



**TANGO**  
Device  
Server

# **NHQ\_x0xx User's Guide**

## **NHQ\_x0xx Class**

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**Implemented in C++ - CVS repository: tango-ds**

### **Introduction:**

This DeviceServers controls NHQ\_x0xx series of high voltage powersupplies provided by FAST or ISEG supplier

### **Class Inheritance:**

- Tango::Device\_4Impl
  - NHQ\_x0xx

### **Class Description:**

device of the NHQ\_x0xx high voltage supply from FAST (supplier

## Properties:

Device Properties		
Property name	Property type	Description
<b>SerialProxyName</b>	Tango::DEV_STRING	path to the device server instance
<b>Channel</b>	Tango::DEV_STRING	Choice between channel A and channel B. The both channels work at the same time. channel A is selected by entering A channel B is selected by entering B

## Device Properties Default Values:

Property Name	Default Values
SerialProxyName	No default value
Channel	No default value

**There is no Class properties.**

## States:

States	
Names	Descriptions
<b>ON</b>	the HV supply is switched ON
<b>OFF</b>	the HV supply is switched OFF
<b>ALARM</b>	Voltage max or current max was exceeded
<b>FAULT</b>	no communication possible, several reasons: - out of memory - device Serial is not executing - hardware not linked (check out the wiring)

## Attributes:

Scalar Attributes			
Attribute name	Data Type	R/W Type	Expert
<b>voltage:</b> represents the output voltage, this value can be modified	DEV_DOUBLE	READ_WRITE	No
<b>maxVoltage:</b> this attribute is calculated according to a % of Vmax. - this % can be modify by turning the rotary switch reachable only in front of the Power Supply. - Vmax is depending on the NHQ version. for the NHQ_203M version Vmax = 3000V. Finally if % = 10% and Vmax = 3000V therefore maxVoltage = 300 V.	DEV_DOUBLE	READ	No
<b>maxCurrent:</b> this attribute is calculated according to a % of Imax. - this % can be modify by turning the rotary switch reachable only in front of the Power Supply. - Imax is depending on the NHQ version. for the NHQ_203M version Vmax = 4 mA. Finally if % = 10% and Imax = 4 mA therefore maxVoltage = 0.4 mA.	DEV_DOUBLE	READ	No
<b>rampSpeed:</b> Represents the velocity for reaching the voltage preset	DEV_DOUBLE	READ_WRITE	No
<b>current:</b> Represents the current generated, this value can be modified	DEV_DOUBLE	READ_WRITE	No
<b>autostartMode:</b> if attribute set AND power supply is on, the output voltage is automatically applied.	DEV_BOOLEAN	READ_WRITE	No

## Commands:

More Details on commands....

Device Commands for Operator Level		
Command name	Argument In	Argument Out
<b>Init</b>	DEV_VOID	DEV_VOID
<b>State</b>	DEV_VOID	DEV_STATE
<b>Status</b>	DEV_VOID	CONST_DEV_STRING
<b>RestoreVoltage</b>	DEV_VOID	DEV_VOID

### 1 - Init

- Description:** This commands re-initialise a device keeping the same network connection.  
 After an Init command executed on a device, it is not necessary for client to re-connect to the device.  
 This command first calls the device *delete\_device()* method and then execute its *init\_device()* method.  
 For C++ device server, all the memory allocated in the *nit\_device()* method must be freed in the *delete\_device()* method.  
 The language device desctructor automatically calls the *delete\_device()* method.
- Argin:**

**DEV\_VOID** : none.

- **Argout:**

**DEV\_VOID** : none.

- **Command allowed for:**

- Tango::ON
- Tango::OFF
- Tango::ALARM
- Tango::FAULT

## 2 - State

- **Description:** This command gets the device state (stored in its *device\_state* data member) and returns it to the caller.

- **Argin:**

**DEV\_VOID** : none.

- **Argout:**

**DEV\_STATE** : State Code

- **Command allowed for:**

- Tango::ON
- Tango::OFF
- Tango::ALARM
- Tango::FAULT

## 3 - Status

- **Description:** This command gets the device status (stored in its *device\_status* data member) and returns it to the caller.

- **Argin:**

**DEV\_VOID** : none.

- **Argout:**

**CONST\_DEV\_STRING** : Status description

- **Command allowed for:**

- Tango::ON
- Tango::OFF
- Tango::ALARM
- Tango::FAULT

## 4 - RestoreVoltage

- **Description:** Restores output voltage after the output voltage has been shut off because of: -the presence of an INHIBIT SIGNAL (low=active) -exceeding I<sub>max</sub> This command works if only the autostart is ON.
- **Argin:**  
**DEV\_VOID :**
- **Argout:**  
**DEV\_VOID :**
- **Command allowed for:**
  - Tango::ON
  - Tango::ALARM

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