MKS651C Tango Cpp Class

Contents :

- ValvePosition
- States

MKS651C Class Identification :

Contact	: at desy.de - johannes.blume
Class Family	: Instrumentation
Platform	: Unix Like
Bus	: Not Applicable
Manufacturer	: MKS Instruments
Manufacturer ref.	: http://www.mksinst.com/product/product.aspx?ProductID=111&source=search

MKS651C Class Inheritance :

- Tango::DeviceImpl
  - MKS651C

MKS651C Class Description :

Tango server for MKS 651 C Digital/Analog Pressure Controller

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MKS651C Properties :

There is no class properties

Device Properties			
Name	**Description**	**Type**	**Default Value**
HostName	host name / ip address of terminal server	String	""
PortNumber	port number of terminal server	short	0
DeviceFile	tty device file if connected via RS232	String	""
BaudRate	baud rate if connected via RS232	int	0
ConnectType	`net` or `serial`	String	""
SimulationMode		boolean	none

MKS651C 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.
				With input `true` : start the learning procedure With input `false` : stop the learning procedure

Learn	DEV_BOOLEAN	DEV_VOID	OPERATOR	Normally the learning procedure should not be stopped explicitly. The device state will change from `ON` to `RUNNING`` when the learning procedure is started and back to `ON` when the controller reports learning as done.
SetOffset	DEV_DOUBLE	DEV_VOID	OPERATOR	Zero the sensor (correct offset)
RemoveOffset	DEV_VOID	DEV_VOID	OPERATOR	Remove any sensor offset

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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 Learn :

With input `true` : start the learning procedure

With input `false` : stop the learning procedure

Normally the learning procedure should not be stopped
explicitly. The device state will change from `ON` to `RUNNING`` when
the learning procedure is started and back to `ON` when
the controller reports learning as done.

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

Command SetOffset :

Zero the sensor (correct offset)

SetOffset Definition		
Input Argument	Tango::DEV_DOUBLE	zero value (in % of full scale pressure) if arg = 0, command Z1 will be called, otherwise command Z2
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command RemoveOffset :

Remove any sensor offset

RemoveOffset Definition		
Input Argument	Tango::DEV_VOID	
Output Argument	Tango::DEV_VOID	

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

MKS651C Class Attributes							
Name	**Inherited**	**Abstract**	**Attr. type**	**R/W type**	**Data type**	**Level**	**Description**
SetPointA	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	Set point A value unit depends on AbsoluteValues setting: if true, value is pressure if false, value is % of full scale range
AbsoluteValues	false	false	Scalar	READ_WRITE	Tango::DEV_BOOLEAN	OPERATOR	The controller returns values for presssure settings (pressure, setpoint, process limit) in % of full range. If you want the real values calculated set this to true.
SetPointB	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	Set point B value unit depends on AbsoluteValues setting: if true, value is pressure if false, value is % of full scale range
SetPointC	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	Set point C value unit depends on AbsoluteValues setting: if true, value is pressure if false, value is % of full scale range
SetPointD	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	Set point D value unit depends on AbsoluteValues setting: if true, value is pressure if false, value is % of

							full scale range
SetPointE	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	Set point E value unit depends on AbsoluteValues setting: if true, value is pressure if false, value is % of full scale range
SetPointAnalogue	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	Analogue set point A value unit depends on AbsoluteValues setting: if true, value is pressure if false, value is % of full scale range
SelectedSetPoint	false	false	Scalar	READ_WRITE	Tango::DEV_USHORT	OPERATOR	Selected setpoint: 0 = analogue 1 = A 2 = B 3 = C 4 = D 5 = E
Unit	false	false	Scalar	READ_WRITE	Tango::DEV_USHORT	OPERATOR	Pressure Unit: 0 = Torr 1 = mTorr 2 = mbar 3 = nbar 4 = kPa 5 = Pa 6 = cmH2O 7 = inH2O This just changes the unit sign displayed on the device. Check / set SensorPressureRange value as well.
SensorPressureRange	false	false	Scalar	READ_WRITE	Tango::DEV_USHORT	OPERATOR	Sensor pressure range: 0 = 0.1 1 = 0.2 2 = 0.5 3 = 1.0 4 = 2.0 5 = 5.0 6 = 10.0 7 = 50.0 8 = 100.0 9 = 500.0 10 = 1000.0 11 = 5000.0 12 = 10000.0 13 = 1.33 14 = 2.66

							15 = 13.33 16 = 133.3 17 = 1333.0 18 = 6666.0 19 = 13332.0
SensorVoltageRange	false	false	Scalar	READ_WRITE	Tango::DEV_USHORT	OPERATOR	Sensor voltage range: 0 = 1 V 1 = 5 V 2 = 10 V
ValveState	false	false	Scalar	READ_WRITE	Tango::DEV_USHORT	OPERATOR	Valve State: 0 = open 1 = close 2 = stop
SoftStartA	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	softstart rate of set point A, value is % of full speed
SoftStartB	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	softstart rate of set point B, value is % of full speed
SoftStartC	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	softstart rate of set point C, value is % of full speed
SoftStartD	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	softstart rate of set point D, value is % of full speed
SoftStartE	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	softstart rate of set point E, value is % of full speed
SoftStartAnalogue	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	softstart rate of analog set point, value is % of full speed
SoftStartValveOpen	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	softstart rate of open valve, value is % of full speed
SoftStartValveClose	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	softstart rate of close valve, value is % of full speed
ProcessLimit1Low	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	low threshold process limit 1 unit depends on AbsoluteValues setting: if true, value is pressure if false, value is % of full scale range
ProcessLimit1High	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	high threshold process limit 1 unit depends on AbsoluteValues setting: if true, value is pressure if false, value is % of full scale range
							low threshold process

ProcessLimit2Low	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	limit 2 unit depends on AbsoluteValues setting: if true, value is pressure if false, value is % of full scale range
ProcessLimit2High	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	high threshold process limit 2 unit depends on AbsoluteValues setting: if true, value is pressure if false, value is % of full scale range
AnalogueSetPointRange	false	false	Scalar	READ_WRITE	Tango::DEV_USHORT	OPERATOR	Sensor pressure range: 0 = 0.1 1 = 0.2 2 = 0.5 3 = 1.0 4 = 2.0 5 = 5.0 6 = 10.0 7 = 50.0 8 = 100.0 9 = 500.0 10 = 1000.0 11 = 5000.0 12 = 10000.0 13 = 1.33 14 = 2.66 15 = 13.33 16 = 133.3 17 = 1333.0 18 = 6666.0 19 = 13332.0
SetPointAnalogueType	false	false	Scalar	READ_WRITE	Tango::DEV_USHORT	OPERATOR	Set point A type where value is: 0 = position 1 = pressure
SetPointBType	false	false	Scalar	READ_WRITE	Tango::DEV_USHORT	OPERATOR	Set point A type where value is: 0 = position 1 = pressure
SetPointCType	false	false	Scalar	READ_WRITE	Tango::DEV_USHORT	OPERATOR	Set point A type where value is: 0 = position 1 = pressure
SetPointDType	false	false	Scalar	READ_WRITE	Tango::DEV_USHORT	OPERATOR	Set point A type where value is: 0 = position 1 = pressure
SetPointEType	false	false	Scalar	READ_WRITE	Tango::DEV_USHORT	OPERATOR	Set point A type where value is: 0 = position 1 = pressure
							Set point A type where

SetPointAType	false	false	Scalar	READ_WRITE	Tango::DEV_USHORT	OPERATOR	value is: 0 = position 1 = pressure
ValvePositionOutputRange	false	false	Scalar	READ_WRITE	Tango::DEV_USHORT	OPERATOR	Valve position output range: 0 = 5 V 1 = 10 V
DirectReverseControl	false	false	Scalar	READ_WRITE	Tango::DEV_USHORT	OPERATOR	Direct / Reverse control: 0 = direct 1 = reverse
SensorType	false	false	Scalar	READ_WRITE	Tango::DEV_USHORT	OPERATOR	Sensor type: 0 = absolut 1 = differential
LeadA	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	Lead for Setpoint A
GainA	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	gain of Setpoint A, where value = % gain
LeadB	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	Lead for SetpointB
LeadC	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	Lead for Setpoint C
LeadD	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	Lead for Setpoint D
LeadE	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	Lead for Setpoint E
GainB	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	gain of Setpoint B, where value = % gain
GainC	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	gain of SetpointC, where value = % gain
GainD	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	gain of SetpointD, where value = % gain
GainE	false	false	Scalar	READ_WRITE	Tango::DEV_DOUBLE	OPERATOR	gain of Setpoint E, where value = % gain
ControlType	false	false	Scalar	READ_WRITE	Tango::DEV_BOOLEAN	OPERATOR	Control type: 0 = self-tuning 1 = PID
ValveOnPowerFail	false	false	Scalar	READ_WRITE	Tango::DEV_USHORT	OPERATOR	Behaviour of valve on power failure: 0 = option not activated or installed 1 = valve opens on power failure 2 = valve closes on power failure
ValveType	false	false	Scalar	READ_WRITE	Tango::DEV_USHORT	OPERATOR	Sensor type: 0 = absolut 1 = differential
Pressure	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	
ValvePosition	false	false	Scalar	READ	Tango::DEV_DOUBLE	OPERATOR	

There is no dynamic attribute defined.

Attribute SetPointA :

Set point A value

unit depends on AbsoluteValues setting:

if true, value is pressure
if false, value is % of full scale range

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	false

Attribute AbsoluteValues :

The controller returns values for presssure settings (pressure, setpoint, process limit) in % of full range.

If you want the real values calculated set this to true.

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 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	false

Attribute SetPointB :

Set point B value

unit depends on AbsoluteValues setting:

if true, value is pressure
if false, value is % of full scale range

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	true
• Criteria checked by TANGO	true

Attribute SetPointC :

Set point C value

unit depends on AbsoluteValues setting:

if true, value is pressure
if false, value is % of full scale range

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	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
Archive Periodic	Not set
Archive Relative Change	Not set

Polling Period	Not polled
Memorized	Not set
Read allowed for	All states
Write allowed for	All states

min_value
max_alarm
min_alarm
max_warning
min_warning
delta_time
delta_val

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 SetPointD :

Set point D value

unit depends on AbsoluteValues setting:

if true, value is pressure
if false, value is % of full scale range

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	false

Attribute SetPointE :

Set point E value

unit depends on AbsoluteValues setting:

if true, value is pressure
if false, value is % of full scale range

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	false

Attribute SetPointAnalogue :

Analogue set point A value

unit depends on AbsoluteValues setting:

if true, value is pressure
if false, value is % of full scale range

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	false

Attribute SelectedSetPoint :

Selected setpoint:

0 = analogue
1 = A
2 = B
3 = C
4 = D
5 = E

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_USHORT
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	5
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 Unit :

Pressure Unit:

0 = Torr
1 = mTorr
2 = mbar
3 = nbar
4 = kPa
5 = Pa
6 = cmH2O
7 = inH2O

This just changes the unit sign displayed on the device.
Check / set SensorPressureRange value as well.

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_USHORT
Display Level	OPERATOR
Inherited	false
Abstract	false

Attribute Properties	
label	
unit	
standard unit	
display unit	
format	
max_value	7

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

Polling Period	Not polled
Memorized	Not set
Read allowed for	All states
Write allowed for	All states

min_value	0
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

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 SensorPressureRange :

Sensor pressure range:

0 = 0.1
1 = 0.2
2 = 0.5
3 = 1.0
4 = 2.0
5 = 5.0
6 = 10.0
7 = 50.0
8 = 100.0
9 = 500.0
10 = 1000.0
11 = 5000.0
12 = 10000.0
13 = 1.33
14 = 2.66
15 = 13.33
16 = 133.3
17 = 1333.0
18 = 6666.0
19 = 13332.0

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_USHORT
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	19
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 SensorVoltageRange :

Sensor voltage range:

0 = 1 V
1 = 5 V
2 = 10 V

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_USHORT
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	false

Attribute ValveState :

Valve State:

0 = open
1 = close
2 = stop

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_USHORT
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	2
min_value	0
max_alarm	
min_alarm	
max_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

Write allowed for	All states

min_warning	
delta_time	
delta_val	

Push DataReady event by user code	false

Attribute SoftStartA :

softstart rate of set point A, value is % of full speed

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	false

Attribute SoftStartB :

softstart rate of set point B, value is % of full speed

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

Attribute Properties	
label	
unit	%
standard unit	%
display unit	%
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_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

Write allowed for	All states

min_warning	
delta_time	
delta_val	

Push DataReady event by user code	false

Attribute SoftStartC :

softstart rate of set point C, value is % of full speed

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	false

Attribute SoftStartD :

softstart rate of set point D, value is % of full speed

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

Attribute Properties	
label	
unit	%
standard unit	%
display unit	%
format	
max_value	
min_value	
max_alarm	
min_alarm	
max_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

Write allowed for	All states

min_warning	
delta_time	
delta_val	

Push DataReady event by user code	false

Attribute SoftStartE :

softstart rate of set point E, value is % of full speed

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	false

Attribute SoftStartAnalogue :

softstart rate of analog set point, value is % of full speed

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

Attribute Properties	
label	
unit	%
standard unit	%
display unit	%
format	
max_value	
min_value	
max_alarm	
min_alarm	

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

Read allowed for	All states
Write allowed for	All states

max_warning	
min_warning	
delta_time	
delta_val	

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

Attribute SoftStartValveOpen :

softstart rate of open valve, value is % of full speed

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	false

Attribute SoftStartValveClose :

softstart rate of close valve, value is % of full speed

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

Attribute Properties	
label	
unit	%
standard unit	%
display unit	%
format	
max_value	
min_value	
max_alarm	
min_alarm	

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

Read allowed for	All states
Write allowed for	All states

max_warning	
min_warning	
delta_time	
delta_val	

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

Attribute ProcessLimit1Low :

low threshold process limit 1

unit depends on AbsoluteValues setting:

if true, value is pressure
if false, value is % of full scale range

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	false

Attribute ProcessLimit1High :

high threshold process limit 1

unit depends on AbsoluteValues setting:

if true, value is pressure
if false, value is % of full scale range

Attribute Definition	
Attribute Type	Scalar

Attribute Properties	
label	
unit	

Attribute Event Criteria	
Periodic	Not set

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

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 ProcessLimit2Low :

low threshold process limit 2

unit depends on AbsoluteValues setting:

if true, value is pressure
if false, value is % of full scale range

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	false

Attribute ProcessLimit2High :

high threshold process limit 2

unit depends on AbsoluteValues setting:

if true, value is pressure

if false, value is % of full scale range

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	false

Attribute AnalogueSetPointRange :

Sensor pressure range:

0 = 0.1
1 = 0.2
2 = 0.5
3 = 1.0
4 = 2.0
5 = 5.0
6 = 10.0
7 = 50.0
8 = 100.0
9 = 500.0
10 = 1000.0
11 = 5000.0
12 = 10000.0
13 = 1.33
14 = 2.66
15 = 13.33
16 = 133.3
17 = 1333.0
18 = 6666.0
19 = 13332.0

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_USHORT

Attribute Properties
label
unit
standard unit
display unit

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

Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read allowed for	All states
Write allowed for	All states

format	
max_value	19
min_value	0
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 SetPointAnalogueType :

Set point A type where value is:
0 = position
1 = pressure

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_USHORT
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	false

Attribute SetPointBType :

Set point A type where value is:
0 = position
1 = pressure

Attribute Definition	
Attribute Type	Scalar

Attribute Properties	
label	

Attribute Event Criteria	
Periodic	Not set

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

unit	
standard unit	
display unit	
format	
max_value	1
min_value	0
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 SetPointCType :

Set point A type where value is:
0 = position
1 = pressure

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_USHORT
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	1
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 SetPointDType :

Set point A type where value is:
0 = position
1 = pressure

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_USHORT
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	1
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 SetPointEType :

Set point A type where value is:
0 = position
1 = pressure

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_USHORT
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	1
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 SetPointAType :

Set point A type where value is:
0 = position
1 = pressure

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_USHORT
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	1
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 ValvePositionOutputRange :

Valve position output range:

0 = 5 V
1 = 10 V

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_USHORT
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	19
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 DirectReverseControl :

Direct / Reverse control:
0 = direct
1 = reverse

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_USHORT
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	1
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 SensorType :

Sensor type:
0 = absolut
1 = differential

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_USHORT
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	1
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 LeadA :

Lead for Setpoint A

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	s
standard unit	s
display unit	s
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 GainA :

gain of Setpoint A, where value = % gain

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	100
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 LeadB :

Lead for SetpointB

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	s
standard unit	s
display unit	s
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 LeadC :

Lead for Setpoint C

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	s
standard unit	s
display unit	s
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 LeadD :

Lead for Setpoint D

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	s
standard unit	s
display unit	s
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 LeadE :

Lead for Setpoint E

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	s
standard unit	s
display unit	s
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 GainB :

gain of Setpoint B, where value = % gain

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	100
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 GainC :

gain of SetpointC, where value = % gain

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	100
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 GainD :

gain of SetpointD, where value = % gain

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	100
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 GainE :

gain of Setpoint E, where value = % gain

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	100
min_value	0
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	false

delta_time	
delta_val	

code

Attribute ControlType :

Control type:

0 = self-tuning
1 = PID

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	Not set
Read allowed for	All states
Write allowed for	All states

Attribute Properties	
label	
unit	
standard unit	
display unit	
format	
max_value	1
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 ValveOnPowerFail :

Behaviour of valve on power failure:

0 = option not activated or installed
1 = valve opens on power failure
2 = valve closes on power failure

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_USHORT
Display Level	OPERATOR
Inherited	false
Abstract	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
Archive Periodic	Not set
Archive Relative Change	Not set

Polling Period	Not polled
Memorized	Not set
Read allowed for	All states
Write allowed for	All states

min_value	
max_alarm	
min_alarm	
max_warning	
min_warning	
delta_time	
delta_val	

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 ValveType :

Sensor type:
0 = absolut
1 = differential

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_USHORT
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	1
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 Pressure :

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_DOUBLE
Display Level	OPERATOR
Inherited	false
Abstract	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
Archive Periodic	Not set
Archive Relative Change	Not set

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 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 ValvePosition :

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

MKS651C Class States	
Name	**Description**
ON	Device is up and ready to run
FAULT	Something went bananas, check status
RUNNING	Device is executing the learning function