Frese COMBIFLOW Modbus Programming Tool

Description

The Frese COMBIFLOW Modbus Programming Tool is used to configure the Frese COMBIFLOW Modbus Rotary Actuator. The tool comprises an LCD display and keys for the easy actuator programming and data reading as well as a cable for a quick connection to the actuator.

Operation

The Frese COMBIFLOW Modbus Programming Tool is connected via a 7 pin cable to the actuator. The keys are used to navigate in the menu which is displayed in the LCD screen and to set the required actuator parameters.

The tool enables setting the address of the actuator, either local or mass, as well as programming the sizing flows for heating and for cooling (the closing position of the actuator and thus the valve must be programmed from the BMS). The tool is also designed for conducting the diagnostics of the actuator.

Application

The Frese COMBIFLOW Modbus Programming Tool is used with the Frese COMBIFLOW Modbus Rotary Actuator for:

- Cooling and Heating flows setting
  Note: The actuator and thus the valve closing position must be programmed from the BMS.
- Single actuator configuration
- Mass actuators configuration
- Actuator's diagnostics

Benefits

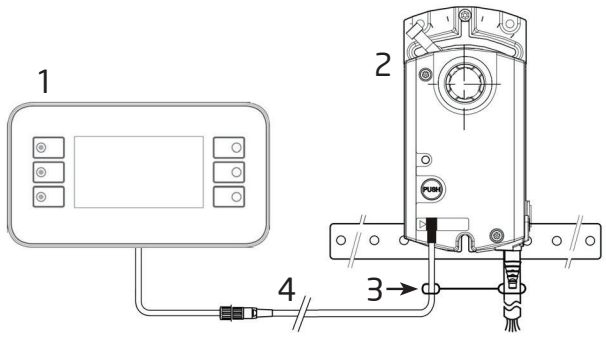
- Easy setting of the sizing flow for heating and for cooling
- Assigning a unique address of the actuator without the risk of repeating the same value in different actuators
- Mass configuration for quick system commissioning
- Direct actuator operation monitoring and diagnostics

Features

- LCD display
- 6 keys for easy programming
- 7 pin connection cable

Function

The Frese COMBIFLOW Modbus Programming Tool is connected to the actuator using the dedicated 7 pin cable. The tool can be operated only after connecting it to the actuator which is also used as a power supply.



1. AST20
2. Frese 48-5398
3. Strain release strip
4. Connection cable (7-pin or 6-pin)

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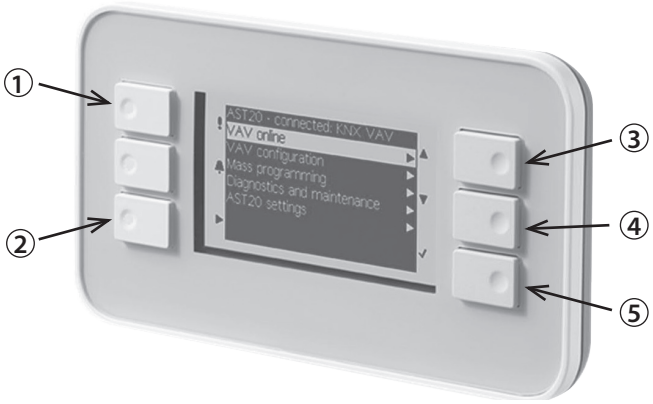
Basic Operation

Once the tool is connected to the actuator a menu is displayed in the screen. The type of the device AST20 and the Modbus communication protocol is displayed in the first line. The lower lines comprise the selection list (menu item). The tool is operated by means of six keys. These are used to navigate in the menu and to programme the actuator.

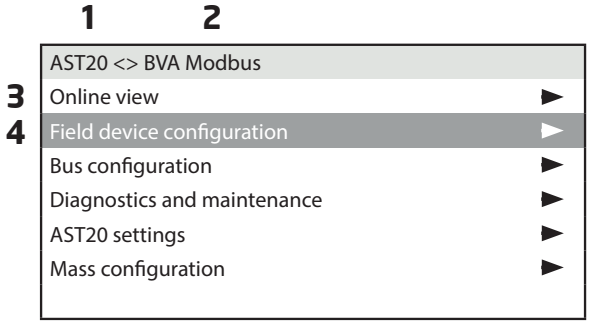


1. RESET, 2. ESCAPE, 3. UP, 4. DOWN, 5. ENTER

Basic operation by 5 keys

- Keys UP (3) and DOWN (4) are used to navigate to a menu item
- If pressing ENTER (5) on a highlighted menu item, the value can be changed with UP/DOWN (if not protected or readonly).
- Pressing ENTER (5) confirms the value change.
- By pressing ESCAPE (2), a value change can be cancelled or a menu page can be left to the next higher level.
- To reset the AST20, press RESET (1) until the display gets dark. The restart takes ca. 20s.
- **Note**: After pressing ENTER (5), changed values are written directly into the BVA compact controller.

Screen

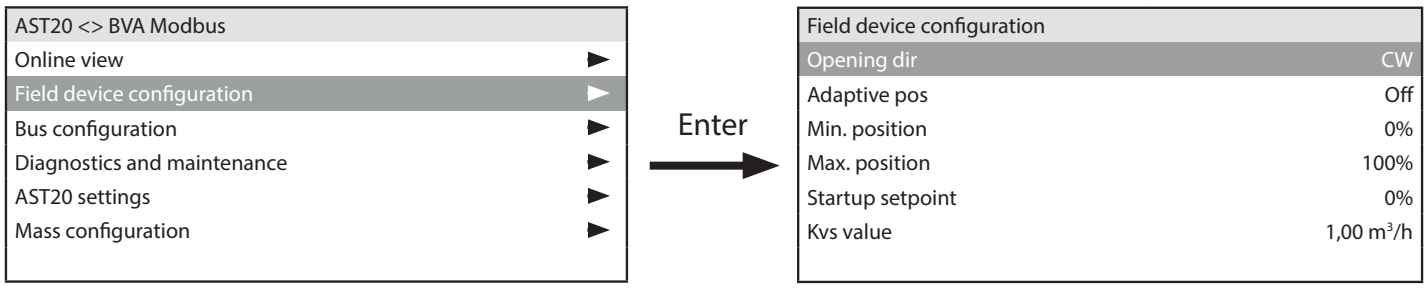


1. AST20 self-identification
2. Connected field device type
3. Menu item (not highlighted)
4. Highlighted / selected menu item

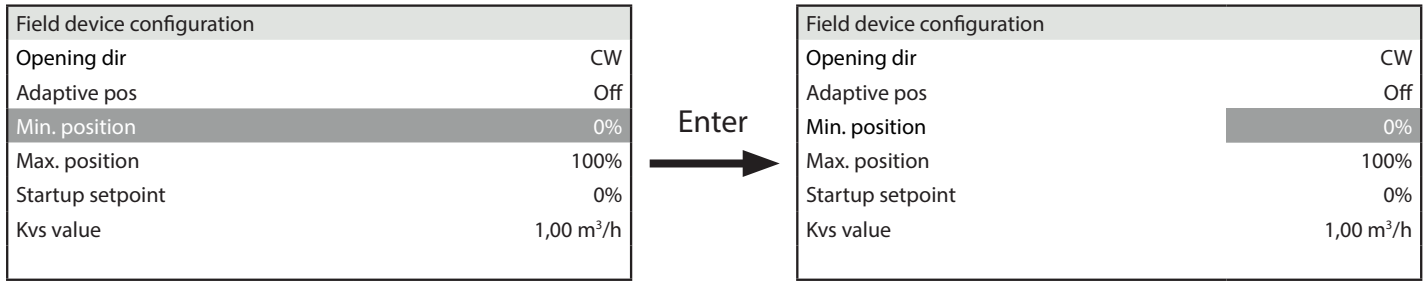
The highlighting bar is moved with the UP/DOWN keys, where ENTER either opens the sub menu (example 1) or allows changing the selected value using the UP/DOWN keys (example 2).

Basic operation - examples

Example 1: Entering a sub-menu



Example 2: Changing a value



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Menu tree

Title bar	Information on connected device
Online view	
Setpoint: position	Display of actual setpoint
Actual position	Actual relative valve position
Override control	Override control: Off, open, close, stop, setpoint
Field device configuration	
Opening direction	Opening direction CW or CCW
Adaptive positioning	Adaptive positioning On or Off
Min. position	Minimum position [%]
Max. position	Maximum position [%]
Startup setpoint	Setpoint used after startup until setpoint from controller is received
Bus configuration	
Address	Address for RS-485 networks (Modbus / BACnet MS/TP)
Baudrate	Baudrate
Transmission format	Start-/Stopbit, Parity
Termination	Termination electronically switchable
Backup Mode	Setpoint monitoring On or Off
Backup Position	Position if backup mode entered
Backup Timeout	Monitoring waiting time
Diagnostics and maintenance	
Field device info	Basic information on connected device (actuator)
Field device statistics	Counters and statistical data of connected device (actuator)
AST20 settings	
Handheld tool settings	Settings like language, brightness etc.
Mass configuration	
Mass configuration mode	Activates mass configuration: cf. description below
Resume mass configuration	Resume mass conf. if parameters have been changed on a downloaded configuration
Address incrementation	Automatically incrementing the address when using mass configuration

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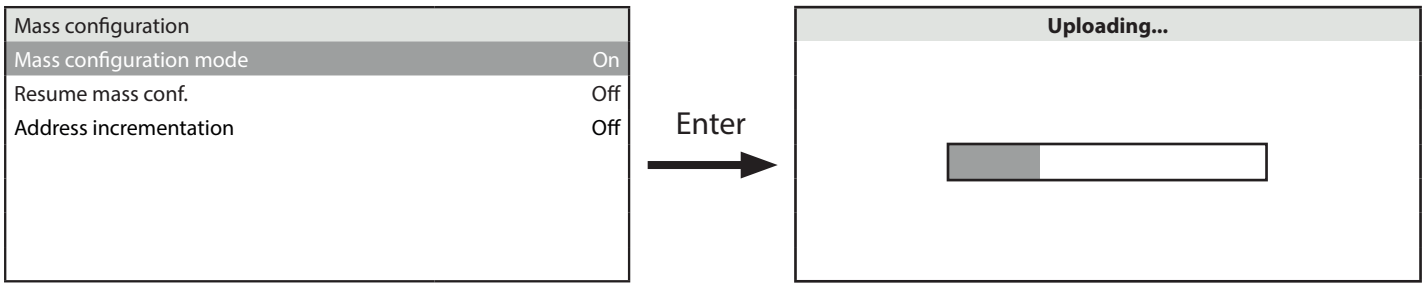
Mass configuration

Path: Mass configuration

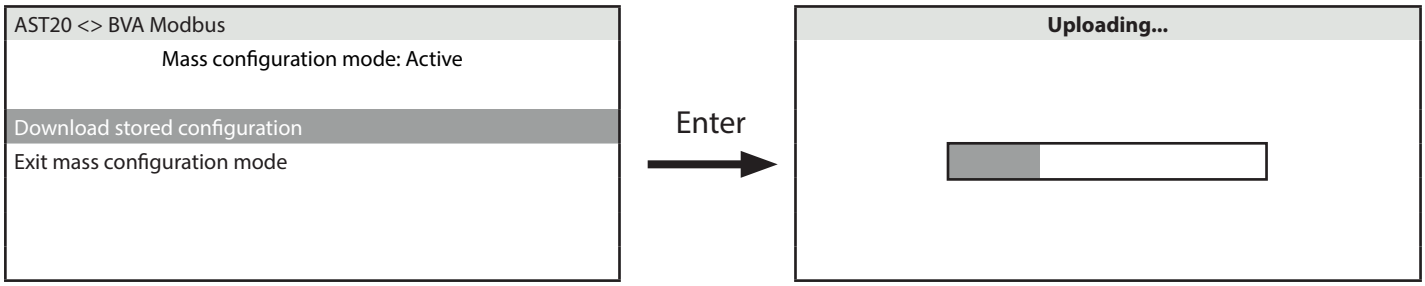
- By turning this function on, the configuration (all parameters that can be set by the user) from one field device (actuator) is loaded into the AST20 and stored there as a "template".
- The stored configuration can be written into 1..n devices (actuators) of the same type.
- After writing a stored configuration, changes can be made on the connected field device (actuator) without losing the stored configuration.
- If a configuration is changed after loading it into a field device (actuator), it can be made the new template configuration.
- For Modbus devices (actuators) the bus address can automatically be incremented.

Mass configuration without change of selected parameters in the target device (actuator)

Step 1: Activating the mass configuration mode. The configuration of the connected field device (actuator) is uploaded into the non-volatile storage of the AST20.

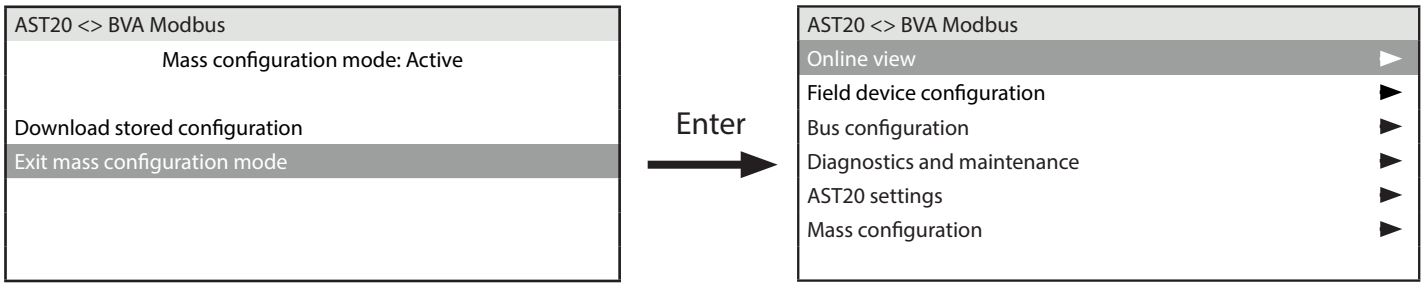


Step 2: After connecting the AST20 to the next field device (actuator of the same type), the stored configuration can be donwloaded into this target device (actuator).



Mass configuration with change of selected parameters in the target device (actuator)

Step 1: The mass configuration mode can (temporarily) be left after upload of the configuration: Selected parameters can then be changed.



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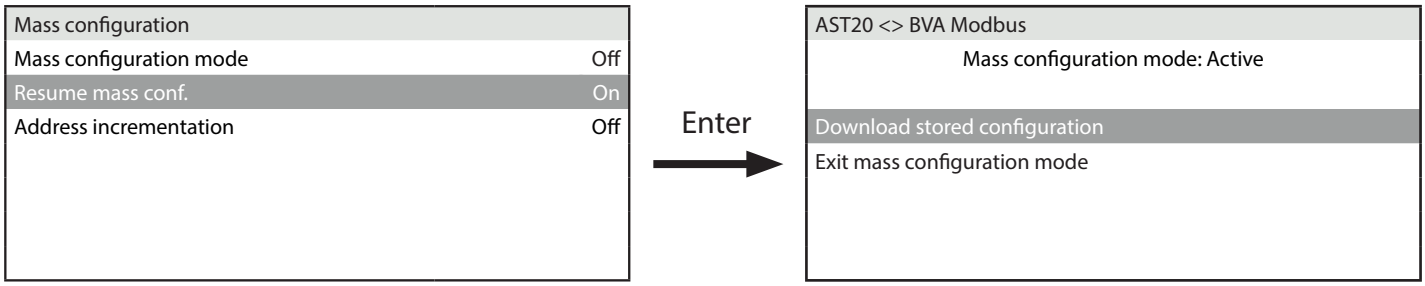
Step 2: After making the desired changes, mass configuration can be resumed with the original configuration; or the changed configuration can be made the new "template" configuration by newly activating "mass configuration".



Technical data

Power supply	
Powered by controller	DC 24 V ±20%, 30 mA AC 24 V ±20%, 60 mA

Display		
LCD type		STN blue, negative
Resolution		Dot matrix 240 x 128
Backlight		White LEDs
Size	LCD size	93 x 58 mm
	Visible area size	86.15 x 47.78 mm
Visibility angle[1]	Angle from top	41°
	Angle from bottom	21°

[1] Visibility angle is the angle at which the contrast ratio is greater than 2.

General data		
Dimensions		173.2 x 95.5 x 22.1 mm
Weight	excl. packaging	305 g
	incl. packaging and cables	950 g
Lens		Makrolon 2405, transparent
Keypad		Silicon rubber, RAL7035
Housing	Front housing	Makrolon 6485, RAL7035
	Rear housing	Makrolon 6485, RAL5014

Connection cables		
Cable at handheld tool	Type	74 424 0117 0
	Length	0.29 m
Cable with 7-pin connector	Type	74 424 0301 0
	Length	2.6 m

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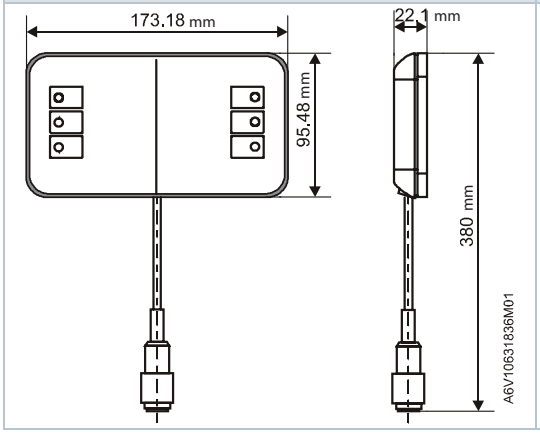
Degree of protection	
Degree of protection acc. to EN 60529	IP65
Safety class acc. to EN 60730	III
UV protection test level	IEC 60068-2-9, 1.13 kW/m², procedure B, 7 cycles
Pollution degree	2

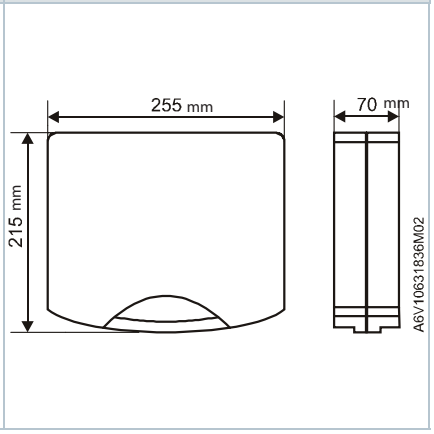
Environmental conditions		
Operation		IEC 60721-3-3
	Temperature	-40…70 °C
	Temperature restriction on LCD	-20…60 °C
	Humidity	5…95% r.h. (non-condensing)
	Air pressure	Min. 700 hPa, corresponding to Max. 3,000 m above sea level
Transport and storage		IEC 60721-3-2
	Temperature	-40…70 °C
	Humidity	5…95% r.h. (non-condensing)
	Air pressure	Min. 260 hPa, corresponding to Max. 10,000 m above sea level

Dimensions

AST20



Transport case



Product programme

Type	Operating voltage	Power consumption	Frese no.
Frese COMBIFLOW Modbus Programming Tool	Powered by field device (AC 24 V ±20%)	1.5 VA	48-5399

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Note

Caution: National safety regulations

Failure to comply with national safety regulations may result in personal injury and property damage.

Observe national provisions and comply with the appropriate safety regulations.

7-pin and 6-pin connection cables

Using the wrong connection cable (e.g. 6-pin cable on 7-pin plug) can damage the connected actuator.

Maintenance

AST20 handheld tools are maintenance-free. Do not open the AST20 handheld tool.

Disposal

The device is considered electrical and electronic equipment for disposal in terms of the applicable European Directive and may not be disposed of as domestic garbage.

- Dispose of the device through channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.

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