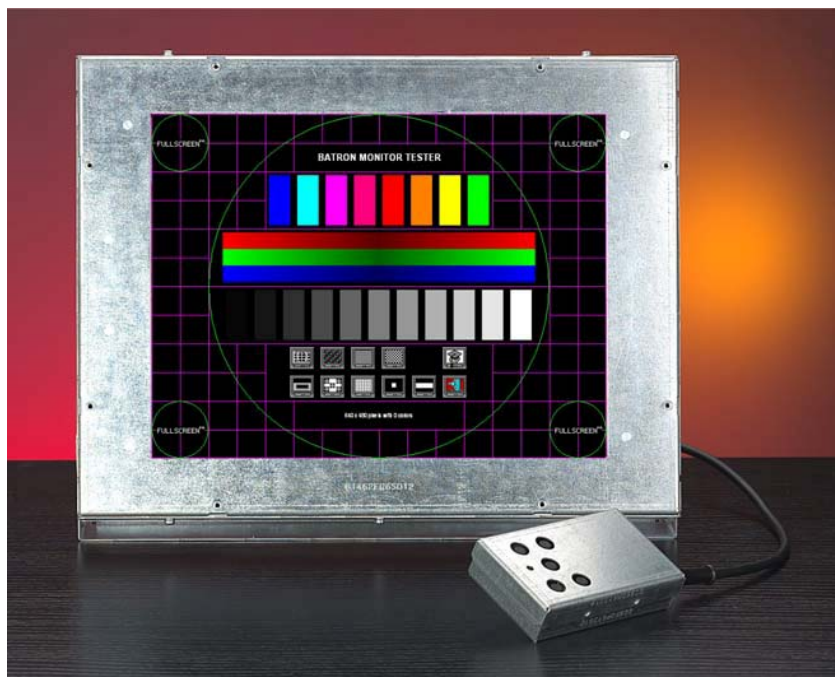


# unipo®

*makes your process visible*

## Operating manual

### Universal unipo® Flat Panel UFP



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# 1 General

## 1.1 Information on operating instructions

These operating instructions describe the installation, operation and maintenance of the equipment. Compliance with all specified safety notes and instructions for use is mandatory for safe working and proper handling of the device.

Moreover, the accident prevention instructions and general safety regulations applicable at the place of use must also be complied with.

These operating instructions are part of the product and should always be kept near the device, available for installation, operating, maintenance and cleaning personnel at any time.

For better representation of circumstances the illustrations in this manual are not necessarily to scale and may slightly vary from the actual design of the machine.

## 1.2 Explanation of symbols

Important safety and machine related notes in this operating manual are marked with symbols. The notes must be adhered to in order to avoid accidents, personal injuries and damage to property.



### **WARNING!**

This symbolizes dangers that can lead to adverse effects on health, injuries, permanent physical damage or to death.

**Adhere at all costs to the notes specified regarding work safety, and be particularly careful in these cases.**



### **WARNING! Danger of electric current!**

This symbol draws attention to dangerous situations involving electrical currents. There is a danger of serious injury or death if the safety notes are not complied with. The work may only be carried out by qualified electricians.



### **ATTENTION!**

This symbol highlights notes, which if not complied with, can lead to damage, malfunction and/or breakdown of the machine.



### **NOTE!**

*This symbol highlights tips and information that are to be observed for efficient and disruption-free operation of the machine.*

### 1.3 Liability and warranty

Any information and notes contained in these operating instructions have been compiled under due consideration of valid regulations, the latest status of technical development and our profound knowledge and experience gathered over the years.

For special versions, the use of additional ordering options or due to latest technical modifications the actual scope of delivery may vary from the explanations and artwork in this manual. Please address any questions to the manufacturer.

The warranty period is 12 months, starting with the date of shipment.

Apart from this, the obligations agreed upon in the delivery contract, the general terms of business as well as the legal regulations valid at the time of entering into the contract shall apply.



**NOTE!**

*These operating instructions must be thoroughly read before starting any work on or with the device, especially before commissioning! The manufacturer will not assume liability for damage or disruptions occurring as a result of non-compliance with the operating instructions.*

We reserve the right for technical modifications to the product with the aim of improving the utilization properties and further development.

### 1.4 Quality assurance

The quality assurance system of unipo GmbH has been certified acc. to DIN EN ISO 9001:2000.

### 1.5 Copyright

These operating instructions is to be treated confidentially. They are only intended for persons working with or on the device. Passing these operating instructions on to third parties without the written consent of the manufacturer is not permitted. Please address any questions to the manufacturer.



**NOTE!**

*The contents of these instructions, texts, drawings, pictures and other representations are protected by copyright law subject to industrial property rights. Any misuse is punishable.*

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## 1.6 Spare parts



**ATTENTION! Danger of damage to the device!**

**Wrong or faulty spare parts can cause damage, malfunction or even total failure of the device!**

**Only use original spare parts from the manufacturer.**

When using unapproved spare parts any claims concerning warranty, service, damage and liability against the manufacturer or his representatives, dealers and agents will become null and void.

## 1.7 Disassembly

When taking out of service clean the device and dismantle it under due consideration of applicable industrial safety and environmental regulations.



**WARNING! Danger of injury!**

**Edged components, sharp points and corners on and inside the device or on the required tools can cause injuries.**

**Any work for disassembling the device must therefore only be carried out by qualified specialists.**

Before starting disassembly work:

- Switch off the entire system and secure against switching on again.
- Physically disconnect the complete power supply from the device, relieve stored energy residues as specified
- Dispose of operating and auxiliary materials as well as rests of processing materials environmentally

## 1.8 Waste disposal

If not agreement concerning the return or waste disposal has been made, all parts should be directed to recycling after proper disassembly:

- Metal material residues are to be scrapped
- Any other components must be sorted by their material properties

**ATTENTION! Environmental hazard!**

**Electrics scrap, electronic components, lubricants and other auxiliary materials must be treated as hazardous waste.**

**Such items must be disposed of by specially approved waste disposal companies!**

## **1.9 Customer service**

The customer service of the manufacturer and authorized representatives or authorized agents nominated for the place of use are available to customers and users for technical information about the device and its use.

Information about the responsible contact person is at any time available by phone, fax, e-mail or via internet.

Apart from that, the manufacturer's personnel is permanently interested in receiving new information and experience which may arise from the utilization of the device and could be of great value for improving the utilization properties.

Technical enquiries should be addressed to the unipo<sup>®</sup> Service Department.

This department is available to you at any time under the following phone number:

unipo GmbH

Pelarstraße 21

D-64720 Michelstadt

Phone: +49 (0) 6061 704-0

Fax: +49 (0) 6061 740-160



## 2 Safety

This paragraph provides you with an overview of all important safety aspects for optimal protection of personnel as well as safe and trouble-free operation of the device.

The individual chapters additionally contain concrete safety notes, which are highlighted with symbols, for averting immediate dangers.

### 2.1 General

At the time of development and manufacture the equipment complies with the valid and established technical rules and regulations and is safe to operate. However, danger may arise from this machine if it is used unprofessionally by untrained personnel, or if it is used improperly or not for the purpose it is intended for. Each person entrusted with work on or with the machine must have read and understood the operating manual before starting work. The customer is advised to demand a written confirmation that all relevant persons have read the operating manual.

Changes of any kind as well as attachments or conversions to the machine are prohibited.

Safety, warning and operation related decals on the machine must always be kept in legible condition. Damaged decals or stickers must be immediately replaced.

Specified settings and adjustment ranges must be strictly complied with.

### 2.2 Customer's responsibility

- Always keep these operating instructions near the device and ensure access for installation, operating, maintenance and cleaning personnel at any time.
- Operate the device only in technically sound and safe condition.

Any information on industrial safety refers to regulations of the European Union valid at the time the device was manufactured. The customer is obliged to assure compliance of the specified industrial safety measures with the current status of legal statutes and to observe any new regulations over the entire period in which the machine is used. Outside of the European Union, the industrial safety legislation and regional regulations and instructions for the place of use of the device are to be complied with.

The generally valid safety notes and accident prevention guidelines as well as the valid environmental conditions for the area of use are to be observed and adhered to alongside the industrial safety notes in this operating manual.

The customer and personnel authorized by him/her are responsible for the disruption-free operation of the device as well as for unambiguous determination of responsibilities during installation, operation, maintenance and cleaning of the device

The information in these operating instructions must be fully complied with and without any limitations!

The UFP must be installed / placed under ergonomical aspects and according to applicable regulations.

## 2.3 Intended use

Equipment safety and reliability is only guaranteed if used as intended in accordance with the information in the operating manual.

The UFP serves the visualization of processes and data (visual display units and control panels) and is a replacement for old tube type display units

It is universally used on machines and plants.

Intended use also includes correct adherence to assembly, operating, maintenance and cleaning instructions.



### **ATTENTION!**

**Any other use of the device that differs from this or exceeds this is prohibited and is considered unintended!**

**Claims of any kind against the manufacturer and/or his authorized representatives resulting from damage caused by unintended use of the device are excluded.**

**The customer is solely liable for any damage resulting from unintended use.**

## 2.4 Dangers the device may present

The product has been subjected to a danger analysis. The resulting construction and design of the device correspond to the state-of-the-art.

Nonetheless, some risks remain!

The device works with high electric voltage.



### **WARNING! Danger caused by electric current!**

**Electrical power can cause severe injuries. There is a danger of life caused by electric current if the insulation or individual components are damaged.**

- Switch off the power supply and secure against switching on again before starting maintenance, cleaning or repair work.
- Before starting any work on the electric system switch off the device and check that it is free of current or voltage.

## 2.5 EMERGENCY STOP switch

The device is used within a plant and has no Emergency Stop switch installed.

The customer must therefore make sure that EMERGENCY STOP switches are installed in compliance with valid accident prevention regulations.

Operating personnel must be demonstrably informed by the customer about the location and function of the EMERGENCY STOP switches.

## 2.6 System control

The device is used in an overall plant system and serves the visualization of processes and data. The customer must make sure that the device is connected to the system control in agreement with the applicable accident prevention regulations.

For this purpose, the following points must be observed:

In case of a power failure the control system must disconnect all connection lines.

The system control must recognize an electrical short circuit and disconnect all connection phases immediately.

## 2.7 Operating personnel

The device must only be operated and serviced by authorized, qualified and instructed personnel. These persons must have received special instructions regarding any dangers that may occur.

An instructed person is a person who has learned about and, if necessary, has been instructed practically in the tasks entrusted to her/him and the possible dangers resulting from improper actions, as well as about the necessary safety features and protective measures.

Qualified personnel include those who can assess the work entrusted to them and recognize potential dangers based on their specialist training, knowledge and experience as well as their knowledge of relevant regulations.

Inexperienced personnel without profound knowledge must be trained accordingly.

Responsibilities for operation and maintenance must be clearly determined and adhered to so that there is no unclear division of competency with regard to safety.

The device must only be operated and serviced by persons who can be expected to carry out their work reliably. For this purpose, any mode of operation that adversely affects the safety of persons, the environment or the device is to be avoided.

Persons who are under the influence of drugs, alcohol or medication that affects their responsiveness may **under no circumstances** carry out work on or with the device.

When choosing personnel, attention must be paid to the regulations protecting young workers in the relevant country regarding the minimum age and, if necessary, to the job-related instructions based on this.

The operator must also ensure that no unauthorized persons work on or with the device.

Unauthorized persons, such as visitors etc., may not come into contact with the device. They must keep an appropriate safety distance.

The operator is obliged to report immediately any changes to the device, which may adversely affect the safety of the operator.





## 3 Transport, packing and storage

### 3.1 Transport inspection

Check delivery immediately on receipt for completeness and transport damage.

Do not accept delivery or only accept under proviso if there is externally recognizable transport damage. Note the extent of damage on the transport documents/delivery note of the carrier. Start complaints procedure.

Complain about hidden deficiencies as soon as they are discovered, as compensation claims can only be asserted within the applicable complaints period.

### 3.2 Packaging

The devices are delivered in various types of packaging.

The main packaging materials are cardboard and plastics (foils, foam rubber). The packaging material may also include materials to protect the packed goods against moisture or frost (e.g. bags with silica gel, anti-freeze agent, etc.).

If there is no corresponding agreement regarding the return of packaging material, the packaging material remains with the customer.



#### **ATTENTION!**

**An environmentally friendly disposal of packing material in agreement with relevant waste disposal instructions must be assured. If necessary, a waste disposal company must be entrusted with the waste disposal of the packaging material.**



*NOTE! Good for environmental protection!*

*Packaging materials are valuable raw materials and can continue to be used in many cases or sensibly reconditioned and re-cycled.*

### 3.3 Storage

After unloading, the packing units must be stored up to time of assembly in compliance with the attached shipping labels.

Packed machine parts and accessories must not be unpacked.

The following instructions apply for storage:

- Store in a dry place.
- Also, make sure that packing units are not stored outdoors. Furthermore, make sure that the floor of the warehouse is dry during storage.
- Protect against direct sunlight.
- Store in a dust-free environment.
- Avoid mechanical vibrations and accidental damage.

Check preservation measures if storage is for longer periods of more than approx. 3 months.

Under highly aggressive weather conditions the preservation may need to be renewed.

#### 3.3.1 Ambient conditions during transport and storage

Designation	Technical data
Ambient temperature	-20°C to +65°C
Temperature change	max. 5°C/min
Relative humidity	max. 85 %
Air pressure/altitude	max. 12.000 m above sea level
Condensation	none
Recovery time	2h

Table 1: Ambient conditions

## 4 Design of the UFP

The following directives and safety regulations are complied with:

Directives	Safety
Low-radiation acc. to MPR II CE-label acc. to EC-directive 89/336/EEC (DIN EN 50081-2, DIN EN 50082-2)	EN 60950 EN 60204-1

Table 2: Directives and safety regulations

### 4.1 Description of function

The video signal is physically adapted through the input module and transmitted to the electronic unit.

Here the signals are digitized, processed and transferred to the display unit for on-screen display.

Signal processing is accomplished by the unipo® video FPGA.

With the optional control unit the image can individually changed (e.g. contrast, size, position, brightness).

## 4.2 Scope of delivery

### The scope of delivery includes

- UFP (display unit, electronics unit, power supply module, input module)
- Mains cable
- Test certificate
- Technical information on input module
- Operating instructions

### Accessories (optional)

- Assembly unit (front plate, conversion kit, foot angle, etc.)
- Control unit
- 24V Power supply unit
- PC software UFP Tool
- Touch

Further accessories are available on request

## 4.2.1 Design of the UFP

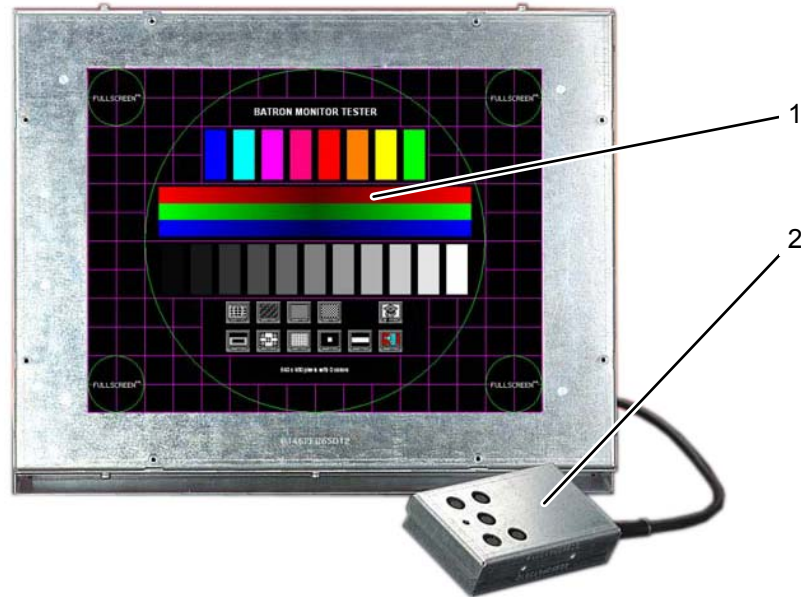


Fig. 1: UFP front view

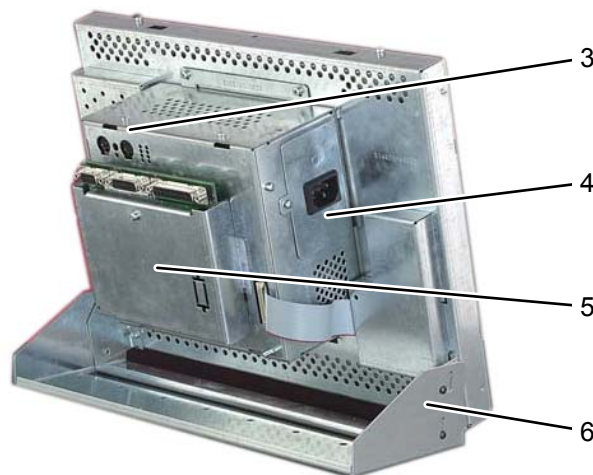


Fig. 2: UFP rear view

The UFP consists of the following modules

- |   |                         |   |                         |
|---|-------------------------|---|-------------------------|
| 1 | Display unit            | 4 | Power supply module     |
| 2 | Control unit (optional) | 5 | Input module (I-Module) |
| 3 | Electronic unit         | 6 | Foot angle (optional)   |

**Design of the UFP**

**4.2.1.1 The display unit**

The display unit has the function of visualizing the processes.  
 It is a TFT flat screen and replaces the old tube display of the original monitor.  
 Connection to the electronic unit is accomplished through the unipo® video bus.

UFP Device	Tube display of original monitor
6"	9"
8"	9" and 10"
10"	12"
12"	14" and 15"
15"	17"
17"	19" and 20"
19"	21" and 22"

Table 3: UFP-Type vs. tube display

**4.2.2 The control unit**

The control unit is used to set parameters via the on-screen display (OSD). Connection is accomplished through a 6-pin Mini-DIN-plug on the back of the device.

**4.2.3 Input module (I-Module)**

The input module serves the purpose of connecting the video plug.  
 It provides several plugging possibilities, because it can be universally used.  
 The input plug needed for the application is marked "Video-In".  
 There are mainly 2 versions available:

Basic module	Input plug
I-Module-TTL	9, 15 and 25 pin Sub-D
	12, 16 and 20 pin Ribbon cable plug
I-Module-Analog	9, 15 and 25 pin Sub-D
	12, 16 and 20 pin Ribbon cable plug
	5 x BNC, 15 pin Sub-HD

Table 4: Basic modules with existing input plugs

#### **4.2.4 Electronic unit**

The electronic unit serves the function of digitizing and processing the video signals and contains the central interface to the display unit, the unipo videobus®.

It can be mounted directly to the display, or placed remotely via an up to 5m ribbon cable.

#### **4.2.5 Power supply module**

The power supply module is used to connect the display to the mains supply by means of an inlet connector for non-heating appliances.

#### **4.2.6 Foot angle**

The foot angle enables fastening and tilting of the display and is available as an option.

#### **4.2.7 Front plate**

The front plate enables fastening of the display and is available as an option.

#### **4.2.8 Conversion kit**

Various conversion kits for direct exchange of the monitor are available as options.

### 4.3 Technical data

The device has been developed in accordance with IEC204-3 for use as electronic equipment for machines and plants.  
It has been designed as universally usable monitor replacement using flat screen technology for 24-hour industrial use.

Connection	AC version – inlet connector for non-heating appliances DC version – 4-pin connecting plug
Supply voltage	AC version 84 V <sub>AC</sub> - 264 V <sub>AC</sub> , switched-mode power supply (SMPS) optional DC version 18 V <sub>DC</sub> - 32 V <sub>DC</sub> , switched-mode power supply (SMPS)
Input power	up to max. 40 W (depending on display type)
Interface	depending on I-module variant used
Degree of protection	front side IP 65 <sup>1</sup> ; back side IP 20
Frequency	horizontal min./max. 12 / 100 kHz vertical min./max. 40 / 100 Hz
Display protection	3mm Conturan screen with interference optical glare suppression glass
Reliability MTBF	Background illumination 50,000 h <sup>2</sup> ; electronics 75,000 h
Weight	approx. 6 kg (depending on display type)
Video modes	TTL, EGA, CGA, BAS, RGB, Comp. Sync., Interlace, Sync. to green, VGA, and others
Special features	<ul style="list-style-type: none"> <li>• meets the requirements of video workstations</li> <li>• plug&amp;play setting in connection with the unipo® input modules</li> <li>• 16 user specific image settings can be stored</li> <li>• up to 128 image formats in supplied library</li> <li>• Fine tuning of screen parameters via OSD and control unit</li> <li>• unipo® video FPGA</li> </ul>

Table 5: Technical data

<sup>1</sup> In connection with unipo® installation accessories

<sup>2</sup> Brightness < 50% of the original value at 25°C, depending on display type



### 4.3.1 Optical data of the different UFP

Model	Resolution Pixels	Viewing angle H/V	Contrast ratio	Brightness
6"	640 x 480	± 50° / -45° +35°	typ. 300:1	typ. 350 cd/m <sup>2</sup>
8"	640 x 480	± 65° / -60° +50°	typ. 500:1	typ. 350 cd/m <sup>2</sup>
10"	640 x 480	± 65° / -45° +65°	typ. 500:1	typ. 350 cd/m <sup>2</sup>
10"	800 x 600	± 70° / -60° +50°	typ. 500:1	typ. 350 cd/m <sup>2</sup>
12"	800 x 600	± 65° / -75° +45°	typ. 500:1	typ. 350 cd/m <sup>2</sup>
15"	1024 x 768	± 65° / -60° +50°	typ. 450:1	typ. 250 cd/m <sup>2</sup>
17"	1280 x 1024	± 89° / ± 89°	typ. 1000:1	typ. 280 cd/m <sup>2</sup>
19"	1280 x 1024	± 89° / ± 89°	typ. 1000:1	typ. 250 cd/m <sup>2</sup>

Table 6: Optical data of the different UFP

All measurements are approximate values.

### 4.3.2 Display measurements of the different UFP



Fig. 3: The UFP-family

#### Display measurements

Model	Image size (mm)	UFP W x H x D (mm)	Electronic unit W x H x D (mm)
6"	133 x 90	230 x 150 x 40	170 x 110 x 160 (can be mounted in different variants)
8"	171 x 128	215 x 172 x 40	
10"	211 x 159	255 x 220 x 40	
10"			
12"	246 x 184	333 x 255 x 50	
15"	304 x 228	385 x 295 x 50	
17"	338 x 270	425 x 345 x 50	
19"	376 x 270	445 x 372 x 50	

Table 7: Display measurements of the different UFP

All measurements are approximate values.

### 4.3.3 Ambient conditions during operation

Designation	Technical data
Test	acc. to IEC 68-2-1 (Test Ab), IEC 68-2-2 (Test Bb), IEC 68-2-14 (Test Nb)
Test conditions	Device ready for operation and switched on
Test result	Device works to specification during test
Ambient temperature	0°C to +55°C
Temperature change	max. 0.5°C/min
Relative humidity	10 % to 85 %
Absolute humidity	max. 30 g/m <sup>3</sup>
Air pressure/altitude	max. 3.000 m above sea level
Condensation	none

Table 8: Ambient conditions during operation

### 4.3.4 Electric safety

Designation	Technical data
Classification	acc. to DIN VDE 0113 (IEC 204-1), DIN VDE 0160, DIN 0411 Part 1 (IEC 348), DIN VDE 0505 (IEC 950, EN 60950)
Degree of protection	1

Table 9: Technical data, electric safety



## 5 Installation and start-up



**WARNING! Danger of injury!**

Installation and assembly work may only be carried out by trained technical staff while observing the safety instructions.

### 5.1 Measures before installation

Before installation, make sure that the machine is device is complete and that there are no deformations, scratches or other damage which could indicate a fall having occurred.

Before installation the plant must be brought to a safe condition, because the device is not equipped with an On/Off-switch, but is switched on and off via the plant.



**WARNING! Danger of injury!**

Installing a damaged or incomplete device can lead to severe personal injury or material defects. Only install completely intact devices.



**WARNING!**

In order to enhance safety and to assure the interference immunity in accordance with valid European standards, the control unit must be connected to an earthed conductor, before starting the device. This connection is made via the threaded bolt on the back of the housing.



**WARNING!**

The remote control must only be connected to or disconnected from the input module with the device switched off, as otherwise the device may get damaged!



**WARNING!**

Before plugging on supply and interface cables the assembly personnel must discharge themselves via a suitable earth connection, to avoid any electrostatic discharge via plug pins!

### 5.1.1 Measures for compliance with the electromagnetic compatibility (EMC)

This device complies with the basic European standards EN 50081-2 for interference transmission in industrial applications, as well as EN 50082-2 for interference immunity in industrial applications, as long as these installation instructions have been adhered to:

- Before plugging in interface cables, the device must be disconnected from the supply voltage.
- The operating personnel must be free of static charges (touch earthing surface).
- Transverters must be wired with filters.  
These filters must be of such size, that interference signals are either completely eliminated or their level is dampened down to a insignificant level.

In addition to this the following measures must be applied in order to avoid wanted signals being affected by interference signals:



#### **ATTENTION!**

##### **Ensure equipotential bonding!**

- Connect all metal parts of a housing (control cabinet) ensuring large area contact and electric conductivity.
- Do not place the connecting points on a painted surface, because paint has an electrically insulating effect.  
Use contact or serrated washers for such connections.
- For screening use only cables with screening mesh.
  - Use metal or metal coated plugs to ensure good screening connection of the lines.
  - Always ensure large area connection of screening elements.
  - For cables conducting digital signals ensure large area connection and good electric conductivity of cable screens at both ends (use screen bus)
  - For cables conducting analog signals ensure single side large area connection and good electric conductivity of the cable screen.
- Do not route wanted signal lines directly parallel to power cables; therefore do not run both types of cable through a common cable duct or control box.
- Keep a sufficient distance between interference susceptible wanted signal lines and any possible source of interference.  
The distance must be at least one meter, but can be reduced when using metal screening plates.

- Route lines, which belong together by signal (e. g. feed and return lines), either with very little distance from each other, or twist them together.
- Route wanted signal lines and the associated lines for equipotential bonding close together and keep these cables as short as possible.
- Route all lines close to earthing areas and avoid unnecessary routing ways and cable lengths.
- Run wanted signal lines only from one level into the device (control cabinet).

### 5.2 Installation

The installation of the UFP depends on the following factors:

- chosen optional accessories  
Optional accessories are delivered with detailed installation instructions. These operating instructions describe the installation of the UFP by means of front plate and clamping claws.
- chosen input module  
These operating instructions contain detailed installation instructions.

#### 5.2.1 General installation procedure

- Install optional accessories.
- Plug the input module into the socket on the back of the UFP provided for this purpose and fasten it with the supplied assembly material and the covering hood (if not delivered in assembled state).
- Connect the protective earthing acc. to VDE.
- Connect the signal connection.
- If necessary connect the control unit.
- Connect the mains cable (depending on power supply module used).

The UFP-Chassis is provided with ventilation openings, which must never be blocked during operation. Ensure sufficient air ventilation.



#### **WARNING! Danger of overheating!**

**During operation of the unit an insufficient air circulation can lead to overheating and therefore failure of the device! The ventilation openings must always be kept clear.**



### 5.2.2 Fastening of the UFP on the optional front plate by means of clamping claws

Special clamping claws for fastening the UFP to the front plate are available.

Assembly of the clamping claws:

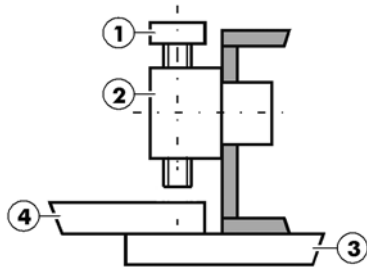


Fig. 4: Assembly of clamping claws 1

1. Turn screw 1 into clamping claw 2.

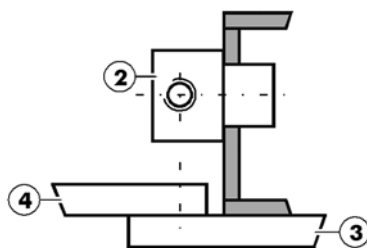


Fig. 5: Assembly of clamping claws 2

2. Turn clamping claw 2 and screw 1 parallel to the front plate 3.
3. Insert clamping claw 2 into rectangular slot 16 x 8 mm

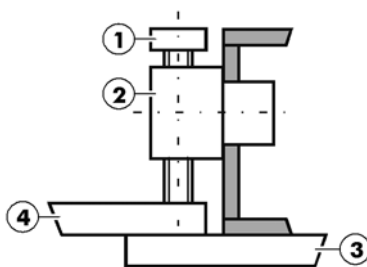


Fig. 6: Assembly of clamping claws 3

4. Turn clamping claw 2 on screw 1 by 90°.
5. Tighten screw 1 against receptacle plate 4.

## 5.3 Connections

### 5.3.1 Video connection

The devices of the UFP-family can be connected to various video sources via corresponding input modules.

These include analog (e.g. VGA or BAS) as well as digital (e.g. EGA) input signals:

- **Analog signals**  
feature separated H-Sync / V-Sync, Composite Sync or Sync to green.  
The display of interlace formats is possible.
- **Digital signals**  
Feeding with one or two bit per color or with a total of four bit (RGB plus HI).  
Six different variants are available for HI-signal processing.  
Synchronization is achieved via separate H-Sync and V-Sync or via a composite Sync-Signal.  
The processing of interlace formats is possible.

### 5.3.2 AC - Version

The UFP can be connected to the 84 V<sub>AC</sub> – 264 V<sub>AC</sub> voltage supply by means of an inlet connector for non-heating appliances. The UFP has no additional On/Off-switch.



**WARNING! Danger caused by electric current!**

**Improper connection causes danger of electric shock.**

**The structure of the device is in accordance with degree of protection 1. Before connecting the UFP to the voltage supply the protective earth must first be connected through the DIN/IEC inlet connector for non-heating appliances. The corresponding connecting cable must always have an earth conductor.**

**Any interruption of the earth conductor inside or outside the device is prohibited for safety reasons!**

### 5.3.3 DC - Version

The UFP must be connected to the 18 V<sub>DC</sub> - 32 V<sub>DC</sub> voltage supply by means of the connecting plug. Correct polarity must be assured. The polarity of the input voltage is identified.



**WARNING! Danger caused by electric current!**

**Improper connection causes danger of electric shock.**

**The structure of the device is in accordance with degree of protection 1. Before connecting the UFP to the voltage supply the protective earth must first be connected. On the UFP this is accomplished via a screw connection on the earthing bolt on the back of the metal housing.**

**Any interruption of the earth conductor inside or outside the device is prohibited for safety reasons!**

## 5.4 Start-up

### 5.4.1 Measures before starting the UFP

**Please observe before starting the device:**

- Check all previously loosened screw connections for tight fit.
- Check all previously loosened plug/cable connections for tight fit.
- Check whether all previously removed covers are properly installed again.
- Make sure that all tools, materials and other equipment used were removed again from the work area.
- Clean up the work area and remove any substances, such as fluids or similar, that may have leaked out.
- Make sure that all safety features on device and system are restored to good working order.

### 5.4.2 Starting the device

1. Switch on the machine.
2. The device will run an automatic setup process (duration approx. 10 sec.).  
The screen shows the corresponding image.
3. If the image quality is sufficient, the installation process can be quit at        at this point.
4. If the image quality is not sufficient, further manual adjustments can be made.  
For information on manual adjustment of the UFP refer to the following chapters:  
Chapter 6 Software description  
Chapter 8 Faults

## 6 Software description

This description applies for UFP-units with firmware version 06/04/00 or higher.

The version number appears in the On-Screen-Display when booting or can be interrogated via the menu (GLOBAL SETTINGS / Version).

### 6.1 General information

The UFP process different video signal from various sources.

The transient response to correct display is adjusted as follows:

- automatically by the unipo® video FPGA and an integrated micro controller by means of the integrated format library
- automatically by the UFP (if no matching parameters are available in the integrated format library)
- manual configuration by the user (readjustment of parameters after the automatic adjustment is possible)

The manual readjustment takes place via a cable linked control unit in connection with an OSD (On-Screen-Display).

The settings may have a name assigned to them and stored as user settings.

If the user does not interfere or has no control unit at hand, the setting will be automatically saved after a short delay.

### 6.2 Automatic configuration of parameters

After initial switching on the UFP will browse through the integrated format library.

The matching formats for the input signal will be displayed on screen in the menu SELECT in form of a list.

If no selection is made with the navigation keys [▶] and [▶] within a certain period of time, the first displayed value will automatically be accepted and saved.

### 6.3 Manual configuration of parameters

Each menu can be individually edited via a cable linked control unit.

#### 6.3.1 The control unit

The control unit consists of the following elements:



Fig. 7: Control unit

- |   |                           |   |                          |
|---|---------------------------|---|--------------------------|
| 1 | Function key ESC (Escape) | 5 | Navigation key [▶]       |
| 2 | Navigation key [◀]        | 6 | Function key [↵] (Enter) |
| 3 | Function key assignment   | 7 | Function key [F]         |
| 4 | Connecting cable to UFP   | 8 | Control unit             |

Symbol	Function	Explanation
ESC	Escape	To exit the menu without saving
▶	Navigation key right	To navigate in the menu and to set parameters (right)
◀	Navigation key left	To navigate in the menu and to set parameters (left)
↵	Enter	Selection/activation of menu and confirmation of settings
F	Function key	Automatic setting of the corresponding parameter or special function

Table 10: Function keys on control unit

## 6.4 Manual configuration with control unit

The keys on the control unit are used as follows:

- From ongoing operation the function key [←] is used to open the menu structure, starting with the main menu SELECT. The names of the currently set format and the current frequencies are displayed.
- The navigation key [▶] opens the next main menu window, the key [◀] brings you back to the previous menu screen. The navigation keys are used to select the parameters in the corresponding sub-menu.
- The selected menu must first be activated with the [←]-key, before the corresponding parameter can be edited/adjusted.
- The navigation keys [▶] and [◀] are used to set the following parameters.
- The function key [F] is used to set the parameters automatically. The system will in this case suggest matching values or reset the values to standard.
- The selected settings or newly adjusted parameters are confirmed with the [←]-key, the changes are accepted and the main menu window will open.
- Pressing the function key [ESC] deletes the set parameters without saving any changes, exits the corresponding sub-menu and returns to the main menu window.
- Longer pressing of the function key [ESC] hides the OSD, a short actuation of the function key [ESC] shows the OSD again.
- In the main menu NAME a name can be defined for the new format. This is automatically saved to one of 16 memory locations; once all 16 locations are used, the oldest one will be overwritten.
- The set changes are saved in the menu EXIT/SAVE.

 **NOTE!**

*If no input is made over a period of 10 minutes, the data will be automatically saved under the current format name (only with write protection deactivated) before exiting the menu.*

 **ATTENTION!**

**If the input signal changes while the user is in a menu, this menu will automatically quit, all previously made changes, that had not been saved, will be lost.**



### 6.5 UFP menu structure

Main menu	Sub-menu	Description
SELECT		To select a pre-determined format, Auto-Setup
SAMPLE RATE		To set the sample rate
PHASE		To set the phase angle
HORZ. EXPANSION		To set the horizontal image size
HORZ. POSITION		To set the horizontal image position
VERT. EXPANSION		To set the vertical image size
VERT. POSITION		To set the vertical image position
MISC. SETTINGS		Miscellaneous settings
	Colors	To set the colors
	Contrast	To set the contrast
	RGB Offset	To set the black-level
	Write prot.	To activate/deactivate write protection
	Format info	Information to the currently selected format
NAME		To edit the format name
GLOBAL SETTINGS		General device settings
	Brightness	To set the brightness
	ScrSaver	To set the screensaver
	Sensitivity	To set the sensitivity of format detection
	Sync Filter	Additional filtering of the Sync-Signals

Table 11: Menu structure part 1

Main menu	Sub-menu	Description
GLOBAL SETTINGS	SOG Threshold	To set the threshold for the Sync-separation
	Version	Information to the UFP version (not editable)
	Environment	Operating status
	Restore	To reset the device to its standard settings
	Advanced set.	Advanced settings (for service purposes)
EXIT / SAVE		To exit the menu
	Discharge	To exit the menu without saving (global settings will always be saved)
	Save	To exit the menu with saving

Table 12: Menu structure part 2

## 6.6 Individual UFP menu options

Menus that are not selected normally appear in the OSD indented, selected menus are left-justified and highlighted in color.

If no operations take place over a period of 10 minutes, the system will automatically exit the menu. If the active format is not write protected, any changes will thereby be saved.

 **NOTE!**

*The illustrations shown here only serve as examples.*

*The displayed names/settings/frequency data may vary from user to user.*

### 6.6.1 Manually setting the pre-defined format - `SELECT`

The first selection window is the menu `SELECT`.

The currently valid parameters are displayed.

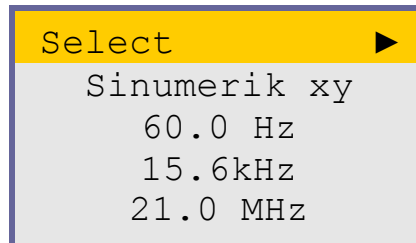


Fig. 8: Menu `SELECT`

From this menu an existing format can be selected or a new calculation can be automatically made.

- Press key [`←`] to open the menu `SELECT`.

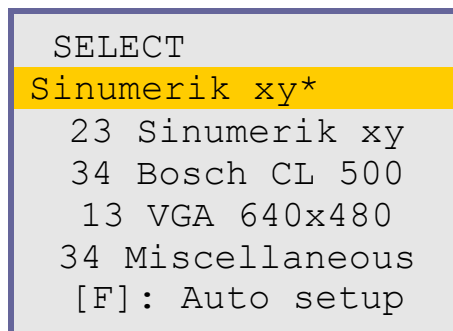


Fig. 9: Menu window `SELECT`

- Use the navigation keys [`▶`] (down) and [`◀`] (up) to select a format. The currently valid line is highlighted in color.

or

- Press function key [`F`] to run an `Auto setup`; i.e. the system will automatically reset the parameters without accessing the already available formats in the library.
- Press key [`←`] to activate the selected format. (The changeover will take place immediately and the main menu `SELECT` will be displayed again.)

or

- Press key [`ESC`] to reject the changes. (The main menu `SELECT` is displayed again.)

Changes must be saved in the main menu `EXIT/SAVE`.

 NOTE

*The associated settings are always loaded directly, so that the event can be checked immediately.*

*The format selected last will be displayed. Vertical, horizontal and pixel frequencies will be displayed as additional information.*

### 6.6.2 Setting the sample rate - SAMPLE RATE

The next selection window is the `SAMPLE RATE` menu.

The currently valid parameter is displayed.

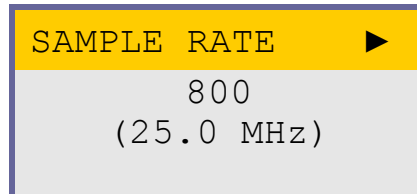


Fig. 10: Menu `SAMPLE RATE`

Here you can set the frequency of video signal digitizing per line.

- Press key `[←]` to open the menu `SAMPLE RATE`.

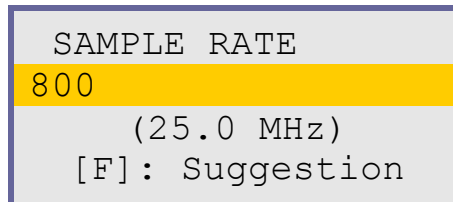


Fig. 11: Menu window `SAMPLE RATE`

- Select a sample rate with the navigation keys `[▶]` and `[◀]`.  
The currently valid line is highlighted in color.
- or
- Press function key `[F]` to automatically determine a new sample rate.
  - Press key `[←]` to activate the selected parameter.  
(The changeover will take place immediately and the main menu `SAMPLE RATE` will be displayed again.)
- or
- Press key `[ESC]` to reject the changes.  
(The main menu `SAMPLE RATE` is displayed again.)

Changes must be saved in the main menu `EXIT/SAVE`.

Software description

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 NOTE

*Each video module generates in each line an exactly specified number of pixels. For an exact display both values must match exactly.*

*The specified value does not correspond with the horizontal resolution, but is always higher.*

*For example, the correct sample rate for Standard VGA with a resolution of 640 x 480 pixels is normally 800.*

 NOTE

*Changing this parameter will also change the horizontal size of the image. However, this can be corrected later in the menu EXPANSION. With each adjustment of the sample rate the image position is also regulated.*

 NOTE

*If the image shows slightly visible vertical stripes, the distance of which changes when adjusting the sample rate, the sample rate is most likely incorrect.*

*These stripes may appear as darker or brighter background areas, or as areas in which vertical lines appear wider, narrower, clearer or more blurred than in the rest of the image.*

*The stripes are clearly visible when starting automatic adjustment of the sample point by pressing the key [F] for a longer time. The stripes will then move horizontally through the image for a short time.*

*With a high number of distinct contrasts in the image the sample rate can be set easier (Moire pattern/images with a lot of text).*

### 6.6.3 Adjust the phase angle - PHASE

The next selection window is the menu PHASE.

The currently valid parameter is displayed.

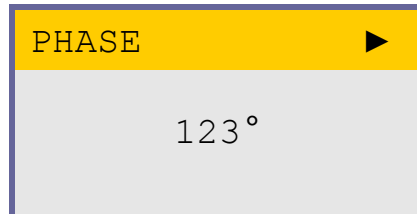


Fig. 12: Menu PHASE

Here the phase angle can be set.

- Press key [←] to open the menu PHASE.

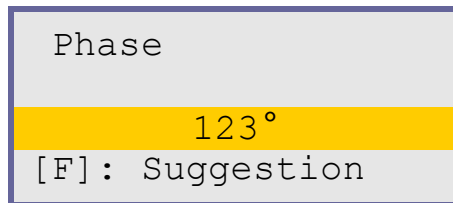


Fig. 13: Menu window PHASE

- Select a phase with the navigation keys [▶] and [◀].  
The currently valid line is highlighted in color.
- or
- Press function key [F] to automatically determine a new phase angle.  
This may take a few seconds, during which the image may probably not be stable.
  - Press key [←] to activate the selected parameter.  
(The changeover will take place immediately and the main menu PHASE will be displayed again.)
- or
- Press key [ESC] to reject the changes.  
(The main menu PHASE is displayed again.)

Changes must be saved in the main menu EXIT/SAVE.

#### NOTE

*An incorrectly set phase angle for sampling can be recognized by gritty appearance at high contrast transition or by a generally blurred display.  
The quality of the automatic setting depends on the content of the image, good contrasts enhance the result.*

Software description

**6.6.4 Adjust horizontal image size - HORZ. EXPANSION**

The next selection window is the menu HORZ. EXPANSION.

The currently valid parameter is displayed.

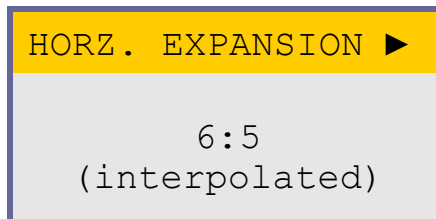


Fig. 14: Menu HORZ EXPANSION

Here the horizontal expansion factor can be set.

- Press key [←] to open the menu HORZ. EXPANSION.

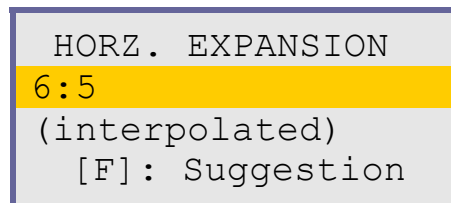


Fig. 15: Menu window HORZ EXPANSION

- Use the navigation keys [▶] and [◀] to set a value between factor 1:1 and 3:1. The currently valid line is highlighted in color. Besides the currently set factor the information in parenthesis indicates whether the expansion is achieved by interpolation (*interpolated*) or by duplication (*duplicated*) or if no expansion (*not expanded*) takes place.

or

- Press function key [F] to automatically determine a new horizontal expansion.
- Press key [←] to activate the selected parameter. (The changeover will take place immediately and the main menu HORZ. EXPANSION appears again.)

or

- Press key [ESC] to reject the changes. (The main menu HORZ. EXPANSION appears again.)

Changes must be saved in the main menu EXIT/SAVE.

**! ATTENTION!**

**With each adjustment the horizontal image position is corrected.**



 NOTE

*The properties not expanded, interpolated **and** duplicated of the factor are not separately adjustable.*

*Some factors are only available as duplicated.*

 NOTE

*For some UFP-models under the setting 1:1 there is the additional factor 8:9 (elimin. Column).*

*In this setting each ninth column is eliminated and the image size is reduced to  $\frac{8}{9}$ .*

*This setting is particularly intended to show text formats with a horizontal resolution of 720 pixels (e.g. VGA text) in a display with a resolution of 640x480.*

### 6.6.5 Adjust horizontal image size - HORZ. POSITION

The next selection window is the menu HORZ. POSITION.

The currently valid parameter is displayed.

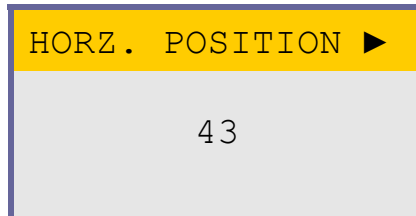


Fig. 16: Menu HORZ POSITION

Here the horizontal image position can be adjusted.

- Press key [←] to open the menu HORZ. POSITION.

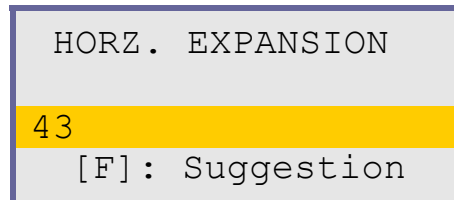


Fig. 17: Menu window HORZ. POSITION

- Select a position value with the navigation keys [▶] and [◀].  
The currently valid line is highlighted in color.
- or
- Press function key [F] to automatically determine a new horizontal position.
  - Press key [←] to activate the selected parameter.  
(The changeover will take place immediately and the main menu HORZ. POSITION appears again).

or

- Press key [ESC] to reject the changes.  
(The main menu HORZ. POSITION appears again.)

Changes must be saved in the main menu EXIT/SAVE.

 NOTE

*The value suggested by [F] is not always exact.  
If required, the value must be manually adjusted.*

 NOTE

*The area read in by the input signal is adjusted; not the image position that appears in the display.*

*This area is always centred.  
It may therefore happen, that parts of the image are missing, even though it does not even touch the margin. These missing parts of the image will become visible when shifting the image to right or left.*

*If image information is missing on either side, the value in the menu *Horz . Expansion* must be reduced.*

### 6.6.6 Adjusting horizontal image size - VERT. EXPANSION

The next selection window is the menu VERT. EXPANSION.

The currently valid parameter is displayed.

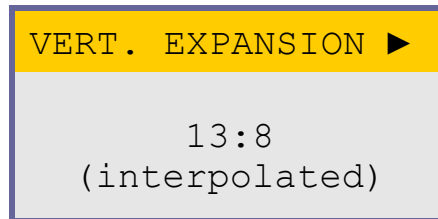


Fig. 18: Menu VERT EXPANSION

Here the vertical expansion factor can be set.

- Press key [←] to open the menu VERT. EXPANSION.

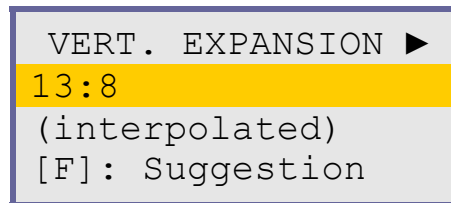


Fig. 19: Menu window VERT. EXPANSION

- Use the navigation keys [▶] and [◀] to set a value between factor 1:1 and 5:1. The currently valid line is highlighted in color. Besides the currently set factor the information in parenthesis indicates whether the expansion is achieved by interpolation (*interpolated*) or by duplication (*duplicated*) or if no expansion (*not expanded*) takes place.

or

- Press function key [F] to automatically determine a new vertical expansion.
- Press key [←] to activate the selected parameter. (The changeover will take place immediately and the main menu VERT. EXPANSION appears again).

or

- Press key [ESC] to reject the changes. (The main menu VERT. EXPANSION appears again.)

Changes must be saved in the main menu EXIT/SAVE.

**! ATTENTION!**

**With each adjustment the vertical image position is corrected.**

 NOTE

*The properties not expanded, interpolated **and** duplicated of the factor are not separately adjustable.*

*Some factors are only available as duplicated.*

### 6.6.7 Adjusting vertical image position - VERT. POSITION

The next selection window is the menu VERT. POSITION.

The currently valid parameter is displayed.

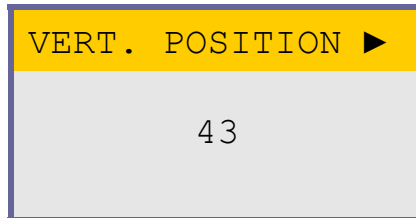


Fig. 20: Menu VERT POSITION

Here the vertical image position can be adjusted.

- Press key [←] to open the menu VERT. POSITION.

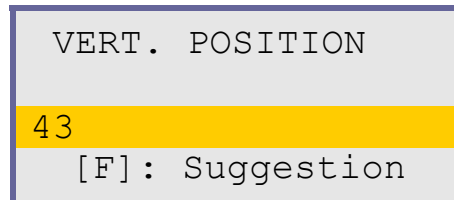


Fig. 21: Menu window VERT. POSITION

- Select a position value with the navigation keys [▶] and [◀].  
The currently valid line is highlighted in color.
- or
- Press function key [F] to automatically determine a new vertical position.
  - Press key [←] to activate the selected parameter.  
(The changeover will take place immediately and the main menu VERT. POSITION appears again.)

or

- Press key [ESC] to reject the changes.  
(The main menu VERT. POSITION appears again.)

Changes must be saved in the main menu EXIT/SAVE.

 NOTE

*The value suggested by [F] is not always exact.  
If required, the value must be manually adjusted.*

 NOTE

*The area read in by the input signal is adjusted, but not the image position that appears in the display.*

*This area is always centred.  
It may therefore happen, that parts of the image are missing, even though it does not even touch the margin. These missing parts of the image will become visible when shifting the image up or down.*

*If image information is missing at top or bottom, the value in the menu *Vert. Expansion* must be reduced.*

### 6.6.8 Miscellaneous settings - MISC. SETTINGS

The next selection window is the menu MISC. SETTINGS.

This menu window contains adjustment possibilities which normally do not need to be adjusted.

The structure is slightly different, because it has additional sub-menus. For reasons of clarity all sub-menus are shown here. In reality only four lines are displayed at a time.

The header MISC. SETTINGS is always displayed.

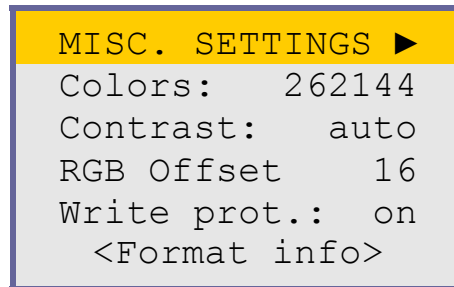


Fig. 22: Menu MISC SETTINGS

- Select the different sub-menus with the navigation keys [▶] and [◀]. The currently valid line is highlighted in color.
- Press key [↵] to open the corresponding sub-menu.



### 6.6.8.1 Setting colors - Colors

The first selection window under MISC. SETTINGS is the menu Colors.

This is where the setting of colors takes place.

The currently valid parameter is displayed.

- Press key [←] to open the menu Colors.

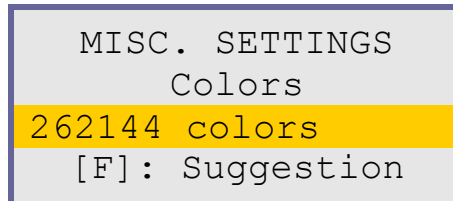


Fig. 23: Menu Colors

- Select the color settings with the navigation keys [▶] and [◀]. The currently valid line is highlighted in color.

or

- Press the function key [F] to interrogate the coding of the input signal. In case of a (digital) TTL-module, 64 Colors will be automatically set, otherwise the setting 262144 Colors will be chosen.
- Press key [←] to activate the selected parameter. (The changeover will take place immediately and the main menu MISC. SETTINGS appears again.)

or

- Press key [ESC] to reject the changes. (The main menu MISC. SETTINGS appears again).

Changes must be saved in the main menu EXIT/SAVE.



*There are 8 possible options for colors available:*

262144 colors (real colors)	for analog video signals
64 colors (64 colors)	for TTL video signals
64 gray levels	64 gray levels
4 gray levels	4 gray levels
4 grays inverse	4 gray levels negative inverse
yellow on black	yellow against black background
white on blue	white against blue background

Table 13: Possible color settings

## Software description

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### 6.6.8.2 Adjust the contrast - Contrast

The next selection window under `MISC. SETTINGS` is the menu `Contrast`.

Here the amplification of the video signal is adjusted.

The currently valid parameter is displayed.

- Press key `[←]` to open the menu `Contrast`.

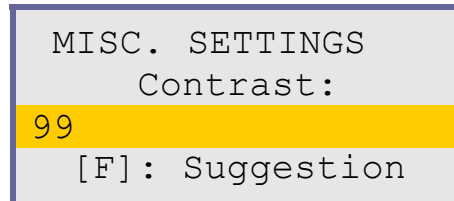


Fig. 24: Menu `Contrast`

- Select the contrast with the navigation keys `[▶]` and `[◀]`.  
The currently valid line is highlighted in color.  
You can choose between `Auto` and the settings `0` for low contrast to `100` for high contrast.

or

- Use the function key `[F]` to reset the setting to `AUTO`.
- Press key `[←]` to activate the selected parameter.  
(The changeover will take place immediately and the main menu `MISC. SETTINGS` appears again.)

or

- Press key `[ESC]` to reject the changes.  
(The main menu `MISC. SETTINGS` appears again.)

Changes must be saved in the main menu `EXIT/SAVE`.

### 6.6.8.3 Adjusting the black level – RGB Offset

The next selection window under `MISC. SETTINGS` is the menu `RGB Offset`.

This sub-menu is used to adjust the black level (RGB).

The currently valid parameter is displayed.

- Press key `[←]` to open the menu `RGB Offset`.

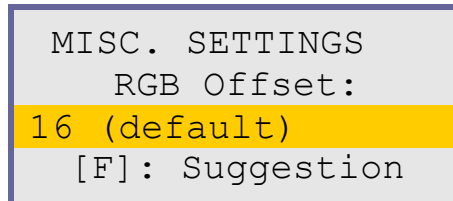


Fig. 25: Menu Contrast

- Select the black level (RGB) with the navigation keys `[▶]` and `[◀]`. The currently valid line is highlighted in color. You can choose setting from -63 to 63.

or

- Use the function key `[F]` to reset the setting to the default value.
- Press key `[←]` to activate the selected parameter. (The changeover will take place immediately and the main menu `MISC. SETTINGS` appears again.)

or

- Press key `[ESC]` to reject the changes. (The main menu `MISC. SETTINGS` appears again.)

Changes must be saved in the main menu `EXIT/SAVE`.

#### NOTE

*Changing this parameter makes sense when a dark background that should appear in black, is not really black. Increasing this value reduces the brightness of the background.*

#### 6.6.8.4 Setting the write protection - Write Prot.

The next selection window under MISC. SETTINGS is the menu Write prot..

Here the write protection for the formats is set.

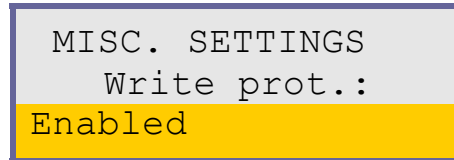


Fig. 26: Menu Write Prot.

The currently valid parameter is displayed.

- Press key [←] to open the menu Write prot..
- Use the navigation keys [▶] and [◀] to activate (enabled) or deactivate (disabled) the write protection.

The following message appears on the screen:

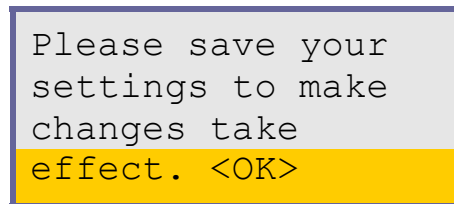


Fig. 27: Menu Write Prot. - Safety dialog

- Press key [←] to activate the selected write protection. (The main menu MISC. SETTINGS appears again.)

or

- Press key [ESC] to reject the changes. (The main menu MISC. SETTINGS appears again.)

Changes must be saved in the main menu EXIT/SAVE.

 **NOTE**

*The write protection is a feature of the set format; the format must therefore be saved before the write protection is activated.*

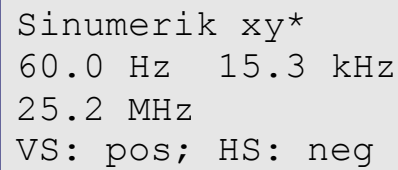
#### 6.6.8.5 Calling up format information - Format info

The next selection window under MISC. SETTINGS is the menu Format info.

Here a short information about the currently detected input signal is displayed.

The currently valid parameters are displayed.

- Press key [←] to open the menu Format Info.



```
Sinumerik xy*
60.0 Hz  15.3 kHz
25.2 MHz
VS: pos; HS: neg
```

Fig. 28: Menu Format info

- Press any key to exit this menu.  
(The main menu MISC. SETTINGS appears again.)

#### NOTE

*The displayed values are vertical, horizontal and pixel frequency, as well as Sync-type or polarity.*

### 6.6.9 Editing the format name - NAME

The next selection window is the menu NAME.

Here you can assign a new format name.

The currently valid format name from the library is displayed.

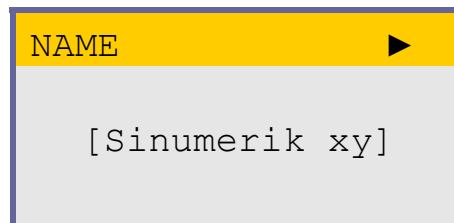


Fig. 29: Menu NAME

The format can have a name of up to 13 characters. If the format was loaded from the library, it will automatically take this name.

**When editing the format name the key functions are assigned as follows:**

- Use the navigation keys [▶] and [◀] to select the characters for the currently selected position.
- Press the [ESC] key to move the cursor one digit to the right.
- Press the [F] key to delete the character to the left of the cursor; the following characters will move up accordingly.
- Use the key [↵] to confirm the new name.

The following dialog appears:

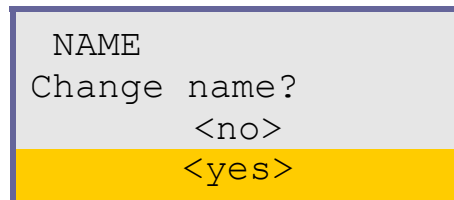


Fig. 30: Menu NAME - Safety dialog

- Use the navigation keys [▶] and [◀] to choose between <no> and <yes>. The currently valid line is highlighted in color.
- Press key [↵] to confirm the selection.  
Press <yes> to accept the changes, press <no> to exit the menu without accepting any changes.

### 6.6.10 Global device settings – GLOBAL SETTINGS

The next selection window is the GLOBAL SETTINGS menu.

This menu window contains adjustment options, which are not just limited to individual formats, but have effect for the entire device.

The structure is slightly different, because it has additional sub-menus.

For reasons of clarity all sub-menus are shown here. In reality only four lines are displayed at a time.

The header GLOBAL SETTINGS is always displayed.

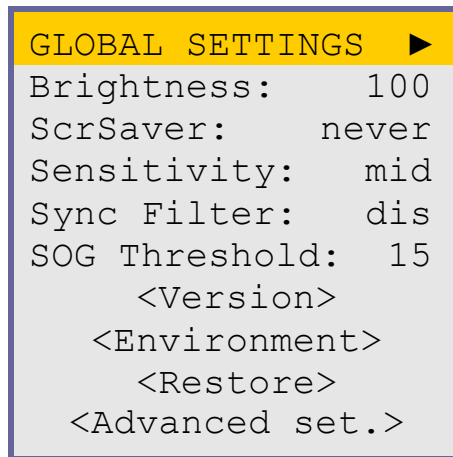


Fig. 31: Menu GLOBAL SETTINGS

- Select the different sub-menus with the navigation keys [▶] and [◀]. The currently valid line is highlighted in color.
- Press key [↵] to open the sub-menus.

### 6.6.10.1 Setting the brightness of the image – Brightness

The first selection window under GLOBAL SETTINGS is the menu Brightness.

This menu is used to set the brightness of the background illumination.

The currently valid parameter is displayed.

- Press key [←] to open the menu Brightness.

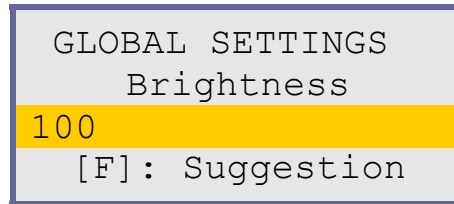


Fig. 32: Menu Brightness

- Select the brightness values with the navigation keys [▶] and [◀]. The currently valid line is highlighted in color. The value can be adjusted from 0 % to 100 % in steps of 5 %.

or

- You may use the function key [F] to set the value to maximum brightness.
- Press key [←] to activate the selected parameter and to exit the menu. (The main menu GLOBAL SETTINGS is displayed again.)

or

- Press key [ESC] to reject the changes. (The main menu GLOBAL SETTINGS is displayed again.)

Additional saving under the main menu EXIT/SAVE is not required for settings made under GLOBAL SETTINGS.



### 6.6.10.2 Setting the screensaver – ScrSaver

The next selection window under GLOBAL SETTINGS is the menu ScrSaver.

This sub-menu is used to adjust the screensaver.

The currently valid parameter is displayed.

- Press key [←] to open the menu ScrSaver.

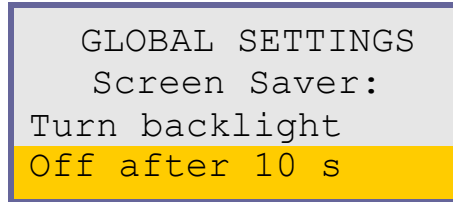


Fig. 33: Menu ScrSaver

- Select the setting with the navigation keys [▶] and [◀].  
The currently valid line is highlighted in color.  
The value can be set between *Never* (no active screensaver) and 3600 s.
- Press key [←] to activate the selected parameter and to exit the menu.  
(The main menu GLOBAL SETTINGS is displayed again.)

or

- Press key [ESC] to reject the changes.  
(The main menu GLOBAL SETTINGS is displayed again.)

Additional saving under the main menu EXIT/SAVE is not required for settings made under GLOBAL SETTINGS.

 **NOTE**

*In this case the UFP will first display a text message, before the screen switches to black.  
With the PC program "UFPTool" the user can edit the corresponding text.*

 **NOTE**

*If the video source has a screensaver to darken the screen, the UFP is able to detect this screensaver and to switch off the TFT-display in order to prolong its lifetime.  
This menu allows to set whether the screen is to be switched off and after what time.*

Software description

**6.6.10.3 Setting the sensitivity – Sensitivity**

The next selection window under GLOBAL SETTINGS is the menu Sensitivity.

This sub-menu is used to set the sensitivity for distinguishing between formats.

The currently valid parameter is displayed.

- Press key [←] to open the menu Sensitivity.

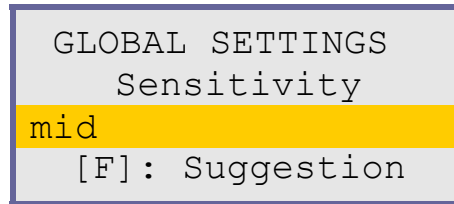


Fig. 34: Menu Sensitivity

- Select the setting with the navigation keys [▶] and [◀].  
The currently valid line is highlighted in color.  
The value can vary between low, mid, high and paranoiac.

or

- You may use the function key [F] to set the value automatically to mid.
- Press key [←] to activate the selected parameter and to exit the menu.  
(The main menu GLOBAL SETTINGS is displayed again.)

or

- Press key [ESC] to reject the changes.  
(The main menu GLOBAL SETTINGS is displayed again.)

Additional saving under the main menu EXIT/SAVE is not required for settings made under GLOBAL SETTINGS.

 NOTE

*This parameter only needs to be changed if problems arise when distinguishing between formats.*

 NOTE

*If the UFP frequently loses and reloads the format, the setting low may reduce the sensitivity.*

*If the video source provides various video formats requiring different settings, but are not detected by the UFP as being different, the setting high may be selected.*

*The setting paranoiac should only be used in exceptional cases and after consulting unipo®.*

#### 6.6.10.4 Filtering Sync-Signals – Sync Filter

The next selection window under GLOBAL SETTINGS is the menu SyncFilter.

It is used to apply an additional filtering of the Sync-Signals.

The currently valid parameter is displayed.

- Press key [←] to open the menu SyncFilter.

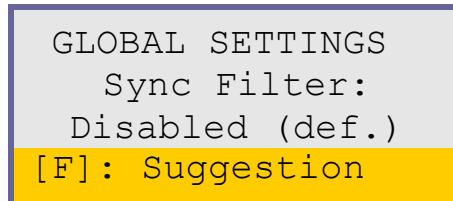


Fig. 35: Menu Sync Filter

- Select the setting with the navigation keys [▶] and [◀].  
The currently valid line is highlighted in color.  
The value can be set to either disabled (def.) (deactivated; default setting) or enabled (activated).

or

- Use the function key [F] to reset the value to default.
- Press key [←] to activate the selected parameter and to exit the menu.  
(The main menu GLOBAL SETTINGS is displayed again.)

or

- Press key [ESC] to reject the changes.  
(The main menu GLOBAL SETTINGS is displayed again.)

Additional saving under the main menu EXIT/SAVE is not required for settings made under GLOBAL SETTINGS.

 **NOTE**

*This setting may adversely affect the image definition.*

*This can be corrected by readjusting the phase angle in the menu PHASE.*

## Software description

---

### 6.6.10.5 Sync-separation – SOG Threshold

The next selection window under GLOBAL SETTINGS is the menu SOG Threshold.

The currently valid parameter is displayed.

- Press key [←] to open the menu SOG Threshold.

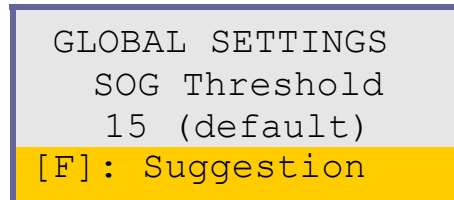


Fig. 36: Menu SOG Threshold

- Select the setting with the navigation keys [▶] and [◀].  
The currently valid line is highlighted in color.  
The values can be set between 1 and 28.
- or
- Use the function key [F] to reset the value to default (15).
  - Press key [←] to activate the selected parameter and to exit the menu.  
(The main menu GLOBAL SETTINGS is displayed again.)

or

- Press key [ESC] to reject the changes.  
(The main menu GLOBAL SETTINGS is displayed again.)

Additional saving under the main menu EXIT/SAVE is not required for settings made under GLOBAL SETTINGS.

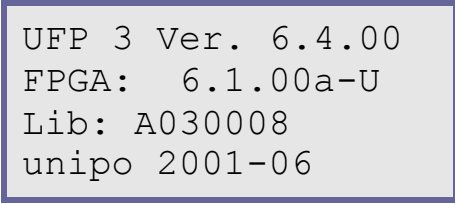
### 6.6.10.6 Showing the UFP version – Version

The next selection window under GLOBAL SETTINGS is the menu `Version`.

It shows various information on the UFP version status.

The currently valid parameter is displayed.

- Press key [`←`] to open the menu `Version`.



```
UFP 3 Ver. 6.4.00
FPGA: 6.1.00a-U
Lib: A030008
unipo 2001-06
```

Fig. 37: Menu `Version`

1. Line      Version status of firmware
2. Line      Version status of unipo<sup>®</sup> video FPGA
3. Line      Version number of format library
4. Line      Copyright information

- Press any key to exit this menu.  
(The main menu GLOBAL SETTINGS is displayed again.)

 **NOTE**

*No settings can be made.*

## Software description

---

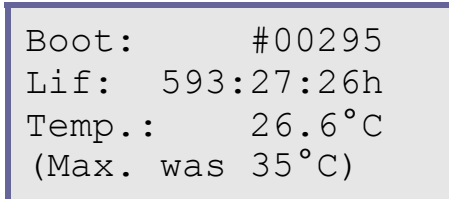
### 6.6.10.7 Showing the operating status of the device – Environment

The next selection window under GLOBAL SETTINGS is the menu Environment.

It shows the current operating status of the UFP.

The currently valid parameter is displayed.

- Press key [←] to open the menu Environment.



```
Boot:      #00295
Lif:      593:27:26h
Temp.:    26.6°C
(Max. was 35°C)
```

Fig. 38: Menu Environment

Boot shows the number of boot processes of the device

Lif shows the actual operating time of the device in hours, minutes and seconds

Temp. shows the actual temperature inside the device

Max. was shows the maximum temperature in the device that has so far been reached

- Press any key to exit this menu.  
(The main menu GLOBAL SETTINGS is displayed again.)

 **NOTE**

*No settings can be made.*

*Upon delivery the device will already indicate a certain operating time, which has accumulated during extensive device tests.*

### 6.6.10.8 Resetting the device – Restore

The next selection window under GLOBAL SETTINGS is the menu Restore.

The default settings of the UFP are reloaded and the user library is deleted.

- Press key [↔] to open the menu Restore.  
The following safety dialog is displayed:

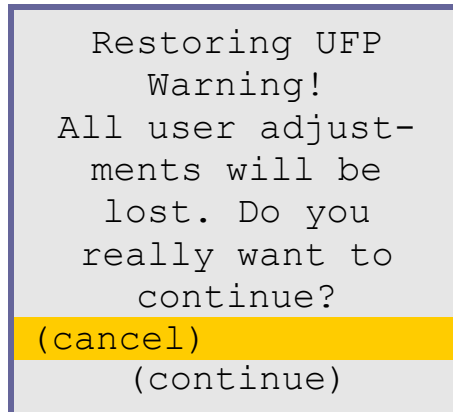


Fig. 39: Menu Restore- safety dialog

- Select the settings with the navigation keys [▶] and [◀].  
The currently valid line is highlighted in color.  
You may either choose (cancel) or (continue).
- Press key [↔] to activate the selected action.  
(The action will be executed immediately and the main menu GLOBAL SETTINGS will be displayed again.)

**! ATTENTION!**

**When confirming the dialog with (continue) , all saved user format settings will be deleted.**

**All personal settings will thus be lost.**

**👉 NOTE**

*This menu can also be opened directly after the boot process, by proceeding as follows:*

*Switch off the UFP and hold the keys [▶] and [◀] depressed when switching on, until the above window appears.*

### 6.6.10.9 Service features – Advanced set.

The next selection window under GLOBAL SETTINGS is the menu Advanced set..

Access to the "Advanced" menu is locked by a key dialog.

- Press key [←] to open the menu Advanced Set..

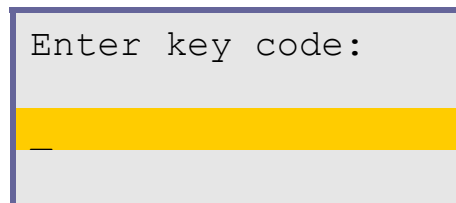


Fig. 40: Menu Advanced Settings – key dialog

- A window asking for the key code is opened.
- After entering the correct key code you have access to an extended menu.



#### **WARNING!**

**This menu has exclusively been provided for service purposes.  
Changes must only be made by personnel from unipo GmbH.  
The key code is therefore not passed on to the customer.**



### 6.6.11 Quitting and exiting the menu / saving – EXIT

The next selection window is the menu EXIT.

This completes the process and exits the menu.

- Press key [↵] to open the menu EXIT.

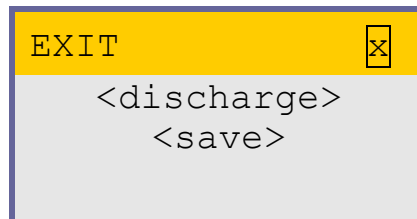


Fig. 41: Menu EXIT

- Select the settings with the navigation keys [▶] and [◀].  
The currently valid line is highlighted in color.  
You may either select <discharge> or <save>.
- Press key [↵] to activate the selected action.  
Actual settings are transferred to the user library by choosing <save> and rejected when choosing <discharge>.  
In either case the menu is exited and the OSD switched off.

If the currently loaded format is write protected a warning will be displayed, but the format can still be overwritten.

If only global settings (all adjustment options in the menu GLOBAL SETTINGS), like e.g. Brightness, were changed, saving is not required.

Global settings are automatically saved when exiting the corresponding sub-menu.

#### NOTE

*After confirmation with the setting save the saved setting will be displayed for approx. 10 seconds, before the OSD is switched off.*



## 7 Maintenance

### 7.1 Safety



**WARNING!**

In principle, work on the device must only be carried out by qualified personnel trained especially for this type of work.



**WARNING! Danger from electric current!**

Work on electrical systems may only be carried out by professional electricians while observing the safety regulations.

Before starting work, switch off electrical supply and secure against switching on again.

### 7.2 Maintenance work

The UFP does not require any special maintenance and cleaning, except the fan.

#### 7.2.1 Cleaning the UFP

Clean the visible display surface regularly with a soft and, if necessary, slightly moistened cloth.

Glass cleansing agents or special screen cleaning agents may be used. Do not scratch the glass surface.



**WARNING!**

**No fluid should enter into the device.**

**However, should this happen, take the device immediately out of service and have it checked by a qualified service engineer!**

### 7.2.2 Fan maintenance

If the UFP is continuously used, the fan must be replaced at the latest after 2 years (or approx. 20.000 operating hours).

The new fan is delivered with replacement instructions.

With the following data the fan can be directly ordered from unipo®:

Name                               DC-Fan 12V  
Spare parts number   FLL012D15010

### 7.3 Measures after maintenance work

**Please observe after maintenance work and before switching on the device:**

- Check all previously loosened screw connections for tight fit.
- Check all previously loosened plug/cable connections for tight fit.
- Check whether all previously removed covers are properly installed again.
- Make sure that all tools, materials and other equipment used were removed again from the work area.
- Clean up the work area and remove any substances, such as fluids or similar, that may have leaked out.
- Make sure that all safety features on device and system are restored to good working order.

## 8 Malfuncions

Faults on electric installations and on mechanical components must only be rectified by specially trained expert personnel.

In case of faults that cannot be rectified with the measures described hereunder, you should consult the manufacturer or a service partner authorized by the manufacturer.

### 8.1 Safety



**WARNING! Danger of injury!**

**Improper troubleshooting may lead to severe injury or even death and/or property damage. Troubleshooting may therefore only be carried out by trained and authorised technical staff while observing the safety instructions!**

### 8.2 Behaviour in case of faults



**ATTENTION!**

**The following is generally valid:**

1. In case of faults, which may impose a direct danger to persons, property and/or the operational safety, the plant must be immediately stopped via the EMERGENCY-STOP-Function.
2. In case of faults which do not lead to such consequences the plant is to be shut down via the plant control, the power supply to the device must be interrupted and properly secured against being switched on again.
3. The responsible person at the place of use must be immediately informed.
4. Have authorized expert personnel check the type fault, perform trouble shooting and rectify the fault.

### 8.3 Faults – image quality

With a perfect image the UFP displays all details without flickering and interferences, right to the edges of the screen.

The screen is completely filled without any black margins. Colour appear clearly and with high contrast.

The image quality must be checked on the basis of several different images, in order to include all image areas.

Fault	Cause	Remedy	Menu
Image with poor contrast or dark	Contrast incorrectly adjusted	Adjust contrast manually	MISC. SETTINGS Contrast
Image jumps/flickers	Terminating resistors on I-module incorrectly adapted	Consult unipo®	
		Rearrange jumpers	See chapter "Technical data sheets"
	SOG Threshold incorrectly set	Adjust SOG Threshold	GLOBAL SETTINGS SOG Threshold
		Switch Sync.Filter on/off	GLOBAL SETTINGS Sync Filter
Image parts missing	Image size/centring incorrectly adjusted	Adjust horizontal and vertical image size	HORZ. EXPANSION VERT. EXPANSION
		Adjust horizontal and vertical image position	HORZ. POSITION VERT. POSITION
	Graphics board defective	Replace graphics board	
	Poor contrast setting	Increase the contrast	MISC. SETTINGS Contrast
Image too bright	Brightness set too high	Adjust the brightness	GLOBAL SETTINGS Brightness
	Contrast set too high	Adjust the contrast	MISC. SETTINGS Contrast
Device does not start up Screen remains dark	No power supply	Consult unipo®	
		Check mains connection	
Black margins	Image size incorrectly adjusted	Correct image size	HORZ. EXPANSION VERT. EXPANSION

Table 14: Fault image quality part 1

Fault	Cause	Remedy	Menu
Ghost images/ reflections	Video cable defective or of poor quality	Replace the video cable	
	Incorrect color setting	Reduce the number of colors to 64 (other setting)	GLOBAL SETTINGS Colors
	Incorrect phase angle	Readjust the phase	PHASE
	Sync.Filter incorrectly adjusted	Adjust SOG Threshold	GLOBAL SETTINGS SOG Threshold
		Switch Sync.Filter on/off	GLOBAL SETTINGS Sync Filter
	Sample rate incorrect	Adjust the sample rate	SAMPLE RATE
Color shift	Incorrect phase angle	Adjust the phase angle	PHASE
	Graphics board defective	Replace graphics board	
Image gritty/snow	Video cable defective or of poor quality	Replace the video cable	
	Incorrect phase angle	Readjust the phase	PHASE
	Incorrect color setting	Reduce the number of colors to 64 (other setting)	MISC. SETTINGS Colors
	Terminating resistors on I-module incorrectly adapted	Consult unipo®	
Rearrange jumpers		See chapter "Technical data sheets"	
Image blurred complete screen	Incorrect phase angle	Readjust the phase	PHASE
Image blurred in vertical sections	Sample rate incorrectly set	Adjust sample rate	SAMPLE RATE

Table 15: Fault image quality part 2

### 8.4 Faults – device messages

Device messages	Cause	Remedy
No image, but OSD present	Graphics board defective	Replace graphics board
	Cable defective	Replace cable
	Control not starting up	Start up, repair control
	Wrong I-module	Replace I-module see chapter "Technical information"
	Video cable plugged in wrong (only BNC)	Connect cable correctly
No H-Sync found. Please check your video source	Missing H-Sync	Check video cable
		Replace graphics board
Wrong I-module	Wrong I-module	Replace I-module
		Replace I-module
No V-Sync found. Please check your video source	Missing V-Sync	Check video cable
		Replace graphics board
	Wrong I-module	Replace I-module
Screensaver active	UFP does not receive video signal	Deactivate screensaver of control
		Check video cable
		Replace graphics board
	Wrong I-module	Replace I-module

Table 16: Faults - device messages



## 9 Repair

**Any repair work on this device must solely be performed at unipo<sup>®</sup>.**

If the UFP is continuously used, the fan must be replaced at the latest after 2 years (or approx. 20.000 operating hours).

The new fan is delivered with replacement instructions.

unipo<sup>®</sup> guarantees a constantly high service quality and the required safety of repaired devices by extensive function and safety tests, the use of excellently trained personnel and suitable measuring and testing equipment.

Technical enquiries should be addressed to the unipo<sup>®</sup> Service Department. This department is available to you at any time under the phone number 0049 (0) 6061/704-0.



**WARNING! Danger of electric current!**

**Electrical power can cause severe injuries. There is a danger of life if the insulation or individual components are damaged.**

**Disconnect the device from the electric power supply before opening the housing.**



**WARNING! Danger of burning!**

**After an operating time of approx. 10 minutes components inside the device may be very hot!**

**Allow the device to cool down to ambient temperature before starting work.**

### **Exclusion of warranty**

After operations and changes to the device, which were not made by unipo GmbH, the warranty for the device will become null and void!

unipo GmbH will not assume liability for damage to persons or property resulting from unauthorized operations to the device!



## 10 Glossary

Designation	Explanation
Flat panel	Flat screen
FPGA	Abbreviation for <b>Field Programmable Gate Array</b> Free programmable Logic-Modules, which can be linked to form complex circuitries Currently taking over the function of micro-processors
MTBF	<b>Mean Time Between Failure</b> the mean time between two failures; serves as a measure for the reliability of devices and plants
OSD	<b>On Screen Display</b>
RGB	<b>Red Green Blue</b> Color mix of red, green and blue
SAMPLE RATE	Sampling rate
SoG	<b>Sync on Green</b> Line synchronization signal based on the green signal
TFT	Abbreviation for <b>Thin Film Transistor</b> a technology for the manufacture of flat screens
UFP	Abbreviation for <b>Universal Flat Panel</b>
$V_{AC}$	Supply voltage (alternating current)
$V_{DC}$	Supply voltage (direct voltage)

Table 17: Glossary



## 11 Appendix – Technical data sheets

The following additional data sheet is attached to these operating instructions.

Technical information

Brief instructions status 30/01/06

UFP input module 7LPIP9270200

These instructions are up-to-date at the time of delivery but are subject to changes, based on variation of components.



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