ModbusPLC Tango Cpp Class

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ModbusPLC Class Identification :

Contact	: at null - null
Class Family	:
Platform	:
Bus	:
Manufacturer	:
Manufacturer ref.	:

ModbusPLC Class Inheritance :

- Tango::DeviceImpl
  - ModbusPLC

ModbusPLC Class Description :

This class has been to access WAGO/Beckhof acquired values

ModbusPLC Properties :

There is no class properties

Device Properties			
Name	**Description**	**Type**	**Default Value**
Modbus_name	Name of the modbus device.	String	none
Di_address	Address where the digital inputs are mapped	short	0
Do_address	Address where the digital outputs are mapped	short	512
Ai_address	Address where the Analog Inputs are mapped	short	0
Ao_address	Address where the analog outputs are mapped	short	512
Retries	Number of retries while trying to reconnect to PLC	short	1
DynamicInputsNames	Names for the dynamic attributes created for PLC Inputs: Name1\nName2\nName3\n...	String[]	none
DynamicInputsAddresses	Adresses of the Dynamic Attributes created for PLC Inputs: Address1\nAddress2\nAddress3\n...	int[]	none
DynamicOutputsNames	Names of the Dynamic Attributes created for PLC Outputs: Name1\nName2\nName3\n...	String[]	none
DynamicOutputsAdresses	Adresses for the Dynamic Attributes created for PLC Outputs: Address1\nAddress2\nAddress3\n...	int[]	none
DynamicAttributes	{AttributeName}=address(XX)[+type({AI/AO/DI/DO})]	String[]	none

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ModbusPLC 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.
ReadValues	DEVVAR_STRINGARRAY	DEVVAR_SHORTARRAY	OPERATOR	Read multiple 16bits registers. Uses the pre-defined Address for each type.
WriteValues	DEVVAR_STRINGARRAY	DEV_VOID	OPERATOR	The address is always related to 0 Write multiple coils (digital I/O) state. argin[0]= "DO" argin[1] = first coil address

				argin[2] = number of coils argin[3] = 1st coil state argin[4] = 2nd coil state ...

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	State Code
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	Status description
DisplayLevel	OPERATOR	..
Inherited	true	..
Abstract	true	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command ReadValues :

Read multiple 16bits registers. Uses the pre-defined Address for each type.

ReadValues Definition		
Input Argument	Tango::DEVVAR_STRINGARRAY	Type, first channel, no. of inputs
Output Argument	Tango::DEVVAR_SHORTARRAY	16 bits values readed
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

Command WriteValues :

The address is always related to 0

Write multiple coils (digital I/O) state.
argin[0]= "DO"
argin[1] = first coil address
argin[2] = number of coils
argin[3] = 1st coil state
argin[4] = 2nd coil state
...

WriteValues Definition		
Input Argument	Tango::DEVVAR_STRINGARRAY	Type, first channel, no. of outputs, values ...
Output Argument	Tango::DEV_VOID	
DisplayLevel	OPERATOR	..
Inherited	false	..
Abstract	false	..
Polling Period	Not polled	..
Command allowed for	All states	..

ModbusPLC Class Attributes							
Name	Inherited	Abstract	Attr. type	R/W type	Data type	Level	Description
DigitalInputs	false	false	Spectrum	READ	Tango::DEV_BOOLEAN	OPERATOR	
DigitalOutputs	false	false	Spectrum	READ_WRITE	Tango::DEV_BOOLEAN	OPERATOR	
AnalogInputs	false	false	Spectrum	READ	Tango::DEV_LONG	OPERATOR	
AnalogOutputs	false	false	Spectrum	READ_WRITE	Tango::DEV_LONG	OPERATOR	
AI_1	false	false	Scalar	READ	Tango::DEV_LONG	OPERATOR	
AI_2	false	false	Scalar	READ	Tango::DEV_LONG	OPERATOR	
AO_1	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	
AO_2	false	false	Scalar	READ_WRITE	Tango::DEV_LONG	OPERATOR	
DynAI	false	false	Scalar	READ		OPERATOR	
DynAO	false	false	Scalar	READ		OPERATOR	
DynamicAttribute	false	false	Scalar	READ		OPERATOR	

There is no dynamic attribute defined.

Attribute DigitalInputs :

Attribute Definition	
Attribute Type	Spectrum (256)
R/W Type	READ
Data Type	Tango::DEV_BOOLEAN
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	• FAULT

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	Not set

Attribute DigitalOutputs :

Attribute Definition	
Attribute Type	Spectrum (256)
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 NOT allowed for	• FAULT
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	Not set

Attribute AnalogInputs :

Attribute Definition	
	Spectrum (256)

Attribute Properties	
label	

Attribute Event Criteria	
Periodic	Not set

Attribute Type	
R/W Type	READ
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	• FAULT

unit	
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	Not set

Attribute AnalogOutputs :

Attribute Definition	
Attribute Type	Spectrum (256)
R/W Type	READ_WRITE
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	• FAULT
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	Not set

Attribute AI_1 :

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	• FAULT

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	Not set

Attribute AI_2 :

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	Tango::DEV_LONG
Display Level	OPERATOR

Attribute Properties
label
unit
standard unit
display unit

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

Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	• FAULT

format
max_value
min_value
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	Not set

Attribute AO_1 :

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	• FAULT
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	Not set

Attribute AO_2 :

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ_WRITE
Data Type	Tango::DEV_LONG
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled
Memorized	Not set
Read NOT allowed for	• FAULT
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	Not set

Attribute DynAI :

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	
Display Level	OPERATOR
Inherited	false
Abstract	false
Polling Period	Not polled

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

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

Memorized	Not set
Read NOT allowed for	• FAULT

min_alarm
max_warning
min_warning
delta_time
delta_val

Archive Relative Change	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	Not set

Attribute DynAO :

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	
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	Not set

Attribute DynamicAttribute :

Attribute Definition	
Attribute Type	Scalar
R/W Type	READ
Data Type	
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	Not set

ModbusPLC Class States	
Name	**Description**
ALARM	The status ALARM is set by the PLC to indicate some special event
ON	*
FAULT	The status FAULT is set by the Modbus communication if it is broken