



solarfox[®]
SOLAR DISPLAY SYSTEMS

INSTALLATION INSTRUCTIONS

SOLARFOX[®] SF-600

- OUTDOOR -

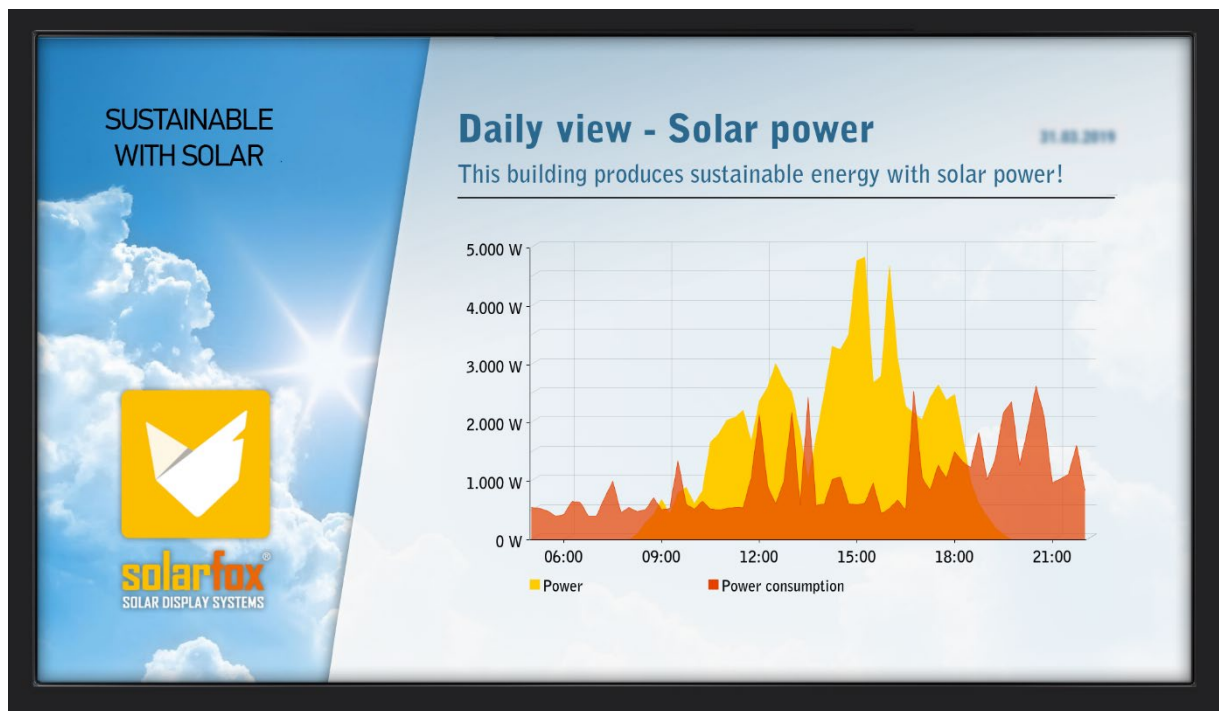


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1. General information - Solarfox® SF-600

The SF-600 series is equipped with a robust Samsung monitor and features a modern cooling system with a filter-less heat exchanger and an integrated heater. The devices comply with the IP-56 protection standard and can be used in a temperature range of -30° to 50° C. A high-quality anti-reflection glass with vandalism protection and the very high brightness for use in bright light conditions make the new Solarfox® Outdoor series an eye-catcher. The flat construction with a depth of only 8.5 cm provides a visually appealing and secure wall mounting. In outdoor applications, it provides protection against moisture, humidity, heat, dust, vandalism and theft. A daily individual controllable timer reduces energy consumption.



Illustration 1 – Front and back view SF-600

2. Scope of delivery

1)	SAMSUNG IP56 HIGHBRIGHT OUTDOOR DISPLAY	1 piece
2)	SAMSUNG infrared remote control, incl. batteries	1 piece
3)	Wallmount	1 piece
4)	Anti-theft protection (cover and screws)	2 pieces
5)	HDMI- fiber optic cable (20 meters) *	1 piece
6)	Solarfox® Connection Kit incl. power supply and Solarfox® SC-2000	1 piece
7)	Accessories	

* In case you need a longer HDMI fiber optic cable, you can either order it as a special item during your order process or add it as accessories later on. (available: 50m, 100m, 200m)

3. Preparations for installation and set-up

You'll need the following tools for the installation:

- 1) Impact drill
- 2) Spirit level and pencil
- 3) Dowels and screws suitable for the respective wall structure (recommendation: hexagon screws Ø8mm DIN 571)
- 4) USB keyboard or notebook or computer for the initial configuration of the display
- 5) Open-end wrench or ratchet for mounting / dismounting the monitor holder
- 6) TX15 Torx screwdriver or bit

Please make sure that there is a 230V power supply at the desired place of installation as well as a possibility to lay the glass fiber HDMI cable (standard scope of supply: 20m) to the inside area. It must be connected to the SOLARFOX® Connection Kit.

The connection cable between the display and the Solarfox® Connection Kit can be routed through a 16mm empty pipe. We generally recommend a wired connection via RJ45 / Ethernet. Optionally, the Connection Kit can also be connected via WiFi (WLAN).

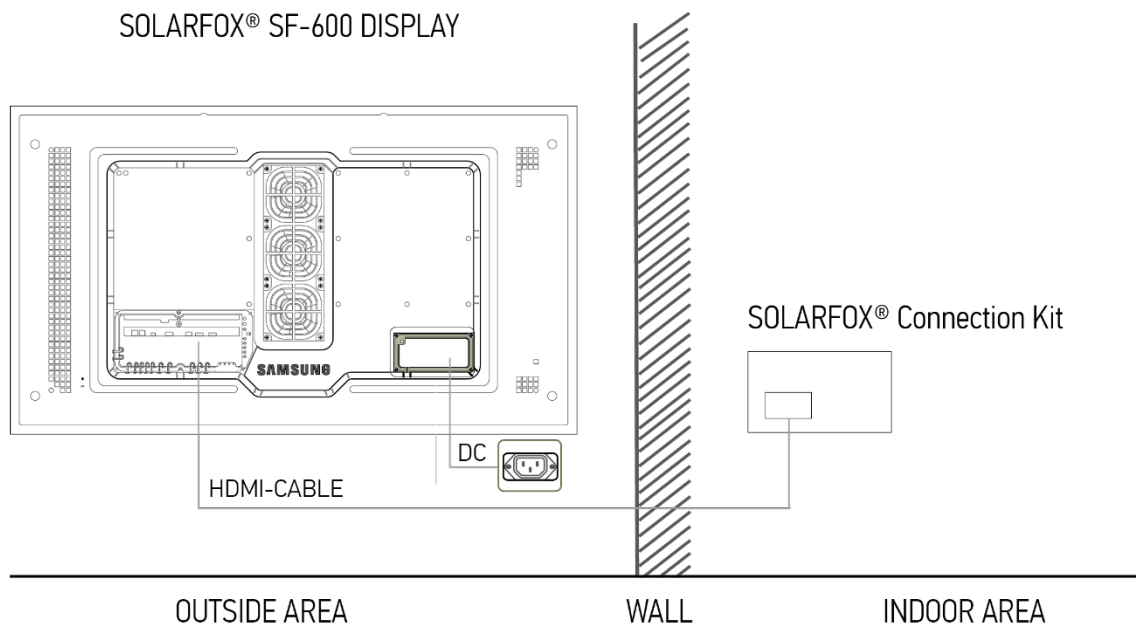


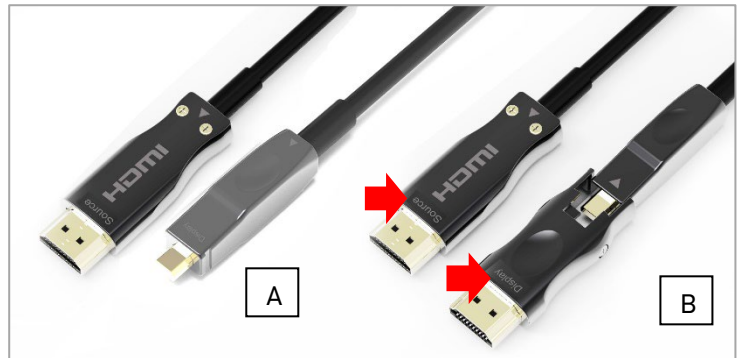
Illustration 2 – Connection pattern SF-600

When choosing the mounting or location, make sure that the respective wall has sufficient load capacity for the weight of the display and the wall mount (for weight see data sheet). Make sure that the power supply line in the wall is de-energized!

Installation should be carried out by two people.

Please note that the HDMI fiber optic cable has two different ends. It is possible to remove the plug attachment to make it easier to pass the cable through walls and pipes. We recommend a pipe diameter of 16 mm.

The illustration on the right shows the cable without plug attachment (A) and with attachment (B).



IMPORTANT: The “SOURCE” plug must be connected to the control computer and the plug labeled “DISPLAY” must be connected to the Solarfox display. The upper illustration shows the cable without the plug attachment (A) and with the attachment (B). Pay attention to the labeling SOURCE AND DISPLAY – (see red arrow above)!

Register your display before the installation process!

Register your display with the provided serial number to be able to proper use it later on. To do so, please access the following website from a browser:



<http://setup.solar-fox.com>

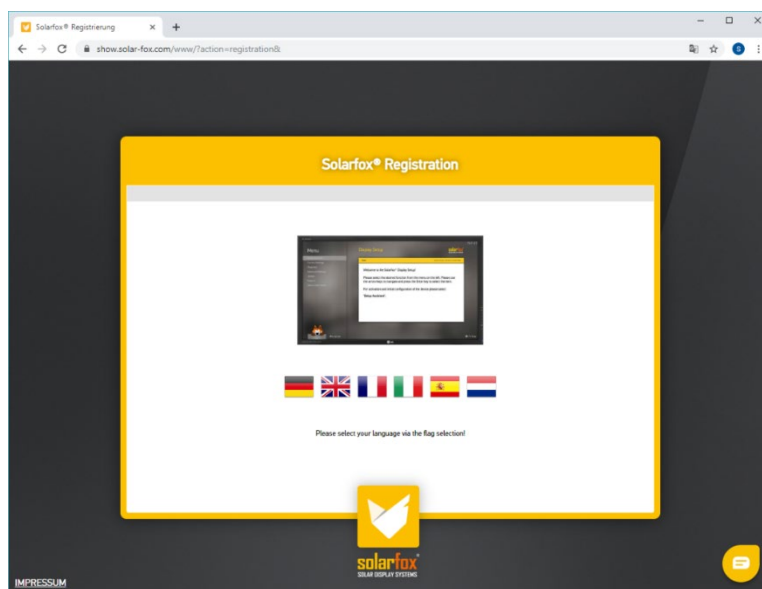


Illustration 3 – Display registration: setup.solar-fox.com

TIP: We also recommend sending the checklist for IT managers (<https://www.solar-fox.com/checklist>) to the network administrator before commissioning. Have them fill it out and return it to you. Then you can quickly configure your device.

Additional advice concerning wall characteristics and mounting

Please remember that the air supply as well as the vents should not be covered during installation. The distance (A) between the wall and the display has to be at least 40 mm. (refer to Illustration 4 – Wall-distance)

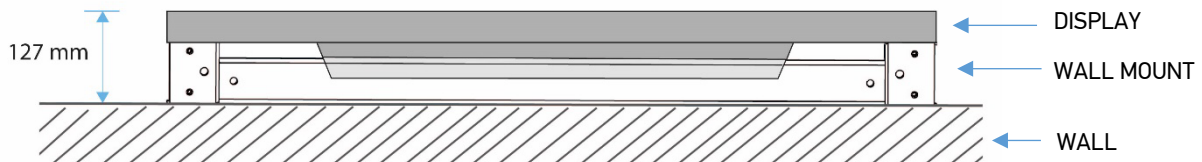


Illustration 4 – Wall distance

The included wall mount ensures a sufficient air supply. The depth of the display incl. wall mount is 127 mm. (refer to Illustration 4 – Wall-distance)

For wall mounting or installation in a niche, the distance around the display must be 50 mm (A + B). For niche installations, we therefore recommend the following dimensions for the niche:

SOLARFOX® SF-600 46 ": (LxWxD) 1169 mm x 724 mm x 127 mm

SOLARFOX® SF-600 55 ": (LxWxD) 1310 mm x 780 mm x 127 mm

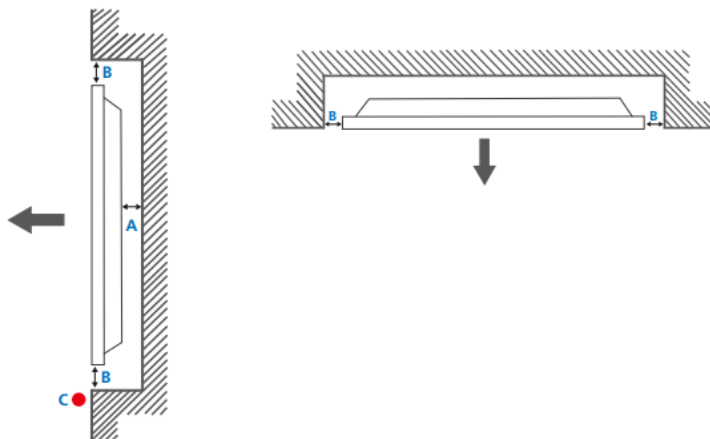


Illustration 5 – Wall installation

However, the included wall mount can only be used for niche installation if it is possible to access and tighten the screws on the side and then attach the panel.

4. Installation of the display

- 1) First, look for a clean and flat surface. When unpacking, make sure that the surface of the screen or frame is not scratched and avoid any heavy pressure on the surface. You should therefore thoroughly check the surface for objects such as screws or dirt.
- 2) Remove the Samsung monitor from the box and place it on a clean and level surface.
- 3) Remove the wall mount from the box and first remove the side-mounted anti-theft panels on the left and right sides of the wall mount.

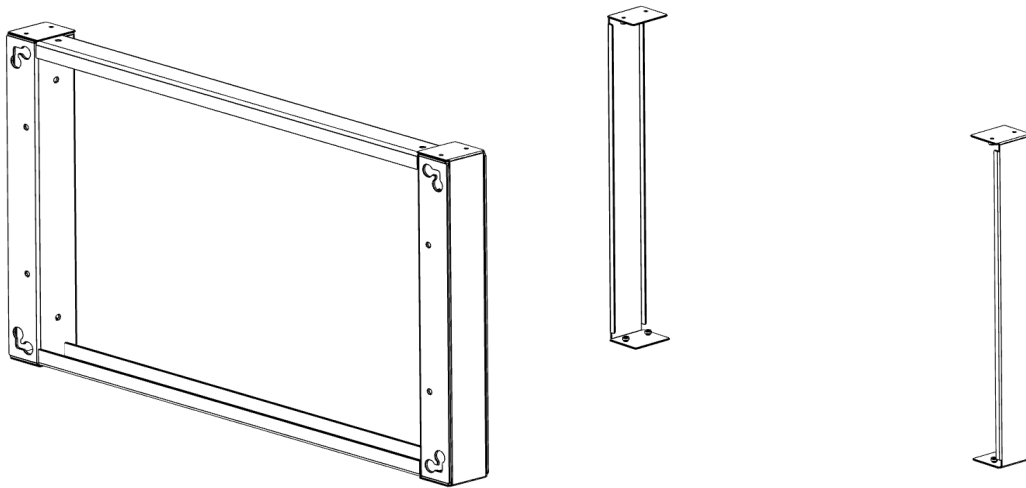
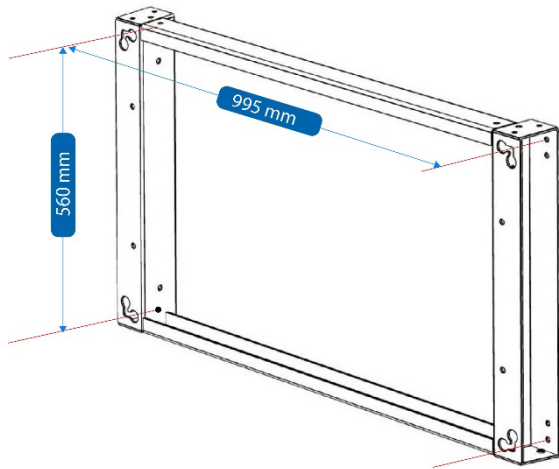


Illustration 6 – Removing the anti-theft panels

- 4) Use the supplied wall mount and mark the drill holes on the mounting wall (upper and lower holes - marked in red). Use a spirit level to position the frame. (refer to Illustration 7 – Distance for drilling for 46" and 55" display)

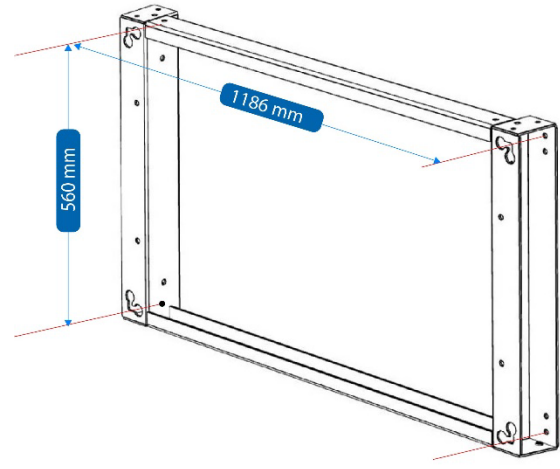
SOLARFOX® SF-600 46" mount



Distance for drilling:

995 mm x 560 mm

SOLARFOX® SF-600 55" mount



Distance for drilling:

1186 mm x 560 mm

Illustration 7 – Distance for drilling for 46" and 55" display

- 5) Then drill the necessary holes in the wall with an impact drill and a suitable drill. Make sure that the holes are at least 10 cm from the outer edge of the wall and inserted vertically into the wall. Screws and dowels are not included in delivery, these must be selected by the fitter depending on the wall condition. We recommend 8mm dowels and hexagon screws (recommendation: Ø8mm DIN 571). The drill holes and dowels must ensure a corresponding tensile load (see respective display weight in section 7).
- 6) Prepare the cable inlet. The power cord and HDMI fiber optic cable should be routed through the wall before installing the mount. For this purpose, a hole is to be made within the mounting area and through the mounting wall. The hole should have a diameter of at least 16 mm for the cables to be pulled through. We recommend the use of a empty pipe. Pass all cables through the wall and let them hang down on the outside wall first.

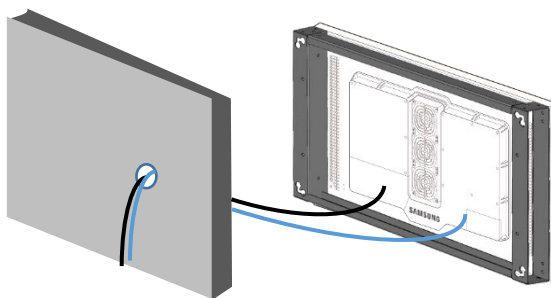


Illustration 8 – Drilling a hole through the wall

- 7) Attach the wall mount to the display. To do so use the inner holes (B) for the 46" model and the outer (A) ones for the 55" model. Use the 4 screws already attached to the display. (refer to Illustration 9 – Installing the mount on the display)

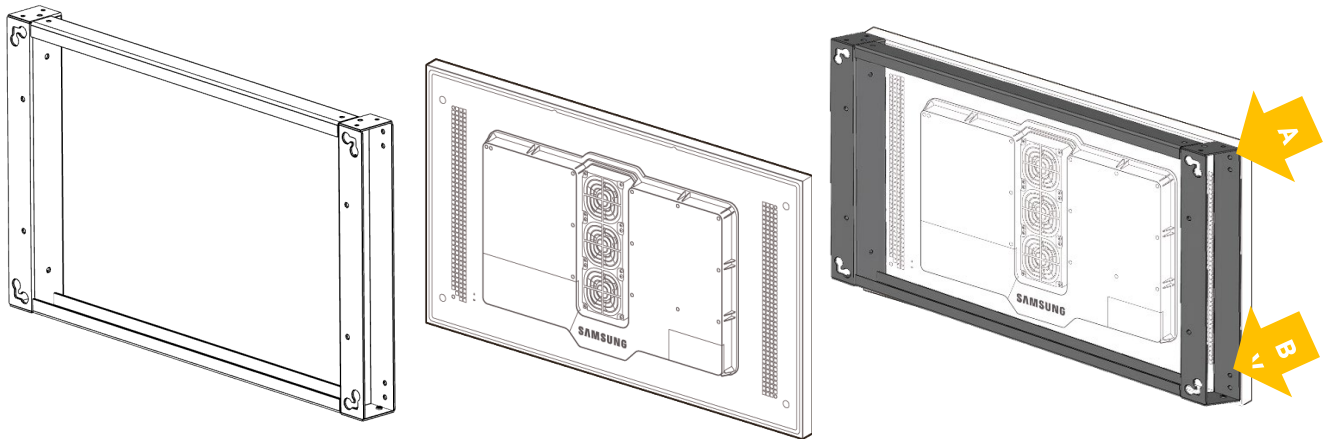


Illustration 9 – Installing the mount on the display

- 8) Connect the supplied HDMI fiber optic cable to the display.

Be sure to connect the DISPLAY connector to the Samsung Display and the SOURCE connector to the Solarfox® control computer (SOLARFOX® Connection Kit).

(Please avoid kinking the HDMI cable when connecting or installing it, as this will damage the fiber optic cable.)

To do this, use a TX15 screwdriver to open the connector cover at the lower left edge of the screen. Plug the cable into the HDMI IN 1 connector on the monitor. Lead the cable out of the seal and close the cover again. Make sure all seals are tight. (See illustration 10 - illustrations 1-5 and illustration 11)

Connect the supplied optical fiber HDMI cable to the screen. To do so, open the cover on the lower right side of the screen. The cable can either be routed to a water-protected socket or the cold-device cable and the lead can be connected e.g. to WAGO® terminals and protected inside the cover from rain and moisture. Pass the cable through the gasket and close the cover. (refer to Illustration 10 – and Illustration 11 – Display-connections)

Procedure for opening the connection cover on the back of the device:

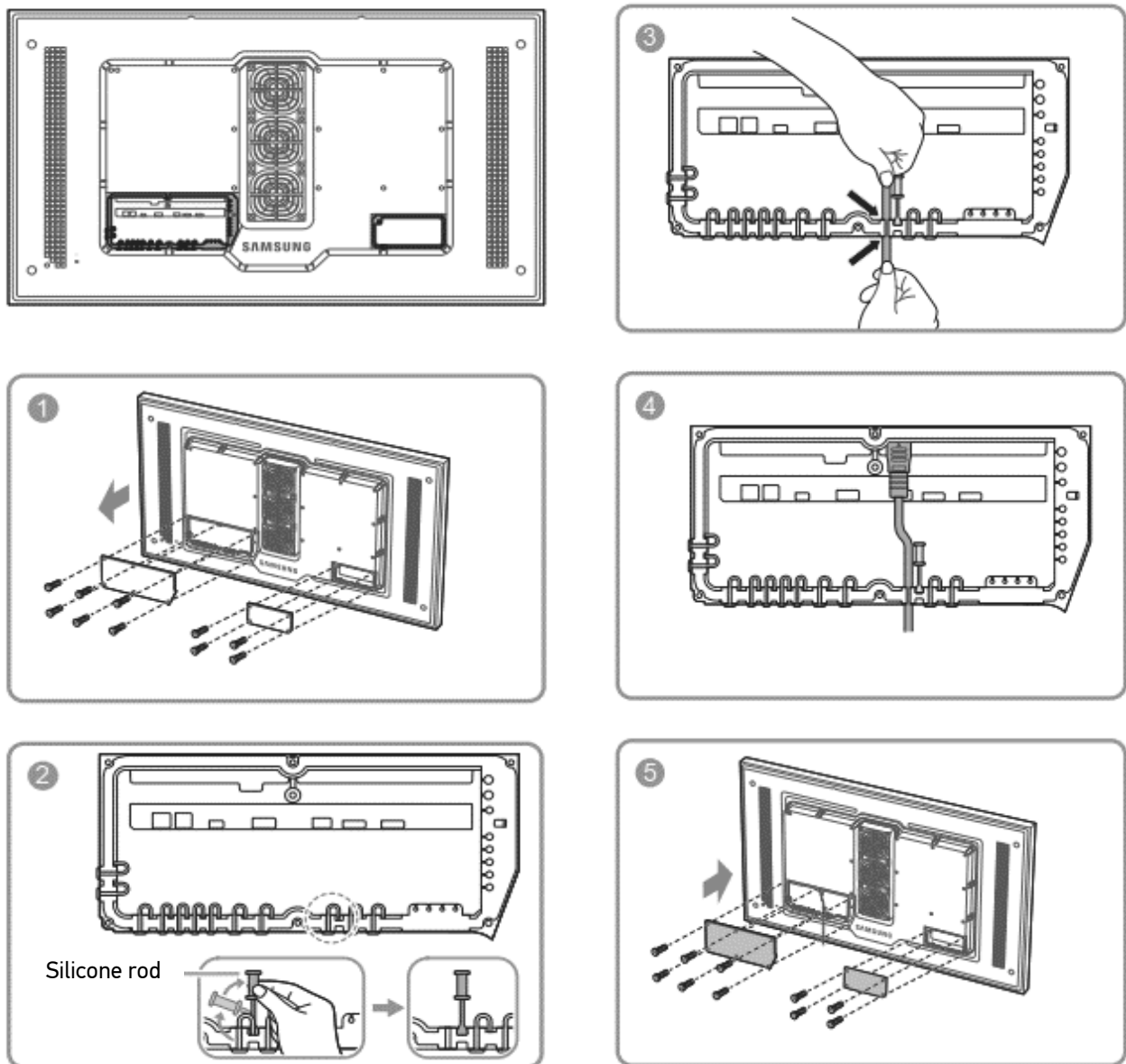


Illustration 10 – Opening the connection covers

In case the cable is not lead through the wall on the back, it may as well be lead upwards or downwards using the openings in the mount.

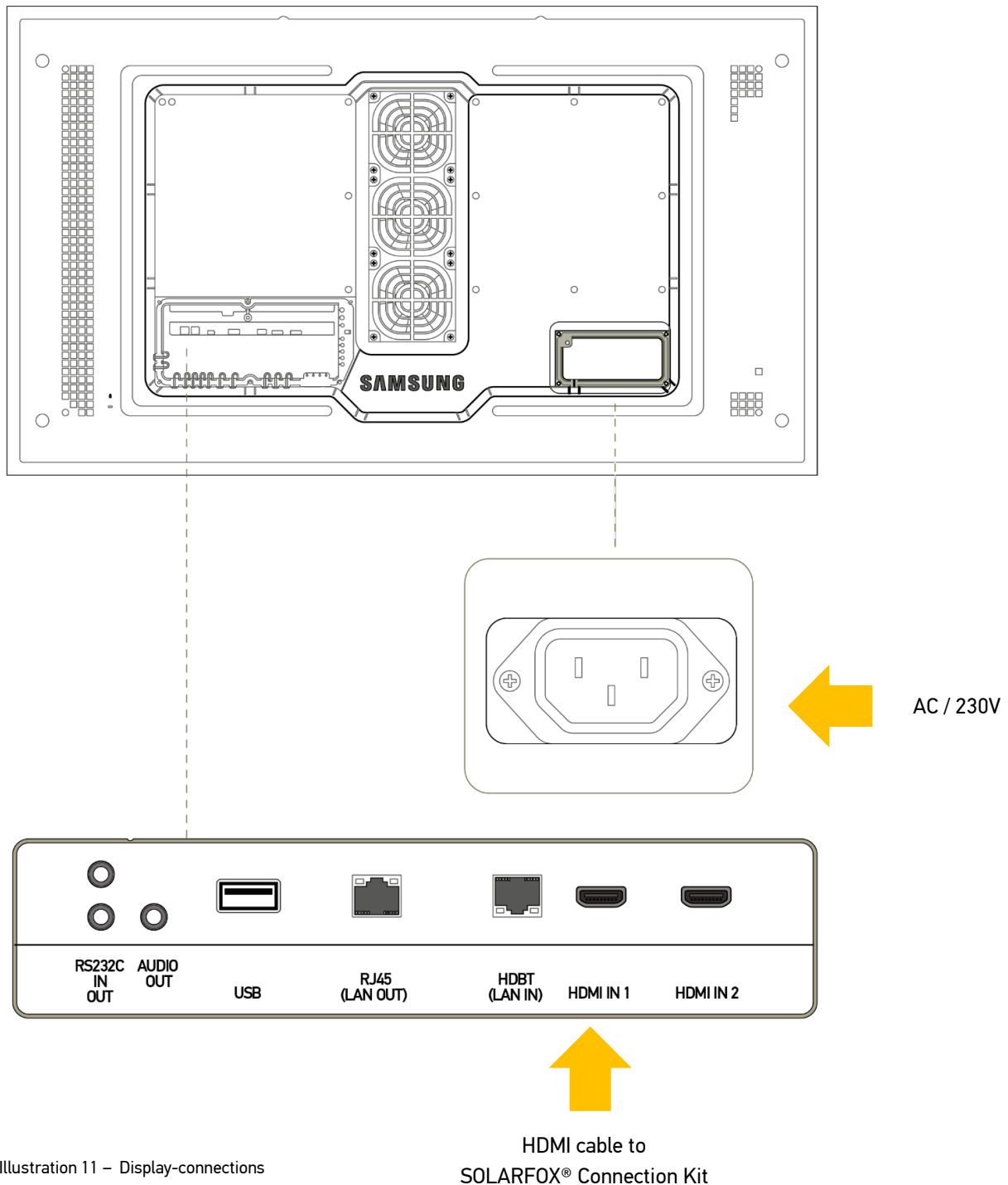


Illustration 11 – Display-connections

9) Installing the display on the wall

Screw one hexagon screw into each of the top two dowels and allow them to protrude approx. 5 mm. Now the display along with the wall mount can be hung in the upper screws. Once the display is hung up, tighten the top screws with a wrench or ratchet wrench, then insert and tighten the bottom screws.

5. Installation of the anti-theft panels

1. Slide the 2 cover plates sideways over the wall mount.
2. Screw the cover plates together with the included anti-theft screws at the top and bottom.
3. Optionally, you can attach an additional Kensington lock to the display before mounting the covers.

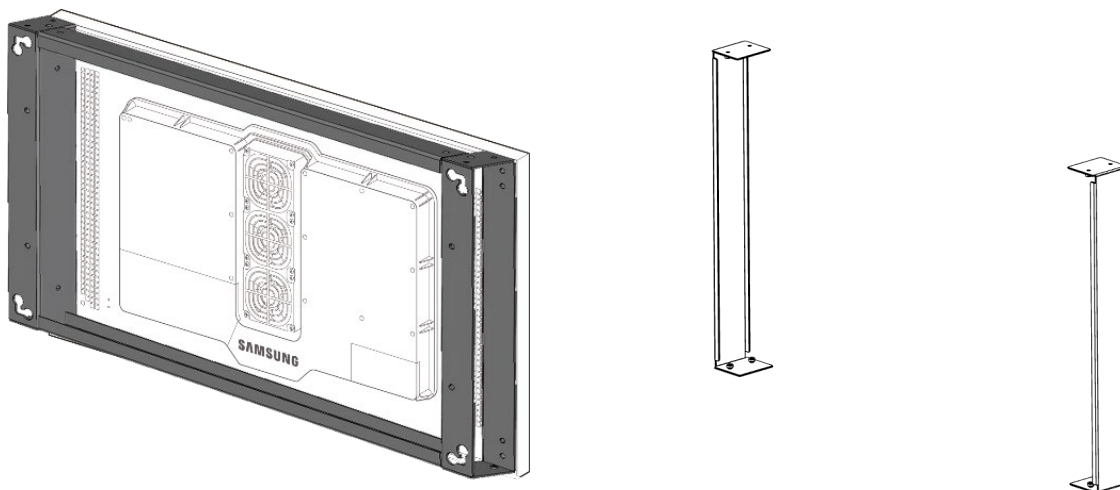


Illustration 12 – Installation of the anti-theft panels

6. Installation of the SOLARFOX® Connection Kit

- 1) Install the SOLARFOX® Connection inside or outside in an area that is protected against vandalism.

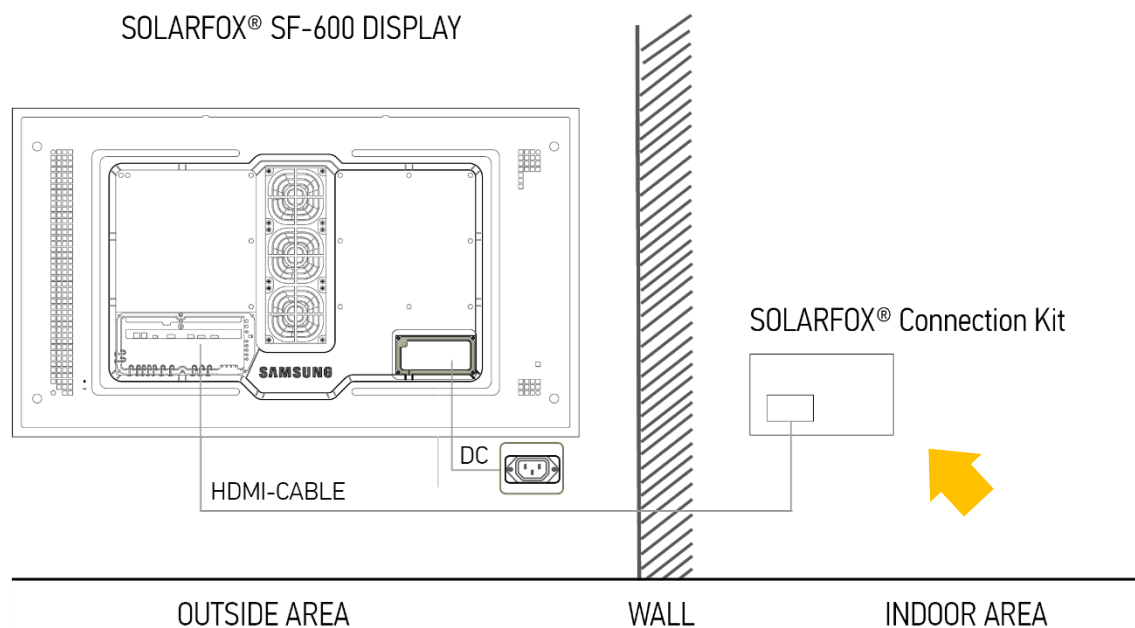


Illustration 13 – Connection scheme

- 2) Install the PG-bolting on the IP65 protected module case.



Illustration 14 – SOLARFOX® Connection Kit

- 3) Remove the 4 screws to open the module case.



Illustration 15 – SOLARFOX® Connection Kit

- 4) Insert a power cable and the fiber-optic HDMI cable and a network cable through the PG bolting into the module case.
- 5) Connect HDMI and LAN to the Solarfox control computer.

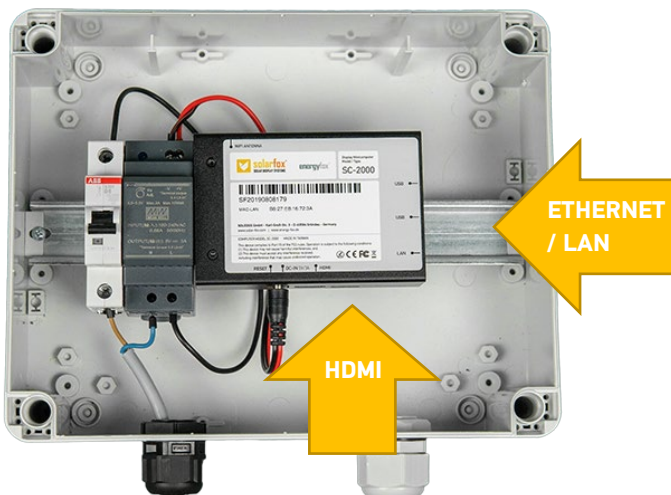


Illustration 16 – SOLARFOX® Connection Kit

- 6) For power supply, the phase (L) on the B6 circuit breaker and the neutral (N) on the 5V / 3A power supply must be connected.

7. Activation and Setup

You can now plug in the fuse again or turn on the power to the system and start configuring the display. Please make sure that the Solarfox® display has already been registered (see section 3). All displays must be registered before activation at: **<http://setup.solar-fox.com>**. For this you need the serial number of the display. It always starts with "SFD" followed by 11 digits. Further information on registration can be found in our Quick Start Guide. (www.solar-fox.com → Service → Download)

7.1 Starting the display setup

In order for your display to show content, an Internet connection must first be established for the SOLARFOX® system. To do so, the network settings and the account data must be configured. There are basically two options for configuring your display. The data can be stored via a so-called web interface with another computer (option A, B) or via a USB keyboard (option C) it can be entered directly on the device.

In order to choose the appropriate procedure, you should first check via which method the IP addresses are assigned in your network. There are two ways to do this:

- 1) Automatic (DHCP) or
- 2) Manual

In case number 1, your system will automatically get an IP address from the DHCP server. If the SOLARFOX® display has already been registered, connected and put into operation, it connects automatically and loads your slideshow. In this case you can continue with option A. If, however, no IP address is displayed, you must continue with option B or C.

Option A – Configuration via web interface (automatic):

Use a computer, that uses the same network your display has access to, log in to the online administration at <http://show.solar-fox.com> and click on the left sidebar of your display. Then click on "network report". (This one will be provided within 15-20 minutes of the first activation.) The network report shows the IP address of the display. Access the IP address shown on the display in a web browser. Subsequently, the SOLARFOX® Setup Assistant appears. The default password set is the SF number of the control computer. You can find this directly on the control computer. Follow the instructions in the setup wizard. You can now enter the display code and password. In the Setup Wizard, click "Start Slideshow". Exit the Setup Wizard and log out. The SOLARFOX® display should now display the SOLARFOX® slideshow.

Option B – Configuration via web interface (manual):

Connect a notebook/desktop-PC with the same network the Solarfox® display has access to. Configure the IP-address of your computer to get access to the static IP address of the Solarfox® display:

1. Access the static IP-address of the Solarfox® device:

<http://169.254.13.37>
2. Follow the setup assistant and enter the user data and reps. change the IP-address information. The default password set is the SF number of the control computer. You can find this directly on the control computer.

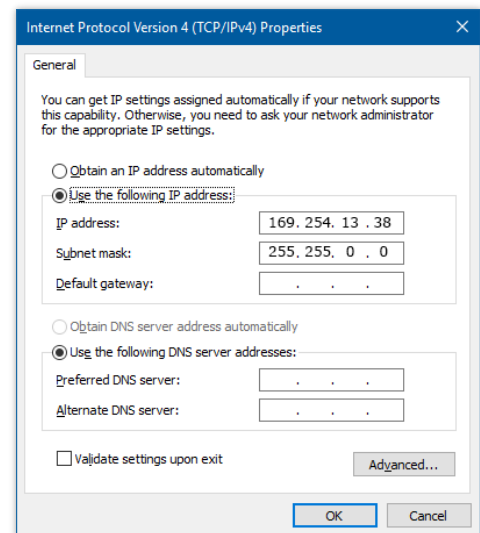


Illustration 17 – Network settings

Option C – Configuration via USB keyboard

- 1) Connect a conventional USB keyboard to the control computer (minicomputer) in the Connection Kit. Basically any keyboard with a USB port is suitable.
- 2) Use a separate HDMI cable to connect a second screen to the Solarfox® control computer's HDMI output to navigate through the setup.
- 3) This is followed by the setup process for network configuration and the entering of your account data. The setup wizard guides you step by step through the individual steps of the configuration. We therefore refrain from a detailed description, since the process is largely self-explanatory.
- 4) After completing the configuration, remove the USB keyboard and reinsert the optical fiber HDMI cable of the Solarfox® SF-600 display instead of the secondary screen.
- 5) The Solarfox® slideshow starts automatically.

7.2 Configuration of the integrated timer

The time the Samsung monitor switches on and off can be configured on a daily basis. It is operated via the included Samsung remote control.

For the use of the remote control, please enter the factory default code: **PIN: 4655**

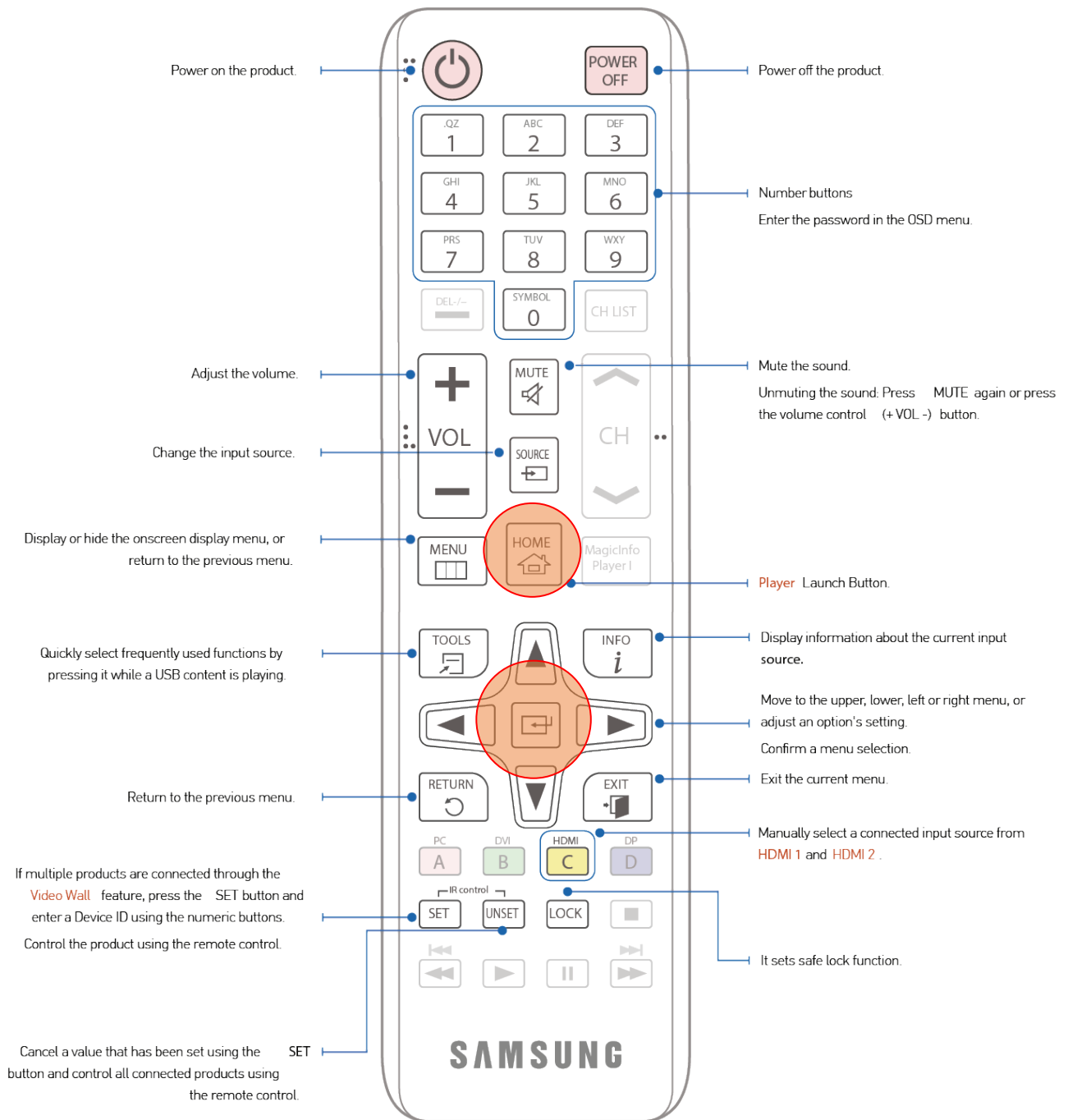


Illustration 18 – Samsung remote control

To use the remote control, the following code must be entered (factory-set):

PIN: 4655

☼ Auto. On

Use the included Samsung remote and press the **Home button**. Then the menu appears. Then use the arrow keys to go to **Automatic On / Off** and press the **Enter key**. (HOME → Automatic On / Off → ENTER)

Select **Auto On** to have your device automatically turn on at the day and time you want it to turn on.

Auto On: Set the power on timer by selecting one of the seven options.

You must first set the time. (Auto On 1 ~ Auto On 7)

Setting: Select Off, Once, Daily, Mon-Fri, Mon-Sat, Sat-Sun or manual.

If you select Manual, you can set the days when the device should turn on. - The tick mark indicates the selected days.

Time: Set hour and minute. Use the number buttons or the up and down keys to enter numbers. With the left and right keys you can change the input.

☼ Auto. Off

Set the power off timer (auto off) by selecting one of the seven options.

You must first set the time. (Auto Off 1 ~ Auto Off 7)

Setting: Select Off, Once, Daily, Mon-Fri, Mon-Sat, Sat-Sun or manual.

If you select Manual, you can set the days when the device should turn on. - The tick mark indicates the selected days.

Time: Set hour and minute. Use the number buttons or the up and down keys to enter numbers. With the left and right keys you can change the input.

Detailed information can be found in the manual of the Samsung monitor starting on page 59.

7.3 Limiting the brightness / Energy-saving mode

The brightness settings can be found in the menu. Use the infrared remote to set the brightness:

MENU → System → Eco solution → ENTER

⚙ Limiting the brightness

You can limit the maximum intensity of the background light.

Off: Off allows the use of maximum brightness.

On: On prevents the use of maximum brightness and saves energy.

The factory default value is "Off".

⚙ Eco sensor

To improve energy savings, the picture settings are automatically adjusted to the brightness or ambient light.

(Setting: Off / On)

- If you change the setting for the background light via Change image while eco sensor is active, Off is automatically disabled.
- If the screen contrast is insufficient or the readability of the display is not optimal, set the eco sensor to Off. If the Eco Sensor is Off, it may not match energy standards.

The factory default value is "On".

⚙ Min. background light

If the Eco Sensor is set to On, you can manually adjust the minimum screen brightness. Min. is the darkest background light mode. Make sure that the value of Min. background light is lower than the value of the background light.

When the Eco Sensor is set to On, the screen brightness adapts to the ambient brightness and automatically darkens or brightens.

The value is already preset in the factory delivery.

7.3 Screen lock



Please note that the device should always be locked after completing the configuration on the device.

To do this, press the **"LOCK"** button on the remote control to prevent unauthorized settings on the device via infrared remote control.

See Illustration 18 - Page 18

8. Maintenance

8.1 General advice concerning care and maintenance

Clean the glass regularly to ensure a clear view of the display. Use a soft cloth, lukewarm water and mild soap or glass cleaner. Wipe the glass with a dry, soft cloth to avoid limescale. Do not clean the glass when heated. Do not use sharp or hard objects.

Do not use high-pressure blasting equipment during cleaning work.
Do not use abrasive cleaners or cleaning utensils!

8.2 General advice concerning usage

☼ Open air mode

We recommend keeping the "Auto" vent setting.

☼ Open air mode / Operating in winter

When using the machine at low temperatures below 0 °C, be sure to set the outdoor mode to "**On**". This function keeps the internal temperature of the unit steady so that the unit can start up properly after being turned on.

- Do not disconnect the power cord when this function is set to "On".
- Power consumption when the power is off is higher when this function is set to "On" than when set to "Off".

The power connection should be guaranteed throughout the winter.

☼ Temperature control

This feature determines the temperature inside the device. You can set the allowable temperature range. The default temperature is 90 °C. The recommended operating temperature for the device is 75 to 90 °C (assuming an ambient temperature of 50 °C).

The screen darkens when the current temperature exceeds the specified temperature limit. If the temperature continues to rise, the unit will be turned off to prevent overheating.

8.3 Ideal picture quality and avoiding ablation of afterimages

Ideal picture quality

Due to manufacturing conditions, about 1 pixel out of a million (1 ppm) is lighter or darker than normal in this display. This does not affect the device performance. Displaying still images on the screen for an extended period of time may result in the ablation of afterimages or pixel defects. Activate the power-saving mode or a dynamic screen saver if you are not going to use the device for a long time.

Avoiding ablation of afterimages

If the LCD screen is operating normally, no afterimages should ablate. Normal operation is the continuous change of image patterns. However, if the LCD screen displays a still image for an extended period of time, there may be a slight voltage difference between the electrodes in the pixels that control the liquid crystal.

Over time, the voltage difference between these electrodes continues to increase, thus reducing the liquid crystal. In this case, when changing the images, the previous image may remain as an afterimage on the screen. To prevent this, the accumulated voltage difference must be lowered. If an LCD screen is operated normally, ie with changing contents, no afterimages should ablate.

8.4 Additional information

Perform a visual inspection of the display regularly. Vandalism or extreme environmental conditions could affect or damage the display.

9. Care and cleaning

Be careful when cleaning and follow the following instructions:

1. Turn off the device and the computer.
2. Disconnect the power cord from the device. Hold the power cord by the plug, and do not touch the cord with wet hands. Otherwise, this may result in an electric shock or fire.
3. Use water and a dry cloth to clean the protective glass.
 - Wipe with a clean damp cloth.
 - To remove stubborn stains, wipe with a cloth and a small amount of detergent on ethanol basis.
 - Use a brush to remove all foreign objects from the inlet and outlet openings.
4. After cleaning, attach the power cord to the unit again.

10. Technical information

Product description	SF-600 46"	SF-600 55"
Screen diagonal	116,8 cm (46")	138,7 cm (55")
Size (LxHxD)	1069.0 x 623.6 x 85.0 mm	1260.6 x 731.4 x 85.0 mm
Size incl. wall mount (LxHxD)	1069.0 x 623.6 x 127.0 mm	1260.6 x 731.4 x 127.0 mm
Active screen (LxH)	1018.08 x 572.67 mm	1209.60 x 680.40 mm
Color	black	black
Performance under load (max.)	468 W	554 W
Typical energy usage (in Western Europe)	193 W	267 W
BTU (max)	1595,88	1889,14
Safety class	IP56	IP56
Energy efficiency class (LED Monitor)	D	D
Operating temperature	-30 °C to +50 °C	-30 °C to +50 °C
Energy consumption Standby/Off	20 – 50 W	20 – 50 W
Weight	40,5 kg	52,6 kg
Weight incl. wall mount	~ 54,1 kg	~ 67,0kg
Humidity	10.0 % ~ 100.0% (non condensing)	10.0 % ~ 100.0% (non condensing)
Sensors	Environment sensor -Auto brightness, Temperature	Environment Sensor -Auto brightness, Temperature
LCD background lights technology	Direct LED	Direct LED
Panel Type	a-si TFT/S-VA	a-si TFT/S-VA
Resolution	1920 x 1080	1920 x 1080
Brightness	2500 nit / cd/m ²	2500 nit / cd/m ²
Viewing angle	178 degree	178 degree
Operating time	24/7	24/7
Display format	1080p (FullHD)	1080p (FullHD)
Video in formats	720p, 1080i, 1080p	720p, 1080i, 1080p
Picture ratio	16:9	16:9
Video connection	HDMI	HDMI
Other connection ports	Ethernet (LAN), WiFi	Ethernet (LAN), WiFi
Timer (On and Off)	Individual daily timer	Individual daily timer
TV-Tuner	No Tuner	No Tuner
Speaker system	No speakers	No speakers
Remote control	Remote with PIN	Remote with PIN
Power supply	230 V	230 V
Environmental protection standards (LED-Monitor)	ENERGY STAR	ENERGY STAR
Warranty	36 months warranty (display unit)	36 months warranty (display unit)
Packaging Display and Wallmount (WxHxD)	1156 x 713 x 200 & 1238 x 622 x 38 mm	1358 x 845 x 230 & 1238 x 622 x 38 mm
Packaging weight incl. Wallmount & Connection Kit	57,6 kg	69,8 kg

11. Technical drawings

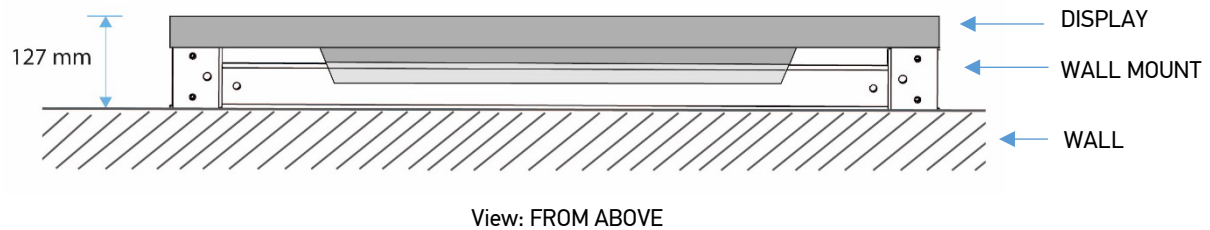
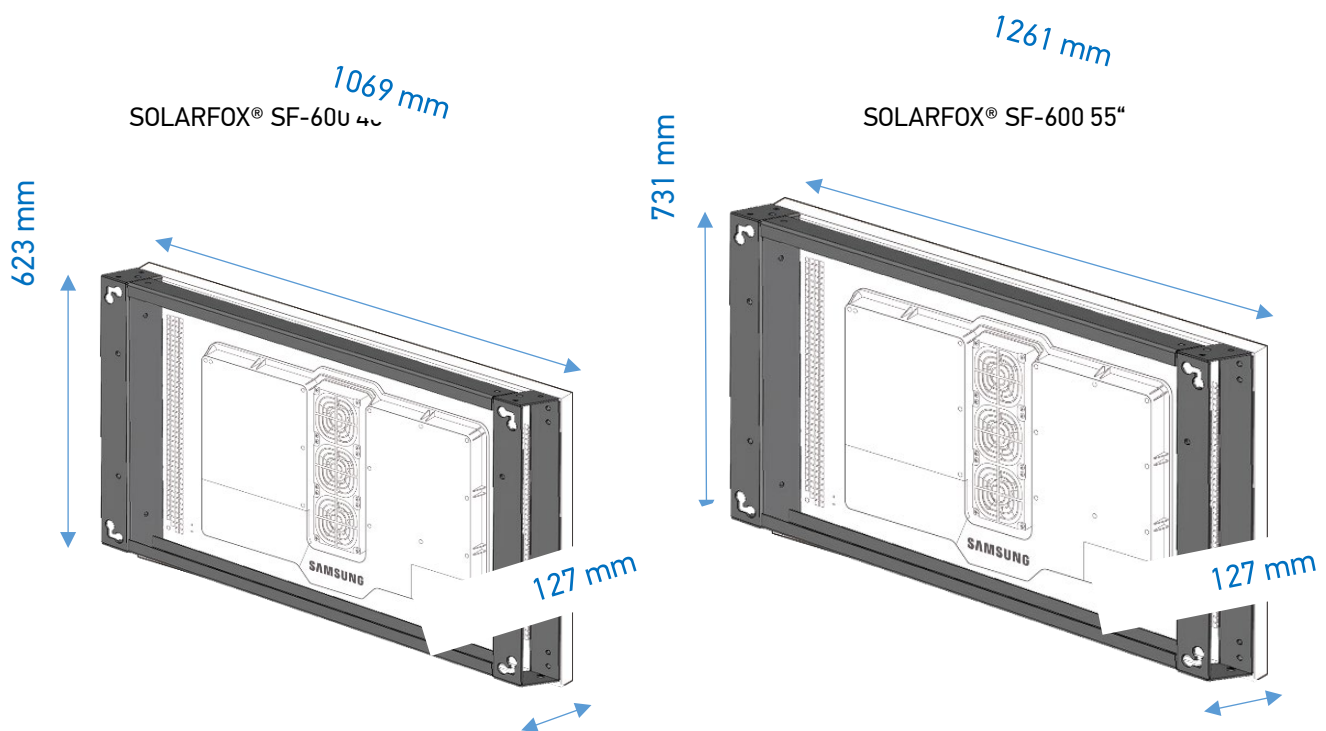


Illustration 19 – Wall mount – cross section



View BACK
(without anti-theft panels)

Illustration 20 – Back with wall mount

SOLARFOX® SF-600 46" Wall mount without display

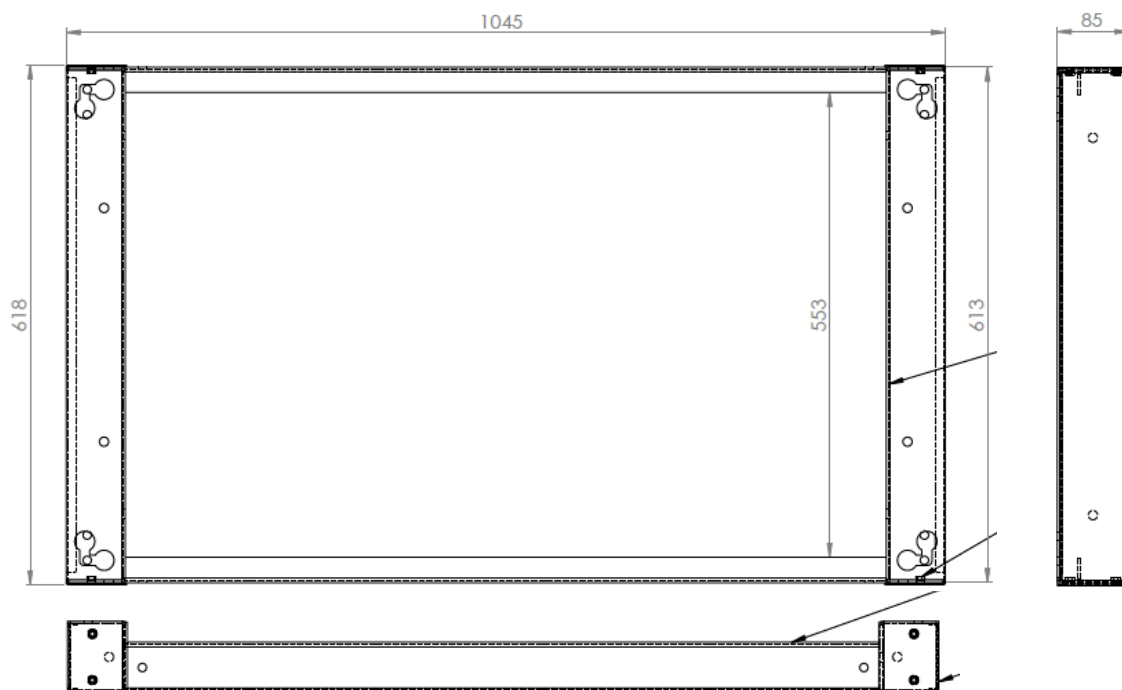


Illustration 21 – Technical drawing SF-600 46"

SOLARFOX® SF-600 55" Wall mount without display

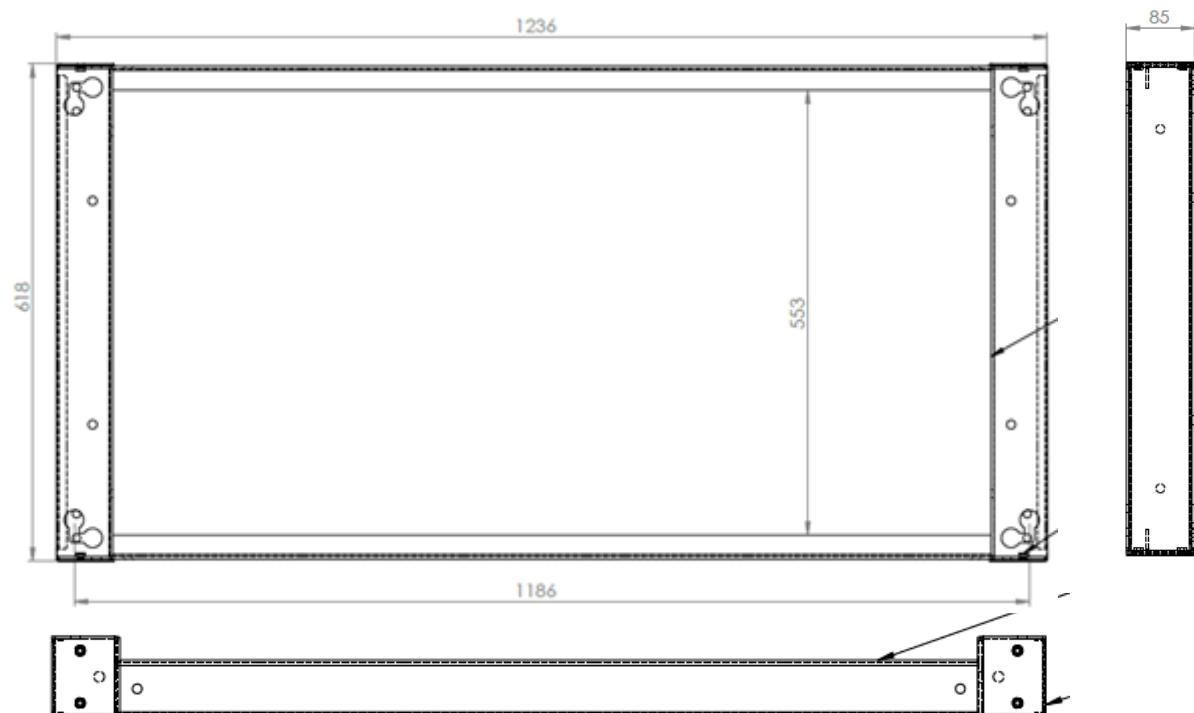


Illustration 22 – Technical drawing SF-600 55"

12. Configuration of SOLARFOX® content

Please refer to the separate manual for SOLARFOX® online administration for more information concerning the configuration of the slideshow. This can be downloaded at „Service“ -> „Download“ at www.solar-fox.com

13. Contact



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In case of technical questions, please don't hesitate to contact our support team directly:

support@solar-fox.com

Online-Chat

You can also contact our support team via the online chat on our website:

www.solar-fox.de <https://www.solar-fox.de/de/support-ticket.html>