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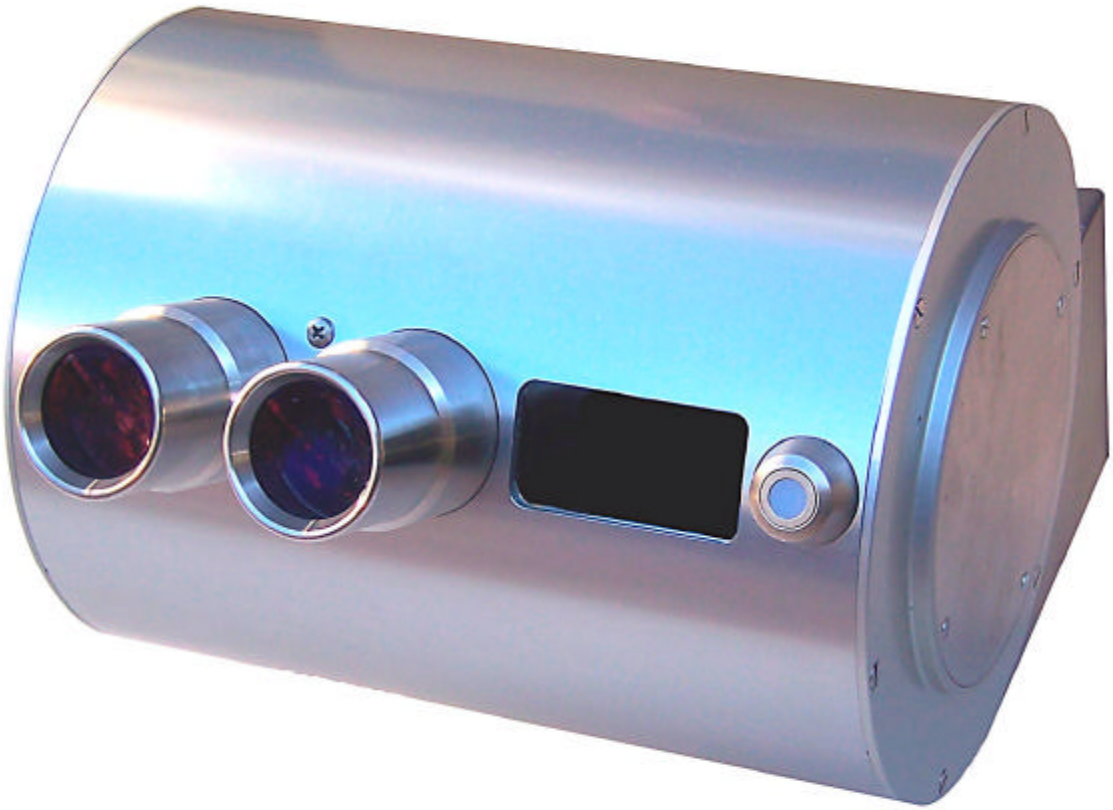
DE WIJS

Design and production of stereoscopic instruments.

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Bank code: NL24PSTB0006084601

Tax number: NL 1899.16.084 B01
K.v.K. Reg. Nº 23071201 Utrecht

# User manual of the 10 slide rotary viewer model 2003 motor advance mechanism



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# Introduction

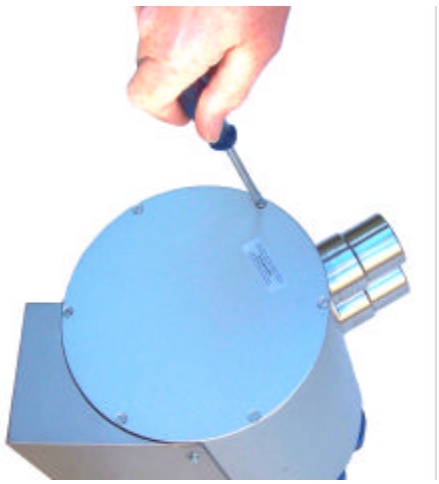
This viewer is the result 30 years of experience in building high quality 3D slide viewers for public use. Each change in the previous models extended the durability, stability and the quality. Especially this 10-slide rotary viewer 2003 has been adapted for the demand to show short 3D slide series to large amounts of public to be informed. To give any idea about the changes with respect to the previous model:

- The slide drum is available in the motor driven as well as the hand-operated version.
- The viewer can be mounted against a wall and it does not need any cover or housing to hold the mechanical parts.
- The new CCFL lamp provides a bright cool white light source without any start-up flickering.
- This viewer is also suited with an automatic return to slide Nº 1 in the motor driven version.
- External control by means of a Personal Computer is possible.
- A simple 12 Volts dc adapter provides a safe power source.

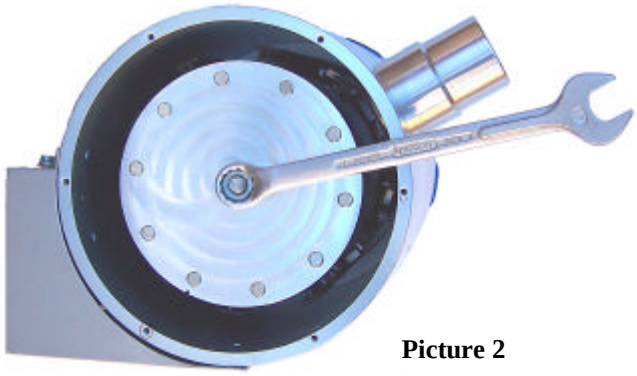
## 1. First indications for operational use

### 1.1 Opening the viewer for exchanging the slides.

- For exchanging the slides you have to remove the left cover of the round housing; see the image. That is NOT the side where the text window and the pushbutton are located.
- Remove the 6 bolts and remove the cover (picture 1)



**Picture 1**



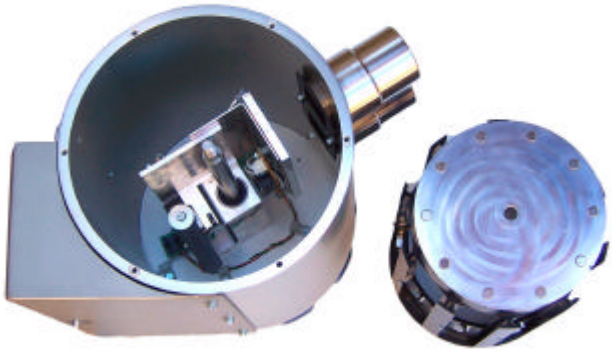
**Picture 2**

- Now you see the round slide drum with a large nut in the middle, take a bolt spanner, hold the drum with your hand and remove the nut (picture 2).



**Picture 3**

- Put your hands around the drum and push with your thumb on the spindle to draw the drum from the spindle out of the viewer (picture 3).



**Picture 4**



**Picture 5**

- Now you can insert or exchange your slides. Keep the order and position of the slides in mind that they won't be presented up side down! (Picture 4 and 5)
- After exchanging the slides you can replace the slide drum in the viewer. Be careful with inserting. Replace the nut on the spindle using the spanner and replace the cover.

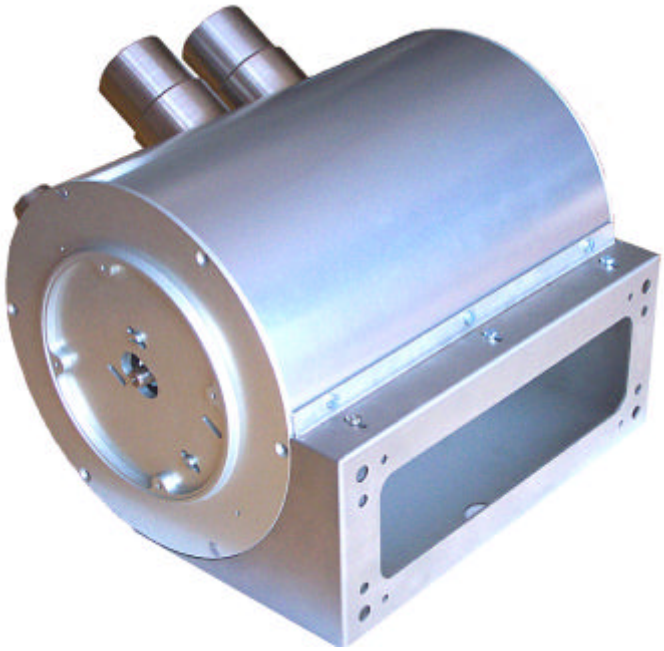
### 1.2 Were do I place the viewer?

Obviously you already have chosen a spot for the viewer in your museum, exhibition or other public environment. Here are some considerations that might help you to check the spot;

- Keep in mind the height of the viewer. Children and grown-ups both want to look in the viewer!
- Depending on the interest of the viewer, people might form a queue. This could cause congestion for the rest of the public.
- Watch out for sunlight coming through the lenses! The lenses will act like burn glasses on the slides. A few minutes in the sun will cause enough damage to the slide that it should be replaced. Within 1 day, in worst case, you have to replace all slides. You can see this on the slide like tiny little white spots showing the track of the sun during the day.
- Avoid spotlights to be shinning on the lenses. The slides are not going to be burned but it does shorten the lifecycle of the slide.
- When the viewer is to be mounted inside some kind of panel, be sure you can get easy access to the viewer for replacing the slides.

### 1.3 How do I mount the viewer against a wall?

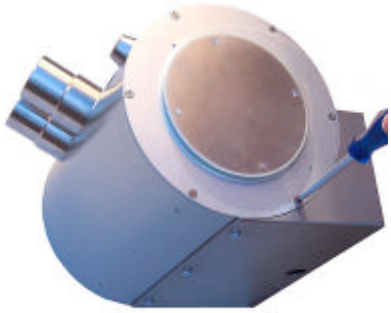
The 10 slide rotary viewer holds a bracket at the back that has several holes to attach the viewer with screws or bolts against a wall. First you have to remove the 3 bolts on the top of the bracket (see the image) and the bolts underneath the viewer to position the bracket only against the wall. Think about how you want to let the cables run through the bracket; are they going through the wall or do they go through the hole at the bottom of the bracket?



## 2. Manual operation (without PC control)

In this situation, the rotary viewer is used in stand-alone mode, without any external devices.

### 2.1 Four operational modes:



The rotary viewer is able to work in 4 different modes. These modes are configurable using the small switches inside the viewer. To get access to these switches follow the next directions:

- Removing the 6 bolts of the right cover of the viewer (the side where button is located, picture 6).

**Picture 6**

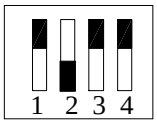
**Picture 7**



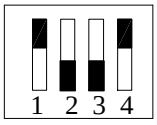
- The next step is not easy. Lift the cover just a little bit and you will see that the power cable is obstructing the cover to come free.
- You can lift the cover a little more and lead the power cord through the hole at the rear and un-plug the small plug that leads to the front panel button.
- Gently take the mechanical interior out of the housing and take care of the power cord.
- Now you see the 4 small switches and the time adjustment for the lamp.

At the right you see an illustration of the dipswitch.
The black square marks the position of the switch.

Mode 1:
After the pre-set shut-off time, the lamp turns off and the viewer stays at this slide.



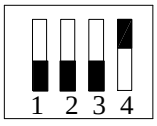

Mode 2:
After the pre-set shut-off time, the lamp turns off and the drum revolves to slide number 1.




Mode 3:
The lamp is always on, after the shut-off time the viewer stays at the current slide.

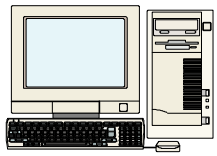



Mode 4:
The lamp is always on, after the shut-off time the drum revolves to slide number 1.




- You can adjust the shut-off time of the lamp by turning with a screwdriver the knob beside the small switches inside the viewer. Turning counter clockwise will increase the time, turning anticlockwise will decrease it.

## 4. External control (with PC)



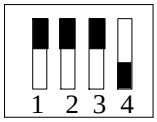
In this situation, the rotary viewer is able to operate according to a configured program with audible explanation of the slide. An IBM compatible PC is required to work with the accompanied software of the rotary viewer to control the rotary viewer.

### 4.1 Setting up the equipment and cable connections

List of materials:

- 10 slide Rotary viewer of ‘de Wijs’ model 2003
- One 12 Volts dc adapter for the rotary viewer.
- Language panel (if you need it).
- 1 Euro connector power cables for the computer
- 1 parallel extension cable with a male D25 and female D25 plug.
- An IBM compatible x86 computer with at least 1 free parallel printer port connector and CD-ROM player, complete it with the usual keyboard, monitor, etc. (mouse not necessary)
- 3.5” Boot disk for the rotary viewer.
- An audio cable with 2,5 mm stereo jack to double cinch or headphones.

Connect all cables according to the connection diagram (chapter 6.2).
Set the small switches at the back of the rotary viewer according to the picture on the right.




For more information about the how to configure the computer and to make audio tracks, take a look at the software manual that can be downloaded at www.dewijs-3d.com at the technical support download page.

## 6 Data

### 6.1 Technical specifications of the rotary viewer

Slides:

- Slide frame format; 41x101 mm.
- Maximum picture size; 23x33 mm.
- Compatible with RBT frames, mounted between glass maximum 3 mm. Thickness.
- The drum can hold 10 slides and accompanying text cards.

Optics:

- One lens barrel holds 2 achromatic lenses of ? 37 mm. f= 120 mm. each.
- Total focal distance is 60 mm.; magnification: 4.2 x
- Lenses are coated on all sides
- Lens separation is fixed to 62 mm.

Illumination:

- The slide is illuminated by a single CCFL (Cold Cathode Fluorescent Lamp) passing its light through a light guide.
- The colour temperature is 5500 Kelvin.
- The lamp runs on 12 Volts dc at ± 300mA using an inverter.

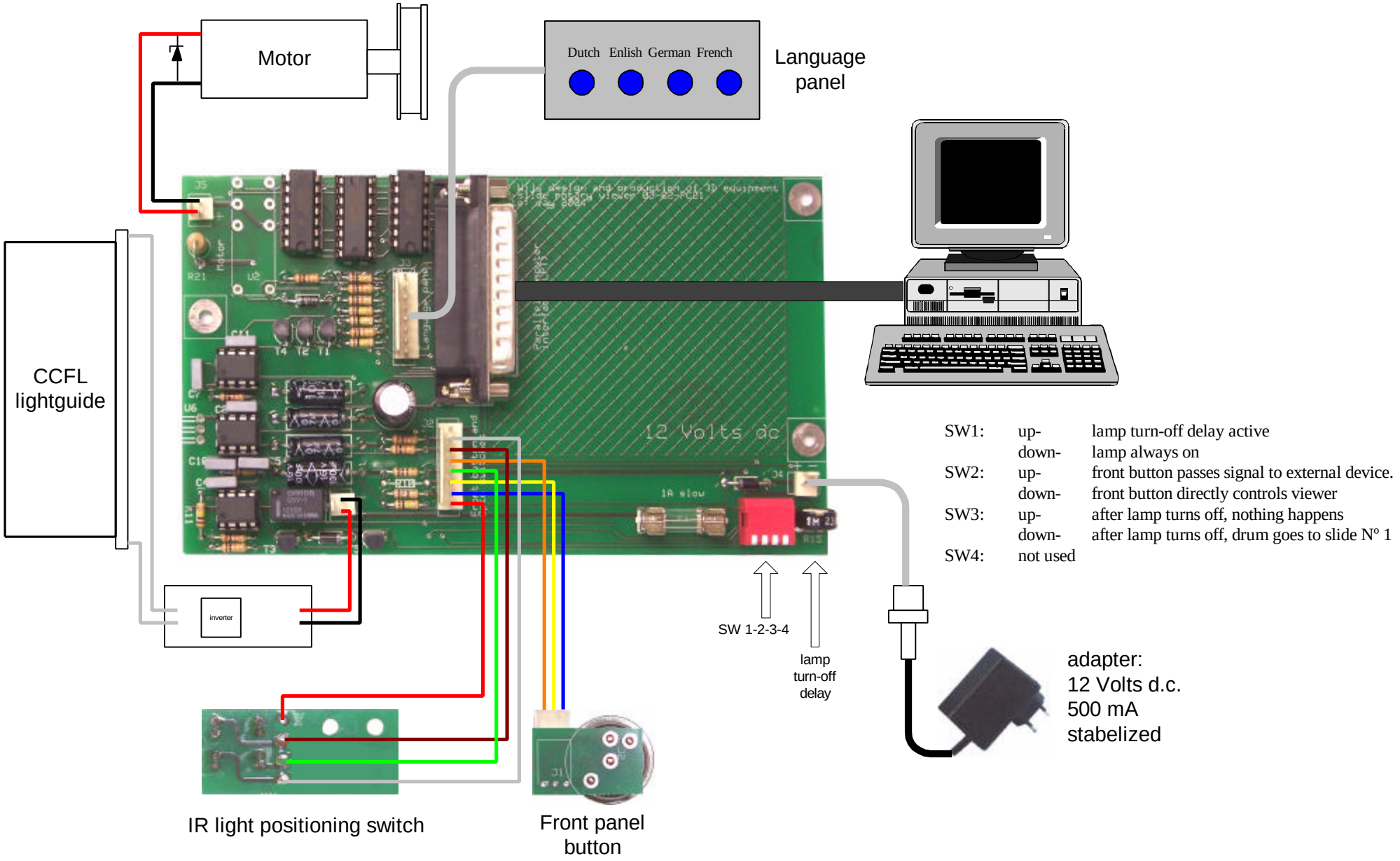
Mechanics;

- The Housing of the viewer is made of plain anodised aluminium. The wall bracket and lens barrels are made of stainless steel.
- The slide drum revolves on ball bearings and don't need any lubrication.
- A 12 Volts motor using a cockwheel mechanism turns the drum.
- When removing the steel plate at the left side of the viewer (4 bolts), you get access to 4 M4 bolts. These bolts make it possible to adjust the focus of the slide drum with regards to the fixed lenses. Do NOT un-fasten these bolts, the focus has been adjusted in the factory very carefully!

Electronics;

- The whole viewer runs on 12 Volts dc. The viewer comes with a 220 Volts AC adapter giving 12 Volts dc. at 500mA.
- The internal circuitery is fused with a 1 Amp. fuse.

## 6.2 Internal connection diagram



### 6.3 Connections of the D25 and J3 connector.

D25 connector:

| Connector pin | Description computer side and addressing | | Description rotary viewer side | Direction looking from computer side. |
|---|---|---|---|---|
| 1 | Strobe | Base+2 bit 0 | Not used | Output |
| 2 | D0 | Base+0 bit 0 | Change slide, 1= moving | Output |
| 3 | D1 | Base+0 bit 1 | Lamp, 1=lamp on. | Output |
| 4 | D2 | Base+0 bit 2 | Not used | Output |
| 5 | D3 | Base+0 bit 3 | Not used | Output |
| 6 | D4 | Base+0 bit 4 | Loop through to D15 con. | Output |
| 7 | D5 | Base+0 bit 5 | Loop through to D15 con. | Output |
| 8 | D6 | Base+0 bit 6 | Loop through to D15 con. | Output |
| 9 | D7 | Base+0 bit 7 | Loop through to D15 con. | Output |
| 10 | Acknowledge | Base+1 bit 6 | Button front panel, 1=pressed | Input |
| 11 | Busy | Base+1 bit 7 | Loop through to D15 con. | Output |
| 12 | Paper end | Base+1 bit 5 | Light gate ‘zero’ detection. | Input |
| 13 | Select out | Base+1 bit 4 | Light gate ‘stop’ detection. | Input |
| 14 | Auto feed | Base+2 bit 1 | Not used | Output |
| 15 | Error | Base+1 bit 3 | Loop through to D15 con. | Input |
| 16 | Init | Base+2 bit 2 | Not used | Output |
| 17 | Select in | Base+2 bit 3 | Not used | Output |
| 18 | Gnd | | | |
| 19 | Gnd | | | |
| 20 | Gnd | | | |
| 21 | Gnd | | | |
| 22 | Gnd | | | |
| 23 | Gnd | | | |
| 24 | Gnd | | | |
| 25 | Chassis ground | | | |

J3 vertical 8-pin header: (for language selection box)

| Connector pin | Description computer side and addressing | | Description rotary viewer side | Direction looking from computer side. |
|---|---|---|---|---|
| 1 | Busy | Base+1 bit 7 | Loop through to D25 con. | Input |
| 2 | | | Ground | |
| 3 | | | +12 Volt. | |
| 4 | | | +5 Volt. | |
| 5 | D5 | Base+0 bit 5 | Loop through to D25 con. | Output |
| 6 | D6 | Base+0 bit 6 | Loop through to D25 con. | Output |
| 7 | D7 | Base+0 bit 7 | Loop through to D25 con. | Output |
| 8 | Error | Base+1 bit 3 | Loop through to D25 con. | Input |
| 9 | D4 | Base+0 bit 4 | Loop through to D25 con. | Output |
| 10 | | | | |
| 11 | | | | |
| 12 | | | | |
| 13 | | | | |
| 14 | | | | |
| 15 | | | | |

## 6.4 Electronic component list model 03-02-A-H

| | |
|---|---|
| R1 | 10K 1/4 Watt IR detect |
| R2 | 10K 1/4 Watt IR detect |
| R3 | 100K 1/4 Watt |
| R4 | 10K 1/4 Watt |
| R5 | 100K 1/4 Watt |
| R6 | 10K 1/4 Watt |
| R7 | 10K 1/4 Watt |
| R8 | 100K 1/4 Watt |
| R9 | 180 1/4 Watt |
| R10 | 100 1/4 Watt |
| R11 | 100K 1/4 Watt |
| R12 | 100K 1/4 Watt |
| R13 | 10K 1/4 Watt |
| R14 | 10K 1/4 Watt |
| R15 | 1M 0.15 Watt 10 mm. standing Pot. |
| R16 | 10K 1/4 Watt |
| R17 | 100K 1/4 Watt |
| R18 | 100 1/4 Watt (IR LED's) |
| R19 | 100K 1/4 Watt |
| R20 | 10K 1/4 Watt |
| R21 | 22 1 Watt |
| C1 | 47uF 10 Volt axial |
| C2 | 100n 50 Volt polyester |
| C3 | 4,7uF 50 Volt axial |
| C4 | 100n 50 Volt polyester |
| C5 | 100n 50 Volt polyester |
| C6 | 1000uF 16 Volt Elco rad. |
| C7 | 100n 50 Volt polyester |
| C8 | 47uF 10 Volt axial |
| C9 | 100uF 16 Volt Elco ax. |
| C10 | 100n 50 Volt polyester |
| C11 | 100n 50 Volt polyester |
| D1 | 1N4001 |
| D2 | 1N4001 |
| D3 | 1N4001 |
| T1 | BC547b |
| T2 | BC547b |
| T3 | BC547b |
| T4 | BC547b |
| T5 | BC547b |
| U1 | 4081 Quad And |
| U2 | Relays 2x 12 Volts |
| U3 | LM555 timer IC |
| U4 | Relays 1x 12V OMRON G5V-1 |
| U5 | 4071 Quad Or |
| U6 | LM7805 1A |
| U7 | 4049UBE |
| U8 | LM555 timer IC |
| U9 | LM555 timer IC |
| J1 | D25 PCB socket 90º male |
| J2 | Header vertical 8 pins |
| J3 | Header vertical 8 pins |
| 2x | Header Socket 8 pins |
| J4 | Header vertical 2 pins |
| J5 | Header vertical 2 pins |
| J6 | Header vertical 2 pins |
| 3x | Header Socket 2 pins |
| | Shrink contacts for Headers |
| J7 | Header vertical 3 pins |
| 1x | Header Socket 3 pins |
| SW1 | Dip switch 4x 90º |
| | DIL8 sockets |
| | DIL14 sockets |
| | DIL16 sockets |
| F1 | Fuse holder internal metal clamps |
| 2x | Opto switches 5mm. Gap |
| 1x | PCB of de Wijs company. |