Bronkhorst software: FlowDDE, FlowView and FlowPlot. Overview and Operation.

Overview:

Bronkhorst High-Tech offers different software for the control and management of your instruments. They are delivered with each order or available on the internet: <u>click here</u>

The three softwares, FlowDDE, FlowPlot and FlowView allow you to quickly enjoy your instruments with a simple your instruments with a simple PC equipped with Windows.

FlowDDE is an interface that generates DDE links.

- Data exchange between the RS232 port and applications under Windows environment:
- Visual Basic, Labview, Excel, etc...
- BRONKHORST software: Flow View and Flow Plot.

Flowview is a control software for BRONKHORST digital instruments.

Parameters displayed in the application window:

- User-defined name of the instrument: USERTAG.
- Serial number
- Number of the selected digital channel
- The setpoint and the instantaneous flow rate by means of a cursor on a % scale
- Instantaneous flow rate in physical unit and nature of the fluid
- Control mode: RS232/ BUS/ analog etc...
- Selection of setpoint ramp
- Selection of one of the 8 memorizable calibration curves
- Display of the counter.

Alarm management:

- Selection of the alarm mode: Min/max, difference measurement/setpoint...
- Selection of the delay before the alarm is triggered
- Selection of the setpoint change in alarm mode
- Selection of alarm reset mode: automatic, bus, keyboard...

Counter management:

- Selection of counter mode: with or without limit.
- Selection of the unit
- Selection of the setpoint change when the limit is reached.
- Selection of the reset mode: automatic, bus, keyboard...

FlowPlot is a control loop tuning software.

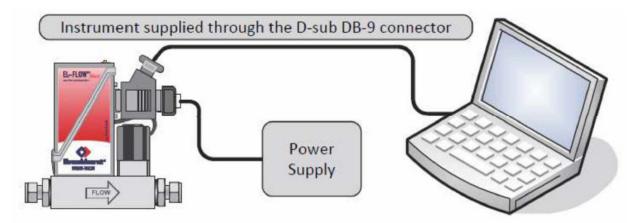
- Visualization of the instrument behavior
- Curve according to the time of the setpoint, the measurement and the valve voltage.
- Adjustment of the PID parameters.
- Automatic adjustment of the opening time.
- Storage of different dynamic profiles.
- Implementation of dynamic operating scenario with fast change of the setpoint.
- Modification of calibration parameters as an option.

Operation:

Install the FlowDDE, FlowView and FlowPlot software. You will find them on the CD provided with the with the instrument or on the internet at the following address https://www.bronkhorst.com/int/products/accessories-and-software/flowware/

ATTENTION: For a correct use of the software, the decimal symbol must be a point "." and not a comma ",". Make sure to change this setting in your computer's regional settings. For the connection of the instrument to your computer you can refer to the brochure 9.17.027 (RS232 interface with FLOW-BUS protocol for digital multibus), which can be downloaded here : https://www.bronkhorst.com/int/downloads-1/manuals-and-quick-installation-guides/

Below is an example of a classic EL-FLOW/RS232 use. If your PC does not have a sub-D9 a sub-D9 serial port, you can use a USB converter, ref. Bronkhorst: 9.09.122.



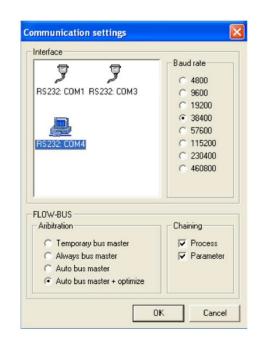
Connect the fluid inlet and outlet and pressurize.

Start up of flowdde:

For a detailed use, please refer to the manual 9.17.067.

Start FlowDDE, select Communication and then Communication settings...



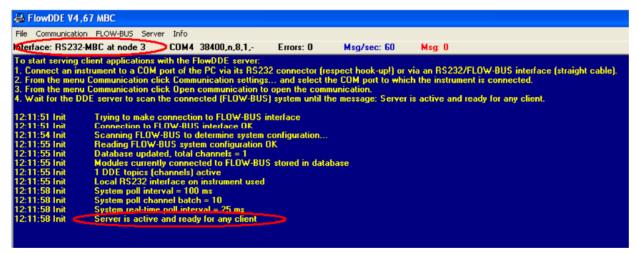


🔒 F	lowDDE V4,67	ĺ.			
File	Communication	FLOW-BUS	Server	Info	
Inter	Open commu	nication	F3		38400
12:0	Close communication		F4	tual	
12:0	Communication settings				
12:0 12:0	Test ProPar		Maj	j+F6	ut
12:0	Speed test		Ctr	I+D	*
12:0	Reset errors		Ctr	l+R	ut
12:0	Echo all info		Ctr	l+E	lue
12:0	Echo errors		Ctr	l+G	re
12:0	 Echo client linkpokes 			l+W	tual
12:0	Check FLOW-	BUS configura	ation Ctr	I+B	
12:0 12:0 12:0	1:36 Read 1:36 Read	Ch001 P0 Ch001 P0		alog in Irm info	

Default display to be maintained. If necessary change the COM-port, then OK.

Open communication

On your screen, FlowDDE should show the following image:



Leave flowdde open while using FlowView and/or FlowPlot.

Getting started with flowview

Detailed instructions on the manual : 9.17.030

Basic function

After opening you will get this window. You can now :

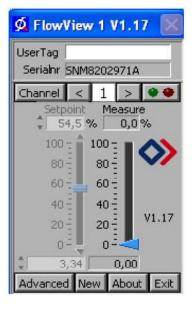
- read the serial number.
- indicate a tag number,
- select the channel,
- change the setpoint and
- read the measurement.

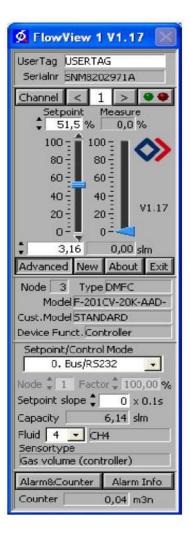
Advanced function

Click on the "Advanced" button. In this window you will be able to:

- modify the control mode,
- create slopes,
- change the gas (for multi-fluid instruments),
- configure the counters and alarms.

If you have several instruments in a network, click on new and select your instrument with the arrows under the serial number.



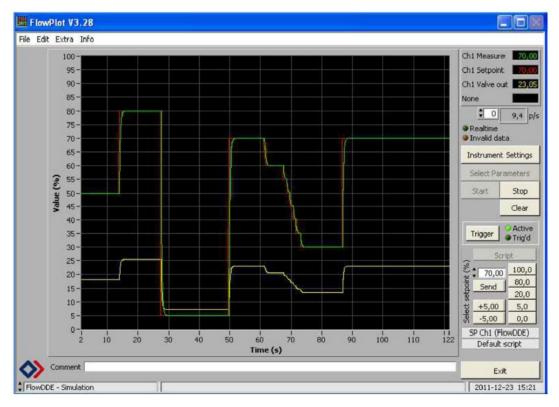


FlowPlot

When opening FlowPlot 2 windows are opened. In the "Select Parameters" window, you can modify the curves to be displayed. Display at least "Measure" and "Setpoint", then OK.

FlowPlot V3.28			. • ×
File Edit Extra Info			
100 - 95 - 90 - 85 -			None None None None None
Select Parameters			Inf p/s
Plot lines			Realtime Invalid data
		color options	-
1 FlowDDE	8 Measure		Instrument Settings
2 FlowDDE 1 3 FlowDDE 1			Select Parameters
	Job Valve Odc	-	Start Stop
Add Remove Defa	ult all		
Edit selected plot line			Clear
	hannel parameter	color Trigger	Trigger Active
Identify instrument (wink	LEDs)		Script
			50,00 100,0
Channel & control mode DDE server channe FlowDDE 1 SNM8202971A (DMFC) Mode 0, Bus/R5232		Options Show Select Parameters window at startup	Send 80,0
FlowDDE - Normal polling		OK Can	Exit 2011-12-23 15:04

Start the display by clicking on Start. You can change your setpoint, either by writing it down or by using the writing it down or by using the buttons, +5, -5, 80....and Send.



Select Instruments Settings to access the advanced settings.

Instrument Settings	
Channel & control mode DDE server channel FlowDDE 1 1 SNSN999999A (DMFC) w Mode 0. Bus/RS232 1 Actual readings Meas 70,00% 0,700 In/min Valve 23,05% 0,000 A Basic Ident Sensor Calibrati	Setpoint controller DDE server channel FlowDDE 1 9 0% 100% 40% 80% 20% 10% 50% 9% -1% 50% 0% ion Valve Controller
Identification Serial number: SN99999A (DMFC) Service number: 00000000 Usertag: USERTAG Fluid settings Active fluidset: 1 Fluid: AIR	Model number: F201C-FA Customer model: STANDARD
Capacity and unit Unit type: Volume Flo Full scale value: 1,000 [n/n	
Output filter Dynamic: Display factors Dynamic: 01, 1 = no filtering Static: Sensor filter Sensor filter	1,00E-3 1,00E-6
Smoothing factors Exponential: 01, 1 = no filtering Adaptive:	1,000 Inf ttings Backup Request Close

🛄 Instrument Settings
Channel & control mode Setpoint controller DDE server channel FlowDDE 1 SNSN999999A (DMFC) w Mode 0. Bus/RS232 Actual readings 0,700 In/min Valve 23,05% 0,000 A
Basic Ident Sensor Calibration Valve Controller Alarm & Count Controller features Controller type: 1 Valve curve correction Controller startup Open from zero with ramp function Factor: 2,0 Signal: 4 80 % Valve voltage drift compensation Automatic slope for pilot valves Open: 0,000 A Max: 0,000 A Valve voltage drift compensation Automatic slope for pilot valves Set open to low Valve output steps Valve overshoot protection Setpoint slope: 0,0 sec
PID settings PID-Ti PID-Ti PID-Td 8 10 12 0,010 0,100 0,010 0,100 6 14 0,001 0,010 0,001 0,010 0,001 0,001 0,001 0,000 5,000 fast 0,000 5,000 fast 0,000 slow 0,000 5,000 fast 0,000 score 0,000 5,000 fast 0,000 score 0,000
Load Save as Restore settings Backup Request Close

The controller tab will allow you to set the controller parameters.