



TANGO
Device
Server

PowerSupplyDanFysik User's Guide

PowerSupplyDanFysik Class

Revision: release_3_3_4 - Author: coquet
Implemented in C++

Introduction:

Basic control of a DanFysik power supply (for electromag insertions).

Used for :

- the insertion HU640: 3 main power supplies and 4 correctors,
- the insertion HU256: 3 main power supplies only.

Class Inheritance:

- Tango::Device_3Impl
 - PowerSupplyDanFysik

Properties:

Device Properties		
Property name	Property type	Description
ProfibusServerName	Tango::DEV_STRING	Tango name of the Profibus DeviceServer Default : Tango/Profibus/1
BoardNumber	Tango::DEV_LONG	number of the Profibus DP Hilsher card (from 0 to 3) default : 0
DPAddress	Tango::DEV_LONG	DP Address of the power supply from 1 to 125 DO NOT USE 0 , 126,127 reserved for the system! Default : 3
Group	Tango::DEV_LONG	group for sync/freeze parameterized from 1 to 8. Default : 1
InputOffset	Tango::DEV_LONG	Memory offset of input data (seen by the master) offset mémoire des entrées de l'esclave tel que défini dans le configurateur Profibus
InputLength	Tango::DEV_LONG	length in bytes of input data taille en octets de la totalité des entrées de l'esclave tel que défini dans le configurateur Profibus Ces données doivent être consécutives.
OutputOffset	Tango::DEV_LONG	Memory offset of output data (seen by the master) offset mémoire des sorties de l'esclave tel que défini dans le configurateur Profibus
OutputLength	Tango::DEV_LONG	length in bytes of output data taille en octets de la totalité des sorties de l'esclave tel que défini dans le configurateur Profibus Ces données doivent être consécutives.
CurrentSetpointRatio	Tango::DEV_DOUBLE	Ratio à appliquer pour passer de la consigne réelle (flottant, double précision) à la consigne brute (en 18 bits) à fournir à l'alimentation for 600 A, 115 V : 0.0011444091796875 for 440 A, 125 V : 0.0008392333984375 for 360 A, 200 V : 0.0006866455078125 for 6 A, 20 V : 0.000011444091796875
CurrentMeasureRatio	Tango::DEV_DOUBLE	Ratio à appliquer pour passer de la mesure brute (en 18 bits) fournie par l'alimentation à la valeur réelle (flottant, double précision for 600 A, 115 V : 0.018310546875 for 440 A, 125 V : 0.013427734375 for 360 A, 200 V : 0.010986328125 for 6 A, 20 V : 0.00018310546875
VoltageMeasureRatio	Tango::DEV_DOUBLE	Ratio à appliquer pour passer de la mesure brute (en 18 bits) fournie par l'alimentation à la valeur réelle (flottant, double précision for 600 A, 115 V : 0.8984375 for 440 A, 125 V : 0.9765625 for 360 A, 200 V : 1.5625 for 6 A, 20 V : 0.15625

Device Properties Default Values:

Property Name	Default Values
ProfibusServerName	No default value
BoardNumber	No default value
DPAddress	No default value
Group	No default value
InputOffset	No default value
InputLength	No default value
OutputOffset	No default value
OutputLength	No default value
CurrentSetpointRatio	No default value
CurrentMeasureRatio	No default value
VoltageMeasureRatio	No default value

There is no Class properties.

States:

States	
Names	Descriptions
ON	power supply is on, DC mode
OFF	power supply is Off
RUNNING	power supply is On, in AC mode
ALARM	power supply is in alarm bat low
FAULT	power supply is in fault every error is fault except batt low
DISABLE	PS in in LOCAL command mode

Attributes:

Scalar Attributes

Attribute name	Data Type	R/W Type	Expert
current: current read on power supply setpoint on powersupply	DEV_DOUBLE	READ_WRITE	No
voltage: voltage read on power supply	DEV_DOUBLE	READ	No
currentSetpoint: readback of setpoint on the power supply	DEV_DOUBLE	READ	No
modeRemote: true if PS is in remote mode	DEV_BOOLEAN	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
Reset	DEV_VOID	DEV_VOID
Off	DEV_VOID	DEV_VOID
On	DEV_VOID	DEV_VOID
SetPolarityNormal	DEV_VOID	DEV_VOID
SetPolarityReversed	DEV_VOID	DEV_VOID
GetPolarity	DEV_VOID	DEV_SHORT
SetDCMode	DEV_VOID	DEV_VOID
SetACMode	DEV_VOID	DEV_VOID
GetMode	DEV_VOID	DEV_STRING

Device Commands for Expert Level Only

Command name	Argument In	Argument Out
Local	DEV_VOID	DEV_VOID
Remote	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:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT
 - Tango::DISABLE

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
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT
 - Tango::DISABLE

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
 - Tango::OFF
 - Tango::RUNNING

- Tango::ALARM
- Tango::FAULT
- Tango::DISABLE

4 - Reset

- **Description:** resets interlocks on power supply
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::OFF
 - Tango::FAULT

5 - Off

- **Description:** switches the power supply main power to Off
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT
 - Tango::DISABLE

6 - On

- **Description:** switches the main power supply to On
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT

7 - SetPolarityNormal

- **Description:** sets the polarity to positive eg if the current setpoint is -100.0 A, current will follow setpoint
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT

8 - SetPolarityReversed

- **Description:** turns polarity to reversed if setpoint is 100.0A, the current will be -100.0A in reversed polarity
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT

9 - GetPolarity

- **Description:**
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_SHORT :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT
 - Tango::DISABLE

10 - SetDCMode

- **Description:** sets the mode to DC mode, setpoint comes from Profibus
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT

11 - SetACMode

- **Description:** sets mode to AC, setpoint comes from the waveform card
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT

12 - GetMode

- **Description:** returns the actual mode DC : DC mode AC : AC mode
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_STRING :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT
 - Tango::DISABLE

13 - Local (for expert only)

- **Description:** put the power supply in Local mode
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT

14 - Remote (for expert only)

- **Description:** puts the PS in remote mode (command via profibus)
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT
 - Tango::DISABLE

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TANGO
Device
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PowerSupplyDanFysik Class

Revision: release_3_3_4 - Author: coquet
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Used for :

- the insertion HU640: 3 main power supplies and 4 correctors,
- the insertion HU256: 3 main power supplies only.

Class Inheritance:

- Tango::Device_3Impl
 - PowerSupplyDanFysik

Properties:

Device Properties		
Property name	Property type	Description
ProfibusServerName	Tango::DEV_STRING	Tango name of the Profibus DeviceServer Default : Tango/Profibus/1
BoardNumber	Tango::DEV_LONG	number of the Profibus DP Hilsher card (from 0 to 3) default : 0
DPAddress	Tango::DEV_LONG	DP Address of the power supply from 1 to 125 DO NOT USE 0 , 126,127 reserved for the system! Default : 3
Group	Tango::DEV_LONG	group for sync/freeze parameterized from 1 to 8. Default : 1
InputOffset	Tango::DEV_LONG	Memory offset of input data (seen by the master) offset mémoire des entrées de l'esclave tel que défini dans le configurateur Profibus
InputLength	Tango::DEV_LONG	length in bytes of input data taille en octets de la totalité des entrées de l'esclave tel que défini dans le configurateur Profibus Ces données doivent être consécutives.
OutputOffset	Tango::DEV_LONG	Memory offset of output data (seen by the master) offset mémoire des sorties de l'esclave tel que défini dans le configurateur Profibus
OutputLength	Tango::DEV_LONG	length in bytes of output data taille en octets de la totalité des sorties de l'esclave tel que défini dans le configurateur Profibus Ces données doivent être consécutives.
CurrentSetpointRatio	Tango::DEV_DOUBLE	Ratio à appliquer pour passer de la consigne réelle (flottant, double précision) à la consigne brute (en 18 bits) à fournir à l'alimentation for 600 A, 115 V : 0.0011444091796875 for 440 A, 125 V : 0.0008392333984375 for 360 A, 200 V : 0.0006866455078125 for 6 A, 20 V : 0.000011444091796875
CurrentMeasureRatio	Tango::DEV_DOUBLE	Ratio à appliquer pour passer de la mesure brute (en 18 bits) fournie par l'alimentation à la valeur réelle (flottant, double précision for 600 A, 115 V : 0.018310546875 for 440 A, 125 V : 0.013427734375 for 360 A, 200 V : 0.010986328125 for 6 A, 20 V : 0.00018310546875
VoltageMeasureRatio	Tango::DEV_DOUBLE	Ratio à appliquer pour passer de la mesure brute (en 18 bits) fournie par l'alimentation à la valeur réelle (flottant, double précision for 600 A, 115 V : 0.8984375 for 440 A, 125 V : 0.9765625 for 360 A, 200 V : 1.5625 for 6 A, 20 V : 0.15625

Device Properties Default Values:

Property Name	Default Values
ProfibusServerName	No default value
BoardNumber	No default value
DPAddress	No default value
Group	No default value
InputOffset	No default value
InputLength	No default value
OutputOffset	No default value
OutputLength	No default value
CurrentSetpointRatio	No default value
CurrentMeasureRatio	No default value
VoltageMeasureRatio	No default value

There is no Class properties.

States:

States	
Names	Descriptions
ON	power supply is on, DC mode
OFF	power supply is Off
RUNNING	power supply is On, in AC mode
ALARM	power supply is in alarm bat low
FAULT	power supply is in fault every error is fault except batt low
DISABLE	PS in in LOCAL command mode

Attributes:

Scalar Attributes

Attribute name	Data Type	R/W Type	Expert
current: current read on power supply setpoint on powersupply	DEV_DOUBLE	READ_WRITE	No
voltage: voltage read on power supply	DEV_DOUBLE	READ	No
currentSetpoint: readback of setpoint on the power supply	DEV_DOUBLE	READ	No
modeRemote: true if PS is in remote mode	DEV_BOOLEAN	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
Reset	DEV_VOID	DEV_VOID
Off	DEV_VOID	DEV_VOID
On	DEV_VOID	DEV_VOID
SetPolarityNormal	DEV_VOID	DEV_VOID
SetPolarityReversed	DEV_VOID	DEV_VOID
GetPolarity	DEV_VOID	DEV_SHORT
SetDCMode	DEV_VOID	DEV_VOID
SetACMode	DEV_VOID	DEV_VOID
GetMode	DEV_VOID	DEV_STRING

Device Commands for Expert Level Only

Command name	Argument In	Argument Out
Local	DEV_VOID	DEV_VOID
Remote	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:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT
 - Tango::DISABLE

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
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT
 - Tango::DISABLE

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
 - Tango::OFF
 - Tango::RUNNING

- Tango::ALARM
- Tango::FAULT
- Tango::DISABLE

4 - Reset

- **Description:** resets interlocks on power supply
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::OFF
 - Tango::FAULT

5 - Off

- **Description:** switches the power supply main power to Off
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT
 - Tango::DISABLE

6 - On

- **Description:** switches the main power supply to On
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT

7 - SetPolarityNormal

- **Description:** sets the polarity to positive eg if the current setpoint is -100.0 A, current will follow setpoint
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT

8 - SetPolarityReversed

- **Description:** turns polarity to reversed if setpoint is 100.0A, the current will be -100.0A in reversed polarity
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT

9 - GetPolarity

- **Description:**
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_SHORT :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT
 - Tango::DISABLE

10 - SetDCMode

- **Description:** sets the mode to DC mode, setpoint comes from Profibus
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT

11 - SetACMode

- **Description:** sets mode to AC, setpoint comes from the waveform card
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT

12 - GetMode

- **Description:** returns the actual mode DC : DC mode AC : AC mode
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_STRING :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT
 - Tango::DISABLE

13 - Local (for expert only)

- **Description:** put the power supply in Local mode
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT

14 - Remote (for expert only)

- **Description:** puts the PS in remote mode (command via profibus)
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT
 - Tango::DISABLE

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[Link to Non-frame version.](#)



TANGO
Device
Server

PowerSupplyDanFysik Device Commands Description PowerSupplyDanFysik Class

Revision: release_3_3_4 - Author: coquet

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 *init_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
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT
 - Tango::DISABLE

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
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT
 - Tango::DISABLE

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
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT
 - Tango::DISABLE

4 - Reset

- **Description:** resets interlocks on power supply
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::OFF
 - Tango::FAULT

5 - Off

- **Description:** switches the power supply main power to Off
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT
 - Tango::DISABLE

6 - On

- **Description:** switches the main power supply to On
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT

7 - SetPolarityNormal

- **Description:** sets the polarity to positive eg if the current setpoint is -100.0 A, current will follow setpoint
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :

- **Command allowed for:**

- Tango::ON
- Tango::OFF
- Tango::RUNNING
- Tango::ALARM
- Tango::FAULT

8 - SetPolarityReversed

- **Description:** turns polarity to reversed if setpoint is 100.0A, the current will be -100.0A in reversed polarity

- **Argin:**

DEV_VOID :

- **Argout:**

DEV_VOID :

- **Command allowed for:**

- Tango::ON
- Tango::OFF
- Tango::RUNNING
- Tango::ALARM
- Tango::FAULT

9 - GetPolarity

- **Description:**

- **Argin:**

DEV_VOID :

- **Argout:**

DEV_SHORT :

- **Command allowed for:**

- Tango::ON
- Tango::OFF
- Tango::RUNNING
- Tango::ALARM
- Tango::FAULT
- Tango::DISABLE

10 - SetDCMode

- **Description:** sets the mode to DC mode, setpoint comes from Profibus
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT

11 - SetACMode

- **Description:** sets mode to AC, setpoint comes from the waveform card
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT

12 - GetMode

- **Description:** returns the actual mode DC : DC mode AC : AC mode
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_STRING :
- **Command allowed for:**
 - Tango::ON

- Tango::OFF
- Tango::RUNNING
- Tango::ALARM
- Tango::FAULT
- Tango::DISABLE

13 - Local (for expert only)

- **Description:** put the power supply in Local mode
- **Argin:**
DEV_VOID :
- **Argout:**
DEV_VOID :
- **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT

14 - Remote (for expert only)

- **Description:** puts the PS in remote mode (command via profibus)
 - **Argin:**
DEV_VOID :
 - **Argout:**
DEV_VOID :
 - **Command allowed for:**
 - Tango::ON
 - Tango::OFF
 - Tango::RUNNING
 - Tango::ALARM
 - Tango::FAULT
 - Tango::DISABLE
-

