

ZEPHYR | Stand-alone immersed electrode humidifiers

For further information, consult the operating and maintenance manual downloadable from the website www.elsteam.it or scan the QR CODE.

SCAN THE QR CODE AND READ THE USER MANUAL!



ELECTRICAL WIRING

⚠️ DANGER

RISK OF ELECTRIC SHOCK, EXPLOSION OR ELECTRIC ARC

- Various product components, including the printed circuits, run at hazardous voltage levels.
- Only use electrically insulated and suitably calibrated measuring devices and equipment.
- Do not open, disassemble, repair or modify the product.
- Before handling the product, make sure you are wearing all the necessary personal protective equipment (PPE).
- Do not expose the equipment to liquids or chemicals.
- Use this device and all parts connected to it at the specified voltage only.
- Do not use this equipment for critical safety functions.

FAILURE TO FOLLOW THESE INSTRUCTIONS WILL RESULT IN DEATH OR SERIOUS INJURY.

⚠️ DANGER

RISK OF ELECTRIC SHOCK, EXPLOSION OR FIRE

- Install the humidifier away from electronic equipment.
- Do not install the humidifier above electronic equipment.

FAILURE TO FOLLOW THESE INSTRUCTIONS WILL RESULT IN DEATH OR SERIOUS INJURY.

⚠️ DANGER

RISK OF ELECTRIC SHOCK AND FIRE

- Do not use the device with loads greater than those indicated in the technical data section.
- Do not exceed the temperature and humidity ranges indicated in the technical data section.
- Provide safety interlocks (isolators) of a suitable size between the power supply and the humidifier.
- Only use cables with a suitable cross-section as indicated in the "Wiring best practices" section of the user and maintenance manual.

FAILURE TO FOLLOW THESE INSTRUCTIONS WILL RESULT IN DEATH OR SERIOUS INJURY.

⚠️ WARNING

MALFUNCTIONING OF THE EQUIPMENT

- Perform the wiring carefully, in compliance with electromagnetic compatibility and safety requirements.
- Do not operate the product with unknown or incorrect settings or data.
- Make sure the wiring is correct for the final application.
- Use shielded cables for all I/O signal and communication cables.
- Minimise the length of the connections as much as possible and avoid winding the cables around electrically connected parts.
- The signal cables (analogue and digital inputs, communication and corresponding power supplies), power cables and power supply cables for the device must be routed separately.
- Before applying the power supply, check all the wiring connections.
- Do not connect wires to unused terminals and/or to terminals labelled "No connection" ("N.C.")

FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN DEATH, SERIOUS INJURY, OR EQUIPMENT DAMAGE.

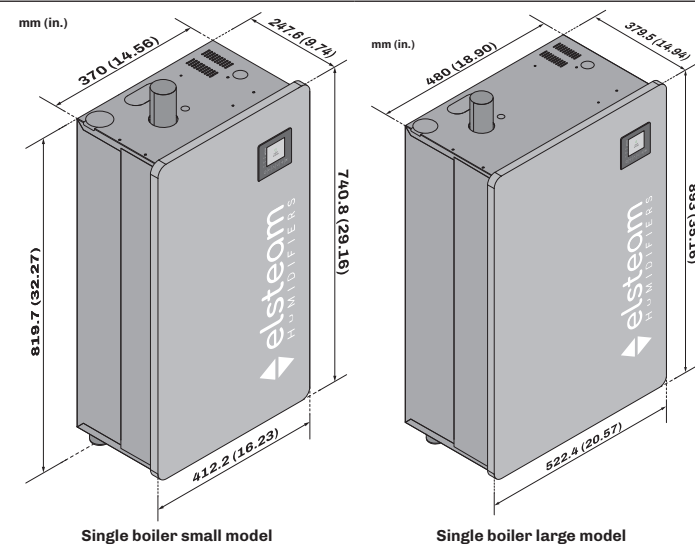
⚠️ WARNING

BIOLOGICAL RISK

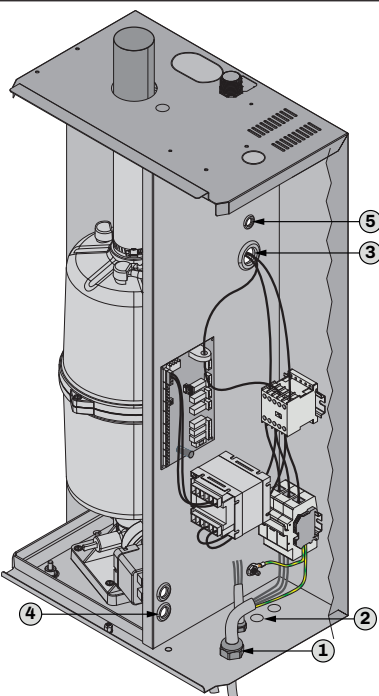
- In the event of inadequate use and/or poor maintenance it is possible that microorganisms (including the bacterium that causes Legionellosis) may proliferate and be transferred into the air treatment system.
- The humidifier must be used properly and be maintained and cleaned properly at prescribed intervals, as described in chapter **MAINTENANCE** in the manual of operating and maintenance.

FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN DEATH, SERIOUS INJURY, OR EQUIPMENT DAMAGE.

DIMENSIONS



CABLE GLANDS AND CABLE ROUTING

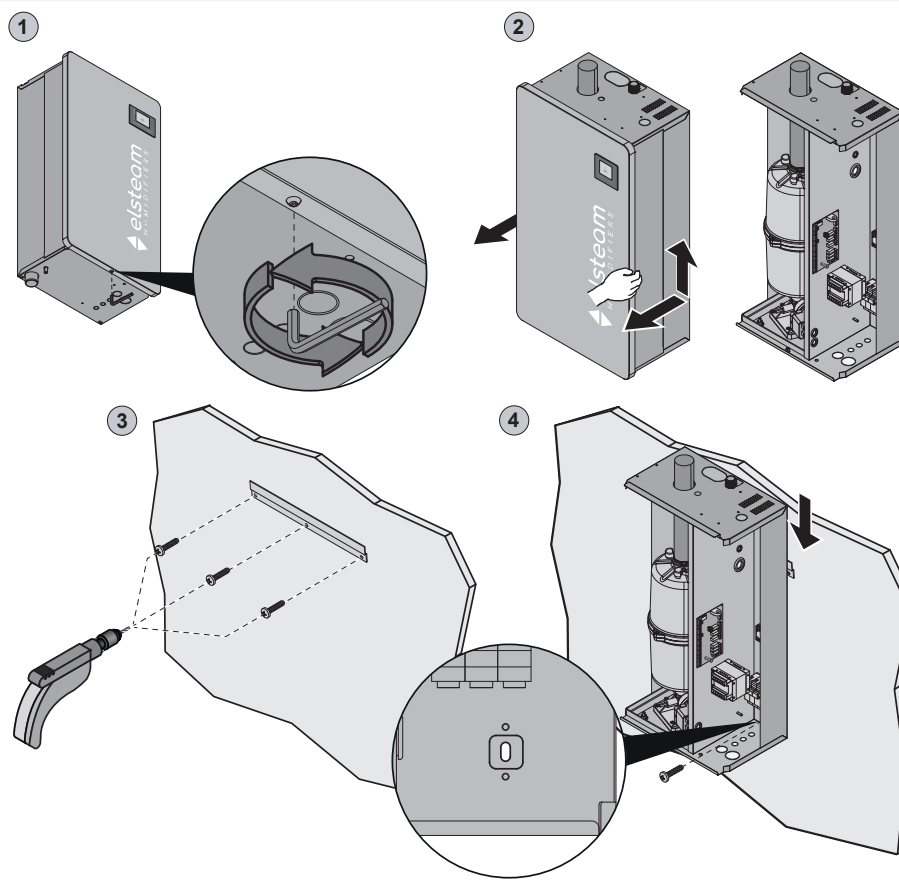


Ref.	Description
①	Pull-resistant cable gland for power cable entry
②	Pull-resistant cable glands for control signal/serial cable entry
③	Cable gland for power cables from contactor to boiler
④	Cable gland for outlet pump power supply cables
⑤	Cable gland for outlet solenoid valve power supply cables and maximum level sensor cable

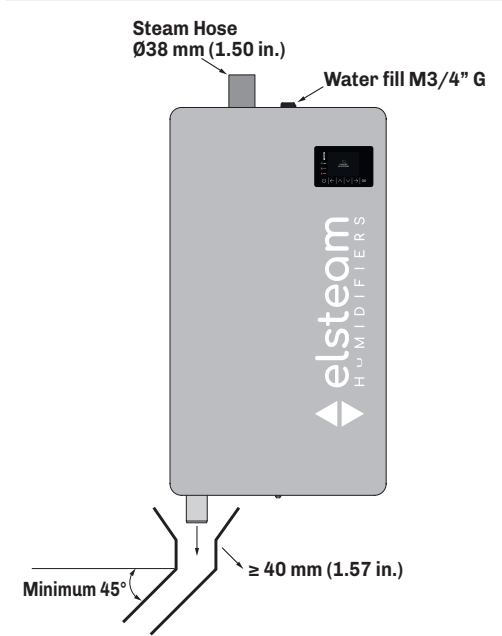
TECHNICAL SPECIFICATIONS

DESCRIPTION	EHKX..... / EHKT.....														
	03M2	05M2	03T2	05T2	03T4	05T4	10T2	10T4	15T2	15T4	20T2	20T4	30T4	40T4	
STEAM PRODUCTION															
Production capacity	3 Kg/h	5 Kg/h	3 Kg/h	5 Kg/h	3 Kg/h	5 Kg/h	10 Kg/h	15 Kg/h	20 Kg/h	30 Kg/h	40 Kg/h	20 Kg/h	30 Kg/h	40 Kg/h	
Maximum pressure	1650 Pa (165 mmH ₂ O)										2000 Pa (200 mmH ₂ O)				
Connection outside diameter	38 mm (1.50 in.)														
ELECTRICAL PROPERTIES															
Power absorbed	2,2 kW	3,75 kW	2,2 kW	3,75 kW	2,2 kW	3,75 kW	7,5 kW	11,3 kW	11,3 kW	15 kW	15 kW	22,5 kW	30 kW	30 kW	
Power supply	230 Vac				400 Vac		230 Vac	400 Vac	230 Vac	400 Vac	230 Vac	400 Vac			
Phases	Single-phase						Three-phase								
Rated absorption per phase	Single-phase				Three-phase										
Assorbimento nominale per fase	9,6 A	16,3 A	5,5 A	9,4 A	3,2 A	5,4 A	18,8 A	10,8 A	28,4 A	16,3 A	37,7 A	21,7 A	32,5 A	43,3 A	
WATER PROPERTIES															
Supply water electrical conductivity	70...1250 µS*cm (Standard boiler 300...700 µS*cm)														
Supply water hardness	5...50 °f (Standard boiler 10...30 °f)														
Supply water pressure	0,02...1 MPa (0,2...10 bar)														
Supply water connection	1x M 3/4" GAS														
Water drain outer dimensions	1x 40 mm (1.57 in.)														

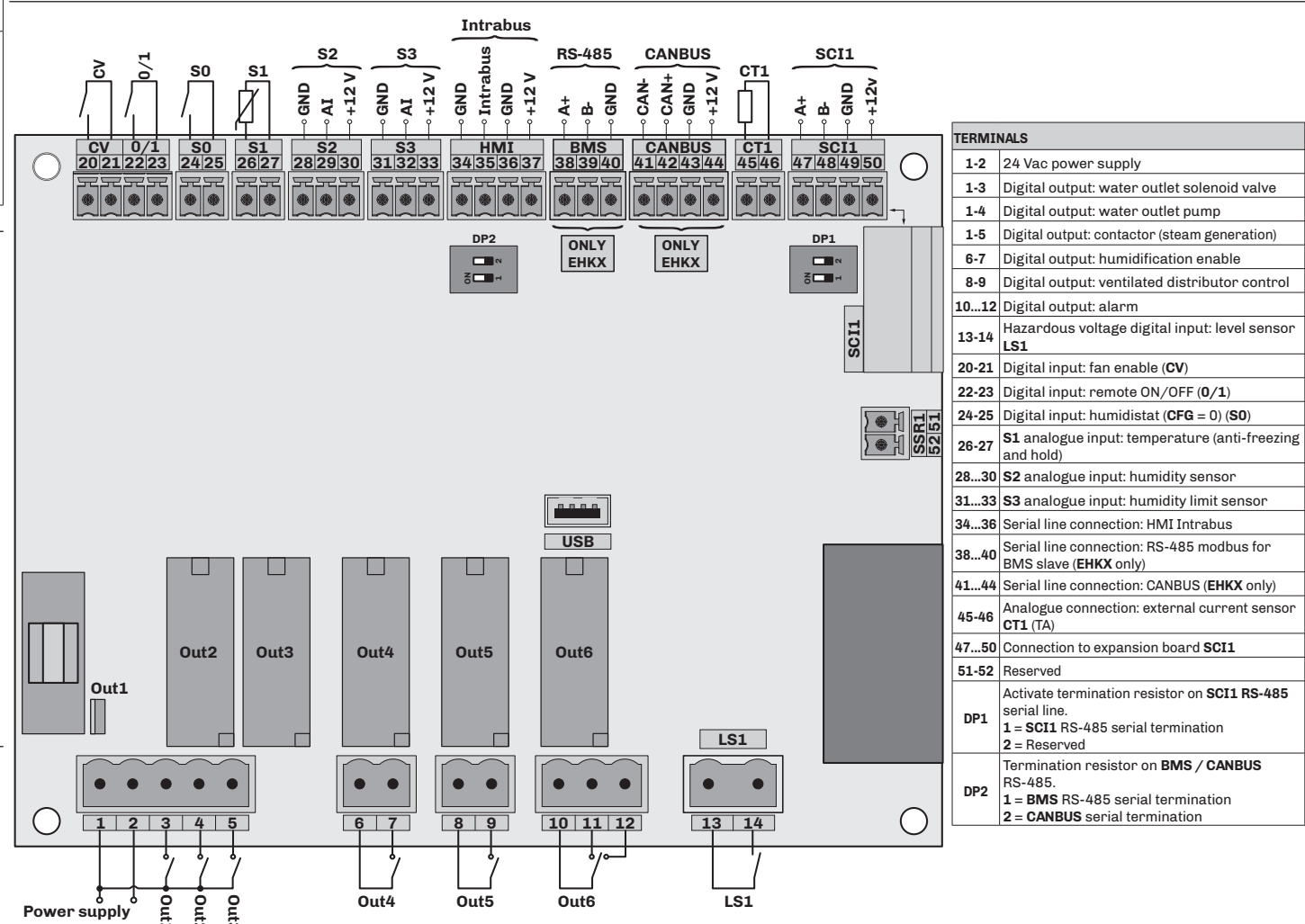
MOUNTING



PLUMBING INSTALLATION



WIRING DIAGRAM



TERMINALS	Description
1-2	24 Vac power supply
1-3	Digital output: water outlet solenoid valve
1-4	Digital output: water outlet pump
1-5	Digital output: contactor (steam generation)
6-7	Digital output: humidification enable
8-9	Digital output: ventilated distributor control
10...12	Digital output: alarm
13-14	Hazardous voltage digital input: level sensor LS1
20-21	Digital input: fan enable (CV)
22-23	Digital input: remote ON/OFF (0/1)
24-25	Digital input: humidistat (CFG = 0) (S0)
26-27	S1 analogue input: temperature (anti-freezing and hold)
28...30	S2 analogue input: humidity sensor
31...33	S3 analogue input: humidity limit sensor
34...36	Serial line connection: HMI Intrabus
38...40	Serial line connection: RS-485 modbus for BMS slave (EHKX only)
41...44	Serial line connection: CANBUS (EHKX only)
45-46	Analogue connection: external current sensor CT1 (TA)
47...50	Connection to expansion board SC11
51-52	Reserved
DP1	Activate termination resistor on SC11 RS-485 serial line. 1 = SC11 RS-485 serial termination 2 = Reserved
DP2	Termination resistor on BMS / CANBUS RS-485. 1 = BMS RS-485 serial termination 2 = CANBUS serial termination

SUITABLE WIRING FOR THE POWER SUPPLY

P/n EHKT	P/n EHKX	Wiring size	Permissible wiring type	Pitch [mm(in.)]
EHKT003M2	EHKX003M2	2G4	[Cable types]	17,8 (0,70)
EHKT003T2	EHKX003T2	3G2,5		
EHKT003T4	EHKX003T4	3G2,5		
EHKT005M2	EHKX005M2	2G10		
EHKT005T2	EHKX005T2	3G4		
EHKT005T4	EHKX005T4	3G2,5		
EHKT010T2	EHKX010T2	3G4		
EHKT010T4	EHKX010T4	3G10		
EHKT015T4	EHKX015T4	3G16		
EHKT015T2	EHKX015T2	3G6		
EHKT020T2	EHKX020T2	3G10	26,5 (1,04)	
EHKT020T4	EHKX020T4	3G16		
EHKT030T4	EHKX030T4	3G16		
EHKT040T4	EHKX040T4	3G16		

POWER-UP AND START-UP

1. Check the inlet and outlet lines;
2. Let the water drain for a few hours before making the final connection;
3. Fit the power fuses;
4. Connect the humidistat or sensor, depending on the required operation;
5. Check that the CV contact is closed;
6. Activate the isolator installed outside the humidifier and open the water supply source;
7. Set the electrical conductivity of the incoming water;
8. Press the ON/OFF button on the user interface to start the humidifier;
9. Set the humidity setpoint SP to 100%;
10. The humidifier will start a boiler filling cycle to fill it to the minimum water level that guarantees rapid steam production;
11. Set the humidity setpoint SP to the value required for the application;

Disposal
The device must be disposed of in accordance with local regulations regarding the collection of electrical and electronic appliances.