

**Sunlight Viewable  
Marine Monitors  
series  
VDS 2xxSV  
USER MANUAL**

**V.D.S. Video Display Systems S.r.l.**

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Rev2.0 – November 2005

**List of revisions**

<b>Date</b>	<b>Rev.</b>	<b>Notes</b>
05/2005	1.0	First edition
11/2005	2.0	General review

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## 1 OVERVIEW

### **Introduction to V.D.S.**

Established in 1979, V.D.S. Video Display Systems srl is an Italian industrial undertaking specialized in the design and manufacture of top quality LCD Monitors and Panel PCs for the Transportation field, with applications for Buses, Trains, Leisure Boats and Ships.

For these products VDS has got the certification of its Quality Management System in conformity of the UNI EN ISO 9001: 2000 standard.

As far as Leisure Boats and Ships are concerned, VDS manufactures Marine Monitors for on deck applications (series **SV – Sunlight Viewable**) and marine monitors for below deck applications (series **MDS® - Marine Display System**).

### **The SV series**

The **VDS 2xxSV** is a series of analog monitors for marine use equipped with TFT color bonded displays specifically engineered to allow excellent viewability of the images visualized on the screen in any condition of environmental illumination, both in direct bright sunlight and in complete darkness.

Moreover, the enclosures of the display units of the **SV** series are fully waterproof (IP65), so that the monitors may be installed outside on deck or on the fly bridge.

Since in these applications reliability is an essential requisite, all the components of the monitors of the **SV** series have been selected among the most qualified professional products available on the market.

### **TFT displays**

The monitors of the **SV** series are equipped with TFT displays characterized by high brightness, high contrast and wide viewing angles.

Yet the intensity of illumination that characterizes the marine environment is so high that these excellent displays would be inadequate for use in full sunlight, if not properly engineered.

In engineering the displays VDS has not modified their brightness by increasing the number of backlight lamps, as this would result in a dramatic increase of the thermal power to be dissipated.

In fact, an increase of the displays brightness obtained by increasing the number of backlight lamps would create thermal problems that would reduce significantly the life of the electronic components of the monitors.

Moreover, this approach would give no solution to the problem of reflexions of direct sun rays on the display's screen, nor it would increase the contrast, on which actually depend the "viewability" of the images visualized on the screen. The engineering of the display units carried out by VDS was aimed at minimizing the effects of direct sunlight on the screen and increasing the contrast to such a level as to have an excellent viewability even in direct bright sunlight.

This approach does not affect the thermal power to be dissipated which remains in the range 30÷50 watt (depending on the display model): this made possible to design waterproof enclosures characterized by minimized overall dimensions.

The models available for the displays of the SV series are listed in Tab.1:

Model	Display size	Resolution
VDS 208SV	8.4"	1024x768
VDS 212SV	12.1"	1024x768
VDS 215SV	15"	1024x768

Tab.1

## Mist

One of the most demanding problem to be worked out when designing a monitor for outside marine use is mist.

Any time the degree of relative humidity of the air is high and the temperature goes down under a certain level the so called "dew point" is reached: this means that part of the water contained in the air in form of vapor condensates and generates a mist that makes a deposit on all the surfaces exposed to the air.

If a certain quantity of air penetrates into the display unit, when the condition described above occurs the water contained in the air turns into mist that deposit on all the internal parts of the monitor, including the internal surface of the display's screen.

This condition not only makes the monitor practically unusable, but it is necessary to disassemble the display unit completely to eliminate the mist deposited on the screen.

To makes things even more complicated, this water contains salt and is therefore highly corrosive.

This problem has been solved from scratch by VDS using bonded displays: in this way the deposit of mist on the internal surface of the display's screen can not occur, whatever the degree of humidity of the air and whatever the thermal excursion to which the display unit is submitted.

As far as the mist on the other internal parts of the display unit is concerned, the monitors of the **SV** series are equipped with Silica Gel desiccators that adsorb the mist.

The desiccant material is contained in small bags fixed to a plate that can be easily removed from the rear of the monitor without disassembling the display unit.

The substitution of the saturated desiccant should be performed by qualified service technicians only (see **Chapter 2 - High Voltage Danger** paragraph).

### **Mechanical structure**

The mechanical structure of the display units of the **SV** series has been designed following four basic rules: thermal balance, ruggedness, simplicity of mounting, aesthetic elegance.

In order to minimize the possibility of overheating, the whole structure is made of aluminium, with special devices to optimize the thermal dissipation of the heat generated by the CCFL lamps.

Two mounting versions are available:

- CONSOLE mounting
- YOKE BRACKET mounting

The ON/OFF switch, the status LED lamp, the brightness adjustment and input signal (VGA and PAL/NTSC) selection pushbuttons are mounted on the front bezel (see Fig.1):

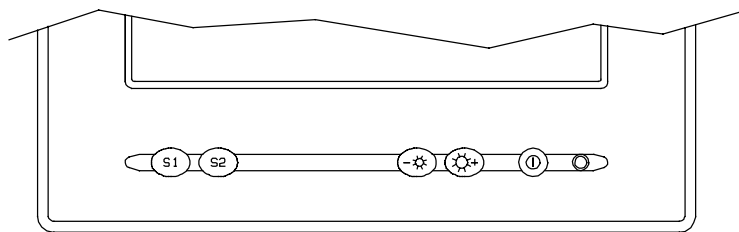





Fig.1

For the CONSOLE version the fixing system of the monitor to the console is made up of two adjustable brackets that are anchored to the display unit's enclosure; in this way it is possible to fix the monitor to the console with no need of screws.

### **Set up procedures**

The procedures to set up the parameters related to visualization of images on the screen are carried out by means of pushbuttons mounted on the display's front bezel.



The pushbutton  has a double function: if kept pressed for at least 5 seconds it behaves as OFF switch, if pressed briefly it selects and activates the set-up and adjustment procedures.

The pushbuttons  and  have also a double function: normally they are used to increase or decrease brightness.

When used in the SET-UP procedure they are used to increase or decrease the value of the current procedure (see chapter 6).

The procedures are guided by an OSD (On Screen Display) menu made up of a single operating level: this makes the setting of parameters quick and immediate, thus avoiding all the complications resulting from the use of submenus.

### **Brightness dimming**

The displays brightness can be dimmed step by step from the maximum value to zero pressing the pushbutton . Pressing the pushbutton  brightness is increased.

When dimming the displays brightness, the status LED lamp's is dimmed at the same time.

In this way, the operator is not troubled by an excessive luminosity coming from the LED lamp when he has to operate in conditions of scarce environmental illumination or even complete darkness.

### **Power**

The monitors of the **SV** series can be powered by 12Vdc or 24Vdc DC voltage systems.

The absolute voltage range is 10÷35Vcc.

### **Input signals**

The monitors of the **SV** series can visualize the signals coming from both a VGA source (2 input available, p.e. from Navigation System, Radar etc.) and a PAL/NTSC standard Composite Video source (2 or 4 input from TV cameras, Video Recorders, TV Tuners, etc. available on demand).

The input to be visualized on the display are selected by means of pushbuttons mounted on the monitor's front bezel.

**Reliability**

In order to guarantee a top quality level for the products and an efficient maintenance service, all the mechanical and electronic parts (excluding the display) of the monitors are designed, tested and maintained by VDS. As the reliability level of the monitors largely depend on the operating temperature of its electronic components, a special attention has been paid to thermal balance in order to minimize overheating problems.

## **2 HANDLING & USE PRECAUTIONS**

### **WARNING: Product installation and use**

The equipment described in this manual must be installed and used in accordance with the instructions specified in the manual.

Failure to do so could result in poor product performance, personal injury and/or damage to the vessel.

Then, the installation and use procedures described in this manual must be followed carefully.

### **WARNING: Navigation aid**

The equipment described in this manual, when used in a navigation system, is intended to be used as a navigation aid.

In fact, its accuracy can be affected by many factors, including equipment failure or defect, inadequate environmental conditions and incorrect handling or use.

It is therefore the Users responsibility to exercise common prudence in evaluating the use for navigational purposes of the data provided by the equipment.

This equipment should not be relied upon as a substitute for such prudence and navigational judgements.

### **WARNING: Electrical safety**

Make sure that the power supply is switched off before making any electrical connections or removing the power cord or starting a cleaning and/or service operation.

During installation, make sure that the power supply voltage is in the range specified in this manual before switching on the monitor.

*An input voltage exceeding the maximum allowed value or a reversal of polarity could badly damage the monitor.*

### **WARNING: High voltage danger**

Do not open the display unit for any reason whilst it is switched on.

Inside of this there are the high voltage circuits (around 600Vac) that drive the CCFL lamps. This high voltage could bad injury the operator.

Adjustments require specialized procedures and tools only available to qualified service technicians.

As there are no serviceable parts or adjustments, the user should not attempt to service the equipment.

Moreover, any attempt to open the display unit by not authorized personnel would nullify the warranty.

### **WARNING: Cleaning the display**

The TFT display is shielded by a clear glass screen coated with an antiglare, contrast enhancing process.

It is essential that the surface of this screen is not wasted by physical or chemical agents able to alter its functionality.

Therefore, take care when cleaning the display.

Do not clean the display's screen with a dry cloth as this could scratch the screen's coating.

Do not use acid, ammonia based or abrasive products: only wipe the display with a clean, damp cloth.

If necessary, use a mild detergent solution to remove grease marks.

*The use of acid, ammonia based or abrasive products could damage the equipment. Only wipe the display with a clean, damp cloth and use a mild detergent solution to remove grease marks.*

### **CAUTIONS:**

The following rules should be followed to avoid permanent damages to the monitor:

1. Since the display uses glass, it may break or crack if dropped or bumped on hard surface. Handle with care.
2. Do not touch the display's screen with sharp objects.
3. To protect the liquid crystals of the displays from ultraviolet rays do not leave the monitor in direct sunlight when the display is not in use.
4. The storage and the operating temperature of the monitor must always be in the range specified in this manual.

### 3 SPECIFICATIONS

The **VDS 2xxSV** is a series of analogic monitors equipped with color, backlighted ,TFT displays bonded with an antiglare, contrast enhancing, clear glass panel.

The monitors can be connected to devices equipped with a VGA standard (2 VGA input available) or PAL/NTSC standard Composite Video output (4 input available on demand).

#### VGA input

The monitors of the **SV** series are equipped with 2 VGA input that can be selected by means of a pushbutton (**S1**) mounted on the front bezel (see Fig.1). In this way it is possible to visualize signals coming from two remote units (i.e. navigation system, radar etc.) switching very quickly from one to another.

The data coming from the selected VGA input are visualized full screen on the display.

The maximum resolution of the displays and the number of colors available are shown in Tab.2

Model	Displays size	Resolution	colors
VDS 208SV	8.4"	1024x768	256K
VDS 212SV	12.1"	1024x768	256K
VDS 215SV	15"	1024x768	16M

Tab.2

The monitors are driven by the R, G, B signals and the horizontal and vertical synchro signals of a VGA board; a clock signal, generated by these synchro signals, is used to sample the input video signals.

A 8 bit per channel A/D converter is used to convert the R, G, B analogic signals; therefore, up to 256 levels per each component are available (that is a palette of 16 million colors).

In practice the number of colors that can actually be displayed depends on the display used (see Tab.2).

The monitors of the **SV** series are multiscan devices able to automatically match the following VESA standard functioning modes of a VGA signal (see Tab.3):

Functioning mode/ resolution	Field frequency	Line frequency	Pixel frequency
XGA (1024x768)	60 Hz	48.3 KHz	65 MHz
	70 Hz	56.4 KHz	75 MHz
	75 Hz	60 KHz	78.75 MHz
SVGA (800x600)	56 Hz	35.1 KHz	36 MHz
	60 Hz	37.9 KHz	40 MHz
	72 Hz	48.1 KHz	50 MHz
VGA (640x480)	75 Hz	46.9 KHz	49.5 MHz
	60 Hz	31.5 KHz	25.175 MHz
	72 Hz	37.9 KHz	31.5 MHz
VGA DOS (720x400)	75 Hz	37.5 KHz	31.5 MHz
	70 Hz	31.5 KHz	28.322 MHz
VGA EGA (640x350)	70 Hz	31.5 KHz	25.175 MHz

Tab.3

**TAKE NOTE: The monitors of the SV series can not be used in the 1024x768, interlaced VESA format ( line frequency 43 Hz).**

When the format of the input signal has a lower resolution than the resolution of the display on which the signal is visualized, the input signal is zoomed to fill in the whole screen.

The monitors can also be programmed in such a way as to match any other standard (**not interlaced** signals only) based on field/line/pixel frequency values not substantially different from those shown in Tab.3 and the related set-up parameters can be stored in the monitor's memory.

The monitors input accept analog video signals having an amplitude in the range 0÷1 Vpp; the input impedance for the analog video signals is 75 ohm. The input of the synchro signals have a TTL level and an input impedance of 500 ohm; the input is a Schmitt trigger buffer with a threshold of 1.2V.

The monitors can be connected to the remote VGA output using an inexpensive, three wires coaxial cable.

***It is possible to connect the monitors up to a distance of approximately 20/30m from the remote VGA output. This distance can be increased to approximately 100m using a proper cable equalizer (VDS EQ200).***

The displays visualization parameters can be set using 3 pushbuttons mounted on the front bezel.

The set up procedures are guided by a OSD (On Screen Display) dialogue window.

### **PAL/NTSC input (optional)**

On demand, the monitors of the **SV** series can visualize PAL/NTSC standard Composite Video signals.

It is so possible to visualize signals coming from TV cameras, video recorders or TV tuners (4 inputs are available). The desired input can be selected by means of a pushbutton (**S2**) mounted on the front bezel (see Fig.1 – pag.7). The PAL and the NTSC standard of the input signal are automatically acknowledged.

The input signal is analog, with  $0\div 1$  Vpp level and 75 ohm impedance. Since the resolution of the displays of the **SV** series is 1024x768 pixel, higher than resolution of PAL and NTSC signals, the image visualized on the screen is zoomed to fill in the whole screen.

### **Power input**

The monitors of the **SV** series can be supplied by 12Vdc or 24Vdc systems.

The absolute voltage range is  $10\div 35$  Vdc.

The input connectors are mounted on the rear of the monitor as shown in Fig.2:

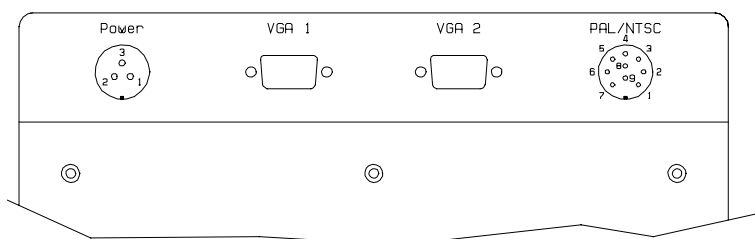


Fig.2

**SPECIFICATIONS mod.VDS 208SV**

- **Display:** 8.4" color TFT panel, backlighted with 2 CCFL lamps
- **Resolution:** 1024x768 pixel
- **Pitch:** 0,167x0,167 mm
- **Viewing area:** 171x128 mm
- **Colors:** 256K
- **Brightness:** 300 cd/m<sup>2</sup> (typ.)
- **Brightness dimming:** Max÷0
- **Contrast:** 400:1 (typ.)
- **Viewing angles:** ±80° horizontal, +80° -70° vertical (typ. Cr≥5)
- **Lamps life:** 50.000 h (min.)
- **VGA input:** 2
- **RGB input signals amplitude:** 0÷1 Vpp
- **Input impedance:** 75 ohm for the analogic signals and 500 ohm for the synchro signals
- **VGA input connectors:** female, D type, 15 pin, high density, VGA standard
- **Power supply:** 10÷35 Vcc
- **Power supply connector:** 3 pin CONXALL (p/n 4182-3PG-300)
- **Power consumption:** 1,5A@24 Vcc (max)
- **Operating temperature:** -5°÷ +55 °C
- **Storage temperature:** -20÷+60 °C
- **Relative humidity:** up to 95%
- **Overall waterproofing degree:** IP65
- **Mounting:** CONSOLE

**SPECIFICATIONS mod.VDS 212SV**

- **Display:** 12.1" color TFT panel, backlighted with 2 CCFL lamps
- **Resolution:** 1024x768 pixel
- **Pitch:** 0,240x0,240 mm
- **Viewing area:** 246x184 mm
- **Colors:** 256K
- **Brightness:** 300 cd/m<sup>2</sup> (typ.)
- **Brightness dimming:** Max÷0
- **Contrast:** 500:1 (typ.)
- **Viewing angles:** ±60° horizontal, +50° -40° vertical (typ. Cr≥10)
- **Lamps life:** 50.000 h (min.)
- **VGA input:** 2
- **RGB input signals amplitude:** 0÷1 Vpp
- **Input impedance:** 75 ohm for the analogic signals and 500 ohm for the synchro signals
- **VGA input connectors:** female, D type, 15 pin, high density, VGA standard
- **Power supply:** 10÷35 Vcc
- **Power supply connector:** 3 pin CONXALL (p/n 4182-3PG-300)
- **Power consumption:** 1,5A@24 Vcc (max)
- **Operating temperature:** -5°÷ +55 °C
- **Storage temperature:** -20÷+70 °C
- **Relative humidity:** up to 95%
- **Overall waterproofing degree:** IP65
- **Mounting:** CONSOLE

**SPECIFICATIONS mod. VDS215SV**

- **Display:** 15" color TFT panel, backlighted with 4 CCFL lamps
- **Resolution:** 1024x768 pixel
- **Pitch:** 0,297x0,297 mm
- **Viewing area:** 304x228 mm
- **Colors:** 16.2M
- **Brightness:** 550 cd/m<sup>2</sup> (typ.)
- **Brightness dimming:** Max÷0
- **Contrast:** 500:1 (typ.)
- **Viewing angles:** ±70° horizontal, +70° -50° vertical (typ. - Cr≥10)
- **Lamps life:** 60.000 h (typ.)
- **VGA input:** 2
- **RGB input signals amplitude:** 0÷1 Vpp
- **Input impedance:** 75 ohm for the analogic signals and 500 ohm for the synchro signals
- **VGA input connectors:** female, D type, 15 pin, high density, VGA standard
- **Power supply:** 10÷35 Vcc
- **Power supply connector:** 3 pin CONXALL (p/n 4182-3PG-300)
- **Power consumption:** 2A@24 Vcc (max)
- **Operating temperature:** -5°÷ +55 °C
- **Storage temperature:** -20÷+60 °C
- **Relative humidity:** up to 95%
- **Overall waterproofing degree:** IP65
- **Mounting:** CONSOLE

## **OPTIONS**

- **Mounting:** YOKE BRACKETS
- **Composite Video input:** 4 PAL/NTSC standard input
- **Composite Video input connector:** 9 pin CONXALL (p/n 4282-9PG-300)
- **Accessories:** Cable equalizer VDS EQ200 (1 input/2 output - cable length up to approximately 100 mt).

## 4 POWER

### Power supply

The monitors of the **SV** series can be supplied by 12Vdc or 24Vdc systems (see Tab.5):

Model	Input voltage	Consumption max
VDS 208SV	10÷35 Vcc	1,5A@24Vcc
VDS 212SV	10÷35 Vcc	1,5A@24Vcc
VDS 215SV	10÷35 Vcc	2A@24Vcc

Tab.5

The power supply is protected by a proper circuit from a possible reversal of polarity on its input and by a 3A fuse from current overloads.

The supply input connector is a circular, 3 pin, IP 67 waterproofing degree, CONXALL connector p/n 4182-3PG-300 (see Fig.2).

The mating connector is a CONXALL p/n 3182-3SG-530; the front view pin out (socket contact) is shown in Fig.3:

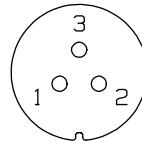


Fig.3

The pin disposal on the connector is shown in Tab.6:

Pin	Signal
1	+ Vbatt
2	0 V
3	Shield

Tab.6

### Power cord

The power cord should be as short as possible (5 mt max.).

Use a cable with 3 conductors having a section area of at least 1 mm<sup>2</sup>.

In order to guarantee a IP65 waterproofing degree, the external diameter of the cable should not exceed the range 7.6÷8.1mm.

## 5 INSTALLATION


### Unpacking and inspection


The monitors of the **SV** series are packed in a carton.  
After unpacking inspect the unit carefully for visible shipping damages (a special care should be dedicated to inspect the TFT display).

### Switching on/off the monitor

Plug in the input connectors before connecting the power cord to the power input.

Make sure that the power cord is connected to a proper supply unit (12Vdc or 24Vdc) and then plug in the power connector.

Press the pushbutton  to switch on the monitor and finally switch on the remote units (PC, black box, etc.).

To switch off the monitor keep the pushbutton  pressed for at least 5 seconds.

**WARNING: Make sure that the power cord is connected to the supply unit with the correct polarity before switching on the monitor. If a reversal of polarity occurs, the LED lamp mounted on the front bezel will not be turned on, thus indicating that the monitor is off.**


### Status LED

A LED lamp mounted on the front bezel(see Fig.1) indicates the "status" of the monitor.

The green color of the LED lamp indicates that the monitor is ON and is working correctly.

The color of the lamp is yellow when one of the following events occur:

- there is no input signal (the message "No sync" is visualized on the display for a few seconds);
- the default procedure is in progress (the message "Default" is visualized on the display).

If the LED lamp remains OFF after pressing the pushbutton , one of the following events occurred:

- the power cord has been connected to the supply unit with the wrong polarity;
- the monitor is damaged.

**VGA connector**

The monitors of the **SV** series are equipped with 2 VGA input connectors (see Fig.2 – pag.14).

These connectors are D type, 15 pin, female, high density, VGA standard, IP65 waterproofing degree, CONEC connectors (p/n HDD15SAM99B50X).

The input signal's assignment is shown in Tab.6:

Signal	Pin
R	1
G	2
B	3
-	4
-	5
GND	6
GND	7
GND	8
-	9
GND	10
GND	11
-	12
HSYNC	13
VSYNC	14
-	15

Tab.6

## VGA cable

The cable to connect the VGA input of the monitor to the VGA output of the remote units (navigation system, radar, fish finder etc.) must be equipped with D type, 15 pin, high density, male, IP65 waterproofing degree, VGA standard connectors assembled in a CONEC hod (p/n 165x14819x).

It is absolutely necessary that the wires that carry the R,G,B signals have the same length.

The cable's features are the following:

- 3 coaxial cables (impedance: 75 ohm – colors:Blue, Red and Green)
- 4 tinned copper wires AWG 28 (7x0,13mm)
- External shield
- Cable's external diameter: 7,6 mm.
- Length: up to 100 mt (for distances exceeding 20 mt a cable equalizer must be used).

The cable must be wired as shown in Tab.7:

D type, 15 pin, high density, male, plug in connector		D type, 15 pin, high density, male, plug in connector	
Pin	Signal	Pin	Signal
1	R (Red coaxial cable's central wire)	1	R (Red coaxial cable's central wire)
2	G (Green coaxial cable's central wire)	2	G (Green coaxial cable's central wire)
3	B (Blue coaxial cable's central wire)	3	B (Blue coaxial cable's central wire)
4	-	4	-
5	-	5	-
6	GND (Red coaxial cable's shield)	6	GND (Red coaxial cable's shield)
7	GND (Green coaxial cable's shield)	7	GND (Green coaxial cable's shield)
8	GND (Blue coaxial cable's shield)	8	GND (Blue coaxial cable's shield)
9	-	9	-
10	GND	10	GND
11	GND	11	GND
12	-	12	-
13	HSYNC	13	HSYNC
14	VSYNC	14	VSYNC
15	-	15	-
Connector's body	The cable's external shield is connected to the connector's body and is grounded on the monitor's ground.	Connector's body	The cable's external shield is connected to the connector's body and is grounded on the monitor's ground.

Tab.7

### **PAL/NTSC input connector**

On demand the monitors of the **SV** series may be equipped with 4 PAL/NTSC standard, Composite Video signal input (TV1÷TV4).

The PAL/NTSC connector is mounted on the rear of the monitor and is a 9 pin, IP65 waterproofing degree, CONXALL connectors (p/n 4282-9PG-300) – see Fig.2.

The signals assignment on the PAL/NTSC input connector is shown in Tab.8:

<b>Pin</b>	<b>Signal</b>	<b>Pin</b>	<b>Signal</b>
1	TV1(coaxial cable's central wire)	6	TV3(coaxial cable's shield)
2	TV1(coaxial cable's shield)	7	TV4(coaxial cable's central wire)
3	TV2(coaxial cable's central wire)	8	TV4(coaxial cable's shield)
4	TV2(coaxial cable's shield)	9	SHIELD
5	TV3(coaxial cable's central wire)	-	-

Tab.8

### **PAL/NTSC cable**

The PAL/NTSC cable is composed of 4 coaxials with an impedance of 75Ω.

The mating connector is a CONXALL (p/n 3282-9SG-530).

The front view pin out (socket contact) is shown in Fig.4:

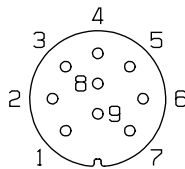


Fig.4




In order to guarantee a IP65 waterproofing degree, the external diameter of the cable should not exceed the range 7.6÷8.1mm.

## 6 ADJUSTMENT PROCEDURES

### Set-up

The parameters concerning visualization of images on the display can be set up by means of 3 pushbuttons mounted on the front bezel of the monitor. The SET-UP procedures are guided by an OSD (On Screen Display) menu made up of a single operating level: this makes setting of parameters quick and immediate, thus avoiding all the complications resulting from the use of submenus.

The functions associated to the pushbuttons are the following:

-  : press this pushbutton briefly to select and activate the desired procedure
-  : press this pushbutton to decrease the value of the current parameter
-  : press this pushbutton to increase the value of the current parameter

The visualization parameters need to be set only **one time** when installing the monitor, in order to adapt the monitor to the signals coming from the remote units.

As these signals may vary significantly depending on the specific units, it might be necessary to set the visualization parameters again when a remote unit is replaced.

### Adjusting brightness

Press the pushbuttons  or  to increase or decrease CCFL lamps *brightness* both in VGA and PAL/NTSC mode.

Brightness can be dimmed down to zero in order to fit the personal requirements of operators for any level of environmental illumination.

### Selecting VGA input

The monitors of the **SV** series are equipped with 2 VGA inputs so that signals coming from two different units can be displayed (typically navigation system and radar).

The VGA1 input is displayed by default when switching on the monitor.

Then pressing the pushbutton **S1** the VGA2 input is displayed.

Pressing **S1** again the VGA1 input is restored.

### **Selecting PAL/NTSC input**

On demand the monitors of the **SV** may be equipped with 4 PAL/NTSC standard Composite Video inputs. The desired input is selected by pressing the pushbutton **S2**.

When the monitor is switched on the VGA1 input is displayed by default.

Pressing **S2** the TV1 input is displayed.

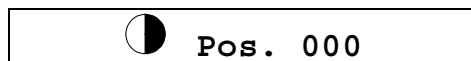
Pressing **S2** again the TV2 input is displayed and so on.



Pressing **S1** at any time the current VGA input is restored.

## SET-UP PROCEDURES (VGA mode)

### Adjusting contrast

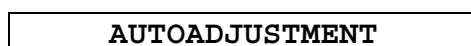
Pressing **one time** the pushbutton  briefly the following symbol is displayed





Pressing the pushbuttons  or  *contrast* is increased or decreased. The value -31 corresponds to the lowest level of contrast, +32 corresponds to the highest level; 000 is the default value. Once the desired level of contrast has been selected wait 5 seconds until the OSD circuit is automatically switched-off.

### Automatic adjustment

Pressing **two times** the pushbutton  briefly the following writing is displayed





Pressing the pushbuttons  or  an automatic adjustment procedure is started to select the optimized values for the horizontal and vertical positions of the image and the clock phase. The automatic procedure works correctly if an image is visualized on the display that completely fills in the screen and is characterized by high spectral frequencies (for example: small characters or disomogeneous images). This procedure takes some seconds to be completed: if the final result is not satisfactory the manual adjustment procedure has to be activated.

### Adjusting horizontal position

Pressing **three times** the pushbutton  briefly the following symbol is displayed





The number of three digits (-099 through +099) specifies the horizontal position, 000 is the value of the default position that corresponds to a standard VESA format. If the visualized image is shifted with respect to the pixel grid of the display, pressing the pushbuttons  or  the image may be shifted rightward or leftward to match the grid. Once the desired vertical position has been found wait 5 seconds until the OSD circuit is automatically switched-off.

### Adjusting vertical position

Pressing **four times** the pushbutton  briefly the following symbol is displayed



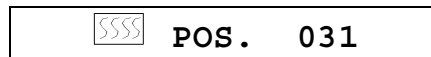
The number of three digits (-099 through +099) specifies the horizontal position, 000 is the value of the default position that corresponds to a standard VESA format.

If the visualized image is shifted with respect to the pixel grid of the display, pressing the pushbuttons  or  the image may be shifted upward or downward to match the grid.

Once the desired horizontal position has been found wait 5 seconds until the OSD circuit is automatically switched-off.

### Adjusting sharpness

Pressing **five times** the pushbutton  briefly the following symbol is displayed



The number of two digits (0 through 63) specifies the value of sharpness of the displayed image, 031 is the default value.

Press the pushbuttons  or  to find the right value.

Once the desired value of sharpness has been found wait 5 seconds until the OSD circuit is automatically switched off.

**NOTE: This adjustment procedure affects the phase of the input sampling clock. If the procedure is not carried out correctly, the image on the screen could appear not completely stable and more or less affected by noise. An optimized calibration may be obtained by displaying an image containing high spectral frequencies such as, for example, an image containing small characters or an unhomogeneous background.**

## Size

Pressing **six times** the pushbutton  briefly the following symbol is displayed



For the VESA standard formats the number that is displayed next to symbol is the number of line pixels shown in the column **size** of Tab.9:


Format	Hz	Size	VESA standard
720x400	70	900	DOS
640x350	70	800	EGA
640x480	60	800	VGA
640x480	72	832	VGA
640x480	75	840	VGA
800x600	56	1024	SVGA
800x600	60	1056	SVGA
800x600	72	1040	SVGA
800x600	75	1056	SVGA
1024x768	60	1344	XGA
1024x768	70	1328	XGA
1024x768	75	1312	XGA

Tab.9



**NOTE: If the format of the input signal is not a VESA standard format the number of line pixels could be not correct.  
In this case vertical noise bands are visualized on the display.  
Use the pushbuttons + and - to set the correct number of line pixels so that the noise bands disappear.**

Once the correct value has set wait 5 seconds until the OSD circuit is automatically switched off.

## Default

Pressing **seven times** the pushbutton  briefly the following writing is displayed

**DEFAULT**

Pressing the pushbuttons  or  this procedure sets all the visualization parameters at the values predefined at factory.



All the non VESA standard formats stored in the monitor's memory will be erased.

Wait 5 seconds until the OSD circuit is automatically switched off.

## Test

Pressing **eight times** the pushbutton  briefly the following writing is displayed

**TEST**

If then the pushbutton  or  is pressed, the visualization of a writing indicating the input video format (*resolution and field frequency*) is activated or deactivated.



Wait 5 seconds until the OSD circuit is automatically switched off.

## SET-UP PROCEDURES (PAL/NTSC mode)

### Adjusting contrast

Pressing **one time** the pushbutton  briefly the following symbol is displayed



Pressing the push-buttons  or  *contrast* is increased or decreased. The value -31 corresponds to the lowest level of contrast, +32 corresponds to the highest level; 000 is the default value.



Once the desired level of contrast has been selected wait 5 seconds until the OSD circuit is automatically switched-off.

Contrast adjustments in PAL/NTSC and VGA mode are independent from each other.

### Adjusting brightness

Pressing **two times** the pushbutton  briefly the following symbol is displayed



Pressing the push-buttons  or  *brightness* is increased or decreased. The value -32 corresponds to the lowest level of brightness, +31 corresponds to the highest level; 000 is the default value.

Once the desired level of brightness has been found wait 5 seconds until the OSD circuit is automatically switched-off.

This brightness adjustment works on PAL/NTSC signals only adding an offset to the input signal.



### Adjusting horizontal position

Pressing **three times** the pushbutton  briefly the following symbol is displayed



The number of three digits (-099 through +099) indicates the shift (number of pixels) of the image on the *horizontal axis* with respect to the pixel grid of the display.

000 is the value of the default position that corresponds to a PAL/NTSC standard format.

If the visualized image is shifted with respect to the pixel grid of the display, pressing the push-buttons  or  the image may be shifted rightward or leftward to match the grid.

Once the desired horizontal position has been found wait 5 seconds until the OSD circuit is automatically switched-off.



### **Adjusting vertical position**

Pressing **four times** the pushbutton  briefly the following symbol is displayed



The number of three digits (-099 through +099) indicates the shift (number of pixels) of the image on the *vertical axis* with respect to the pixel grid of the display.

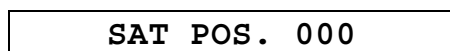
000 is the value of the default position that corresponds to a PAL/NTSC standard format.

If the visualized image is shifted with respect to the pixel grid of the display, pressing the push-buttons  or  the image may be shifted upward or downward to match the grid.

Once the desired vertical position has been found wait 5 seconds until the OSD circuit is automatically switched-off.

### **Adjusting color saturation**

Pressing **five times** the pushbutton  briefly, the following writing is displayed



The number of three digits (-032 through +031) specifies the value of *color saturation*.

Pressing the pushbutton  or  the value of color saturation can be increased or decreased.

The default value (000) is the optimized value; the value -32 corresponds to a monochromatic visualization.



Once the desired position has been found wait 5 seconds until the OSD circuit is automatically switched off.

### Adjusting hue (for NTSC input only)

Pressing **six times** the pushbutton  briefly, the following writing is displayed

HUE POS. 000

The number of three digits (-032 through +031) specifies the value of hue (tint).

Pressing the pushbuttons  or  the value of hue can be increased or decreased.

The default value (000) is the optimized value; the value -32 corresponds to a monochromatic visualization.



Once the desired position has been found wait 5 seconds until the OSD circuit is automatically switched off.

This adjustment procedure does not work on PAL input signals.

### Default

Pressing **seven times** the pushbutton  briefly the following writing is displayed

DEFAULT

Pressing the pushbuttons  or  this procedure sets all the visualization parameters at the values predefined at factory.



All the not VESA standard formats stored in the display's controller memory will be erased.

Wait 5 seconds until the OSD circuit is automatically switched off.

### Test

Pressing **eight times** the pushbutton  the following writing is displayed

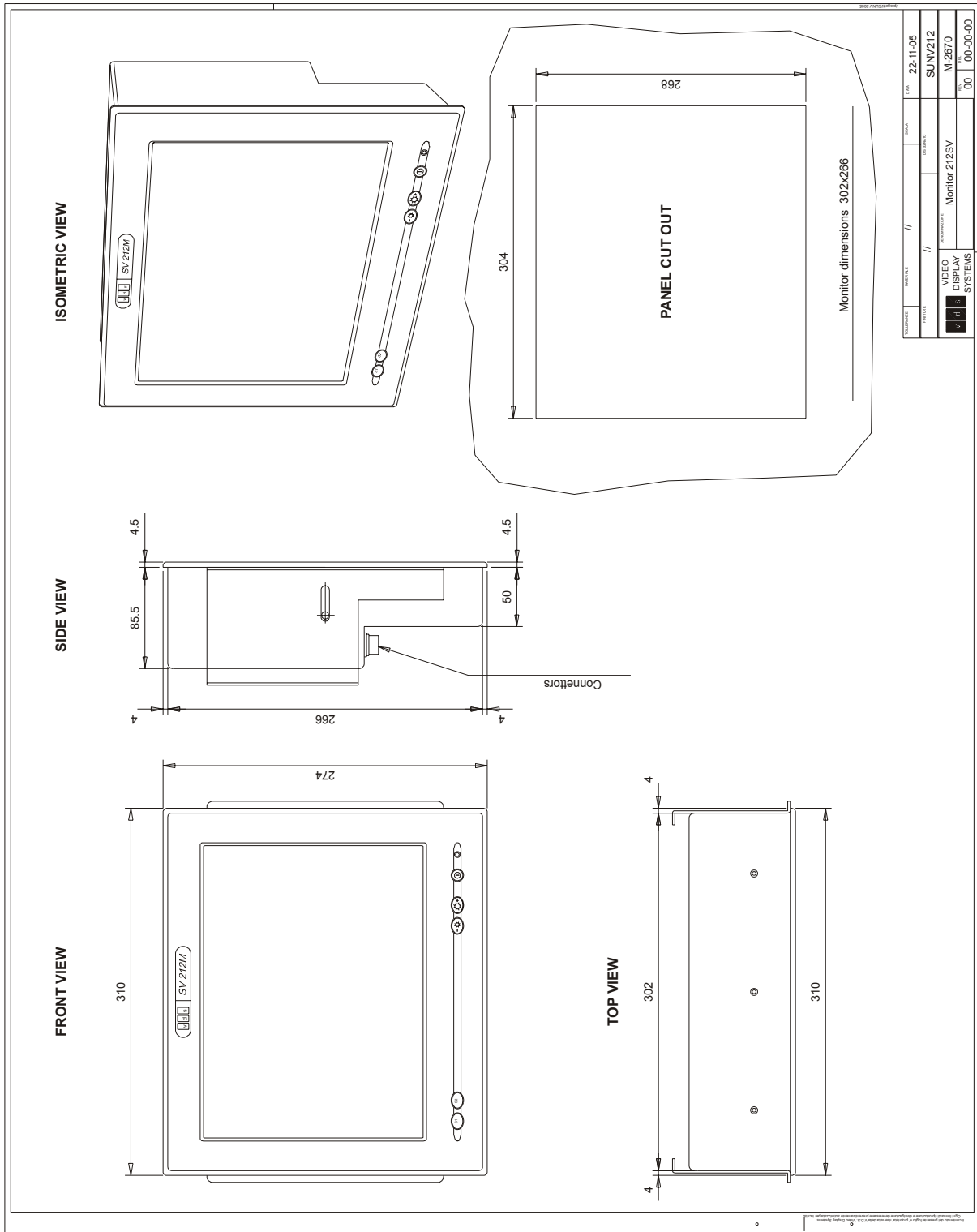
TEST

If then the pushbutton  or  is pressed, the visualization of a writing indicating the input video format (*resolution and field frequency*) is activated or deactivated.

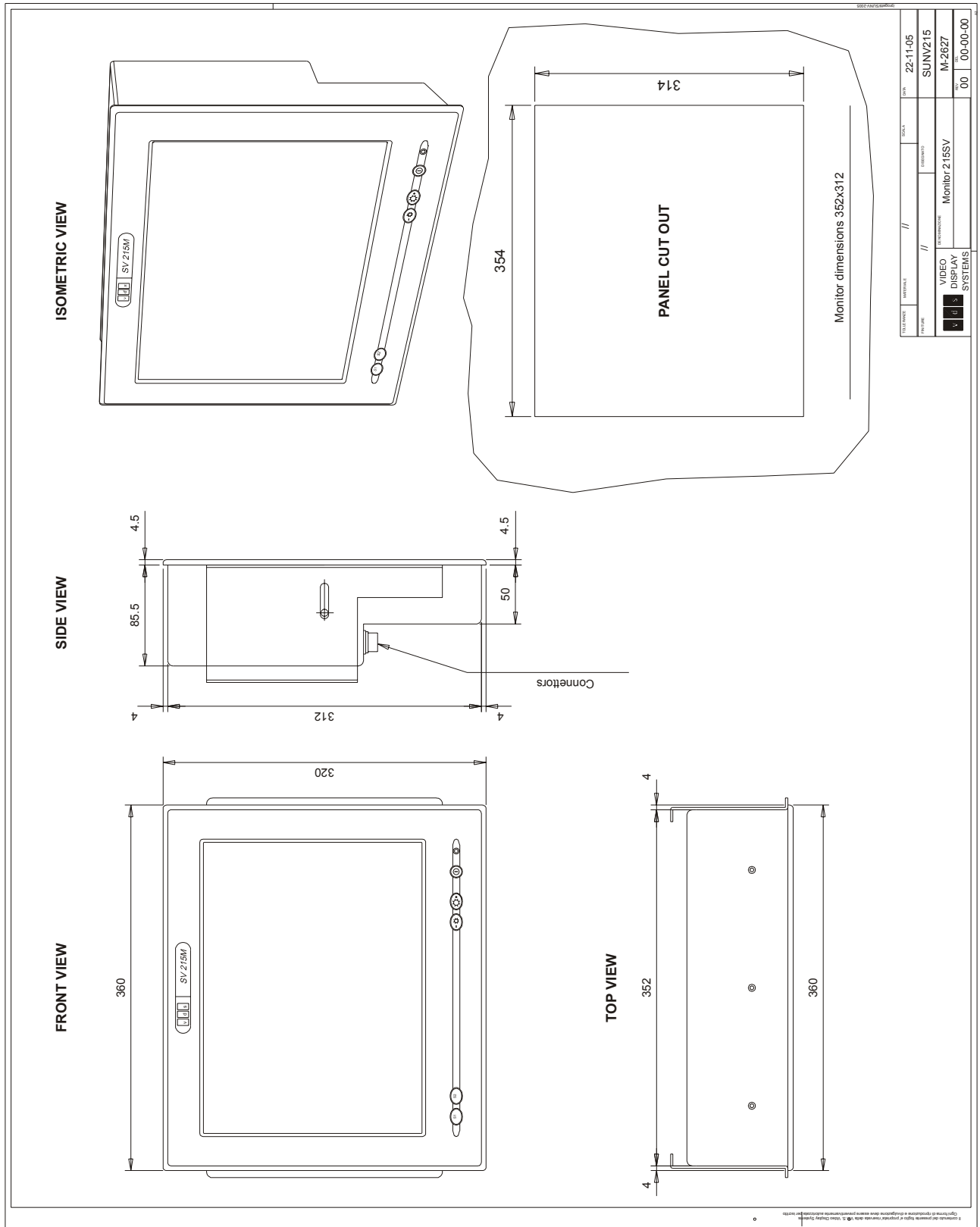
Wait 5 seconds until the OSD circuit is automatically switched off.



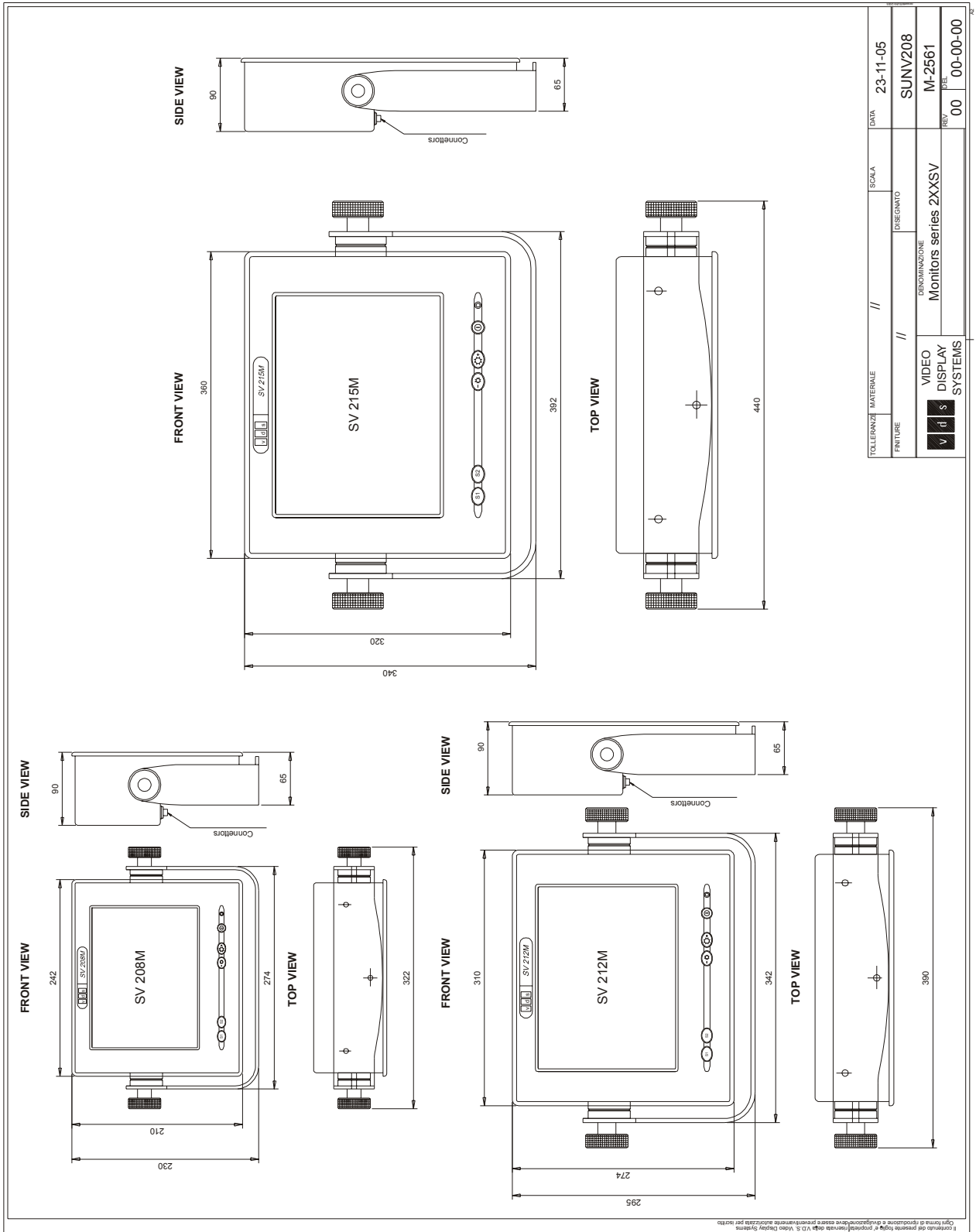
### Mechanical drawings VDS 212SV- CONSOLE mounting



**Mechanical drawings VDS 215SV- CONSOLE mounting**



**Mechanical drawings series 2xxSV - BRACKET mounting**



**Mechanical drawings series VDS 2xxMDS – Fixing brackets**

TELAZZIONE	INTERNALE	//	SCALA	25-11-05
FIGURE		//	DISCIPLINA	2XXSV
VDS		DESCRIZIONE		2562
		Monitor series 2XXSV		REV. 00
		Console mounting system		00-00-00

/progetti/SUN-2005

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