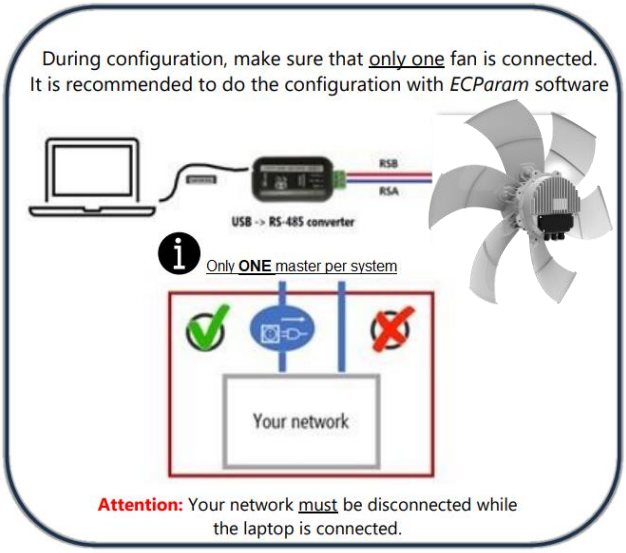
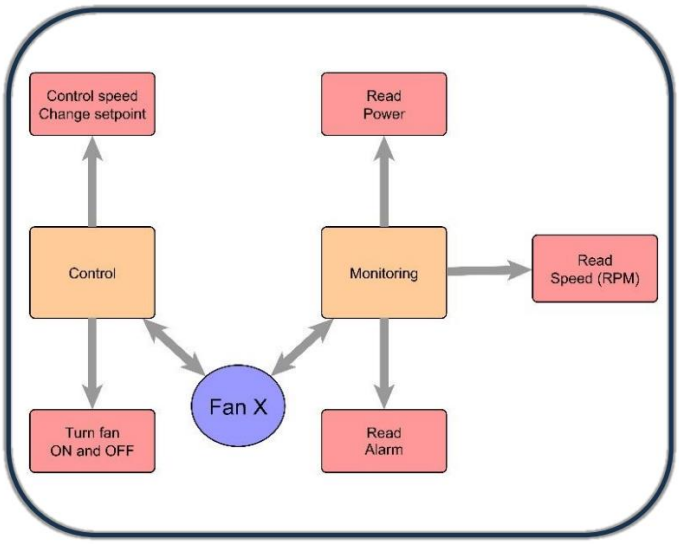
Quick-Start Guide Modbus: BA601

Configuration



Control



Quick Reminder

All Modbus devices need the same Baud rate and parity + unique address.

The Modbus signal is divided into 5 Key points: Address, FC, Register, Data, CRC.
Each Command should have the following order.

Address	FC	Register 1	Register 0	Data 1	Data 0	CRC	CRC

A Quick Example would be the change of the Baudrate.

01	06	00	16	00	01	A9	CE

The signal contains the address 1 with the FC06 for the register 16 and writes the value 01 in it.
After that the CRC (cycle redundancy check) finishes the signal.

Attention: On every Modbus network, only ONE Master is allowed. While configuring with a laptop, it is important to disconnect your BMS network.

Default Modbus parameters are:

Baud rate: 19200
Parity: EVEN
Stop bit: 1
Address: 1

Rosenberg Ventilatoren GmbH · Maybachstraße 1 · 74653 Künzelsau-Gaisbach
Tel.: +49(0)7940/142-0 · Fax.: +49(0)7940/142-125 · Email: info@rosenberg-gmbh.com · www.rosenberg-gmbh.com

Quick Start of Configuration

register type	register	name	unit	description	read/write
holding	38 0x26	control mode enable	0 = Modbus ; 2 = digital input; 1 = always activ	control possibility of the fan	R/W
holding	39 0x27	control mode setpoint	0 = Modbus ; 1 = analog input	control possibility of the fan	R/W
holding	78 0x4E	modbus adresse	1-247	unit in the system	R/W
holding	79 0x4F	communication parameter	0x 0 x x 0 parity, baudrate baudrate: 0 = 9600 1 = 19200 2= 38400 3 = 57600 parity: 0 = even 1 = odd 2 = none	Modbus communication parameters **A change is only possible with FW > 224**	R/W

Quick Start of Work

register type	register	name	unit	resolution	description	read/ write
holding	38 0x26	*motor ON / Off*	0/1	0-1	15 = motor is ON; 0 = motor is Off	**R/W**
holding	43 0x2B	*setpoint*	value	0-4096	set the RPM in % for the fan	**R/W**
input	82 0x52	*speed of the motor*	RPM	0-3000	get the current RPM of the fan	**R**
input	86 0x56	*power in*	W	0-15000	Get the current power consumption **A change is only possible with FW > 224**	**R**
input	85 0x55	*internal stop*	0 ; >0	0 = no failure ; >0 = failure	motor stopped	**R**

Typical Used Settings

Setup Modbus Network

In this example, multiple fans are set to baudrate 19200 with parity EVEN and 1 stop bit.
Additionally, the control mode gets changed to bus control.
The settings need to be changed on every single fan.
The changes require a reset of the power supply. It must be switched off for at least 10 seconds to trigger a reinitialization of the electronic.
We recommend using our software ECParam for the configuration.

fan 1				
Nr	description	type	register Dez	value Dez
1	Modbus Address	Holding	78	4
2	Communication Rate	Holding	79	256
3	Control Mode Enable	Holding	38	0
4	Control Mode Setpoint	Holding	39	0
fan 2				
1	Modbus Address	Holding	78	5
2	Communication Rate	Holding	79	256
3	Control Mode	Holding	38	0
4	Control Mode Setpoint	Holding	39	0
fan x				
1	Modbus Address	Holding	78	X
2	Communication Rate	Holding	79	256
3	Control Mode	Holding	38	0
4	Control Mode Setpoint	Holding	39	0

1. Define the Modbus address. Each number is unique and should not be multiple times in one network.

2. Define the communication parameters (baudrate, parity).
Each device needs the same communication speed and parity.
Higher communication speed reduces the maximum cable length.

3. Set the control mode enable register to bus control.

4. Set the control mode setpoint register to bus control.

Control the Fan

Used registers for controlling over Modbus

In this example the fan is controlled by Modbus.
With the following commands it gets turned ON and set to 50% of its maximum speed.
Additionally, the rotation speed gets read out.

Nr	description	type	register	value
1	motor ON / OFF	holding	38	15 = ON
2	setpoint	holding	43	2048 = ~50%
3	speed of the motor	holding	82	read value
4	internal stop	holding	85	0 = no failure >0 = failure

1. Control the fan by turning it ON or OFF

2. Define the speed of the fan. This is a percent-based control.
means 0 = 0% and 4096 = 100%

3. Returns the measured speed of the motor. The value is the measured speed of the motor in RPM.

4. Check for a failure of the motor (only read function).
It can only be read, if the register value is >0 the motor has stopped and needs to be restarted overpower cycled. To see what caused the motor to stop, the software ECParam and a USB to RS-485 converter is required.

For the more detailed Modbus instruction guide use the "Complete Instruction Guide" for the ID: BA601.