

## XPSGroup Tango Cpp Class

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### **XPSGroup Class Identification :**

Contact : at synchrotron-soleil.fr - jean.coquet  
Class Family : Motion  
Platform : All Platforms  
Bus : Ethernet  
Manufacturer : Newport  
Manufacturer ref. : XPS

### **XPSGroup Class Inheritance :**

- [Tango::DeviceImpl](#)
  - XPSGroup

### **XPSGroup Class Description :**

controls a group of motor from Newport (XPS controllers)

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## XPSGroup Properties :

There is no class properties

Device Properties			
Name	Description	Type	Default Value
Url	IP Address of the HXP Controller	String	none
Port	port to connect to HXP	short	none
Period	polling period	short	none
GroupName	Name of the XPS Group	String	none
AttributeMotorList	each line creates a dynamic attribute syntax : AttributeName;PositionerName;[format] order by : the order of motors in the group format is optional, default value : %7.4f	String[]	none

XPSGroup Class Commands				
Name	Input type	Output type	Level	Description
<a href="#">State</a>	DEV_VOID	DEV_STATE	OPERATOR	This command gets the device state (stored in its <i>device_state</i> data member) and returns it to the caller.
<a href="#">Status</a>	DEV_VOID	CONST_DEV_STRING	OPERATOR	This command gets the device status (stored in its <i>device_status</i> data member) and returns it to the caller.
<a href="#">InitializeReferencePosition</a>	DEV_VOID	DEV_VOID	OPERATOR	starts the homing process
<a href="#">GoToPosition</a>	DEVVAR_DOUBLEARRAY	DEV_VOID	OPERATOR	sends the hexapod to the 6 given positions

				values X Y Z U V W
<a href="#">Stop</a>	DEV_VOID	DEV_VOID	OPERATOR	Stops all movements
<a href="#">Kill</a>	DEV_VOID	DEV_VOID	OPERATOR	kill all movements deinitializes the HXP
<a href="#">DefinePosition</a>	DEVVAR_DOUBLEARRAY	DEV_VOID	OPERATOR	defines the position as the XYZUVW
<a href="#">On</a>	DEV_VOID	DEV_VOID	OPERATOR	enables drivers of the group
<a href="#">Off</a>	DEV_VOID	DEV_VOID	OPERATOR	disables drivers of the group
<a href="#">TrajectoryGoToOrigin</a>	DEV_VOID	DEV_VOID	OPERATOR	go to trajectory start position This command is mandatory to check the trajectory
<a href="#">TrajectoryCheck</a>	DEV_VOID	DEV_BOOLEAN	OPERATOR	returns true if trajectory check by XPS is successful
<a href="#">TrajectoryReset</a>	DEV_VOID	DEV_VOID	OPERATOR	clears the trajectory in memory
<a href="#">TrajectoryStart</a>	DEV_VOID	DEV_VOID	OPERATOR	starts the trajectory exception if not at origin point

### **Command State :**

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

State Definition		
Input Argument	Tango::DEV_VOID	none.
Output Argument	Tango::DEV_STATE	State Code
DisplayLevel	OPERATOR	..
Inherited	true	..

Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

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### **Command Status :**

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

<b>Status Definition</b>		
Input Argument	Tango::DEV_VOID	none.
Output Argument	Tango::CONST_DEV_STRING	Status description
DisplayLevel	OPERATOR	..
Inherited	true	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

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### **Command InitializeReferencePosition :**

starts the homing process

<b>InitializeReferencePosition Definition</b>		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

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**Command GoToPosition :**

sends the hexapod to the 6 given positions values X Y Z U V W

GoToPosition Definition		
Input Argument	Tango::DEVVAR_DOUBLEARRAY	the 6 positions X Y Z U V W
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

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**Command Stop :**

Stops all movements

Stop Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

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**Command Kill :**

kill all movements  
deinitializes the HXP

Kill Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

### **Command DefinePosition :**

defines the position as the XYZUVW

DefinePosition Definition		
Input Argument	Tango::DEVVAR_DOUBLEARRAY	the XYZUVW positions
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

### **Command On :**

enables drivers of the group

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<b>On Definition</b>		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

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### **Command Off :**

disables drivers of the group

<b>Off Definition</b>		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

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### **Command TrajectoryGoToOrigin :**

go to trajectory start position

This command is mandatory to check the trajectory

<b>TrajectoryGoToOrigin Definition</b>		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..

Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

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### **Command TrajectoryCheck :**

returns true if trajectory check by XPS is successful

<b>TrajectoryCheck Definition</b>		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_BOOLEAN	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

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### **Command TrajectoryReset :**

clears the trajectory in memory

<b>TrajectoryReset Definition</b>		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..



## Command TrajectoryStart :

starts the trajectory  
exception if not at origin point

TrajectoryStart Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
		..
Command allowed for	All states	..

XPSGroup Class Attributes							
Name	Inherited	Abstract	Attr. type	R/W type	Data type	Level	Description
<a href="#">freeze</a>	false	false	Scalar	READ_WRITE	Tango::DEV_BOOLEAN	OPERATOR	freezes the hexapod when true: \nyou can write attributes x,y,z,u,v,w without a real move.\nwhen written to false sends the command with the values written to the HXP
							trajectory. For each point you must issue all motor positions for the group in the group order\nAll

<a href="#">trajectory</a>	false	false	Image	WRITE	Tango::DEV_DOUBLE	EXPERT	positions must be provided absolute Time in seconds position in (units) velocity in units/sec. line 0 : time 0=0, abs pos.1, speed pos.1=0, abs pos.2, speed pos.2=0, abs pos.n, speed pos.n=0 line 1 : time 1, abs pos.1, speed pos.1, abs pos.2, speed pos.2, abs pos.n, speed pos.n line m : time m, abs pos.1, speed pos.1, abs pos.2, speed pos.2, abs pos.n, speed pos.n last line : time z, abs pos.1, speed pos.1=0, abs pos.2, speed pos.2=0, abs pos.n, speed pos.n=0
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**There is no dynamic attribute defined.**

**Attribute freeze :**

freezes the hexapod when true: \nyou can write attributes x,y,z,u,v,w without a real move.\nwhen written to false sends the command with the values written to the HXP

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE

Attribute Properties	
label	freeze
unit	
standard unit	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set

Data Type	Tango::DEV_BOOLEAN
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states
Write allowed for	All states

display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

### Attribute trajectory :

trajectory. For each point you must issue all motor positions for the group in the group order\nAll positions must be provided absolute \nTime in seconds\nposition in (units)\nvelocity in units/sec.\nline 0 : time 0=0, abs pos.1, speed pos.1=0, abs pos.2 , speed pos.2=0, abs pos.n , speed pos.n=0\nline 1 : time 1, abs pos.1, speed pos.1, abs pos.2 , speed pos.2, abs pos.n , speed pos.n\nline m : time m, abs pos.1, speed pos.1, abs pos.2 , speed pos.2, abs pos.n , speed pos.n\nlast line : time z, abs pos.1, speed pos.1=0, abs pos.2 , speed pos.2=0, abs pos.n , speed pos.n=0\n\n\n

Attribute Definition	
Attribute Type	Image ( 17 x 1000 )
R/W Type	WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	EXPERT
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set

Attribute Properties	
label	trajectory
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	

Attribute Event Criteria	
Periodic	Not set
Relative Change	Not set
Absolute Change	Not set
Archive Periodic	Not set
Archive Relative Change	Not set
Archive Absolute Change	Not set

Write allowed for	All states
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delta_time	
delta_val	

Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

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**There is no state defined**