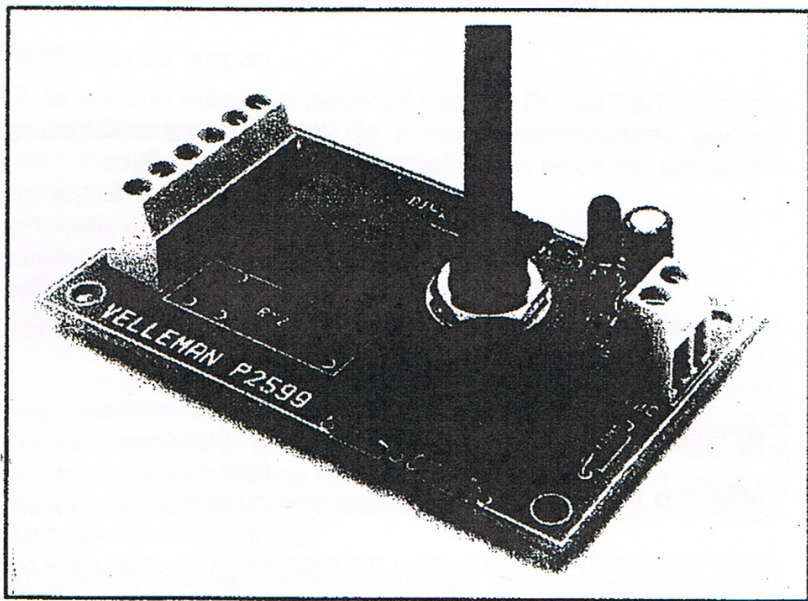


velleman-^{HIGH-Q}kit



SCREEN WIPER ROBOT K2599

- Power supply: 12- 15VDC.
- Supply current: - output "OFF" : 25mA.
- output "ON" : 100mA.
- Relay output (2 inverters).
- Timer intervals: 5- 10- 15 seconds.
- Dimensions: 82X52X40 mm.



H2599-ED2-1

vous pouvez tester les bornes du moteur.

Mettez l'interrupteur du tableau de bord en position "arrêt". Il n'y a maintenant qu'une seule borne à laquelle la lampe s'allume: 53a.

Mettez l'interrupteur du tableau de bord en position "lente". Maintenant il y a deux bornes auxquelles la lampe s'allume de façon continue: la borne 53a qu'on avait déjà trouvé, et la borne 53. Il y a aussi une troisième borne, à laquelle la lampe s'éteint brièvement le moment que les essuie-glace sont en position de repos: c'est la borne 31b.

Mettez l'interrupteur du tableau de bord en position "vite".

La lampe s'allume maintenant à la borne 53b.

Il y a une seule borne à laquelle la lampe ne s'allume jamais: c'est la connection de masse, 31.

Dans certaines voitures, l'interrupteur du tableau de bord n'est pas mis en série avec le +, mais par contre il est entre le moteur et la masse. Le principe est le même, seulement les connections 15 et 31 sont échangées mutuellement sur le schéma.

SCREEN WIPER ROBOT

This circuit is built around the classical timer IC NE555.

With the four-position switch you can choose out of three interval lengths: 5, 10, or 15 seconds.

Only a small modification is needed to make the intervals longer or shorter, if necessary.

Specification

- Power supply: 12-15VDC
- Interval lengths: 5, 10, or 20 seconds
- Relay output, two inverters
- Supply current:
output off: 25mA
output on: 100mA
- Dimensions: 82x52x40mm

Assembly

- Fit D1, 1N914 or 1N4148 type small signal diode. Pay attention to the polarity! The 1N4148 type may have a colour code (large yellow band, brown, yellow, grey). In this case the large yellow band must correspond with the strip on the board. If the diode is identified by its number, then the black band has to correspond with the strip on the board.
- Fit the resistors:
 - R1 and R2, 150K (brown, green, yellow, gold)
 - R3, 120K (brown, red, yellow, gold)
 - R4, 22K (red, red, orange, gold)
 - R5, 560 ohm (green, blue, brown, gold)
- Fit an 8 pin socket for IC1
- Fit C1 and C3, 100nF SibaTit capacitors
- Fit C2, 47uF electrolytic capacitor. Attention to the polarity!
- Fit the relais RY1 and RY2.
- Fit the screw connectors for "12VDC" and "ABCDEF".
- Fit led LD. Pay attention to the polarity (flat side)!
- Fit rotary switch SW.
- Insert IC1, 555, into its socket, with its notch towards R5.

Operation

- Turn SW to its leftmost position (OFF).
 - Connect the power supply to + and - 12VDC. Pay attention to the polarity (- next to the rotary switch).
 - Turn the switch one position to the right. The relais are activated for a moment, and then released. Led LD glows when the relais are not activated. After about fifteen seconds the relais are again activated shortly, and so on... In the second position of SW, the interval is about 10 seconds long, and about 5 seconds in the third.
- If you want longer or shorter interval lengths, all you have to do is to replace C2 by a larger or smaller one.
- The relais contains two inverters: ABC and DEF. A is the common contact of the first inverter, and D is the common of the second inverter. A is connected to B, and D to E, when the relais are not activated. When they are activated, A is connected to C, and D to F.

Installation in the car

On most cars, all electrical connections are numbered. A two-speed motor has five connections (fig. 1):

- 31 is the negative or ground connection
- 53 is connected to the + when wiping slowly
- 53b is connected to the + for high speed wiping
- 53a and 31a are the contacts of switch P, which is controlled by the motor shaft. Switch P makes the screenwipers continue up to their parking position when the dashboard switch is turned off. Once they have arrived at their parking position, switch P goes from its 1 to its 0 position, short-circuiting the motor to make it stop before the wipers leave their parking position again.

Fig. 2 shows how the kit should be wired to the existing system. The dashboard switch has priority over the interval circuitry.

If the connections in your car aren't numbered, you can easily find the numbers with the help of a testlamp:

Connect one of the leads of the lamp to the negative of the accumulator (frame), and with the other lead you can test the terminals of the motor.

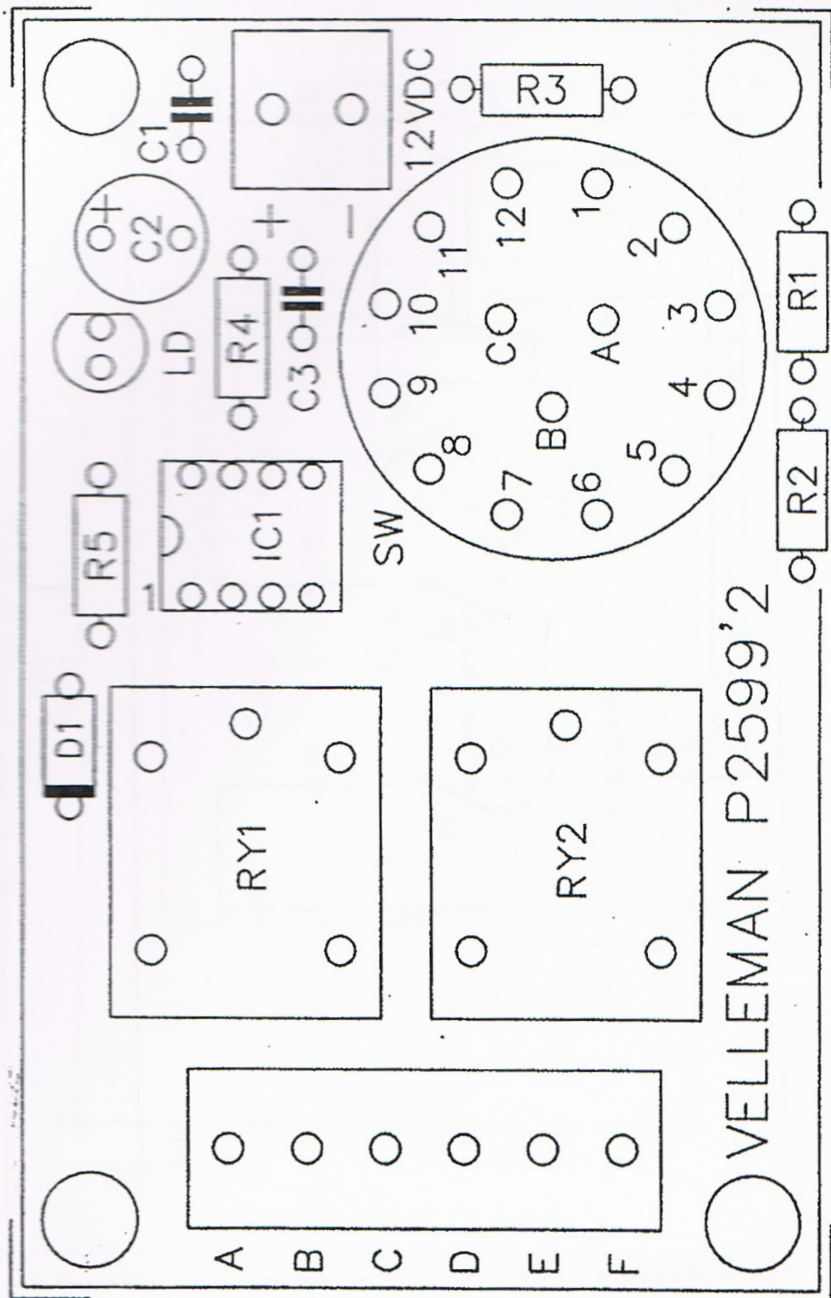
Put the dashboard switch in the OFF position. There is now only one terminal that makes the lamp go on: 53a.

Put the dashboard switch in the low speed position. Now there are two terminals which make the lamp glow continuously: 53a, which we found already, and 53. There is a third terminal that makes the lamp go on, but where it is switched off everytime the wipers are in their parking zone: this is terminal 31b.

Put the dashboard switch in the high speed position. Now the lamp is only lit at terminal 53b.

There is one terminal where the lamp never lights: the negative of the motor, 31.

Sometimes the dashboard switch is not connected in series with the positive, but on the contrary it is between the motor and the negative. The principle is the same, but connections 15 and 31 of the schematic diagram are interchanged.



VELLEMAN P2599'2

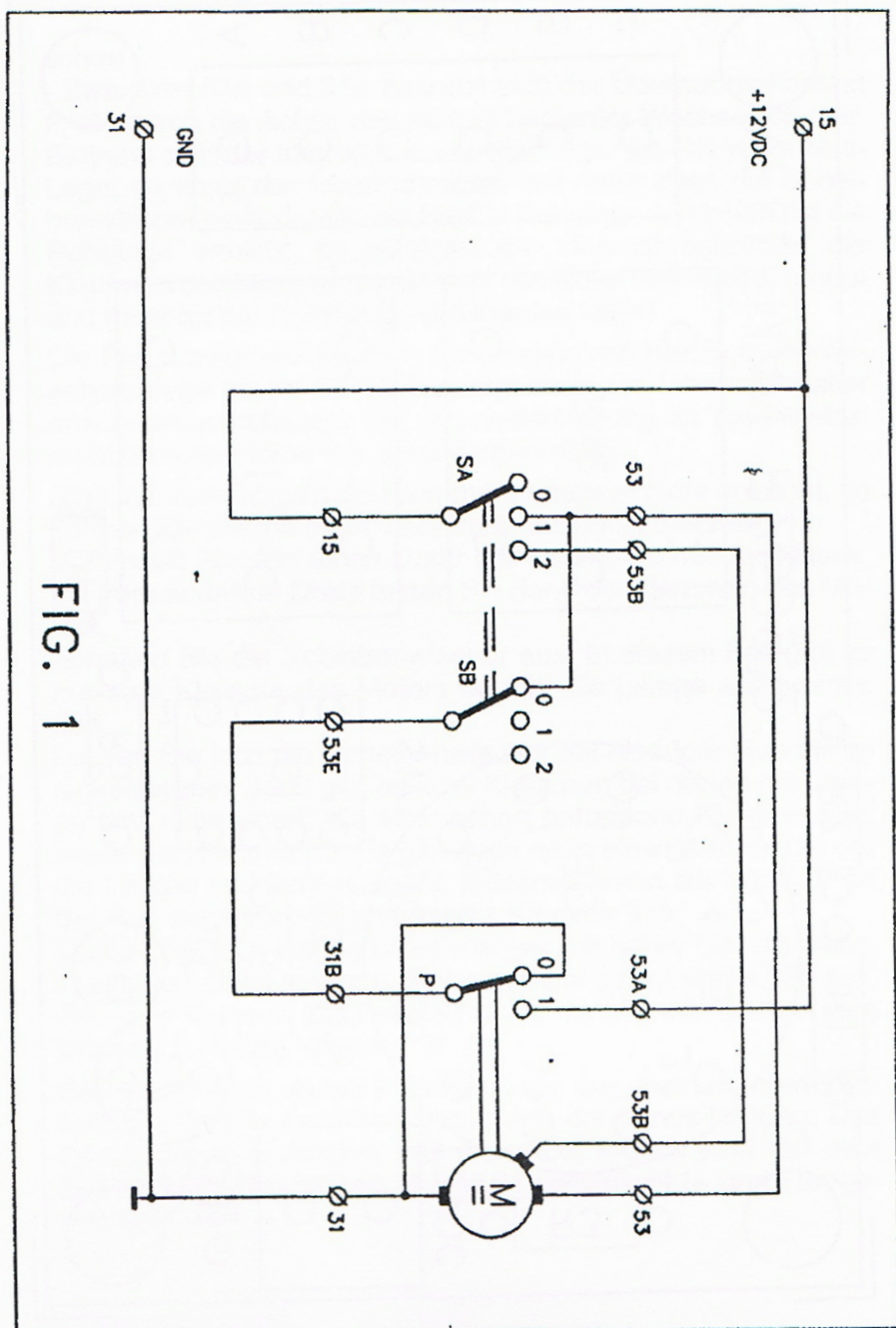


FIG. 1

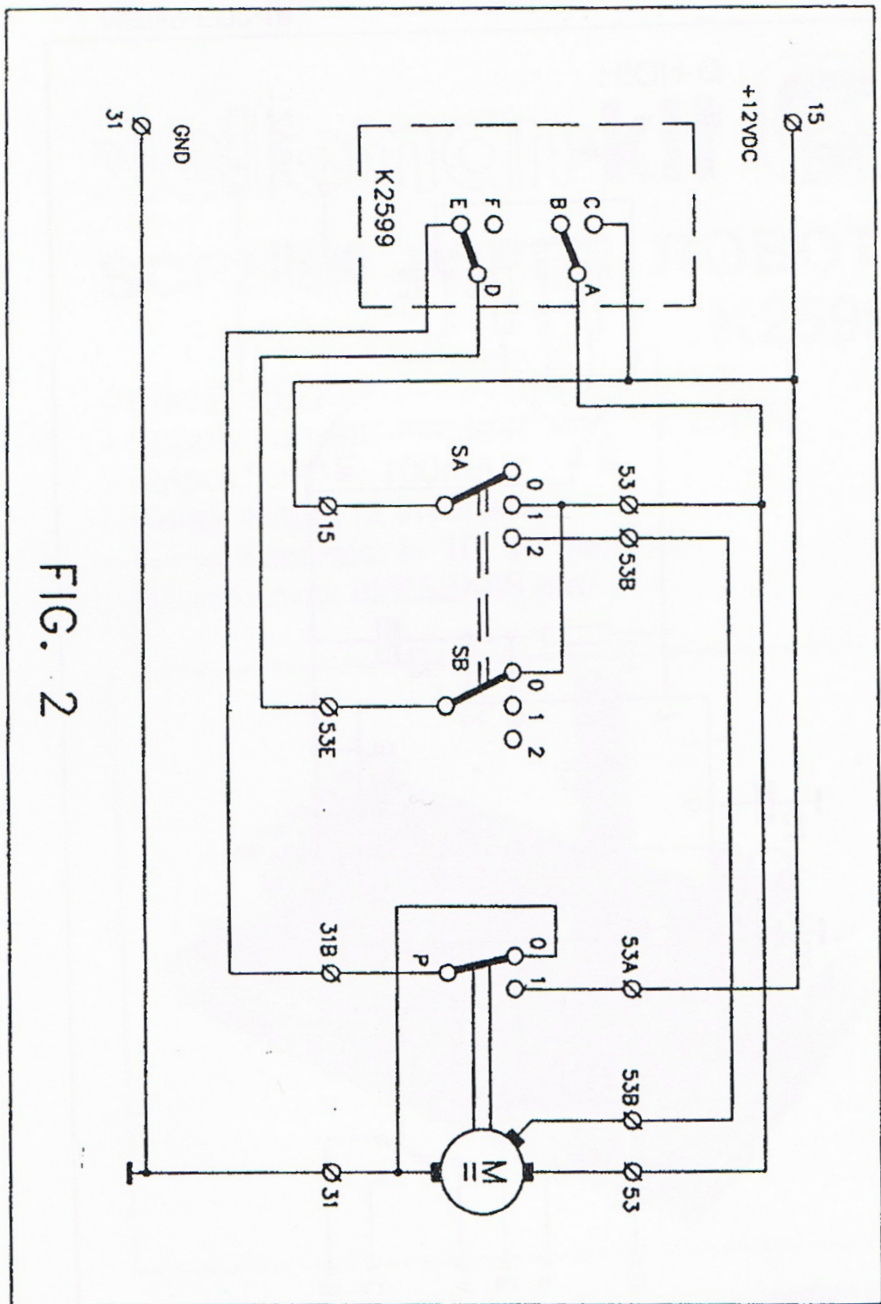
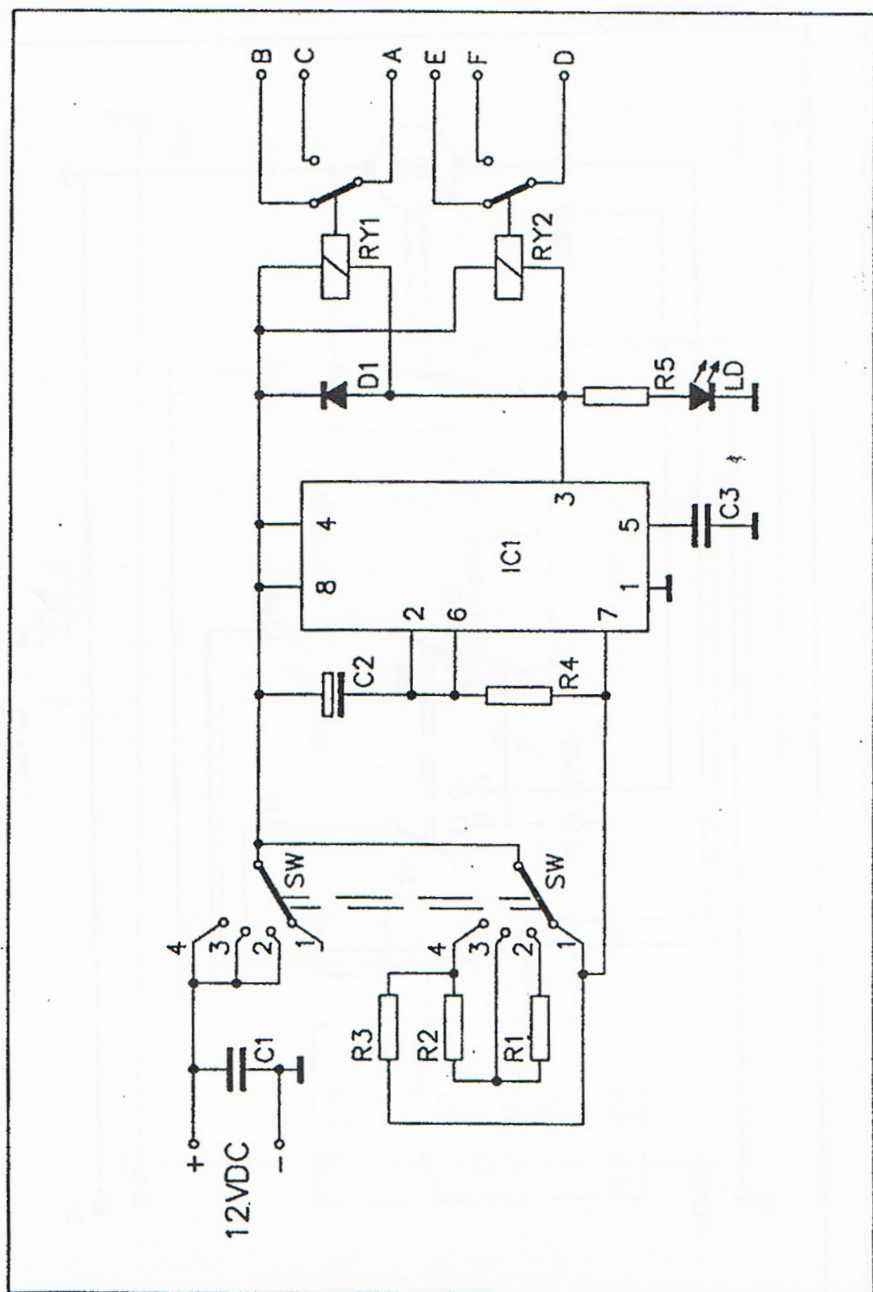


FIG. 2



H2599-ED2-16