



TANGO Device Server

Vacuum temperature device server. User's Guide

VacTemperature Class

Revision: Release_3_0 - Author: peru
Implemented in C++ - CVS repository: ESRF

Introduction:

This class manages vacuum temperature through PLCmodbus.

Class Inheritance:

- Tango::Device_4Impl
  - VacTemperature

Properties:

Device Properties		
Property name	**Property type**	**Description**
WagoDevice	Tango::DEV_STRING	This string should contain the device name of the associate wago. Example: sr/plc-modbus/c29-wago
Name_addr	Tango::DEV_USHORT	Labels list address in wago's memory.
Setpoint_addr	Tango::DEV_USHORT	setpoint address in wago's memory.
Temp_addr	Tango::DEV_USHORT	temperatures address in wago's memory.
Alarm_addr	Tango::DEV_USHORT	Alarms address in wago's memory.
Thermocouple_nbr_addr	Tango::DEV_USHORT	Address on wago where to read thermocouple number.
Location_addr	Tango::DEV_USHORT	Location of the array containing array of ...thermocouple location from the beginning of the cell.
HdbAccessDeviceName	Tango::DEV_STRING	This proprety should contains device name of a server able to push data into the HDB taco database (usually HdbAccess class
HdbSignalPrefix	Tango::DEV_STRING	This property is used to retreive signals name in hdb. Signals are built like this: hdbSignalPrefix + label. ex: If hdbSignalPrefix is: sr/v-th/c27-wago, attribute with label set to 'Ther-1' then data relative to this label is stored in hdb with the signal name : 'sr/v-th/c27-wago/Ther-1
RelativeChange	Tango::DEV_DOUBLE	This property is the minimum % between previous stored value and new value required to store new value in HDB. For example, if relative change is 5(%) values greater or lower by 5% from reference are stored in HDB.
HdbMaxDelay	Tango::DEV_LONG	This is the max delay in seconds between two storage in HDB. If Thermo are constants, they wont be store on RelativeChange. So force storage every hdbMaxDelay. Unit is SECONDS
HdbExceptNoRetry	Tango::DEV_SHORT	This is the number of save (in hdb) to skip, in case of hdb-storage exception. This is done to avoid retries on each polling period and kill hdb-push server. With a polling period of 1000ms, a value of 10 will try every 10 second to store data.
Error_code_address	Tango::DEV_USHORT	Error code in wago's memory.
Skip_hdb_storage	Tango::DEV_SHORT	If this property is different of 0, the device server won't save data in HDB.
HdbConfigDeviceName	Tango::DEV_STRING	The name of the device server used to configure HDB (creation of new entries when required).
DerivativeDelay	Tango::DEV_SHORT	This is the delay (expressed in seconds) between the present and the previous value used for the derivative calculation.

Device Properties Default Values:

Property Name	Default Values
WagoDevice	No default value
Name_addr	No default value
Setpoint_addr	No default value
Temp_addr	No default value
Alarm_addr	No default value
Thermocouple_nbr_addr	No default value
Location_addr	No default value
HdbAccessDeviceName	No default value
HdbSignalPrefix	No default value
RelativeChange	No default value
HdbMaxDelay	No default value
HdbExceptNoRetry	No default value
Error_code_address	No default value
Skip_hdb_storage	No default value
HdbConfigDeviceName	sys/hdb-config/1
DerivativeDelay	10

There is no Class properties.

Attributes:

Scalar Attributes			
Attribute name	**Data Type**	**R/W Type**	**Expert**
DelayForDerivative: Delay in seconds between present and previous values for derivative calculation.	DEV_SHORT	READ_WRITE	No

Spectrum Attributes			
Attribute name	**Data Type**	**X Data Length**	**Expert**
Temperatures	DEV_DOUBLE	60	No
Setpoints	DEV_SHORT	60	No
Alarms	DEV_SHORT	60	No
Labels	DEV_STRING	60	No
Location: This is the distance of thermocouple from beginning of the cell.	DEV_DOUBLE	60	No
Max_temperatures	DEV_DOUBLE	180	No
Hdb_storage_enabled	DEV_BOOLEAN	60	No
Derivatives	DEV_DOUBLE	60	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
GetStatusWord	DEV_VOID	DEV_USHORT
ReloadConfiguration	DEV_VOID	DEV_VOID
DebuggingTrigger	DEV_VOID	DEV_VOID
StopHDBStorage	DEV_VOID	DEV_VOID
ResumeHDBStorage	DEV_VOID	DEV_VOID
ConfigureHdb	DEV_VOID	DEV_VOID
ResetMaxTemperature	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 - GetStatusWord

- **Description:** Returns wago status word.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_USHORT :

- **Command allowed for:**

5 - ReloadConfiguration

- **Description:** Force server to reload labels tables, and rebuild lookup tables.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**

6 - DebuggingTrigger

- **Description:** This command is here for server debugging purpose. It shouldn't be used in operation.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**

7 - StopHDBStorage

- **Description:** This command momentary stop HDB storage (if not already disabled by skip_hdb_storage propertie). This efffect stay until server is restarted, or command ResumeHDBStorage is called.

- **Argin:**
  DEV_VOID :

- **Argout:**

DEV_VOID :

- **Command allowed for:**

8 - ResumeHDBStorage

- **Description:** This command resume HDB storage if not already on. This command override the skip_hdb_storage property, until the server is restarted or the command stop_hdb_storage is called.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**

9 - ConfigureHdb

- **Description:** Create, if they do not exist, the entries in HDB.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**

10 - ResetMaxTemperature

- **Description:** Reset the max temperature value.

- **Argin:**
  DEV_VOID :

- **Argout:**
  DEV_VOID :

- **Command allowed for:**

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