



TANGO
Device
Server

IK220 encoder User's Guide

IK220 Class

Revision: - Author: tere29
Implemented in C++

Introduction:

Class for encoder talking to IK220 PCI card of Heidenhain

Class Inheritance:

- Tango::DeviceImpl
 - Encoder
 - IK220

Properties:

Device Properties		
Property name	Property type	Description
Channel	Tango::DEV_USHORT	Channel number. 0 or 1, selecting /dev/enc/0 or /dev/enc/1.
Mode	Tango::DEV_USHORT	0 -> current measurement 1 -> voltage measurement
SimulationMode	Tango::DEV_ULONG	0 real mode, 1 simulation mode

Device Properties Default Values:

Property Name	Default Values
Channel	0
Mode	1
SimulationMode	No default value

There is no Class properties.

States:

States	
Names	Descriptions
ON	Device without problems

Attributes:

Scalar Attributes			
Attribute name	Data Type	R/W Type	Expert
Position: Calculated position from encoder	DEV_DOUBLE	READ	No
Offset: Offset for position calculation	DEV_DOUBLE	READ_WRITE	No
Conversion: Conversion factor for position calculation	DEV_DOUBLE	READ_WRITE	No
StatusPort	DEV_LONG	READ	No
P1: 0: Incremental encoder (default) 1: EnDat encoder 2: SSI encoder	DEV_LONG	READ_WRITE	No
P2: 0: 11 muApp (current measurement) 1: 1 Vpp (voltage measurement) (default)	DEV_LONG	READ_WRITE	No
P3: 0: Linear axis 1: Angular axis +/- infinite	DEV_LONG	READ_WRITE	No
P4: 0: Positive counting direction 1: Negative counting direction	DEV_LONG	READ_WRITE	No
P5: 0 to 0xffffffff: Signal periods/revolution for angular axes, effective only if parameter 3 = 1, Default value 0	DEV_LONG	READ_WRITE	No
P6: 0: Single REF mark (default) 500: distance-coded REF marks. Fixed interval 500 x GP 1000: distance-coded REF marks. Fixed interval 1000 x GP 2000: distance-coded REF marks. Fixed interval 2000 x GP 5000: distance-coded REF marks. Fixed interval 5000 x GP	DEV_LONG	READ_WRITE	No
P7: 0 to 12: Number of interpolation bits (default 12) The interpolation value (16-bit width, max 12 significant bits, left-aligned) is rounded off to the number of set bits.	DEV_LONG	READ_WRITE	No
P8: 0: compensation for position value off (default). 1: compensation for position value on	DEV_LONG	READ_WRITE	No
P9: 0: acquisition of compensation value off (default) 1: acquisition of compensation value on	DEV_LONG	READ_WRITE	No
P10: 1 to 8: Number of measuring points per octant within a signal period for calculation of compensation values. Default value 1.	DEV_LONG	READ_WRITE	No
P11: 16 to 47: Time interval for timer. Default value 33 corresponds to 1 ms.	DEV_LONG	READ_WRITE	No
FlagIgnoreStatus: If true: ignore status in reading position.	DEV_LONG	READ_WRITE	No

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
Calibrate	DEV_DOUBLE	DEV_LONG
InitEncoder	DEV_VOID	DEV_LONG
SetCorrectionOffOn	DEV_LONG	DEV_LONG
DoReference	DEV_VOID	DEV_LONG
CancelReference	DEV_VOID	DEV_LONG

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:**
 - Tango::ON

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:**

- Tango::ON

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:**

- Tango::ON

4 - Calibrate

- **Description:** Calibrate encoder. Compute offset from calibrate and current positions.

- **Argin:**

DEV_DOUBLE : Calibrate position

- **Argout:**

DEV_LONG : Completion status

- **Command allowed for:**

- Tango::ON

5 - InitEncoder

- **Description:** Init encoder

- **Argin:**

DEV_VOID :

- **Argout:**

DEV_LONG : Completion status

- **Command allowed for:**

- Tango::ON

6 - SetCorrectionOffOn

- **Description:** Set correction off or on setting P9 to 0 or 1 respectively.
- **Argin:**
DEV_LONG : 0 -> correction off, 1-> correction on (P9)
- **Argout:**
DEV_LONG : Completion status
- **Command allowed for:**
 - Tango::ON

7 - DoReference

- **Description:** Start reference-seeking
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_LONG : Completion status
- **Command allowed for:**
 - Tango::ON

8 - CancelReference

- **Description:** Cancel reference
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_LONG : Completion status
- **Command allowed for:**

- Tango::ON

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