SIEMENS

# Display

TD

## Replacement of Parts

Display

19" Color TFT Monitor (DSC 1904-D)

Valid for Part No. 086 75 402
Valid for Part No. 086 81 657



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### Document revision level

The document corresponds to the version/revision level effective at the time of system delivery. Revisions to hardcopy documentation are not automatically distributed.

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## Safety Information

Assuming a complete replacement, there are no contact points for line power, etc.

**NOTE**

**ARTD-002.732.17.. (Safety-technical Regulations for Installation and Repair) must be observed.**

**⚠WARNING**

**Certain components inside the units are under high voltage!**

**If there is contact with these components, it can cause damage, serious bodily injury or death.**

➪ **Do not open the monitor housing; this is not necessary in a service situation.**

**⚠WARNING**

**A damaged power cable can lead to fire or electric shock!**

**If these components are operated with a damaged power cable, it can cause damage, serious bodily injury or death.**

➪ **Use only power cables that are in good condition! When disconnecting the power line, hold the power cable only by the connector.**

**⚠WARNING**

**If objects are inserted into the housing, this can cause electrical shock.**

**This can cause damage to the unit, to other damage, serious bodily injury or death.**

➪ **Do not insert objects into the housing!**

**⚠WARNING**

**When handling connection cables, no contact with the patient may be made.**

**This can cause damage, serious bodily injury or death of the patient.**

➪ **Do not connect the unit in the patient area!**

## Monitor Remarks

- A laptop is not required for adjustment. All adjustments can be performed in an on-screen menu, accessible using the push-buttons (front of frame).
- Power switch:

  The TFT monitor has a power switch; seen from the front, this is at the bottom left, behind the front panel.

### TFT Monitors 86 75.402 / 86 81.657

**NOTE** **In a replacement situation, only the same Part Number may be used again.**

- The DSC 1904-D (model designation) is a high-resolution 19" color TFT monitor (48 cm).
- There are two versions of this model:
  - **86 75 402** => is shipped with a base and connection cables.

    NOTE: with this Part Number, the **video ground <=> protective ground are not separate!**
  - **86 81 657** => is shipped without a base.

    NOTE: with this Part Number, the **video ground <=> protective ground are not separate!**
- OSD operation is performed using the push-buttons located at the bottom right of the front panel.


*Fig. 1: DSC 1904-D front*

Pos. 1 Power switch on rear

Pos. 2 On-screen menu buttons

## Technical Data

| | |
|---|---|
| **Power Supply** | Voltage range => 100V to 240V, +/- 10%<br>Power line frequency => 47Hz to 63Hz<br>Power consumption => < 75W |
| **Inputs** | **DVI Socket (29-pole):**<br>=> input for DVI analog signal or DVI digital signal.<br>**Sub-D Socket (15-pole):**<br>**Level:**<br>Video level: 0,5 ... 1.00 Vpp<br>Sync level: 0,2 ... 0.3 Vpp |
| **Resolution** | max. 1280 x 1024 (full format) |
| **Background Brightness** | 280 cd/$m^2$ typical<br>Status when shipped: 137 cd/$m^2$ with use of the video norm: 1280 x 1024/75 Hz VESA, 700mV B-Signal. |
| **Contrast Ratio** | 450 : 1 typical |
| **Climate** | **Transport and Storage (in original packaging):**<br>Ambient temperature -20 to +60°C<br>Temperature gradient <5°C/h<br>Relative humidity max. 75% at +25°C, no condensation.<br>Pressure 1040 to 674 hPa<br>**Operation:**<br>Ambient temperature +5 to +40°C<br>Temperature gradient <5°C/h<br>Relative humidity max. 80% at +30°C, no condensation.<br>Air pressure 1040 to 674 hPa |
| **Installation** | Heat dissipation is achieved by "natural" convection; a fan is not installed. The free setup height as well as the side and rear distance must be at least 100 mm.<br>However, installation in the DCS is permitted. |
| **Weight** | 8.7 kg with base |

## Repair / Troubleshooting

**NOTE**

- **In a malfunction situation, the TFT monitor is only completely replaced.**
- **For replacement part numbers, see the SPC (Spare Parts Catalogue).**
- **Every defective monitor must be returned with an exact description of the malfunction. Without a description of the malfunction, it is virtually impossible to find sporadic and/or temperature-related effects or even system-related causes.**
- **For more information on adapting to the particular system, see (System-related Adjustments / p. 14).**

## Test and Auxiliary Equipment

- All required settings must be performed using the push buttons on the front of the unit.
- SMfit ACT luminous density meter See CB - DOC TD00-000.801.01... (Spare Parts Catalogue).

# General Remark Regarding Use of the OSD Menu

## Button Functions

**TFT Monitor, Part No. 86 75 402 / 8681657**

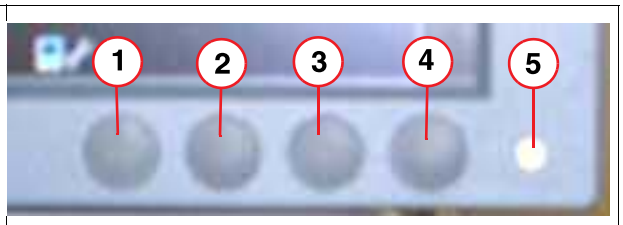


*Fig. 2: DSC 1904-D (push buttons)*

| | |
|---|---|
| Pos. 1 | Menu |
| Pos. 2 | Up |
| Pos. 3 | Down |
| Pos. 4 | Set |
| Pos. 5 | Power LED |

- The status of the TFT monitor is displayed by the power LED. On / OFF / Standby.
- The front buttons are designed without a "designation".
- All required adjustments are made using the push-buttons located on the front frame.
  The push-buttons are blocked when shipped (new system).
- Unlock or lock them as follows:
  Press the SET button 1x (briefly).
  Press the Up button 1x (long).
  The OSD menu can then be selected using the Menu button.
- The OSD menu can also be started without an input signal.

## OSD Menu

Tab. 1 Button functions in the OSD menu

| Button(s) | Action |
|---|---|
| Menu | Selection of the OSD / menu item |
| up (+) | Open the menu item, a sub menu can be recognized by the fact that the menu title is highlighted.<br>Set the value up or to the right. |
| down (-) | Set the value down or to the left. |
| Set | Close the menu item (press one level higher 1x). |

Tab. 2 Blocking/Unblocking the OSD Menu

| Function | Action |
|---|---|
| OSD Menu<br>block or enable | Press the Set button 1x (briefly) + the Up button (long).<br>The OSD may not be opened to block or release the OSD! If opened, first exit the OSD using "Undo".<br>If the OSD is blocked, only the input signal can be switched with the Up and Down buttons. |
| Select<br>Service Level 2. | To get to the Service Level 2 menu, the following procedure is necessary:<br>• Select the OSD menu.<br>• Select Service Level 2 with the Menu button.<br>• Open the Service Level 2 menu by pressing the Up button 1x and the Down button 2x.<br>In service level 2, expanded adjustments can be performed. |
| Adjustment Values<br>Save | Press the Set button as often as required until the “Undo” menu item appears.<br>Any changes made are accepted with "Accept changes”.<br>The "new" settings are rejected with "Reject changes”.<br>Selection is made with the "Menu” button.<br>Select with the “Up” button. |

Tab. 3 OSD Menu

| | | | |
|---|---|---|---|
| Menu | Brightness / Contrast | Brightness | Adjustable |
| | | Contrast | Adjustable |
| | | Backlight | Adjustable |
| | | Color | Selection => 2 |
| | | Set user color | not enabled |
| | Position / Zoom | H-Position | Adjustable |
| | | V-Position | Adjustable |
| | | Zoom | Selection => Fill Screen |
| | Picture source | Source selection | Not needed; selection is automatic |
| | Auto functions | Auto Brightness Contrast | Use only if the monitor is completely incorrectly adjusted.<br>In conclusion, the adjustment must be performed per (System-related Adjustments / p. 14)! |
| | | Auto Position Phase Frequency | Auto adjustment of Size / Position / Phase and Frequency. |
| | | Execute selected auto functions | Start the selected auto functions. |

| | | | |
|---|---|---|---|
| | Language | German/English | Selection => English |
| | Others | Frequency / Phase | Manual adjustment of frequency and phase. |
| | | Sharpness | Selection => 3<br>Active only if the FBAS and/or the S-Video input is used. |
| | | OSD Settings | If required, the position and the "transparency" of the OSD menu can be set here. |
| | | DPMS Settings | Selection On |
| | | Status | Status display of the monitor (e.g. temp., operating hours.....) |
| | Service level 2 | Calibration | Factory set. |
| | | User Settings | Factory set!<br>It is possible to return to the factory setting under "Reset User settings" in this screen.<br>All adjustments (B/KC/Phase/Frequency) must then be repeated! |
| | | Test and Reset | "Reset to factory defaults" **may not be used!**<br>If selected, original parameters are downloaded. |
| | | Tolerance | Factory set. |
| | | Others | Factory set. |

# Troubleshooting

- **General:**

  Every defective TFT monitor must be replaced completely.

  Fuses:

  If a fuse is defective, the TFT monitor must be replaced. A fuse responds only if there is an error (in the TFT monitor). Because of this, replacing a fuse is not reasonable.

- **Troubleshooting:**

| Malfunction | Possible Cause | Solution |
|---|---|---|
| TFT monitor displays no image, power LED is off. | Fuse defective.<br>Power cable not plugged in or line power missing. | 1. Fuse okay, line power present.<br>2. Replace the TFT monitor. |
| TFT monitor displays no image, power LED is on. | No video/synchronous signal (cable or video source).<br>Inputs incorrectly plugged in, with a new installation. | 1. Video/synchronous signal present.<br>2. Replace the TFT monitor. |
| Unclear image, defects in vertical lines | Frequency and/or phase incorrectly set.<br>Disturbances in the video signal. | 1. For frequency / phase setting, see (Adjustment / p. 15).<br>2. Make sure that the video signal has no disturbances.<br>3. Replace the TFT monitor. |
| Other malfunctions (sporadic) | Plug-in connection(s) loose. | 1. Make sure that there is not a "control problem" (line power/video).<br>2. Replace the TFT monitor. |
| Required contrast no longer reached? | BA signal is too low. | 1. The **BA** signal must be at least 0.5V, otherwise “full control” is no longer ensured.<br>2. An B/C adjustment under (Adjustment / p. 15) makes no improvement.<br>3. Replace the TFT monitor. |

# SP Applications

## ARCADIS Systems

**NOTE**

- **The TFT monitor must be switched on 20 minutes prior to beginning the adjustments!**
- **All adjustments must be performed at the "original" installation location (e.g. monitor trolley).**
- **The adjustments are performed in the "Screen Manager" menu. For selection and use of the menu, see (General Remark Regarding Use of the OSD Menu / p. 9).**

### General Information

The Service menu is set preferably to English and is shipped in English. If needed, this menu can be set to German for setting the parameters.

For adjustment, the monitors and the image system must be completely cabled and the ASPIA image system must be started up.

Perform or check the adjustments to be made in the individual menus. Menus not mentioned do not need to be checked. If not otherwise stated, perform the settings/checks on all installed monitors.

Trolley:

There are always two monitors of the same type on the trolley.

1 => left monitor => Live image

2 => right monitor => Reference image


*Fig. 3: Monitor Trolley*

| | |
|---|---|
| Pos. 1 | left monitor (live image) |
| Pos. 2 | right monitor (reference image) |

**Adjustment**

| NOTE | **The monitors were preadjusted by the supplier. The following adjustments must performed only if necessary. The corresponding Operating Instructions included in the shipment on CD.** |
|---|---|

Adjustment Procedure

- **Auto Setup**

  **Performing Auto Adjust:**

| NOTE | **Auto Adjust must be performed using a predefined test image.**<br>**To select the test image:**<br>• **Service => Utilities => parameters => Explorer (enter).**<br>• **Under C: => My Computers => Testimages => select TFT Autoconfiguration.** |
|---|---|

  a) If needed, deactivate the Block menu, see (Tab. 2 / p. 10)

  b) Perform Auto Adjust:

  - Menu => Auto functions =>

    Auto Brightness Contrast => Off

    Auto Position Phase Frequency => On

    Execute selected auto functions (select) => Auto Adjust is selected with the Up (Value Up) button.

- **Control/adjustment of brightness/contrast with the SMfit Spotmeter**

  a) Select the ASPIA test image (left menu bar).

  b) **Check:**

  - 0.8, +/-0.2 cd/m$^2$ must be measurable in the 0% field.
  - In the 100% field, 200 +20/-20 cd/m$^2$ must be measurable.
  - The 5% field and the 95% field must be visible.

    If the values are not reached, an adjustment must be performed.

  c) **Adjustment:**

  - The adjustment is performed under: Menu => Brightness Contrast
  - Increase the slider for contrast until the 95% field is no longer visible (over-exposed).
  - Lower the slider for contrast again until the 95% field is again visible.

    When doing so, make sure that the visual color impression (color temperature) of the 90% field and the 100% field appear almost equal => with unequal color impression, the contrast should be reduced slightly more.

- Set the slider for "Backlight" in the 100% field to 200 +/20/-80 cd/m$^2$.

**NOTE**

**120 cd/m$^2$ should result as the lower limit value.**

**With dual monitor operation, the difference between the two TFT monitors should be a maximum of $^+$/- 10 cd/m$^2$.**

**If 120 cd/m$^2$ are not attained, the monitor must be replaced.**

- Set the slider for "Brightness in the 0% field to 0.8, +/-0.2 cd/m$^2$.
  The 5% field must still be visible.
- Measure the values in the 100% field and in the 0% field again.
- Repeat the adjustments until the specified values result.

**NOTE**

**After completing the adjustment, the Operation menu must be blocked again, see (Tab. 2 / p. 10)**

Chapter 3:

Path to open SMPTE test image corrected.

ARCADIS Varic / ARCADIS Orbic / ARCADIS Avantic changed to ARCADIS systems.