

SIEMENS

High Resolution 46 cm/18" LCD-Monitor SCD 1897

Operating Instructions

SCD 1897-C/CT (Chassis)

6GF6220-3MA (-3MB with Touch)

SCD 1897-E/ET (Mountable)

6AV8100-2BA00-0AA0/6AV8100-2BB00-0AA0

(Int.ID:6GF6220-4MA/6GF6220-4MB)

SCD 1897-R/RT (Rack 19")

6AV8100-2CA00-0AA0/6AV8100-2CB00-0AA0

(Int.ID:6GF6220-6MA/6GF6220-6MB)

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1. Overview

The LCD monitor SCD 1897 has been developed and constructed especially for industrial applications. This monitor can be used in applications where a standard CRT-device would be unsuitable, due to space or environmental restrictions.

Its compact enclosure opens up a wide spectrum of possible application areas for the SCD 1897, ranging from air-conditioned computer rooms behind a switching cabinet door, to the immediate vicinity of machinery in a special protective enclosure. As is the case for all industrial systems, the monitor has been designed to withstand the particular demands placed upon such equipment, e.g., it is immune to electromagnetic radiation and can withstand a large temperature range.

The trend-setting LCD technology in this monitor has relegated picture geometry distortion and colour patches to the past. Even at the low refresh rate of 50 Hz. the screen remains flicker-free. The SCD 1897 thus fulfils even the strictest ergonomic requirements. Pictures of lower resolution are expanded to fill the screen.

The SCD 1897 can simultaneously display up to 16 million colours enabling realistic colour images and videos to be displayed. The LCD-monitor contains special hardware to convert a standard analogue VGA video signal for the display controller. Compatibility with conventional CRT monitors is, thus, guaranteed.

It is very easy to adjust the monitor settings using the clearly designed OSD (On Screen Display). The "Automatic Alignment" function does away with the need to carry out tedious adjustments such as picture position and phase. At the press of a button, the monitor performs these alignments automatically.

The SCD 1897 is equipped with an active 18.1" TFT display module with a maximum resolution of 1280x1024 pixels. The integrated power management system VESA DPMS, allows a significant reduction in power consumption when the synchronisation signal from the computer has been switched off, compared with that under "normal" operation.

Three basic versions of this monitor are available:

- | | |
|---|----------------------------------|
| 1. as a stand-alone chassis | SCD1897-C(CT with touch-screen) |
| 2. as a mountable module with front plate | SCD1897-E (ET with touch-screen) |
| 3. as 19" rack 9 HE | SCD1897-R(RT with touch-screen) |

1.1. Layout of this Handbook

This handbook should be kept within reach while installing and operating the LCD-monitor. It has been laid out so that even inexperienced users can find the information they require. Chapters are clearly arranged according to subject.

In detail, the chapters are arranged as follows:

- **Chapter 1 Introduction**
This chapter provides a brief description of the SCD 1897, including its properties, application areas and special features.
- **Chapter 2 Installation**
This chapter is mainly concerned with preparing the LCD-monitor for use, its installation and cabling.
- **Chapter 3 Operation**
All operations and adjustment possibilities for the SCD 1897 are described here.
- **Chapter 4 Technical Data**
This chapter contains technical details such as dimensions, power supply, environmental considerations and EMC data.

Important: The manufacturer has gone to great lengths to match the quality of the documentation to the high standard of this product. In achieving this, we are reliant on the support of our customers. If anything in this handbook is not clearly understandable or if there are any errors, then please submit a short note to that effect. The same applies for any suggestions for improvement. We are grateful for all such assistance.

1.2. Warnings and Safety Notes

Transport

The LCD-monitor should only be transported in its original packaging to ensure it will be protected against shocks and rough handling.

Setting Up

When installing the monitor, it should be noted whether any moisture (condensation) has entered the unit during transport or storage. Additional important installation information can be found in the "Technical Data" chapter.

EMC

This is a Class A piece of equipment (industrial use). In domestic situations, it may cause interference. Under such circumstances, the operator can be required to undertake appropriate measures to minimise problems.

This LCD-monitor is a component designed for building into industrial systems. The operator of the entire plant is responsible for maintaining electromagnetic compatibility according to EMC-law.

Repairs

Before the unit is opened, the supply voltage must be switched off. Only authorised persons may open the unit.

Additions or changes to the unit may damage the system or affect its EMC behaviour.

Cleaning

The unit must be isolated from the power supply before cleaning. If heavily soiled, the LCD-monitor can be cleaned with a damp cloth and mild detergent. Care must be taken to ensure that no moisture enters the unit during cleaning.

Scouring powders and solvents must never be allowed to come in contact with the unit. The inside of the unit is to be cleaned by qualified service technicians only.

1.2.1. Instructions for Handling Assemblies Susceptible to Electrostatic Shock

Most of the assemblies within the SCD 1897 LCD-monitor contain components which can be destroyed by electrostatic voltages. It is also possible for the assemblies to be damaged in such a way that total failure does not occur.

If you (as an authorised service technician) are handling such assemblies then the following precautions should be observed:

- When such assemblies are being handled, a means of electrostatic discharge must be available. This can be, for example, an earthed object, which can be touched to discharge electrostatic voltages.
- This applies to all tools used (insulated). They must also be discharged at an earthed object.
- When assemblies are removed or added to the system, the unit must always be switched off and the power supply cable disconnected.
- Vulnerable assemblies should always be held by their edge. Avoid touching tracks and contact pins.

2. General Installation

Preparation for installing the LCD-monitor include the following points:

- Removal of all packaging
- Checking of components for damage
- Comparison of components received with those on the delivery note
- Connection to the computer system and power supply
- Building into your system, bearing in mind technical and ergonomic aspects

2.1. Removing the Packaging and Checking Individual Parts

After unpacking all the delivered components, they should be checked for completeness and for possible transport damage (visual inspection). If any deficiencies are found then please contact the service department given on the delivery note. Have the delivery note number, serial number and a description of the deficiency to hand.

The original packaging should be kept for future transportation.

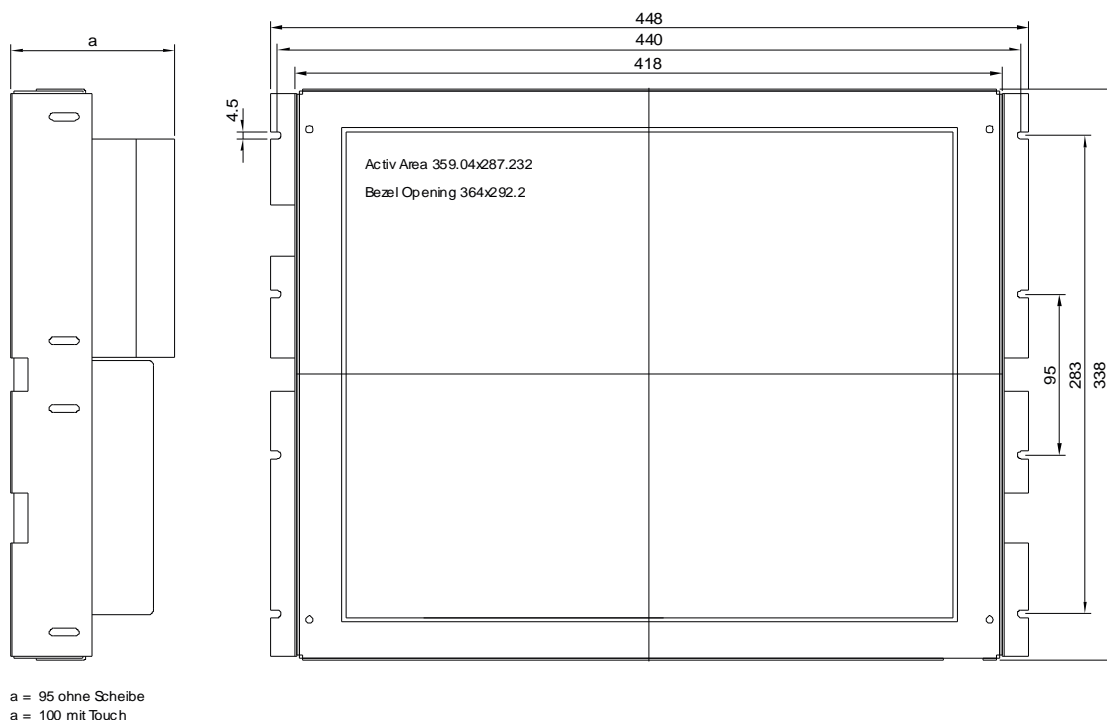
2.2. Installing the LCD-Monitor

The SCD 1897-C(CT) can be mounted behind a front plate using two fixing brackets.

A front plate is delivered with the SCD1897-E(ET). It has a sealing band all the way round. When mounting the front plate, care must be taken to ensure that the O-ring remains in its groove otherwise the seal may not be tight.

The SCD1897-R(RT) is designed for mounting in a standard 19" rack system. Supporting rails are not necessary.

Figure 1: Dimensions of the SCD 1897-C/CT



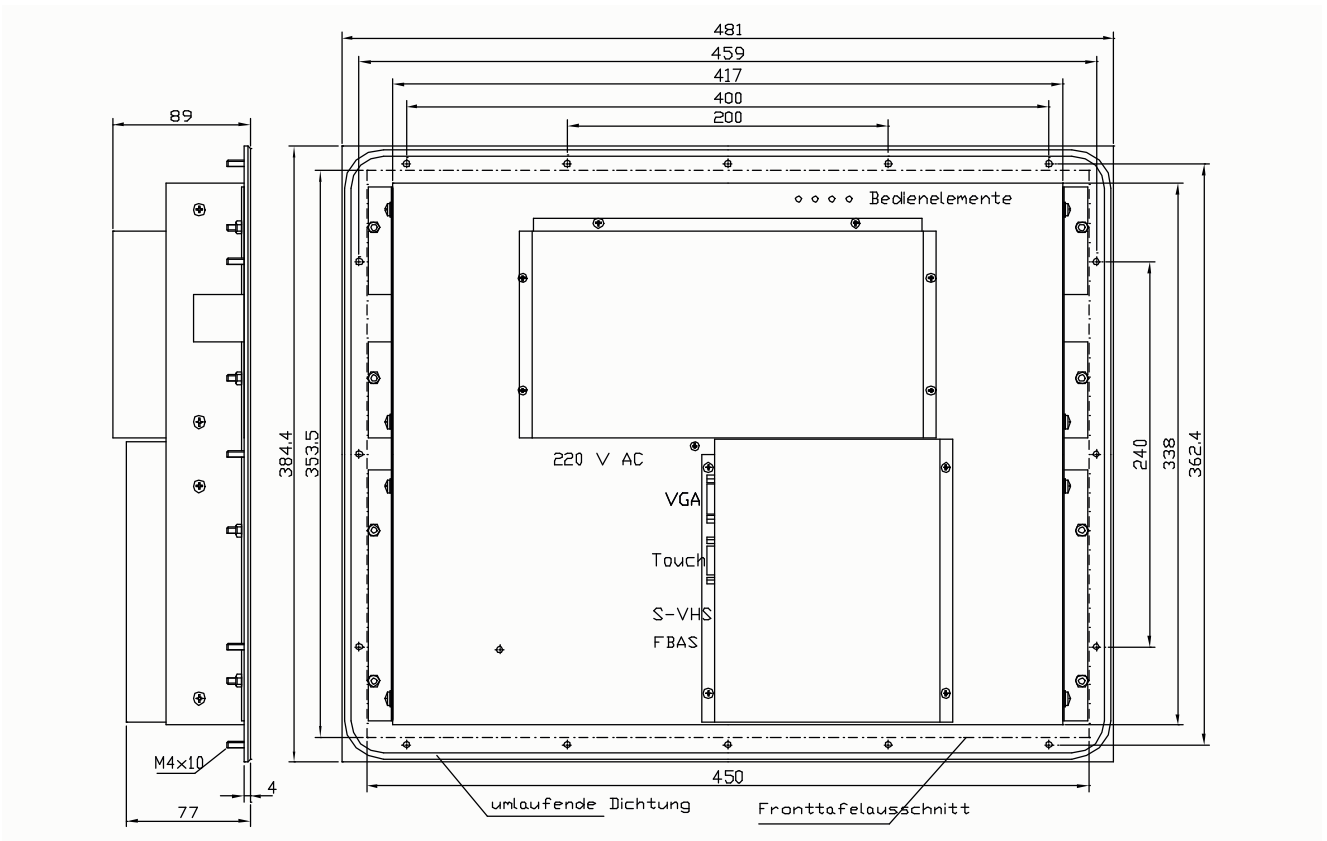


Figure 2: Dimensions of the SCD 1897-E/ET

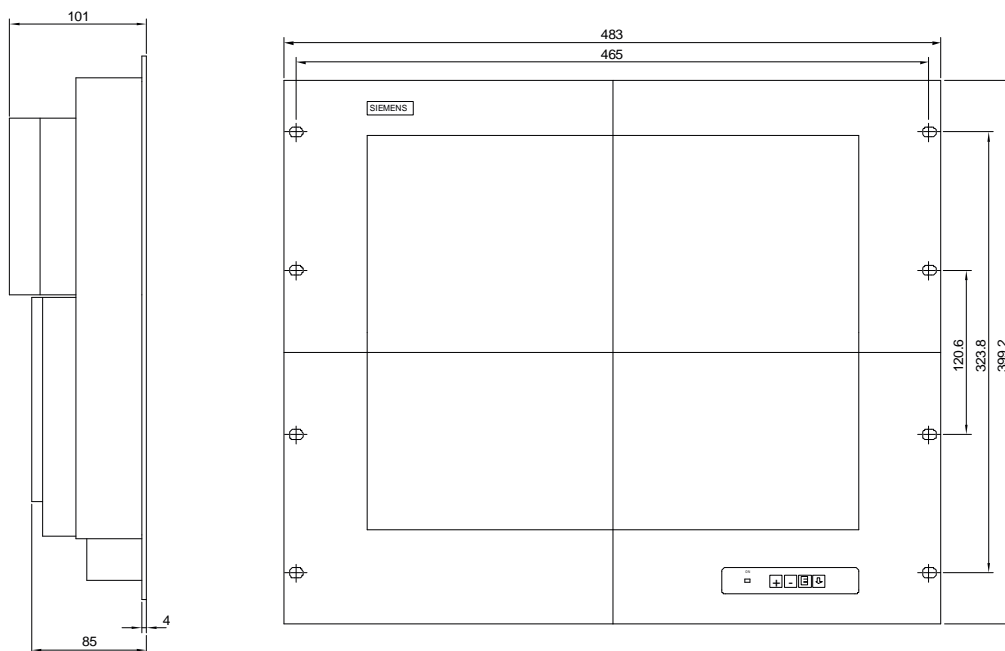


Figure 3: Dimensions of the SCD 1897-R/RT

Thermal Problems

In order that the LCD-monitor maintains an optimum operating temperature while in use, air must be allowed to circulate freely around the SCD 1897 enclosure. It is particularly important that the rear of the system is kept free.

Please bear in mind that increased temperatures can lead to defects and to a significant reduction in the lifetime of the monitor.

EMC Problems

This LCD-monitor is a piece of equipment designed for building into an industrial system. The operator of the entire plant is responsible for maintaining electromagnetic compatibility according to EMC laws.

Safety Problems

All voltage and signal connections must adhere to appropriate legal requirements.

Ergonomics

The screen should be easily viewable from all sides and without reflections.

2.3. Cable Connections and Pin Assignments

The LCD-monitor has been tested and set-up in the factory. Before use, the power supply and the VGA signals should be connected to the sockets provided. Connections to the monitor should adhere to EMC regulations.

A high-quality 75-ohm coaxial cable must be used for the VGA-signals. Low quality cables can result in interference and shadowing on the display.

VGA Interface

The VGA interface is a standard 15-pin male HD-D-type connector.

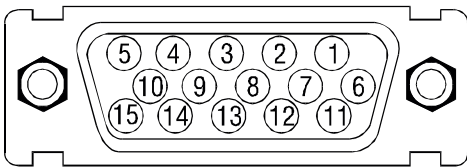


Figure 4: VGA Interface

| Pin | Signal |
|-----|-------------------|
| 1 | Video input RED |
| 2 | Video input GREEN |
| 3 | Video input BLUE |
| 4 | Not used |
| 5 | Not used |
| 6 | GND (RED) |
| 7 | GND (GREEN) |
| 8 | GND (BLUE) |
| 9 | Not used |
| 10 | GND |
| 11 | Not used |
| 12 | Not used |
| 13 | H-Sync. |
| 14 | V-Sync. |
| 15 | Not used |

Power Supply

Power is supplied to the SCD 1897 via a standard power connector on the rear of the unit.

2.4. Electrical Installation

Before connecting the SCD 1897 to the power supply, a check should be carried out as to whether the VGA connector is plugged in properly and that the screws are tightened.

If a video signal is connected, the image will appear immediately on the screen.

There are many possible reasons why an image might fail to appear on the display after it has been switched on:

- the unit is not switched on
- no VGA signal connected
- no synchronisation signal connected
- horizontal and vertical synchronisation signals are connected the wrong way round

2.5 Touch-screen version SCD 1597xx/T

The installation of the necessary touch screen driver software is described in the manufactures original touch-screen manual which is enclosed.

3. Operation and Alignment

This chapter contains a description of all the operating and alignment functions.

3.1. Location of the Operation and Alignment Controls

All the controls for the C (CT) and E (ET) versions are located on the rear of the unit. Their exact position is shown in Figure 2: Dimensions of the SCD 1897-E/ET on page 9. These controls are used for navigating in the OSD menu and for selecting and altering parameters.

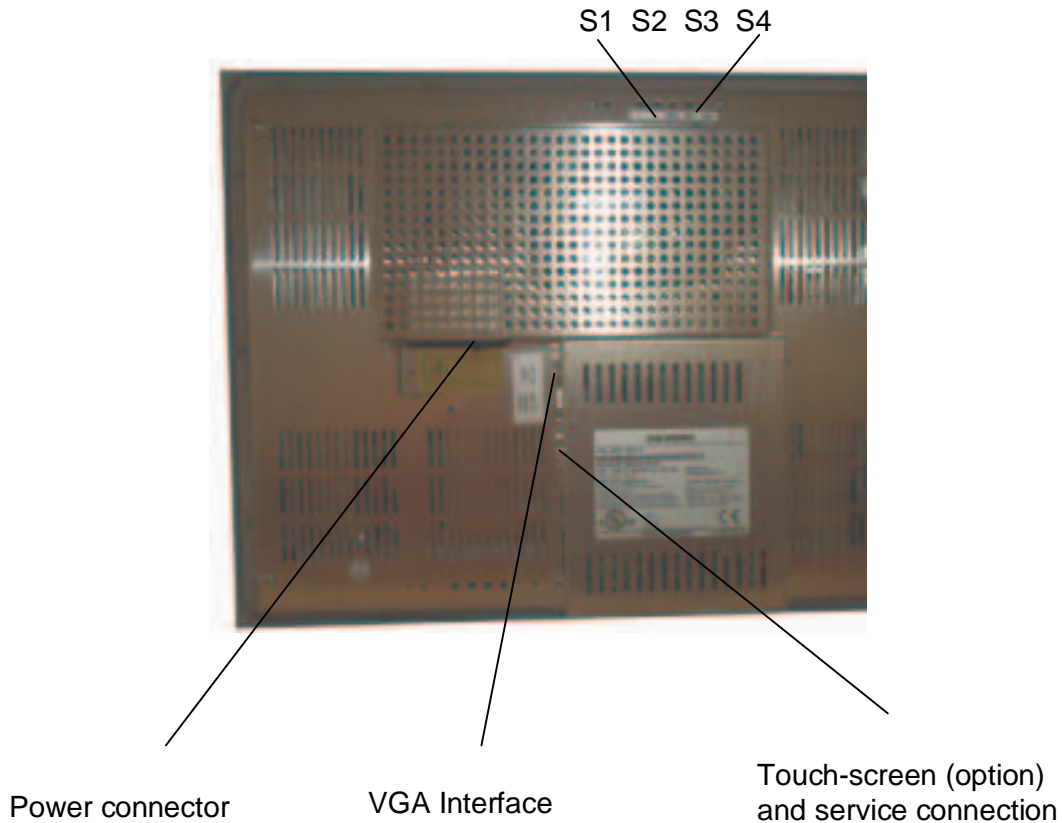
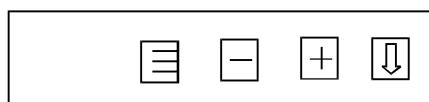


Figure 5: Location of the operation and alignment controls for the SCD1897-C(CT) and E(ET).

Stromversorgung

| | |
|----|----------|
| S1 | + / up |
| S2 | - / down |
| S3 | Menu |
| S4 | Set |



The controls for the SCD1897-R(RT) version are located on the front, lower right-hand side of the chassis

Menu down up Set

3.2. Aligning the Converter

Since there are no standards for video output signals from VGA cards, the first time the unit is switched on it will automatically adjust itself to the graphic card currently being used. The adjustment procedure can also be called up by pressing two times the “+”button.

3.2.1. OSD Menu

The „On Screen Display“ OSD is a menu system, which is shown on the display. With the help of OSD and the described control elements, all adjustments of the monitor are executable. There are just 4 keys S1 to S4 to control the OSD.



OSD-Menu / Quick-OSD-Menu

In addition to the **OSD** menu there are more possibilities to adjust important functions like brightness, contrast and automatic adjustment directly via a **Quick-OSD-menu**.

Function(s) of the control keys:

| | |
|-------------|---|
| <+> | Increase value, menu navigation (go to sub menu / go to right) Invoke Quick-OSD-menu: To execute an automatic adjustment |
| <-> | Decrease value, menu navigation (go to left) |
| MENÜ | Invoke OSD Menu navigation (switching between main- and sub-menu) |
| SET | Menu navigation (go down) Invoke Quick-OSD-menu: Brightness and contrast adjustment |

3.2.2. Quick-OSD-Menu-Functions

Following adjustments can be done via the Quick-OSD-menu:



Invoke via key **<SET>**

| Function | Adjustment/value | Description |
|------------|------------------------------------|--|
| Brightness | Range: 0 to 100 via key <+>/<-> | Brightness adjustment |
| Contrast | Range: 0 to 100 via key <+>/<-> | Contrast Adjustment |
| Zoom | Range: 0 to 100 via key <+>/<-> | Zoom Adjustment Expansion of displayed Screen |

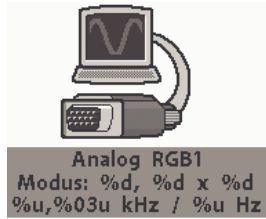
Invoke via key **<+>**

| Function | Adjustment/value | Description |
|----------------------------|---------------------------------------|--|
| Automatic image adjustment | Press key <+> to start the adjustment | Performs an automatic image adjustment. Adjustment of frequency, phase and image position. |

3.2.3. OSD-Menu-Function

Invoke via key <MENUE>

| Main menu | Function | Adjust function / value / range | Description |
|-----------|-------------------|--|---|
| Picture 1 | Brightness | setting range: 0 to 100 through key (+/-) | adjust brightness |
| | Contrast | setting range: 0 to 100 through key (+/-) | adjust contrast change contrast between dark and light colors |
| | H Position | setting range: 0 to 100 through key (+/-) | move picture in horizontal direction |
| | V-Position | setting range : 0 to 100 through key (+/-) | move picture in vertical direction |
| | Phase | setting range : 0 to 31 through key (+/-) | adjust phase of input signal |
| | Frequency | setting range : 950 to 1050 (dependent to picture) through key (+/-) | adjust frequency of input signal |
| | Scaling | fill all; fill aspect ratio, one to one | select predefined scaling |
| | adv. scaling | setting range : 950 to 1050 (dependent to picture) through key (+/-) | adjust non-linear scaling |
| Picture 2 | Sharpness | 1, 2, 3, 4, 5 | adjust sharpness of the picture by using no. 1 to 5 1=sharp, 5= soft |
| | Gamma | Linear or CRT | correction of gamma curve value of colors will be forwarded to the display |
| | Color temperature | 5000 - 6500 – 9300 - VAR | color temperature / adjust color three defined and one adjustable color temperatures are for selection activate „VAR“ - for RGB shows up a adjustment beam. 0 to 100 % (50% correspond to factor 1) |
| Options 1 | OSD | select between nine defined OSD positions f | define position OSD |
| | OSD H-Position | setting range : 0 to 100 through key (+/-) | move OSD-menu in horizontal position |
| | OSD V-Position | setting range : 0 to 100 through key (+/-) | move OSD-menu in vertical position |
| | OSD timeout | 5 ... 60 seconds | adjust time after the OSD menu is automatically fade out the adjustment ensures between 5 to 60 s in steps of 5 s. |
| | OSD background | Opaque – Transparent | select background color of the OSD menu you have the choice between transparent and colored background. |
| | Noise suppression | ON - OFF | Standard adjustment OFF. By ON: Activate the function noise suppression. This function suppresses interference at the sync signal lines to avoid A new auto adjustment during short interference. |

| Main menu | Function | Adjust function / value / range | Description |
|--------------|------------------------------|--|---|
| Options 2 | DPMS | ON – OFF | Display Power Management System (DPMS) on or off If DPMS activated, the monitor is turn off (backlight) when a synch signal is left. The screen is dark. |
| | Source scan | OFF – ON – Standard | Standard: ON Note: To scan new video source is not relevant because the monitor has one RGB input source only. |
| | Blank color | red – reen – blue – black | Choose the background color of the screen when no input signal is present. |
| | Frame color | red – reen – blue – black | Choose the frame color of the screen when input signal does not fill screen (see scaling). |
| | Info signal source | ON – OFF | Input source icon on or off The icon is shown when input signal are changed. The icon shows the following information's: <ul style="list-style-type: none"> - signal source (e.g. RGB analog) - Mode number (internal mode number of the timing list) - Image resolution of the input signal - H- and V-frequency  |
| Utilities | Language | English – German | OSD language |
| | Calibration | <+> press | Adjustment of the internal A/D converter (following the menu instruction) |
| | freeze frame | ON – OFF | freeze the actual shown picture |
| | Factory reset | <+> press | Reset of values like brightness, contrast,.. to default values |
| | Installation RGB-Mode | <+> press | Enter a new timing which is not in the internal timing table. This function should used, when the shown image resolution is not the resolution are expect. When press <+> the sub menu expect 9 timing parameter. |
| | When <+>, H- and V-Frequency | – | Show the H- and V-Frequency of the present input signal. |
| | H/V-total, H/V-start Option | – | Show the used timing parameter of the present input signal |
| | | Var. RGB-Mode inactive, Mode1, Mode2, Mode3 | Inactive: used the internal timing table only Mode1: use the timing parameter and perform a complete auto adjustment. (usually used) Mode2: use the timing parameter and perform an auto adjustment without an automatic image position adjustment. Mode3: use the timing parameter and perform an auto adjustment without an automatic frequency adjustment. |
| | H-resolution | 100 to 2000 through key (+/-) | Horizontal image resolution (important parameter) |
| | V-resolution | 100 to 2000 through key (+/-) | Vertical image resolution (important parameter) |
| | H-total | 100 to 2500 through key (+/-) | Whole pixel per line (important parameter) |
| | H-Start | 0 to 750 through key (+/-) | Number of Pixels from H-sync start to image start |
| V-Start | 0 to 500 through key (+/-) | Number of lines from V-sync start to image start | |
| Install | <+> press | Activate the feed timing parameter | |
| test pattern | <+> press | Show a test image | |
| Info | Firmware, Resolution, Timing | – | Show the firmware version and timing data of the present input signal |

4. Technical Data

4.1. Display Module

| | |
|----------------------|---|
| Type | Colour active TFT-LCD |
| Diagonal | 46 cm (18.0") |
| Display area (WxH) | 359 x 287.2 mm ² |
| Resolution | 1280 x 1024 pixels |
| Pitch | 0.2805 x 0.2805 mm ² |
| Colours | 16 million |
| Backlight | 6xCCFT (Cold Cathode Fluorescent Tube) |
| Brightness (typical) | approx. 200 cd/m ² |

4.2. Power Supply

| | |
|--------------------------------------|-----------------------|
| Input voltage | 110-240V AC, 50/60 Hz |
| Power consumption (normal operation) | approx. 60 VA |
| Power consumption (StandBy) | approx. 5 VA |

4.3. Operating Conditions

| | |
|-----------------------|---------------------------|
| Operating temperature | +5 to +45°C |
| Storage temperature | -25 to +60°C |
| Humidity | max. 95% (non condensing) |

4.4. Protection

| | |
|---------------------------------|------|
| Protection Class | IP20 |
| Front screen in E(ET) and R(RT) | IP65 |

4.5. Enclosure

| | |
|--------------------|--------------|
| Weight | approx. 8 kg |
| Enclosure material | aluminium |
| Enclosure colour | light basic |

4.6. Input Signals

| | |
|-----------------|---|
| Level (Video) | 0.7V _{ss} RGB analogue at 75Ω |
| Bandwidth | 140Mhz (-3dB) |
| Impedance | 75Ω |
| Synchronisation | - Sep. Sync. (TTL) - Sync on green - Composite Sync |
| H-Frequency | 30 to 97 KHz |
| V-Frequency | 50 to 100 Hz** |

4.7. EU Declaration of Conformity on EMC

| | | | |
|----------------------------------|--|--|---|
| Product | LCD-Monitor SCD 1897 | | |
| Test foundations | EU framework guidelines | No. 89/336/EWG No. 92/031/EWG No. 73/23/EWG No. 93/68/EWG | |
| Harmonised standards used | EN 55022 +A1/EN55022/A1 EN 50082-2 EN 60950 | Edition 05/1995 Edition 08/1994 Edition 02/1996 Edition 11/1997 | Interference emissions Interference resistance Safety |

