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**aerauliqa EHS Range Ceiling High Volume Low  
Speed Fan Instruction Manual**

**EHS**



**CE**

 **aerauliqa®**

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## 1 GENERAL INFORMATION

Carefully read the instructions contained in this manual. This Specific Manual **MUST** be read in conjunction with the “Installation, Operation and Maintained General Manual”.

Note: store the manual for future reference. We reserve the right to improve and make changes to the manual, products and accessories without any obligation to update previous productions and manuals.

The installation and service of the unit and complete ventilation system must be performed by an authorized installer and in accordance with local rules and regulation.

## 2 PRECAUTIONS

In addition to the precautions indicated in the “Installation, Operation and Maintenance General Manual” special attention should be paid to the following warning notes:

-The fan must be installed at a height of not less than 2.7m from the floor below.

Installation at a lower height is considered “improper use”. In case of “improper use” the manufacturer declines all responsibility for any damage that may be caused to persons or property, and any warranty will be considered invalid.

### RECOMMENDED BOLT TORQUE FOR COARSE THREADED METRIC STEEL BOLTS TE-TCEI GRADE 8.

Dimensions	M6	M8	M10	M12	M14	M16
Nm	9,5	23	46	79	127	198

**Table 1** Use the values shown in the table to tighten all the screws.

- fixing: check/inspect and eventually retighten all the fixing annually.
- windy conditions: fans should not operate in case of strong wind (6m/s) and should not be installed in places where it is frequently windy.
- weight: it is recommended that the building structure is capable to bear approx. twice the weight of the fan as well as a torque of at least 350Nm. A professional structural engineer should perform an evaluation before installing the fan.
- key safety features: make sure that all the supplied key safety features are used to install the fan to provide a comprehensive protection of people, animals, equipment's and property. The installer and the building owner are responsible to ensure the safety of the fan mounting system and that the fan installation is correct, in compliance with any national and local regulations.

## 3 TYPE

Ceiling fans with EC brushless motor designed for industrial, civil and zootechnical applications, where high performance with low rotation speed are required.

## 4 MAIN FEATURES

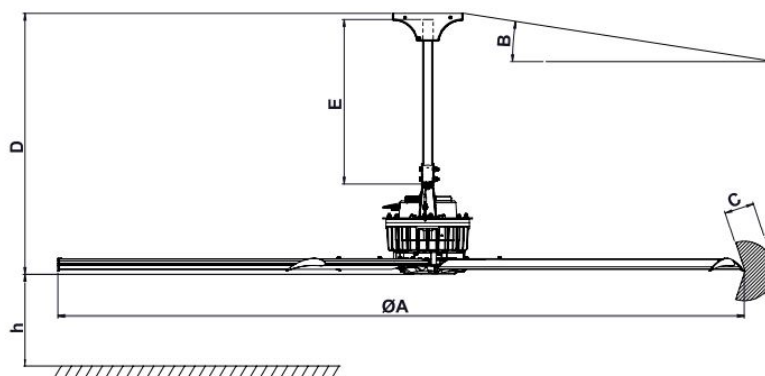
- Brushless motor 200-480Vac, 3ph, 50/60Hz, IP65

- Max temperature +50°C
- Speed controllable
- Suitable for S1 continuous service
- Embedded electronic system
- Anodized extruded blades
- Gearless for silent operation
- Maintenance-free
- Key Safety features
- Simplified electrical wiring connection: pre cabled
- Strong and robust design and manufacturing

## 5 DATI @400Vac, 50Hz

Model	No. Blades	Max Rotation Speed	Max Absorbed Power	Max Air Flow AMCA 230-15		Max Air Flow AMCA 230-99		Lp @ 100% [dB(A)]	Lp @ 50% [dB(A)]
		r/min	kW	cfm	m³/h	cfm	m³/h		
EHS360	5	120	0,79	74566	126688	105452	179164	55	39
EHS400	5	100	0,75	79963	135858	113085	192132	55	39
EHS500	5	85	0,94	130550	221805	184626	313680	57	41
EHS540	5	75	0,98	137922	234330	195051	331393	55	39
EHS600	5	70	1,00	171489	291360	242522	412045	57	41
EHS730	5	50	0,88	207516	352571	293472	498611	57	41
EHS730 PLUS	5	58	1,30	245855	417709	347692	590730	62	46

## 6 DIMENSIONS AND CLEARANCES



Model	ØA	B max ceiling slope	C min safety distance from side obstruction	D fan height with standard downrod	E standard downrod length	H min fan installation height	Weight
	mm	°	mm	mm	mm	mm	kg
EHS360	3600	20	550	1296	800	2700	97
EHS400	4000		450	1296			91
EHS500	5000		550	1296			101
EHS540	5400		650	1296			123
EHS600	6000		650	1306			118
EHS730	7300		750	1306			142
EHS730 PLUS	7300		750	1306			130

## 7 COMPONENTS

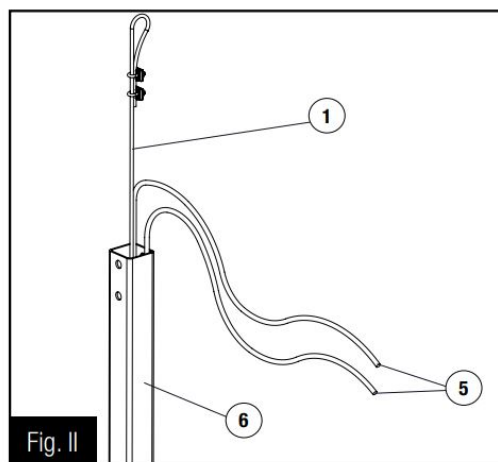
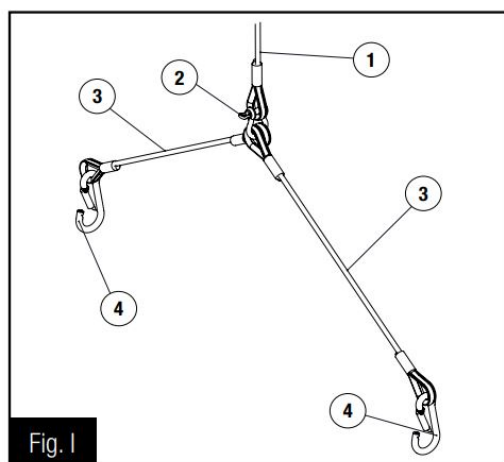
- The fan is delivered split into two kits, each one in its own box. · MOTOR KIT includes:
  - main body ((Fig.VII and VIII – 15).
  - standard 800mm length downrod (Fig.II, III and VIII- 6).
  - 2x ceiling fixing brackets (Fig.III, IV and V – 7).
  - 2x fixings sets:
    - 4x M12 bolts (Fig.III e VIII – 8), 4x locknuts (Fig.III e VIII – 9), 4x standard washers (Fig.III e VIII – 10 ) and 4x spring washers (Fig.III e VIII – 11), for fan fixing to the ceiling.
    - 10x M8 flange bolts (Fig.XIV – 20), 10x locknuts (Fig.XIV – 21), 10x spring washers (Fig.XIV – 22) and 10x plastic caps (Fig.XIV – 23), for blades fixing to main body.
    - plastic components set: hub cover (Fig.XV – 24), 5x M4 bolts (Fig.XV – 25), canopy (Fig. VI – 13) and 4x self-tapping screw (Fig.VI – 14).
    - security wires set: 1x Ø5mm 2,5m security wire with one ring (Fig.I, II and V- 1), 2x Ø5mm 0,35m wire with two rings (Fig.I and X – 3), 2x clamp 5mm (Fig.V – 12), 2x 7mm snap-hook (Fig.I e X – 4), 1x shackle (Fig.I – 2) for the security wire, 4x Ø3mm 2,5m stabilizing wires with turnbuckle (Fig.XI – 16), 4x 5mm snap-hooks (Fig.XI – 17) and 8x 3mm clamp (Fig.XIII – 18) for the stabilizing wires.
- BLADES KIT includes five blades with mounted terminals (Fig.XIV – 19).
- The electrical wire type (Fig.II, IX and XVI – 5) must comply with the local regulations of the electric system and must have the following features:
  - 4 core supply power cable (one cable section 1mm<sup>2</sup>)
  - 8 core control cable (one cable section 0.5mm<sup>2</sup>)

Note: the voltage drop cannot be higher than 4%.

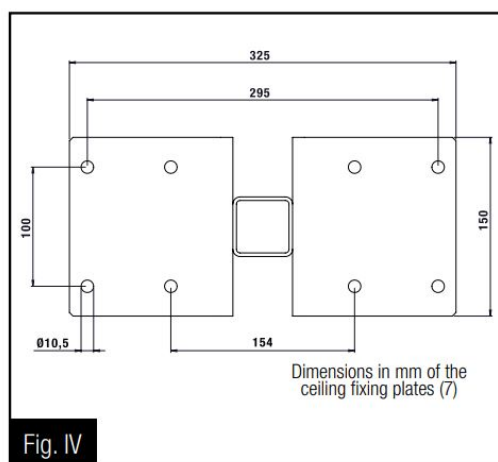
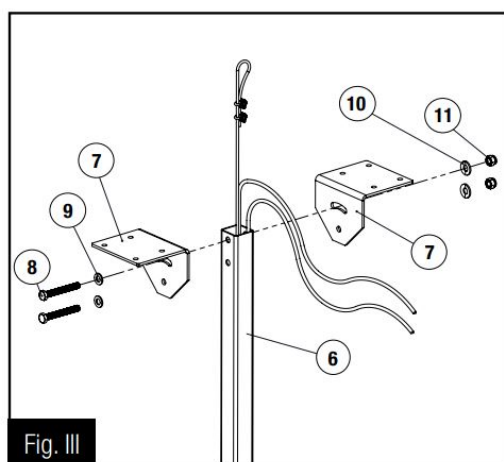
## 8 INSTALLATION

- Decide on the position the fan is to be sited keeping in consideration as follows:
  - the minimum distance from the floor to the lowest point of the fan is 2,7m.
  - the minimum distance from the fan blade to the side wall of similar obstruction depends on the fan model (§ 6 – C).
  - avoid mounting the fan directly below lights to prevent any strobe effect caused by the moving blades.
  - in any installation where fire sprinklers are placed, fan should not interfere with their operation.

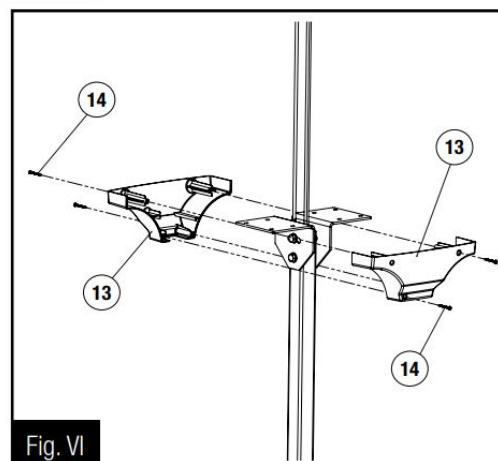
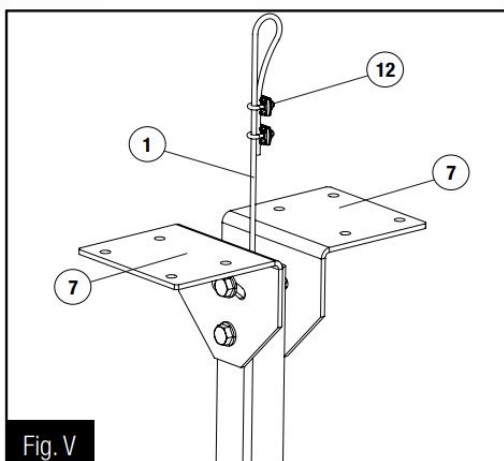
- fan should not be placed near to supply air outlet or exhausting inlets of other HVAC equipment which could decrease the fan capacity and compromise the indoor air quality as well as the occupants' comfort:
- supply air outlet should deliver air away from the unit.
- exhaust fan inlets or other return air point which could create negative pressure should not be located within 1,5 times the fan diameter.
- when mounting the fan, mark the floor with a large crosshatched circle to alert people of the overhead fan location.



- Compose the security cable set consisting of: Ø5mm wire of 2.5m length (1), 0.33t shackle (2), Ø5mm wire of 0.35m length with two rings (3) and 7mm snap-hook (4).
- Insert the security wire (1) and electric cables (5) into the downrod (6).

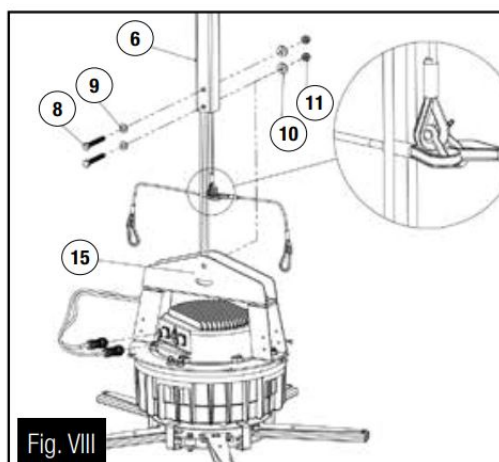
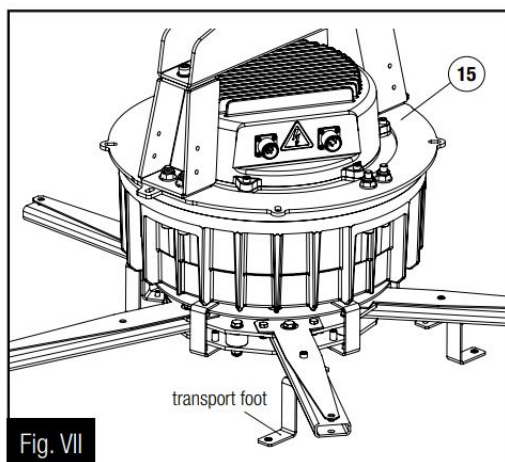


- Fix the downrod (6) to the ceiling brackets (7) by means of the M12 bolts (8), the flat washer (9), the spring washers (10) and the locknuts (11).

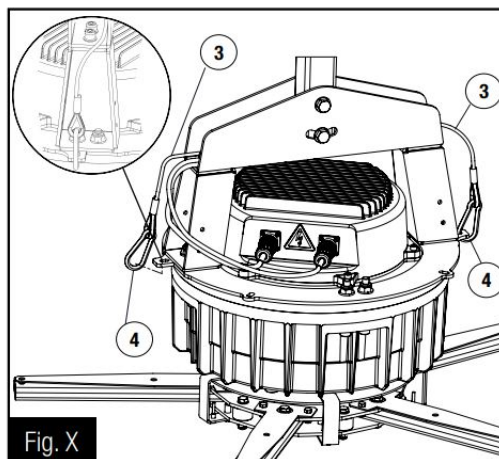
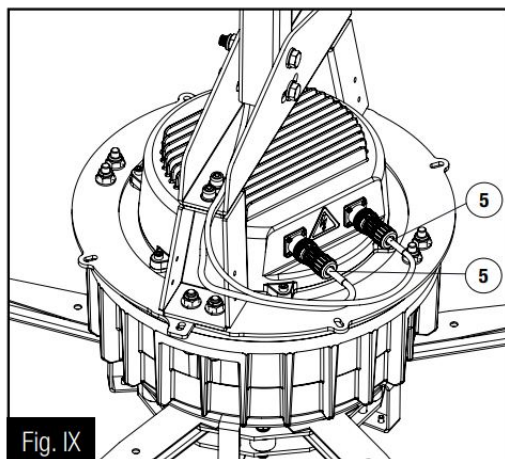


- Fix the assembly to the ceiling/beam through the 8 holes on the brackets (7) and fix the security wire (1) to the ceiling/beam using the clamps (12). Fixing screws/plugs are not supplied.
- Fix the canopy (13) at the top, using the supplied self-tapping screws (14).

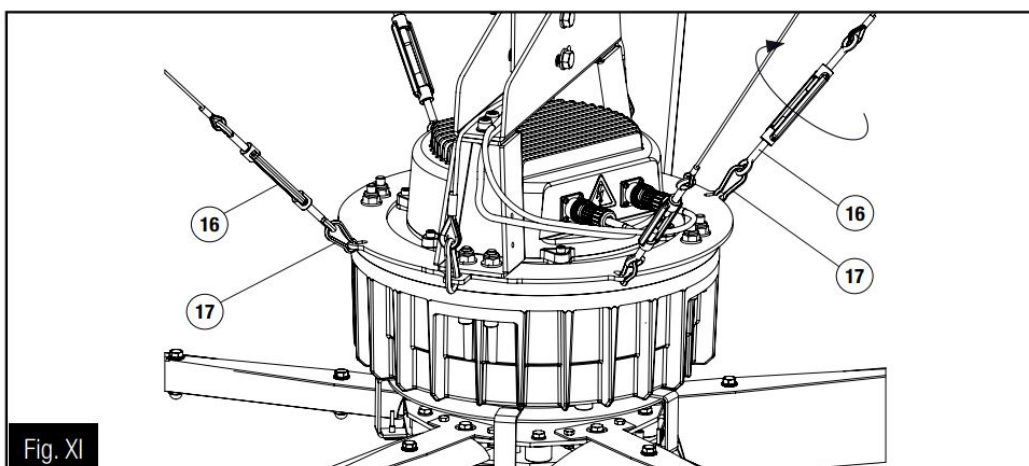




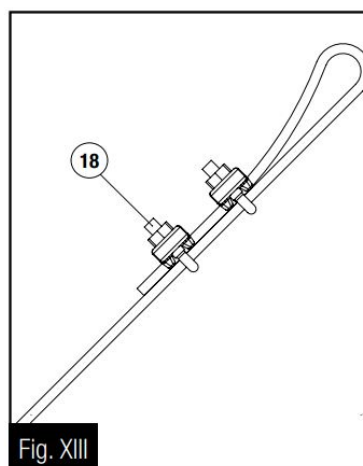
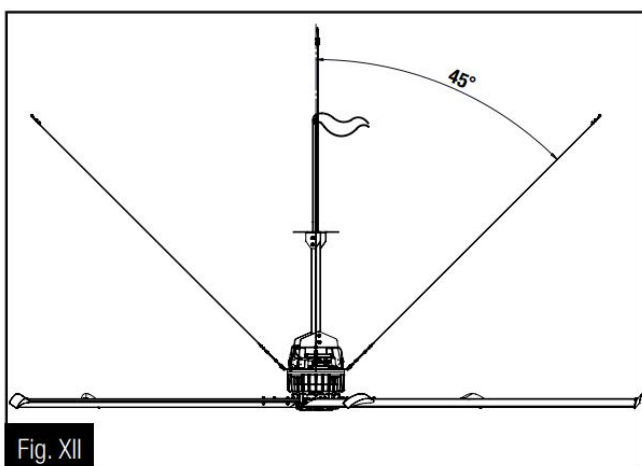
- Remove from the main body the three transport feet (15) (Fig.VII), by unscrewing the bolts, washers and locknuts
- Fix the main body (15) to the downrod (6) using the M12 bolts (8), the flat washer (9), the spring washers (10) and locknuts (11).

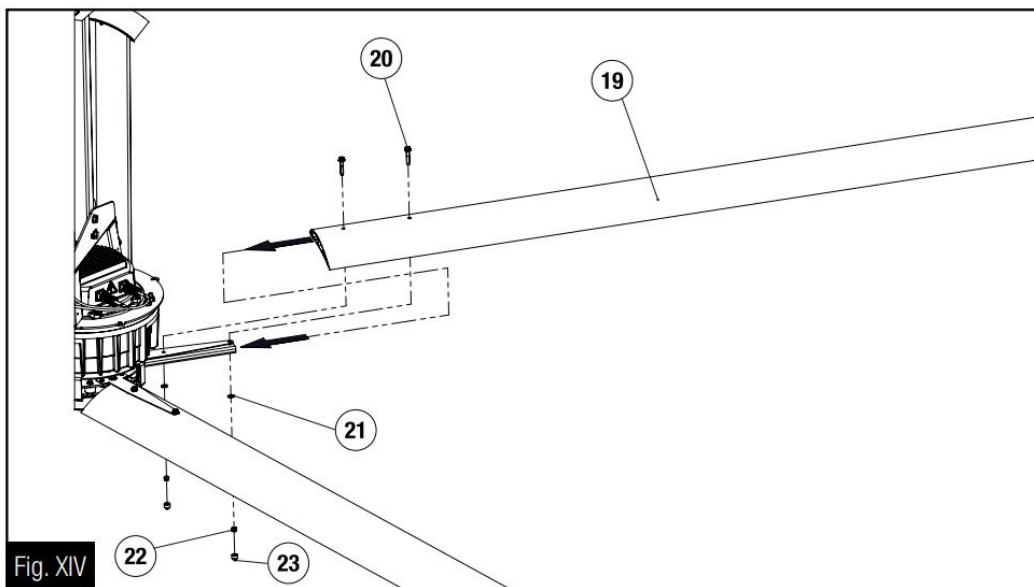


- Connect the electric cable plugs (5) to the motor through the front cable grommets.
- Connect the Ø5mm wires long 0,35m (3) to the motor support using the 7mm snap-hooks (4).

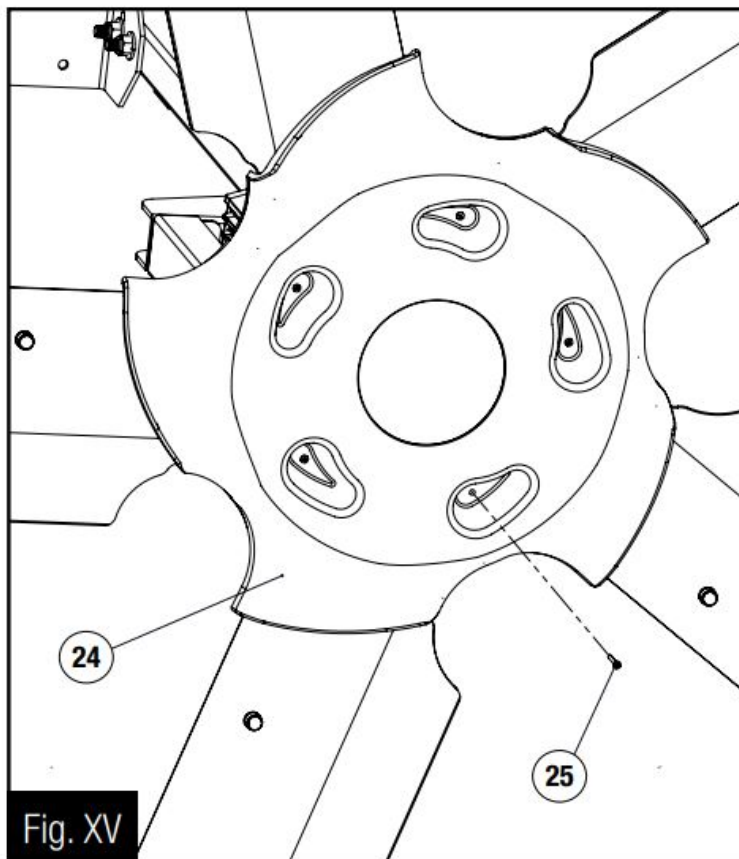


- Connect the Ø3mm stabilizing wires with turnbuckle (16) to the motor support using the 5mm snap-hooks (17) and stabilise the fan; securely fix the other end of the stabilizing wires to the ceiling using the clamps (18). Fixing screws for the ceiling/beam are not supplied.

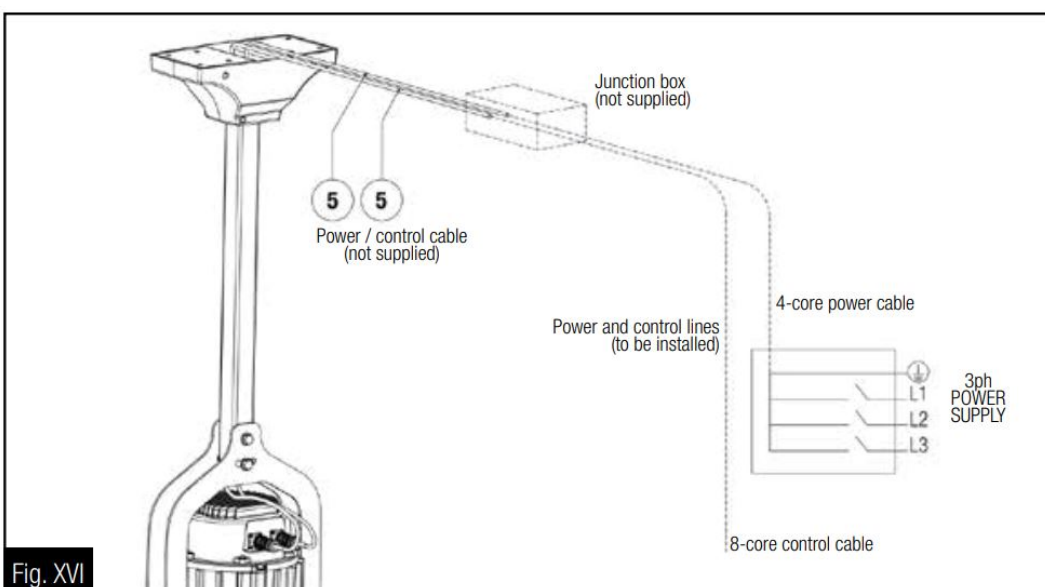




- Insert the blade (19) over the blade root, lock it with the M8 flange bolts (20), spring washers (21) and locknuts (22). Tighten the screws making reference to table 1. Mount the plastic caps (23) on the locknuts.



- Mount the plastic cover (24) under the hub using the M4 bolts (25); in case water is used for washing, drill a hole in the plastic cover for water drainage.



- Make the connection to the power supply/control network by connecting the wired cables to the motor (5) through a junction box (not supplied) to be placed near the ventilation unit. Size the cables appropriately taking into account the distance between the ventilation unit and the power supply point. The complete electrical system must be carried out by a qualified and authorized installer, in accordance with the local requirements.

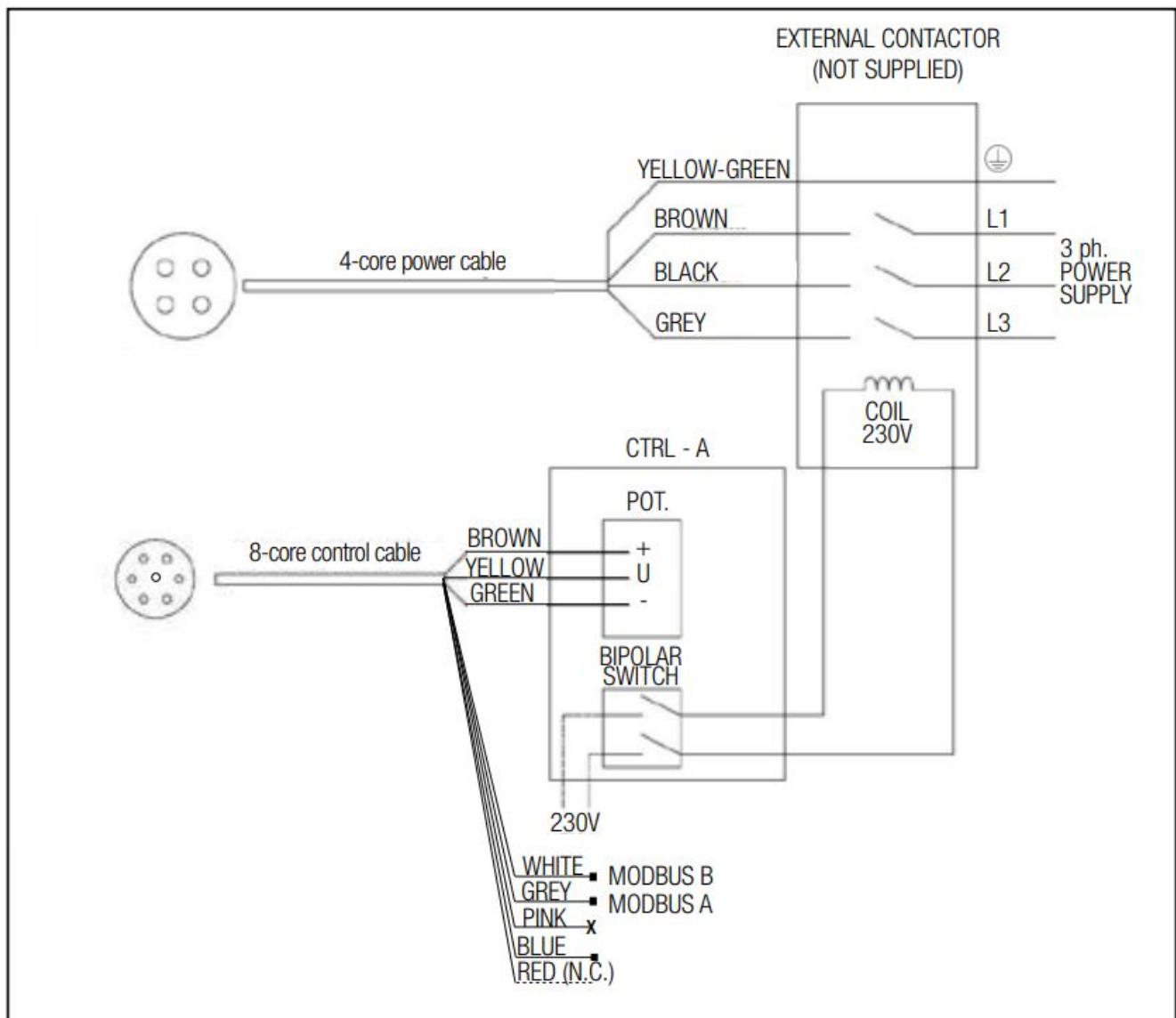


## 9 WIRING DIAGRAM

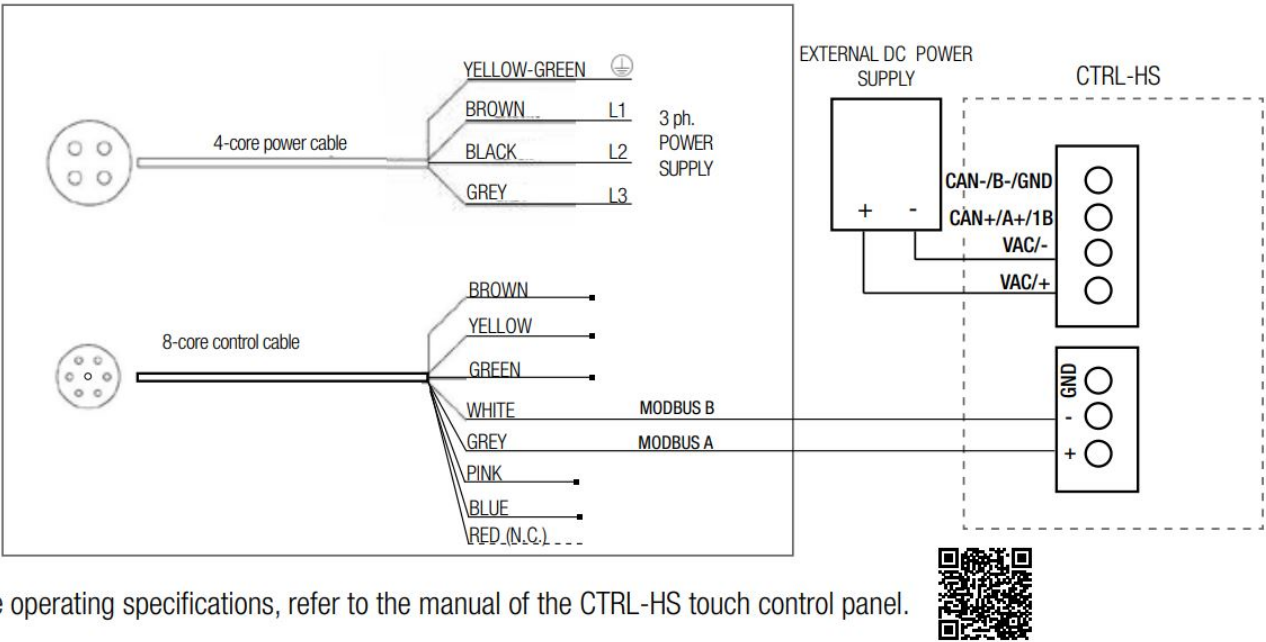
- Make sure that the mains supply to the unit is disconnected before performing any installation, service, maintenance or electrical work!
- The installation and service of the unit and complete ventilation system must be performed by an authorized installer and in accordance with local rules and regulations.
- Fan must be earthed.

**WARNING:** regardless of the control system in place (potentiometer or ModBus), it's strongly recommended to wire the ModBus communication line and make it accessible from ground level, in order to ease troubleshooting via ModBus anytime after the installation.

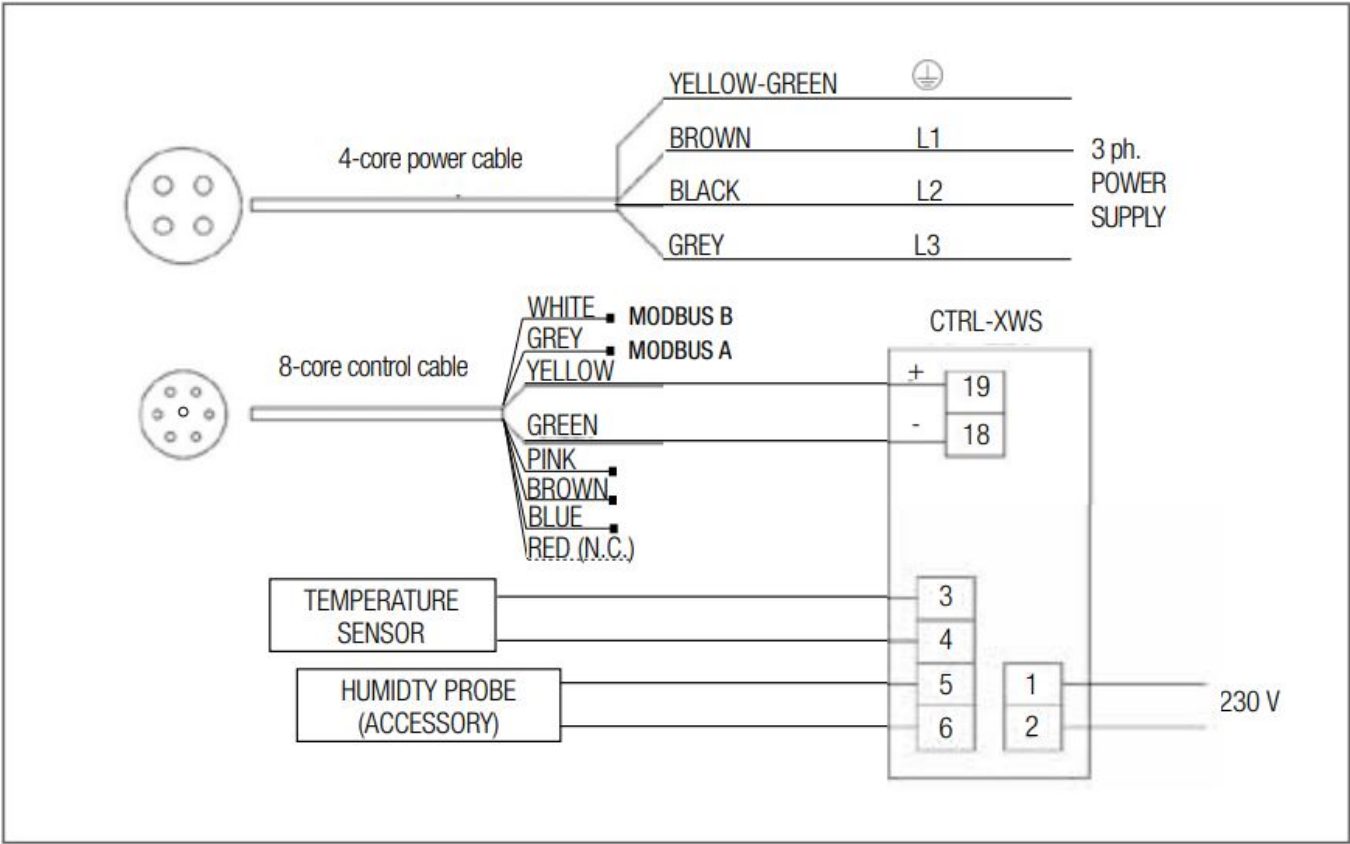
### 9.1 CTRL-A (accessory on request)



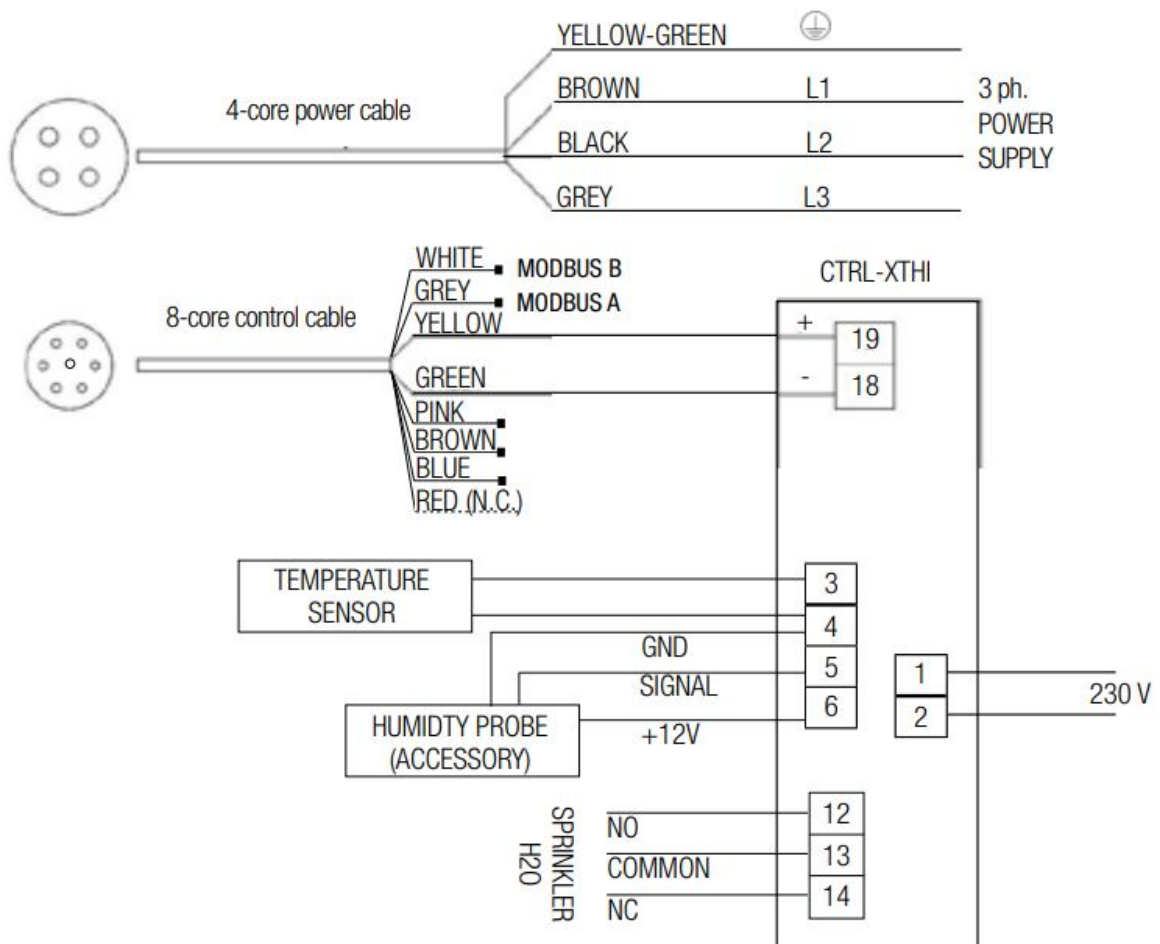
9.2 CTRL-HS (accessory on request)



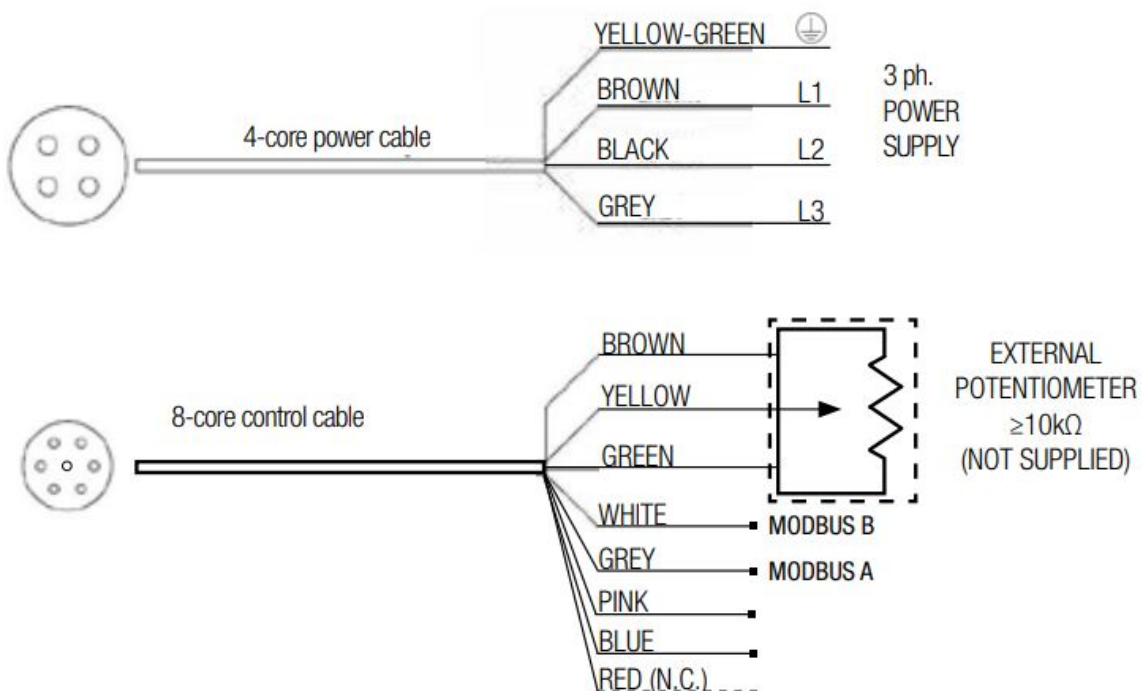
9.3 CTRL-XWS (accessory on request)



9.4 CTRL-XTHI (accessory on request)



## 9.5 CONTROL WITH EXTERNAL POTENTIOMETER (not supplied)



## 10 CLEANING

The unit (IP65) can be washed with water jets. In this case it is recommended to drill a hole under the plastic cover for water drainage.

## 11 TROUBLESHOOTING (Modbus)

### 11.1 Connection parameters

<b>Protocol</b>	MODBUS/RTU over RS485
<b>Baud Rate (bps)</b>	9600
<b>Data bits</b>	8
<b>Parity bits</b>	none
<b>Stop bits</b>	2
<b>HVLS Slave Address</b>	1

### 11.2 Modbus Registers – Input Register

These registers are READ-ONLY, and can be read using the function 04 READ INPUT REGISTERS.

<b>Register Address</b>	<b>Description</b>	<b>Dimension (Word)</b>	<b>Data Type</b>	<b>U.M. (data on the register)</b>	<b>Example Register value → Real value</b>
3	Measured speed	1	ushort	0.1rpm	490 → 49rpm
10	Alarm 1	1	ushort	-	See table (§ 11.3)
17	Alarm 2	1	ushort	-	See table (§ 11.3)

### 11.3 Alarm codes/LED status/Troubleshooting

ALARM 1 VALUE	ALARM 2 VALUE	LED BLINKS (single blink approx. duration)	ALARM DESCRIPTION POSSIBLE CAUSE	TROUBLESHOOTING
0	0	1 Blink/3s (1s)	No error	-
1	0	1 Blink/s (0.5s)	Memory error – motor parameters lost	Contact manufacturer/technical support
2	0	2 Blink/s (0.25s)	Short circuit – electronics power module damaged	Board damaged – Contact manufacturer/technical support
3	0	3 Blink/s (0.17s)	Motor synchronization lost – wrong motor parameters or electronics damaged	Check motor windings. If motor windings OK (all 3 windings have same resistance), contact manufacturer/technical support. If motor windings damaged (open/short circuit), replace motor
4	1	5 Blink/s (0.1s)	Supply voltage out of range 135Vac÷550Vac (DC bus voltage 190÷780V) only with motor still - not running	Check power supply voltage / check power supply wiring
4	32	5 Blink/s	Supply voltage above 565Vac (DC bus voltage over 800V) during motor running (instantaneous value)	Check power supply voltage / check power supply wiring
4	33	5 Blink/s	Supply voltage below 107Vac (DC bus voltage below 150V) during motor running (instantaneous value)	Check power supply voltage / check power supply wiring
4	34	5 Blink/s	“Restart on the fly” failed	The drive couldn't catch the impeller – power cycle/retry
4	49	4 Blink/s (0.13s)	U phase voltage missing/disconnected (or wrong motor parameters)	Check power supply/wiring. If wiring OK, contact manufacturer/technical support
4	50	4 Blink/s	V phase voltage missing/disconnected (or wrong motor parameters)	Check power supply/wiring. If wiring OK, contact manufacturer/technical support
4	51	4 Blink/s	W phase voltage missing/disconnected (or wrong motor parameters)	Check power supply/wiring. If wiring OK, contact manufacturer/technical support
4	113	6 Blink/s (0.08s)	Electronics temperature over 85°C	Check if operating temperature is above rated maximum operating temperature. Check mechanical load for anomalies (e.g. difficult turning)
4	114	7 Blink/s (0.07s)	Motor windings temperature over 125°C	Check if operating temperature is above rated maximum operating temperature. Check mechanical load for anomalies (e.g. difficult turning)
4	115	no Blink	Short circuit on Pt100 motor temperature probe	Check temperature probe wiring – detects temperature probe malfunction

For additional information on HVLS Modbus control, contact the manufacturer/technical support.

## 12 DECLARATION OF CONFORMITY AND INCORPORATION



**AERAULIQA SRL***Sedi produttive / Production plants:*

Plant A: Via Mario Calderara 39-41

25018 Montichiari, Brescia

Plant B: Via Torquato Tasso

25016 Ghedi, Brescia

*Sede legale/Registered office:*

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25018 Montichiari, Brescia

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AERAULIQA SRL è una società a socio unico, sotto  
la direzione e coordinamento di Elta Group Ltd (UK)  
*AERAULIQA SRL is a single-member company subject  
to management and coordination of Elta Group Ltd (UK)*

## UE DECLARATION OF CONFORMITY/INCORPORATION

Manufacturer:

**AERAULIQA SRL****Via Mario Calderara 39/41 - 25018 Montichiari (BS) - ITALY**

### UE DECLARATION OF CONFORMITY



We herewith declare that the following range:

EHS series ceiling fans

BRAND: AERAULIQA

MODELS:

EHS360, EHS400, EHS500, EHS540

EHS600, EHS730, EHS730plus on the basis of its design and construction as partly  
completed machines brought onto the market, is designed in compliance within relevant  
health and safety requirements of the following Directives:

2014/35/UE – Low Voltage Directive (LVD)

2014/30/UE – Electromagnetic Compatibility (EMC)

2009/125/EC – Energy Related Products (ErP)

in the event that alterations are made to the machinery without prior consent with the  
manufacturer, this declaration becomes invalid.

This declaration is issued under the sole responsibility of the manufacturer.

### UE DECLARATION OF INCORPORATION

In accordance with the Machinery Directive 2006/42/EC.

We herewith declare that the following range:

EHS series ceiling fans

BRAND: AERAULIQA MODELS: EHS360, EHS400, EHS500, EHS540 EHS600,  
EHS730, EHS730plus

on the basis of its design and construction of partly completed machines, is designed in compliance with the Essential Health and Safety Requirements (EHSRs) of ANNEX I, sections 1.1.2 (Safety integration), 1.1.5 (Handling), 1.4.1 (Protective devices), 1.5.1 (Electricity) of EC Machinery Directive 2006/42/EC.

The machinery is incomplete and must not be put into service until such time as the machinery which is partly complete is to be incorporated and has been assessed and declared in conformity with the provisions of the Machinery Directive 2006/42/EC.

We undertake to transmit, upon reasoned request by appropriate national authorities, relevant information on the partly completed machinery identified above.

Montichiari, 01/03/2025



Direttore Generale  
Ing. Guido Banzi

During installation, it is recommended to write the serial number of the unit in this manual and keep it safe for maintenance service.

SERIAL NUMBER




Aerauliqa S.r.l. – via Mario Calderara 39/41, 25018 Montichiari (Bs)

C.F. e P.IVA/VAT 03369930981 – REA BS-528635 – Tel: +39 030 674681 – Fax: +39

Aerauliqa S.r.l. reserves the right to modify/make improvements to products and/or this instruction manual at any time and without prior notice.

## Documents / Resources

	<p><a href="#">aerauliqa EHS Range Ceiling High Volume Low Speed Fan [pdf]</a> Instruction Manual</p> <p>12, 22, EHS Range Ceiling High Volume Low Speed Fan, EHS, Range Ceiling High Volume Low Speed Fan, Ceiling High Volume Low Speed Fan, High Volume Low Speed Fan, Volume Low Speed Fan, Low Speed Fan, Speed Fan</p>
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## References

- [User Manual](#)

■ aerauliqa

◆ 12, 22, aerauliqa, Ceiling High Volume Low Speed Fan, ehs, EHS Range Ceiling High Volume Low Speed Fan, High Volume Low Speed Fan, Low Speed Fan, Range Ceiling High Volume Low Speed Fan, Speed Fan, Volume Low Speed Fan

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