

Display

TD

Replacement of Parts

Display

18" B/W TFT Monitors (SMD 1897-M; DSB 1802-D;
DSB 1803-DC; DSB 1804-DC)

Applicable for Part No. 75 56 249 X2311

Applicable for Part No. 75 56 769 X2311

Applicable for Part No. 77 28 657 X2311

Applicable for Part No. 30 99 975 X2311

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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

DHHS Regulations (Department of Health and Human Services) skipped (no high voltage).

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

| |
|-------------|
| NOTE |
|-------------|

The TFT monitors, 77 28 657 / 30 99 975, are distinguished from the "predecessor monitors with

Part Nos.: 75 56 249 / 75 56 769" as follows:

Only "one" TFT monitor is used because of its multi-use (DCS and table). When used for the table, the base is separate (also as an E part).

Because of the modified backlight (shade of blue), a "subjectively" stronger contrast image is displayed.

In a malfunction situation, the "new TFT monitors do not replace (77 28 657 / 30 99 975) the predecessors! The actual Part Number must always be ordered in a replacement situation!

Tab. 1 Disp.compl.

TFT Monitor Table (75 56 249)

The SMD-1897-M (model designation) is an 18" high-resolution B/W TFT monitor (46 cm) for the "table mode".

It is always shipped with a stand base.

OSD operation is performed using the push-buttons located on the (right) side.



Fig. 1: LCD Table

DCS TFT Monitor (75 56 769)

The DSB1802 - D (model designation) is an 18" high-resolution B/W TFT monitor (46cm) for operation in the DCS (Display Ceiling Suspension).

It is installed on the DCS using a "VESA adapter".

Installation is made without any space between using a rubber seal that runs all around; the monitors "appear" as a single surface.

OSD operation is performed using the push-buttons located at the bottom right (from the front).

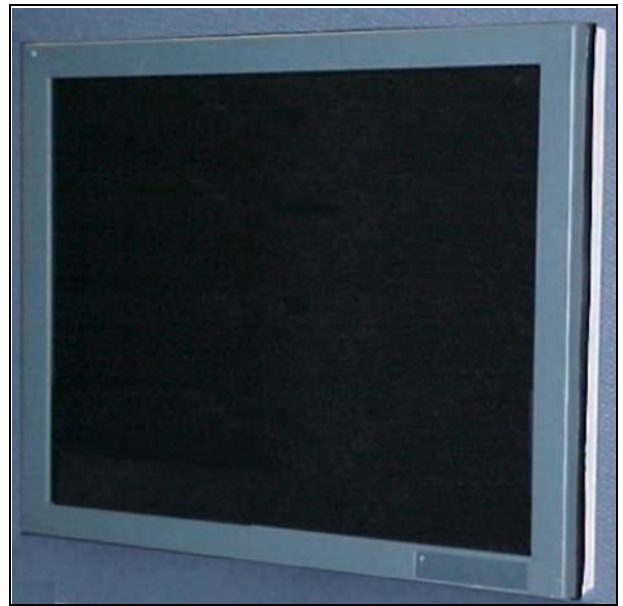


Fig. 2: DCS front

Table / DCS TFT Monitor

(77 28 657 / 30 99 975)

The DSB 1803 - DC (model designation) is an 18" high-resolution B/W TFT monitor (46cm) for operation in the DCS (Display Ceiling Suspension) and as a stand unit (table).

It is installed on the DCS or on the table base / monitor cart using a "VESA adapter".

Installation is made without any space between using a rubber seal that runs all around; the displays "appear" as a single surface.

The rubber seal is black when used in the DCS and silver when using it with the base (table). In a replacement part situation, a black rubber seal is always shipped; this replaces the existing rubber seal (defective unit) when used for the table.

OSD operation is performed using the push-buttons located at the bottom right (from the front).



Fig. 3: Table / DCS LCD with blue backlight

- A laptop is not required for adjustment. All adjustments can be performed in an on-screen menu, accessible using the push-buttons (front frame).
- The TFT monitor can be controlled with RGB (BNC) and BAS (Synch on green).

- Power switch:
 - The display has a power switch; it can be switched from the front - bottom right, in the rear cover panel, or from the back.
 - When installing it in the DCS, the “top row”, cannot be operated from the front.
- OSD operating menu:
 - In the OSD menu, under < **Others => Status** >, the firmware version as well as the timing that is currently configured and the operating hours can be read out.
- Technical Data:

| | |
|-----------------------------|--|
| Power Supply | <p>Voltage range => 100V, -10% to 240V, +10%.</p> <p>Nominal power rating => 0.5A at 240V / 1.0A at 100V.</p> <p>Power line frequency => 47Hz to 63Hz.</p> <p>Power consumption => 100V / 240V: < 75W (typically 55W).</p> |
| Video | <p>Inputs:</p> <p>B/W signal to BAS/G (BNC) or standard graphics card to R/G/B-H/V.</p> <p>Shipped configuration: RGB mono switch on “mono”.</p> <p>Switches R and G and B on On (terminal resistors on).</p> <p>Control via BAS signal to BAS/G input (BNC).</p> <p>Signal level:</p> <p>0.5V - 0.9V, BA signal 0.2V - 0.4V, Synch signal at 75 Ohm.</p> <p>Timings:</p> <p>The timings are stored in the FW for all applications released for Med (AX).</p> <p>It is also possible to store “new” timings (conforming to the VESA standard); these must (if necessary) be adjusted. When saved, they are placed in the background and when recalled are displayed correctly automatically.</p> <p>A maximum of 10 “customer-specific” timings can be adjusted.</p> <p>Starting with the 11th timing, the “oldest” is deleted.</p> |
| Luminous Intensity | <p>Max. luminous intensity = 700 cd/m² (typical). When shipped (typical): 400 cd/m² to 1 cd/m² (without external light sensor). 400 cd/m² to 1cd/m² (with external light sensor in a brightly lit room).</p> <p>Attention: When operating at higher luminous intensity than specified (400 cd/m), the operational life of the backlight is automatically reduced!</p> |
| Ambient Light Sensor | <p>The ambient light sensor is located at the top left of the front panel as viewed from the front.</p> <p>When the ambient light sensor is switched on, the max. brightness of the ambient light is compensated.</p> |

| | |
|----------------|---|
| Climate | <p>Transport (in original packaging): Environmental temperature -20 to +60°C, temperature gradient <5°C/h Relative humidity max. 75% at +25°C, non condensing, air pressure 1040 to 674 hPa.</p> <p>Operation: Ambient temperature +5 to +35 °C, temperature gradient <5°C/h. Relative humidity max. 75% at +25°C, non condensing, air pressure 1040 to 860 hPa</p> |
| Setup | <p>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.</p> <p>However, installation in the DCS is permitted.</p> |

Pixel Defects:

| Pixel Errors | Maximum Number |
|--|--------------------------|
| white | 3 |
| black | 5 |
| 2 attached white | 1 |
| 3 attached white | none |
| 3 attached black | none |
| Black and white pixels inside a circle with a 10 mm diameter | 3 |
| Total pixel errors (black and white) | 6 (incl. 3 white) |

- Video norm:
 - The TFT monitor detects the video norm that is set and sets itself automatically to it.
 - "New" norms not yet set (VESA standard), can (must) be set. The next time this norm is applied, the display automatically sets itself to the norm.
 - There is separate set of parameters in the display for each norm.
This means that each norm used must be set individually.
Exception: The backlight setting (max. brightness) has only one register; this means that all norms are displayed at the same max. contrast.

- Backlight:
 - The backlight is automatically adjusted.
This means that the maximum contrast that is set is retained to the control maximum.
The control maximum has been reached when the following appears in the OSD menu:

With the OSD Version < 9/2, under:

< Others => User Setting => Service Only for authorized person (press Up button 1x and Down button 2x, "as Password") >

With OSD versions beginning with 9/2, under:

Service Level 2 => Backlight control

the value 255 appears for the backlight command. A lower value indicates that the control is not yet at stop.

- For minimum luminous intensity values, see ([System-related Installation / Settings / p. 19](#)). If there is a drop below the "minimum value", replace the display.

Repair / Troubleshooting

In a malfunction situation, the TFT monitor is only completely replaced.

NOTE

Model: 75 56 249 / 75 56 769

There are no individual spare part numbers.

In a replacement situation, the TFT monitor is always only ordered completely (exception: power fuse).

Type: 7728657 / 30 99 975

There is "only" the TFT monitor as a replacement part. In a replacement part situation for table application, the display must be attached to the existing base.

The table base / power fuse can also be ordered as replacement part.

For replacement part numbers, see the SPC (Spare Parts Catalogue).

To adapt to the particular system, see "[\(System-related Installation / Settings / p. 19\)](#)".

NOTE

Every defective TFT monitor must be returned with an exact description of the error. Without this error description, it is virtually impossible to find sporadic and/or temperature-related errors as well as system-related causes.

Test and Auxiliary Equipment

- All required settings, see ([System-related Installation / Settings / p. 19](#)), must be performed using the push-buttons on the front of the unit.
- SMfit ACT luminous density meter, see CB-DOC (Computer Basic Documentation), TD00-000.801.xx... (Spare Parts Catalogue).
- A standard flashlight.

General Remark Regarding Use of the OSD Menu

TFT Monitor Table (75 56 249)

All required adjustments are made using the push-buttons arranged on the right side of the frame.

The push-buttons are locked when shipped (new system).

Unlocking or locking them is done as follows:

Press the SET button 1x.

Press the Up button 3x (arrow pointing up).

The OSD menu can be selected only if a BAS signal is present!

Without a BAS signal, the OSD menu cannot be selected.

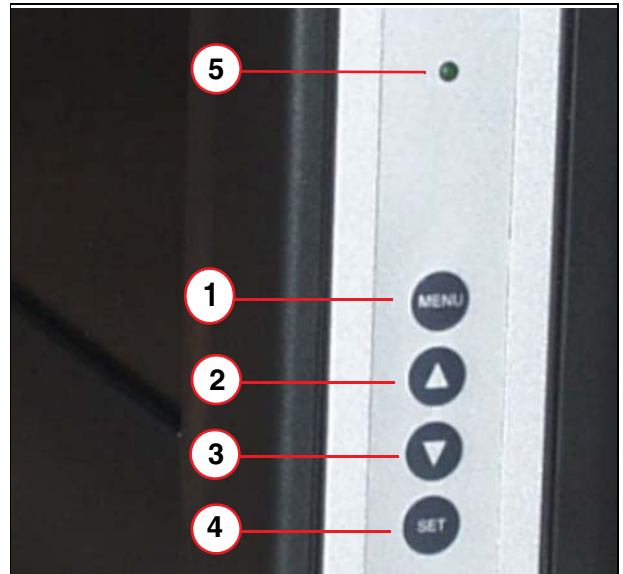


Fig. 4: LCD table buttons

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

Table / DCS TFT Monitor (75 56 769 / 77 28 657 / 30 99 975)

The front buttons are designed without a "designation". For the function of the buttons, see the illustration to the right.

All required adjustments are made using the push-buttons located on the front frame.

The push-buttons are locked when shipped (new system).

Unlocking or locking them is done as follows:

Press the SET button 1x.

Press the Up button 3x.

The OSD menu can now be displayed or is now blocked.

The OSD menu can be selected only if a BAS signal is present!

Without a BAS signal, the OSD menu cannot be selected.

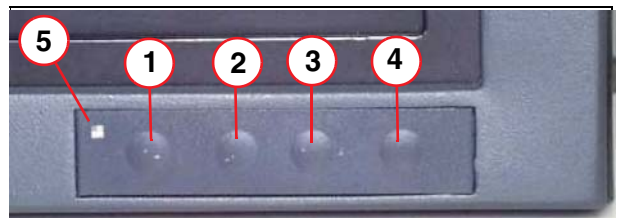


Fig. 5: LCD-DCS buttons

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

Function of the Push-buttons:

- **MENU:** Selection of the OSD menu is made using the MENU button.
The selection can be changed in the menu currently being displayed by using the MENU button.
- **Up (arrow pointing up):** The currently selected (black highlighted) Adjustment / Configuration mode is reached using the Up button. A switch is made to the “value” by using the Up button in the selected Adjustment / Configuration mode.
- **Down (arrow pointing down):** A switch is made to the “value” in the currently selected Adjustment / Configuration mode by using the Down button.
- **SET:**The selected menu can be exited again by using the SET button.

OSD Menu Versions

Beginning approx. the middle of 2002, the OSD menu will be shipped in the “OSD Version 9/2” version.

Primary difference to the previous version is:

Changed settings are no longer automatically accepted. When the OSD menu is exited, an inquiry appears automatically of whether to accept or reject the changes.

For the required settings, see ([System-related Installation / Settings / p. 19](#)).

Select the menu by pressing the “MENU” button.

For the required settings, see ([System-related Installation / Settings / p. 19](#)).

OSD Menu Version 9/2



Fig. 6: OSD menu 1

OSD Menu Version < 9/2

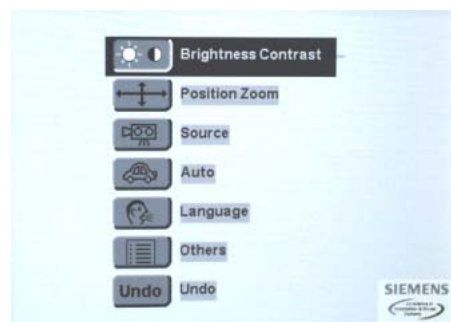


Fig. 7:

NOTE

Service Level 2 is activated as follows:
- Press the Up key 1x / Down key 2x.

Location of the OSD Menu:

The location of the OSD menu (on the display) can be changed under < Others >< OSD Settings >.

Selection dot:

In some menus, a function is selected using a “selection dot”

A white dot means the function is active!

Troubleshooting

- **General Remarks:**

Every defective TFT monitor must be replaced completely.

There are no individual replacement parts, except for the input fuses!

- Troubleshooting:

| Malfunction | Possible Cause | Corrective Measure |
|--|---|--|
| Monitor displays no image, power LED is off. | Fuse defective. Power cable not plugged in or power fuse missing. | 1. Fuse okay, line power present. 2. Replace the TFT monitor. |
| Monitor displays no image, power LED is on. | No video/synchronous signal (cable or video source). Inputs incorrectly plugged in, with a new installation. | 1. Video/synchronous signal present. 2. Replace the TFT monitor. |
| Unclear image, defects in vertical lines | Frequency and/or phase incorrectly set. Defects in the video signal. | 1. Frequency / phase setting (Frequency / Phase (Focus) / p. 27) 2. Video signal is free of defects. 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). 2. Replace the TFT monitor. |
| Required contrast cannot be achieved. | BA signal is too low. | 1. The BA signal must be at least 0.5V, otherwise "full control" is no longer assured. 2. The H/C adjustment under (Brightness / Contrast / p. 28) does not improve things. 3. Replace the TFT monitor. |

- **Synch problems:**

With synch problems, etc., make sure that the control signal is okay. Example: The synch signal must be between 200 mV and 400 mV with Synch on green (BAS input) at 75 Ohm or with H / V control => TTL level / HCMOS level, otherwise the display cannot synchronize.

- Maximum contrast after replacement of the TFT monitor cannot be reached:**

If the max. contrast is not reached, check the switch configuration on the BNC outlets. With B/W control, the BNC configuration for green must be used and the RGB switch <=> mono must be set to "Mono"! If the switch position is incorrect, not all 3 pixels, rather only the green input is controlled (green subpixels only); because of this, the maximum contrast is not reached.
- User Settings:**

If needed, regardless of the reason, all settings can be reset to the user settings; when this is done, all adjustments that have been performed are cancelled.

Perform a reset in the OSD menu.

 - ⇒ **With OSD version < 9/2:**

Others => User Setting => Service Only for authorized person (press 1x up, 2x down) => Reset User Settings =>press Up push-button 1x >.

 - ⇒ **With OSD version beginning with 9/2:**

Service level 2 (1x Up / 2x Down) => Reset settings => Reset user settings => press Up push-button 1x.

NOTE

"All" values are reset by the User Settings Reset!

In conclusion, the adjustment for brightness / contrast / ambient light sensor must be performed!

Tab. 2 Service images

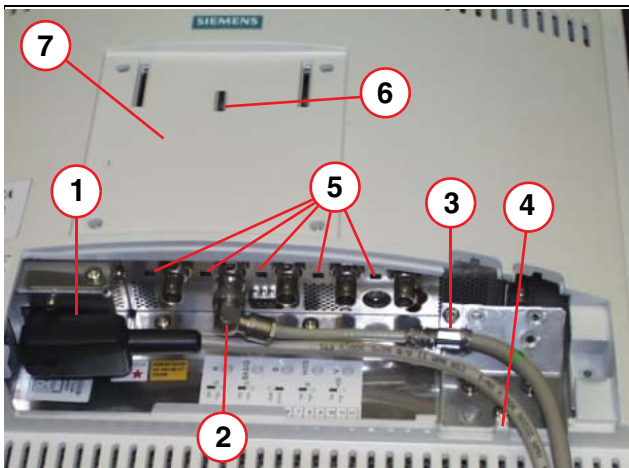


Fig. 8: LCD-DCS Connection
 Pos. 1 Power connector, power fuse
 Pos. 2 BNC connector (BAS)
 Pos. 3 Triax cable, strain relief and ground
 Pos. 4 Connector for ground cable
 Pos. 5 Switch for BNC inputs
 Pos. 6 Switch for cable length adaption
 Pos. 7 VESA adapter (mechanicl adapter)

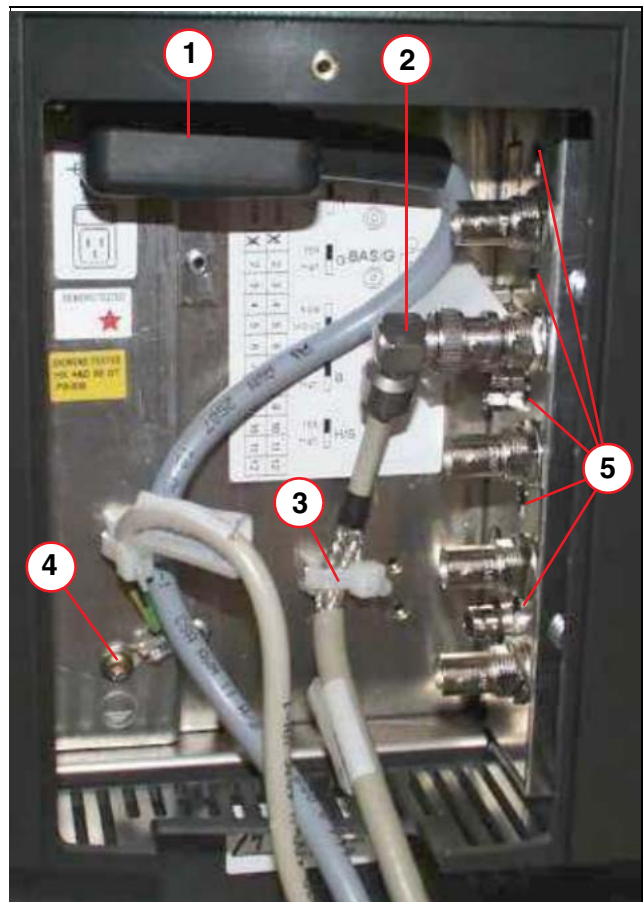


Fig. 9: LCD table connection
 Pos. 1 Power connector, power fuse
 Pos. 2 BNC connector (BAS)
 Pos. 3 Triax cable, strain relief, no ground!
 Pos. 4 Connector for additional ground cable
 Pos. 5 Switch for BNC inputs

General Remarks

NOTE

As of 02/2002, the DIN 6868 - 57 Acceptance Test for Image Playback Equipment is required only for Germany:

If the TFT monitor is specified as a diagnostic monitor (Category A or B), an Acceptance Test must be performed after replacing the TFT monitor! In addition, the Serial Number of the TFT monitor must be changed in the Acceptance Protocol and new reference values must be defined.

- **OSD Operation:**

For general remarks regarding operation of the OSD menu (release of operation, etc.), see [\(General Remark Regarding Use of the OSD Menu / p. 13\)](#).

- **Use in the Med field:**

As a rule, timings used in the Med field are set (as fixed values in the FW).

However, the brightness/contrast settings must be performed under <Brightness Contrast =>...>. Reason: Slight differences in the BAS signal (graphics card) lead to different brightness/contrast values.

- **Use outside of the Med field (standard PC):**

For “non”-Med norms, an auto-adjustment for display problems must be performed as follows.

⇒ **With OSD version < 9/2, under:**

Auto function => the Auto button “Auto all “ must be set to On => select Auto choose source => perform the Auto-adjust (press Up 1x).

⇒ **With OSD versions beginning with 9/2, under:**

Auto functions => (Auto Pos. & Auto Freq & Phase = Yes) => Execute selected auto functions (select) => Perform Auto adjust (press UP 1x)

If needed, the position in the OSD menu can be set under <**Position Zoom =>>**

and the focus can be set in the OSD menu under <**Others => Frequency Phase>**

NOTE

Prior to performing the auto adjustment (Execute selected auto-function), the “Brightness / Contrast button absolutely must be set to “No”!

If Yes is set, the luminous intensity setting will be written over with stored “default values”.

Installing the Replacement Unit

Table / DCS TFT Monitor (77 28 657 / 30 99 975) with Blue Backlight

NOTE

TFT monitors 77 28 657 / 30 99 975 (with blue backlight) are the successors to the TFT monitor with Part Numbers 75 56 249 and 75 56 769.

In a replacement situation, only the existing TFT monitor (Part No.) may be ordered as the replacement part!

The TFT monitors (77 28 657 / 30 99 975) are used in the DCS and on the table (with base). However, only the "TFT monitor" is always shipped as the replacement part and must be adapted to the application.

The cable rectifier (cable length adapter) must be checked and adjusted prior to installation on the DSC. The switches are covered by the mechanical adapter (VESA adapter)!

- **With use on the table (with base), the following must also be observed:**

- The back wall of the “base” must be pulled off towards the back (snap-in), see illustration of opening the base.



Fig. 10: Opening the base

- Disconnect the electrical connections.

Remove the base (4 screws, see illustration => removing the base).

- In the "new" display, set the cable rectifier (cable length adaptor) to the particular cable length.

- Install the display in the reverse order of the instructions above.

- Replace the surrounding “black” rubber seal with the “silver” rubber seal from the defective unit, see the illustration of the rubber seal.

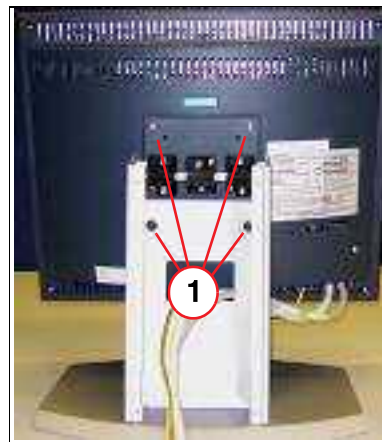


Fig. 11: Removing the base

Pos. 1 4x mounting screw



Fig. 12: Rubber seal

- **Connections:**

- **BNC:**
See LCD-DCS connection, Pos.2. The BAS connection (BNC) is made at the BAS / G input.
- **Power Line Connection:**
See the LCD-DCS Connection, Pos.1.
- **Ground Wire Connection:**
See the LCD-DCS Connection, Pos.4.
- **Triax Shielding:**
See the LCD-DCS Connection, Pos.3.
The connection to the ground wire connector and the strain relief for the triax cable is ensured by the cable clamp.
- **Input Switches:**
See the LCD-DCS Connection, Pos. 5:
 - ⇒ Switch R on 75 Ohm.
 - ⇒ Switch G on 75 Ohm.
 - ⇒ Switch RGB/Mono on mono.
 - ⇒ Switch B on 75 Ohm.
 - ⇒ Switch H(S) on 75 Ohm
- **VESA Adapter:**
See the LCD-DCS Connection, Pos. 7.
The display is mechanically mounted on the DCS over the VESA adapter.

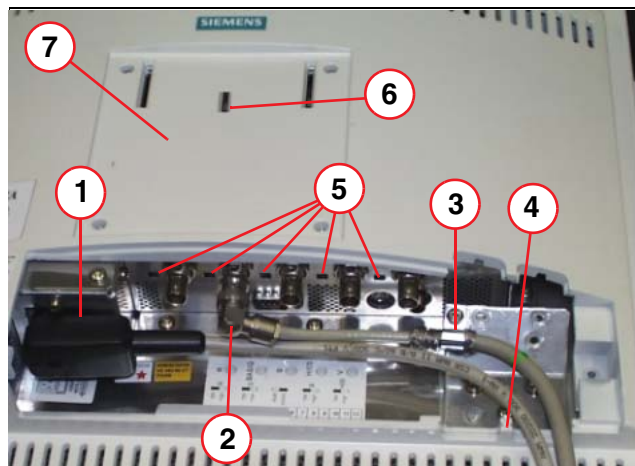


Fig. 13: LCD-DCS Connection

| | |
|--------|---------------------------------------|
| Pos. 1 | Power connector, power fuse |
| Pos. 2 | BNC connector (BAS) |
| Pos. 3 | Triax cable, strain relief and ground |
| Pos. 4 | Connector for ground cable |
| Pos. 5 | Switch for BNC inputs |
| Pos. 6 | Switch for cable length adaptation |
| Pos. 7 | VESA adapter (mechanical adapter) |

- **Cable Rectifier:**

See the illustration of the LCD-DCS connection, Pos: 6

When installed in the DCS, the built-in cable rectifier is activated; for the switch positions, see the Cable Length Adapter.

For the configuration, see (Tab. 3 / p. 23)

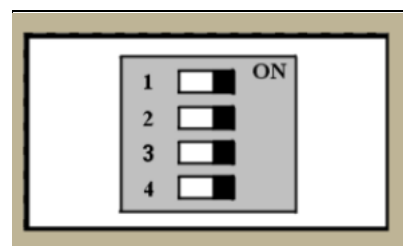


Fig. 14: Cable length adaptation

Tab. 3 Cable Length

| Location of the image system | Location TFT Monitor | Cable length (Normal situation) | Cable Rectifier: Switches 1 to 4 |
|------------------------------|------------------------------|---------------------------------|----------------------------------|
| Control room | Control room | ≤15 m | OFF |
| Control room | Examination room (Rack/Cart) | ≥ 15 m | ON |
| Equipment room | Control room | ≥ 15 m | ON |
| Equipment room | Examination room (Rack/Cart) | ≥ 15 m | ON |

Table TFT Monitor (75 56 249)

- BNC Connection:**
 See the LCD-Table connection, Pos.2 . The BAS connection (BNC) is made at the BAS / G input.
- Power Line Connection:**
 See LCD-Table connection, Pos.1.
- Ground Wire Connection:**
 See LCD-Table connection, Pos. 4.
- Triax Shielding:**
 The shielding is **not** connected to the ground wire!

 A strain relief for the BNC cable is provided above the cable ties, see LCD-Table connection, Pos. 3. After making the connection, make sure that the triax shielding has no connection to the ground wire connection!
- For **switch positions** for the input switches, see the LCD-Table connection, Pos. 5:
 - ⇒ Switch R on 75 Ohm.
 - ⇒ Switch G on 75 Ohm.
 - ⇒ Switch RGB/Mono on mono.
 - ⇒ Switch B on 75 Ohm.
 - ⇒ Switch H(S) on 75 Ohm

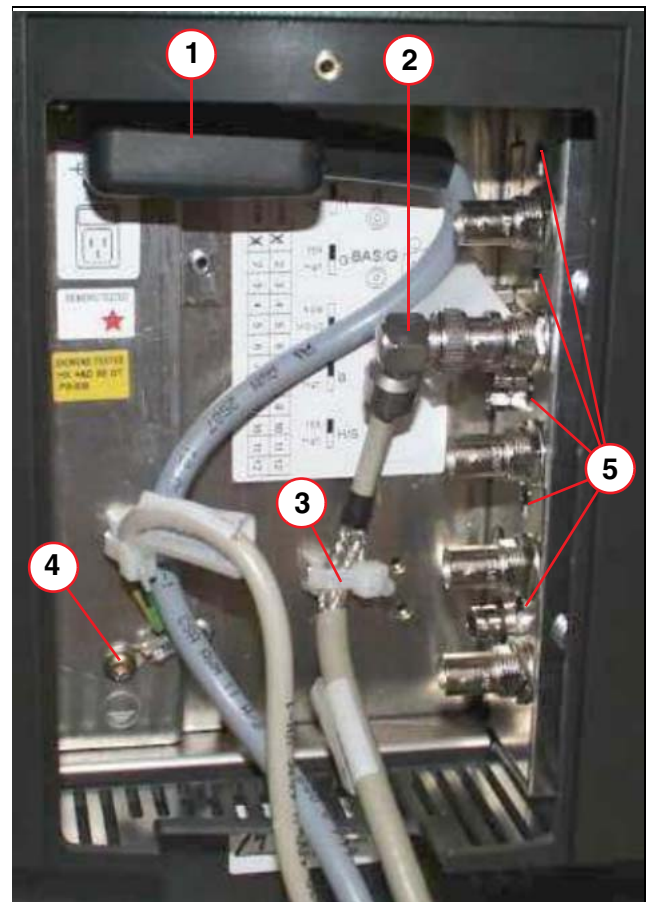


Fig. 15: LCD table connection
 Pos. 1 Power connector, power fuse
 Pos. 2 BNC connector (BAS)
 Pos. 3 Triax cable, strain relief, no ground!
 Pos. 4 Connector for additional ground cable
 Pos. 5 Switch for BNC inputs

DCS TFT Monitor (75 56 769)

NOTE

The cable rectifier (cable length adapter) must be checked and adjusted prior to installation on the DSC. The switches are covered by the mechanical adapter (VESA adapter)!

- BNC Connection:**

See LCD-DCS connection, Pos.2. The BAS connection (BNC) is made at the BAS / G input.
- Power Line Connection:**

See the LCD-DCS Connection, Pos.1.
- Ground Wire Connection:**

See the LCD-DCS connection, Pos. 4.
- Triax Shielding:**

See the LCD-DCS Connection, Pos.3.

A connection to the ground wire connector and the strain relief for the triax cable is provided over the cable clamp.
- For **switch positions** for the input switches, see the LCD-DCS Connection, Pos. 5:

 - ⇒ Switch R on 75 Ohm.
 - ⇒ Switch G on 75 Ohm.
 - ⇒ Switch RGB/Mono on mono.
 - ⇒ Switch B on 75 Ohm.
 - ⇒ Switch H(S) on 75 Ohm
- For the **cable rectifier**, see the LCD-DCS connection Pos: 6

When installed in the DCS, the built-in cable rectifier is activated, for switch positions, see Cable Length Adapter, Pos. 8.

For the configuration, see [\(Tab. 3 / p. 23\)](#)
- For VESA adapter, see LCD-DCS Connection, Pos.7.

The display is mechanically mounted on the DCS over the VESA adapter.

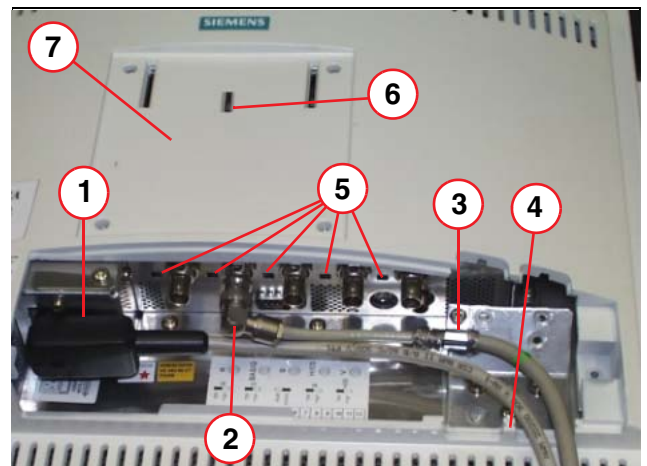


Fig. 16: LCD-DCS Connection

- Pos. 1 Power connector, power fuse
- Pos. 2 BNC connector (BAS)
- Pos. 3 Triax cable, strain relief and ground
- Pos. 4 Connector for ground cable
- Pos. 5 Switch for BNC inputs
- Pos. 6 Switch for cable length adaption
- Pos. 7 VESA adapter (mechanicl adapter)

Item 8

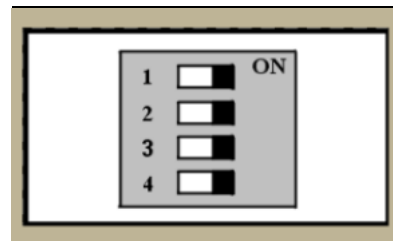


Fig. 17: Cable length adaptation

Adjustment Instructions, applicable for "all" Applications

General Information

- If used in systems with the Syngo platform, make sure that when selecting the test images, the "window values" are fully opened!
- Adjustments may be performed only after a warm-up time of 20 minutes.
- The control buttons must be locked again following installation.
- If two video norms are used for the TFT monitor (e.g. emergency mode), both video norms must be set!

Exception: The backlight setting (maximum contrast) is not "norm-dependent". As a result, it is the same for both norms!

- The brightness measurements are performed with the SMFit test meter.

When performing the measurement, make sure that the measuring sensor does not exert any pressure on the panel surface. Otherwise, panel damage cannot be ruled out!

Size / Position

Check the size and position in the norm being used.

The display must appear "display-filling", but the H/V relationship must be correct (squares must be displayed square).

If this is not the case, the size can be adjusted in the OSD menu.

If Med norms are used:

⇒ With OSD version < 9/2, under:

Others => User Setting => Service Only for authorized person (press 1x up, 2x down) => Reset User Settings =>press Up push-button 1x >.

⇒ With OSD versions beginning with 9/2, under:

Service level 2 (1x Up / 2x Down) => Reset Settings => Reset user settings => press Up push-button 1x.

If non-standard norms are used, per the VESA standard:

⇒ With OSD version < 9/2, under:

Auto function => the Auto button "Auto all " must be set to On => select Auto choose source => perform the Auto-adjust (press Up 1x).

⇒ With OSD versions beginning with 9/2, under:

Auto functions => (Auto Pos. & Auto Freq & Phase = Yes) => Execute selected auto functions (select) => Perform Auto adjust (press UP 1x)

Manual adjustment of the size is not possible.

The position can be adjusted in the OSD menu under:

< **Position Zoom =>>.**

Frequency / Phase (Focus)

NOTE

- As a rule, “only” the phase adjustment is performed for the released Med applications.
- With this adjustment, it is ensured that the picture is correct for the display mask.
- Incorrect adjustment is manifested as “out of focus” and / or horizontal flicker.
- The adjustment can be made using the SMPTE test pattern (quick adjustment) or by generating a text page.
- All listed values, including the listed tolerances, are setting values. The listed tolerances are not values to check the constancy of the display!

The adjustment is made in the OSD menu under <Others => Frequency Phase>

- **Using SMPTE:**

Tab. 4 SMPTE

Select the SMPTE test pattern at the system.

The 5 high-frequency line groups must be equally well visible!

The adjustment is made using the slider for phase.

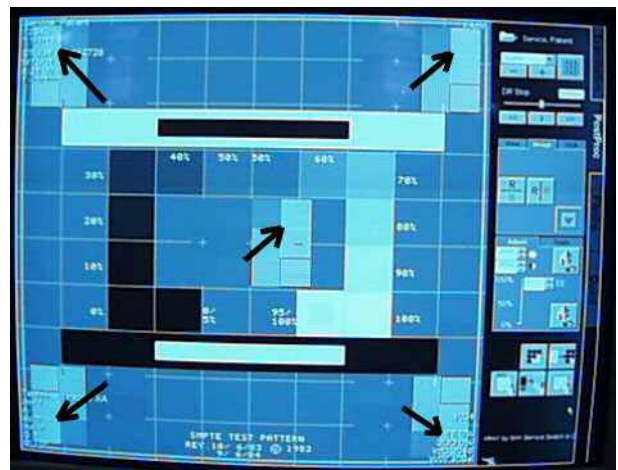


Fig. 18:

- **Using a Text Page (exactly adjustable)**

Select Explorer to specify the background color for the Notepad and select Notepad.

Selecting Explorer:

- Select <Utilities> in the service main menu.
- Select <Escape to OS> in the Utilities (Source) window.
- Select <NT Command Interpreter> under Command.
- Enter <explorer> under Parameters.
- Start Explorer with “Enter”.

Select Display (invert so that the highlighted elements appear on a black background):

- Start => “**Control Panel**” under “**My Computer**”.
- In the window on the right => open “**Display**” by double-clicking on it.
- Select “**Appearance**” in the menu bar.
- Select “**Marked Elements**” under Display Element.
- Select “**black**” under Color.

Generating a Text Page with “mmmmm”:

- In Explorer, open "Notepad.exe" under C/Winnt/.
- Open Notepad all the way (to cover the entire screen).
- Fill approx. 3 lines with “mmmmmm” => select the lines => copy => paste until the page is full.
- Select the entire page; when this is done, the background becomes black and the characters appear white.
- Under “Edit” => select => “Set Font..” => Arial / Regular / 12.
- The adjustment can now be performed using this picture, a complete page filled with “m...” with white characters and a black background.
- Adjust the entire screen area to the optimum focus using the sliders for frequency and phase.

Brightness / Contrast

| |
|-------------|
| NOTE |
|-------------|

-
- **Contrast:**
Using Contrast, detection of the 95% field in the 100% field is adjusted (limitation).
 - **Brightness:**
Using Brightness, the basic brightness and detection of the 5% fields are adjusted.
 - **Backlight:**
Maximum white (100% field) is adjusted using Backlight.
 - **The settings are made using the SMFit test meter.**
When performing the measurement, make sure that the measuring sensor does not exert any pressure on the panel surface. Otherwise, panel damage cannot be ruled out!
-

Ambient Light Sensor

When shipped, the ambient light sensor is deactivated (spare parts shipments).

Depending on the system, it must be activated and adjusted (as a rule, it is always active).

AX Application

AXIOM Artis FC / FA / BC / BA / DFCM / DBCM / AXIOM ICONOS with Image System / AXIOM Sireskop SD with Image System

Brightness / Contrast / Ambient Light Sensor

Brightness / Contrast

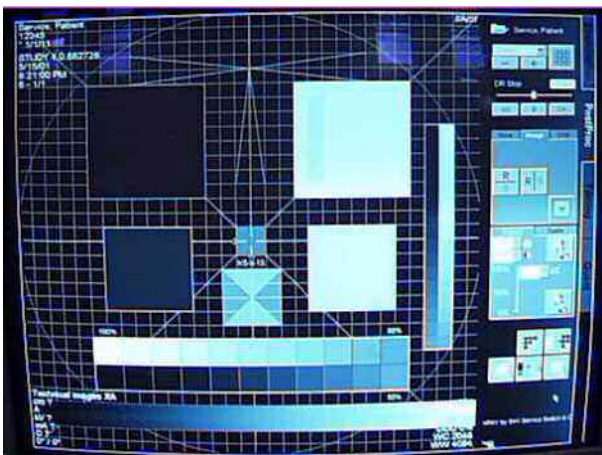


Fig. 19: Image1

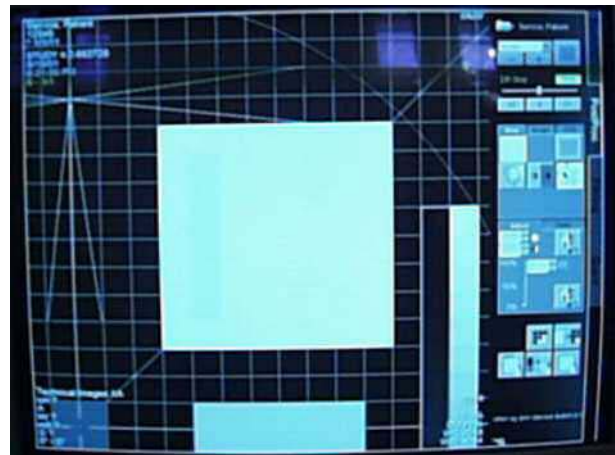


Fig. 20: Image1

NOTE

AXIOM Artis

Prior to the adjustment, the window values for the test pattern must be fully opened!

WC 2048

WC 4094

- **Brightness / Contrast**

- Select the test pattern (Fig. 20 / p. 29).
- Select zoom, drag the white area to the center of the screen (Fig. 20 / p. 29).
- Adjustment is performed in the OSD menu under < **Brightness Contrast** >. **The ambient light sensor must be switched off in this menu for adjustment of the luminous density!**
- Set the slider for "**Contrast**" to the maximum.

- Set the slider for "**Brightness**":

DSB 1803-DC

- With Revision 1 (TFT), set to **minimum**.
- With Revision 2 or higher (TFT), set to "**30**".

DSB 1804-DC

- Set to "**30**".



Fig. 21: Label (Revision)

Pos. 1 Revision Level

- Use the slider for "**Backlight**" in the 100% field to set the value from the table (Backlight) (Tab. 5 / p. 35).
- Drag the black area to the center of the screen.
- Use the slider for "**Brightness**" in the black area to set the value from the table (Brightness) (Tab. 5 / p. 35).
IMPORTANT: The 5% field in the black area must still be visible!
If the value in systems with black value (**possible only in "old" systems prior to AXIOM**) cannot be adjusted, see (User Gray Scale / p. 31).
- White area in the center of the pattern
- Use the slider to lower the contrast until the cd/m² value in the white area (measured with the Mavo monitor) drops.
Then increase again using the slider until the previously set value (backlight value from the table) is just reached again.
In every case, the 95% field must be recognizable!
- Check the brightness value in the black field, adjust it if required.
If it needed to be "readjusted", the contrast value must be checked again, and if needed, adjusted.
- The ambient light sensor must be switched on again unless it is always not used for this application (see IQAP).
- Final Check: All steps must be detectable in the test pattern. If not, repeat the adjustment.

The operating buttons must be locked (again)!

User Gray Scale

NOTE**User Gray Scale 1 - 2.**

The allocation User 1-2 is made automatically (norm-dependent) over the permanently stored norms, a Med norm with a black value is applied, the User button is automatically selected (it appears light).

For norms with a black value ("old systems" only, prior to AXIOM ...), it is possible that the brightness value cannot be adjusted (too high). In this instance, an additional black value compensation can be performed in the < User Gray scale > menu.

⇒ With OSD version < 9/2 under:

Brightness Contrast => User Gray Scale

⇒ With OSD Version beginning with 9/2 under:

Brightness Contrast => Black Level.

- Use the Brightness slider to adjust the brightness to the value from the table ([Tab. 5 / p. 35](#)).
- Set the slider for Contrast to the maximum.
Adjust the slider so that the 95% field in the 100% is "clearly" visible.

The operating buttons must be locked (again)!

Ambient Light Sensor

- Ambient light sensor => as a rule with an AX application, the ambient light sensor is activated.
 - Select the test pattern ([Fig. 20 / p. 29](#)).
 - The adjustment is made under <Others => **User Setting**>
 - Set the switch for the **Ambient light sensor** (ALS) to **ON** (light dot).
 - Set the slider for ALS delay to 0 (only for adjustment, quick control).
 - The slider for ALS sensitivity was adjusted at the factory to the optimum synchronism of the equipment and as a rule should not be changed in the field.
However, if different control action is found (after finishing a complete adjustment), the control action can be adapted using ALS.
 - Completely cover the ambient light sensor (front frame, top left).
Use the slider for ALS offset to set the value from the table ([Tab. 5 / p. 35](#)) for ALS offset (take note of the system!).
 - Completely open the ambient light sensor, use a flashlight to illuminate the sensor during the adjustment (front frame, top left).
Use the slider for ALS limit to set the value from the table ([Tab. 5 / p. 35](#)) for ALS limit (take note of the system!).
 - Set the slider for ALS delay to 140.

DPMS (Display Power Management System)

With **On**, the backlight is shut down if the BAS signal is missing.

The switch for **DPMS to ON** (light dot).

The operating buttons must be blocked again!

Systems without Image System

(e.g. Iconos R100 and R200 ND / Sireskop CX / Siregraph CF)

- When it is switched on, the display detects the applied video norm and automatically sets itself to it.
 - New norms that have not yet been set must be set. The next time this norm is applied, the display automatically sets itself to the norm.
- Prior to beginning the adjustment, the monitor must be switched on for approx. 20 min.

Selecting the OSD Menu

For start and operation, see [\(General Remark Regarding Use of the OSD Menu / p. 13\)](#).

Adjustment / Configuration**NOTE**

- **To ensure IQ, the adjustment must be performed in the following sequence.**
- **The Auto adjust / Reset of user settings may not be performed with the DIC test image; "only" the normal DIC image may be present.**

Configuration

(The particular sub-menu is selected with the Up key.)

- **Norm Group**
 - In the OSD menu, under: **Service Level 2** ([General Remark Regarding Use of the OSD Menu / p. 13](#)) under => **Tolerance** => **Norm group** switch to **PAL-RGB**.
- **Resetting User Settings**
 - In **Service level 2**) => **User settings** => **Reset user settings** perform a reset of the user settings.
- **Selecting the Display Function**
 - In the OSD menu, under: **Service Level 2** => **Calibration** => **Select Display function** => set to "3".
- **Checking the H-Scaler Clip**
 - In the OSD menu, under: **Service Level 2** => **Other** => **H-Scaler clip** the H / V relationship can be corrected if needed.
- **Do not yet exit the OSD menu.**

Adjustment

- **Brightness / Contrast Adjustment**

NOTE

The measurement is made using the SMfit test meter; here, the influence of the ambient brightness must be excluded (by covering the area around the measuring sensor).

When making the measurement, make sure that the measuring sensor does not exert any pressure on the panel surface; this can cause the panel to be damaged or to fail.

NOTE

Contrast: Detection of the 95% fields in the 100% field (limitation) is adjusted using video gain (contrast).

Backlight: The 100% field (maximum white) is adjusted using the backlight.

Brightness: Adjustment of the black area (basic brightness and detection of the 5% field).

Select the black / white text image on the Videomed DIC:

- Videomed DIC
set the S2 - 3 / 4 / 5 / 5 switch to the On position. (the test pattern first appears after a few seconds following selection).
- Press the S1 push button until the black / white test image is displayed on the TFT monitor.

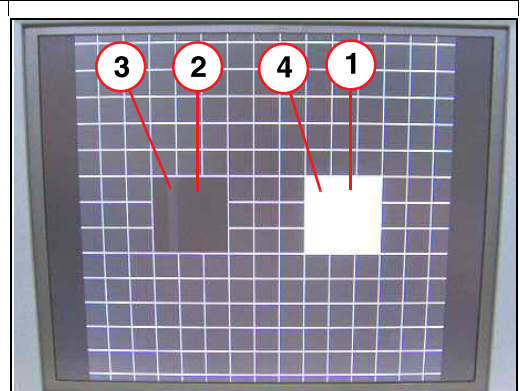


Fig. 22: Videoemd DIC B/W test image

- Pos. 1 White field (100% white)
- Pos. 2 Black field (0% white)
- Pos. 3 5% field
- Pos. 4 95% field

- The adjustment is performed under: **OSD Menu => Brightness / Contrast.**
- Set the slider for **Contrast to maximum.**
- Set the slider for **Brightness to "30".**
- "1" Use the slider for **Backlight** in the 100% field to set the value for the particular system from (Tab. 5 / p. 35).
- "2" Use the slider for **Brightness** in the black field to set the value for the particular system from (Tab. 5 / p. 35).
- "3" Lower the slider for **Contrast** until the **95% field is visible.**
- **"Alternately repeat adjustments 1, 2 and 3"** until the specified values are reached.
- Saving the new adjustment values:
Press the **Set** button as often as needed until the "**Quit OSD menu**" appears. Select **"Accept changes"**.
- Press the Up key; the menu will no longer be displayed.
- Block the OSD menu again by pressing the combination "**SET**" 1 x and "**Up**" 3 x.
- Switch off the test image in the Videomed DIC:
Set the Videomed DIC S2 - 3 / 4 / 5 / 6 switch to the Off position.
Press the S1 pushbutton; a reset will take place and the "normal" image will be displayed again after a few seconds.

Ambient Light Sensor

- Ambient light sensor => as a rule with an AX application, the ambient light sensor is activated.
 - Select the test pattern (Fig. 20 / p. 29).
 - The adjustment is made under **<Others => User Setting>**
 - Set the switch for the **Ambient light sensor (ALS)** to **ON** (light dot).
 - Set the slider for ALS delay to 0 (only for adjustment, quick control).
 - The slider for ALS sensitivity was adjusted at the factory to the optimum synchronism of the equipment and as a rule should not be changed in the field.
However, if different control action is found (after finishing a complete adjustment), the control action can be adapted using ALS.
 - Completely cover the ambient light sensor (front frame, top left).
Use the slider for ALS offset to set the value from the table (Tab. 5 / p. 35) for ALS offset (take note of the system!).
 - Completely open the ambient light sensor, use a flashlight to illuminate the sensor during the adjustment (front frame, top left).
Use the slider for ALS limit to set the value from the table (Tab. 5 / p. 35) for ALS limit (take note of the system!).
 - Set the slider for ALS delay to 140.

Checking the DPMS (Display Power Management System)

With **On** (default setting), the backlight is shut down if the BAS signal is missing.

The switch for **DPMS to ON** (light dot).

Block the OSD menu again by pressing the combination "**SET**" 1x and "**Up**" 3x!

Brightness / Contrast Values

Tab. 5 B/C Value

| System | Brightness | Backlight | ALS Offset | ALS Limit |
|--------------------------------|-------------------------------|-----------------------------|-----------------------------|-----------------------------|
| AXIOM Artis FC /FA/BC/BA | $0,8 \pm 0,2 \text{ cd/m}^2$ | $400 \pm 20 \text{ cd/m}^2$ | $400 \pm 20 \text{ cd/m}^2$ | $450 \pm 20 \text{ cd/m}^2$ |
| AXIOM Artis MP | $0,8 \pm 0,15 \text{ cd/m}^2$ | $260 \pm 10 \text{ cd/m}^2$ | $260 \pm 20 \text{ cd/m}^2$ | $450 \pm 20 \text{ cd/m}^2$ |
| AXIOM Iconos R200 | $0,8 \pm 0,15 \text{ cd/m}^2$ | $260 \pm 20 \text{ cd/m}^2$ | $260 \pm 20 \text{ cd/m}^2$ | $450 \pm 20 \text{ cd/m}^2$ |
| AXIOM Sireskop CX | $0,8 \pm 0,15 \text{ cd/m}^2$ | $260 \pm 20 \text{ cd/m}^2$ | $260 \pm 20 \text{ cd/m}^2$ | $450 \pm 20 \text{ cd/m}^2$ |
| AXIOM Iconos R200 ND / R100 | $0,8 \pm 0,15 \text{ cd/m}^2$ | $260 \pm 20 \text{ cd/m}^2$ | $260 \pm 20 \text{ cd/m}^2$ | $450 \pm 20 \text{ cd/m}^2$ |
| Siregraph CF | $0,8 \pm 0,15 \text{ cd/m}^2$ | $260 \pm 20 \text{ cd/m}^2$ | $260 \pm 20 \text{ cd/m}^2$ | $450 \pm 20 \text{ cd/m}^2$ |
| Leonardo Workstation | $0,8 \pm 0,2 \text{ cd/m}^2$ | $260 \pm 5 \text{ cd/m}^2$ | $260 \pm 20 \text{ cd/m}^2$ | $450 \pm 20 \text{ cd/m}^2$ |
| ACOM PC | $0,8 \pm 0,2 \text{ cd/m}^2$ | $400 \pm 20 \text{ cd/m}^2$ | $400 \pm 20 \text{ cd/m}^2$ | $450 \pm 20 \text{ cd/m}^2$ |
| "Standard" PC Application | $0,8 \pm 0,2 \text{ cd/m}^2$ | $400 \pm 20 \text{ cd/m}^2$ | $400 \pm 20 \text{ cd/m}^2$ | $450 \pm 20 \text{ cd/m}^2$ |

Tab. 6 Changes

K 03 System-related Settings

Page 32

Systems without image system added.