

Spk Tango Cpp Class

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Spk Class Identification :

Contact : at desy.de - thorsten.kracht
Class Family : Motion

Spk Class Inheritance :

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

Platform : Unix Like
 Bus : Not Applicable
 Manufacturer : none
 Manufacturer ref. :

Spk Class Description :

the interface to the large offset monochromator motors

Spk Properties :

There is no class properties

Device Properties			
Name	Description	Type	Default Value
PlcServer	the server which exports the SPK PLC	String	none
Channel	the channel selects the motor, the first motor starts at offset 512, the next motor at 512 + 256	int	0
SimulationMode	0 real mode, 1 simulation mode	int	none
FlagUseCollisionsSensor	Set to 1 for using CollisionsSensor Server for checking possible collisions	int	0
CollisionsSensorDS	Name of the CollisionsSensor Device Server to be connected to.	String	none
CollisionsSensorBL	Beamline identification as string, needs for sending to CollisionsSensor.	String	none

Spk Class Commands				
Name	Input type	Output type	Level	Description
State	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.
Status	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.
CompleteMove	DEV_VOID	DEV_LONG	OPERATOR	It no action
SetupUnitMove	DEV_DOUBLE	DEV_LONG	OPERATOR	prepares a move, calculates the new step position from the argument, the calibration value and the conversion factor, takes backlash into account, sets FlagMotorReady
StartMove	DEV_VOID	DEV_LONG	OPERATOR	a motor with FlagMotorReady == 1 is started, the function returns immediately, Better: move a motor by writing to Position attribute
StopMove	DEV_VOID	DEV_LONG	OPERATOR	stop a movement, return immediately, don't wait for de-acceleration, don't do backlash
Move	DEV_DOUBLE	DEV_LONG	OPERATOR	Setup motor, start move, complete move. Better: move a motor by writing to the `Position` attribute
ResetMotor	DEV_VOID	DEV_LONG	OPERATOR	Sets and clears the `Reinitialisierung`-Bit
Calibrate	DEV_DOUBLE	DEV_LONG	OPERATOR	Calibrate the motor: current position is calibrated to be the value given as an argument,

UserCalibrate	DEV_DOUBLE	DEV_LONG	OPERATOR	changes the home position Uses an user calibration for calibrating the motor keeping the general one.
CheckMove	DEV_VOID	DEV_LONG	OPERATOR	returns MOVING or ON
GetStepPosition	DEV_VOID	DEV_LONG	OPERATOR	None.
MoveHome	DEV_VOID	DEV_VOID	OPERATOR	Start the homing procedure
ClearError	DEV_VOID	DEV_VOID	OPERATOR	resets the errors
SaveEncoderOffset	DEV_VOID	DEV_VOID	OPERATOR	saves the encoder offset
LoadEncoderOffset	DEV_VOID	DEV_VOID	OPERATOR	loads the encoder offset
CalibrateEncoder	DEV_DOUBLE	DEV_LONG	OPERATOR	changes the encoder offset
ResetLimitPositions	DEV_VOID	DEV_VOID	OPERATOR	resets the PLC limit positions
ClearLimitPositions	DEV_VOID	DEV_VOID	OPERATOR	If limits are hit, the SPS memorized the positions and uses the value as a hardware limit. This command restores the default hardware limits.

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	true	..
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	Status description
DisplayLevel	OPERATOR	..
Inherited	true	..
Abstract	true	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command CompleteMove :

It no action

CompleteMove Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_LONG	return status of execution
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command SetupUnitMove :

prepares a move, calculates the new step position from the argument, the calibration value and the conversion factor, takes backlash into account, sets FlagMotorReady

SetupUnitMove Definition		
Input Argument	Tango::DEV_DOUBLE	final position, in units
Output Argument	Tango::DEV_LONG	completion status
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command StartMove :

a motor with FlagMotorReady == 1 is started, the function returns immediately,
Better: move a motor by writing to Position attribute

StartMove Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_LONG	completion status

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

Command StopMove :

stop a movement, return immediately, don't wait for de-acceleation, don't do backlash

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

Command Move :

Setup motor, start move, complete move.
Better: move a motor by writing to the `Position` attribute

Move Definition		
Input Argument	Tango::DEV_DOUBLE	Final position, in units
Output Argument	Tango::DEV_LONG	Completion status
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	<ul style="list-style-type: none"> • MOVING • FAULT 	..

Command ResetMotor :

Sets and clears the `Reinitialisierung`-Bit

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

Command Calibrate :

Calibrate the motor: current position is calibrated to be the value given as an argument, changes the home position

Calibrate Definition		
Input Argument	Tango::DEV_DOUBLE	Value to be calibrated
Output Argument	Tango::DEV_LONG	Completion status
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command UserCalibrate :

Uses an user calibration for calibrating the motor keeping the general one.

UserCalibrate Definition		
Input Argument	Tango::DEV_DOUBLE	Value to be calibrated
Output Argument	Tango::DEV_LONG	Completion status
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command CheckMove :

returns MOVING or ON

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

Command GetStepPosition :

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

Command MoveHome :

Start the homing procedure

MoveHome 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"> • MOVING • FAULT 	..

Command ClearError :

resets the errors

ClearError 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 SaveEncoderOffset :

saves the encoder offset

SaveEncoderOffset 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"> • MOVING • FAULT 	..

Command LoadEncoderOffset :

loads the encoder offset

LoadEncoderOffset Definition		
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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"> • MOVING • FAULT 	..

Command CalibrateEncoder :

changes the encoder offset

CalibrateEncoder Definition		
Input Argument	Tango::DEV_DOUBLE	Value to be calibrated
Output Argument	Tango::DEV_LONG	Completion status
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
		..
Command allowed for	All states	..

Command ResetLimitPositions :

resets the PLC limit positions

ResetLimitPositions 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"> • MOVING • FAULT 	..

Command ClearLimitPositions :

If limits are hit, the SPS memorized the positions and uses the value as a hardware limit.
This command restores the default hardware limits.

ClearLimitPositions 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 ..

Spk Class Attributes							
Name	Inherited	Abstract	Attr. type	R/W type	Data type	Level	Description
CwLimit	false	false	Scalar	READ	Tango::DEV_LONG	OPERATOR	CW limit status, hardware
CcwLimit	false	false	Scalar	READ	Tango::DEV_LONG	OPERATOR	CCW limit status, hardware
UnitLimitMax	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	software limit, rw
UnitLimitMin	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	software limit, rw
SettleTime	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	Online sleeps SettleTime seconds after each move
FlagProtected	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	if 1, no write operations to the server are allowed
FlagMotorReady	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	OmsVme58 compatibility feature
StepPositionController	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	compatibility feature
StepPositionInternal	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	
SlewRate	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	compatibility feature
UnitBacklash	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	if > 0, the backlash is done when goind down
Position	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	
HomePosition	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	Setting the offset effectively sets the home position,\nmaintained by the PLC - no need to memorize
FlagEncoderHomed	false	false	Scalar	READ	Tango::DEV_LONG	OPERATOR	1, if the encoder was homed
FlagEncoderHomeDefined	false	false	Scalar	READ	Tango::DEV_LONG	OPERATOR	always 1
CurrentUnitPosition	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	obsolete, use Position instead
							the error code\n0 no error\n1 emergency power off\n2 unexpected limit switch\n3 at a limit during

ErrorCode	false	false	Scalar	READ	Tango::DEV_LONG	OPERATOR	power-on\n4 both limits\n5 homing blocked by limit switch\n6 wrong limit during homing\n7 schlupf more than 1 mm\n8 inconsistent limits\n9 hardware error, motor\n10 hardware error, encoder
ConversionFactor	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	the factor is used to convert the PLC positions to \nphysical quantities, pos = PlcUnits*convFactor/1000. \n`1000` because the PLC measures the position in microns.
IgnoreLimits	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	if set, the limit switches are ignored
PositionSetPoint	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	stores the setpoint
UnitLimitMaxHW	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the hardware limit, in units, conversion and home position\nare taken into account, ro
UnitLimitMinHW	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	the hardware limit, in unit, conversion and home position\nare taken into account, ro
EncoderOffset	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	in micrometer, posPLC = Encoder + HomePosition + EncoderOffset, \npos = posPLC/1000*conversion

There is no dynamic attribute defined.

Attribute CwLimit :

CW limit status, hardware

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 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	

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	Not set

delta_time	
delta_val	

Attribute CcwLimit :

CCW limit status, hardware

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 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	Not set

Attribute UnitLimitMax :

software limit, rw

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
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	

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	Not set

Write allowed for	All states
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delta_time	
delta_val	

Attribute UnitLimitMin :

software limit, rw

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read allowed for	All states
Write 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	Not set

Attribute SettleTime :

Online sleeps SettleTime seconds after each move

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read allowed for	All states
Write 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
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

delta_val

Attribute FlagProtected :

if 1, no write operations to the server are allowed

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 allowed for	All states
Write 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	Not set

Attribute FlagMotorReady :

OmsVme58 compatibility feature

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	Not set
Read allowed for	All states
Write 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
Push Change event by user code	false
Push Archive event by user code	false
Push DataReady event by user code	Not set

Attribute StepPositionController :

compatibility feature

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	Not set
Read allowed for	All states
Write 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	Not set

Attribute StepPositionInternal :

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	Not set
Read allowed for	All states
Write 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	Not set

Attribute SlewRate :

compatibility feature

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	Not set
Read allowed for	All states
Write 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	Not set

Attribute UnitBacklash :

if > 0, the backlash is done when goind down

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read allowed for	All states
Write 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	Not set

Attribute Position :

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

Attribute HomePosition :

Setting the offset effectively sets the home position,\nmaintained by the PLC - no need to memorize

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

Attribute FlagEncoderHomed :

1, if the encoder was homed

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 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	Not set

Attribute FlagEncoderHomeDefined :

always 1

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 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	Not set

Attribute CurrentUnitPosition :

obsolete, use Position instead

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	Not set

Attribute ErrorCode :

the error code\n0 no error\n1 emergency power off\n2 unexpected limit switch\n3 at a limit during power-on\n4 both limits\n5 homing blocked by limit switch\n6 wrong limit during homing\n7 schlupf more than 1 mm\n8 inconsistent limits\n9 hardware error, motor\n10 hardware error, encoder

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 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	Not set

Attribute ConversionFactor :

the factor is used to convert the PLC positions to \physical quantities, $pos = PlcUnits * convFactor / 1000$. \n`1000` because the PLC measures the position in microns.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	true
Write hardware at init.	true
Read allowed for	All states
Write 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	Not set

Attribute IgnoreLimits :

if set, the limit switches are ignored

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.	Not set
Read allowed for	All states
Write 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	Not set

Attribute PositionSetPoint :

stores the setpoint

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	Not set

Attribute UnitLimitMaxHW :

the hardware limit, in units, conversion and home position\nare taken into account, ro

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	Not set

Attribute UnitLimitMinHW :

the hardware limit, in unit, conversion and home position\nnare taken into account, ro

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	Not set

Attribute EncoderOffset :

in micrometer, posPLC = Encoder + HomePosition + EncoderOffset, \npos = posPLC/1000*conversion

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

Spk Class States	
Name	Description
MOVING	*
FAULT	*
ON	motor is idle