

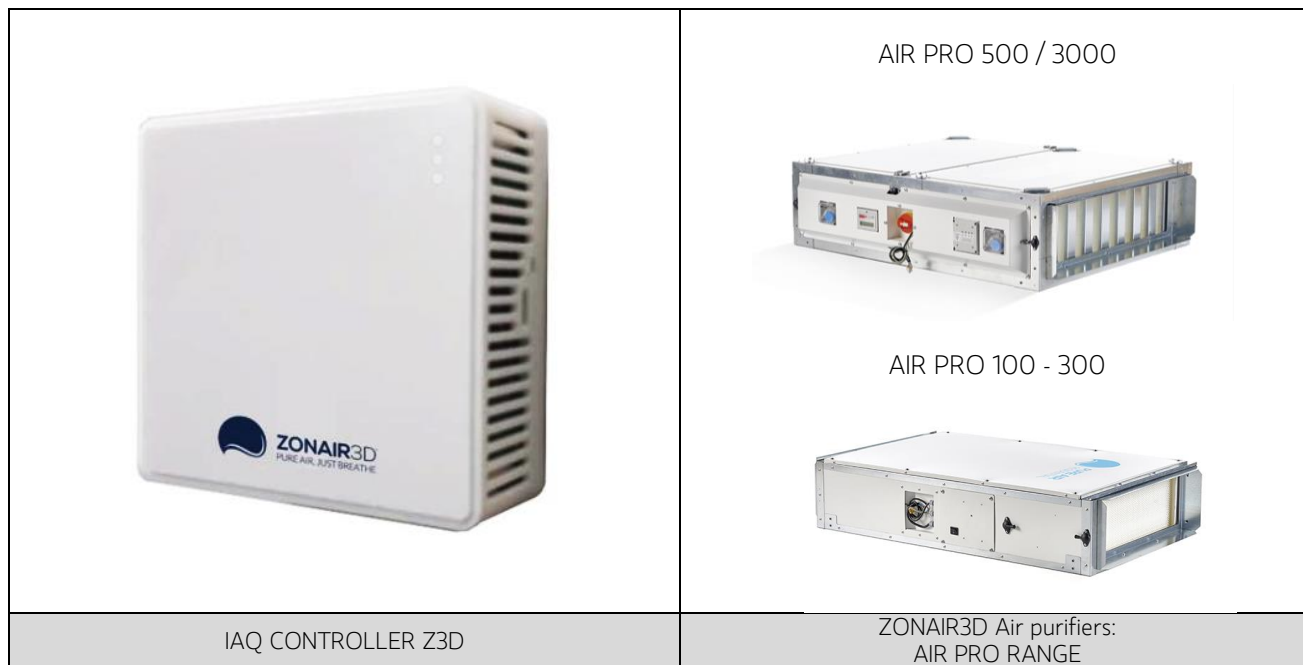


**ZONAIR3D™**  
PURE AIR, JUST BREATHE

IAQ CONTROLLER– ZONAIR3D

USER MANUAL

## SPECIFICATIONS IAQ CONTROLLER FOR ZONAIR3D PURIFIERS



### Controller specs:

- Built-in sensors:
  - VOC (volatile organic compounds):
    - Sensing element: Metal oxide semiconductor.
    - Detection range: 0,00ppm to 30,00ppm. 0,01ppm=10ppb, 0,1ppm=100ppb, 1ppm=1000ppb
    - Operating life: 10 years.
  - PM2.5, PM10 (particulate matter):
    - Sensing element: Laser-based light scattering particle sensing.
    - Concentration range: 0\_g/m3 to 1000\_g/m3.
    - Operating life: ~ 10 years.
    - PM2.5: Particles size between 0.3\_m and 2.5\_m.
    - PM10: Particles size between 0.3\_m and 10\_m.
    - \* PM1 y PM4: Developing.
  - CO2 (carbon dioxide):
    - Sensing element: NDIR (Non-Dispersive Infrared detector). Dual sensor.
    - Detection range: 0ppm to 5000ppm.
    - Operating life: > 5 years.
  - Temperature:
    - Sensing element: NTC.
    - Measurement range: 0,0°C to 50,0°C.
    - Operating life: > 10 years.
  - Relative humidity:
    - Sensing element: Capacitive type humidity sensor combined with specific IC.
    - Measurement range: 0,0% to 100,0%.
    - Operating life: > 10 years.

Factory calibrated sensors.

Other measurement ranges under request.

- Calibration: For sensors VOC, PM2.5 and PM10, CO2, T and HR.
- On/off control for air purifier. Dry contact output (NO or NC contact, configurable).
- Air purifier control according to VOC, PM2.5 and/or PM10. Setpoints for VOC, PM2.5 and PM10. Consult calibration processes.
- Air purifier start / stop control function by means of a voltage-free relay contact digital output (configurable NO or NC contact). Adjustment of the operating setpoint in the external pressure / flow control of the fan (s).
- Sensor selection to regulate the air purifier (VOC, PM2.5 and / or PM10).
- Independent operating setpoints for VOC, and PM2.5 and PM10 particles.
- CO2, temperature and relative humidity measures.
- Digital inputs for an external on/off and for filter/s pressure switch/es.
- Working modes: PROBE, **OMS/WELL**, **EUROPE** or **ASIA**. Selectable by means of a switch.
- The controller functions as a standalone controller thanks to microprocessor integration.
- Air renewal control according to CO2 (i.e. outdoor air damper).
- Control of air renewal by CO2 (eg control of the outside air damper). Proportional control signal 0...10V according to the setpoint and proportional band corresponding to the CO2 measurement.
- Analog outputs 0...10V or 0...1V for PM2.5, VOC and CO2 measures.

Optional: T and HR.

PM2.5	Rango de medida: 0µg/m <sup>3</sup> a 1000µg/m <sup>3</sup>	0µg/m <sup>3</sup> : 0,0V... 1000µg/m <sup>3</sup> : 10,0V/1,0V
VOC	Detection range: 0,00ppm a 30,00ppm	0,0ppm: 0,0V... 30,00ppm: 10,0V/1,0V
CO <sub>2</sub>	Detection range: 0ppm a 5000ppm	0ppm: 0,0V... 5000ppm: 10,0V/1,0V

Optional analog outputs:

T	Measurement range: 0,0°C a 50,0°C	0,0°C: 0,0V... 50,0°C: 10,0V/1,0V
HR	Measurement range: 0% a 100%	0%: 0,0V... 100%: 10,0V/1,0V

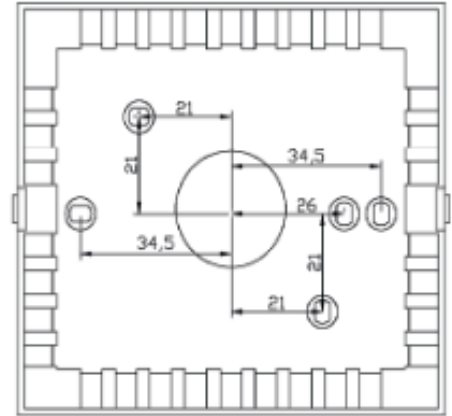
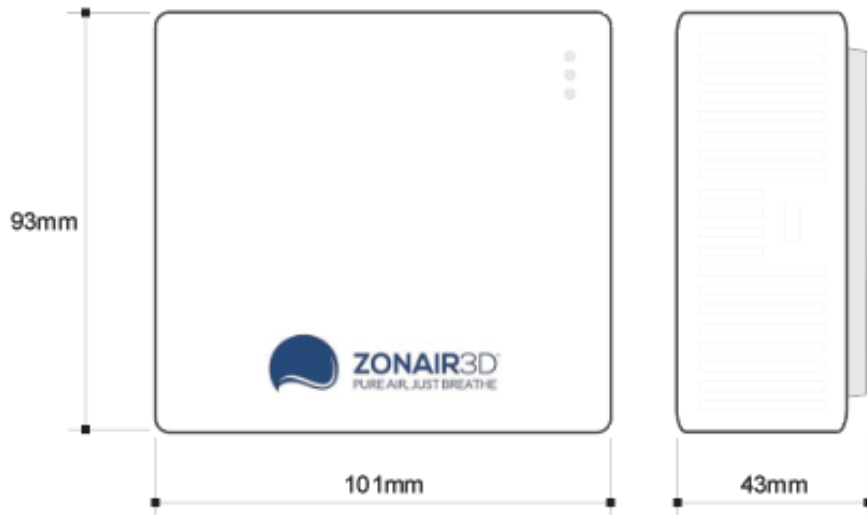
Note: The type of analog outputs 0... 10V or 0... 1V is configurable through serial communications.

Analog outputs can be useful for HVAC controllers

- Parameters via serial communication in order to optimize the controller operation. Service tool to configure the controller (PC or touchscreen).
- Operating hours counter.
- Power supply: 100...250V (universal and isolated power supply integrated).
- **Serial communication Modbus channel for BMS.**
- Optional: We can supply communication devices (PC, touch screen) for viewing and managing the controller probe. Consult. Local and / or remote connectivity.
- Indoor applications. Mounting base for universal mounting box. Easy connection: Plug & Play.
- Leds for displaying the controller status.
- "Forced on" mode in order to switch the air purifier on in case of sensor failure.
- Optional: Logo in the front cover.



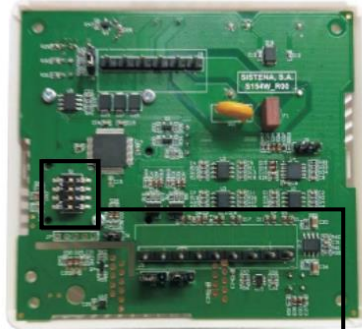
ZONAIR3D IAQ CONTROLLER DIMENSIONES



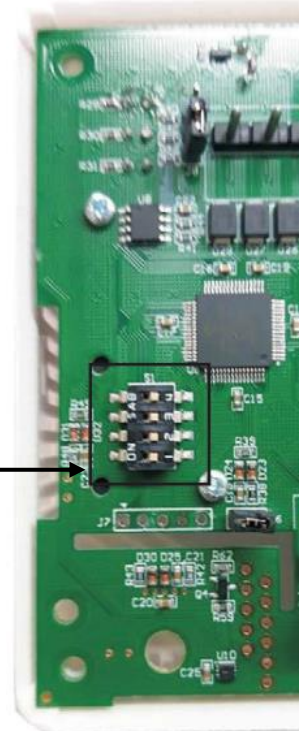
SWITCH CONFIGURATION FOR ZONAIR3D IAQ CONTROLLER



Top view





Bottom view

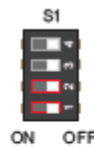


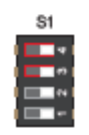

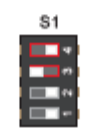

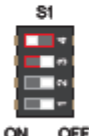

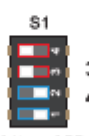

Working mode configuration  
Microswitches 1 and 2 in the S1 switch



PROBE mode	OMSWELL mode
 <p>1 OFF 2 OFF</p>	 <p>1 ON 2 OFF</p>
EUROPE mode	ASIA mode

Normal operation  
Calibration mode  
Autotest / Forced on mode  
Microswitches 3 and 4 in the S1 switch



Normal operation	Calibration. VOC sensor
 <p>3 OFF 4 OFF</p> <p>Leds: </p>	 <p>3 ON 4 OFF</p> <p>Leds: </p>
Calibration. CO <sub>2</sub> sensor	Autotest / Forced on mode
 <p>3 OFF 4 ON</p> <p>Leds: </p> <p>Background calibration: 400ppm</p>	 <p>3 ON 4 ON</p> <p>If microswitches 1 and 2 = OFF -- AUTOTEST Autotest: Factory process</p> <p>If microswitches 1 and/or 2 = OFF -- FORCED ON Air purifier ON</p> <p>Leds: </p>

## Led lights for displaying the status of the controller. ZONAIR3D IAQ CONTROLLER



### LED LIGHTS

#### YELLOW LIGHT:

- Stabilization process (start up process): Blinking every 1s.
- PROBE mode: Blinking every 10s
- CONTROLLER mode (OMS/WELL, EUROPE, ASIA):
  - > Off: Blinking every 10s
  - > On:
    - Clean air filter: Blinking every 5s.
    - Clogged air filter: Blinking every 2s.

#### BLUE AND GREEN LIGHT:

- Pollutants < Setpoints: Blue led on / Red led off (NO POLLUTANTS IN THE AIR).
- Pollutants > Setpoints: Blue led off / Red led on (POLLUTANTS IN THE AIR).

### FORCED ON MODE

This mode holds the air purifier on.

In this mode, IAQ controller does not activate analog outputs neither digital inputs, and the serial communication is not active.

So this mode is only useful when a built-in sensor is damaged (VOC or PM2.5/PM10). This mode must be a temporary solution.

Display

Blue light blinking every 1s (yellow and red lights off)

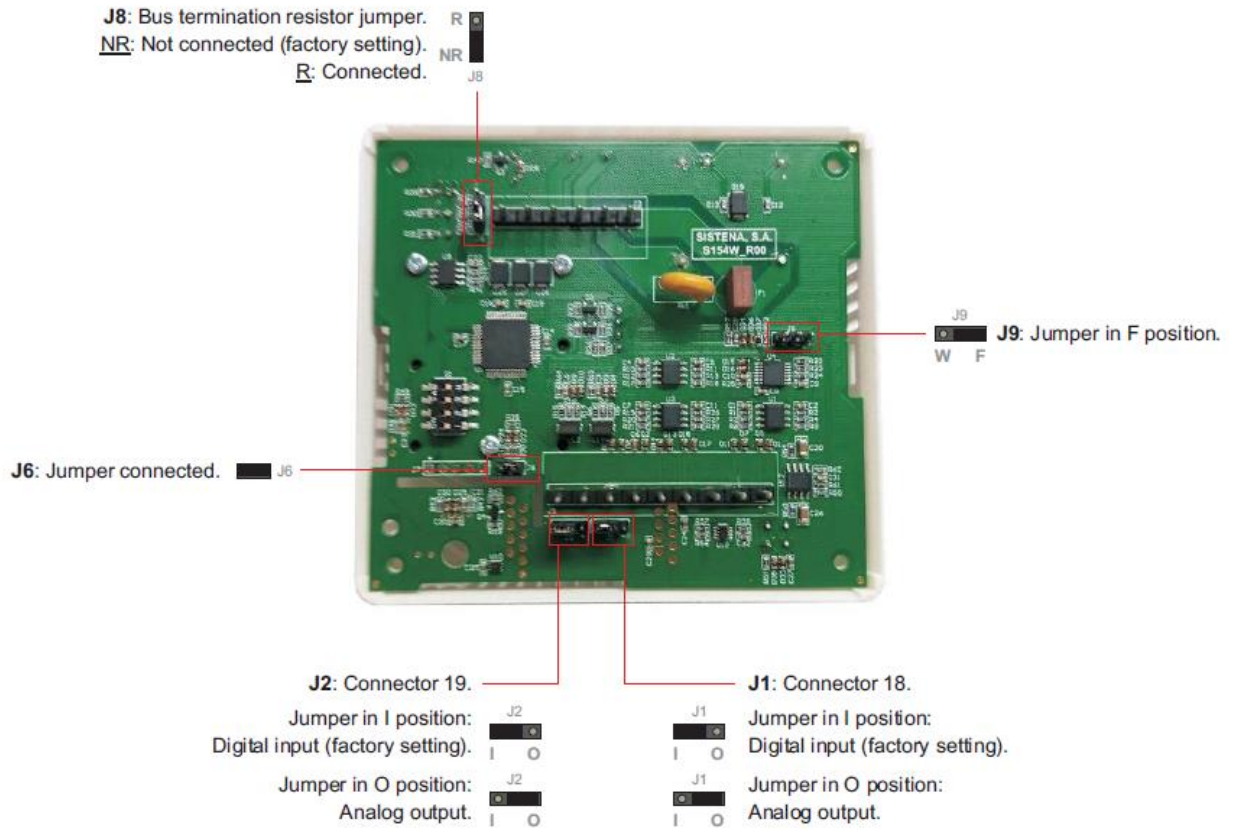
To activate / deactivate the relay (purifier start / stop) the digital input of the local on / off is used (terminals 19-20 of the mounting base).

Display

- Forced on function active: Blue LED flashing.
- Relay activated (digital input closed): Yellow LED on. Relay deactivated (digital input open): Yellow LED off.
- Green LED permanently off.

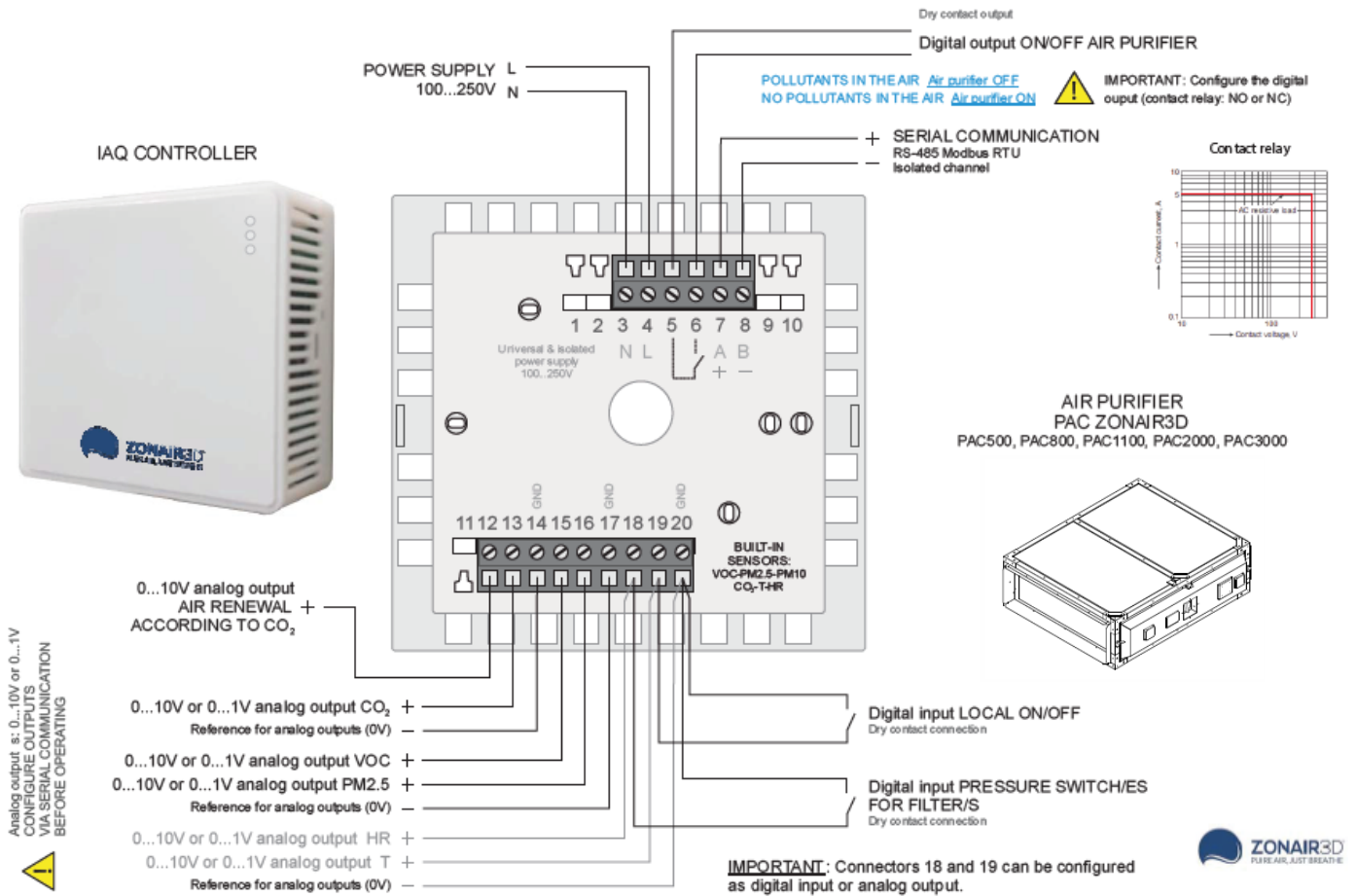


Jumpers configuration. IAQ CONTROLLER ZONAIR3D



If these jumpers are not configured properly, IAQ controller might work in a wrong way.

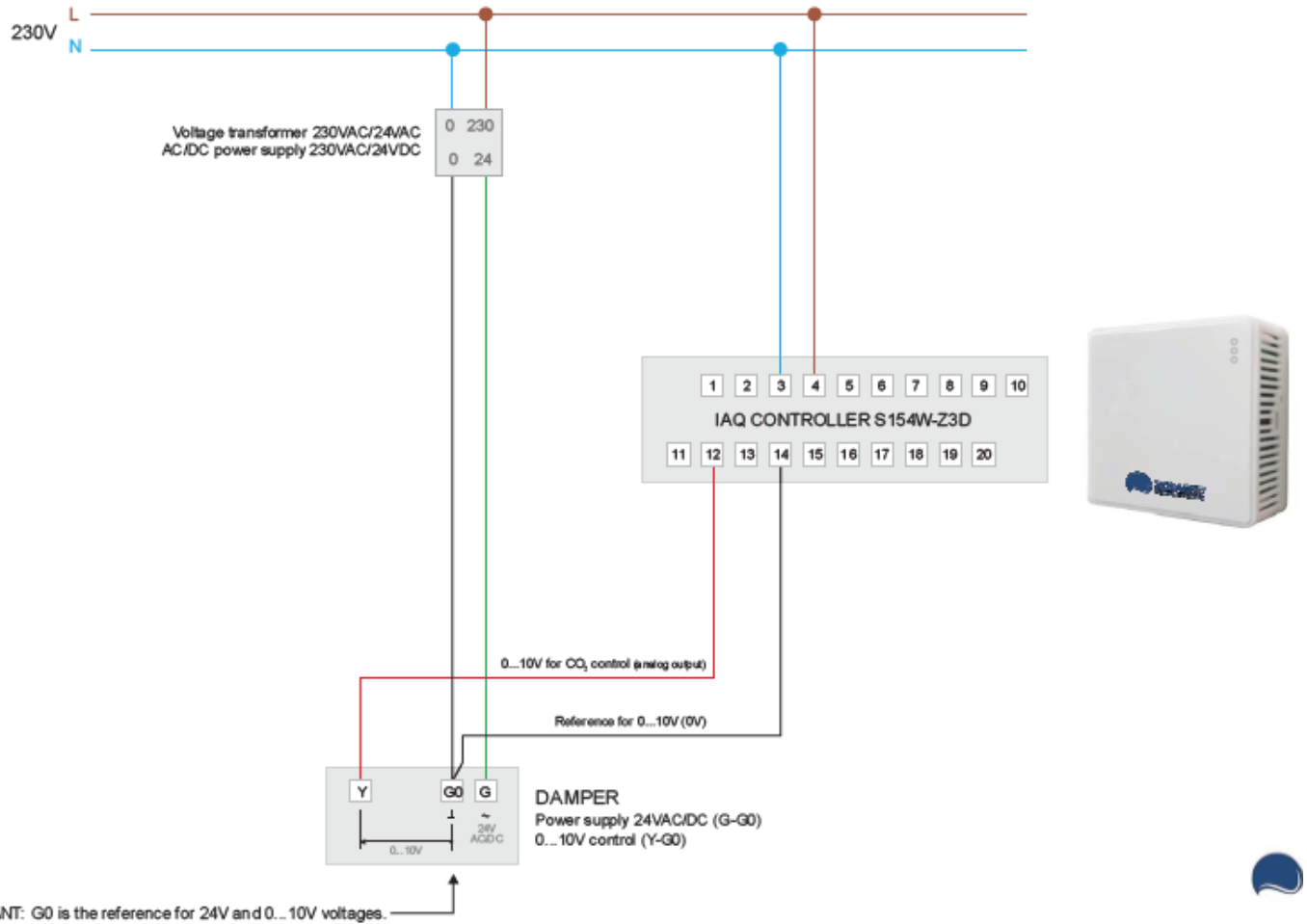
## Wiring diagram ZONAIR3D IAQ CONTROLLER





### Wiring diagram ZONAIR3D IAQ CONTROLLER and air renewal damper

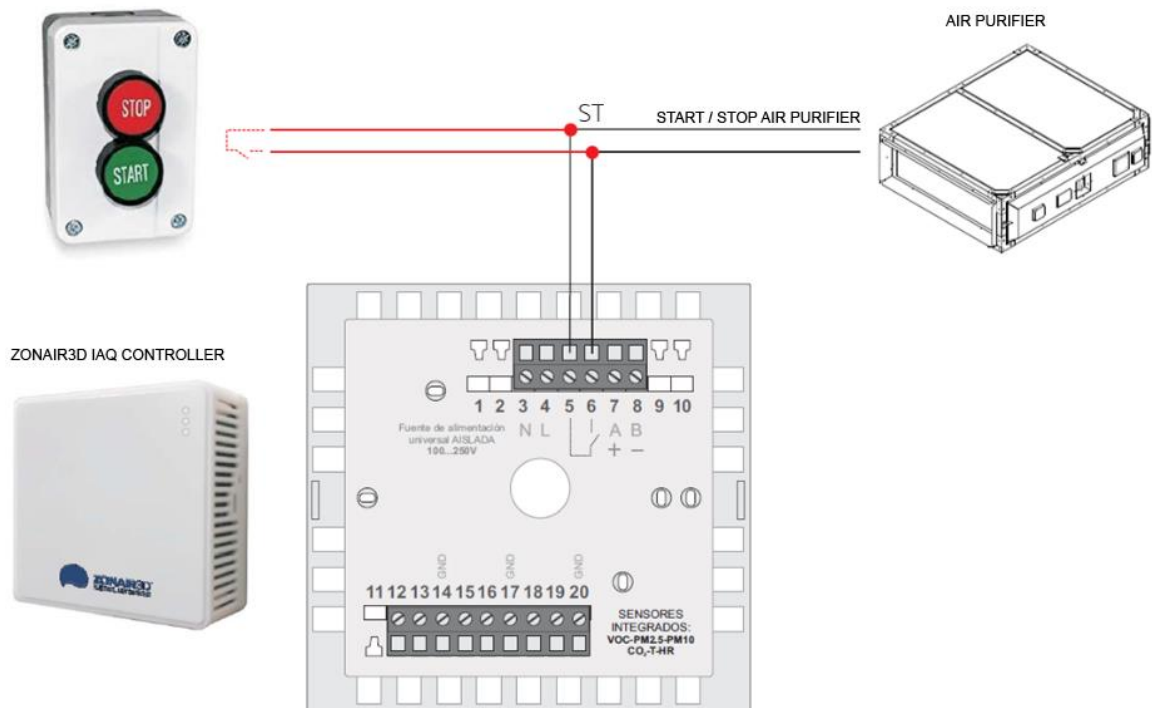
Air renewal damper control according to CO<sub>2</sub>. Controller connected to a 0...10V damper with 24VAC/DC power supply.



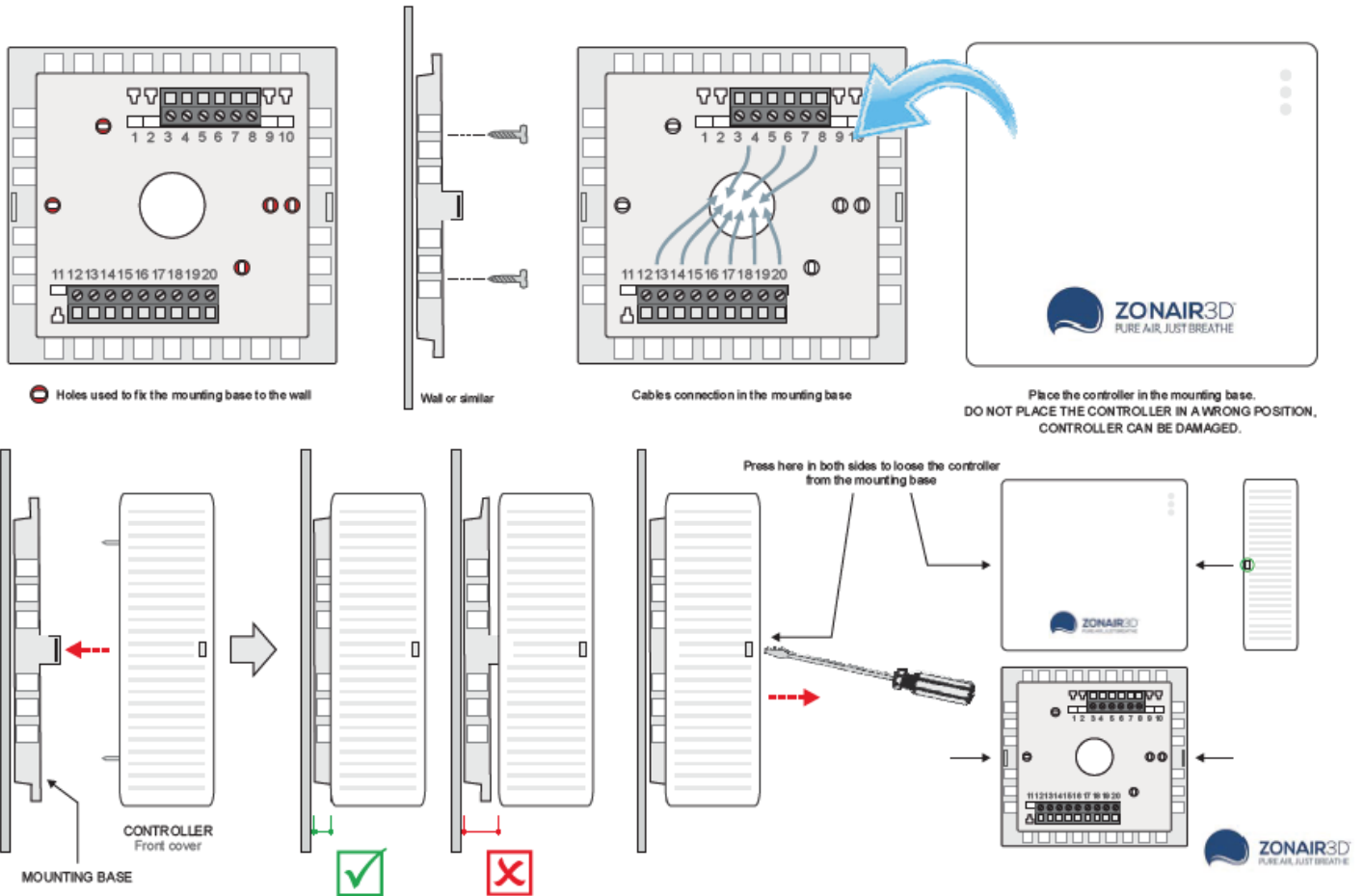
## Contact connection to force air purifier operation

### RECOMMENDATION

It is recommended to install a switch in the purifier that can force it into operation in case of the controller probe failure.



Fixing, mounting and connecting ZONAIR3D IAQ CONTROLLER





## COMMUNICATIONS PROTOCOL OF IAQ CONTROLLER S154W-Z3D

The protocol used is MODBUS RTU mode with the following characteristics:  
RS-485 (2 wire). Maximum number of items in the bus: 32 (1 master + 31 slaves).

- Baudrate: 9600 bits/s.
- Data format:
  - 8 bits.
  - No parity.
  - 1 stop bit.
- 16-bit registers (2 bytes).  
Variable format: High Word First [H/L].
- CRC according to polynomial  $x^{16} + x^{15} + x^2 + 1$ .

Note: It is advisable to perform retries in the communications. Timeout: 1s.

Note: Minimum time *Wait to send* recommended: 100ms.

## REGISTERS READING

For reading registers, it is possible to use command codes 3 or 4 with the following message structure:

**Slave number (1 byte) – Code (03 or 04) (1 byte) – Address of the 1<sup>st</sup> register to be read (00-XX) (2 bytes) – Number of registers to read (00-YY) (2 bytes) – CRC16 (2 bytes)**

*Maximum number of registers to read in the same message = 39 (from register 0 to register 38)*

The controller answer has the following message structure:

**Slave number (1 byte) – Code (03 or 04) (1 byte) – Number of data bytes (XX) (1 byte) – Data (AA-BB-CC-DD...) (2 bytes for each register) – CRC16 (2 bytes)**

*Number of data bytes = 2 \* Number of registers to read*

## REGISTERS WRITING

For writing registers, the command code 6 is used with the following message structure:

**Slave number (1 byte) – Code (06) (1 byte) – Address of the register to be written (00-XX) (2 bytes) – Data to be written in the register (AA-BB) (2 bytes) – CRC16 (2 bytes)**

The response of the controller has the following message structure:

**Slave number (1 byte) – Code (06) (1 byte) – Address of the written register (00-XX) (2 bytes) – Data written in the register (AA-BB) (2 bytes) – CRC16 (2 bytes)**

## ERRORS

If a code different than the reading or writing is used, the controller answer is:

**Slave number – Code OR 80Hex – Error code (1) – CRC16 (2 bytes)**

If you try to access a register with a non-existent address in reading or writing, the controller answer is:

**Slave number – Code OR 80Hex – Error code (2) – CRC16 (2 bytes)**

If you try to write to a read-only register, or you try to write an illegal value to a register, the controller answer is:

**Slave number – Code OR 80Hex – Error code (3) – CRC16 (2 bytes)**

## REGISTERS MAP

The unused bits of the following registers are 0.

Note: In some communications programs, the first word address is set to 400001, which means that the register 0 of the controller corresponds to the word address 400001. In summary, the word address to which corresponds each register of the controller is calculated by adding 1 to the register number of the register map described below.

### Device ID register

- **Register 0:** Device ID and Built-in sensors [read only].
  - High byte: 154. Controller always responds as a 16-bit binary sentinel point.
  - Low byte: Built-in sensors (63<sub>dec</sub>, 3F<sub>hex</sub>).

Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
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Bit 0: Temperature.  
 Bit 1: Relative humidity.  
 Bit 2: VOC.  
 Bit 3: CO<sub>2</sub>.  
 Bit 4: PM2.5.  
 Bit 5: PM10.  
 Bit 6: PM1.  
 Bit 7: PM4.

### Read/write registers

- **Register 1:** Slave address [read/write].
  - Values: 1 to 240, in 16-bit binary.  
*Default value: 1 [1].*  
*If the controller is connected to a serial communications network, it is not possible to configure any slave unit on the network in address 245, since the controller also reply to that address.*  
*BROADCASTING: Address 250 (the controller receives the communication, but does not reply. Broadcasting is allowed in all writing registers).*
- **Register 2:** Type of control and type of outputs [read/write].
  - High byte: Type of control.
    - 0: VOC.
    - 1: PM2.5.
    - 2: PM10.
    - 3: VOC + PM2.5.
    - 4: VOC + PM10.
    - 5: PM2.5 + PM10.
    - 6: VOC + PM2.5 + PM10.
    - Default value: 3 [VOC + PM2.5].*
  - Low byte: Type of outputs.
    - 0: Contact relay N.O. + 0...10V analog outputs.
    - 1: Contact relay N.O. + 0...1V analog outputs.
    - 2: Contact relay N.C. + 0...10V analog outputs.
    - 3: Contact relay N.C. + 0...1V analog outputs.
    - Default value: 0 [Contact relay N.O. + 0...10V analog outputs].*
- **Register 3:** Type of on/off [read/write].
  - 0: Local on/off (on/off according to digital input).
  - 1: Remote on/off (on/off according to serial communication).  
*Default value: 0 [Local on/off].*
- **Register 4:** Remote on/off [read/write].
  - 0: Off.
  - 1: On.  
*Default value: 0 [Off].*

- **Register 5:** VOC setpoint OMS/WELL [read/write].
  - Values: 0,00ppm to 30,00ppm, multiplied by 100 in 16-bit binary.  
*Default value: 130 [1,30ppm].*
- **Register 6:** VOC setpoint EUROPE [read/write].
  - Values: 0,00ppm to 30,00ppm, multiplied by 100 in 16-bit binary.  
*Default value: 130 [1,30ppm].*
- **Register 7:** VOC setpoint ASIA [read/write].
  - Values: 0,00ppm to 30,00ppm, multiplied by 100 in 16-bit binary.  
*Default value: 130 [1,30ppm].*
- **Register 8:** VOC hysteresis [read/write].
  - Values: 0,10ppm a 5,00ppm, multiplied by 100 in 16-bit binary.  
*Default value: 30 [0,30ppm].*
- **Register 9:** Software filtering for VOC [read/write].
  - High byte: Upper limit.  
Values: +1 to +20 in 16-bit binary.  
*Default value: 4 [+4].*
  - Low byte: Lower limit.  
Values: -1 to -20 in 16-bit binary.  
*Default value: 2 [-2].*
- **Register 10:** PM2.5 setpoint OMS/WELL [read/write].
  - Values: 0 $\mu\text{g}/\text{m}^3$  to 1000 $\mu\text{g}/\text{m}^3$ , in 16-bit binary.  
*Default value: 10 [10 $\mu\text{g}/\text{m}^3$ ].*
- **Register 11:** PM2.5 setpoint EUROPE [read/write].
  - Values: 0 $\mu\text{g}/\text{m}^3$  to 1000 $\mu\text{g}/\text{m}^3$ , in 16-bit binary.  
*Default value: 25 [25 $\mu\text{g}/\text{m}^3$ ].*
- **Register 12:** PM2.5 setpoint ASIA [read/write].
  - Values: 0 $\mu\text{g}/\text{m}^3$  to 1000 $\mu\text{g}/\text{m}^3$ , in 16-bit binary.  
*Default value: 35 [35 $\mu\text{g}/\text{m}^3$ ].*
- **Register 13:** PM2.5 hysteresis [read/write].
  - Values: 1 $\mu\text{g}/\text{m}^3$  to 100 $\mu\text{g}/\text{m}^3$ , in 16-bit binary.  
*Default value: 5 [5 $\mu\text{g}/\text{m}^3$ ].*
- **Register 14:** PM10 setpoint OMS/WELL [read/write].
  - Values: 0 $\mu\text{g}/\text{m}^3$  to 1000 $\mu\text{g}/\text{m}^3$ , in 16-bit binary.  
*Default value: 20 [20 $\mu\text{g}/\text{m}^3$ ].*
- **Register 15:** PM10 setpoint EUROPE [read/write].
  - Values: 0 $\mu\text{g}/\text{m}^3$  to 1000 $\mu\text{g}/\text{m}^3$ , in 16-bit binary.  
*Default value: 40 [40 $\mu\text{g}/\text{m}^3$ ].*
- **Register 16:** PM10 setpoint ASIA [read/write].
  - Values: 0 $\mu\text{g}/\text{m}^3$  to 1000 $\mu\text{g}/\text{m}^3$ , in 16-bit binary.  
*Default value: 70 [70 $\mu\text{g}/\text{m}^3$ ].*
- **Register 17:** PM10 hysteresis [read/write].
  - Values: 1 $\mu\text{g}/\text{m}^3$  to 100 $\mu\text{g}/\text{m}^3$ , in 16-bit binary.  
*Default value: 10 [10 $\mu\text{g}/\text{m}^3$ ].*
- **Register 18:** Software filtering for PM2.5 and PM10 [read/write].
  - High byte: Upper limit.  
Values: +1 to +200 in 16-bit binary.  
*Default value: 5 [+5].*
  - Low byte: Lower limit.

Values: +1 to +200 in 16-bit binary.  
Default value: 5 [-5].

- **Register 19:** PM2.5 and PM10 sensor settings [read/write].
  - High byte: Time between measures.  
Values: 5 to 200, in 16-bit binary.  
Time between measures = Value (5 to 200) \* 50 ms.  
Default value: 10 [0,5s].
 

5	250ms (0,25s)	0x0005
...		
10	500ms (0,5s)	0x000A
...		
100	5000ms (5s)	0x0064
...		
200	10000ms (10s)	0x00C8
  - Low byte: Sensor coefficient adjustment.  
Values: 30 to 200, in 16-bit binary.  
Default value: 100 [100].  
If this value is modified, the new value will be sent to the sensor when a reset happens (voltaje reset or Register 2=0xFF).  
**IMPORTANT:** The modification of this value may affect the measures of the particle sensor.
- **Register 20:** Digital inputs (functions) [read/write].
  - High byte: Local on/off contact.
    - If Register 3=0 (local on/off): On/off function.  
=0: Off when contact is opened, On when contact is closed.  
=1: Off when contact is closed, On when contact is opened.
    - If Register 3=1 (remote on/off): Forced off.  
=0: Off when contact is closed.  
=1: Off when contact is opened.
  - Default value: 0.
  - Low byte: Pressure switch/es for filter/s.  
=0: Clogged filter/s when contact is closed.  
=1: Clogged filter/s when contact is opened.  
Default value: 0 [Clogged filter/s when contact is closed].
- **Register 21:** Minimum stop time for air purifier [read/write].
  - Values: 5s to 1800s, in 16-bit binary.  
Default value: 30 [30s].
- **Register 22:** Minimum working time for air purifier [read/write].
  - Values: 5s to 1800s, in 16-bit binary.  
Default value: 180 [180s].
- **Register 23:** Operating hours (counter) [read/write]. 0 (reset) is the only value allowed to be written.
  - Values: 0h to 65000h, in 16-bit binary. The value 65000h does not overflow.  
Default value: 0 [0h].  
Note: The operation time is only increased when the ventilation is on,
- **Register 24:** CO<sub>2</sub> setpoint [read/write].
  - Values: 400ppm to 1500ppm, in 16-bit binary.  
Default value: 1200 [1200ppm].
- **Register 25:** CO<sub>2</sub> proportional band [read/write].
  - Values: 100ppm to 500ppm, in 16-bit binary.  
Default value: 400 [400ppm].

- **Register 26:** Temperature and relative humidity adjustments [read/write].

- High byte: Temperature offset.

Values: 0 [-5,0°C] to 100 [+5,0°C], in 16-bit binary.

Default value: Depending on the factory calibration.

-5,0°C	0x0000	0
0,0°C	0x0032	50
+5,0°C	0x0064	100

- Low byte: Humidity offset.

Values: 0 [-50%] to 100 [+50%], in 16-bit binary.

Default value: Depending on the factory calibration.

-50%	0x0000	0
0%	0x0032	50
+50%	0x0064	100

Note [EEPROM]: Values of the read/write registers are saved in EEPROM memory every time they are written.

#### Read-only registers

- **Register 27:** Controller status [read only].

- High byte: On/off status.

=0: Off.

=1: On.

- Low byte: Relay status.

=0: Stop.

=1: Working.

Contact relay status (opened/closed) depends on the configuration of the low byte on Register 2.

**IMPORTANT:** During the 10 min after a power up or a reset, the controller holds deactivated outputs. After this period of time, controller will start the operation with stabilized measures.

- **Register 28:** VOC [read only].

- Values: 0,00ppm to 30,00ppm, multiplied by 100 in 16-bit binary. 0,01ppm=10ppb, 0,1ppm=100ppb, 1ppm=1000ppb

0,00ppm	0x0000
30,00ppm	0x0BB8

- **Register 29:** PM2.5 [read only].

- Values: 0µg/m<sup>3</sup> to 1000µg/m<sup>3</sup>, in 16-bit binary.

0µg/m <sup>3</sup>	0x0000
1000µg/m <sup>3</sup>	0x03E8

- **Register 30:** PM10 [read only].

- Values: 0µg/m<sup>3</sup> to 1000µg/m<sup>3</sup>, in 16-bit binary.

0µg/m <sup>3</sup>	0x0000
1000µg/m <sup>3</sup>	0x03E8

- **Register 31:** CO<sub>2</sub> [read only].

- Values: 0ppm to 5000ppm, in 16-bit binary.

0ppm	0x0000
5000ppm	0x1388

- **Register 32:** Temperature [read only].

- Values: 0,0°C to 50,0°C, multiplied by 10 in 16-bit binary.

0,0°C	0x0000
50,0°C	0x01F4

- **Register 33:** Relative humidity [read only].

- Values: 0,0% to 100,0%, multiplied by 10 in 16-bit binary.

0,0%	0x0000
100,0%	0x03E8





- **Register 34:** Pollutant levels for VOC, PM2.5 and PM10; and air renewal output (CO<sub>2</sub>) [read only].
  - High byte: Pollutant levels for VOC, PM2.5 and PM10.

Bit 15	Bit 14	Bit 13	Bit 12	Bit 11	Bit 10	Bit 9	Bit 8
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Bit 8 (bit 0 of the high byte): VOC level.

- =0: Good.
- =1: Bad.

Bit 9 (bit 1 of the high byte): PM2.5 level.

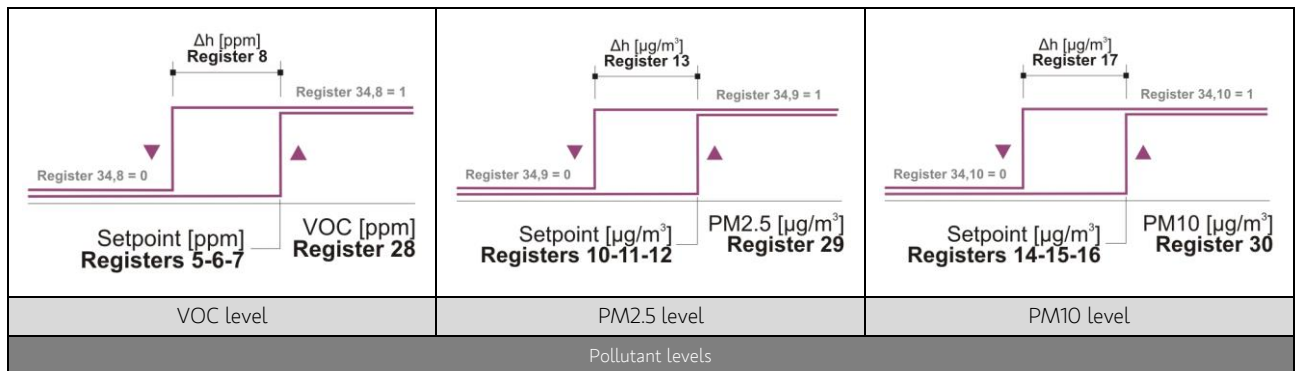
- =0: Good.
- =1: Bad.

Bit 10 (bit 2 of the high byte): PM10 level.

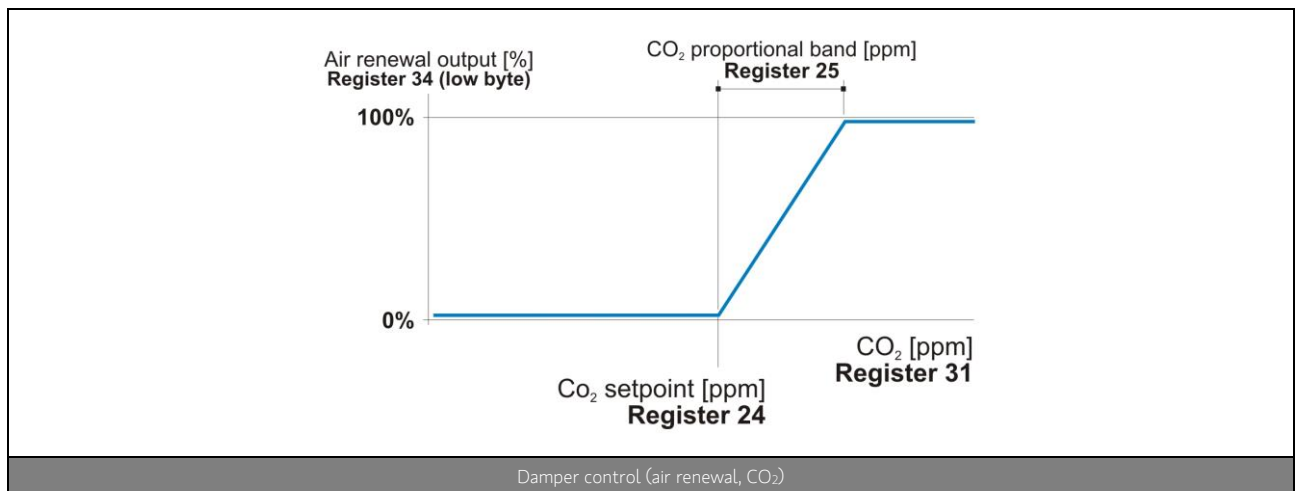
- =0: Good.
- =1: Bad.

Bit 15 (bit 7 of the high byte): Measure stabilization process (after power up or reset).

- =0: Stabilization process finished.
- =1: Stabilization process in progress 10min aprox.



- Low byte: Air renewal output (CO<sub>2</sub>).  
Values: 0%[0,0V]...100%[10,0V], in 16-bit binary.  
If controller is off, output is 0%.



- **Register 35:** Filter/s status and forced off [read only].
  - High byte: Current filter/s status.  
0: Clean filter/s.  
1: Clogged filter/s.

- Low byte: Forced off.  
0: Forced off is no active.  
1: Forced off is active.
- **Register 36:** Digital inputs status [read only].
  - High byte: Local on/off digital input.  
=0: Digital input opened.  
=1: Digital input closed.
  - Low byte: Pressure switch/es digital input for filter/s.  
=0: Digital input opened.  
=1: Digital input closed.
- **Register 37:** VOC sensor characteristics [read only].
  - High byte: Value of the digital potentiometer for VOC sensor.  
Values: 0 to 63, in 16-bit binary.
  - Low byte: Internal resistance  $R_o$  of VOC sensor.  
Values:  $0k\Omega$  to  $100k\Omega$ , in 16-bit binary.
- **Register 38:** Working mode and firmware version [read only].
  - High byte: Working mode.  
0: PROBE. Controller is only a probe.  
1: OMS/WELL.  
2: EUROPE.  
3: ASIA.



Working mode is configured by means of the microswitches 1 and 2 of the switch S1:

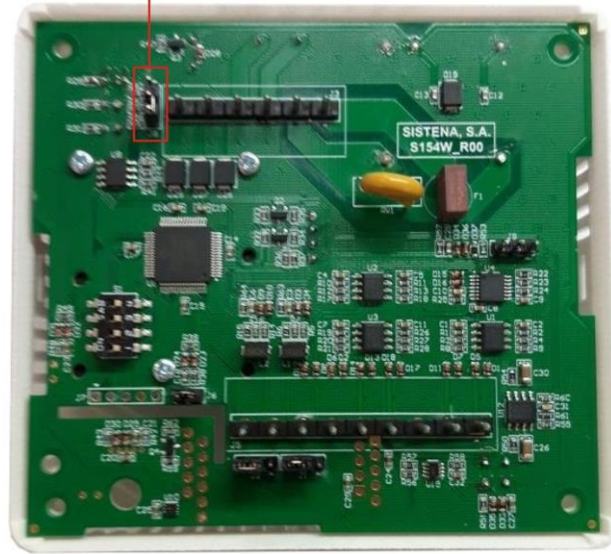
Microswitch 1	Microswitch 2	Working mode
OFF	OFF	PROBE
ON	OFF	OMS/WELL
OFF	ON	EUROPE
ON	ON	ASIA

- Low byte: Firmware version.  
Values: XX.X, multiplied by 10 in 16-bit binary.

IMPORTANT: During 2 or 3 minutes after a power up or a reset, controller do

Configuration of the bus termination resistor

**R**  **J8: Bus termination resistor jumper.**  
**NR**  **NR: Not connected (factory setting)**  
**R:** Connected



Bus termination resistor



## Zonair3D™ European Warranty

### A) LEGAL WARRANTY

This warranty is granted notwithstanding and in addition to the rights granted to the consumer against the seller by Royal Legislative Decree 1 of 16 November 2007, approving the consolidated text of the General Defence of Consumers and Users Act [Ley General para la Defensa de Consumidores y Usuarios], as amended by Royal Decree-Law 7 of 27 April 2021, transposing European Union directives on competition, prevention of money laundering, credit institutions, telecommunications, tax measures, prevention and repair of environmental damage, posting of workers in the provision of transnational services and consumer protection (hereinafter, "LDCU"), as well as other complementary and implementing regulations. Therefore, all legal rights given to the consumer by virtue of applicable regional, Spanish or European law are expressly confirmed.

The warranty contained herein will apply only when the products are sold to consumers and is valid in the following countries: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of Ireland, Romania, Slovakia, Slovenia, Spain, Sweden and Switzerland. However, this clause shall apply notwithstanding any limitations and conditions that may apply to the warranty in the country in which it is exercised, provided the product was purchased in one of the countries referred to above.

This Zonair3D™ product is under warranty for three (3) years from when it is delivered. During that period, Zonair3D™ will be liable for any non-conformity of the product with that set forth the agreement, in accordance with the LDCU. Consequently, during this period, the consumer is entitled to request the repair or replacement of the purchased product, except in cases in which one of the two options is objectively impossible or, in comparison with the other remedy, would entail disproportionate costs for the retailer (due to being considerably higher than the costs of the other option), which will be the case when this option would impose an unreasonable expense for the seller, taking into account: a) the value that the goods would have had if there had been no non-conformity; b) the materiality of the non-conformity. In the same way, it will be deemed disproportionate when the alternative remedy could be performed without major inconvenience to the consumer and the user.

Furthermore, in cases in which the consumer cannot require that the product be repaired or replaced or when repair or replacement has not occurred within a reasonable time or without major inconvenience to the consumer and user, he/she may choose between requesting a price reduction or termination of the agreement. However, the agreement cannot be terminated when the non-conformity is of minor significance.

Both options will be free of charge for the consumer and user, including, when appropriate, the labour and materials required for this purpose. In all cases, warranty repairs must be performed by the Official Technical Assistance Service of Zonair3D™.

### B) EXERCISING THE LEGAL WARRANTY:

In order to exercise the legal warranty regulated in this clause, the consumer must provide documents proving the product's delivery date (such as the purchase receipt, invoice, delivery note or a stamped and dated warranty card). Under no circumstances will documents that have been falsified or tampered with in any way be accepted as proof.

The consumer must contact the company within the period indicated above through the following contact details:

ZONAIR3D

C/CERDANYA, 7

08140 - CALDES DE MONTBUI

BARCELONA (SPAIN)

Tel: + 34 93 551 03 40

Website: [www.zonair3d.com](http://www.zonair3d.com)

E-mail: [zonair3d@zonair3d.com](mailto:zonair3d@zonair3d.com)



○ EXCLUSIONS:

The installation or de-installation of the product, as well as all periodic servicing or maintenance work, are expressly excluded from the warranty. Likewise, it is expressly stipulated that the Legal Warranty does not cover the maintenance or replacement of the product's filters, nor does it cover damage that has been directly caused by a lack of maintenance of the filters.

The legal warranty does not cover the replacement of parts that may be required due to wear and tear or breakage of mechanisms, rubber parts, casings, plastics, glass or bulbs, or damage caused to the product during transport.

In addition, the product will not be covered by the Legal Warranty in the following cases:

- a) If the product has been totally or partially opened, disassembled, manipulated or repaired by a person not authorised by Zonair3D™.
- b) If the non-conformity is the result of improper installation or use of the product that is abusive, improper or not in accordance with the instructions for use and maintenance given by Zonair3D™.
- c) If the non-conformity was caused by poor maintenance of the product by the user.
- d) In the event of aesthetic damage or other damage caused to the external finish of the product, as well as damage caused by abuse, misuse, force majeure or accidental damage, damage caused by the use of accessories, chargers, consumables, accessories, tools, equipment, services, parts, articles, applications, installations, repairs, external wiring or connectors not supplied or authorised by Zonair3D™.
- e) Damage caused by connections to improper power line current, voltage, surges or fluctuations.
- f) Damage caused by not handling or maintaining the product in accordance with the instructions provided by Zonair3D™.
- g) Damage caused by normal wear and tear of the product.
- h) Damage produced by any cause not attributable to the manufacture or design of the product.



**ZONAIR3D**<sup>™</sup>  
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[www.zonair3d.com](http://www.zonair3d.com)