SmarActController Tango Cpp Class

Contents :

SmarActController Class Identification :

Contact	: at desy.de - johannes.blume
Class Family	: Motion
Platform	: Unix Like
Bus	: Not Applicable
Manufacturer	: SmarAct

SmarActController Class Inheritance :

- Tango::DeviceImpl
  - SmarActController

Manufacturer ref. : MCS-3C-IDSH (RS232)

SmarActController Class Description :

Controller server for the SmarAct MCS-3C-IDSH controller

SmarActController Properties :

There is no class properties

Device Properties			
Name	**Description**	**Type**	**Default Value**
HostName	Hostname of terminal server	String	""
PortNumber	Port number on terminal server	String	""
ConnectType	can be serial or net	String	""
BaudRate	tty baud rate	int	0
DeviceFile	tty device file	String	""

SmarActController 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.
Reset	DEV_VOID	DEV_VOID	OPERATOR	Reset the controller
BaudRate	DEV_ULONG	DEV_VOID	OPERATOR	Set baud rate to argin
Stop	DEV_LONG	DEV_VOID	OPERATOR	Stop movement
AxisStatus	DEV_LONG	DEV_LONG	OPERATOR	Get status for axis argin

GetSensorType	DEV_LONG	DEV_LONG	OPERATOR	Get sensor type for axis argin
SetSensorType	DEVVAR_SHORTARRAY	DEV_VOID	OPERATOR	Set sensor type for axis argin
GetPosition	DEVVAR_DOUBLEARRAY	DEV_DOUBLE	OPERATOR	Get position for axis argin
SetPosition	DEVVAR_DOUBLEARRAY	DEV_VOID	OPERATOR	Moves axis argin to position
SetSpeed	DEVVAR_LONGARRAY	DEV_VOID	OPERATOR	Set velocity for axis
GetSpeed	DEV_LONG	DEV_LONG	OPERATOR	Get velocity for axis argin
SetFrequency	DEVVAR_LONGARRAY	DEV_VOID	OPERATOR	Set the closed loop maximum frequency
Home	DEVVAR_LONGARRAY	DEV_VOID	OPERATOR	Run reference mark search for axis
SetAngleLimit	DEVVAR_DOUBLEARRAY	DEV_VOID	OPERATOR	sets limit for rotary movements
GetAngleLimit	DEV_LONG	DEVVAR_DOUBLEARRAY	OPERATOR	sets limit for rotary movements
SetPositionLimit	DEVVAR_DOUBLEARRAY	DEV_VOID	OPERATOR	sets limits for linear movements
GetPositionLimit	DEV_LONG	DEVVAR_DOUBLEARRAY	OPERATOR	gets limit for linear movements
DefinePosition	DEVVAR_DOUBLEARRAY	DEV_VOID	OPERATOR	define current position of axis (argin[0]) as argin[1]
GetLimitMax	DEVVAR_DOUBLEARRAY	DEV_DOUBLE	OPERATOR	Get the maximum limit set for this axis
SetLimitMax	DEVVAR_DOUBLEARRAY	DEV_VOID	OPERATOR	Set the maximum limit set for this axis
GetLimitMin	DEVVAR_DOUBLEARRAY	DEV_DOUBLE	OPERATOR	Get the minimum limit set for this axis
SetLimitMin	DEVVAR_DOUBLEARRAY	DEV_VOID	OPERATOR	Set the maximum limit set for this axis
GetAxisType	DEV_LONG	DEV_LONG	OPERATOR	Get type of axis
PositionKnown	DEV_LONG	DEV_BOOLEAN	OPERATOR	Checks whether the physical position of axis argin is known.

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

Command Reset :

Reset the controller

Reset 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 BaudRate :

Set baud rate to argin

BaudRate Definition		
Input Argument	Tango::DEV_ULONG	9600 -> 115200
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	• FAULT	..

Command Stop :

Stop movement

Stop Definition		
Input Argument	Tango::DEV_LONG	axis index (0-3)
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	• FAULT	..

Command AxisStatus :

Get status for axis argin

AxisStatus Definition		
Input Argument	Tango::DEV_LONG	axis index
Output Argument	Tango::DEV_LONG	current axis status (cf. smarxrm.h)
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	• FAULT	..

Command GetSensorType :

Get sensor type for axis argin

GetSensorType Definition		
Input Argument	Tango::DEV_LONG	axis index
Output Argument	Tango::DEV_LONG	sensor type
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	• FAULT	..

Command SetSensorType :

Set sensor type for axis argin

SetSensorType Definition		
Input Argument	Tango::DEVVAR_SHORTARRAY	0: axis index 1: sensor type
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	• FAULT	..

Command GetPosition :

Get position for axis argin

GetPosition Definition		
Input Argument	Tango::DEVVAR_DOUBLEARRAY	0: axis index 1: axis type (linear, rotary, ...)
Output Argument	Tango::DEV_DOUBLE	current position
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	• FAULT	..

Command SetPosition :

Moves axis argin to position

SetPosition Definition		
		0: axis index

Input Argument	Tango::DEVVAR_DOUBLEARRAY	1: position 2: hold time
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	• FAULT	..

Command SetSpeed :

Set velocity for axis

SetSpeed Definition		
Input Argument	Tango::DEVVAR_LONGARRAY	0 = axis index 1 = speed
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	• FAULT	..

Command GetSpeed :

Get velocity for axis argin

GetSpeed Definition		
Input Argument	Tango::DEV_LONG	axis index
Output Argument	Tango::DEV_LONG	current velocity
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..

Polling Period	Not polled	..
Command NOT allowed for	• FAULT	..

Command SetFrequency :

Set the closed loop maximum frequency

SetFrequency Definition		
Input Argument	Tango::DEVVAR_LONGARRAY	0 = axis index 1 = frequency
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	• FAULT	..

Command Home :

Run reference mark search for axis

Home Definition		
Input Argument	Tango::DEVVAR_LONGARRAY	0 = axis 1 = direction (0 = forward, 1 = backward) 2 = hold time 3 = autozero (0 = no autozero, 1 = autozero)
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	• FAULT	..

Command SetAngleLimit :

sets limit for rotary movements

SetAngleLimit Definition		
Input Argument	Tango::DEVVAR_DOUBLEARRAY	0 = axis index 1 = minimum angle 2 = minimum revolutions 3 = maximum angle 4 = maximum revolutions
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	• FAULT	..

Command GetAngleLimit :

sets limit for rotary movements

GetAngleLimit Definition		
Input Argument	Tango::DEV_LONG	axis index
Output Argument	Tango::DEVVAR_DOUBLEARRAY	0 = minimum angle 1 = minimum revolutions 2 = maximum angle 3 = maximum revolutions
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	• FAULT	..

Command SetPositionLimit :

sets limits for linear movements

SetPositionLimit Definition		
Input Argument	Tango::DEVVAR_DOUBLEARRAY	0 = axis index 1 = minimum position 2 = maximum position
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	• FAULT	..

Command GetPositionLimit :

gets limit for linear movements

GetPositionLimit Definition		
Input Argument	Tango::DEV_LONG	axis index
Output Argument	Tango::DEVVAR_DOUBLEARRAY	0 = minimum position 1 = maximum position
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	• FAULT	..

Command DefinePosition :

define current position of axis (argin[0]) as argin[1]

DefinePosition Definition		
Input Argument	Tango::DEVVAR_DOUBLEARRAY	
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	• FAULT	..

Command GetLimitMax :

Get the maximum limit set for this axis

GetLimitMax Definition		
Input Argument	Tango::DEVVAR_DOUBLEARRAY	0: axis index 1: axis type
Output Argument	Tango::DEV_DOUBLE	Maximum limit
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	• FAULT	..

Command SetLimitMax :

Set the maximum limit set for this axis

SetLimitMax Definition		
Input Argument	Tango::DEVVAR_DOUBLEARRAY	0: axis index 1: axis type 2: maximum limit
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	• FAULT	..

Command GetLimitMin :

Get the minimum limit set for this axis

GetLimitMin Definition		
Input Argument	Tango::DEVVAR_DOUBLEARRAY	0: axis index 1: axis type
Output Argument	Tango::DEV_DOUBLE	Minimum limit
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	• FAULT	..

Command SetLimitMin :

Set the maximum limit set for this axis

SetLimitMin Definition		

Input Argument	Tango::DEVVAR_DOUBLEARRAY	0: axis index 1: axis type 2: minimum limit
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	• FAULT	..

Command GetAxisType :

Get type of axis

GetAxisType Definition		
Input Argument	Tango::DEV_LONG	axis index
Output Argument	Tango::DEV_LONG	can be: 0: linear 1: rotary 2: goniometer
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	• FAULT	..

Command PositionKnown :

Checks whether the physical position of axis argin is known.

PositionKnown Definition		
Input Argument	Tango::DEV_LONG	axis index

Output Argument	Tango::DEV_BOOLEAN	false : position not known true: position known
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command NOT allowed for	• FAULT	..

SmarActController Class Attributes							
Name	**Inherited**	**Abstract**	**Attr. type**	**R/W type**	**Data type**	**Level**	**Description**
SensorsEnabled	false	false	Scalar	READ_WRITE	Tango::DEV_BOOLEAN	OPERATOR	read true = sensors enabled read false = sensors disabled write true = enable sensors write false = disable sensors

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There is no dynamic attribute defined.

Attribute SensorsEnabled :

read true = sensors enabled
read false = sensors disabled
write true = enable sensors
write false = disable sensors

Attribute		Attribute	Attribute Event Criteria	

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	• FAULT
Write NOT allowed for	• FAULT

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

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

SmarActController Class States	
Name	**Description**
ON	Everything ok
FAULT	Something went wrong (check status)