



TANGO
Device
Server

3 Legs + 2 Translations table User's Guide

Table3p Class

Revision: Table3p-Release_2_1 - Author: meyer
Implemented in C++ - CVS repository: ESRF

Introduction:

the physical device is a table supported by 3 legs. 1 leg on the front side, each leg is equipped with a stepper motor allowing to change the height of the leg. 2 legs on the back side. 2 stepper motors allow to horizontally translate the front leg or the 2 back legs. The present class, defines 2 translations (vertical and horizontal) and 3 rotations around a center of rotation.

Class Inheritance:

- Tango::Device_4Impl
 - Table3p

Class Description:

Properties:

Device Properties		
Property name	Property type	Description
Table_length	Tango::DEV_DOUBLE	Distance between de back leg plan and the front leg (in mm)
Table_width	Tango::DEV_DOUBLE	distance between the 2 back legs
Center_front	Tango::DEV_DOUBLE	distance between the center of rotation and the front leg
Center_height	Tango::DEV_DOUBLE	height of the center of rotation in respect to the top of the legs
Frontleg_name	Tango::DEV_STRING	
Extleg_name	Tango::DEV_STRING	
Intleg_name	Tango::DEV_STRING	
Fronttrans_name	Tango::DEV_STRING	
Backtrans_name	Tango::DEV_STRING	
Wago_name	Tango::DEV_STRING	name of the wago device for the reading of the absolute encoders
Frontleg_enc_module	Tango::DEV_SHORT	
Extleg_enc_module	Tango::DEV_SHORT	
Intleg_enc_module	Tango::DEV_SHORT	
Screen_cmd_channel	Tango::DEV_SHORT	
Btrans_enc_name	Tango::DEV_STRING	
Ftrans_enc_name	Tango::DEV_STRING	
Digital_in_module	Tango::DEV_SHORT	
Digital_out_module	Tango::DEV_SHORT	
Coder_resolution	Tango::DEV_DOUBLE	
NominalZc	Tango::DEV_DOUBLE	nominal value of the Zc attribute
NominalYc	Tango::DEV_DOUBLE	Nominal value of the Yc attribute
NominalPitch	Tango::DEV_DOUBLE	Nominal value of the Pitch attribute
NominalYaw	Tango::DEV_DOUBLE	Nominal value of the Yaw attribute
NominalRoll	Tango::DEV_DOUBLE	Nominal value of the roll attribute
Table_type	Tango::DEV_STRING	Type of table: depending of the geometry. the following type are known: eh3_exp, eh3_mirror

Device Properties Default Values:

Property Name	Default Values
Table_length	No default value
Table_width	No default value
Center_front	No default value
Center_height	No default value
Frontleg_name	No default value
Extleg_name	No default value
Intleg_name	No default value
Fronttrans_name	No default value
Backtrans_name	No default value
Wago_name	No default value
Frontleg_enc_module	No default value
Extleg_enc_module	No default value
Intleg_enc_module	No default value
Screen_cmd_channel	No default value
Btrans_enc_name	No default value
Ftrans_enc_name	No default value
Digital_in_module	No default value
Digital_out_module	No default value
Coder_resolution	No default value
NominalZc	No default value
NominalYc	No default value
NominalPitch	No default value
NominalYaw	No default value
NominalRoll	No default value
Table_type	No default value

There is no Class properties.

Attributes:

Scalar Attributes

Attribute name	Data Type	R/W Type	Expert
Zc: height of the center of rotation	DEV_DOUBLE	READ_WRITE	No
Yc: Transverse position of the center of rotation	DEV_DOUBLE	READ_WRITE	No
Roll: Tilt perpendicular to beam	DEV_DOUBLE	READ_WRITE	No
Pitch: Tilt along the beam	DEV_DOUBLE	READ_WRITE	No
Yaw: rotation around a vertical axis	DEV_DOUBLE	READ_WRITE	No
Front_coder: value of the front leg coder	DEV_DOUBLE	READ	Yes
Ext_coder	DEV_DOUBLE	READ	Yes
Int_coder	DEV_DOUBLE	READ	Yes

Commands:

More Details on commands....

Device Commands for Operator Level

Command name	Argument In	Argument Out
Init	DEV_VOID	DEV_VOID
State	DEV_VOID	DEV_STATE
Status	DEV_VOID	CONST_DEV_STRING
Off	DEV_VOID	DEV_VOID
On	DEV_VOID	DEV_VOID
Nominal	DEV_VOID	DEV_VOID
Abort	DEV_VOID	DEV_VOID
Reset	DEV_VOID	DEV_VOID
Save	DEV_VOID	DEV_VOID
Undo	DEV_VOID	DEV_VOID

1 - Init

- Description:** This commands re-initialise a device keeping the same network connection. After an Init command executed on a device, it is not necessary for client to re-connect to the device. This command first calls the device *delete_device()* method and then execute its *init_device()* method.

For C++ device server, all the memory allocated in the *nit_device()* method must be freed in the *delete_device()* method.

The language device desctructor automatically calls the *delete_device()* method.

- **Argin:**
DEV_VOID : none.
- **Argout:**
DEV_VOID : none.
- **Command allowed for:**

2 - State

- **Description:** This command gets the device state (stored in its *device_state* data member) and returns it to the caller.
- **Argin:**
DEV_VOID : none.
- **Argout:**
DEV_STATE : State Code
- **Command allowed for:**

3 - Status

- **Description:** This command gets the device status (stored in its *device_status* data member) and returns it to the caller.
- **Argin:**
DEV_VOID : none.
- **Argout:**
CONST_DEV_STRING : Status description
- **Command allowed for:**

4 - Off

- **Description:** switch off all the motors
- **Argin:**
DEV_VOID :
- **Argout:**

DEV_VOID :

- **Command allowed for:**

5 - On

- **Description:** switch on all the motors
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**

6 - Nominal

- **Description:** go to nominal position
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**

7 - Abort

- **Description:** abort any movement in progress
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**

8 - Reset

- **Description:** load all motor counters with the value of the absolute encoder. This routine is called at each device server startup and each time we switch the motors ON.
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**

9 - Save

- **Description:** Save the current motor positions to be the nominal position. This position can be restored at any time by applying the "Nominal" command
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**

10 - Undo

- **Description:** Undo the last performed movement
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**

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