

ModBus RTU

L8000009-B 23.02.2023

01 Introduction

The ModBus interface on DUCO systems (via the Communication Print option on a DucoBox¹ or standard on an IQ unit) allows an external controller or building management system to communicate with the DUCO ventilation system. In this way, one can request info about the ventilation network, or via write parameters or holding registers read or adjust settings. The supported protocol is ModBus RTU over RS-485.

The following settings are by default:

→ 9600 bps baud rate → 8 data bits, 1 stop bit, no parity

If different settings are necessary, they can be changed via the Display menu.

The DucoBox Silent Connect, Focus, Energy and the IQ Unit support the following ModBus subset:

HEX	DEC	SUPPORT FUNCTION
0x03	3	Read multiple HOLDING registers
0x04	4	Read multiple INPUT registers
0x06	6	Write single HOLDING register
0x10	16	Write multiple HOLDING registers

Here, input registers are 16-bit read-only variables and holding registers are 16-bit read/write variables.

The ModBus address can be set via the Display menu (see information sheet L8000015) or the Duco Network Tool.



Due to a difference in some ModBus implementations compared to the official specification (on which our implementation is based), an address shift of '1' may occur for the read and write parameters.

E.g.: read address '20' will become '19'.

This can be solved by setting the >RegOffs parameter to '1' using the Display menu or the Duco Network Tool.

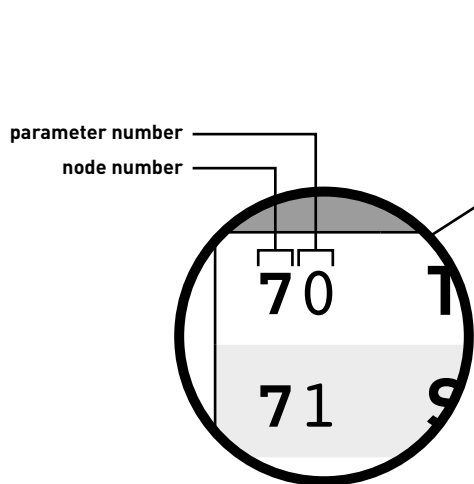
02 Working with registers / parameters

The external control unit communicates with each component (node) through read parameters (**INPUT**) and write parameters (**HOLDING**).

- Read parameters (**INPUT**): type of component, extract level, CO₂ value, moisture content, etc.
- Write parameters (**HOLDING**): target extract level, control all window ventilators, target level window ventilator, etc.

Each component can contain a maximum of 10 read and 10 write parameters. This collection of values is bundled together in a 'table' where information can be extracted or inserted. Below is an example a 'table' like this, with its 2 x 10 'parameters' for a component (CO₂ Control valve) with node 7. Each node together with its parameters is assigned a code: **xxx**y (**xxx**=node number, **y**=parameter number). **70**, **71** etc. in this example.

This allows all values to be read and controlled from the external control unit. There are specific parameters for each component.



INPUT (read parameter)		HOLDING (write parameter)	
70	Type of Module	70	Target value (%)
71	Status	71	CO ₂ setpoint (ppm)
72	Ventilation position (%)	72	
73	Indoor temp. (°C)	73	
74	CO ₂ value (ppm)	74	Flow (m ³ /h)
75		75	Auto min. (%)
76		76	Auto max. (%)
77		77	
78		78	
79	Zone identification	79	Action

03 Overview of parameters

The parameters are classified according to the same structure for each component and grouped by category:

COMPONENT e.g. node 1			
INPUT (read parameter)		HOLDING (write parameter)	
10	Type of module Indicates component type	10	Ventilation target value Overrules the ventilation setting for the zone in which the component is located
11	Ventilation status Indicates the active setting for the ventilation system in the zone in which the component is located.	11	Change settings Changes the component settings. Settings will vary depending on the type of component
12		12	
13	Sensor values and component status Depending on the type of component, indicates the measured values from any built-in sensors and/or the status of the component itself.	13	
14		14	
15		15	
16		16	
17		17	
18		18	
19	Localisation number Indicates a number of a group of components belonging together	19	Action Simulates manual system control

You will find an explanation of most parameters in the following tables per component (DucoBox, Control valve, User Control/Sensor, ...).

You will find an explanation for some general parameters present in each type of component in the list below.

INPUT '0' Type of module

Indicates which type of component is involved:

10 = master unit (e.g. DucoBox Focus, DucoBox Energy, IQ-unit, etc.)
11 = Sensorless control valve or 2-Zone control valve
12 = CO ₂ Control valve
13 = Humidity Control valve
14 = Room operating unit (with or without battery)
15 = CO ₂ Sensor
16 = Humidity Sensor
17 = Tronic window ventilator
18 = Switch Sensor
21 = iAV Sensorless (control valve)
22 = iAV Humidity (control valve)
23 = iAV CO ₂ / iAV Toilet (control valve)
24 = Humidity / CO ₂ Control valve

INPUT '1' Status

Indicates the active setting for the ventilation system **in the zone** in which the component is located.

0 = Auto
1 = 10 minutes in high setting
2 = 20 minutes in high setting
3 = 30 minutes in high setting
4 = Manual low setting
5 = Manual medium setting
6 = Manual high setting
7 = Nobody home setting / Unoccupied setting
8 = Permanent low position
9 = Permanent middle position
10 = Permanent high position
99 = Error



NOTE: if a target value has been set using the **HOLDING '0'** parameter, the **INPUT '1'** status parameter will not reflect the correct setting because the actual ventilation setting will have been overruled in that case. The actual ventilation setting (expressed as a percentage) can be read out using the **INPUT '2'** ventilation setting parameter.

How to control ventilation via ModBus?

The ventilation mode can be set via ModBus, either with the **target value parameter** **HOLDING '0'** as with the **action parameter** **HOLDING '9'**. Both methods have advantages and disadvantages. The ventilation setting is determined in all cases by the last action via a ModBus or a remote control.

HOLDING '0' Target value

The ventilation setting for the zone is overruled with the **HOLDING '0'** target value parameter. **Advantage:** the ventilation setting can be determined with greater precision than using the fixed low, medium and high manual presets. **Disadvantage:** as a result, the remote control(s) in this zone will be unable to show the correct setting.



NOTE: if a target value parameter has been set for underlying components, it is possible for ventilation in this zone to run out of balance.

Overruling will cease if...

- ... the system is switched to a different setting via a user control
- ... the ModBus **HOLDING '9'** action parameter is altered
- ... the ModBus **HOLDING '0'** target value parameter is set to '-1'

The actual ventilation setting can be read out via the **INPUT '2'** ventilation setting parameter.

HOLDING '9' Action

An action on a component is simulated via the **HOLDING '9'** action parameter (e.g.: pressing a button on a user control). The action parameter is therefore suitable for the use of alternative control methods (e.g. via app on a smartphone). **Advantage:** the user controls in the system indicate the correct ventilation setting. **Disadvantage:** the settings are limited to the fixed manual presets.

The values '0' and '1' serve to visualise the component to be operated by lighting up the LED in blue:

- 0 = Node visualisation OFF
- 1 = Node visualisation ON (permanently, until the value is reset to 0 or the ventilation system is restarted)

The values '2' through '6' included determine the ventilation setting by simulating a control:

- 2 = Zone to **temporary** manual setting 1 (15 minutes for extraction and 8 hours for supply)
- 3 = Zone to **temporary** manual setting 2 (15 minutes for extraction and 8 hours for supply)
- 4 = Zone to **temporary** manual setting 3 (15 minutes for extraction and 8 hours for supply)
- 5 = Zone to automatic setting
- 6 = Nobody home setting / Unoccupied setting



NOTE: possible values in the **INPUT** '1' status parameter are **not equal** to the possible values of the **HOLD-ING** '9' action parameter. For example: 'manual low setting' status is value '2' in the action parameter and value '4' in the status parameter. You will find all possible status parameter values in the table for each component.

DucoBox e.g. node 1					
INPUT (read parameter)			HOLDING (write parameter)		
10	Type of Module	10 = DucoBox	10	Target value (%)	Overruling the ventilation setting of the entire system. Values: 0-100% (lowest to highest setting) in steps of 5 -1 = overruling off Standard = -1
11	Status	0 = Auto 1 = 10 minutes in high setting 2 = 20 minutes in high setting 3 = 30 minutes in high setting 4 = Manual low setting 5 = Manual medium setting 6 = Manual high setting 7 = Nobody home setting / Unoccupied setting 8 = Permanent low position 9 = Permanent middle position 10 = Permanent high position 99 = Error	11		
12	Ventilation position (%)	Actual ventilation setting of the entire system	12		
13	Current power (W)		13		
14	Average power (W)		14		
15	Maximum power (W)		15	Auto min. (%)	Minimum ventilation setting in automatic mode. Values: 0-100% (lowest to highest setting) in steps of 5 Standard = 10%
16			16	Auto max. (%)	Maximum ventilation setting in automatic mode. Values: 0-100% (lowest to highest setting) in steps of 5 Standard = 100%
17			17		
18			18		
19	Localisation number	Indicates a number of a group of components belonging together (used for Qbus, among others).	19	Action	0 = Node display OFF 1 = Node display ON 2 = Zone to temporary manual setting 1 3 = Zone to temporary manual setting 2 4 = Zone to temporary manual setting 3 5 = Zone to automatic setting 6 = Nobody home setting / Unoccupied setting

Control valve e.g. node 2

INPUT (read parameter)			HOLDING (write parameter)		
20	Type of Module	11 = Sensorless Control valve 12 = CO ₂ Control valve 13 = Humidity Control valve 24 = Humidity / CO ₂ Control valve	20	Target value (%)	Overruling the ventilation setting for the zone in which the component is located. Values: 0-100% (lowest to highest setting) in steps of 5 -1 = overruling off Standard = -1
21	Status	0 = Auto 1 = 10 minutes in high setting 2 = 20 minutes in high setting 3 = 30 minutes in high setting 4 = Manual low setting 5 = Manual medium setting 6 = Manual high setting 7 = Nobody home setting / Unoccupied setting 8 = Permanent low position 9 = Permanent middle position 10 = Permanent high position 99 = Error	21	CO ₂ setpoint (ppm)	(CO ₂ Control valve only) The desired CO ₂ concentration in parts per million. Values: 0-2000 ppm in steps of 10 Standard = 800 ppm
22	Ventilation position (%)	Actual ventilation setting for the zone in which the component is located	22	RH Setpoint (%)	(Humidity Control valve only) The desired moisture content. Values: 0-100% in steps of 5 Standard = 60%
23	Indoor temp. (°C x 10)	The measured indoor temperature x 10 Example: <input type="text" value="210"/> = 21 °C	23	RH Delta (on/off)	Whether or not Delta control can be activated. This delta control increases the ventilation if there is a certain increase in the moisture content over a period of time (e.g. 10% in 5 seconds). Because this may cause the ventilation system to overreact, it is off by default. Values: 0 = off, 1 = on Standard = 0 (= off)
24	CO ₂ value (ppm)	(CO ₂ Control valve only) Measured CO ₂ value	24	Flow (m³/h)	Here, the desired flow rate of this zone can be set in m³/h (standard = depending on type of valve → bathroom / laundry room - toilet - living room / kitchen - bedroom) Values: 20-200 m³/h in steps of 5 Standard = depending on type of control valve
25	RH value (% x 100)	(Humidity Control valve only) The measured moisture content x 100 Example: <input type="text" value="4974"/> = 49.74%	25	Auto min. (%)	Minimum ventilation setting in automatic mode. Values: 0-100% (lowest to highest setting) in steps of 5 Standard = 10%
26			26	Auto max. (%)	Maximum ventilation setting in automatic mode. Values: 0-100% (lowest to highest setting) in steps of 5 Standard = 100%
27			27		
28			28		
29	Localisation number	Indicates a number of a group of components belonging together (used for Qbus, among others).	29	Action	0 = Node display OFF 1 = Node display ON 2 = Zone to temporary manual setting 1 3 = Zone to temporary manual setting 2 4 = Zone to temporary manual setting 3 5 = Zone to automatic setting 6 = Nobody home setting / Unoccupied setting

Control valve 2-Zone (DucoBox Energy) e.g. Zone 1 = node 67 (Zone 2 = node 68)

INPUT (read parameter)			HOLDING (write parameter)		
670	Type of Module	11 = 2-Zone Control Valve	670	Target value (%)	Overruling the ventilation setting for the zone in which the component is located. Values: 0-100% (lowest to highest setting) in steps of 5 -1 = overruling off Standard = -1
671	Status	0 = Auto 1 = 10 minutes in high setting 2 = 20 minutes in high setting 3 = 30 minutes in high setting 4 = Manual low setting 5 = Manual medium setting 6 = Manual high setting 7 = Nobody home setting / Unoccupied setting 8 = Permanent low position 9 = Permanent middle position 10 = Permanent high position 99 = Error	671		
672	Ventilation position (%)	Actual ventilation setting for the zone in which the component is located.	672	RH Setpoint (%)	[Humidity Control valve only] The desired moisture content. Values: 0-100% in steps of 5 Standard = 60%
679	Localisation number	Indicates a number of a group of components belonging together (used for Qbus, among others).	679	Action	0 = Node display OFF 1 = Node display ON 2 = Zone to temporary manual setting 1 3 = Zone to temporary manual setting 2 4 = Zone to temporary manual setting 3 5 = Zone to automatic setting 6 = Nobody home setting / Unoccupied setting

User controller / sensor e.g. node 3

INPUT (read parameter)			HOLDING (write parameter)		
30	Type of Module	14 = User control (with or without battery) 15 = CO ₂ Sensor 16 = Humidity Sensor	30	Target value (%)	Overruling the ventilation setting for the zone in which the component is located. Values: 0-100% (lowest to highest setting) in steps of 5 -1 = overruling off Standard = -1
31	Status	0 = Auto 1 = 10 minutes in high setting 2 = 20 minutes in high setting 3 = 30 minutes in high setting 4 = Manual low setting 5 = Manual medium setting 6 = Manual high setting 7 = Nobody home setting / Unoccupied setting 8 = Permanent low position 9 = Permanent middle position 10 = Permanent high position 99 = Error	31	CO ₂ Setpoint (ppm)	(CO ₂ Sensor only) The desired CO ₂ concentration in parts per million. Values: 0-2000 ppm in steps of 10 Standard = 800 ppm
32			32	RH Setpoint (%)	The desired moisture content. Values: 0-100% in steps of 5 Standard = 60%
33	Indoor temp. (°C x 10)	(not with battery) The measured indoor temperature x 10 Example: <input type="text" value="210"/> = 21 °C	33	RH Delta (on/off)	Whether or not Delta control can be activated. This delta control increases the ventilation if there is a certain increase in the moisture content over a period of time (e.g. 10% in 5 seconds). Because this may cause the ventilation system to overreact, it is off by default. Values: 0 = off, 1 = on Standard = 0 (= off)
34	CO ₂ value (ppm)	(CO ₂ Sensor only) Measured CO ₂ value	34	Button 1 (%)	Value of button 1. Values: 0-100% in steps of 5 Standard = 10%
35	RH value (% x 100)	(Humidity Sensor only) Measured moisture content x 100 Example: <input type="text" value="4974"/> = 49.74%	35	Button 2 (%)	Value of button 2. Values: 0-100% in steps of 5 Standard = 50%
36			36	Button 3 (%)	Value of button 3. Values: 0-100% in steps of 5 Standard = 100%
37			37	Manual time (min.)	Duration of manual mode. This will depend on whether or not Tronic window ventilators are linked to the Room operating unit. Values: 5-9995 min. in steps of 5 Standard = 15 min. if linked to extraction 480 min.(= 8 hours) if linked to supply
38			38		
39	Localisation number	Indicates a number of a group of components belonging together (used for Qbus, among others).	39	Action	0 = Node display OFF 1 = Node display ON 2 = Zone to temporary manual setting 1 3 = Zone to temporary manual setting 2 4 = Zone to temporary manual setting 3 5 = Zone to automatic setting 6 = Nobody home setting / Unoccupied setting

Box sensor (DucoBox Silent Connect) e.g. node 137/138

INPUT (read parameter)			HOLDING (write parameter)	
1370	Type of Module	15 = CO ₂ Sensor 16 = Humidity Sensor	1370	
1371			1371	CO ₂ Setpoint (ppm) [CO ₂ Sensor only] The desired CO ₂ concentration in parts per million. Values: 0-2000 ppm in steps of 10 Standard = 800 ppm
1372			1372	RH Setpoint (%) The desired moisture content. Values: 0-100% in steps of 5 , i.e. 50 instead of 5000! Standard = 60 %
1373	Indoor temp. (°C x 10)	The measured indoor temperature x 10 Example: <input type="text" value="210"/> = 21 °C	1373	RH Delta (on/off) Whether or not Delta control can be activated. This delta control increases the ventilation if there is a certain increase in the moisture content over a period of time (e.g. 10% in 5 seconds). Because this may cause the ventilation system to overreact, it is off by default. Values: 0 = off, 1 = on Standard = 0 (= off)
1374	CO ₂ value (ppm)	(CO ₂ Sensor only) Measured CO ₂ value	1374	
1375	RH value (% x 100)	(Humidity Sensor only) Measured moisture content x 100 Example: <input type="text" value="4974"/> = 49.74%	1375	
1376			1376	
1377			1377	
1378			1378	
1379	Localisation number	Indicates a number of a group of components belonging together (used for Qbus, among others).	1379	

Humidity Box Sensor (DucoBox Energy) e.g. node 57

INPUT (read parameter)			HOLDING (write parameter)	
570	Type of Module	16 = Humidity Box sensor	570	
571			571	
572			572	RH Setpoint (%) The desired moisture content. Values: 0-100% in steps of 5 , i.e. 50 instead of 5000! Standard = 60%
573	Indoor temp. (°C x 10) The measured indoor temperature x 10 Example: 210 = 21 °C		573	RH Delta (on/off) Whether or not Delta control can be activated. This delta control increases the ventilation if there is a certain increase in the moisture content over a period of time (e.g. 10% in 5 seconds). Because this may cause the ventilation system to overreact, it is off by default. Values: 0 = off, 1 = on Standard = 0 (= off)
574			574	
575	RH value (% x 100) The measured moisture content x 100 Example: 4974 = 49.74%		575	
576			576	
577			577	
578			578	
579	Localisation number Indicates a number of a group of components belonging together (used for Qbus, among others).		579	

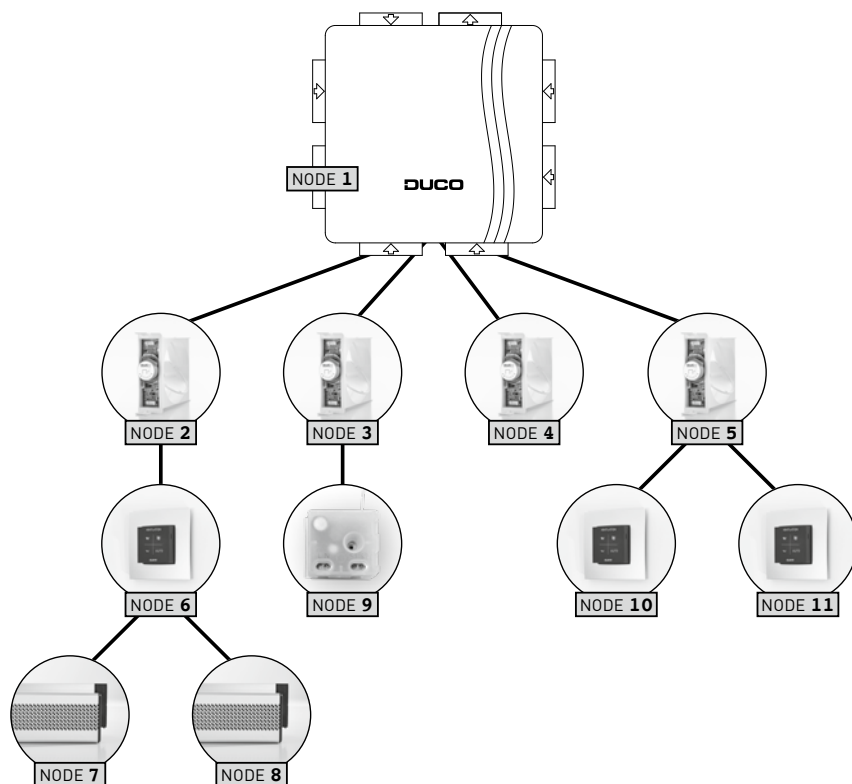
Electronically controlled window ventilator e.g. node 21

INPUT (read parameter)			HOLDING (write parameter)		
210	Type of Module	17 = window ventilator	210	Target value (%)	Overruling the window ventilator setting . Values: 0-100% (shut to open setting) in steps of 5 -1 = overruling off Standard = -1
211	Status	0 = Auto 1 = 10 minutes in high setting 2 = 20 minutes in high setting 3 = 30 minutes in high setting 4 = Manual low setting 5 = Manual medium setting 6 = Manual high setting 7 = Nobody home setting / Unoccupied setting 8 = Permanent low position 9 = Permanent middle position 10 = Permanent high position 99 = Error	211		
212	Window ventilator setting (%)	Actual window ventilator setting (0 = closed, 100 = open)	212		
213	Outdoor temp. (°C x 10)	The measured outside temperature (°C) Example: <input type="text" value="210"/> = 21 °C	213		
214			214	Inlet (%)	Setting determines the share this window ventilator has compared with the extraction in this zone. Values: 0-100% in steps of 5 Standard = 0% (= each window ventilator has the same supply "weight")
215			215	Auto min. (%)	Minimum ventilation setting in automatic mode. Values: 0-100% (lowest to highest setting) in steps of 5 Standard = 10%
216			216	Auto max. (%)	Maximum ventilation setting in automatic mode. Values: 0-100% (lowest to highest setting) in steps of 5 Standard = 100%
217			217		
218			218		
219	Localisation number	Indicates a number of a group of components belonging together (used for Qbus, among others).	219	Action	0 = Node display OFF 1 = Node display ON 2 = Zone to temporary manual setting 1 3 = Zone to temporary manual setting 2 4 = Zone to temporary manual setting 3 5 = Zone to automatic setting 6 = Nobody home setting / Unoccupied setting

Switch Sensor e.g.: node 40 (Onboard Switch contact: node 132, 133, 134, 135)					
INPUT (read parameter)			HOLDING (write parameter)		
400	Type of Module	18 = Switch Sensor	400	Target value (%)	<p>OVERRULING the ventilation setting for the zone in which the component is located.</p> <p>Values: 0-100% (lowest to highest setting) in steps of 5 -1 = overruling off Standard = -1</p>
401	Status	0 = Auto 1 = 10 minutes in high setting 2 = 20 minutes in high setting 3 = 30 minutes in high setting 4 = Manual low setting 5 = Manual medium setting 6 = Manual high setting 7 = Nobody home setting / Unoccupied setting 8 = Permanent low position 9 = Permanent middle position 10 = Permanent high position 99 = Error	401	Switch mode	<p>Indicates the use to which the Switch Sensor is being put.</p> <p>Values:</p> <p>2 = PRESENCE (e.g. toilet detection): indicates the ventilation setting required for extraction in the toilet</p> <p>1 = HEATPUMP: indicates the ventilation level to which the flow rate requires to be boosted according to the heat pump connected</p> <p>0 = OVERRULE (e.g. alarm): indicates the ventilation level at which the system is being overruled (0-250% / 'MAX'). If it is set to 'MAX', the speed of the central extract unit will increase to maximum and the valve will open fully.</p> <p>Standard = 2 (= PRESENCE)</p>
402	Ventilation position (%)	Actual ventilation setting for the zone in which the component is located	402	Switch value	<p>The desired value of ventilation in the current zone if the Switch Sensor is activated. This value is expressed in % or m³/h depending on the switch mode selected. On changing the switch mode, the switch value will be automatically set to a default value.</p> <p>Values:</p> <p>PRESENCE: 0-100% (lowest to highest setting) in steps of 5 Standard = 100%</p> <p>HEAT PUMP: 0-250 m³/h in steps of 5 Standard = 150 m³/h</p> <p>OVERRULE: 0-250% (lowest to highest setting) in steps of 5 255 = 'MAX' Standard = 100%</p>
403			403		
404			404		
405			405		
406			406		
407			407		
408			408		
409	Localisation number	Indicates a number of a group of components belonging together (used for Qbus, among others).	409	Action	0 = Node display OFF 1 = Node display ON 2 = Zone to temporary manual setting 1 3 = Zone to temporary manual setting 2 4 = Zone to temporary manual setting 3 5 = Zone to automatic setting 6 = Nobody home setting / Unoccupied setting

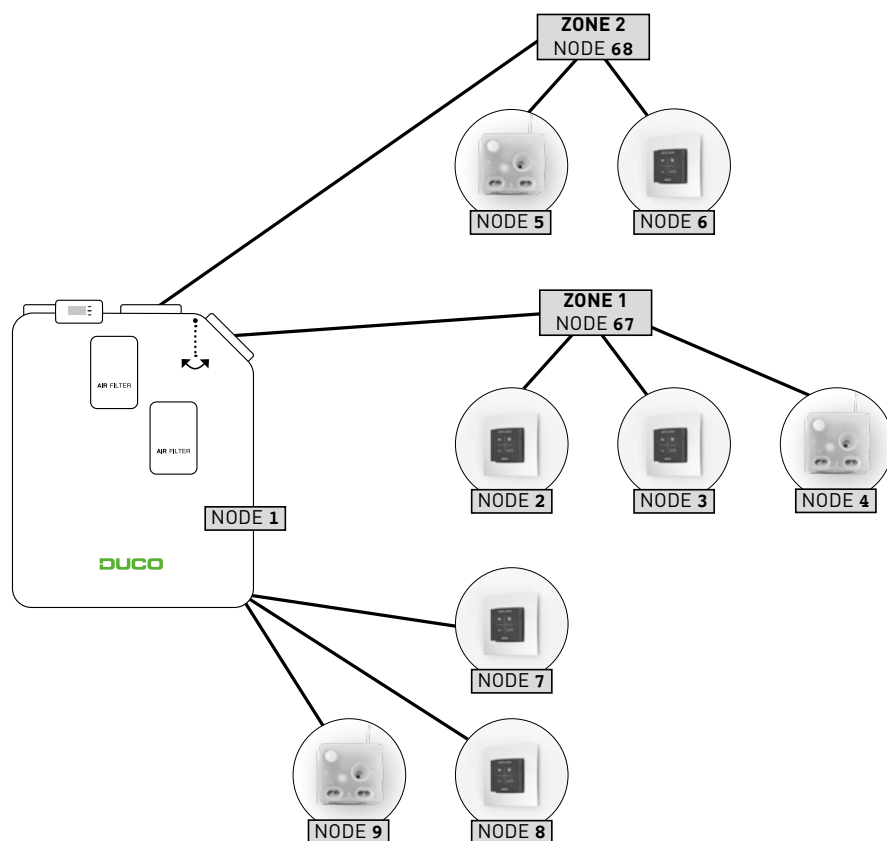
Network examples

Below is an example diagram with a DucoBox Focus. Below the example diagram you will then find an example of the corresponding ModBus parameters. The node numbers are automatically assigned when pairing a component and may therefore change for each situation depending on the pairing sequence.



INPUT (read parameter)		HOLDING (write parameter)	
01 up to and including 09	These parameters are set aside for any additional information over the network	01 up to and including 09	These parameters are set aside for any additional information over the network
10	Type of module = 10	10	Target value (%)
11	Status	11	-
12	Ventilation position (%)	12	-
13	-	13	-
14	-	14	-
15	-	15	Auto min. (%)
16	-	16	Auto max. (%)
17	-	17	-
18	-	18	-
19	Localisation number = 0	19	Action
20	Type of module = 12	20	Target value (%)
21	Status	21	CO ₂ setpoint (ppm)
22	Ventilation position (%)	22	-
23	Indoor temp. (°C)	23	-
24	CO ₂ value (ppm)	24	Flow (m³/h)
25	-	25	Auto min. (%)
26	-	26	Auto max. (%)
27	-	27	-
28	-	28	-
29	Localisation number = 1	29	Action
60	Type of module = 14	60	Target value (%)
61	Status	61	CO ₂ setpoint (ppm)
62	Ventilation position (%)	62	-
63	Indoor temp. (°C)	63	-
64	CO ₂ value (ppm)	64	Button 1 (%)
65	-	65	Button 2 (%)
66	-	66	Button 3 (%)
67		67	Manual time (min.)
68		68	
69	Localisation number = 2	69	Action
70	Type of module = 14	70	Target value (%)
71	Status	71	-
72	Window ventilator setting (%)	72	-
73	Indoor temp. (°C)	73	-
74	Heater switch on	74	Inlet (%)
75	Heater active	75	Auto min. (%)
76	-	76	Auto max. (%)
77	-	77	-
78	-	78	-
79	Localisation number = 2	79	Action
to max. 2000	...	to max. 2000	...

Below is an example diagram with a DucoBox Energy Premium (2-zone). Below the example diagram you will then find an example of the corresponding ModBus parameters. The node numbers are automatically assigned when pairing a component and may therefore change for each situation depending on the pairing sequence.



DucoBox node 1					
INPUT (read parameter)			HOLDING (write parameter)		
10	Type of Module	10 = DucoBox	10	Target value (%)	Overruling the ventilation setting of the entire system. Values: 0-100% (lowest to highest setting) in steps of 5 -1 = overruling off Standard = -1
11	Status	0 = Auto 1 = 10 minutes in high setting 2 = 20 minutes in high setting 3 = 30 minutes in high setting 4 = Manual low setting 5 = Manual medium setting 6 = Manual high setting 7 = Nobody home setting / Unoccupied setting 8 = Permanent low position 9 = Permanent middle position 10 = Permanent high position 99 = Error	11		
12	Ventilation position (%)	Actual ventilation setting of the entire system	12		
13	Current power (W)		13		
14	Average power (W)		14		
15	Maximum power (W)		15	Auto min. (%)	Minimum ventilation setting in automatic mode. Values: 0-100% (lowest to highest setting) in steps of 5 Standard = 10%
16			16	Auto max. (%)	Maximum ventilation setting in automatic mode. Values: 0-100% (lowest to highest setting) in steps of 5 Standard = 100%
17			17		
18			18		
19	Localisation number	Indicates a number of a group of components belonging together (used for Qbus, among others).	19	Action	0 = Node display OFF 1 = Node display ON 2 = Zone to temporary manual setting 1 3 = Zone to temporary manual setting 2 4 = Zone to temporary manual setting 3 5 = Zone to automatic setting 6 = Nobody home setting / Unoccupied setting

2-Zone Control Valve node 67 or 68

INPUT (read parameter)			HOLDING (write parameter)		
670	Type of Module	11 = 2-Zone Control Valve	670	Target value (%)	Overruling the ventilation setting for the zone in which the component is located. Values: 0-100% (lowest to highest setting) in steps of 5 -1 = overruling off Standard = -1
671	Status	0 = Auto 1 = 10 minutes in high setting 2 = 20 minutes in high setting 3 = 30 minutes in high setting 4 = Manual low setting 5 = Manual medium setting 6 = Manual high setting 7 = Nobody home setting / Unoccupied setting 8 = Permanent low position 9 = Permanent middle position 10 = Permanent high position 99 = Error	671		
672	Ventilation position (%)	Actual ventilation setting for the zone in which the component is located	672		
679	Localisation number	Indicates a number of a group of components belonging together (used for Qbus, among others).	679	Action	0 = Node display OFF 1 = Node display ON 2 = Zone to temporary manual setting 1 3 = Zone to temporary manual setting 2 4 = Zone to temporary manual setting 3 5 = Zone to automatic setting 6 = Nobody home setting / Unoccupied setting
680	Type of Module	11 = 2-Zone Control Valve	680	Target value (%)	Overruling the ventilation setting for the zone in which the component is located. Values: 0-100% (lowest to highest setting) in steps of 5 -1 = overruling off Standard = -1
681	Status	0 = Auto 1 = 10 minutes in high setting 2 = 20 minutes in high setting 3 = 30 minutes in high setting 4 = Manual low setting 5 = Manual medium setting 6 = Manual high setting 7 = Nobody home setting / Unoccupied setting 8 = Permanent low position 9 = Permanent middle position 10 = Permanent high position 99 = Error	681		
682	Ventilation position (%)	Actual ventilation setting for the zone in which the component is located	682		
689	Localisation number	Indicates a number of a group of components belonging together (used for Qbus, among others).	689	Action	0 = Node display OFF 1 = Node display ON 2 = Zone to temporary manual setting 1 3 = Zone to temporary manual setting 2 4 = Zone to temporary manual setting 3 5 = Zone to automatic setting 6 = Nobody home setting / Unoccupied setting

Remote control e.g. node 2					
INPUT (read parameter)			HOLDING (write parameter)		
20	Type of Module	14 = Remote control (with or without battery)	20	Target value (%)	Overruling the ventilation setting for the zone in which the component is located. Values: 0-100% (lowest to highest setting) in steps of 5 -1 = overruling off Standard = -1
21	Status	0 = Auto 1 = 10 minutes in high setting 2 = 20 minutes in high setting 3 = 30 minutes in high setting 4 = Manual low setting 5 = Manual medium setting 6 = Manual high setting 7 = Nobody home setting / Unoccupied setting 8 = Permanent low position 9 = Permanent middle position 10 = Permanent high position 99 = Error	21		
22			22		
23	Indoor temp. (°C x 10)	(not with battery) The measured indoor temperature x 10 Example: <input type="text" value="210"/> = 21 °C	23		
24			24	Button 1 (%)	Value of button 1. Values: 0-100% in steps of 5 Standard = 10%
25			25	Button 2 (%)	Value of button 2. Values: 0-100% in steps of 5 Standard = 50%
26			26	Button 3 (%)	Value of button 3. Values: 0-100% in steps of 5 Standard = 100%
27			27	Manual time (min.)	Duration of manual mode. This will depend on whether or not Tronic window ventilators are linked to the Room operating unit. Values: 5-9995 min. in steps of 5 Standard = 15 min. if linked to extraction 480 min.(= 8 hours) if linked to supply
28			28		
29	Localisation number	Indicates a number of a group of components belonging together (used for Qbus, among others).	29	Action	0 = Node display OFF 1 = Node display ON 2 = Zone to temporary manual setting 1 3 = Zone to temporary manual setting 2 4 = Zone to temporary manual setting 3 5 = Zone to automatic setting 6 = Nobody home setting / Unoccupied setting

Humidity Sensor e.g. node 3

INPUT (read parameter)			HOLDING (write parameter)		
30	Type of Module	16 = Humidity Sensor	30	Target value (%)	<p>OVERRULING the ventilation setting for the zone in which the component is located.</p> <p>Values: 0-100% (lowest to highest setting) in steps of 5 -1 = overruling off Standard = -1</p>
31	Status	0 = Auto 1 = 10 minutes in high setting 2 = 20 minutes in high setting 3 = 30 minutes in high setting 4 = Manual low setting 5 = Manual medium setting 6 = Manual high setting 7 = Nobody home setting / Unoccupied setting 8 = Permanent low position 9 = Permanent middle position 10 = Permanent high position 99 = Error	31		
32			32	RH Setpoint (%)	<p>The desired moisture content.</p> <p>Values: 0-100% in steps of 5 Standard = 60%</p>
33	Indoor temp. (°C x 10)	(not with battery) The measured indoor temperature x 10 Example: 210 = 21 °C	33	RH Delta (on/off)	<p>Whether or not Delta control can be activated. This delta control increases the ventilation if there is a certain increase in the moisture content over a period of time (e.g. 10% in 5 seconds). Because this may cause the ventilation system to overreact, it is off by default.</p> <p>Values: 0 = off, 1 = on Standard = 0 (= off)</p>
34			34	Button 1 (%)	<p>Value of button 1.</p> <p>Values: 0-100% in steps of 5 Standard = 10%</p>
35	RH value (% x 100)	(Humidity Sensor only) Measured moisture content x 100 Example: 4974 = 49.74%	35	Button 2 (%)	<p>Value of button 2.</p> <p>Values: 0-100% in steps of 5 Standard = 50%</p>
36			36	Button 3 (%)	<p>Value of button 3.</p> <p>Values: 0-100% in steps of 5 Standard = 100%</p>
37			37	Manual time (min.)	<p>Duration of manual mode. This will depend on whether or not Tronic window ventilators are linked to the Room operating unit.</p> <p>Values: 5-9995 min. in steps of 5 Standard = 15 min. if linked to extraction 480 min.(= 8 hours) if linked to supply</p>
38			38		
39	Localisation number	Indicates a number of a group of components belonging together (used for Qbus, among others).	39	Action	0 = Node display OFF 1 = Node display ON 2 = Zone to temporary manual setting 1 3 = Zone to temporary manual setting 2 4 = Zone to temporary manual setting 3 5 = Zone to automatic setting 6 = Nobody home setting / Unoccupied setting

CO ₂ sensor e.g. node 4					
INPUT (read parameter)			HOLDING (write parameter)		
40	Type of Module	15 = CO ₂ Sensor	40	Target value (%)	Overruling the ventilation setting for the zone in which the component is located. Values: 0-100% (lowest to highest setting) in steps of 5 -1 = overruling off Standard = -1
41	Status	0 = Auto 1 = 10 minutes in high setting 2 = 20 minutes in high setting 3 = 30 minutes in high setting 4 = Manual low setting 5 = Manual medium setting 6 = Manual high setting 7 = Nobody home setting / Unoccupied setting 8 = Permanent low position 9 = Permanent middle position 10 = Permanent high position 99 = Error	41	CO ₂ Setpoint (ppm)	(CO ₂ Sensor only) The desired CO ₂ concentration in parts per million. Values: 0-2000 ppm in steps of 10 Standard = 800 ppm
42			42		
43	Indoor temp. (°C x 10)	(not with battery) The measured indoor temperature x 10 Example: <input type="text" value="210"/> = 21 °C	43	RH Delta (on/off)	Whether or not Delta control can be activated. This delta control increases the ventilation if there is a certain increase in the moisture content over a period of time (e.g. 10% in 5 seconds). Because this may cause the ventilation system to overreact, it is off by default. Values: 0 = off, 1 = on Standard = 0 (= off)
44	CO ₂ value (ppm)	CO ₂ room sensor only The measured CO ₂ value	44	Button 1 (%)	Value of button 1. Values: 0-100% in steps of 5 Standard = 10%
45			45	Button 2 (%)	Value of button 2. Values: 0-100% in steps of 5 Standard = 50%
46			46	Button 3 (%)	Value of button 3. Values: 0-100% in steps of 5 Standard = 100%
47			47	Manual time (min.)	Duration of manual mode. This will depend on whether or not Tronic window ventilators are linked to the Room operating unit. Values: 5-9995 min. in steps of 5 Standard = 15 min. if linked to extraction 480 min.(= 8 hours) if linked to supply
48			48		
49	Localisation number	Indicates a number of a group of components belonging together (used for Qbus, among others).	49	Action	0 = Node display OFF 1 = Node display ON 2 = Zone to temporary manual setting 1 3 = Zone to temporary manual setting 2 4 = Zone to temporary manual setting 3 5 = Zone to automatic setting 6 = Nobody home setting / Unoccupied setting

Switch Sensor e.g. node 5					
INPUT (read parameter)			HOLDING (write parameter)		
50	Type of Module	18 = Switch Sensor	50	Target value (%)	<p>OVERRULING the ventilation setting for the zone in which the component is located.</p> <p>Values: 0-100% (lowest to highest setting) in steps of 5 -1 = overruling off Standard = -1</p>
51	Status	0 = Auto 1 = 10 minutes in high setting 2 = 20 minutes in high setting 3 = 30 minutes in high setting 4 = Manual low setting 5 = Manual medium setting 6 = Manual high setting 7 = Nobody home setting / Unoccupied setting 8 = Permanent low position 9 = Permanent middle position 10 = Permanent high position 99 = Error	51	Switch mode	<p>Indicates the use to which the Switch Sensor is being put.</p> <p>Values: 2 = PRESENCE (e.g. toilet detection): indicates the ventilation setting required for extraction in the toilet 1 = HEATPUMP: indicates the ventilation level to which the flow rate requires to be boosted according to the heat pump connected 0 = OVERRULE (e.g. alarm): indicates the ventilation level at which the system is being overruled (0-250% / 'MAX'). If it is set to 'MAX', the speed of the central extract unit will increase to maximum and the valve will open fully. Standard = 2 (= PRESENCE)</p>
52	Ventilation position (%)	Actual ventilation setting for the zone in which the component is located	52	Switch value	<p>The desired value of ventilation in the current zone if the Switch Sensor is activated. This value is expressed in % or m³/h depending on the switch mode selected. On changing the switch mode, the switch value will be automatically set to a default value.</p> <p>Values: PRESENCE: 0-100% (lowest to highest setting) in steps of 5 Standard = 100% HEAT PUMP: 0-250 m³/h in steps of 5 Standard = 150 m³/h OVERRULE: 0-250% (lowest to highest setting) in steps of 5 255 = 'MAX' Standard = 100%</p>
53			53		
54			54		
55			55		
56			56		
57			57		
58			58		
59	Localisation number	Indicates a number of a group of components belonging together (used for Qbus, among others).	59	Action	0 = Node display OFF 1 = Node display ON 2 = Zone to temporary manual setting 1 3 = Zone to temporary manual setting 2 4 = Zone to temporary manual setting 3 5 = Zone to automatic setting 6 = Nobody home setting / Unoccupied setting

Humidity Box sensor e.g. node 6

INPUT (read parameter)		HOLDING (write parameter)	
60	Type of Module 16 = Humidity Box sensor	60	
61		61	
62		62	RH Setpoint (%) The desired moisture content. Values: 0-100% in steps of 5 Standard = 60%
63	Indoor temp. (°C x 10) The measured indoor temperature x 10 Example: <input type="text" value="210"/> = 21 °C	63	RH Delta (on/off) Whether or not Delta control can be activated. This delta control increases the ventilation if there is a certain increase in the moisture content over a period of time (e.g. 10% in 5 seconds). Because this may cause the ventilation system to overreact, it is off by default. Values: 0 = off, 1 = on Standard = 0 (= off)
64		64	
65	RH value (% x 100) (Humidity Sensor only) Measured moisture content x 100 Example: <input type="text" value="4974"/> = 49.74%	65	
66		66	
67		67	
68		68	
69	Localisation number Indicates a number of a group of components belonging together (used for Qbus, among others).	69	