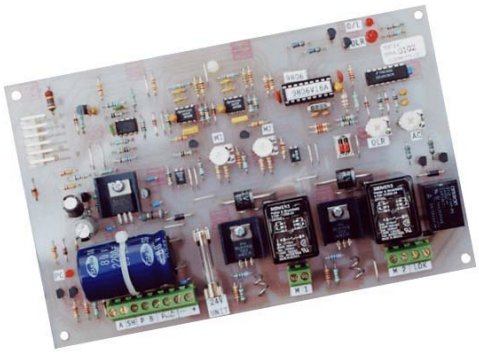
DCEC12S, DCEC24S, DCEC12D, DCEC24D

Direct Current Electronic Clutch 12/24V Single/Double Motor Controller

Features

- 4 versions – 12V Single Motor (DCEC12S), 24V Single Motor (DCEC24S),
- 12V Double Motor (DCEC12D) or 24V Double Motor (DCEC24D)
- No limit switch
- Push Button, Photocell Control or Lock Control
- Optional wireless control with receiver plugged in
- 4-way Code Switch for different settings
- Also available with plastic case (C220)



DCEC12S (12V)
DCEC24S (24V)

Application

- Motor control for garage doors, gates etc.

Description

The DCEC comes in **4 versions** – 12V Motor (DCEC12S) or 24V Motor (DCEC24S). It is specially designed for controlling an automatic gate or door that uses a **single DC motor** and **no limit switch**. An electronic clutch built into the controller makes this possible.

Double motor version also available – DCEC12D & DCEC24D.

The DCEC has a built-in **push button**, **photocell control** and **lock control**.

Optional **wireless operation** is available with a plug-in receiver.

Code Switch Setting *(Gray indicates switch position)*

Switch on 2-way code switch	ON	OFF
Switch 1	Enables Auto Close	Disables Auto Close
Switch 2	Enables Auto Close and Open Only	Disables Auto Close and Open Only
Switch 1 and 2	Enables Auto Close, Open Only and Security Close	Disables Auto Close, Open Only and Security Close

Auto Closing

Enabled when switch 1 is on. The Auto Close timer can be adjusted from 1 to approximately 30 seconds by the on board trimpot called AC. Auto Close timer starts when the doors/gates is opened and stopped. Input from the Photo Cell will hold-off the closing cycle, i.e. auto close timer is reset on a photo cell input.

Open Only

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

Security Closing

Enabled when switch 1 and 2 are 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 1 to 30 seconds can be set on the DCEC board using the trimpot marked AC.

Other Features

M1 / M2	Overload Trimpot	Sets amount of overload. Turn clockwise for more overload power, anti-clockwise for less. M1 is for motor 1 and M2 is for motor 2.
LED O\L	Red Overload	Overload detected. DCEC card will stop motor after 1.5 seconds of overloading.
LED OLR	Red OLR	Indicates the door / gate travel distance in which reversal of motor will occur if an overload condition results. When LED flashes and an overload condition occurs the doors /gates will stop.
LED OLR	Slow Speed	The DCEC will slow down before the fully opened or closed position is reached. This position is indicated with the OLR LED blinking.
OLR	Overload Travel Range Trimpot	OLR trimpot can be adjusted from 3 – 55 seconds. This sets the travel distance where the door / gate will overload and reverse. It should be set to ~3 seconds before the door / gate is fully opened or closed.
Fuse	Replaceable Fuse	Replaceable 240VAC 10Amp fuse.
Maximum run timer	Switch-off Protection	The motor will switch-off after 60 seconds of continuous running.

Installation Instruction

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

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 motor is closing and the photo beam is broken, motor will stop instantly and then open fully again. Should an object be blocking the motor (i.e. photo cell is broken), closing cycle or auto closing is disabled.

Power + -
Connect 12VDC (or 24 VDC for DCEC24x) to the terminal block marked - +.

Motor
Motor should be rated for 12VDC (or 24 VDC for DCEC24x).

LOCK Output
This terminal block outputs a short pulse of 1-6 seconds (adjustable) on opening and closing cycle. This is used for a standard 12V lock.

Close Leaf Delay (DCEC12D & DCEC24D only)
Close leaf delay is adjustable for 2-door application. Time ranges from 1 to 10 seconds.

Remote Control

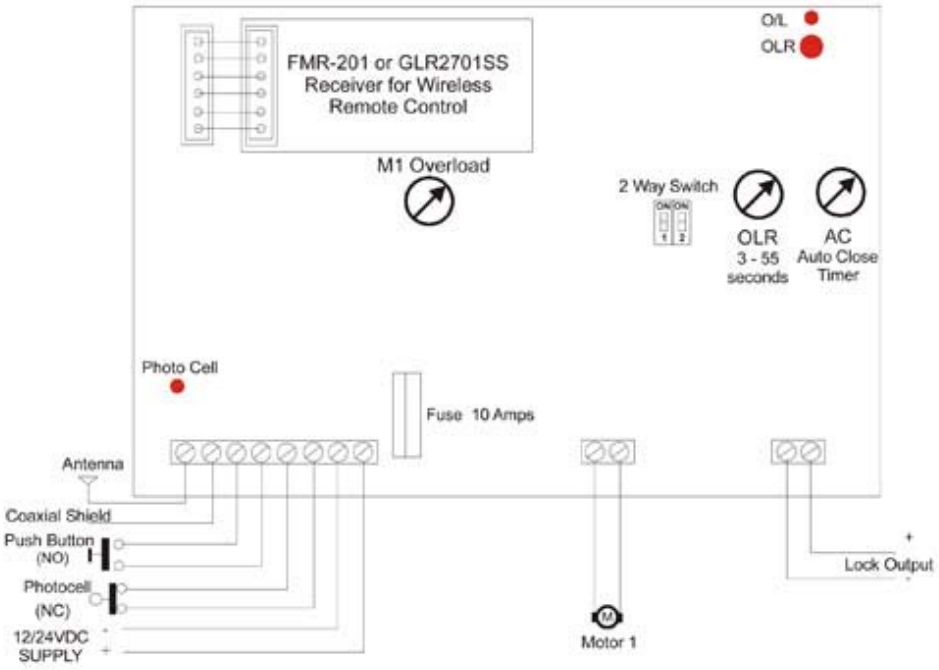
Remote control is achieved by inserting Elsema's FMR-201, GLR2701SS or GLR43301SS. Power to the DCEC printed circuit board should be switched off during the installation of a receiver. The transmitter can be an FMT-301 GLT2701 or GLR43301SS respectively.

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

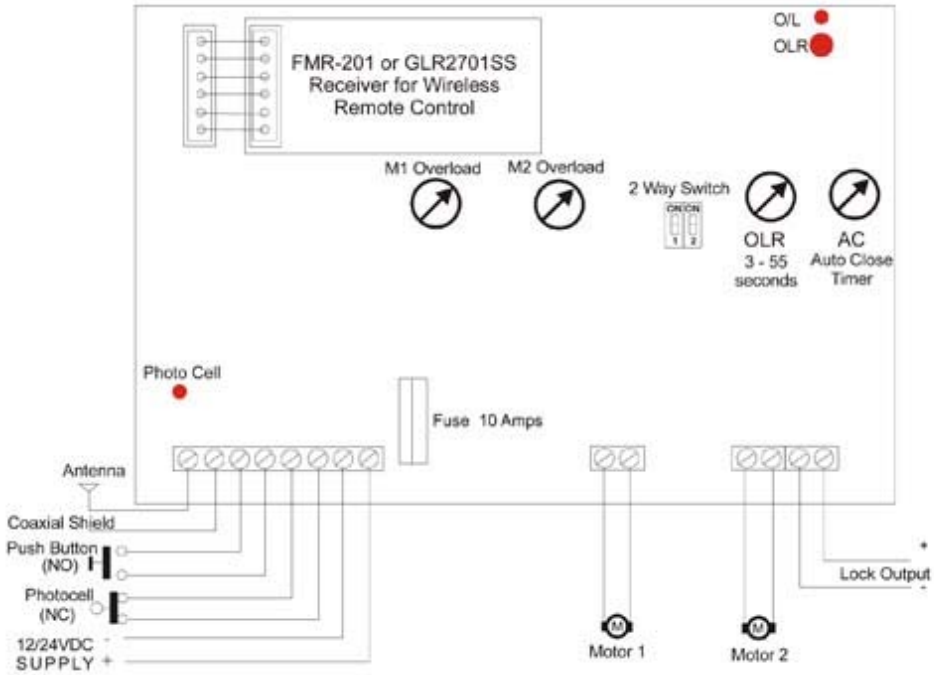
The transformer and rectifier used to power the DCEC board should be large enough to power the motor (check motor rating). If an electronic lock is used a larger transformer and rectifier should be used to power both the motor and lock. Note some locks draw as much as 6 amps.

Block Diagram

DCECS12/24



DCECD12/24



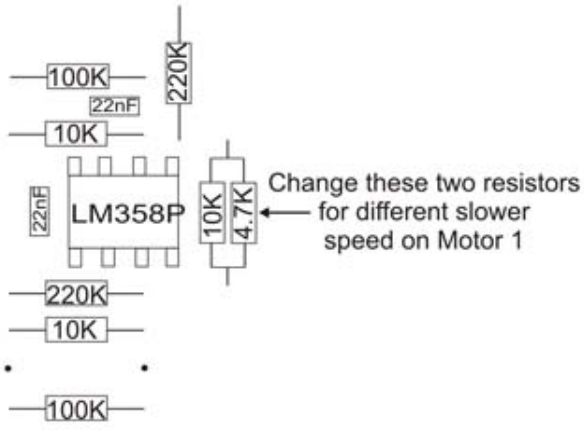
Changing Slow Speed

The slow speed is factory set to 25% of the fast speed. The user can change resistors on the DCECS printed circuit board to change the slow speed to a different speed.

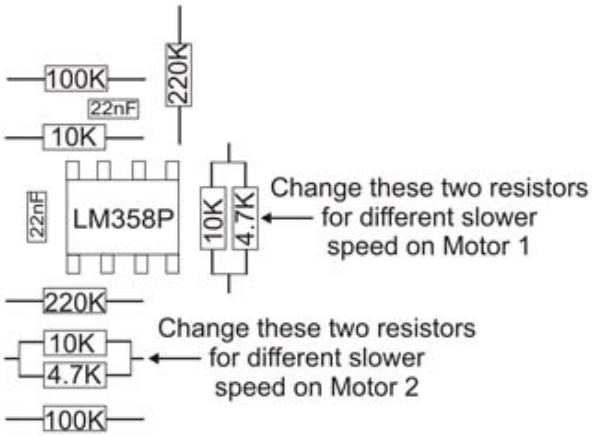
For example, slowing the factory setting would require the user to increase the resistor value. Hence, increasing the factory setting to a faster speed would require the user to decrease the resistor value.

The resistor value is calculated as two resistors in parallel. The factory values are 10 Kilohms and 4.7 Kilohms. Since they are in parallel the total value is 3.2 Kilohms that is the factory setting of 25% slow speed. These two pairs of resistors are shown in the diagram below.

DCECS12/24



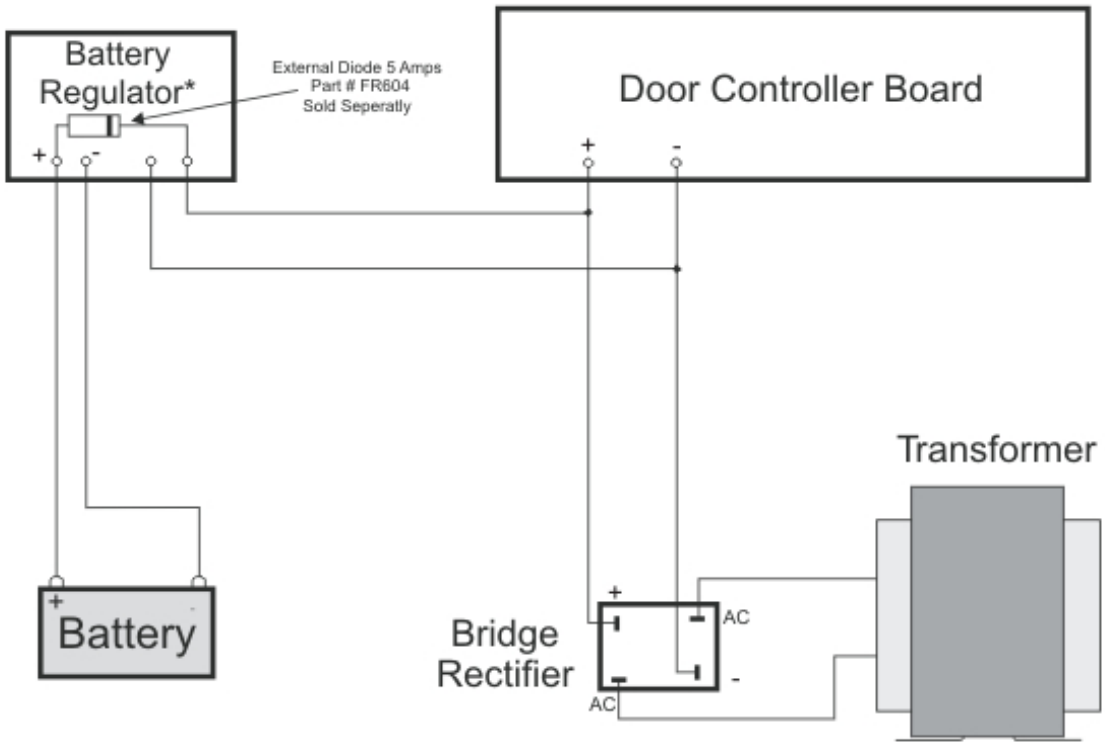
DCECD12/24



The top resistor is for Motor 1 and the bottom resistor is for Motor 2. The factory setting is 25% slow speed.

Charging Diagram

*BACH12 for 12 Volt Charging
BACH24 for 24 Volt Charging



Customised Programming

With a minimal programming fee, customised programming service is available upon request. Special features can be included in the new programme. Please contact us for such service.

Manufactured by

Elsema Pty Ltd
3/10 Hume Rd, Smithfield
NSW 2164
Ph: 02 9609 4668
Fax: 02 9725 2663
Website: http://www.elsema.com

Distributed by