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# FLUIKA™ Miniature Pneumatic Control Kit

Fluika Server

Document: FD009

Version: 1

Date: 2013-10-05



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Due to constant development of our devices, upgraded firm- and software, your actual device or software behavior may differ from that in this documentation. Therefore it is important to obtain latest documentation from our web site ([www.fluika.com](http://www.fluika.com)). All documents are indexed and named FD followed by three digit document number and eventually version number (eg. "FD001-v1.pdf"). Also source codes, project examples and tutorial videos can be found on our web site.

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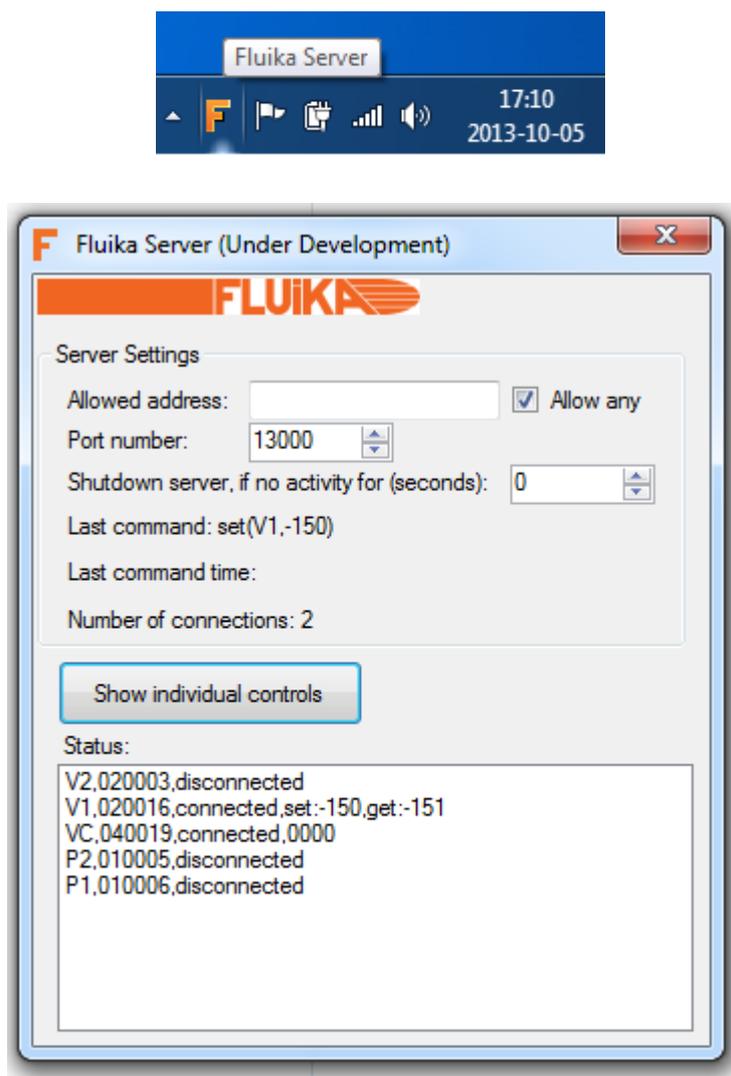
This document contains detailed information how to control FLUIKA™ devices using Fluika Server. Present document describes:

- Graphical user interface
- Communication protocol
- Examples

## FLUIKA SERVER

Fluika Server provides an easy control interface of Fluika devices over TCP/IP protocol, which is useful for control over network or from other software applications without the need to integrate .NET libraries.

Fluika Server is stand-alone application for Windows. If started, no graphical user interface is shown by default, even though server process starts. Graphical interface can be accessed through windows tray, where orange F icon appears. Clicking this icon toggles the control panel of the server visible or invisible.



In Fluika Server control panel, you can find settings for TCP/IP connections, such as allowed address (it can be also any). Port number, which server is listening and inactive time for automated shutdown of the server (0 means, that server never shut downs).

Server handles particular instrument, which is defined in the configuration file *device.txt* located in the same folder as program. This configuration can be edited manually using text editor.

Configuration file can contain comments in C++ style using `//`. Each line can contain definition of one component, which can be either pressure (PG, VG, VPG) or valves (VC) type. Each definition contains also a name for each device and its serial number (or ID). Syntax is case sensitive.

```
//This is example
pressure(V2,020003) //This defines V2, with ID 020003
pressure(V1,020016)
valves(VC,040019) //This defines a valve device
pressure(P2,010005)
pressure(P1,010006)
```

If configuration file is loaded Server attempts to connect and handle all parts defined in the file.

On the other hand server takes TCP/IP connections from other programs or even devices.

once connected server supports following commands:

- **status()**
- **set(device,value)**
- **close()**

**status:** returns status of all defined devices. Status contains device name, its ID, connection status (connected or disconnected) and if connected then, current hardware state. For pressure controllers it is set (defined by software) and get (actually measured) pressure state. For valves it is valves states (listed as 0's and 1's in following order: valve1, 2, 3, 4).

Example:

(Blue is sent command to server and red is the response)

```
status()
status(V2,020003,disconnected)
status(V1,020016,connected,set:0,get:4)
status(VC,040019,connected,0000)
status(P2,010005,disconnected)
```

**set:** set device state. Set command always takes two parameters, first is device name, which the setting is sent and second is the actual parameter.

For pressure controllers parameters are pressure value in mbars (positive or negative integer number), which has to be in the pressure range of the device. Alternative parameter is off which switches the motors off. Any other text or numeric value causes ERROR to be returned.

Example:

```
set(V1,-200)
set(V1,off)
set(V1,-100)
set(V1,100)
ERROR(Set of pressure device can accept <off> or integer number as parameter)
set(V1,ssa)
ERROR(Set of pressure device can accept <off> or integer number as parameter)
```

For valve controllers, parameters are valve states, which can be either valve by valve (valve1on, valve1off, valve2on, valve2off, etc) or all at once using 4 digit string, which can contain 0, 1 and x - 0 meaning that valve will be switched off, 1 - on and x - this valve remains unaffected. Each character is corresponding to one valve starting from valve1 (left most)

```
set (VC, xxx1)
set (VC, valve1on)
set (VC, valve3on)
set (VC, valve4off)
set (VC, xx10)
```

**close** command shut downs the server program