Multi-Functional Display

MASS-STREAM™ D-6400

MASS-STREAM™

USERTAG

Measure : In/min

0.00

Capacity : In/min

25.00

Fluid : 2

O2

User Manual

Bronkhorst®
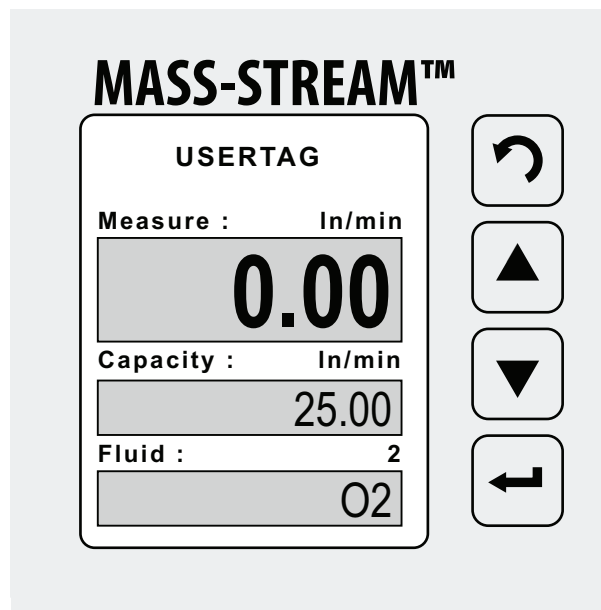
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1 Safety information

1.1 General safety information

⚠ **Please read this document and all other applicable documents carefully before installing and operating the product.**
All instructions must be observed. Failure to comply with instructions may result in material damage and personal injury, including danger to life.

1.2 Scope of this manual

This manual covers the operation of the MASS-STREAM™ D-6400 using the integrated display (optional).

▶ Please read the Instruction Manual MASS-STREAM™ D-6400 before energizing and operating the instrument.

The latest version of the manual can be downloaded from the Bronkhorst® website.

▶ For the web address, see the back of this document.

1.3 Illustrations

The illustrations used in this manual are intended as general instructions for correct operation.

The illustrations may slightly differ from the actual situation due to certain product types or factory configurations.

2 Operation

ⓘ All custom settings persist after unplugging the main connector or after a power loss.

ⓘ When navigating through the menu, the digital communication via RS232 or fieldbus interface remains fully accessible.
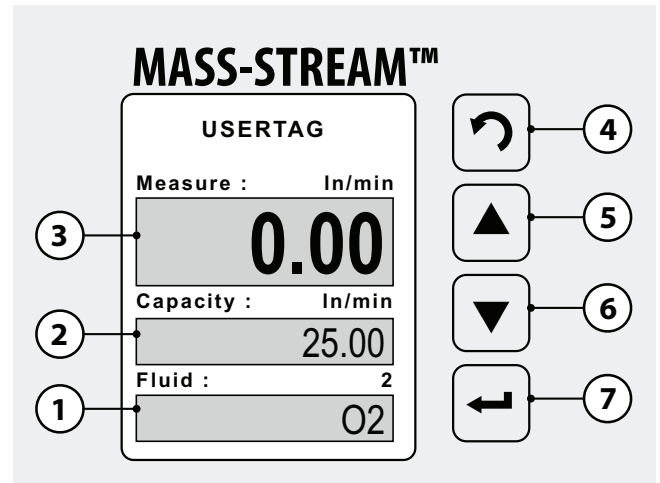
2.1 Display overview

Fig. 1.   Display - standard view

1. Info lower data field
2. Info middle data field
3. Info top data field
4. Back button
5. Up button
6. Down button
7. Enter button

2.1.1 Navigation

The buttons have the following functions:

Back Button ↻ [4]
• Return/ back
• Cycle through pre-settings in the lower data field

Up/Down button ↕ [5 + 6]
• Navigating the menu items
• Selecting fields and characters

Enter button ↵ [7]
• Enter selected menu item
• Confirm selection/changes

2.2 Password protection

A password upon delivery protects the device from unauthorized operation and data entry via the local navigation buttons.

Factory default password is: **'abc'** followed by 5 x ↵ (blanks).

▶ Press the ↵ button to activate the screen.

When prompted with the password dialog.

▶ Select the correct character using the ↕ buttons.
▶ Press ↵ to confirm, and move to the next position.
▶ After entering the last character of the password: press ↵ to confirm.

The default password can be changed in Special Mode ((» 3.2, page 5).
The password is up to 8 characters long, and only may contain the following characters:

• Small letters - a ... z
• Capital letters - A ... Z
• Numbers - 0 ... 9

2.3 Restore factory settings

The factory settings can be restored in the submenu Advanced (» Tab. 6, page 5).

3 Menu overview

ⓘ Access to the Main Menu (settings menu), and the submenu
Advanced can be disabled in the Security Menu (» § 3.2, page 5).

Many functions can be set and selected in the display menu of the product.

A limited feature set is also available in Bronkhorst® FlowWare software (e.g.
Bronkhorst FlowSuite, FlowDDE).

3.1 Main Menu

In the Main Menu all basic functions can be set or activated in several
submenu's:

- **Readout**:   readout settings and fluid selection, » Tab. 1
- **Controller**:   controller characteristics, » Tab. 2
- **Counter**:   counter settings, » Tab. 3
- **Alarm**: alarm settings, » Tab. 4
- **Setup**: product info, display and bus settings, » Tab. 5
- **Advanced**:   sensor settings, auto zero and restore factory settings,
  » Tab. 6

To enter the Main Menu from the standard view:

▶ Press the ↵ button.

If prompted with the password dialog:

▶ Enter the password to enter the Main Menu (» 2.2, page 3).
▶ Use the ↕ buttons and the ↵ button to navigate and change the
settings.
▶ To return to the standard view: press the ↩ button several times.

Readout menu			Display	FlowWare
Readout				
	- Actual		■	
	- Percentage			
fluid selection				
	fluid			
		- Gas 1	■	■
		- Gas ...		
		- Gas 8		
	capacity kg/s		Read Only	■
		- User defined number	Read Only	■

Tab. 1. Menu - Readout menu

Controller menu			Display	FlowWare
speed x				
	- User defined number		■	■
slope sec				
	- User defined number		■	■
mode				
	- analog input		■	■
	- bus/rs232			
	- rs232			
	- fb ana slave			
	- analog slave			
	- fb slave			
	- valve open			
	- valve closed			
	- control idle			
	- setpoint 100%			
	- setpoint 0%			
pid controller				
	pid-Kp x			
		- User defined number	■	■
	pid-Ti sec			

Controller menu			Display	FlowWare
		- User defined number	■	■
	pid-Td sec			
		- User defined number	■	■
	response			
		open from zero		
			- User defined number	■	■
		normal step		
			- User defined number	■	■
		stable situation		
			- User defined number	■	■

Tab. 2. Main - controller menu

Counter menu			Display	FlowWare
Mode				
	- up		■	■
	- off			
	- up to limit			
Reset				
	- automatic		■	■
	- manual			
Unit				
	- ln	- uls	■	■
	- m3s	- m3n		
	- dm3s	- dm3n		
	- ls	- uln		
	-cm3s	- cm3n		
	-mls	- mln		
	- mm3s	- mm3n		
Limit				
	- User defined number		■	■
Setpoint step				
	- no		■	
	- yes			■
Setpoint %				
	- User defined number		■	■

Tab. 3. Main - counter menu

Alarm menu			Display	FlowWare
Mode				
	- off		■	■
	- power-up			
	- response			
	- min/max			
Reset				
	- automatic		■	
	- manual			■
Min Alarm %				
	- User defined number		■	■
Max Alarm %				
	- User defined number		■	■
Delay sec				
	- User defined number		■	■
Setpoint step				
	- no		■	
	- yes			■

Alarm menu		Display	FlowWare
Setpoint %			
	- User defined number	▪	▪

Tab. 4. Main - alarm menu

Setup menu			Display	FlowWare
Info				
	Usertag			
		- User defined data	▪	▪
	Serial		Read Only	
	Model		Read Only	
	Firmw instr		Read Only	
Customize				
	Info top		▪	
		- usertag	▪	
		- serial		
	Info middle		▪	
		- capacity	▪	
		- counter		
		- valve		
		- setpoint		
	Setpoint		▪	
		- step	▪	
		- cursor		
	Readout digits			
		- 1 ... 5		
Display				
	Brightness		▪	
		- 0 ... 9	▪	
	Screensaver		▪	
		- on	▪	
		- off		
	Delay min		▪	
		- 01 ... 99	▪	
Bus				
	- Bus		Read Only	
		Bus type, if applicable	Read Only	
	- Node address		▪	▪
		- User defined number	▪	▪

Tab. 5. Main - setup menu

Advanced menu		Display	FlowWare
Sensor			
	dyn filter		
		- User defined number	▪	▪
	stat filter		
		- User defined number	▪	▪
Autozero			
	- cancel	▪	▪
	- start auto zero		
Restore			
	- cancel	▪	▪
	- start restore		

Tab. 6. Main - advanced menu

3.2   Security Menu

In the Security Menu the password can be changed, and several menu items from the Main Menu can be hidden or password protected. For these items, one of the following access modes can be set:

- **password**: menu item is password protected
- **disabled**: menu item is hidden.
- **enabled**: menu item is available (no password prompt).

To enter the Security Menu from the standard view:

► Press ↕ buttons simultaneously until prompted with the password dialog.
► Enter the password to enter the Security Menu (» 2.2, page 3).
► Use the ↕ buttons and the ↵ button to navigate and change the settings.
► To return to the standard view: press the ↩ button several times.

Security menu		Display	FlowWare
Edit setpoint			
	- password	▪	
	- disable		
	- enable		
Reset counter			
	- password	▪	
	- disable		
	- enable		
Reset alarm			
	- password	▪	
	- disable		
	- enable		
Settings menu			
	- password	▪	
	- disable		
	- enable		
Advanced			
	- password	▪	
	- disable		
	- enable		
New password			
	- User defined	▪	
	- Confirm	▪	

Tab. 7. Security menu

Notes

Service	Helpdesk	Downloads