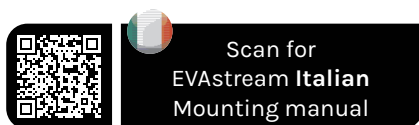
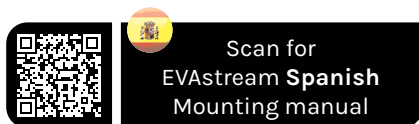
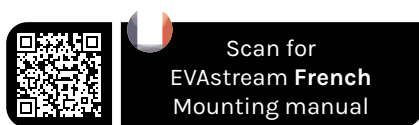
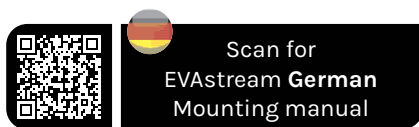
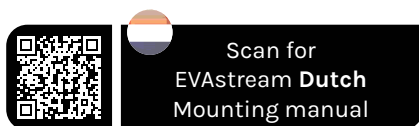


EVAstream



## MOUNTING MANUAL

A step-by-step guide to mounting the EVAstream



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# 1. ABOUT THIS MANUAL

## 1.1 Language

This manual is meant for qualified installers. Read and understand the information in this manual before mounting and using this product. The original language of this manual is English. All versions of this manual in other languages are translations of the original manual.

## 1.2 Symbols used

This manual contains safety instructions. Ignoring these instructions may lead to injury or damage to the appliance. Each safety instruction is indicated with a signal word. The signal word corresponds with the level of risk of the described hazardous situation.

---

 **DANGER**

This symbol indicates a hazardous situation which, if not avoided, will result in death or serious injury.

---

 **WARNING**

This symbol indicates a hazardous situation which, if not avoided, could result in death or serious injury.

---

 **CAUTION**

This symbol indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

---

**NOTICE**

Indicates a situation that, if not avoided, could result in damage to the product or to the environment.

---

## 2. SAFETY

### 2.1 Safety warnings and regulations

#### **DANGER**

Electrical shock hazard. Fatal injury will occur. Switch off all electricity near the pool before performing the electrical installation.

#### **WARNING**

Electrical shock hazard. Risk of electric shock and injury. The product must be installed by a certified electrician. Incorrect installation will cause electrical hazards.

#### **WARNING**

Electrical shock hazard. Risk of electric shock due to incorrect mounting.

- Make sure you read the enclosed documents carefully.
- Never connect the product to the mains before connecting all loose wires properly.
- Always disconnect the product from the mains before servicing.

#### **WARNING**

Electrical shock hazard. Risk of electric shock due to current leakage.

- Make sure to install the turbine with a PE-earthing.
- It's important to connect the installation niche to the pool earthing, never to the house earthing.

#### **NOTICE**

Risk of product damage. Prolonged disturbance of frequency may permanently damage the equipment.

- Never place control and power cables together in one conduit, according the Electrical Standards.

## 2.2 General safety instructions

Follow the NEN1010 guidelines. Follow the specific installation requirements of IEC 60364-7-702: 2010 (Electric low-voltage installations - Part 7-702: Requirements for special installations, spaces, and areas – Swimming pools and fountains). Install the controller in or outside of zone 2 (NOT in zones 0 or 1) according to IEC 60364-7-702: 2010. The power supply must be equipped with an earth leakage circuit breaker (ELCB) with a nominal differential current  $\leq 30\text{mA}$ .

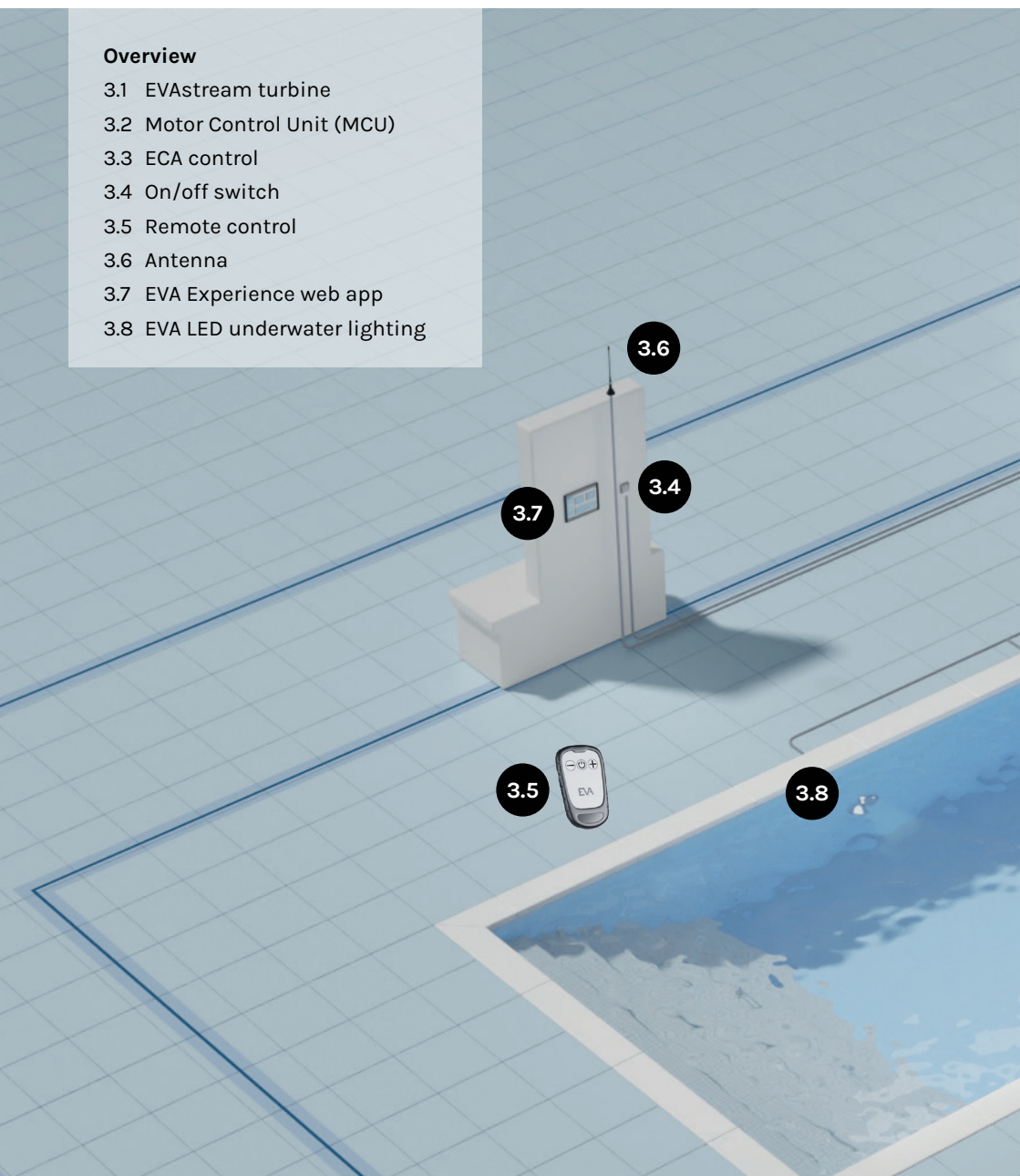
The EVAstream was developed as a counter-current swimming machine for use in a swimming pool. Use for any other purpose is not permitted. Requests for exceptions to this should be submitted to the manufacturer for technical analysis. Only after written approval by EVA Tech B.V. may the EVAstream be applied in any other way than as prescribed in this document.

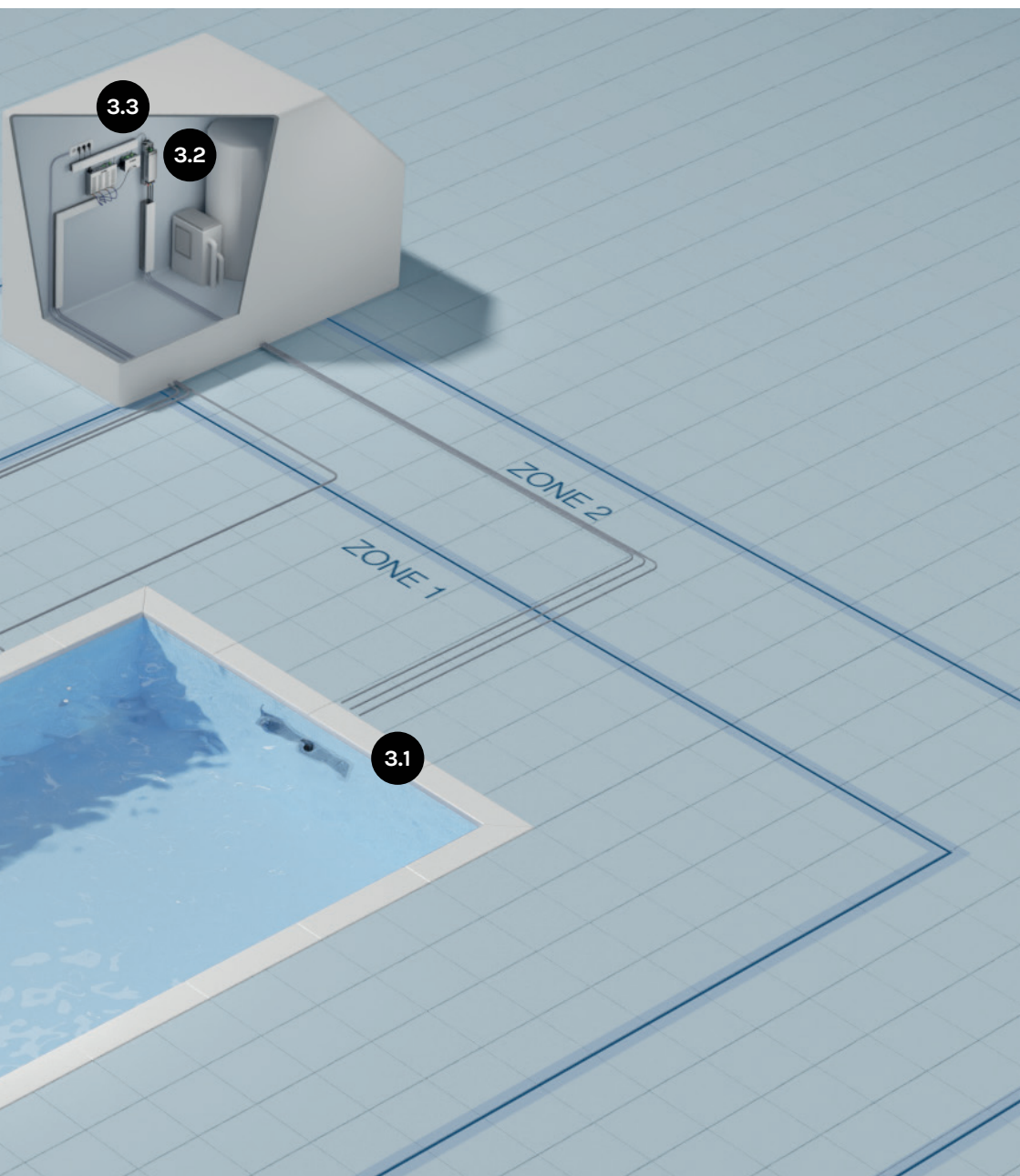
The general terms and conditions of EVA Tech B.V. apply to all our offers and agreements. EVA Tech B.V. expressly rejects the applicability of the general (purchasing) conditions of counterparties. The warranty provisions of the EVAstream and the general terms and conditions of EVA Tech B.V. can be found at **[www.evastream.nl](http://www.evastream.nl)**

### 3. PRODUCT

#### Overview

- 3.1 EVAstream turbine
- 3.2 Motor Control Unit (MCU)
- 3.3 ECA control
- 3.4 On/off switch
- 3.5 Remote control
- 3.6 Antenna
- 3.7 EVA Experience web app
- 3.8 EVA LED underwater lighting





3.1 + 3.2 EVAstream turbine + MCU

Recreational swimmer

EVAstream NEXT 175



EVAstream NEXT 225



|                               |                                    |                                    |
|-------------------------------|------------------------------------|------------------------------------|
| Recommended use               | Recreational swimmer               | Recreational swimmer               |
| Water flow capacity           | 35 - 175 m³/h<br>(adjustable flow) | 45 - 225 m³/h<br>(adjustable flow) |
| Volume displacement           | 0,8 - 4,3 m/s                      | 1,1 - 5,5 m/s                      |
| Max. waterflow speed swimzone | 2:15 sec. per 100 meter            | 1:40 sec. per 100 meter            |
| Minimum pool dimensions       | 4,5 x 2,5 meter (lxb)              | 4,5 x 2,5 meter (lxb)              |
| Warranty                      | 2-3 years factory warranty*        | 2-3 years factory warranty*        |

\* Register your product at [www.evaoptic.com](http://www.evaoptic.com) for 3 years warranty

Turbine

|                    |                                       |                                       |
|--------------------|---------------------------------------|---------------------------------------|
| Number of turbines | 1 turbine                             | 1 turbine                             |
| Cable type         | 3x1x16 mm²                            | 3x1x16 mm²                            |
| Cable length       | 8 meter, extendable to max. 35 meters | 8 meter, extendable to max. 35 meters |
| IP rating          | IPX8                                  | IPX8                                  |
| Motor type         | Brushless motor                       | Brushless motor                       |
| Water temperature  | 5°C to 35°C                           | 5°C to 35°C                           |

**Motor Control Unit**

|                            |                                                                                                                                  |                                               |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| <b>Dimensions</b>          | 284 x 90 x 82 mm (lxbxh)                                                                                                         | 290 x 105 x 91 mm (lxbxh)                     |
| <b>IP rating</b>           | IP 20                                                                                                                            | IP 20                                         |
| <b>Working temperature</b> | -20°C to 32°C, dry and condensation-free area                                                                                    | -20°C to 32°C, dry and condensation-free area |
| <b>Safety measures</b>     | Short circuit, overload, over voltage, over temperature, EVA Torque control, Voltage/current control, Mosfet temperature control |                                               |

**Electrical specifications input**

|                                            |            |            |
|--------------------------------------------|------------|------------|
| <b>Connection voltage (Vac)</b>            | 90-264 Vac | 90-264 Vac |
| <b>Frequency range</b>                     | 47 - 63 Hz | 47 - 63 Hz |
| <b>Nominal current (A)</b>                 | 3A 230 Vac | 4A 230 Vac |
| <b>Power consumption VA (PF &gt; 0.95)</b> | 600W       | 900W       |
| <b>Standby power consumption (W)</b>       | 5W         | 5W         |
| <b>PPM input</b>                           | PPM1       | PPM2       |

**Electrical specifications output**

|                                        |                        |                        |
|----------------------------------------|------------------------|------------------------|
| <b>Turbine output</b>                  | BLDC                   | BLDC                   |
| <b>Turbine connection power supply</b> | 3x1x16 mm <sup>2</sup> | 3x1x16 mm <sup>2</sup> |
| <b>Nominal voltage (Vdc)</b>           | 24 Vdc                 | 24 Vdc                 |
| <b>Nominal current (A)</b>             | 23A                    | 35A                    |
| <b>Output power sharing</b>            | Not available          | Not available          |

3.1 + 3.2 EVAstream turbine + MCU

Experienced swimmer

EVAstream NEXT 275



EVAstream NEXT 450



|                               |                                    |                                    |
|-------------------------------|------------------------------------|------------------------------------|
| Recommended use               | Experienced swimmer                | Experienced swimmer                |
| Water flow capacity           | 55 - 275 m³/h<br>(adjustable flow) | 90 - 450 m³/h<br>(adjustable flow) |
| Volume displacement           | 1,3 - 6,7 m/s                      | 2x 1,1 - 5,5 m/s                   |
| Max. waterflow speed swimzone | 1:25 sec. per 100 meter            | 1:15 sec. per 100 meter            |
| Minimum pool dimensions       | 4,5 x 2,5 meter (lxb)              | 4,5 x 2,5 meter (lxb)              |
| Warranty                      | 2-3 years factory warranty*        | 2-3 years factory warranty*        |

\* Register your product at [www.evaoptic.com](http://www.evaoptic.com) for 3 years warranty

Turbine

|                    |                                       |                                       |
|--------------------|---------------------------------------|---------------------------------------|
| Number of turbines | 1 turbine                             | 2 turbines                            |
| Cable type         | 3x1x16 mm²                            | 3x1x16 mm²                            |
| Cable length       | 8 meter, extendable to max. 30 meters | 8 meter, extendable to max. 25 meters |
| IP rating          | IPX8                                  | IPX8                                  |
| Motor type         | Brushless motor                       | Brushless motor                       |
| Water temperature  | 5°C to 35°C                           | 5°C to 35°C                           |

**Motor Control Unit**

|                            |                                                                                                                                  |                                               |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| <b>Dimensions</b>          | 380 x 90 x 96 mm (lxbxh)                                                                                                         | 360 x 182 x 117 mm (lxbxh)                    |
| <b>IP rating</b>           | IP 20                                                                                                                            | IP 20                                         |
| <b>Working temperature</b> | -20°C to 32°C, dry and condensation-free area                                                                                    | -20°C to 32°C, dry and condensation-free area |
| <b>Safety measures</b>     | Short circuit, overload, over voltage, over temperature, EVA Torque control, Voltage/current control, Mosfet temperature control |                                               |

**Electrical specifications input**

|                                            |            |             |
|--------------------------------------------|------------|-------------|
| <b>Connection voltage (Vac)</b>            | 90-264 Vac | 180-264 Vac |
| <b>Frequency range</b>                     | 47 - 63 Hz | 47 - 63 Hz  |
| <b>Nominal current (A)</b>                 | 6A 230 Vac | 9A 230 Vac  |
| <b>Power consumption VA (PF &gt; 0.95)</b> | 1300W      | 1800W       |
| <b>Standby power consumption (W)</b>       | 40W        | 80W         |
| <b>PPM input</b>                           | PPM2       | PPM2        |

**Electrical specifications output**

|                                        |                        |                        |
|----------------------------------------|------------------------|------------------------|
| <b>Turbine output</b>                  | BLDC                   | BLDC                   |
| <b>Turbine connection power supply</b> | 3x1x16 mm <sup>2</sup> | 3x1x16 mm <sup>2</sup> |
| <b>Nominal voltage (Vdc)</b>           | 24 Vdc                 | 24 Vdc                 |
| <b>Nominal current (A)</b>             | 50A                    | 2x 35A                 |
| <b>Output power sharing</b>            | 24 Vdc 100W            | 24 Vdc 100W            |

3.1 + 3.2 EVAstream turbine + MCU

Professional swimmer

EVAstream NEXT 350



EVAstream NEXT 550



|                               |                                    |                                     |
|-------------------------------|------------------------------------|-------------------------------------|
| Recommended use               | Professional swimmer               | Professional swimmer                |
| Water flow capacity           | 70 - 350 m³/h<br>(adjustable flow) | 110 - 550 m³/h<br>(adjustable flow) |
| Volume displacement           | 1,7 - 8,6 m/s                      | 2x 1,3 - 6,7 m/s                    |
| Max. waterflow speed swimzone | 1:10 sec. per 100 meter            | 1:05 sec. per 100 meter             |
| Minimum pool dimensions       | 4,5 x 2,5 meter (lxb)              | 4,5 x 2,5 meter (lxb)               |
| Warranty                      | 2-3 years factory warranty*        | 2-3 years factory warranty*         |

\* Register your product at [www.evaoptic.com](http://www.evaoptic.com) for 3 years warranty

Turbine

|                    |                                       |                                       |
|--------------------|---------------------------------------|---------------------------------------|
| Number of turbines | 1 turbine                             | 2 turbines                            |
| Cable type         | 3x1x16 mm²                            | 3x1x16 mm²                            |
| Cable length       | 8 meter, extendable to max. 25 meters | 8 meter, extendable to max. 25 meters |
| IP rating          | IPX8                                  | IPX8                                  |
| Motor type         | Brushless motor                       | Brushless motor                       |
| Water temperature  | 5°C to 35°C                           | 5°C to 35°C                           |

## Motor Control Unit

|                            |                                                                                                                                  |                                               |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| <b>Dimensions</b>          | 380 x 90 x 96 mm (lxbxh)                                                                                                         | 360 x 182 x 117 mm (lxbxh)                    |
| <b>IP rating</b>           | IP 20                                                                                                                            | IP 20                                         |
| <b>Working temperature</b> | -20°C to 32°C, dry and condensation-free area                                                                                    | -20°C to 32°C, dry and condensation-free area |
| <b>Safety measures</b>     | Short circuit, overload, over voltage, over temperature, EVA Torque control, Voltage/current control, Mosfet temperature control |                                               |

## Electrical specifications input

|                                            |            |             |
|--------------------------------------------|------------|-------------|
| <b>Connection voltage (Vac)</b>            | 90-264 Vac | 180-264 Vac |
| <b>Frequency range</b>                     | 47 - 63 Hz | 47 - 63 Hz  |
| <b>Nominal current (A)</b>                 | 8A 230 Vac | 12A 230 Vac |
| <b>Power consumption VA (PF &gt; 0.95)</b> | 1700W      | 2600W       |
| <b>Standby power consumption (W)</b>       | 40W        | 80W         |
| <b>PPM input</b>                           | PPM2       | PPM2        |

## Electrical specifications output

|                                        |                        |                        |
|----------------------------------------|------------------------|------------------------|
| <b>Turbine output</b>                  | BLDC                   | BLDC                   |
| <b>Turbine connection power supply</b> | 3x1x16 mm <sup>2</sup> | 3x1x16 mm <sup>2</sup> |
| <b>Nominal voltage (Vdc)</b>           | 24 Vdc                 | 24 Vdc                 |
| <b>Nominal current (A)</b>             | 65A                    | 2x 50A                 |

## Safety standards EVAstream turbine

EVAstream was built for speed and safety. Safety measures were taken to ensure safety of fingers, toes and also hair. EVAstream complies to safety standards DIN EN16582-1/2/3, EN16713-2 (residential pools) and EN13451-1/3 (commercial pools).

## Safety standards Power Supply Unit

SELV, UL62368-1, CSA C22.2 No. 62368-1, TUV EN62368-1 + A11, EAC TP TC 004, BSMI CNS14336-1 approved, EN55032 (CISPR32) Class A/B, EN61000-3-2/3, EN61000-4-2/3/4/5/6/8/11, EN55024, EN61204-3, EN61000-6-2, BSMI CNS13438.

3.3 ECA Control

|                                        | ECA Control Eco                                                                   | ECA Control 1 Essential                                                           |
|----------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|                                        |  |  |
| Suitable for EVAstream type            | EVAstream NEXT 175                                                                | EVAstream NEXT 225 - 275 - 350<br>EVAstream NEXT 450 - 550                        |
| Available EVA web app functions        | Start / stop<br>Speed / timer                                                     | Start / stop<br>Speed / timer                                                     |
| Connection EVA LED underwater lighting | Not available                                                                     | Optional (extension)                                                              |
| Connection EVA Remote control          | Optional (extension)                                                              | Optional (extension)                                                              |
| ECA Unit                               |                                                                                   |                                                                                   |
| Dimensions                             | 158 x 119 x 75 mm (lxbxh)                                                         | 158 x 119 x 75 mm (lxbxh)                                                         |
| IP rating                              | IP20                                                                              | IP20                                                                              |
| Working temperature                    | -20°C tot 32°C, dry/condensation-free                                             | -20°C tot 32°C, dry/condensation-free                                             |
| Warranty                               | 2 years factory warranty                                                          | 2 years factory warranty                                                          |
| Electrical specifications (input)      |                                                                                   |                                                                                   |
| Connection voltage (Vac)               | 230 Vac 5W                                                                        | 230 Vac 10W                                                                       |
| Pulse input (piezo-ready)              | Not available                                                                     | 3x Piezo ready                                                                    |
| Electrical specifications (output)     |                                                                                   |                                                                                   |
| PPM output                             | PPM 1                                                                             | PPM 2                                                                             |
| Lighting control output                | Not available                                                                     | DMX                                                                               |
| Fan output 5W (power box ventilation)  | Not available                                                                     | 24 Vdc 5W                                                                         |

## ECA Control 2 Training



EVAstream  
NEXT 225 - 275 - 350  
EVAstream  
NEXT 450 - 550

## ECA Control 3 ProTrainer



EVAstream  
NEXT 225 - 275 - 350  
EVAstream  
NEXT 450 - 550

Start / stop  
Speed / timer  
3 swim workouts

Start / stop  
Speed / timer  
20 swim workouts

Optional (extension)  
Compatible with  
swim workouts

Optional (extension)  
Compatible with  
swim workouts

Optional  
(extension)

Optional  
(extension)

158 x 119 x 75 mm (lxbxh)

158 x 119 x 75 mm (lxbxh)

IP20

IP20

-20°C tot 32°C, dry/  
condensation-free

-20°C tot 32°C, dry/  
condensation-free

2 years factory warranty

2 years factory warranty

230 Vac 10W

230 Vac 10W

3x Piezo ready

3x Piezo ready

PPM 2

PPM 2

DMX - EVA

DMX - EVA

24 Vdc 5W

24 Vdc 5W

3.4 On/off switch

If the EVAstream is permanently connected to 230V mains, the installation must additionally be equipped with an on/off switch mounted near the swimming pool where the EVAstream is located.

After use, the power must be switched off.

3.5 Remote control

Electrical specifications - Receiver

|                      |                                                                                                                                                                                                        |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Radio frequency band | 433.92 MHz                                                                                                                                                                                             |
| Antenna              | BNC connector, external antenna optional<br>(preferably dipole antenna for DIN-receivers and<br>1/2 - or 1/4 antenna for wall mounting. The antenna<br>is supplied as standard with a 10-metre cable.) |

Electrical specifications - Remote control

|                          |                                                   |
|--------------------------|---------------------------------------------------|
| Radio frequency band     | 433.92 MHz                                        |
| On/off switch            | included                                          |
| IP-rating                | IP67                                              |
| Environmental conditions | -20°C to +55°C / -4°F to +130°F (humidity 10-90%) |
| Moisture                 | 10-90%                                            |
| Dimensions               | 65x 112 x 35 mm / 2.6 x 4.4 x 1.4 inch            |

### 3.6 Antenna

#### General specifications

|            |                     |
|------------|---------------------|
| Frequency  | 433.92 MHz          |
| Weight     | 426 grams           |
| Dimensions | 33x195x33 mm        |
| Range      | 50 m, in open field |

### 3.7 EVA Experience web app

Use the EVA Experience web app to manage the EVAstream.

For instructions on how to set up the tablet environment, please refer to chapter 7.

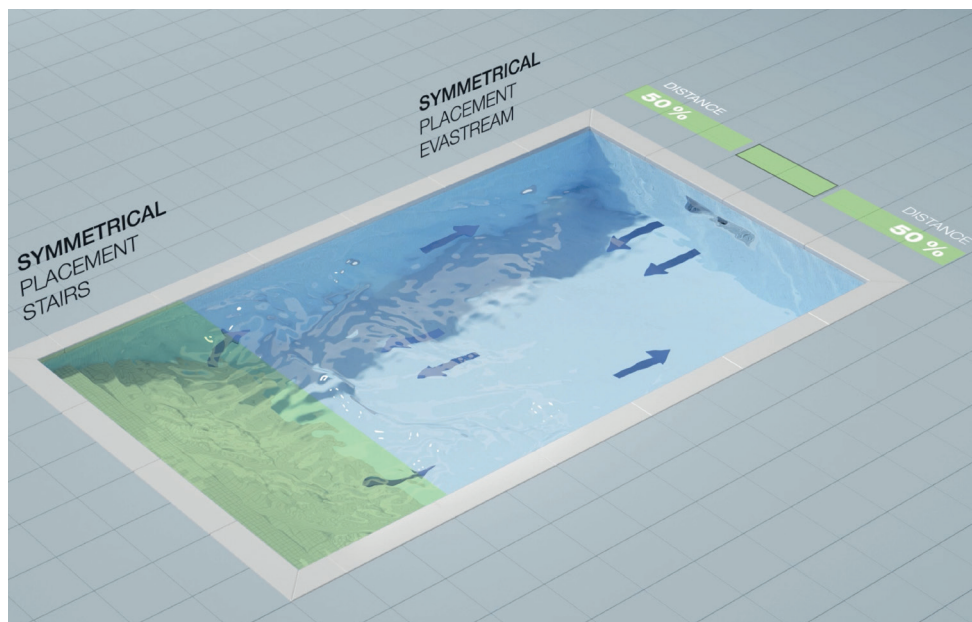
### 3.8 EVA LED underwater lighting

The EVA RGBW LED underwater pool lighting completes the counter current pool experience. The underwater lighting guides you through the training. For instructions on how to set up the underwater lighting, please refer to the mounting & installation manual of the EVA LED underwater lighting.



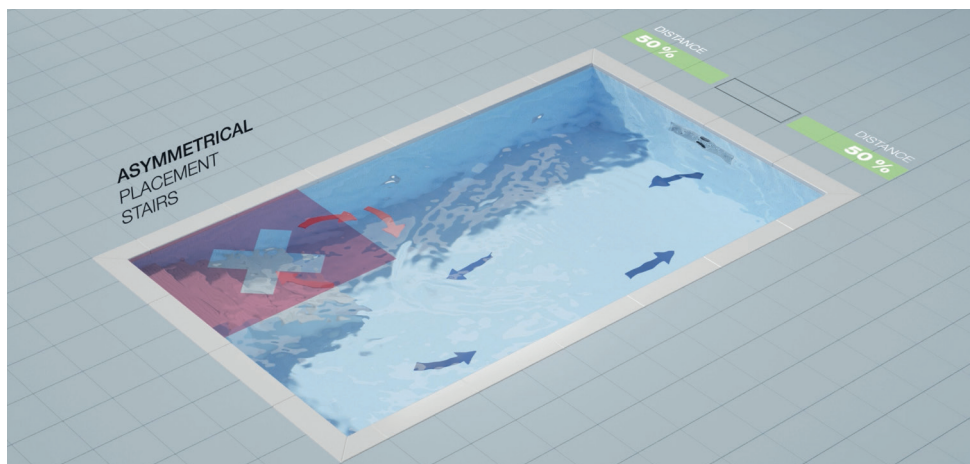
Scan the QR-code  
to go to the manual

## 4. SYMMETRICAL PLACEMENT OF THE EVASTREAM



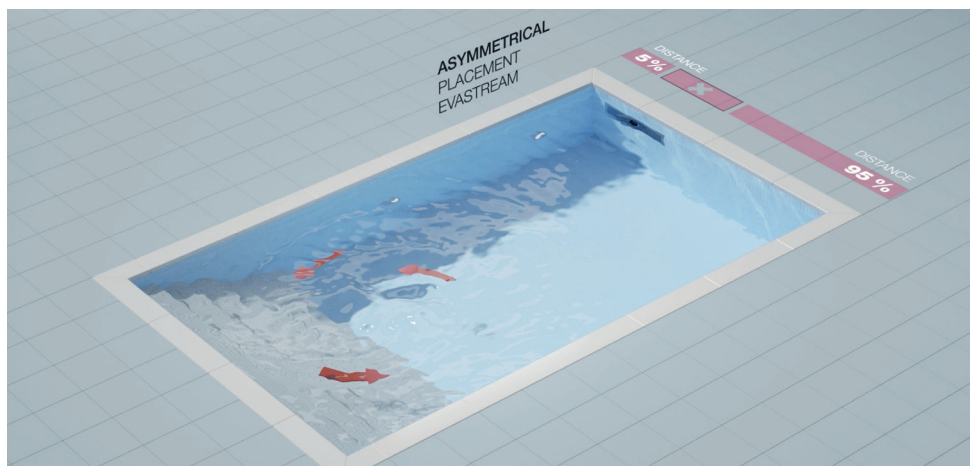
### The importance of symmetrical placement of the EVAstream

To create the optimal swimming experience for the customer, it is important to think carefully about the positioning of the EVAstream in the design phase, for example in relation to elements such as stairs and platforms. Such 'obstacles' can cause a less pleasant swimming experience. For optimal water flow, the EVAstream should be placed in the middle of the pool wall in a symmetrically designed pool.



### Blockages in the water circulation

Suppose you have placed a staircase in the corner of the pool. As a result, the circulation of the flow is not equal on both sides of the pool, because the staircase influences the flow. The flow of the EVAstream is still just as powerful, but the user experiences the current as if it were faltering.



### Flow with asymmetrical placement

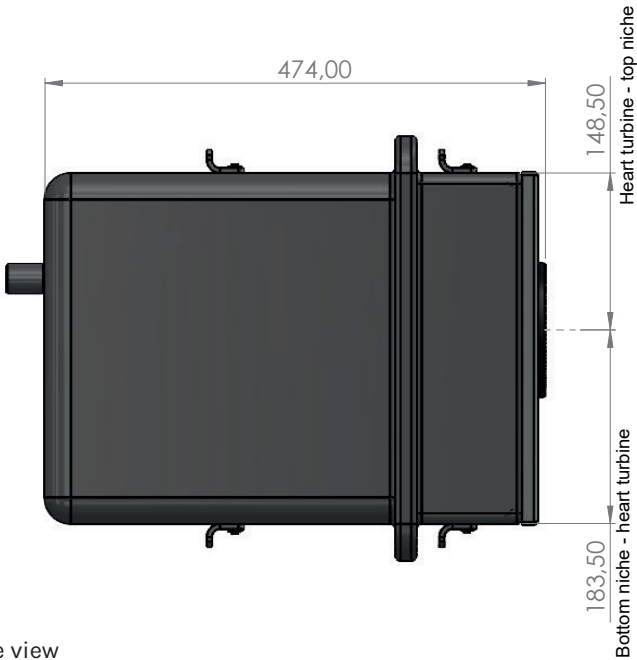
When a turbine is not placed symmetrically in the pool, the circulation of the current is not equal on both sides of the pool. The current of the EVAstream is still just as powerful, but it creates a kind of vortex in the middle of the pool.

# 5. MOUNTING THE EVASTREAM

## 5.1 Mounting drawings

### EVAstream installation niche PP

- Mounting depth: 250 mm below water level (centre of the turbine).
- Mount the EVAstream horizontally in the middle of the poolwall.



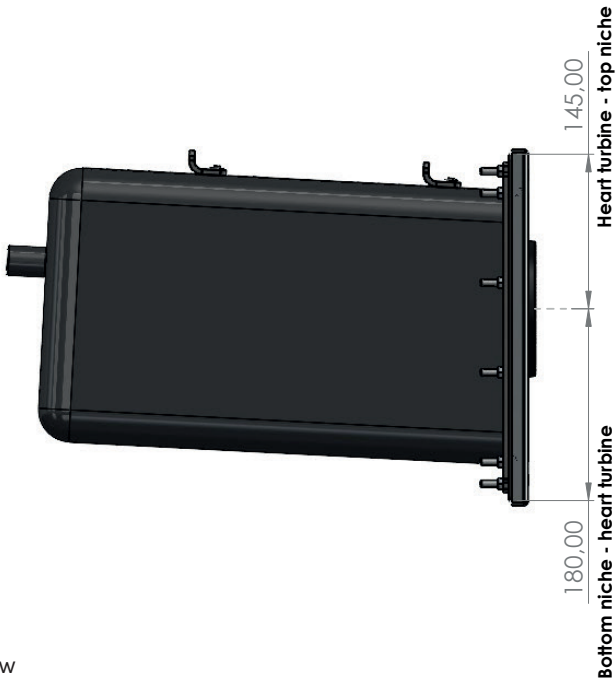
Side view



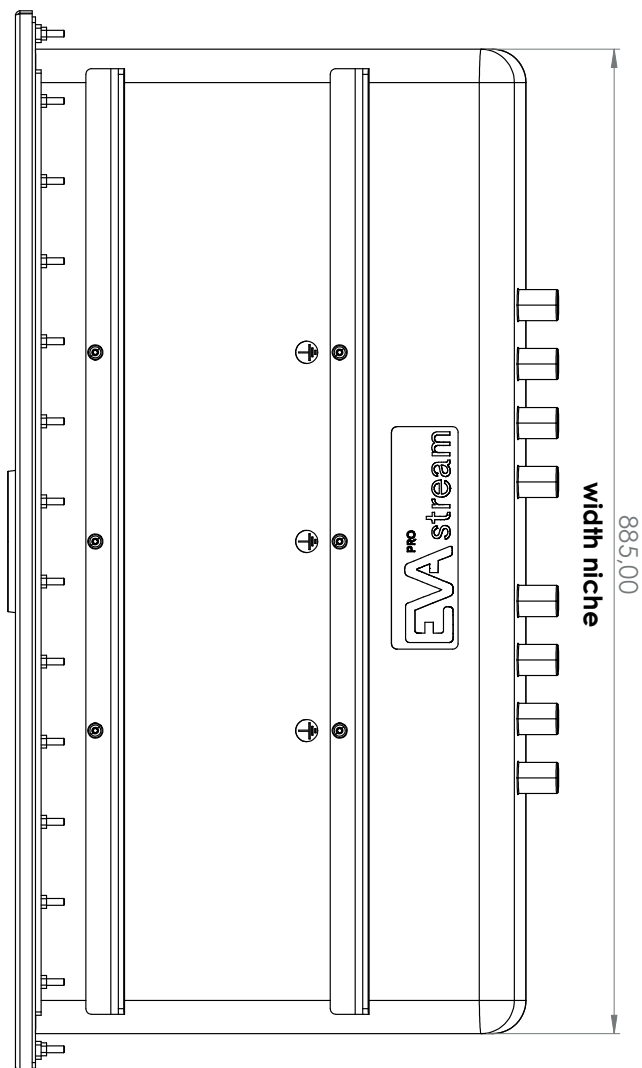
Top view

### EVAstream installation niche POLY

- Mounting depth: 250 mm below water level (centre of the turbine).
- Mount the EVAstream horizontally in the middle of the poolwall.



Side view



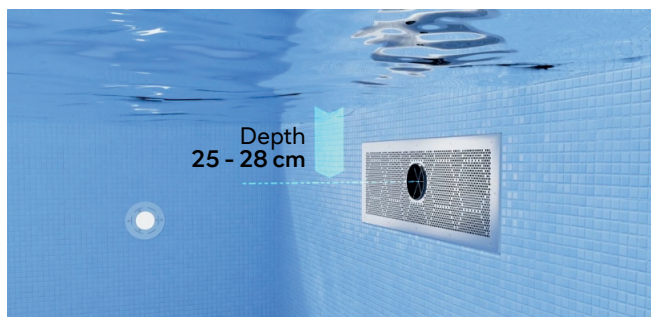
Top view

## 5.2 Placement of the EVAstream niche

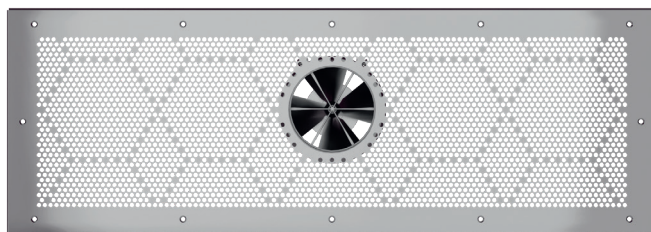
When installing the niche, always calculate the depth based on the final pool water level. The niche must be positioned so that the centre of the turbine is exactly 25 to 28 cm below the final pool water level.

**Caution:** Take this offset into account during installation, as incorrect depth placement directly affects counter-current performance and flow quality.

### Installation Guidelines



**Water Level:** Position turbine centre exactly 25–28 cm below finished water level.



**Turbine Depth:** Please note that the turbine is not located in the centre of the niche.

### 5.3 Example calculation

PP niche for liner and concrete pools

Required turbine depth below water level: **250 mm**

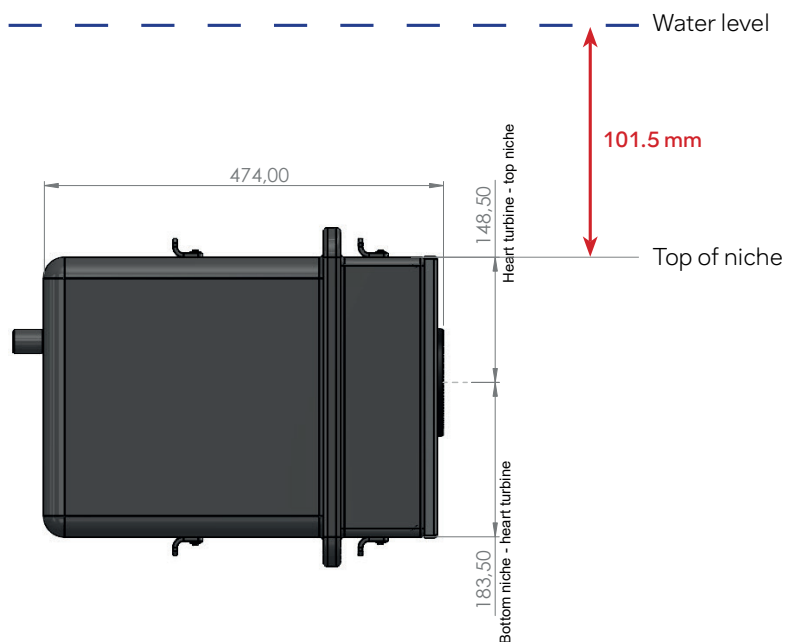
Distance from top of niche to turbine centre: **148.5 mm**

#### Calculation

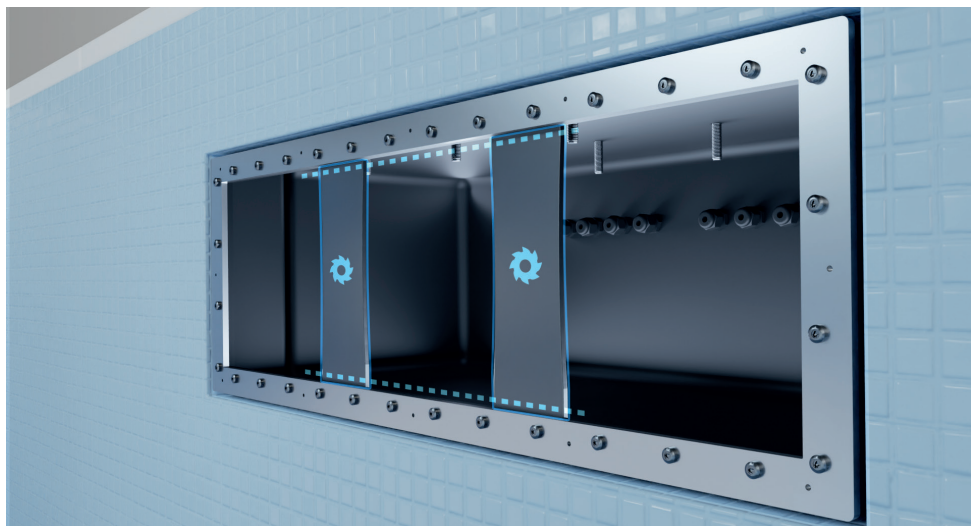
$$250 - 148.5 = 101.5 \text{ mm}$$

#### Result

Install the top of the niche 101.5 mm below the finished water level.



## 5.2 Remove the ribs



### 1. Remove the ribs with a saw suitable for plastic

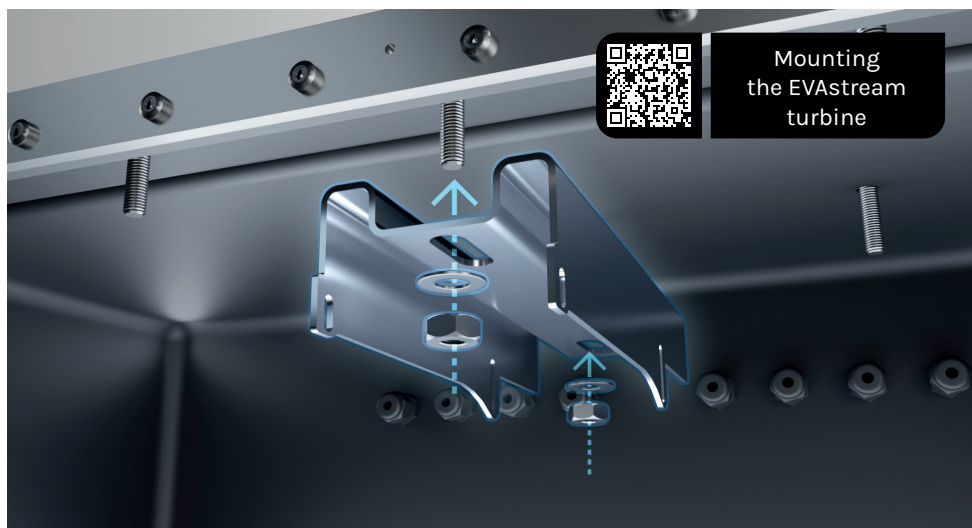
Use a saw suitable for plastic and saw off the ribs along the blue dotted line.



### 2. Empty installation niche

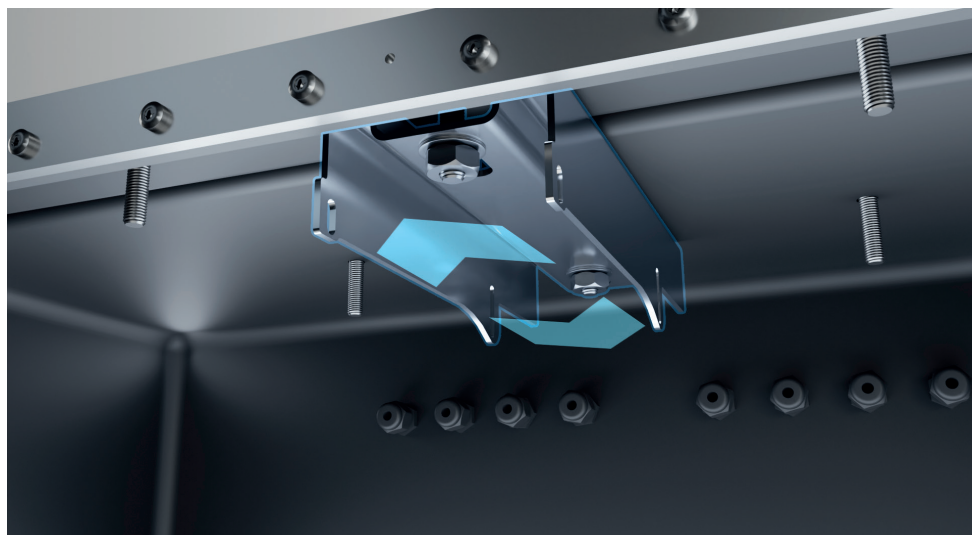
The installation niche is now completely empty and ready for mounting the turbine.

### 5.3 Mounting the EVAstream turbine



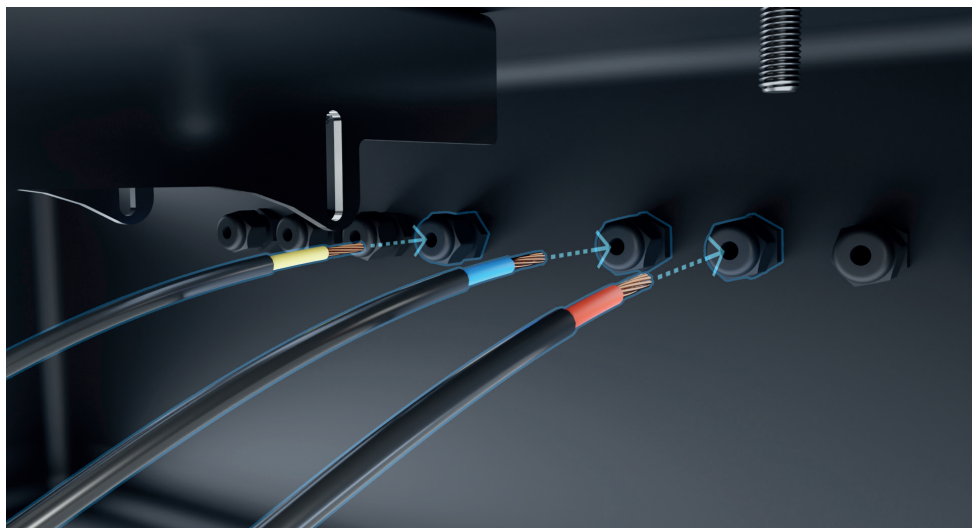
#### 1. Mount the bracket in the niche

Use the washers and M12 nuts.



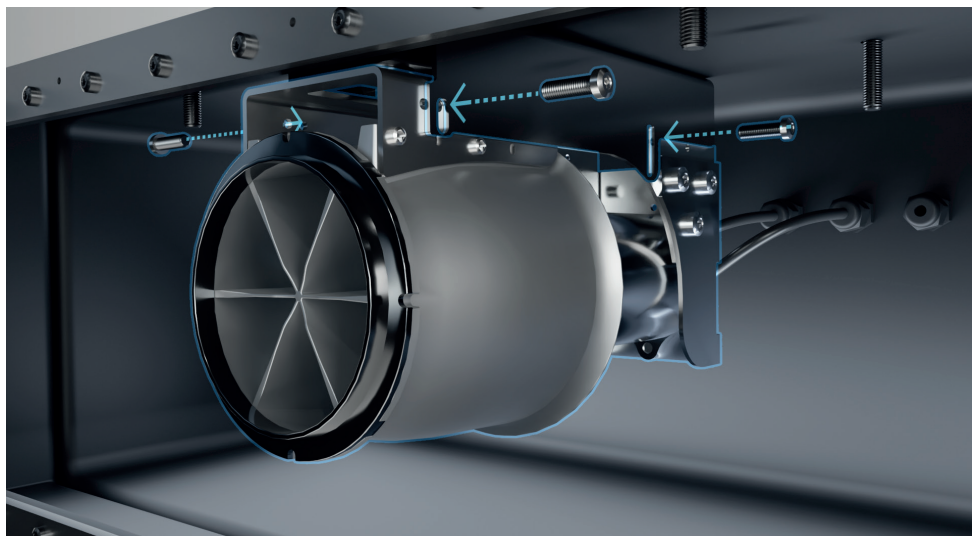
#### 2. The bracket is still adjustable

Make sure the bracket can be moved forwards and backwards.



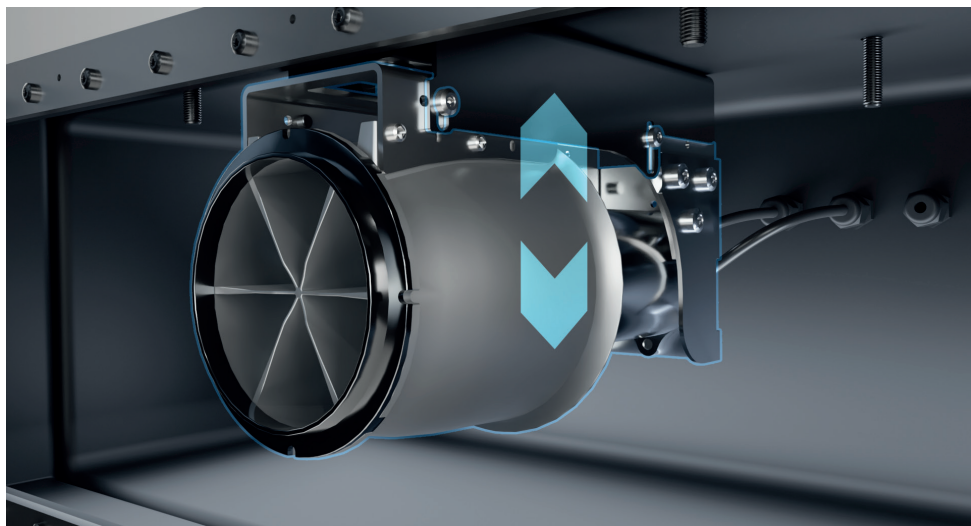
### 3. Put the turbine cables through cable glands

Use red, orange and black cables. Do not change the colours of the cables!



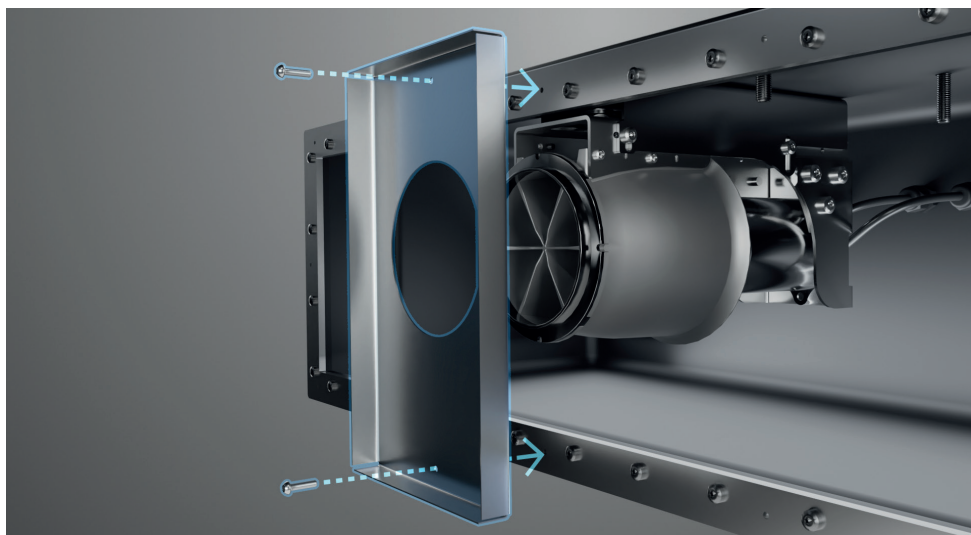
### 4. Mount the turbine to the bracket

Use the M6x10 screws.



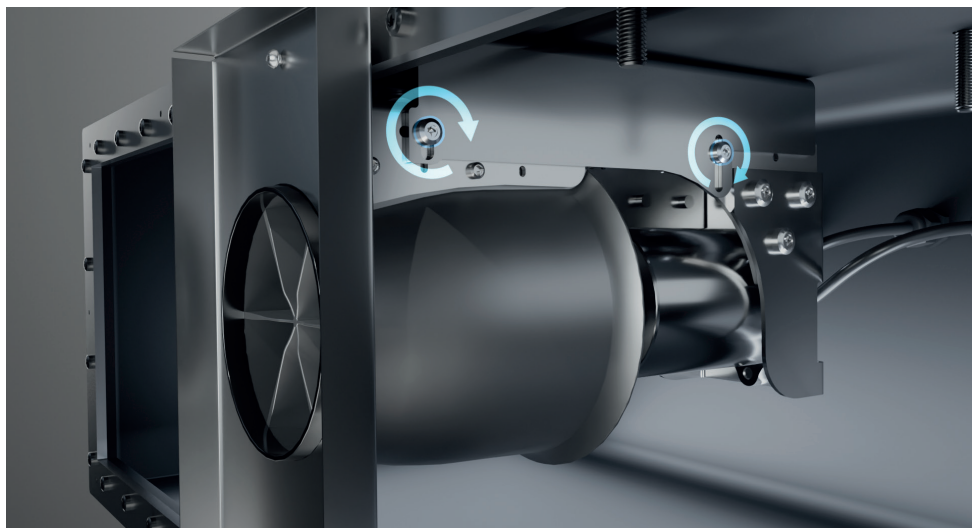
#### 5. The turbine is still adjustable

Make sure the turbine can be moved up and down.



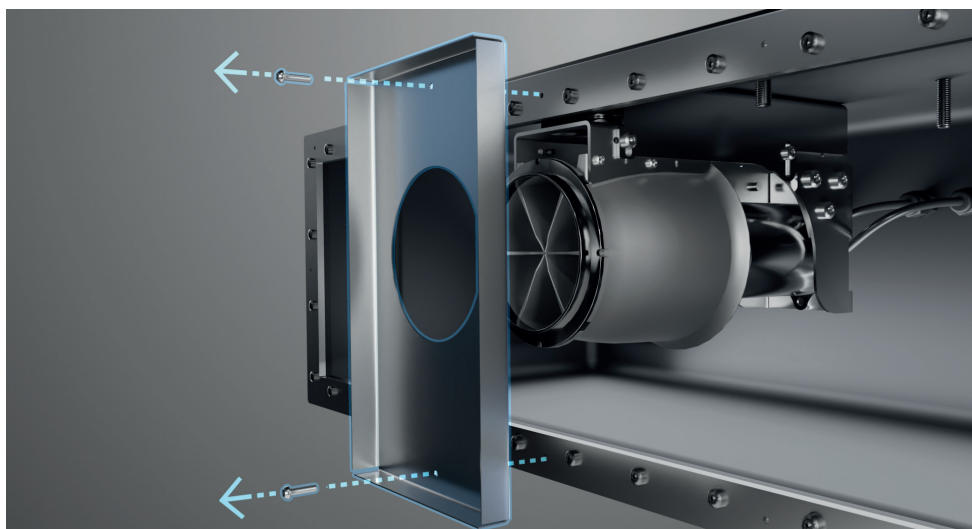
#### 6. Mount the adjusting plate to the niche

To ensure the correct horizontal position of the turbine.



#### **7. Tighten the turbine to the bracket**

The front of the turbine must be pressed against the adjustment plate to ensure the correct position. Secure the turbine by tightening the screws.



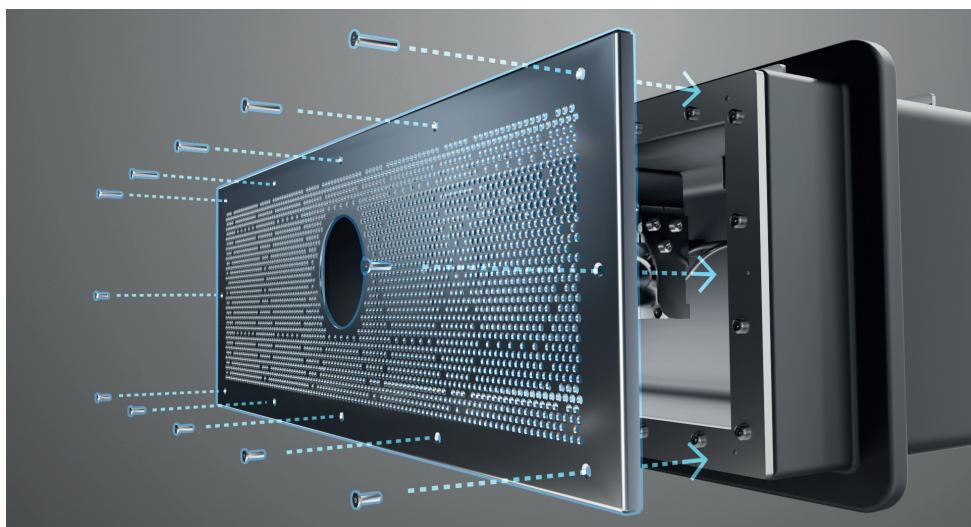
#### **8. Remove the adjustment plate**

This was only used to ensure the correct horizontal position of the turbine.



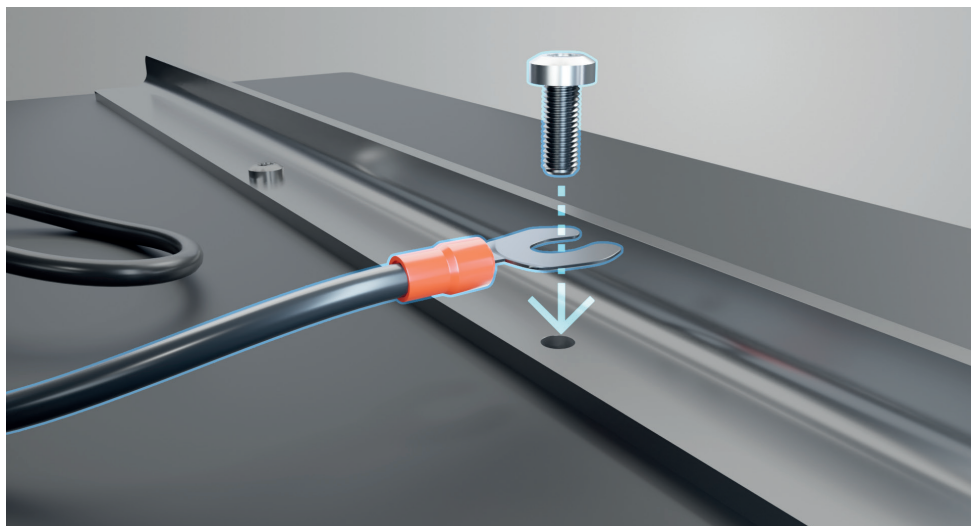
#### 9. Tighten the bracket to the niche

Secure the bracket to the niche by tightening the nuts. The turbine is now set to the correct base height and completely fixed as mounted.



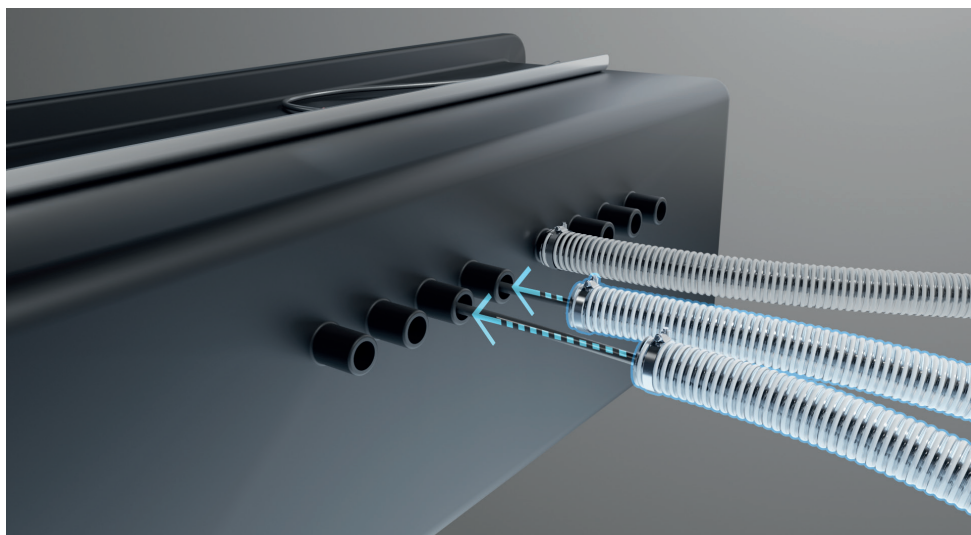
#### 10. Mount the frontplate to the niche

Use the M5x12 screws with a stainless steel frontplate. Use the M5x16 screws with an ABS frontplate.



### 11. Earth the installation niche

The installation niche needs to be connected to the pool earthing on the top of the niche.



### 12. Mount the conduits

The cables need to be placed in separate conduits.

## 6. ELECTRICAL INSTALLATION

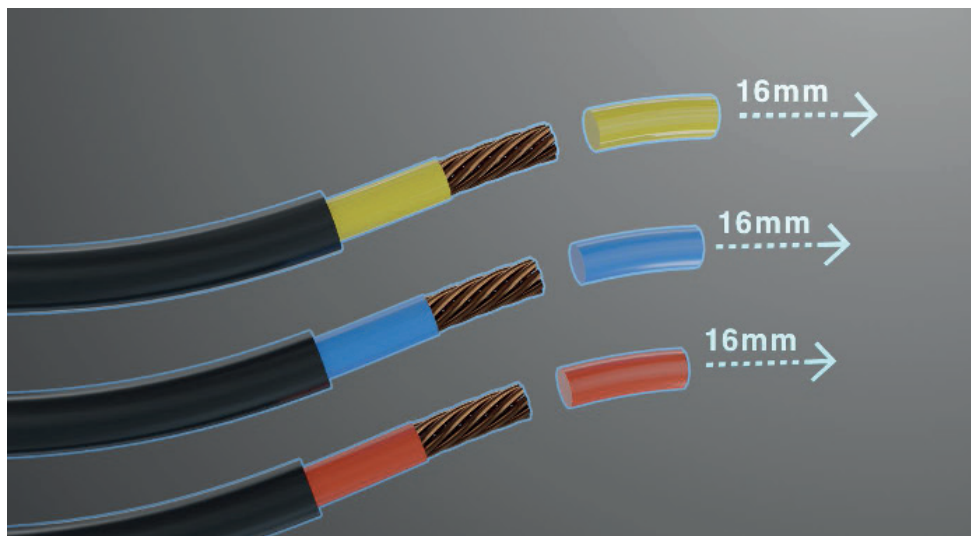
### **DANGER**

Electrical shock hazard. Fatal injury will occur. Switch off all electricity near the pool before performing the electrical installation.



Electrical  
installation

### 6.1 Connect the EVAstream turbine to the Motor Control Unit



#### 1. Make sure the cables are properly finished

Dismantling length should be 16 mm.



## **2. Connect the cables from the EVastream Turbine to the Motor Control Unit (MCU)**

The cables need to be placed in separate conduits.

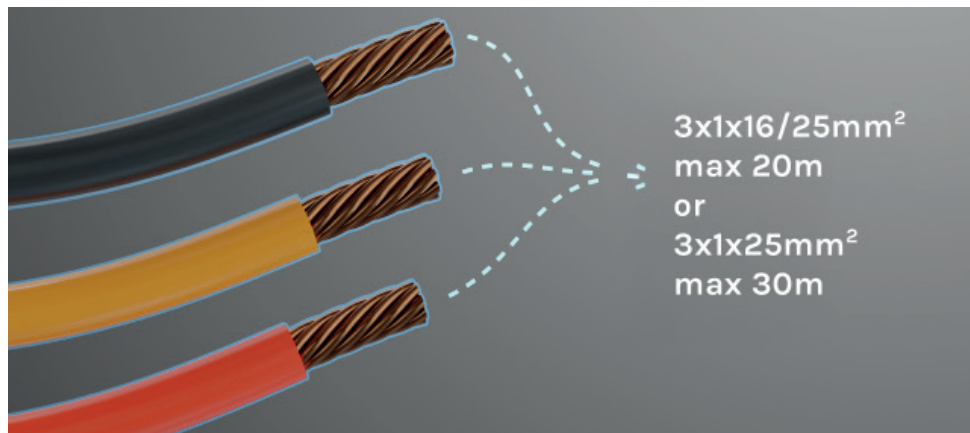


## **3. Insert the cables into their respective holders**

Insert the red, yellow, and blue cable (do not alter the cable colors) and tighten them using a flat-head screwdriver.

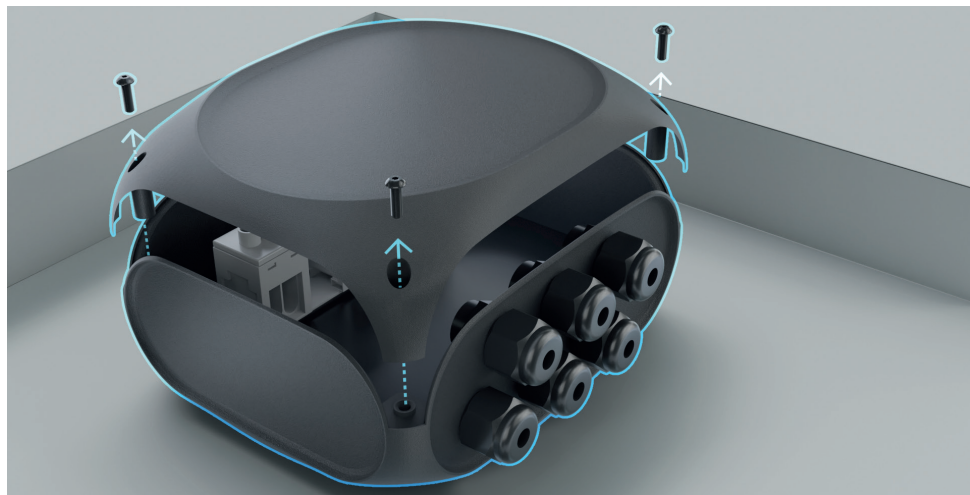
## 6.2 Optional: EVAstream Cable connection box

If the cables are not long enough, they can be extended. You can extend the cable from the Turbine to the Motor Control Unit using the EVA connection box.



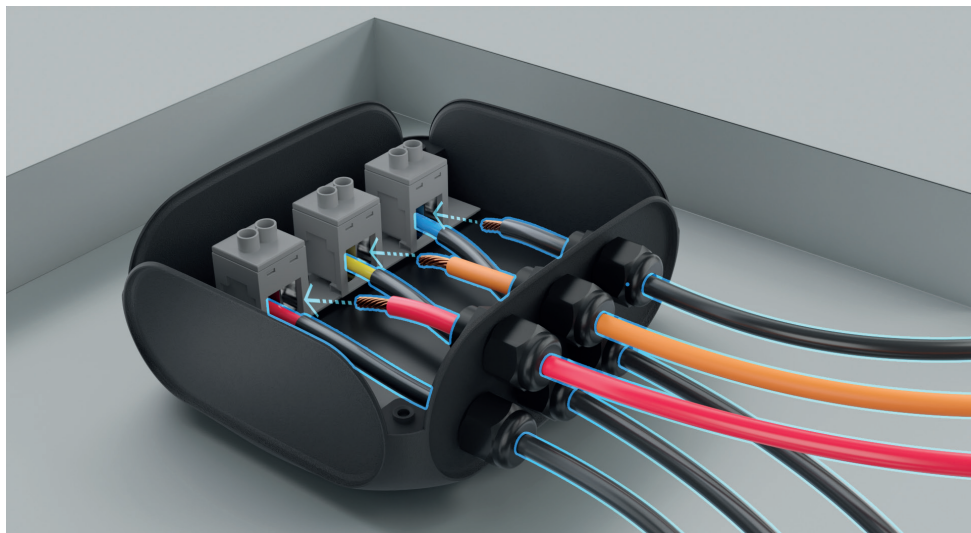
### 1. Choose your cable (flexible cable of fine copper wire stands)

- Use 3x16/25mm<sup>2</sup> cable to a maximum cable length of 20 meters (total maximal 25 meters including the existing cable).
- Use 3x25mm<sup>2</sup> cable to a maximum cable length of 30 meters (total maximal 35 meters including the existing cable).



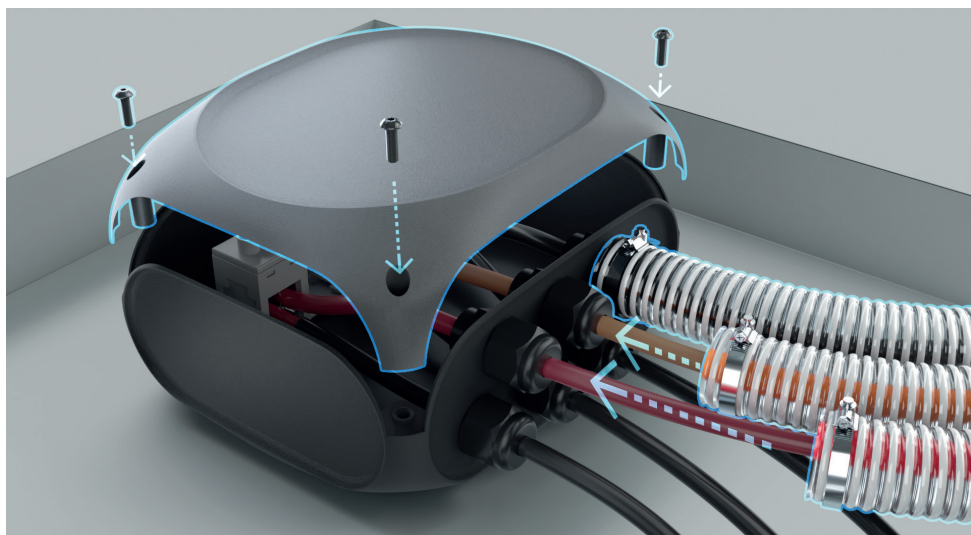
### 2. Place the EVA connection box

The cable connection box must be placed above the ground (accessible).



### 3. Connect the cables

Use red, orange and black cables. Do not change the colours of the cables!



### 4. Mount the conduits

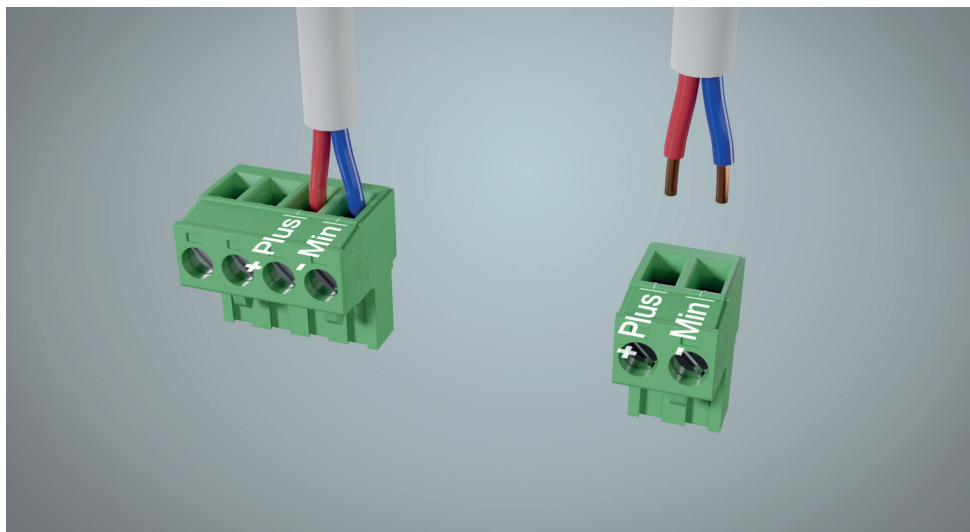
The cables need to be placed in separate conduits and the connection box closed.

### 6.3 Connect the ECA Control to the Motor Control Unit (MCU)



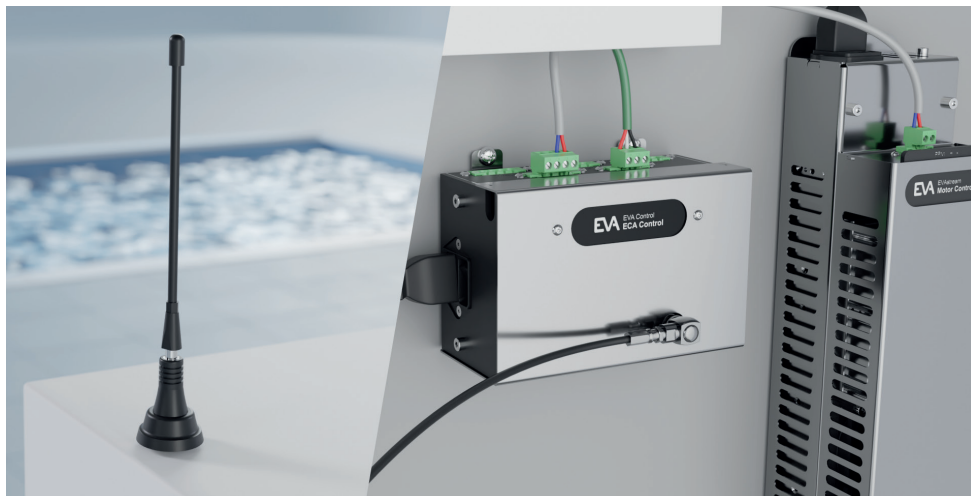
#### 1. Connect the ECA Control to the Motor Control Unit (MCU)

Use the supplied 2-core signal cable.



#### 2. If the supplied cable is not long enough, a longer cable can be installed

Important: connect plus to plus and minus to minus.



### 3. Install the antenna to the ECA control

If you use the remote control, install the antenna outside the technical room for optimal range.



### 4. Additional options:

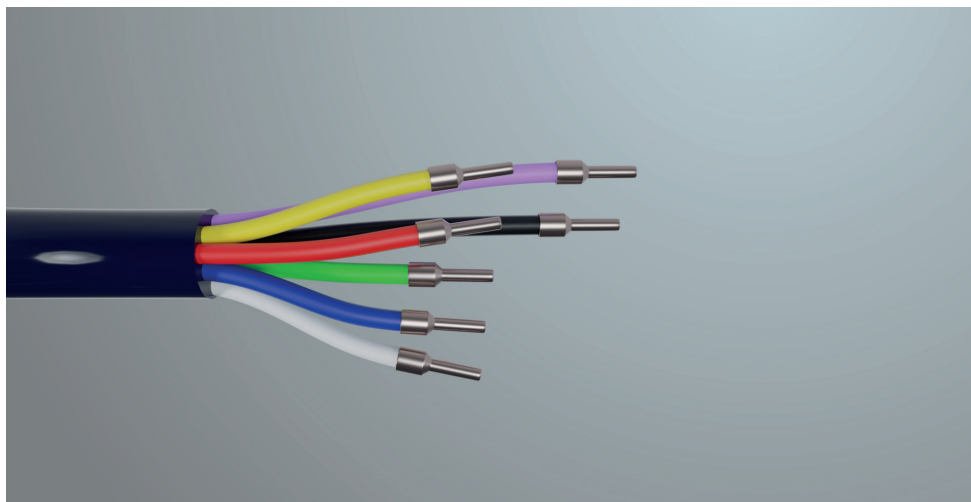
The ECA 1 Essential, 2 Trainer, and 3 ProTrainer models offer the following additional options:

- **DMX:** for connecting underwater lighting,
- **FAN:** for connecting an external fan,
- **3x Piezo:** for connecting Piezo buttons.

## 6.4 Optional: Connect the EVA LED underwater lighting Power Supply Unit (PSU) to the ECA Control

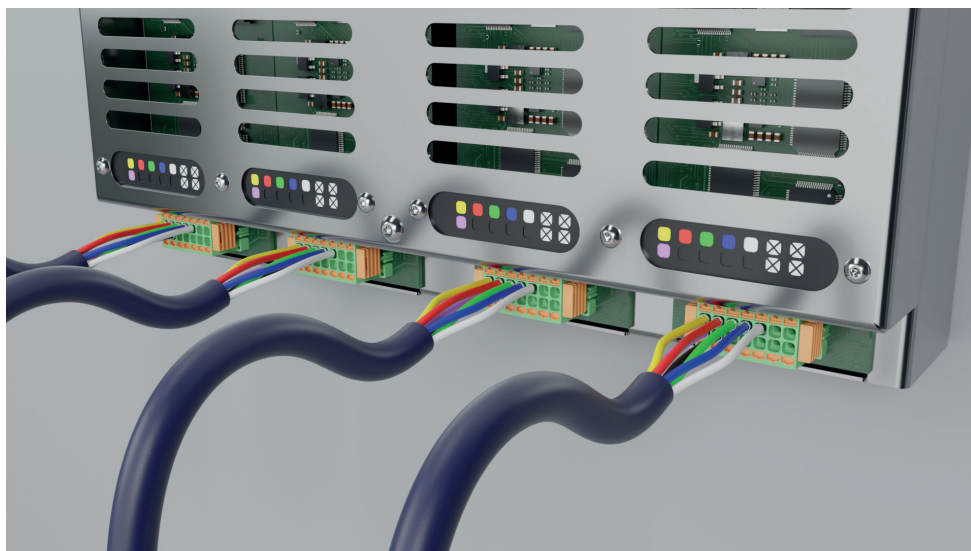


1. The PSU can accommodate 2, 3, or 4 underwater lights



2. Before connecting the cables, cable sleeves must be installed

Refer to the video “Connecting PSU RGBW” at [www.evaoptic.com](http://www.evaoptic.com)



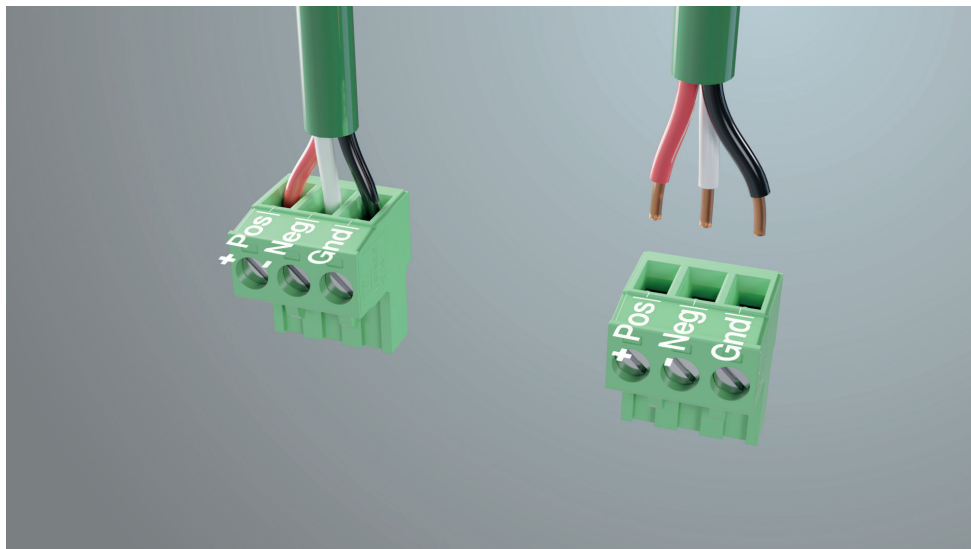
### 3. Connect the 7-core cables from the underwater lights to the PSU

Ensure they are inserted into the correct ports.



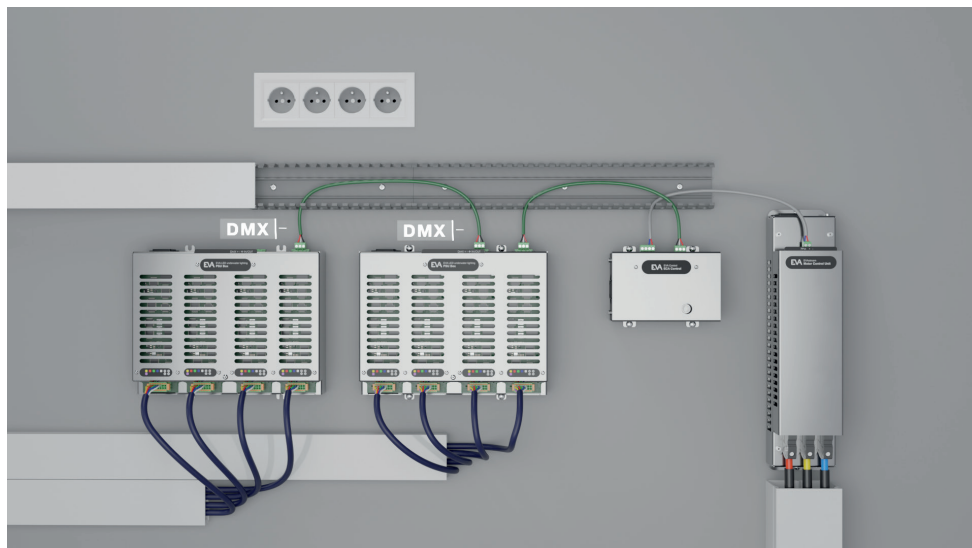
### 4. Connect the DMX cable from the PSU to the ECA Control

Use the supplied DMX cable.



**5. If the supplied cable is not long enough, a longer cable can be installed**

Ensure proper connections: connect the positive wire to the red cable, the negative wire to the white cable, and the ground wire to the black cable.



**6. Optinal: installation with more than 4 lights in the pool**

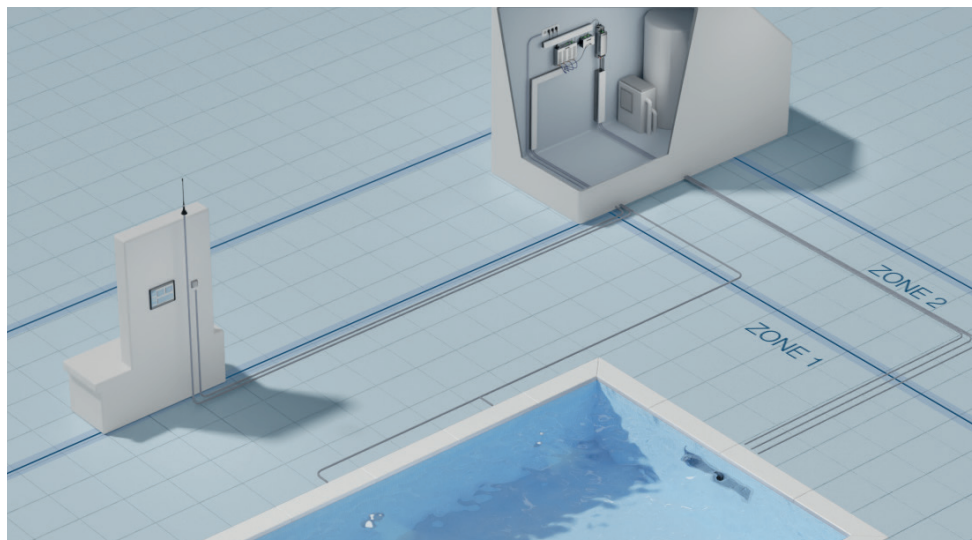
Link the PSU to an additional PSU using the DMX output.

## 6.5 Connect to the mains power



### 1. Connect to the mains

Connect the EVAstream Motor Control Unit, the ECA Control, and the EVA LED underwater lighting Power Supply Unit to the mains power.



### 2. Install an on/off button

Connect an on/off button (power switch) to the socket and install near to the pool.

## 6.6 Optional: Connect the router to the ECA Control



If the wireless connection is too weak, a wired connection can be made by connecting a UTP cable from the router to the ECA Control.

# 7. CONTROL OPTIONS

## 7.1 EVA Experience web app

Especially for the EVAstream, we have developed a complete training program for swimmers of every age and every skill level. The workouts consist of interval, sprint and endurance elements and increase in duration and intensity. Use the EVA Experience web app to manage the training session.



To set up the  
EVA Experience web app,  
scan the QR code



To set up the  
EVA Experience web app,  
watch the video

## 7.2 Remote control

The EVA Remote control has the following functions:



|               |                                                                          |
|---------------|--------------------------------------------------------------------------|
| ON/OFF button | EVAstream ON/OFF                                                         |
| Button +      |                                                                          |
| Short press:  | increase intensity 5%                                                    |
| Long press:   | increase intensity as long as you press for a stepless increase in speed |
| Button -      |                                                                          |
| Short press:  | decrease intensity 5%                                                    |
| Long press:   | decrease intensity as long as you press for a stepless decrease in speed |

## 8. DISPOSAL

### 8.1 Decommissioning

#### **WARNING**

Electrical shock hazard. Risk of electric shock and injury. Make sure to disconnect the product from the mains cable before decommissioning.

1. Switch off the power.
2. Switch off the power around the swimming pool.
3. Disconnect the mains cable.
4. Disconnect all other cables.

### 8.2 Disposal

Before disposing of the different materials, separate them into recyclables, normal waste and special waste. Comply with local legal regulations and provisions when disposing of the product and the individual components. A product marked with the WEEE symbol must be sent for separate collection of electrical and electronic devices. Contact your supplier for more information.

ATTACHMENT 1

NORM COMPLIANCE

| EMC Directive: 2014/30/EU     | Low-voltage LVD Directive: 2014/35/EU |
|-------------------------------|---------------------------------------|
| EMI Electromagnetic Emission  | EN 60364-4-41                         |
| EN 55032 (CISPR32) Class A, B | EN 62368-1                            |
|                               | EN 60364-7-702                        |

EMC Electromagnetic Compatibility

|              |
|--------------|
| EN 61000-3-2 |
| EN 61000-3-3 |

EMC Immunity & Safety

|               |
|---------------|
| EN 61000-4-2  |
| EN 61000-4-3  |
| EN 61000-4-4  |
| EN 61000-4-5  |
| EN 61000-4-6  |
| EN 61000-4-8  |
| EN 61000-4-11 |
| EN 55024      |
| EN 615204-3   |
| EN 61000-6-2  |

Specific standards

|            |
|------------|
| EN 13451-1 |
| EN 13451-3 |
| EN 16582-1 |
| EN 16582-2 |
| EN 16582-3 |
| EN 16713-2 |
| EN 15288-1 |
| EN 60204-1 |

## ATTACHMENT 2

### Environmental conditions and use of EVAstream

Ambient temperature of power supply box (mounting in a dry condensation-free room):  
0°C to 32°C. Water temperature: +1°C to +35°C

## ATTACHMENT 3

### Water Values

The user of the EVAstream is responsible for providing the right conditions for an optimal product life cycle. To fulfil the warranty conditions, the EVAstream should only be used in basins with a water composition within the following limits:

- Water temperature: +1°C to +35°C
- pH value: 6.8 – 7.8
- Maximum chlorine levels for water:
  - Indoor swimming pool – Free available chlorine (FAC):  $0.5 \leq \text{VBC} \leq 1.5 \text{ mg/l}$
  - Open-air swimming pool  $\geq 20 \text{ m}^2$  – Free available chlorine (FAC):  $0.5 \leq \text{VBC} \leq 3.0 \text{ mg/l}$
  - Open-air swimming pool  $< 20 \text{ m}^2$  – Free available chlorine (FAC):  $0.5 \leq \text{VBC} \leq 5.0 \text{ mg/L}$
  - All basins – Bound available chlorine:  $< 0.6 \text{ mg/l}$
- The basin and the available accessories must be free of electrolysis.
- Installation housing must be properly earthed to prevent electrolysis.
- Cyanuric acid:  $\leq 100 \text{ mg/l}$
- Metals:  $\approx 0 \text{ mg/l}$
- Carbonate hardness:  $\geq 2^\circ\text{dH}$  ( $^\circ\text{dH} = \text{mmol/l} \times 2.8$ ); ( $^\circ\text{eH} = \text{mmol/l} \times 3.5$ );  
( $^\circ\text{fH} = \text{mmol/l} \times 5.0$ )
- Ozone:  $0 \text{ mg/l}$
- chlorite + chlorate:  $\leq 30 \text{ mg/l}$
- Redox potential:  $\geq 700 \text{ mV}$

## ATTACHMENT 4

### Unintended uses

- Not for use in potentially explosive areas.
- Not for use in an aggressive environment (gases, acids, vapours, substances, oils).
- Not for use in dirty water.
- The turbine should not be used above water.
- Depending on the type of concrete, the installation shaft must be protected.  
When using concrete with high chloride and sulphate constituents (e.g. Thermotec), the back of the installation shaft must be protected against these harmful substances with a PE film (building protection film).



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