

Aerys



Installation manual

NOTE:

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a. Parts necessary for Aerys assembly (included in the packaging depending on configuration)

No.	Standard parts	Quantity
1	M3x8 CSK TWO-HOLE SP4 (Snake eye M3)	4
Parts for metal pole (additional option)		
1	M5x30 CSK TWO-HOLE SP10 (Snake eye M5)	8
2	Bolt anchor B A4 12-50-65/145	4
3	M12 Nut	4
4	Plastic cover cap for M12 nut	4
Parts for wall mount (additional option)		
1	Stainless steel clamp stramp	2
2	“Worm” drive	2
Parts for wind sensor (Aerys X)		
1	M3x8 CSK TWO-HOLE SP4 (Snake eye M3)	4
Parts for grid power module (additional option)		
1	Plastic cable gland	1
2	Power connector	1
3	Quick release power connector with PGP cable 3x1.5 mm ²	1

b. Aerys installation tools

Tools	Quantity	Size
Combination wrench	1	19
Snake eye bits M3 and M5 (included)	1	3, 5
Phillips head screwdriver	1	1
Wire strippers	1	-
Pliers	1	-

1. Unpacking Aerys

- 1) Aerys is transported in suitable wooden packaging (crate) in order to remain protected during transport. When the device is delivered, please visually check the condition of the crate and the existence of the lead and wire seal, the lack of which indicates the box was opened during transit
- 2) The wooden crate contains a movable top panel that needs to be removed in order to take out the device. It is recommended to remove the panel of the box only on a flat surface near the place of installation. To remove the panels of the box, it is recommended to use a cordless drill/crosshead screwdriver
- 3) If a wall mount is purchased with Aerys (additional option) it will be delivered in the same wooden crate together with the device
- 4) If a metal pole is purchased with Aerys (additional option) it will be delivered in a separate wooden crate. If a grid power module is purchased with the Aerys (additional option), carefully pull the metal pole out of the wooden crate, as the pole will have power cables connected to its two halves
- 5) In both installation cases (metal pole or wall mount) it is recommended to leave Aerys inside the wooden crate until it can be installed onto the metal pole or wall mount. This prevents any unnecessary damage to the device
- 6) If you have purchased calibration service option (additional option) it is recommended to save the wooden crate in which Aerys was packed, as the crate will be needed to send the device back to Include for the calibration process
- 7) Aerys is additionally secured with a stretch foil and dustproof bag. When removing foil and bag avoid using sharp tools such as scissors or scalpels. Usage of sharp tools could damage painting or cables in case the device is equipped with a grid power module

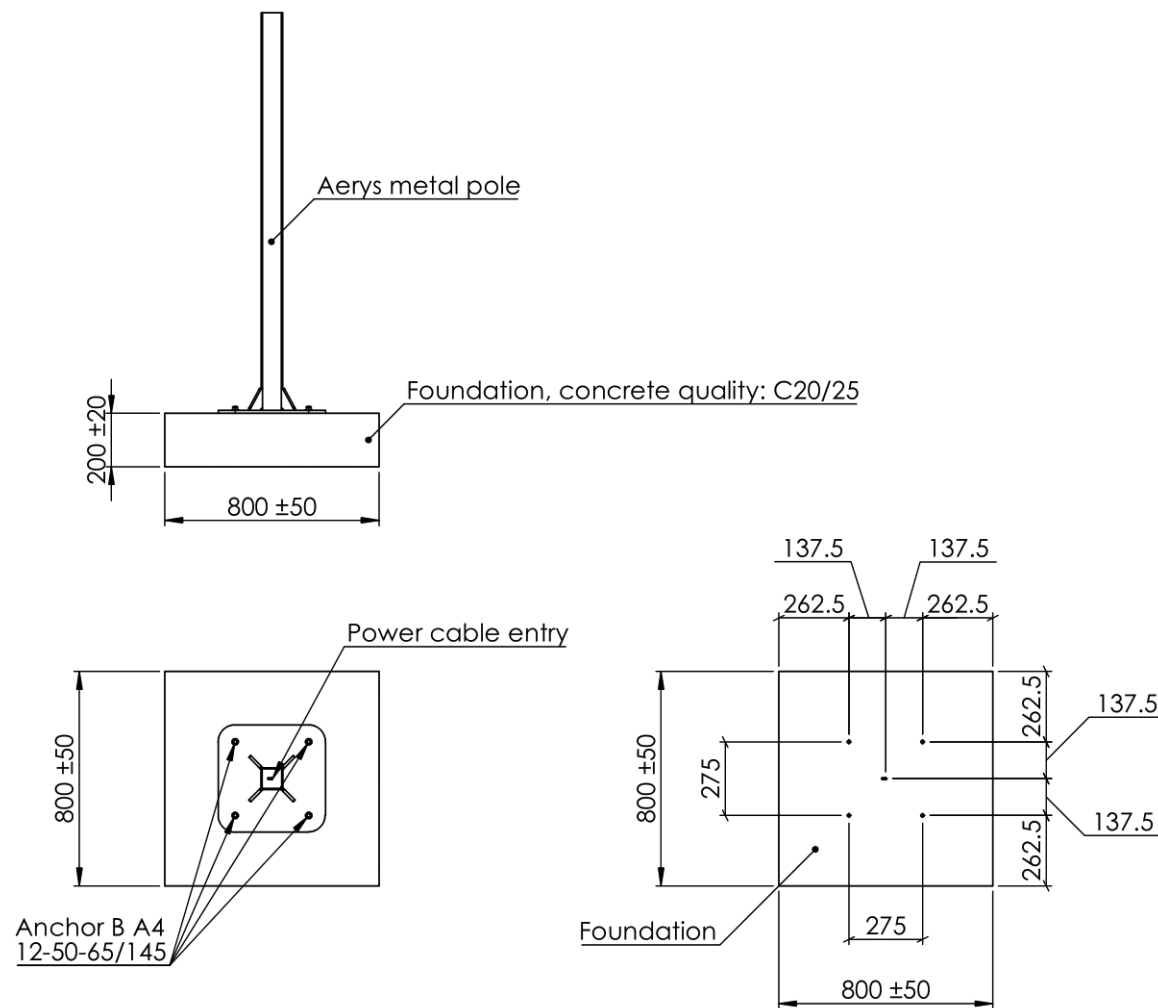


2. Preparing the base for installation procedure

The following instruction describes base (foundation) preparation for Aerys with an additionally purchased metal pole. In case your Aerys is installed with a wall mount you can continue to chapter 3. Aerys installation.

- 1) The base needs to be flat and hard. Concrete with strength class C20/25 should be used as a reference. With regard to base, the condition is met by an equivalent stone surface, while asphalt and earth surfaces are unsuitable for installation
- 2) Recommended base dimension required for mounting the metal pole is 80 cm in length and 80 cm in width. The minimum base dimension should not be less than 50 cm in length and 50 cm in width. The minimum required base depth is 20 cm
- 3) If a grid power module is purchased with the Aerys (additional option), it is necessary to prior set (pre-install) a 230/110V power cable in the base. A PGP cable 3x1.5 mm² is suitable, installed so that it protrudes from the centre of the base at a length of 200 cm. The power cable must be precisely installed in the base so that during the installation of the metal pole it is pulled through it
- 4) It is important to ensure that the power cable is installed in such a way that a drill bit can't damage the cable during the drilling process
- 5) The exact positions and dimensions for the preparation of the power cable in the base can be found on the next page in chapter 2.1. Foundation dimensions and cable position
- 6) Before installation, be sure to unplug the power cable to prevent electric shock. The installation is to be executed by an experienced electrician

2.1. Foundation dimensions and power cable position



3. Aerys installation

3.1. Installation with a wall mount

The following instructions describe the installation of Aerys on the existing pole (e.g. streetlight pole) by using a wall mount.

- 1) It is recommended that a wall mount is installed at least 3 meters from the ground. This is an ideal height for sensors and also lowers the chance of vandalism.
- 2) If Aerys is equipped with a grid power module you may have to drill a hole in the existing pole for the power cable. Ideally, the hole in the existing pole should be positioned in such a way that the power cable can enter the wall mount opening, as shown in the following picture:

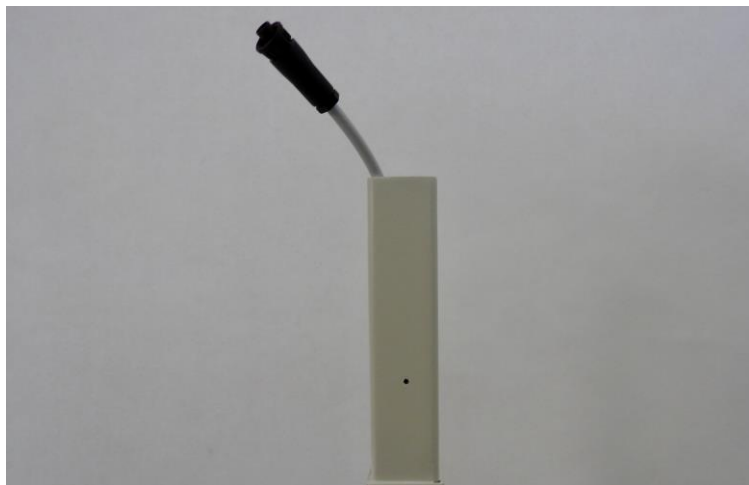


Drill a hole in the existing pole by using a $\varnothing 10$ mm drill bit. To prevent rust, it is recommended to spray drilled hole with zinc spray.

- 3) If you can't secure the entrance of the power cable in such a way as explained in the previous step there is an option to route it through a plastic cable gland that can be mounted on the bottom of the wall mount, as shown in the following picture:



- 4) In both, steps 2 and 3, it is important that the side of the power cable with quick release power connector is located slightly outside of the wall mount where Aerys is connecting with the wall mount, as shown in the following picture:



- 5) To ensure the installation of the wall mount on the poles of different widths, in the packing you can find two stainless steel clamp straps and two “worm” drives for mentioned clamp straps. Pull one side of the clamp strap through the worm drive and press it with pliers, as shown in the following picture:



- 6) Now pull the clamp strap through the holes on the wall mount, position the wall mount in its final position and connect another side of the clamp strap with the worm drive. By using a screwdriver firmly tighten the clamp strap, as shown in the following picture:



NOTE:

Use a spirit level to secure the right vertical position. If needed, adjust the vertical position by adding small metal plates between the existing pole and the wall mount (this may be the case if the existing pole is narrowing towards the top). Cut any excess of the clamp after tightening it to the pole.

- 7) Once the wall mount is firmly connected to the existing pole you can place Aerys on it. If Aerys is equipped with a grid power module, connect the quick-release power connectors on the Aerys side and wall mount side together and slowly lower Aerys onto the wall mount. With special snake eye bolts and provided bit tighten Aerys and the wall mount together, as shown in the following picture:



NOTE:

If Aerys is equipped with a PV module (additional option) it is recommended that the PV module is facing the sun for most of the day.

If you have purchased an Aerys X device with a wind sensor, please read chapter 6. Wind sensor calibration, before placing Aerys on the wall mount.

Necessary parts (included in the packaging):

- Stainless steel clamp straps
- Worm drives
- Snake eye bolts
- Snake eye bit
- PGP cable 3x1.5 mm² (additional option)
- Power connector (additional option)

3.2. Installation with metal pole

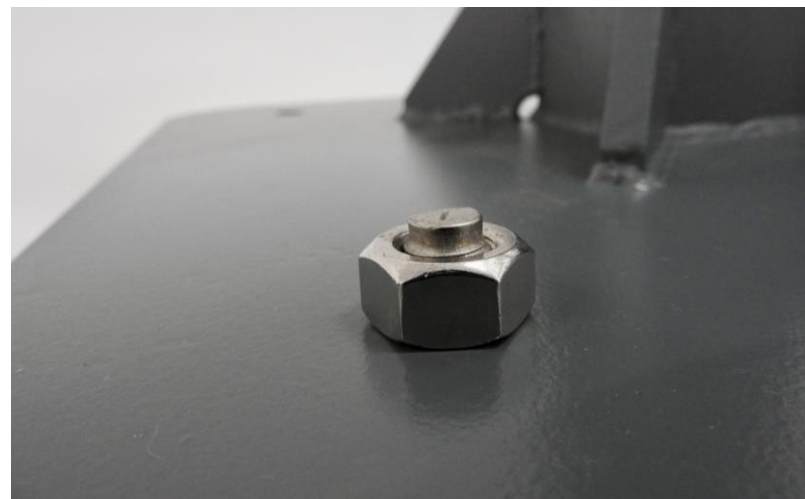
The following instructions describe the installation of Aerys with an additionally purchased metal pole.

NOTE:

It is important that the base is prepared in accordance with section 2. Preparing the base for the installation procedure. Aerys, together with its metal pole, reaches around 4 meters in height and 120 kg in weight.

Any deviations of the base from our recommendations could lead to damage and possibly even injuries to passersby!

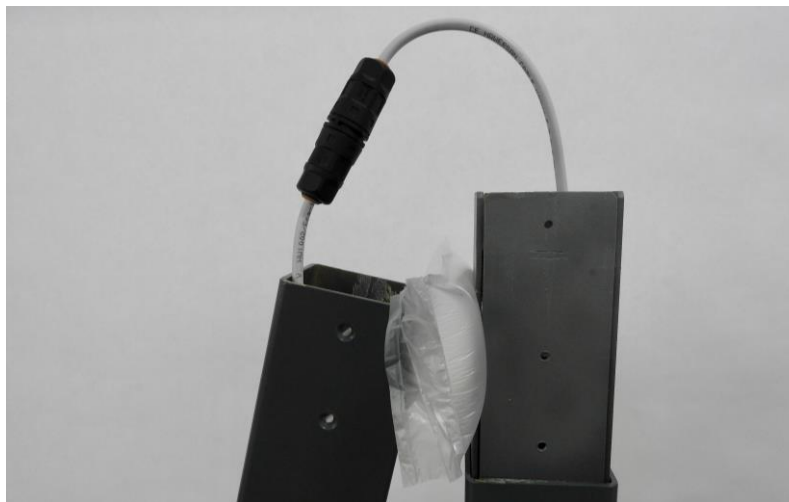
- 1) If Aerys is equipped with a grid power module please ensure that the power cable is prepared in the base in accordance with section 2. Preparing the base for the installation procedure
- 2) Position the bottom half of the metal pole on the base position where it will be permanently installed and mark the drilling holes. Remove the bottom half of the metal pole and drill four holes 140 mm deep in the marked positions using a $\varnothing 12$ mm drill bit
- 3) Insert the FBN 12 anchor bolts into the drilled holes in such a way that 15 to 18mm of each bolt is above the surface. Use a hammer in order to get the bolt to enter the hole and achieve an interference fit
- 4) If Aerys is equipped with a grid power module, run the power cable through the bottom part of the metal pole. Now carefully place bottom half of the pole on the anchor bolts
- 5) When all four bolts are correctly positioned install the nut M12 DIN934. Use a wrench to tighten the nuts. Ideally, after tightening the nut, bolt should be at the level of the nut or a few millimeters above it, as shown in the following picture:



Use a spirit level to secure the right vertical position. If needed, adjust the vertical position by adding small metal plates between the metal pole plate and base. If the bolt height is 5mm or more above the nut, it is recommended to cut off the excess, as the plastic cover caps won't fit properly.

- 6) Once the bolts are tightened and have the proper height, fit the plastic cover caps over the nuts. It is recommended to apply glue or silicone on the nut before fitting the plastic cover cap, as this will prevent unwanted plastic cover cap removal

- 7) If Aerys is equipped with a grid power module before installing upper half of the metal pole on the bottom half it is necessary to connect power cables. Bring upper part of the metal pole close to the bottom half and connect two power cables with power connector that is included in the packaging. If installed properly, connection should look as shown in the following picture:



- 8) Now carefully install upper half of the metal pole on the bottom half, in such a way that rotation markings from the upper and bottom half are on the same side, as shown in the following picture:



- 9) With special snake eye bolts and bit tighten two parts of the metal pole together. If Aerys is equipped with QR/NFC tag, read section 4. Installing QR/NFC tag before proceeding further
- 10) After the metal pole is properly joined and installed in the base you can place Aerys on it. If Aerys is equipped with a grid power module, connect the quick-release power connectors on the Aerys side and metal pole side together and slowly lower Aerys onto the metal pole. With special snake eye bolts and bit tighten Aerys and the metal pole together, as shown in the following picture:



NOTE:

If Aerys is equipped with a PV module (additional option) it is recommended that the PV module is facing the sun for most of the day.

If you have purchased an Aerys X device with a wind sensor, please read chapter 6. Wind sensor calibration, before placing Aerys on the metal pole.

Necessary parts (included in the packaging):

- FBN 12 anchor bolts
- M12 nuts
- Plastic cover caps for M12 nuts
- Snake eye bolts
- PGP cable 3x1.5 mm² (additional option)
- Power connector (additional option)

4. Installing QR/NFC tag

NOTE:

QR/NFC tag is installed only if purchased as additional option with Aerys. Read this chapter before proceeding with chapter 3.2. Installation with metal pole, in case your Aerys is purchased with metal pole (additional option).

4.1. Installing QR/NFC tag with wall mount

NOTE:

It is advised to install a QR/NFC tag just underneath Aerys, approximately 150 cm from the ground.

- 1) Position the stainless steel plate in the position where it will be permanently installed and mark the drilling holes. Take care of the stainless steel plate orientation, as the plastic QR/NFC tag piece will be oriented based on the orientation of the plate. Also, try not to touch the metal plate too much with your hands, as the plate is treated with a special primer for adhesion.
- 2) As QR/NFC tag will be mounted on the existing metal pole it is recommended to use stainless steel flat head self-drilling screw. Another option is to drill a $\varnothing 3$ mm hole with a drill bit and use regular stainless steel flat headed screw.
- 3) Once the plate is installed, carefully remove the protection from the double-sided adhesive tape that is already taped to the plastic QR/NFC tag piece. Now carefully press the plastic piece onto the stainless steel plate.

4.2. Installing QR NFC tag with a metal pole

NOTE:

The flowing instruction explains how to install QR/NFC tag if metal pole is purchased with Aerys (additional option).

Try not to touch the metal plate too much with your hands, as the plate is treated with a special primer for adhesion.

- 1) Once the bottom and upper half of the metal pole are connected together (before the snake eye bolts are positioned on the joint), position a stainless steel metal plate on the desired side and tighten it with snake eye bolts.
- 2) Once the plate is installed, carefully remove the protection from the double-sided adhesive tape that is already taped to the plastic QR/NFC tag piece. Now carefully press the plastic piece onto the stainless steel plate. If installed correctly, QR/NFC tag should look as shown in the following picture:



5. Occasional and permanent Aerys activation

NOTE:

If you have bought Aerys X device, please read chapter 8. Wind sensor calibration (Aerys X) before switching on the device.

Aerys allows two working modes, i.e. two modes of activation:

- Permanent activation (permanent work mode) intended for permanent activation of Aerys after device is installed at its final location
- Intermittent activation (intermittent work mode) intended for Aerys devices used intermittently for trade fairs or presentation purposes

Depending on the method of work, Aerys and the Solos platform communicate and exchange data in a different manner.

5.1. Occasional Aerys activation (intermittent work mode)

To set Aerys in intermittent work mode, shortly press the ON/OFF button located on the bottom of the cylinder housing.

As soon as Aerys is switched on, the ON/OFF button will light up and the device will send an information to Solos platform that it is switched to occasional mode, which means that it is not monitored.

To switch off Aerys shortly press the ON/OFF button, after which the device switches off all modules. The LED light on the ON/OFF button will occasionally blink during the shutdown process. Once the LED light stops blinking the device is off. This usually takes 10 to 30 seconds.

5.2. Permanent Aerys activation (permanent work mode)

Permanent activation of Aerys must be used when installing the device at its final location. Permanent activation is enabled by pressing and holding the ON/OFF button for 15 seconds, after which the device will turn on and the button will flash several times. The ON/OFF button is located on the bottom of the cylinder housing.

After permanent activation of Aerys, the ON/OFF button loses function, and it is no longer possible to use it to switch the device on or off. If you need to turn off the device, you need to open the MANAGE application via the Solos monitoring platform, select Aerys for which you want to deactivate the permanent mode, and uncheck the "permanent work mode" field. The next time Aerys is connected to Solos (usually every 30 minutes), it will receive deactivation information, and it will be possible to switch it off by shortly pressing the ON/OFF button.

6. Wind sensor calibration (Aerys X)

NOTE:

Aerys X air quality monitor is equipped with a wind sensor for monitoring wind speed and direction.

Once installed at its final position, Aerys could be facing different geographical directions (e.g. at one location device could be facing north, while at another location it could be facing west). Therefore, calibration of the wind sensor is necessary once the device is installed at its final location and before proceeding with the steps explained in chapter 5. Occasional and permanent Aerys activation.

Make sure that the plastic holder used for locking the wind sensor is on the sensor before proceeding.

1) Before placing Aerys X on the wall mount or metal pole, install a wind sensor in such a way that the connector on the sensor is on the same side as the connecting cable on the Aerys housing cylinder. Use snake eye bolts to tighten the sensor and place Aerys on top of it. Proper installation is shown in the following picture:



- 2) Once the device is installed, shortly press the ON/OFF button located on the bottom of the cylinder housing. This is the same procedure as explained in chapter 5.1. Occasional Aerys activation
- 3) Wind sensor is locked with a plastic holder that prevents its rotation. Do not remove the plastic holder until the very end
- 4) By using a compass on your phone (or real compass) find the north and position the wind direction instrument towards the north, as shown in the following picture:



- 5) Once the wind direction instrument is facing the north, press and hold the ON/OFF button for exactly 4 seconds. This will open the “menu” and you will hear one short beep sound
- 6) Now make two short presses on the ON/OFF button. This will do the calibration. The device will make one long beep in the following few seconds. This long beep confirms that calibration is successfully done
- 7) After successful calibration you can either permanently activate the product (highly recommended) as explained in chapter 5.2. Permanent Aerys activation or leave in the occasional Aerys activation
- 8) Now remove the plastic holder used for locking the wind sensor

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