ESSENSSE NEO | VCES4

air-only

electric wire heater

EC FANS

WIRE HEATER

STRAW SYSTEM

3 YEARS WARRANTY

MagiCAD

BASIC FEATURES

- **EC version airflow** up to **2850 CFM** (performance testing per AMCA 220)
- **Straw System**– maximising the screening effect
- Recommended installation height **up to 9,8 ft / 3m**
- Length: **39,37 ; 59 ; 78,74 ; 98,42 inches / 1.0; 1.5; 2.0; 2.5m**
- Low profile design
- Integrated **AirGENIO PRIME**

ESSENSSE NEO is a low profile air curtain designed for horizontal installation at the entry doors of **retail shops**, **shopping centres, restaurants, administrative buildings**, and **manufacturing facilities** with a recommended installation height up to 118,11 inches / 3m*.

* Recommended installation height – may vary according to the particular conditions at the installation site.

The air curtain has a self-supporting casing made from a galvanized metal sheet powder-coated in **RAL9016** colour in a glossy smooth finish; any RAL colour may be provided upon the customer's request.
The air curtain is equipped with a cross-flow fan optionally with energy-efficient EC motor.
The fan motors feature integrated maintenance free ball-bearings and thermal protection.
The air curtain has an option for heating and it can be equipped with electric wire heater.
The air curtain's exhaust nozzle is equipped with a unique **Straw System Technology**, which relies on a special tubing system to control airflow performance and maximise the screening effect. The Straw System ensures a laminar, compact and stable airflow across the entire exhaust nozzle. The exhaust nozzle can be set up to 20° angle to direct the airflow stream against the door opening.
The air curtain features an integrated control system **AirGENIO PRIME**, which optimizes the air curtain's operation to ensure interior comfort while minimizing operating cost.
The air curtain shall be installed indoors in a dry environment with ambient temperatures ranging from **32 °F up to 104 °F** (**0 °C up to +40 °C)** and relative humidity of up to 80%. It is designed to convey air free of fine dust, grease, chemical fumes, and other impurities.
The IP rating of the air curtain is **IP20**. It is recommended that air curtain projects always be developed by an HVAC designer or engineer.

2VV certifies that the air curtains shown herein are licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of AMCA Certified Ratings Program.

The air curtains are properly certified according North American standards and are ETL Listed. Ambient units Conform to UL STD 507 (US) and are Certified to CSA STD C22.2#113 (Canada). Electrical units conform UL STD 2021 (US) and are certified to CSA STD C22.2#46.

PRIMARY PARAMETERS

Air curtains with electric heaters are equipped with an automatic heat thermostat and emergency thermostat with manual reset.

Type	Recommended installation height [ft] / [m]	Airflow (cfm)*1					Sound power [dB(A)]*2
		20%	40%	60%	80%	100% *	
VCES4B100-N2EC	9,8 / 3	450	640	850	1060	1097	79
VCES4B150-N2EC		470	760	1030	1320	1679	77
VCES4B200-N2EC		640	1090	1470	1880	2345	82
VCES4B250-N2EC		880	1410	1940	2440	2852	81
VCES4B100-NAEC		440	630	830	1020	1097	79
VCES4B150-NAEC		470	760	1030	1320	1679	77
VCES4B200-NAEC		640	1090	1470	1880	2345	82
VCES4B250-NAEC		880	1410	1940	2440	2852	81

*1 Airflow volume according AMCA Standard 220-05, (ISO 27327-1-1:2009), Figure 1A
*2 Sound power (LWA) measurements according to AMCA Standard 300-14, Figure 1 Setup, Installation Type A

Electrical heat - 208V/3/60Hz

Air curtain type:	Heat output	Total power input	Total Voltage / Current	Operation Fan Voltage / Current	Start-up Peak Fan Voltage / Current	Delta T*	Frequency	Weight
	kW	kW	V / A	V / A	V / A	°F	Hz	lb
VCES4B100-N2EC	2.6	3.00	208V 3~ / 13.5	208V 1~ / 1.5	208V 1~ / 2.8	7.5	60	51.1
VCES4B150-N2EC	8	8.40	208V 3~ / 23.8	208V 1~ / 1.9	208V 1~ / 3	15.0		65.3
VCES4B200-N2EC	8	8.44	208V 3~ / 24.4	208V 1~ / 2.8	208V 1~ / 3.4	10.8		76.0
VCES4B250-N2EC	10.2	10.60	208V 3~/ 30.4	208V 1~ / 2.9	208V 1~ / 3.5	11.3		91.5

* Delta T at maximum airflow volume

Electrical heat - 230V/3/60Hz

Air curtain type:	Heat output	Total power input	Total Voltage / Current	Operation Fan Voltage / Current	Start-up Peak Fan Voltage / Current	Delta T*	Frequency	Weight
	kW	kW	V / A	V / A	V / A	°F	Hz	lb
VCES4B100-N2EC	3.1	3.50	230V 3~ / 16.9	230V 1~/ 1.5	230V 1~ / 2.8	8.9	60	51.1
VCES4B150-N2EC	9.5	9.90	230V 3~ / 27.8	230V 1~ / 1.9	230V 1~ / 3	17.9		65.3
VCES4B200-N2EC	9.5	9.94	230V 3~ / 28	230V 1~ / 2.8	230V 1~ / 3.4	12.8		76.0
VCES4B250-N2EC	11.2	11.64	230V 3~ / 34.5	230V 1~ / 2.9	230V 1~ / 3.5	12.4		91.5

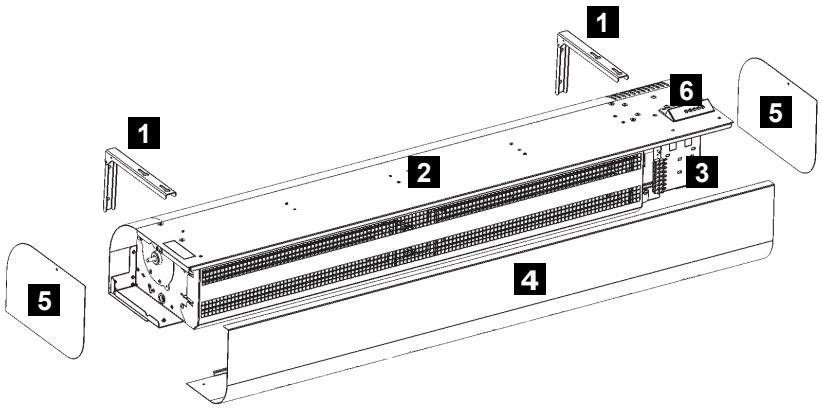
* Delta T at maximum airflow volume

Ambient, no heat 208V-230V/1/60Hz

Air curtain type:	Heat output	Total power input	Total Voltage / Current	Operation Fan Voltage / Current	Start-up Peak Fan Voltage / Current	Delta T	Frequency	Weight
	kW	kW	V / A	V / A	V / A	°F	Hz	lb
VCES4B100-NAEC	-	0.40	208V - 230V 1~ / 2.8	208V - 230V 1~ / 1.5	208V - 230V 1~ / 2.8	-	60	47.2
VCES4B150-NAEC	-	0.40	208V - 230V 1~ / 3	208V - 230V 1~ / 1.9	208V - 230V 1~ / 3	-		61.3
VCES4B200-NAEC	-	0.44	208V - 230V 1~ / 3.4	208V - 230V 1~ / 2.8	208V - 230V 1~ / 3.4	-		72.0
VCES4B250-NAEC	-	0.44	208V - 230V 1~ / 3.5	208V - 230V 1~ / 2.9	208V - 230V 1~ / 3.5	-		85.3

Type	Nozzle depth and width (in)	Max velocity at nozzle (fpm)	Outlet velocity (fpm)	Outlet velocity uniformity (%)
VCES4B100-NxEC	2.85x 34.92	3137	2829	90
VCES4B150-NxEC	2.85x 51	2818	2450	86
VCES4B200-NxEC	2.85x 70.69	2769	2441	82
VCES4B250-NxEC	2.85x 86.77	2750	2341	81

MAIN PARTS



1 Mounting brackets (included with delivery)

2 Top cover / Inlet grill

3 Main power supply and control

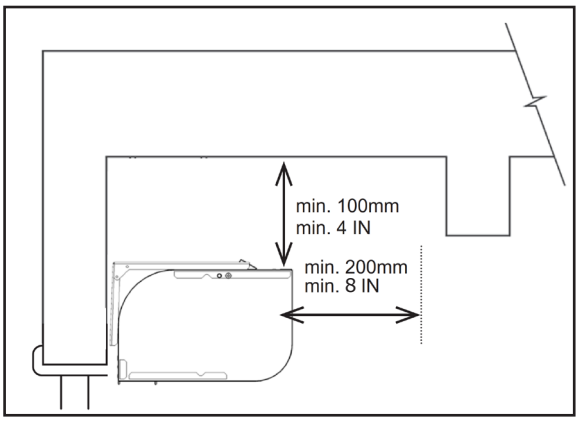
4 Front cover / Intake grill

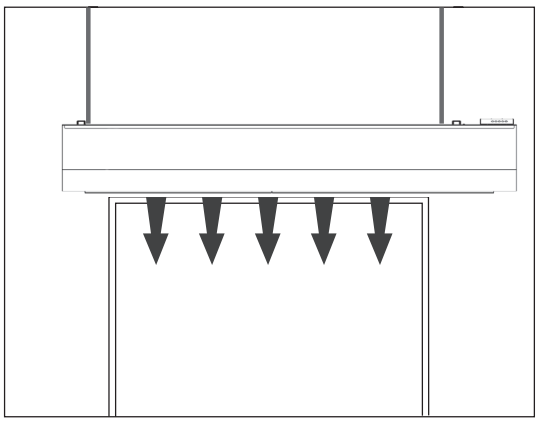
5 Side cover

6 Main power supply connection

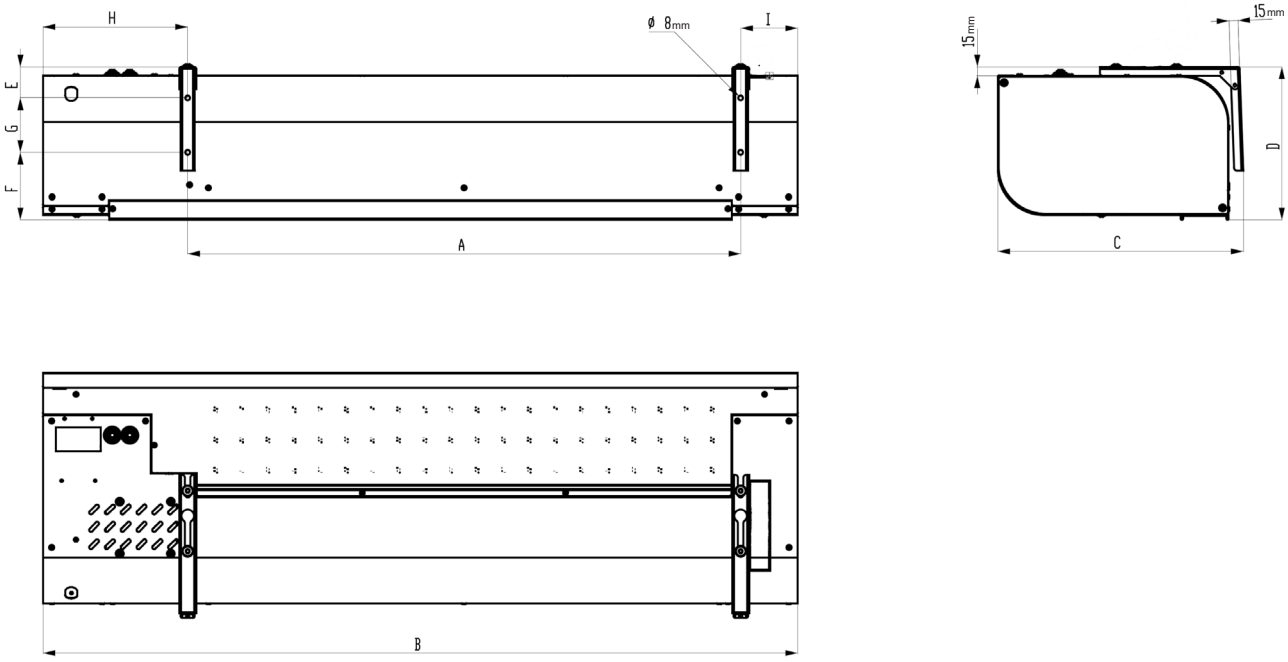
INSTALLATION AND ASSEMBLY

- The air curtain must be installed in a horizontal position only.
- The air curtain shall be located as close as possible to the top edge of the doorway, and a distance from walls that is in accordance with fire safety and building codes of the country where unit is installed. For manufacturer recommended distance see figures below.
- To ensure proper function it is recommended that the air curtain overlaps the doorway by 3,9 inches / 100 mm on both sides.
- Correct operation of the air curtain requires that specified distances from the surrounding objects are observed, see figure.
- Please take note of water and power supply connections when installing air curtain.
- The air curtain shall be installed using supplied brackets.





AIR CURTAIN DIMENSIONS

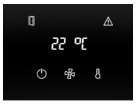


TYPE	A	B	C	D	E	F	G	H	I
	(mm)								
VCES4 B 100	916	1252	407	252	51	111	90	240	95
VCES4 B 150	1325	1660	407	252	51	111	90	240	95
VCES4 B 200	1825	2160	407	252	51	111	90	240	95
VCES4 B 250	2235	2570	407	252	51	111	90	240	95

TYPE	A	B	C	D	E	F	G	H	I
	(inch)								
VCES4 B 100	36.06	49.29	16.02	9.92	2.00	4.37	3.54	9.44	3.74
VCES4 B 150	52.16	65.35	16.02	9.92	2.00	4.37	3.54	9.44	3.74
VCES4 B 200	71.85	85.03	16.02	9.92	2.00	4.37	3.54	9.44	3.74
VCES4 B 250	87.99	101.18	16.02	9.92	2.00	4.37	3.54	9.44	3.74

CONTROL

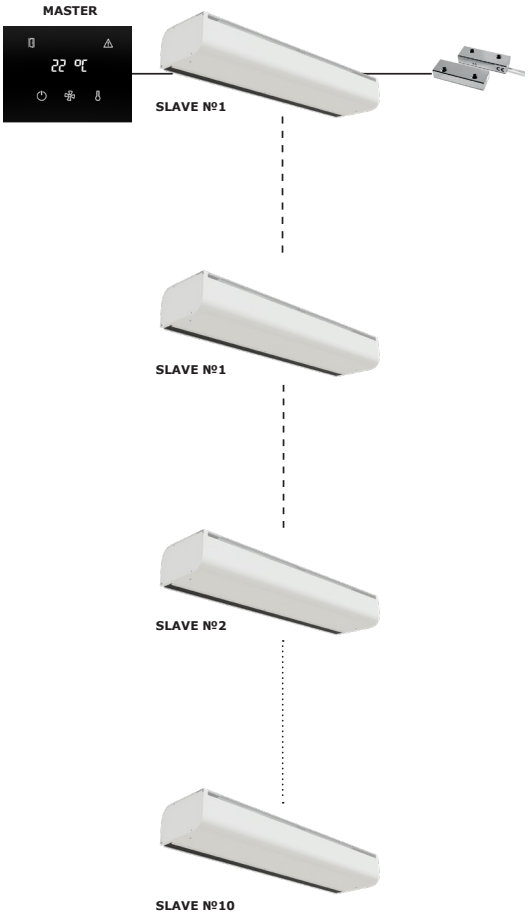
Overview of functions and sensor connections



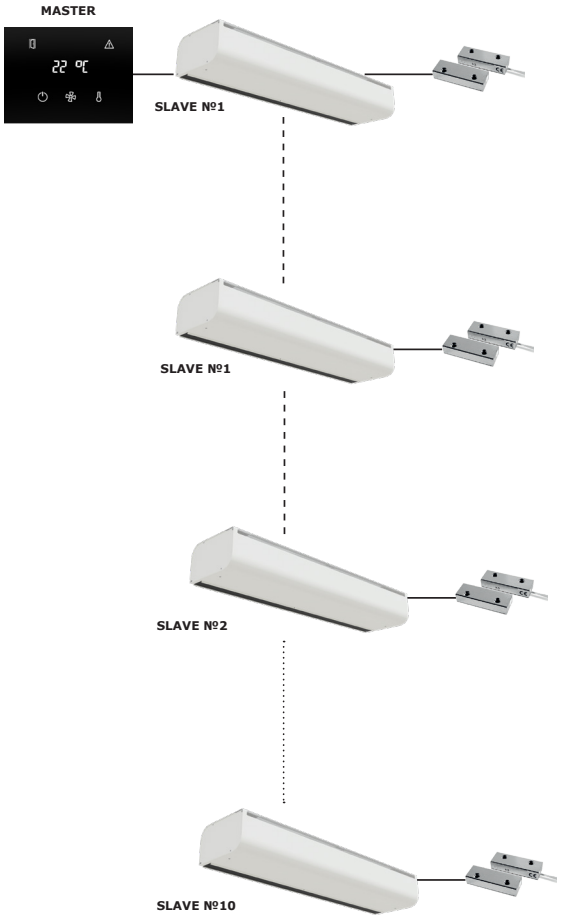
AirGENIO control	PRIME
Control type	7-segment display with 3 capacity buttons
Mode	Manual / Auto
EC Fan control	EC – PWM/0-10V
Electric heater control	PWM
Status indication	Yes (LED on display)
AirGENIO PRIME application	Change of settings
Auto-speed control	Yes
Timer	Yes
Temperature control	Yes (NTC) Built in control panel
DOOR contact connection	Yes Settable logic (NO/NC)
Summer mode	Yes
Chaining	Yes (max. 10pcs)
ERROR contact	Yes (Jumper setting) / HEAT or RUN+ERROR
RUN contact	Yes (Jumper setting) / HEAT or RUN+ERROR
External control	Yes settable logic (NO/NC)
BMS connection	Modbus RTU
Clean intervals	Yes

CHAINING EXAMPLE

Global Door contact function active



Global Door contact function NOT active



OPTIONAL ACCESSORIES

More details can be found on the relevant page in this catalogue

Control panel

PRIME

KEY TO CODING

CP-CB-AP1-EX-EC-U

EC - EC fans (PRIME control)

EX - Electric version

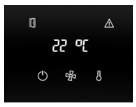
AM - Ambient - No heating

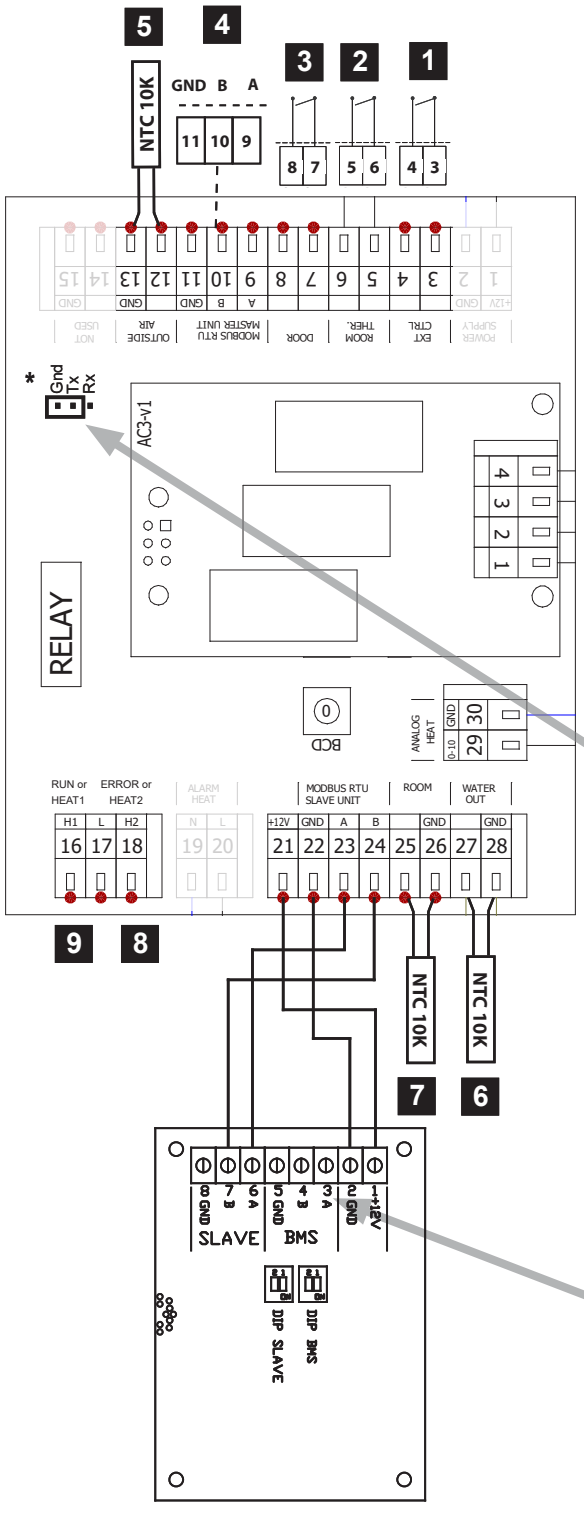
TEMPERATURE SENSOR: CT-NTC-OUTDOOR

Temperature sensor 10m/32,8 feets , IP68

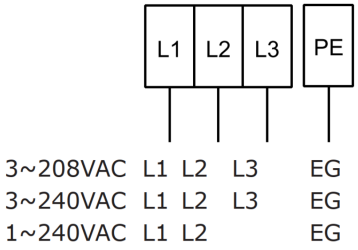
WIRING DIAGRAMS

AirGENIO PRIME MASTER





CONTROL PANEL - MASTER



1	External control - (input, ON/OFF)
2	Room Thermostat (input, NO/NC)
3	DOOR contact (input, NO/NC)
4	SLAVE unit connection
5	Outside air sensor (not included in delivery)
7	Room sensor (not included in delivery)
8	ERROR
9	RUN

Water valve control is in default 0-10V

*For **On/OFF water vlave control**, it is necessary to connect the jumper between GND and Tx

Enable ON/OFF valve and deactivate RUN/ERROR

The default setting from the factory is without the jumper

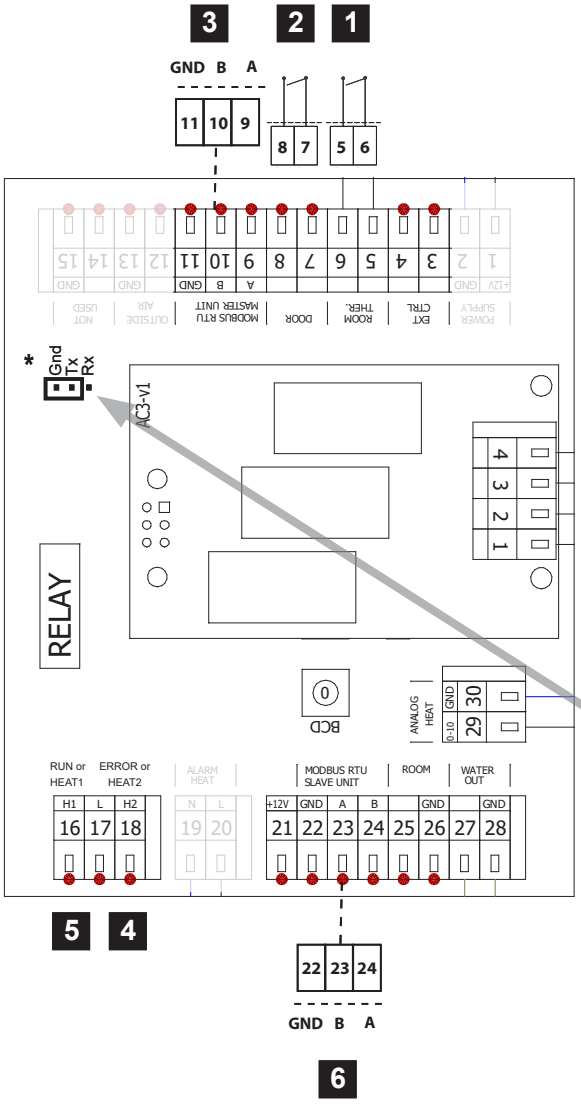
Enable RUN/ERROR and deactivate ON/OFF valve

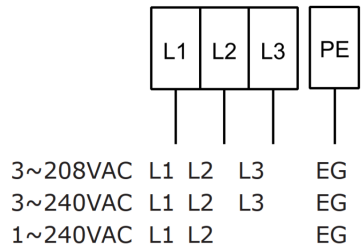
Modbus RTU
(A - 3, B - 4,GND - 5)

To connect the controller with the unit control, we recommend using a shielded cable such as UTP CAT5.
The maximum recommended cable length is 131 feets / 40m!

WIRING DIAGRAMS

AirGENIO PRIME SUBUNITS





1	Room Thermostat (input, NO/NC)
2	DOOR contact (input, NO/NC)
3	SLAVE unit connection
4	ERROR
5	RUN
6	MASTER unit connection

Water valve control is in default 0-10V

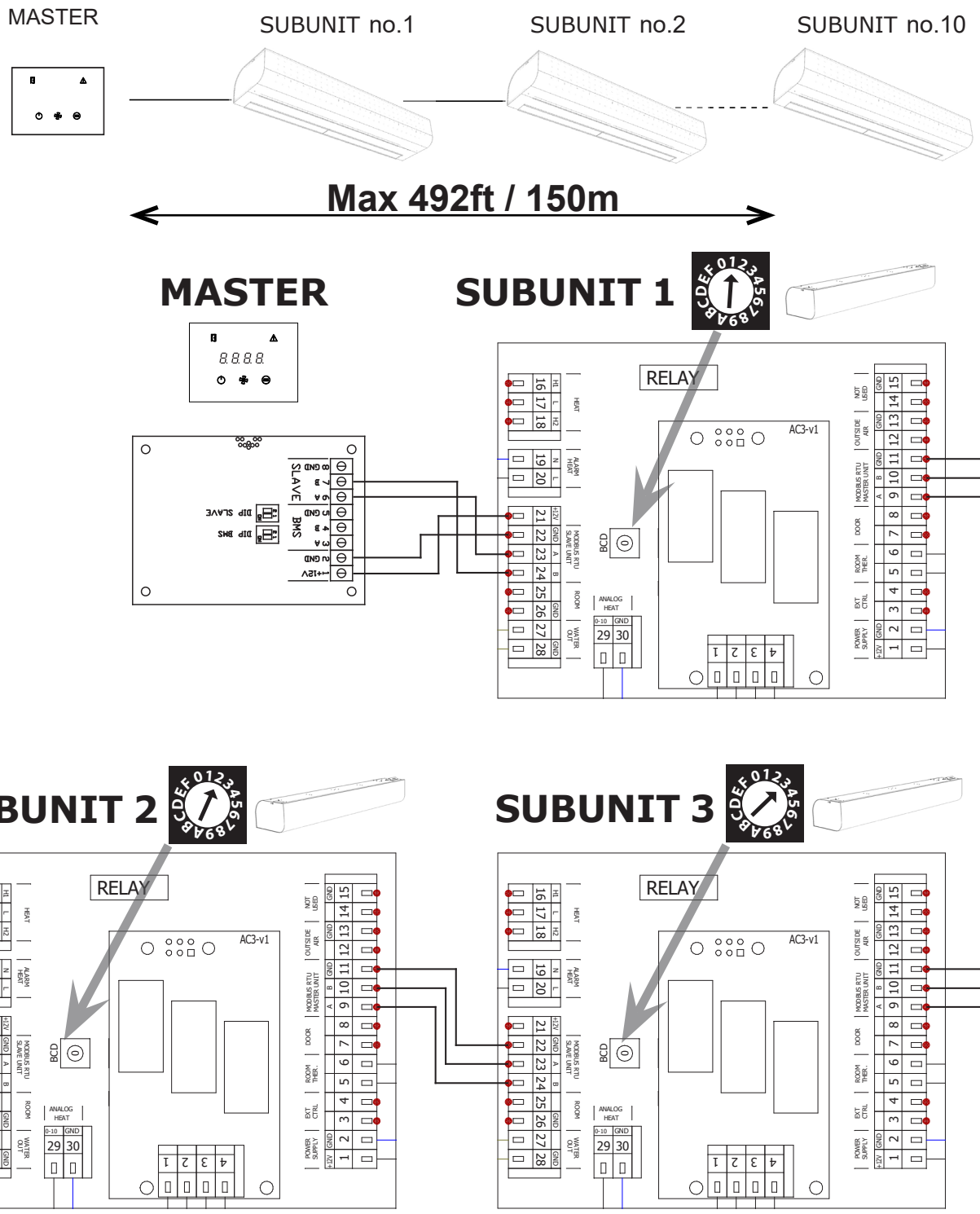
*For **ON/OFF water vlave control**, it is necessary to connect the jumper between GND and Tx

Enable ON/OFF valve and deactivate RUN/ERROR

The default setting from the factory is without the jumper

Enable RUN/ERROR and deactivate ON/OFF valve

WIRING DIAGRAMS



KEY TO CODING

VCES4 B 100-NA EC-PS-0 U0

- **U0** – 2VV version
- **9** – Atyp RAL
  0 – Standard RAL
- **PS - PRIME SLAVE - without control panel**
  PR - PRIME MASTER - control panel integrated
- **EC - EC fans**
- **N2 - Electric**
  NA - Ambient - without heating
- **100 - Length 1.0m / 39.37 inches**
  150 - Length 1.5m / 59.06 inches
  200 - Length 2.0m / 78.74 inches
  250 - Length 2.5m / 98.43 inches
- **B** – Output series
- **VCES4 - ESSENSSE NEO 4th generation**