EN **Original operating manual**

Polizei-Verkehrs-Informations-System
[Police-Traffic-Information-System]

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PolVis -Full matrix

Type Type 28930028593

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Safety instructions

Before carrying out any work on the device it has to be switched off!

General information on the user manual

This operating instruction provides important information on how to work with the device.
All technical information in this manual has been compiled with the utmost of care. We can, however, not exclude discrepancies or mistakes and do therefore neither assume warranty nor any legal liability nor liability for any consequential damages due to incorrect information.
We highly appreciate any information on possible mistakes or discrepancies!
The basic prerequisite for safe working is compliance with all safety and handling instructions stated in this manual.
Furthermore, the local accident prevention as well as safety regulations have to be observed.
The operating instructions must be read carefully before starting any work!
It is part of the product and must be kept in safe place in the immediate vicinity of the device, accessible at any time for the personnel.
If you sell or distribute this product, make sure to also hand out this manual.
For better visualization, the illustrations in this manual are not necessarily true to scale and may differ from the actual design.

General safety instructions

Meaning of pictograms
Safety notes are characterised by pictograms.
Additionally they are preluded by signal words, expressing the scale of the hazard.

- Safety Instructions must be duly observed under all circumstances!
- Always act cautiously in order to avoid accidents, personal injuries and damage to property!

Warning!

Indicates a potentially dangerous situation which can result in death or severe injuries if not being avoided.

Caution!

Indicates a potentially dangerous situation, which may lead to minor or light injuries if not being avoided.

Caution!

Indicates a potentially hazardous situation that may result in property damage if not being avoided

Hints and recommendations

NOTE!

Highlights useful hints and recommendations as well as information for an efficient and trouble-free operation.

Limitation of liability

All information and instructions in this manual were compiled under consideration of all valid and applicable standards and regulations, our state of the art technique as well as our long-term experience and knowledge.

The manufacturer assumes no liability for damage due to:

- Non-observance of the operation and maintenance instructions
- Improper / unintended use
- Deployment of non-trained personnel
- Unauthorized conversions
- Technical changes
- Use of non – approved / unauthorized spare and wear parts

In case of ordering customized versions, use of additional options or due to state of the art technical

alterations the actual scope of supply may differ from the explanations and illustrations described in this manual.

Additionally the responsibilities agreed upon in the delivery contract, the general terms and conditions as well as the manufacturer's conditions of delivery and the statutory provisions valid at the time of contract conclusion shall apply.

Warranty

Wear parts are all components having direct contact with the material processed by the machine. These components are excluded from warranty and defect claims provided it is wear.

Warranty

The manufacturer guarantees the functional capability of the process technology used and the stated performance parameters. The warranty period begins at the time of acceptance without defects.

Warranty

The individual warranty conditions can be found in the sales contract.

In general rules:

In case of conversions or technical modifications which were not certified by horizont group gmbh, any warranty claims expire.

Spareparts

Warning!

Incorrect or faulty replacement parts may lead to damages, malfunctions or even total breakdown of the device, thus severely affecting the safety.

Always use original spare parts only!

Original spare parts can be obtained directly from the manufacturer.

Customer service

In case you need any technical information or advise, our customer service is at your disposal. Furthermore our employees always appreciate receiving feedback from the user - such as experiences arising during the application - in order to constantly work on improving our products.

Copyright

This manual is intended exclusively for persons working with the unit. This manual may not be passed on to third parties without the written consent of the manufacturer.

In case you need any technical information or advise, our customer service is at your disposal. Furthermore our employees always appreciate receiving feedback from the user - such as experiences arising during the application - in order to constantly work on improving our products.

NOTE!

Any content of this instruction like texts, drawings, pictures and other representations are protected by copyright law and subject to industrial property rights. Any improper use is punishable. Reproduction in any form - even in extracts - as well as the utilization and / or communication of the contents are not permitted without written consent of the manufacturer. Violations require compensation. Further claims remain reserved.

Safety

This section gives an overview of all important safety aspects for optimum protection of personnel and for a

safe and trouble-free operation. Failure to comply with the safety instructions stated in this manual may lead to considerably hazardous situation.

Responsibility of the operator

The operator of the device is subject to the legal obligations for safety at work.

In addition to the safety instructions in this manual the safety standards, accident prevention as well as environment protection regulations on site have to be adhered to.

It is essential that the operator

- is informed about the applicable health and safety regulations on site.
- identifies additional hazards which might arise due to special working conditions at the operation site by means of a risk assessment.
- implements the necessary rules of conduct stated in the user manual at the operation site.
- check at regular intervals during the machine‘s entire period of use whether the user instructions correspond to the current state of rules.
- clearly regulates the responsibilities for installing, operating, maintaining and cleaning the device.
- ensures that all employees working on or with the machine have read and understood the operating instructions. In addition he must at regular intervals train the employees in how to deal with the machine and inform them about potential hazards.

In addition, it is the operator‘s responsibility to ensure that:

- the machine is always in a technically perfect condition.
- the machine is maintained in accordance with specified maintenance intervals.
- all safety equipment is regularly checked for completeness and correct functioning.
- the required inspections are carried out or arranged to be carried out at a self-defined or predefined time

Staff requirements

Qualification

WARNING!

Inappropriate handling can lead to considerable personal injury and property damage. All activities should only be carried out by qualified personnel.

Hazards

The following section lists residual risks that were determined on the basis of a hazard analysis.
The hazard notes listed here and the safety instructions in the previous sections of this manual must strictly be observed to reduce possible health hazards and to avoid dangerous situations.

Electrical current

DANGER!

Touching live parts is an immediate risk of fatal injury. Damage to the insulation or individualcomponents can be potentially life-threateningensgefahr. Beschädigung der Isolation oder einzelner Bauteile kann lebensgefährlich sein.

Repairs to the electrical system of the device may only be carried out by qualified electricians!

Before carrying out any work on the device, first disconnect the negative terminal and then the positive terminal on the rechargeable batteries.

Batteries & rechargeable batteries

WARNING!

Improper handling of batteries or rechargeable batteries may release toxic substances or even lead to their explosion.

During the charging process, explosive gas mixtures can originate. Therefore
- you may not smoke
- you must avoid sparking and ensure adequate ventilation
- you may not use any flammable cleaning agents in the immediate vicinity of the batteries !
Adhere to the instructions of your manufacturer for rechargeable batteries!

Environmental protection

CAUTION!

Rechargeable batteries contain toxic heavy metals. They are hazardous waste and must be collected and disposed of in accordance with the local applicable regulations. It is the owner‘s responsibility to inform about disposal regulations and disposal centres.

Intended use of the product

WARNING!

Any use of the device beyond its intended use or any other use not in accordance with the instructions may lead to dangerous situations for which horizont group gmbh does not assume any responsibility.

For this reason:

- you may only use the device for its intended purpose.
- you have to strictly follow all instructions in this manual. In particular, refrain from the following operations, which are deemed to be improper: modification, conversion or alteration of the construction or individual equipment parts with the aim of altering the usability of the device.

Claims of any kind for damage resulting from improper use are excluded. The operator alone is liable for all damage resulting from improper use.

WARNING!

Installation and operation of the PolVis on public roads may only be carried out in compliance with the local applicable regulations (in Germany RSA, TL warning lights, StVO)!

WARNING!

During the process of lifting/ lowering of the PolVis no persons may be in the vicinity of the-PolVis . Furthermore, no objects may be transported in the area of the PolVis which obstruct, block or endanger the operation of thePolVis (vertical sliding PolVis).

WARNING!

Driving into the flowing traffic with the PolVis

- when the PolVis is mounted fix to the rear of the vehicle, the maximum speed allowed is 130 km/h
- the maximum speed:

  130 km/h in upright position,
  160 km/h in lowered position

CAUTION!

When operating the device on the vehicle’s electrical system, the electrical circuit must always be protected accordingly.

Regular maintenance

Recharge the batteries after each use and check the acid level at regular intervals. If necessary, re-fill with distilled water and pay particular attention to corrosion of the terminals.

Check the PolVis for visible damage.

We do not recommend cleaning the unit with high-pressure cleaners. Avoid chemical cleaning agents.

In case the light arrow is not used for a longer period of time, disconnect the rechargeable battery and check the charging level.

Store the unit in a dry place

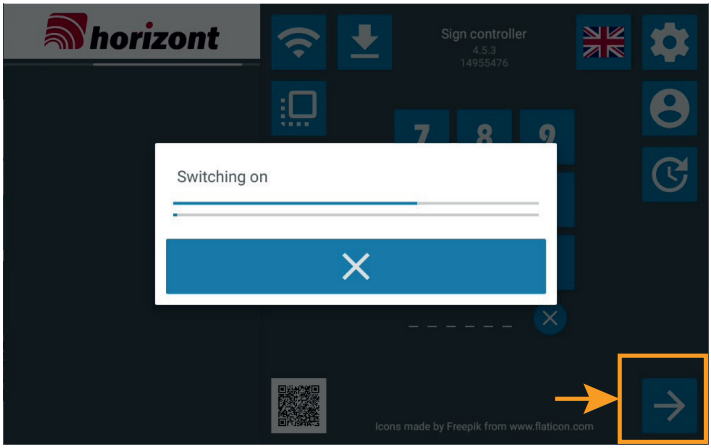
1. Tablet control - remote control

1.1. Overview

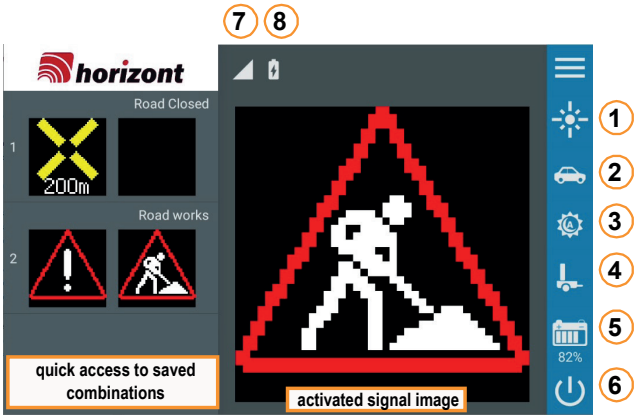
1.2. Turn

To switch on the tablet, press once on the On/Off button. The program automatically starts the connection with the panel; if not, press the arrow once at the bottom right.

The tablet can only run the SiCo app.



1.3. Main menu



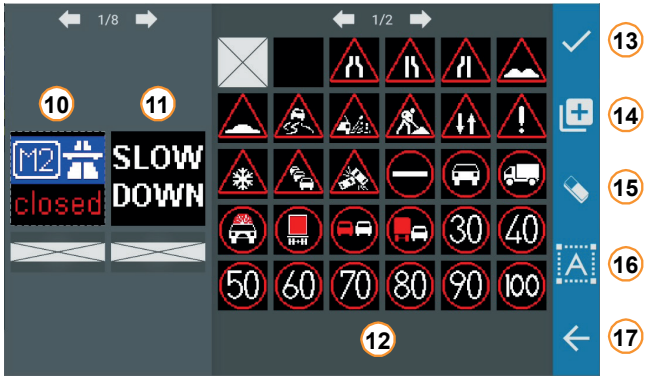
The activated signal image is displayed in the centre of the main menu and can be changed by tapping on the display area. The left area is used to activate stored signal image combinations. Tapping on the characters (1) to (4) displays various submenus in the right-hand menu bar.

The battery symbol (5) indicates the remaining battery capacity.

The LED panel can be switched off via (6). Point 7 shows the signal strength of the wireless connection between the panel and the tablet. Under point 8, you can see the remaining battery capacity of the tablet.

1.4. Submenu signal image selection

Pressing the activated signal image opens a submenu with the signal image selection.

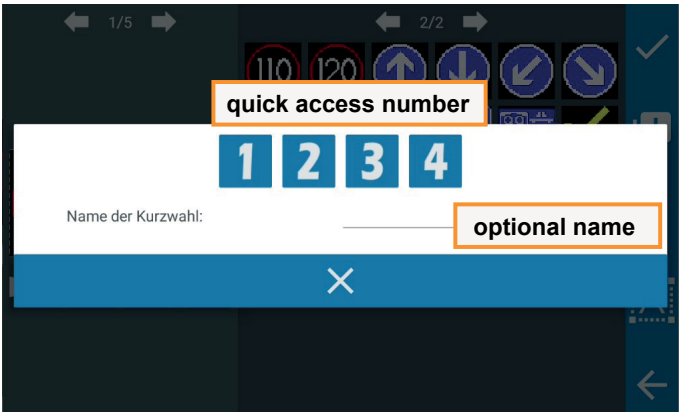


In the left area of the form, two interchangeable images (10 &11) can be selected for the sign. The image change speed is selected in the main window. If a single image or animation is to be selected, the second slot (level)(11) can be deactivated. The direction arrow keys above the signal images are used to scroll through the already activated traffic signs. To select signal images, select a character in 10 or 11. The currently selected sign is indicated by an orange dashed outline. By selecting signal images (12), the selected character is displayed in 10 or 11. During the selection process, the characters can be deleted by 15. To scroll through the signal images (12), press the arrow keys or swipe your finger to the left and right. The content can be saved (14) for quick activation, discarded with (17) or accepted with (13).

14

1.5. Quick access

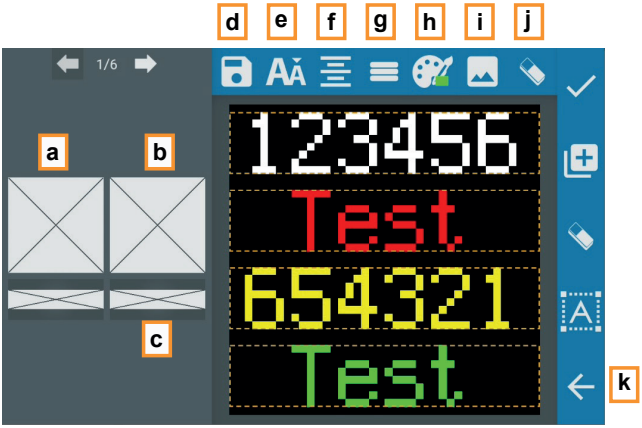
When saving in Quick Slot (14), a new window will open and prompt the user to assign a number to the selected content. Optionally, the user can also assign a name to the defined combination, but this must be done before selecting the slot number.



16

1.6. Submenu text creation

In addition to pre-installed content, free text entry is possible. Pressing the text entry (16) in the signal image selection will open a new form.

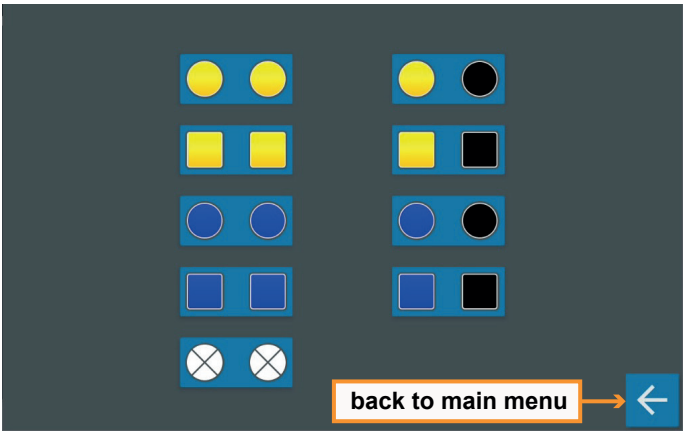


As in the signal image selection, a preview of the currently selected content is displayed (a and b). Next to the text selection are text fields that can be configured with the number of text fields per character(g) and the text size(e).

To enter a colour text, the text colour must first be selected with (h). To start text input, click on one of the dashed orange rectangles (a,b or c). This will open the Android® keyboard. To delete the entire written text, press (j). The text form also allows image input (i), where an image is placed below the text input. After the text has been entered, it can be saved with (d), deleted with (j) or discarded with (k). When a text entry is saved, the text form is displayed on the selected sign. Text alignment can be set by pressing the button (f).

1

1.7. Submenu flasher

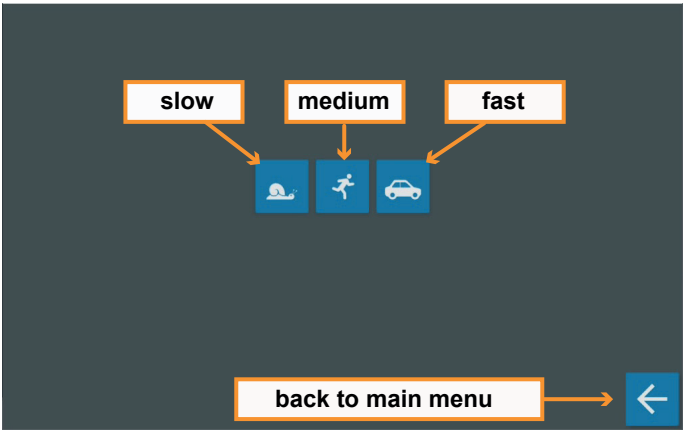


The Flasher (1) button opens a new window in which the displayed signal images can be flashed or deactivated. Yellow and blue flashers are available in round (7 pixels) or square (8x6 pixels).

Please use left column for synchonous flashers or right column for alternating flashers.

2

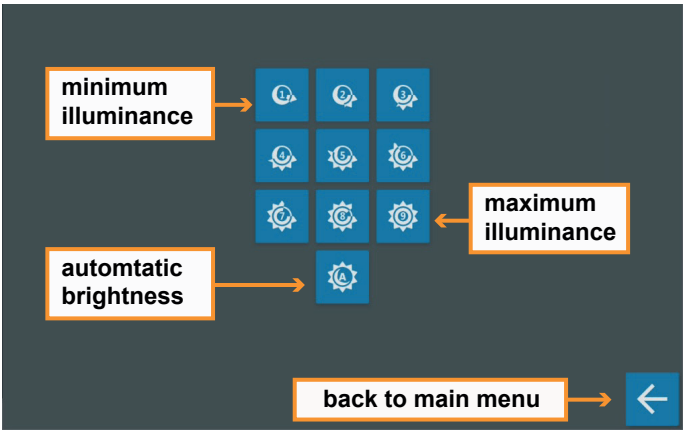
1.8. Submenu panel image switching speed



The panel image switching speed button opens a new form in which the animation speed can be set to slow, medium or fast.

3

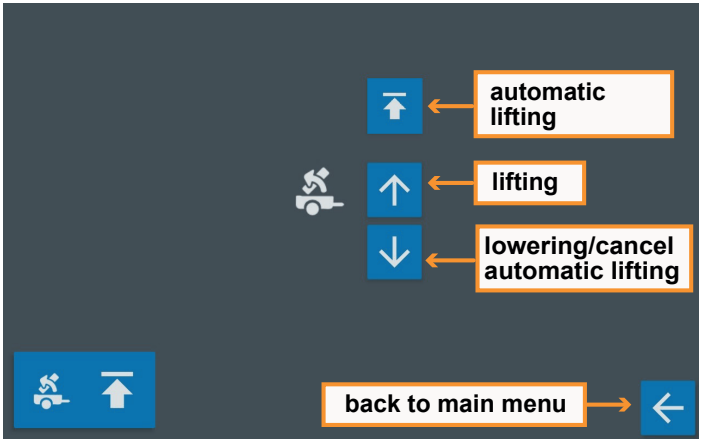
1.9. Submenu luminance level



The luminance level (3) button opens a new window where the brightness can be set manually or automatically from 1 to 9. The use of automatic brightness is recommended as it provides optimal brightness for the ambient conditions.

4

1.10. Submenu raise/lower panel



The raise (4) button opens a new form where the user can raise or lower the panel.

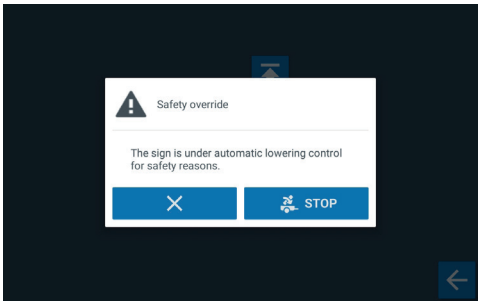
2. Speed-dependent lowering (option)

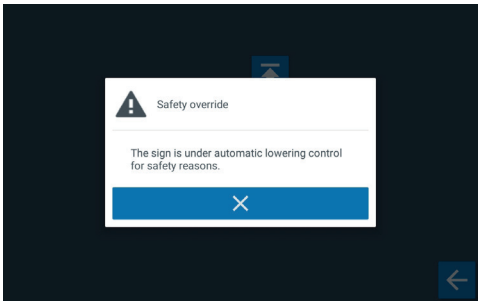
With this optional equipment, the LED panel lowers when the factory-set top speed is reached. The speed is determined using a GNSS sensor (GNSS = global navigation satellite system).

In areas with poor satellite coverage or the system is switched off, this function is only available to a limited extent or not at all. This can be the case, for example, in tunnels or in densely built areas.

During the lowering process, a pop-up message appears on the remote control display and remains visible until confirmed by the user.

As long as the set maximum speed is exceeded, it is not possible to lift the LED panel again!!



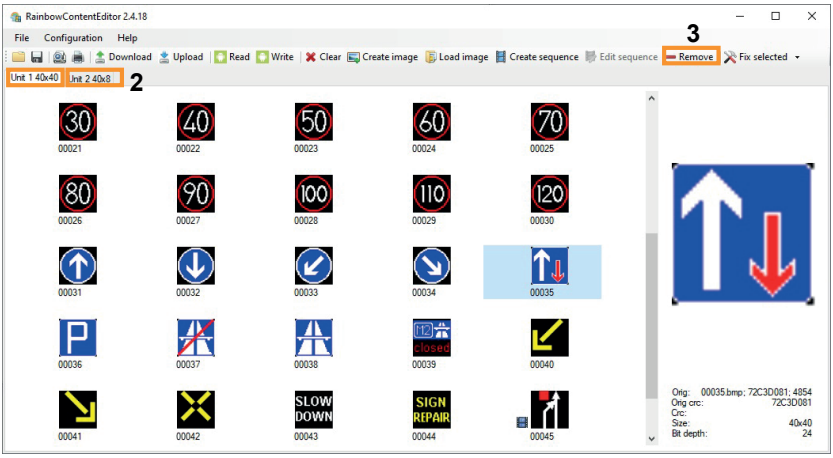


3. RCE program for transferring signal images to the tablet

The RCE program enables the transfer of new images or complete data sets to the tablet. This is done by connecting the table via the USB-C port. Drivers do not have to be installed. To load new signal images onto the tablet, open the RCE program supplied. to write (1), press on the symbol. In the new dialogue window, select the tablet (2) and select the Marvin processor (3). Finally press (4) to transfer the loaded character set to the tablet.

3.1. Main Menu

In the main window of the program, selecting tabs 1 to 2 will show the signal images stored on the bottom panel (1) and in the text field (2) on the bottom panel. Additional signal images can be added using drag & drop. Selected contents can be removed by pressing (3).



3.2. Loading or saving character sets

Existing character sets can be loaded into the program or newly created character sets can be saved. To load an existing character set, select the required character set in the top area of the software "File->Open from zip"(1). To save a data set, select "Save to zip" (2).

4. Character creation program ‘LED panel’

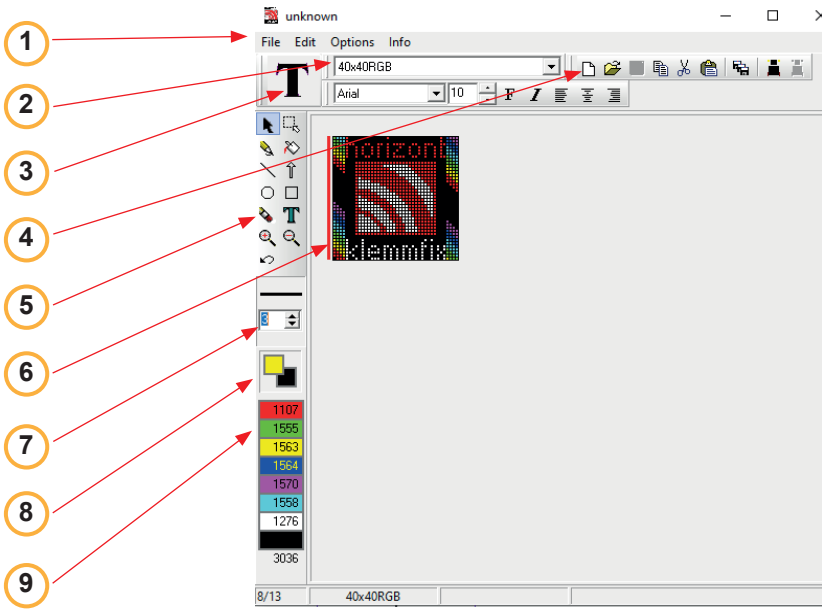
With the program 'LED panel', you can very easily create traffic signs for the LED advance warning panel and modify already created ones. The program applies all necessary checks (sign size, signal image

colours as well as maximum number of LEDs used).

During installation, the program automatically applies the set system language of the PC, which can, however, be changed later in the menu bar.

After the program is started, the following screen appears:

After the program is started, the following screen appears:



Use 24-bit colour resolution or Paint!

1

4.1. Menu bar

Among other things, you can open and save signal images, select their panel size / type, display an auxiliary grid or select the user language (German, English or French).

2

4.2. Panel selection

From this menu, you can select the LED panel you would like to create new signs for.

The designation consists of the following:

e.g. 40x40RGB

40x40 - WxH for pixels of the top panel

RGB - LED colours of the top panel RGS

3

4.3. Line texts

Only touchscreen remote control !!

Depending on the selected panel (see 2.4.2.1), line texts or symbols for the touch screen remote control can be created by selecting this tool. After being transferred with SignLoad (see 2.3.2.), these texts can be selected in the different lines on the touch screen remote control (see 1.3.10.). The arrangement of the texts on the touchscreen remote control does not have to correspond to the arrangement during creation.

4

4.4. Toolbar

Using this bar, you can quickly clear the two panels, open and save files, select the font, and more.

5

4.5. Tools

Pointer:	Moves selected elements
Selection:	Selects a specific area
Line:	Creates freehand lines or single dots
Fill tool:	Fills in an area
Rubber band line:	Creates a straight line when holding down the left mouse button
Directional arrow:	Creates a directional arrow when holding down the left mouse button
Circle:	Draws a circle when holding down the left mouse button
Rectangle:	Draws a rectangle when holding down the left mouse button
Eraser:	Clears individual dots or areas
Text:	Creates text (text flow, text type and position can be changed during input. This is no longer possible after switching to another tool)
Zoom in:	Enlarges the screen area
Zoom out:	Decreases the screen area
Undo:	Discards the last change

6

4.6. Workspace

The red bar on the left side of the LED advance warning panel symbol indicates the selected and editable area with the pointer. You can draw or write texts in this area.

7

4.7. Line width menu

Setting of line width for the tools.

8

4.8. Colour menu

This menu shows the currently selected character and background colour.

9

4.9. Colour selection and pixel count menu

To change the drawing colour, click on the desired colour with the left mouse button. Correspondingly, click on a colour with the right mouse button to change the background colour. Colours that are not allowed are displayed crossed out and blocked.

5. Overview PolVIS - VM

5.1. LED - Matrix

- Display of all common traffic signs with RGB LEDs
- Ø 810 mm, △ 830 mm, ☐ 810 mm
- Flashing light or continuous light
- Dimension of LED sign: 855 x 855 x 135 mm (standard panel)
- Phantom light tested in accordance with EN12966
- Pixels: 1,600 RGB, each dot is freely programmable
- Display of graphics and/or text *)
- Automatic brightness adjustment, additional 9 fixed values selectable
- Flashing frequency selectable in 3 steps
- approx. 700 characters can be programmed on request (depending on the remote control)

5.2. Programming

Further traffic signs, lane guidance, etc. and texts, e.g. ACCIDENT, OIL LINE, STOP, etc. can be programmed on request.

5.3. Technical data

Flash rate	15-60 x per minute
Ambient temperatures	-30°C to +70°C
Protection class	IP 55
Beam width according to EN12966	B6
Luminosity	up to 15400 cd/m2 for white
LEDs	RGB

When connecting the system to the supply voltage, please note that the standby current is permanently 500mA !!!

5.3.1. Luminance level

There are various levels available for setting the luminance level (manual and automatic regulation).
The luminance level refers to standard EN12966:2005

5.3.2. Optical data

Phantom light test according to EN 12966

LED Colour	Classification according to EN 12966-1:2005+A1:2009			
	Luminance	Luminance ratio	Colour	Beam width
Red	**L3***	**R3**	**C2**	**B6**
Green	**L3***	**R3**	**C2**	**B6**
Blue	**L3***	**R3**	**C2**	**B6**

5.3.3. Electrical data

Rechargeable battery	12V / 24V (depending of code)			
Power consumption (A)	Manual			Maximum
Illumination level	1	5	9	9
40x40R20_RGB (Reference image)	0,8 A / 0,4 A	1,2 A / 0,6 A	1,5 A / 0,8 A	1,5 A / 0,8 A
FB - PDA (max. charging current)	1.0 A	1.0 A	1.0 A	1.0 A
FB - tablet (max. charging current)	1.0 A	1.0 A	1.0 A	1.0 A
Total	**1,8 A / 1,4 A**	**2,2 A / 1,6 A**	**2,5 A / 1,8 A**	**2,5 A / 1,8 A**

Reference image:

Active LEDs

Top panel:
RGB 401 pcs.

5.3.4. Maximum Speed

Max. speed with lifted board	**130km/h**
Max. speed with lowered board	**160km/h**