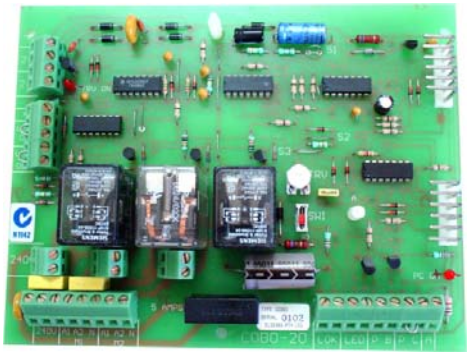
COBO 20

240VAC Double Motor Controller Card



Features

• For 240V AC Motors
• Option for receiver plug-in

Applications

• Single or Double Gates

Description

The COBO20 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 COBO20 card. Hydraulic doors have overflow fluid limits which requires the COBO20 to disable the electronic limit switches. This is selectable by linking the limit switches. Limit switches are linked as factory defaults.

The COBO20 has a built-in lock control, open collector output, photocell control, push button, limit switch connection and wireless operation with a remote control transmitter. Extra options available are LED output, Auto Closing and Security Closing.

Connection Instructions

Mains

240V to terminal block as indicated.

Motor Connection

2 Motor connections are provided which operate in parallel. Motor two has a two second delay on closing to allow double gates to overlap. Motor starting capacitors of 10uF (or 6uF on request) are provided depending on the manufacture of motor.

Limit Switches

If Limit Switches (normally closed) are to be used, remove straps on terminal blocks and wire to relevant limits witches. Low Voltage wiring (24V) can be used for this facility. For 3-wire operation of limit switches, use 2 outside holes and 1 centre position of terminal block (ref. Wiring Diagram)

Lock

The lock circuit provides a short pulse on opening and closing cycle for a standard 12V lock. To extend the lock pulse cut strap marked **S1**

Photo Cell Input

Photo Cell Inputs (Normally closed contact) works as a guard circuit when gate or door is closing. If gate is closing and photo beam is broken, the gate will stop instantly and then open fully again. Should an object be blocking the gate, closing cycle or "Auto Closing" is inhibited.
NB. LED designated "PC" indicates photo beam is broken. A handy feature when PC is not near the control box.

Push Button Input

(Normally open contact) this will initiate the opening or closing cycle (should have leakage of less than 10kΩ.

a. PB input can be set to "up only" (open only) mode by operating switch "SW1".
b. By placing a permanent shorts across PB input, the door can be held open for a long time and together with "AC", door will close when short is removed. This is useful when the door is controlled by a **Time switch or Computer**.

LED Output

If a visual indication of the gate at a remote place is required, a normal LED can be wired to the terminal block marked “LED”. This LED will be on (and stay on) till the gate is open and turn off when the gate is closed. To provide this facility sub-board “LED” must be plugged in.

Radio Control

This is achieved by inserting ELSEMA strip receiver FMR-201 or FMR-203. Power to control board should be switched off during this setup.With the use of hand-transmitter door can be stopped anywhere between the opening and closing limits. To achieve this, receiver FMR-203 must be plugged in and transmitter FMT-302 used as controller.
Channel A controls up and down.
Channel B activated stop condition.
Please note: if "AC" is used, stopping door on way up will result in activating "AC" condition; however if door is stopped on way down "AC" will not time out.

Auto Closing

Auto closing is provided by plugging in sub-board "AC-2" into the socket near the terminal block. The AC-timer can be adjusted from 3sec to appox 1- minute. AC-timer starts when door is fully open. An input from PC terminal can hold-off closing cycle.

Security Closing

(ie: door closes after car has cleared photo beam, even if the door is not fully open yet). This feature is provided by inserting sub-board SC-1. An Auto-Close timer (3sec to 1 min)on the same board will shut the door after the preset time, provided the photo beam is not broken.

Other Features:

S1 To extend lock pulse, cut strap S1
S2 If extra travel time is required (extra 30 sec), cut strap S2
S3 When reversing while opening is required, cut strap S3
Sw1 Sets up "open only" mode for push button (see "Push Button input).
***Do not** use "Sw1" together with "Security Closing" as these two features oppose each other
SW2 In case of hydraulic operation and Three-Phase motors, where current sensing can not be used set switch 2 (on) to by pass sensing coil.

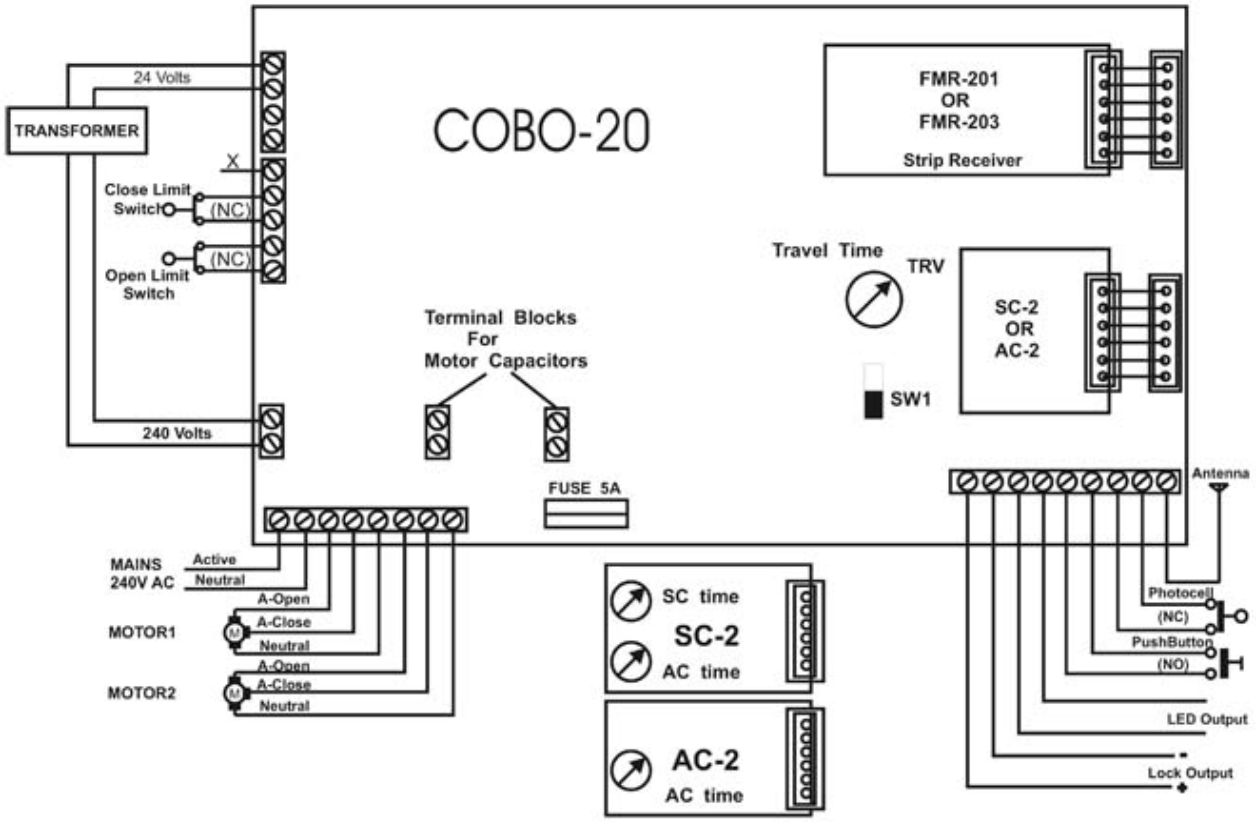
Travel Timer

Travel timer (trimpot marked TRV) is preset to maximum by the factory and should not be touched on site. **COBO20 adjusts itself.** In case of hydraulic operation, where no limit switches are used, set travel timer to stop relays (as indicated by led "TRV-ON") appox 3 seconds after gate is closed.

Terminal block marked "X" goes negative whilst the door is moving. This allows you to connect a 24V relay between "X" and the centre of terminal block marked LMT to swicht a warning light or horn when the door is moving

PLEASE NOTE: When COBO PCB is used to switch contactors a VDR (Voltage Dependant Resistor 275V AC) must be connected across the coil of the contactor.

Wiring Diagram



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.

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