

FPS3010LCtrl Tango Cpp Class

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FPS3010LCtrl Class Identification :

Contact : at desy.de - johannes.blume
 Class Family : MeasureInstruments
 Platform : Unix Like
 Bus : Not Applicable
 Manufacturer : Attocube
 Manufacturer ref. : <http://www.attocube.com/attosensorics/fps-sensor-systems/fps3010/>

FPS3010LCtrl Class

Inheritance :

- [Tango::DeviceImpl](#)
 - FPS3010LCtrl

FPS3010L Ctrl Class Description :

Tango device server for Attocube FPS3010 interferometer

FPS3010L Ctrl Properties :

There is no class properties

Device Properties			
Name	Description	Type	Default Value
DeviceID	ID of device, if no IpAddress is set or ConnectType is empty or set to `usb`, the ID is used to identify the device.	int	-1
ConnectType	Connection method, may be `net` for tcp/ip or `usb` for usb. If empty / not set, devices will be searched on both types.	String	none
HostName	IP Address or hostname If set, device will be identified by this name/address, otherwise identification will be done by DeviceID.	String	""
TriggerSource	Device/Attribute which emits trigger signal to start data collection	String	none
UseTrigger	whether to use trigger (true) or not (false)	boolean	none

FPS3010L Ctrl Class Commands				
Name	Input type	Output type	Level	Description
State	DEV_VOID	DEV_STATE	OPERATOR	This command gets the device state (stored in its device_state data member) and returns it to the caller.
Status	DEV_VOID	CONST_DEV_STRING	OPERATOR	This command gets the device status (stored in its device_status data member) and returns it to the caller.
AxisStatus	DEV_ULONG	DEV_LONG	OPERATOR	None.
Adjust	DEV_VOID	DEV_VOID	OPERATOR	start the adjustment procedure
Recalibrate	DEV_VOID	DEV_VOID	OPERATOR	Start the recalibration procedure.
SignalQuality	DEV_ULONG	DEV_ULONG	OPERATOR	None.
ResetAxis	DEV_ULONG	DEV_VOID	OPERATOR	None.
SetPollTime	DEVVAR_ULONGARRAY	DEV_VOID	OPERATOR	None.
GetPollTime	DEV_ULONG	DEV_ULONG	OPERATOR	get poll time for axis
CollectDataTime	DEV_ULONG	DEV_VOID	OPERATOR	time to run position data collection in ms
GetMeanDev	DEV_ULONG	DEVVAR_DOUBLEARRAY	OPERATOR	Get results per axis after a CollectData call
RunCallBack	DEVVAR_USHORTARRAY	DEV_VOID	OPERATOR	for internal use only, never call from client

CollectDataStart	DEV_VOID	DEV_VOID	OPERATOR	None.
CollectDataStop				
GetCollectData	DEV_ULONG	DEVVAR_DOUBLEARRAY	OPERATOR	None.

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	Device state
DisplayLevel	OPERATOR	..
Inherited	true	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command Status :

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

Status Definition		
Input Argument	Tango::DEV_VOID	none
Output Argument	Tango::CONST_DEV_STRING	Device status
DisplayLevel	OPERATOR	..
Inherited	true	..
Abstract	true	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command AxisStatus :

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AxisStatus Definition		
Input Argument	Tango::DEV_ULONG	axis number
Output Argument	Tango::DEV_LONG	0: axis is successfully aligned, signal quality is sufficient 1: axis is successfully aligned, signal quality is insufficient 2: axis is not successfully aligned, signal quality is sufficient 3: axis is not successfully aligned, signal quality is insufficient
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT 	..

Command Adjust :

start the adjustment procedure

Adjust Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING 	..

Command Recalibrate :

Start the recalibration procedure.

Recalibrate Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..

Command NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING 	..
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Command SignalQuality :

SignalQuality Definition		
Input Argument	Tango::DEV_ULONG	Axis number (0-2)
Output Argument	Tango::DEV_ULONG	signal quality (the higher the better)
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT 	..

Command ResetAxis :

ResetAxis Definition		
Input Argument	Tango::DEV_ULONG	axis number (0-2)
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING 	..

Command SetPollTime :

SetPollTime Definition		

Input Argument	Tango::DEVVAR_ULONGARRAY	arg[0] : axis number arg[1] : poll time (= 80ns * (2 ^ arg[1]), range 0->31)
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING 	..

Command GetPollTime :

get poll time for axis

GetPollTime Definition		
Input Argument	Tango::DEV_ULONG	axis number
Output Argument	Tango::DEV_ULONG	poll time (= 80ns * (2 ^ arg[1]), range 0->31)
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING 	..

Command CollectDataTime :

time to run position data collection in ms

CollectDataTime Definition		
Input Argument	Tango::DEV_ULONG	time to run position data collection in ms
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> • INIT 	

Command NOT allowed for	<ul style="list-style-type: none"> • FAULT • RUNNING 	..
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Command GetMeanDev :

Get results per axis after a CollectData call

GetMeanDev Definition		
Input Argument	Tango::DEV_ULONG	
Output Argument	Tango::DEVVAR_DOUBLEARRAY	0: average value 1: standard deviation
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING 	..

Command RunCallback :

for internal use only, never call from client

RunCallback Definition		
Input Argument	Tango::DEVVAR_USHORTARRAY	0:true: start callback function 0:false: stop callback function 1:true routine ran ok 1:false: routine hit datasize limit
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • ALARM 	..

Command CollectDataStart :

CollectDataStart Definition		
Input Argument	Tango::DEV_VOID	start position data collection
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none">• INIT• FAULT• RUNNING	..

Command CollectDataStop :

CollectDataStop Definition		
Input Argument	Tango::DEV_VOID	stop position data collection
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none">• ON• INIT• FAULT	..

Command GetCollectData :

GetCollectData Definition		
Input Argument	Tango::DEV_ULONG	Axis number
Output Argument	Tango::DEVVAR_DOUBLEARRAY	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..

Command NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • ALARM 	..
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FPS3010LCtrl Class Attributes							
Name	Inherited	Abstract	Attr. type	R/W type	Data type	Level	Description
DeviceFeatures	false	false	Scalar	READ	Tango::DEV_LONG	OPERATOR	<p>Bitfield:</p> <p>0x01: Ethernet enabled</p> <p>0x02: Angular measurement</p> <p>0x04: Digital inputs</p> <p>0x08: Environmental compensation</p>
CollectDataUpdateTime	false	false	Scalar	READ_WRITE	Tango::DEV_ULONG	OPERATOR	<p>Logarithmic time distance of two subsequent position measurements. The actual sample time can be varied only in powers of two:</p> <p>sample time = $10.24\mu s * (2^{lbSmpTime})$.</p> <p>Allowed range is 0 ... 24 (10.24us ... 172s) .</p> <p>The sample time directly affects the data rate!</p>
CollectDataMaxSize	false	false	Scalar	READ_WRITE	Tango::DEV_ULONG	OPERATOR	<p>The maximum number of position data elements the CollectDataStart / CollectDataTime are allowed to collect. Once this value is exceeded data collection will be stopped. This is just a precaution tp prevent the program from eating up all the memory if</p>

							someone forgets to call CollectDataStop or runs CollectDataTime with a too high setting.
FileDir	false	false	Scalar	READ_WRITE	Tango::DEV_STRING	OPERATOR	
FilePrefix	false	false	Scalar	READ_WRITE	Tango::DEV_STRING	OPERATOR	
FileStartNum	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	
FilePostfix	false	false	Scalar	READ_WRITE	Tango::DEV_STRING	OPERATOR	
FileSaving	false	false	Scalar	READ_WRITE	Tango::DEV_BOOLEAN	OPERATOR	
Temperature	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	
AirPressure	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	
Humidity	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	
Refraction	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	
Positions	false	false	Spectrum	READ	Tango::DEV_DOUBLE	OPERATOR	

There is no dynamic attribute defined.

Attribute DeviceFeatures :

Bitfield:

- 0x01: Ethernet enabled
- 0x02: Angular measurement
- 0x04: Digital inputs
- 0x08: Environmental compensation

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING

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

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
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute CollectDataUpdateTime :

Logarithmic time distance of two subsequent position measurements.
 The actual sample time can be varied only in powers of two:

$$\text{sample time} = 10.24\mu\text{s} * (2 \wedge \text{lbSmpTime}).$$

Allowed range is 0 ... 24 (10.24us ... 172s) .
 The sample time directly affects the data rate!

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_ULONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read NOT allowed for	<ul style="list-style-type: none"> • FAULT
Write NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING

Attribute Properties	
label	
unit	
standard unit	
display unit	
format	
max_value	24
min_value	0
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

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
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute CollectDataMaxSize :

The maximum number of position data elements the CollectDataStart / CollectDataTime are allowed to collect. Once this value is exceeded data collection will be stopped. This is just a precaution to prevent the program from eating up all the memory if someone forgets to call CollectDataStop or runs CollectDataTime with a too high setting.

Attribute Definition	

Attribute Properties	

Attribute Event Criteria	
Periodic	Not set

Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_ULONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read NOT allowed for	<ul style="list-style-type: none"> • FAULT
Write NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING

label	
unit	
standard unit	
display unit	
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

Relative Change	Not set
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	false

Attribute FileDir :

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_STRING
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read NOT allowed for	<ul style="list-style-type: none"> • FAULT
Write NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING

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

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
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute FilePrefix :

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_STRING
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read NOT allowed for	<ul style="list-style-type: none"> • FAULT
Write NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING

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

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
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute FileStartNum :

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read NOT allowed for	<ul style="list-style-type: none"> • FAULT
Write NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING

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

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
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute FilePostfix :

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_STRING
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read NOT allowed for	<ul style="list-style-type: none"> • FAULT
Write NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING

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

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
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute FileSaving :

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_BOOLEAN
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read NOT allowed for	<ul style="list-style-type: none"> • FAULT
Write NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT

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

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
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute Temperature :

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

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

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
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute AirPressure :

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

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

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

delta_val

Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute Humidity :

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

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

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
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

Attribute Refraction :

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false

Attribute Properties	
label	
unit	
standard unit	
display unit	
format	
max_value	

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

Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states

min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

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	false

Attribute Positions :

Attribute Definition	
Attribute Type	Spectrum (3)
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	<ul style="list-style-type: none"> • INIT • FAULT • RUNNING

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

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
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	false

FPS3010Ctrl Class States	
Name	Description
ON	Everything ok, read to go.

INIT	The device is either adjusting or recalibrating or aligning. Status message will shown details.
FAULT	Something went wrong, status message will show details.
RUNNING	
ALARM	