



Airobot ventilation unit Modbus configuration

Overview

Airobot ventilation units are designed to seamlessly integrate into modern smart home and building automation systems. To enable external control and monitoring, Airobot supports communication via the Modbus protocol, one of the most widely used open standards in industrial automation. Both Modbus RTU (serial communication) and Modbus TCP (Ethernet-based communication) are supported, offering flexibility for different project requirements.

Modbus TCP

Modbus TCP allows communication over a local area network (LAN) and is the preferred method for most modern integrations.

Connection

- All Airobot ventilation units come standard with Ethernet functionality.
- Connect an Ethernet cable to the RJ45 port on the device enclosure (typically located near the power cable input).
- If the RJ45 port is not present on the device enclosure, connect the Ethernet cable directly to the “LAN” marked socket on the controller board.

Activation

- Modbus TCP is disabled by default. To enable it:
- Go to: Menu > Settings > Other > Modbus TCP
- Set Modbus TCP to ON
- The device will reboot

The IP address assigned by your router will now be saved as a static IP.

Note: If no controller is available, contact Airobot customer support for remote activation (internet connectivity required).

Modbus RTU

Modbus RTU is enabled by default and provides a serial communication option.

Note: The VE1 remote controller cannot operate simultaneously with Modbus RTU. If a controller is necessary, please use Modbus TCP instead.

Note: A special 4-pin connector is not included with the device. It is included with VE1 controller only.

Connection

- Connect the A and B wires to the 4-pin “LCD” connector on the controller board (follow the marking on the board).
- Alternatively, use the 4-pin connector located on the device enclosure near the power cable input.

Modbus RTU Configuration

- Modbus Slave Address: 1



- Baud Rate: 230400
- Stop Bits: 1
- Parity: None

Read data

If data is more than 16bit then it will divide into two Modbus register.

Modbus register	Description	Min	Max	Unit
1000	Device firmware version	256	999	
1001	Extract (room) air temperature	-999	999	°C
1002	Supply air temperature	-999	999	°C
1003	Outside air temperature	-999	999	°C
1004	Exhaust air temperature	-999	999	°C
1005	Extra temperature sensor (optional, required if external humidifier)	-999	999	°C
1006	Extract air humidity	-999	999	RH %
1007	Supply air humidity	-999	999	RH %
1008	Outside air humidity	-999	999	RH %
1009	Exhaust air humidity	-999	999	RH %
1010	Extra humidity sensor (optional, required if external humidifier)	-999	999	RH %
1011	Carbon dioxide level (CO ₂)	0	5000	ppm
1014	Supply fan level	0	10	
1015	Extract fan level	0	10	
1016	Supply fan pulses per minute	0	9999	RPM
1017	Extract fan pulses per minute	0	9999	RPM
1018	Device working time since last reset	0	4294967 295	ms
1026	Sum of errors FIRE_ALARM = 1 FAN1 = 2 FAN2 = 4 SENSOR_1 = 8 SENSOR_2 = 16 SENSOR_3 = 32 SENSOR_4 = 64 SENSOR_5 = 128 SENSOR_CO2 = 256 HEATER = 512 LOW_SUPPLY = 1024 FILTER = 1048	0	4294967 295	
1028	Server Connected	0	1	
1029	VOC	0	500	Index
1031	PM2.5 (optional sensor)	0	999999	µg/m ³
1034	Heat recovery temperature efficiency	0	100	%
1051	Supply air airflow (only if device equipped with constant flow feature)	0	999	m ³ /h
1052	Extract air airflow (only if device equipped with constant flow feature)	0	999	m ³ /h



Read & write data

It is **only allowed** to set values in Min - > Max range, otherwise it might cause unexpected behaviour or damage the device.

Modbus register	Description	Min	Max	Default value
2000	Device working mode 1 – Automatic mode 2 – Manual mode	1	8	1
2003	Setpoint humidity level	50	950	600
2004	Setpoint CO ₂ level (for extract air sensor)	450	2000	800
2005	Manual mode fan working level	0	10	5
2007	Overpressure (fireplace) mode fan working level	0	10	5
2009	Settings Flag (sum of Active Flags)	0	65535	1
	POWER_ON		1	
	BOOST_ON		16	
	OVERPRESSURE_ON		32	
	REBOOT		64	
2010	Boost mode timeout (seconds)	180	3600	1800
2012	Overpressure / Fireplace mode timeout (seconds)	180	3600	1800
2014	UI Flags (sum of Active Flags)	0	65535	9
	FILTER_ALERT		16	
2015	UI Flags1 (sum of Active Flags)	0	65535	8
	MODBUS_ON (Modbus TCP)		16	
2017	Filter reminder interval (hours)	720	8760	4320
2018	Filter reminder time elapsed - set value 0 to reset filter timer	0	65535	0
2034	Setpoint VOC level	0	500	200
2064	Setpoint PM2.5 level	0	999	50

Read & write Coil data

It is **only allowed** to set values 0-1 range.

Modbus register	Description	Min	Max	Default value
4000	POWER_ON – stops ventilation	0	1	1
4003	BYBASS_ON - enables bypass automatic mode	0	1	0
4004	BOOST_ON – activates boost mode if 1	0	1	0
4005	OVERPRESSURE_ON – activates overpressure (fireplace) mode if 1	0	1	0
4006	REBOOT – reboot device if 1	0	1	0
4020	FILTER_ALERT (read only) - device will set value to 1 if filter replacement required	0	1	0
4027	HUMIDITY_CONTROL_ENABLE - enable humidity setpoint control function	0	1	0
4030	VOC_CONTROL_ENABLE - enable VOC setpoint	0	1	0



4031	control function			
	PM_CONTROL_ENABLE - enable PM2.5 setpoint	0	1	0
4036	control function			
	MODBUS_ON - activates Modbus TCP if 1	0	1	0