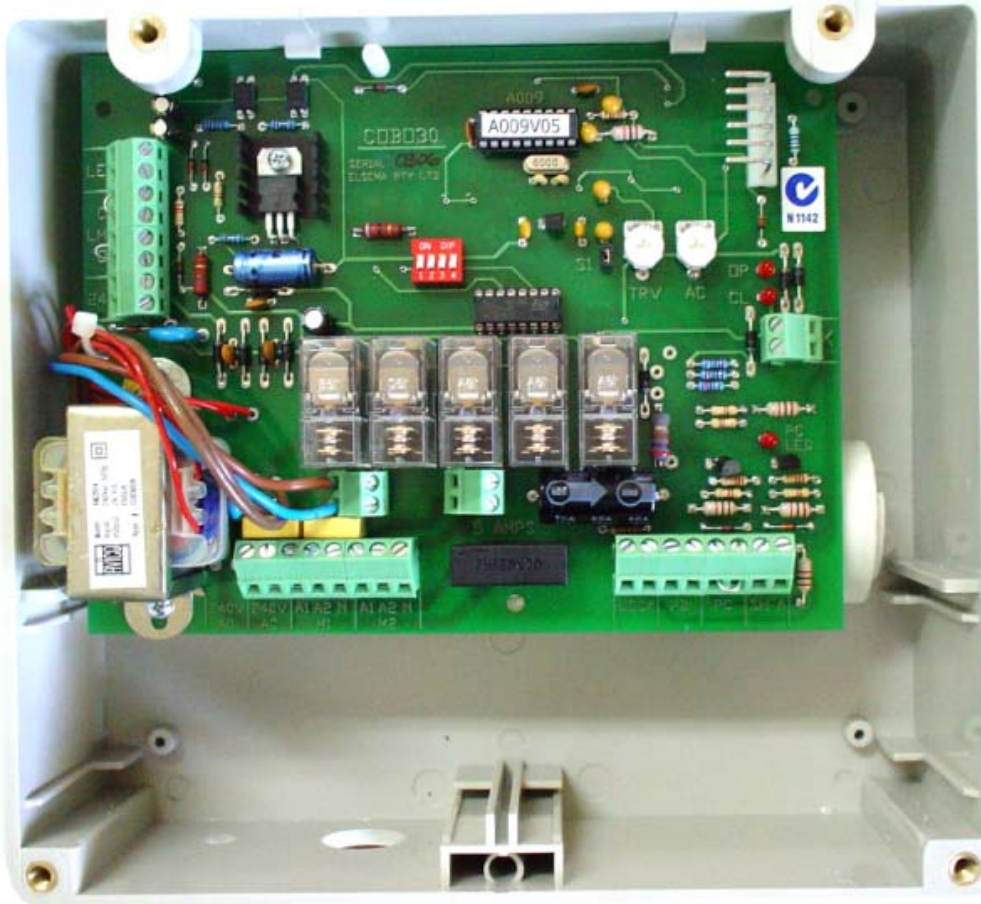
### Replaceable Fuse

Replaceable 240VAC 5Amp fuse.

# COBO30E

## Double 240V Motor Drive Controller with Case and Capacitors

The COBO30E is with an enclosure. The enclosure unit includes Elsema's C220 box, COBO30 card, and capacitors for motors.



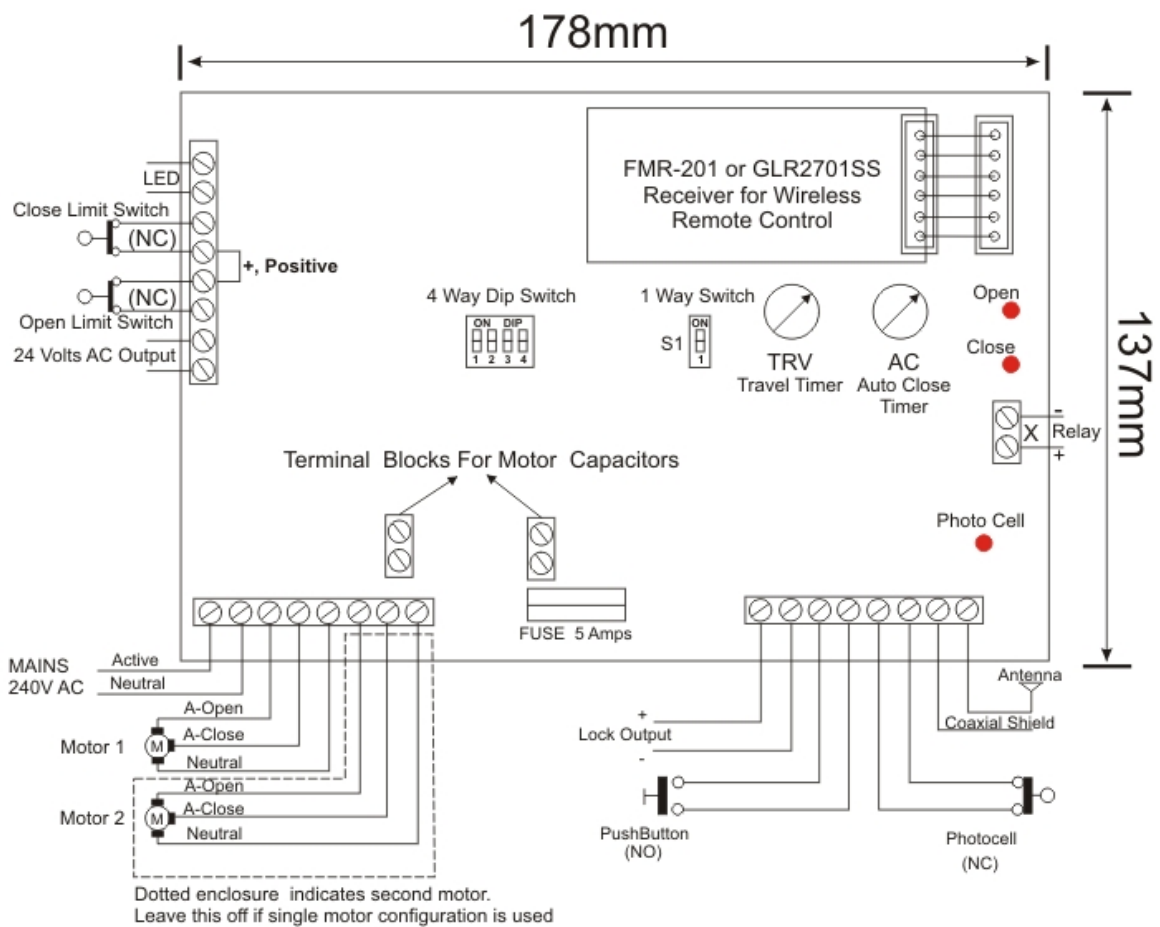
# WIRING AND INSTALLATION INSTRUCTIONS

Care should be taken not to cross printed circuit board with 240V wires over or under the board. This would induce spikes onto the sensitive circuitry of the printed circuit board.

When COBO30 PCB is used to switch contactors (see warning note below), a VDR (Voltage Dependent Resistor 275V AC) must be connected across the coil of contactor.

## Warning Note

When connecting contactors directly to the card you must removed the motor capacitors from the cards capacitor terminal blocks. Motor capacitor should be connected directly to the motors. The motors should also have a thermal overload.



## Wiring Connections

### Power

Connect 240 VAC to the terminal block marked 240 VAC.

### Motors

Motors should be rated for 240 VAC. Each motor should have three wires, i.e. two actives and one neutral. One active is for opening and the other is for closing.

Both motors operate in parallel. However, motor two has a two second delay on closing to allow double gates to overlap.

Motor starting capacitors of 10 $\mu$ F are provided depending on manufacture of motor specifications.

#### Lock Output

This terminal block outputs a short pulse on opening and closing cycle. This is used for a standard 12V lock. To extend lock pulse, set code switch 4 to the on position.

To use the 2 or 4-second pulse feature, a suitable transformer needs to be connected to the COBO30. This transformer will supply the extra current that will operate the lock. Recommend transformer size is 60VA to 100VA.

#### Push Button Input

Push button is a normally open contact. When pressed it will start the opening or closing cycle. This push button should be waterproof for internal and external use. Waterproofing will prevent false activations, which normally occurs due to moisture inside the button. Door or gate can be held open permanently when push button is pressed continuously.

#### Photo Cell Input

Photo Cell input is normally closed contact. The photocell is used as a safety feature. If the doors/gates are closing and the photo beam is broken, the door/gate will stop instantly and then open fully. Should an object be blocking the door/gate (i.e. photo cell is broken), closing cycle or auto closing is disabled. A red LED on the controller card labeled as "PC" indicates photo beam is broken. A handy feature when photocell is not near the box.

#### Antenna

The antenna connection is used to connect an antenna for the plug in FMR-201, GLR2701SS or GLR43301SS. The antenna can be a 50 ohms 27 MHz CB-Antenna or piece of approximately 1 metre of wire.

#### X Output

Terminal block marked "X" has 24 Volt DC outputted whilst the door is moving. This allows you to connect a 24V relay on terminal marked "X" to switch a warning light or horn when the door is moving. X output can source 20mA.

#### Led Output

If a visual indication of the gate or door status is required at a remote place, a LED can be wired to terminal block marked "LED". This LED will be on (and stay on) when gate is open and off when gate is closed. *(Note: This feature will only work if the Limit Switches are used)*

#### Limit Switches

The limit switches are normally closed. To use limit switches remove links from the terminal blocks and wire to relevant limit switches. For three wire operation of limit switches, use two outside holes of terminal block and one positive of the limit switch terminal block (see diagram). Low voltage wiring (24V) can be used for the limit switches.

#### 24 Volts Out

This terminal is used to supply an external device that uses 24 VAC (upto 120mA can be sourced). For example, if you want to connect a Loop Detector (LD30) you could use this terminal block to supply power to the Loop Detector.

#### Remote Control

Remote control is achieved by inserting Elsema's FMR-201, GLR2701SS or GLR43301SS. Power to the COBO30 printed circuit board should be switched off during the installation of a receiver. The transmitter can be an FMT-301, GLT2701 or GLT43301 respectively.