

TP301DTM - Device Type Manager

The screenshot shows the TP301DTM Device Type Manager interface. At the top, there is a header for the TP300 Series 4 to 20 mA + Hart Position Transmitter, featuring a small image of the device and the smar logo. The main interface is divided into two main sections. On the left is a tree view with the following structure: OnLine Parameterize (expanded), Blocks (selected), Identification (expanded), Device (selected), Configuration (expanded), Table (selected), Calibration, General, OffLine Parameterize, Observe, and Diagnosis. The right section displays a 3D model of the transmitter and a configuration table with the following fields: Manufacturer (SMAR), Device Type (TP301), Device ID (18891), Tag (TAG), Descriptor (16 CARACTERES), and Message (32 CARACTERES). At the bottom of the configuration area is a 'Write' button. Below the configuration area is a status bar showing 'Connected' and three navigation icons (home, back, forward).

Manufacturer	SMAR
Device Type	TP301
Device ID	18891
Tag	TAG
Descriptor	16 CARACTERES
Message	32 CARACTERES



TP301DTMME



Specifications and information are subject to change without notice.
Up-to-date address information is available on our website.

web: www.smar.com/contactus.asp

INTRODUCTION

TP301DTM is from the family of Smar's DTMs HART. With TP301DTM is possible to have access to many functionalities of TP301 transmitters:

- ✓ Transmitter Identification and Manufacturing Data.
- ✓ Position Trim.
- ✓ Current Trim.
- ✓ Device Configuration.
- ✓ Equipment Maintenance.

For further details about the topics above, refer to the TP301 manual.

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TP301DTM

Pre - Requirements

The user needs to be familiar with the use of frame application FDT (Field Device Tool).

Installation

To do the TP301DTM Installation and all Smar’s DTMs, run **setup.exe** from CD “**Smar Device Library**”. After ending the CD-ROM installation, get into DTMs catalog from frame application to update DTMs list.

The download of installation package of Smar’s DTMs can be done at <http://www.smar.com/support.asp>. The user has to do a login at site.

TP301DTM could be integrated in all frame applications in compliance with the version 1.2 of the FDT/DTM standard.

Topology

After TP301DTM is installed and included at DTMs frame application catalog, a DTMs topology must be mounted (representing the devices physical topology).

On top must be inserted the communication DTM (responsible for communication between the computer and the first element from physical topology). The TP301DTM is the last element of topology (represents the TP301).

In some cases, is necessary a DTM gateway type (responsible for communication protocol conversion). The TP301DTM could be used with Communication DTM and Gateway DTM from other manufacturers, if they comply with FDT 1.2.

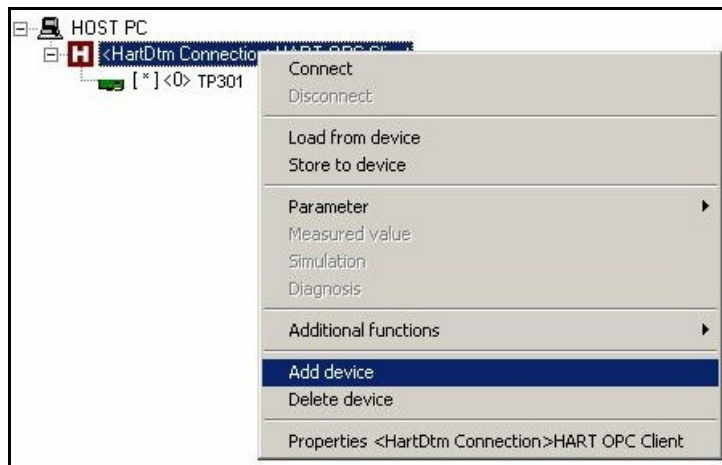


Figure 1 – “Add Device” Screen

Before changing TP301DTM to online, verify in the topology, if the address set in TP301DTM is the same of the TP301 device address. If it is not, change to the correct address through the communication DTM.

While the TP301DTM is offline (not connected), only the option **Offline Parameterize** will be enabled. After connected, will be possible to have online access to many functionalities of TP301:

- Online Parameterize
- Observe
- Diagnosis

Layout

The DTM's from Smar follow a standard layout. The parameters are distributed in many screens according to its functionality. The screens can be accessed by clicking the DTM options. Every time you click an option, all the screen parameters relative to the selected option will be read from the instrument.

Each DTM screen with parameters that can be written has a **Write** button. When any parameter is modified, the relative field will change its color. After writing, the DTM realizes the reading of the changed parameters and updates the screen.

In the figure below, the TP301DTM Online Parameterization navigation tree can be seen. The other options also appear.

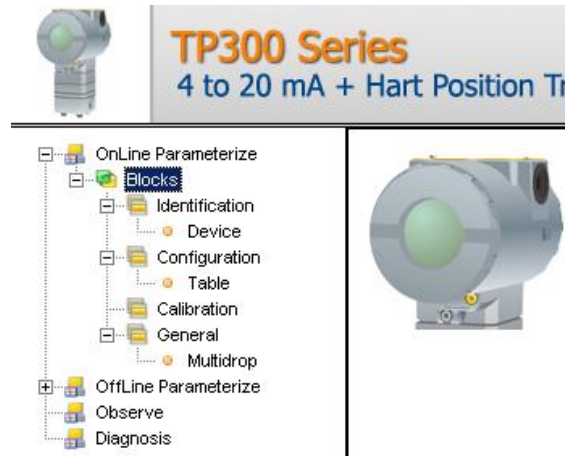



Figure 2 – TP301DTM navigation tree

In the window's bottom part the user has access to navigation buttons . They allow go to home page, back to previous page or go to next page, respectively.

The communication status can be verified - connected or disconnected:



TP301 Version

In case TP301's version is previous than version 2.12, possibly some parameter is not implemented and when attempting to write at this parameter, the following message will appear: "Command is not supported by the device".

Communication

TP301DTM sends the #0 command at each 4 seconds and in case TP301 does not answer after 2 tries, the following message will appear:

"Communication error detected. No response from device." In this case, verify if any connection is broken or if the device is off.

Is not possible read / write any parameter in case the connected equipment is not TP301, not even the Universal Commands and Common Practice of HART protocol.

Response Code

When some writing or reading fail occurs, the TP301DTM displays a message coming from Response Code sent by TP301.

TP301DTM Functions

Below we have a brief description about each TP301DTM function.

1. **Online Parameterize** – This function is used to make the TP301 online parameterization, is enabled when the TP301DTM is online. The user access level for this function is “Operator” (read only) and “Maintenance” (complete access).

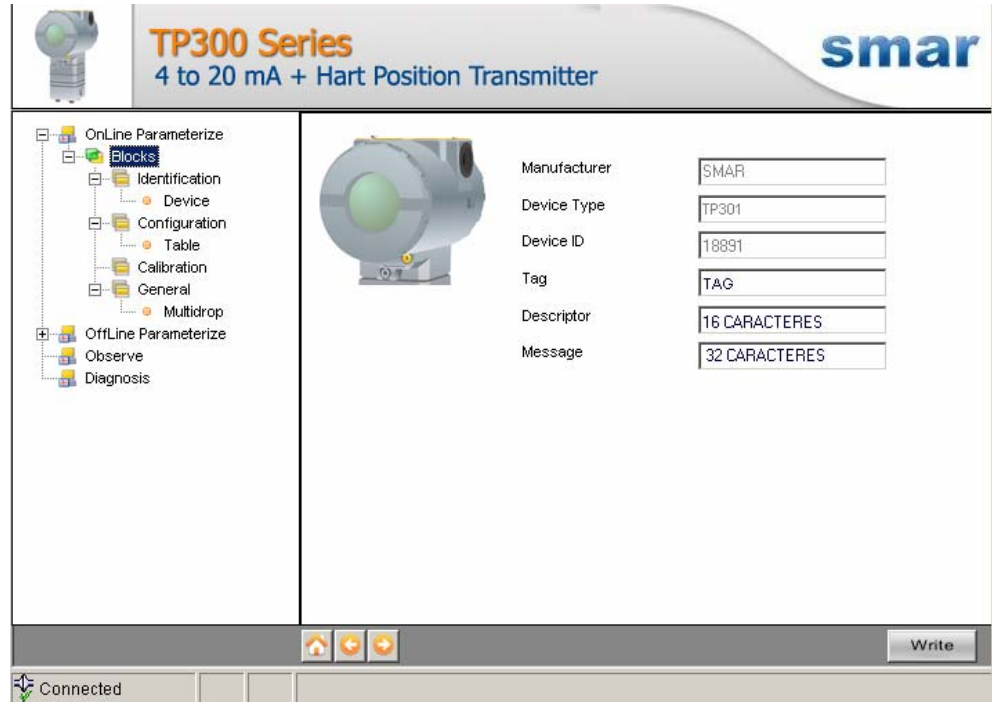


Figure 3 – TP301DTM “Online Parameterize” Screen

2. **Offline Parameterize** - This function is used to make the TP301 offline parameterization, the parameter values configured in this function can be written in TP301 through the **Download** function. The user access level for this function is “Maintenance”.

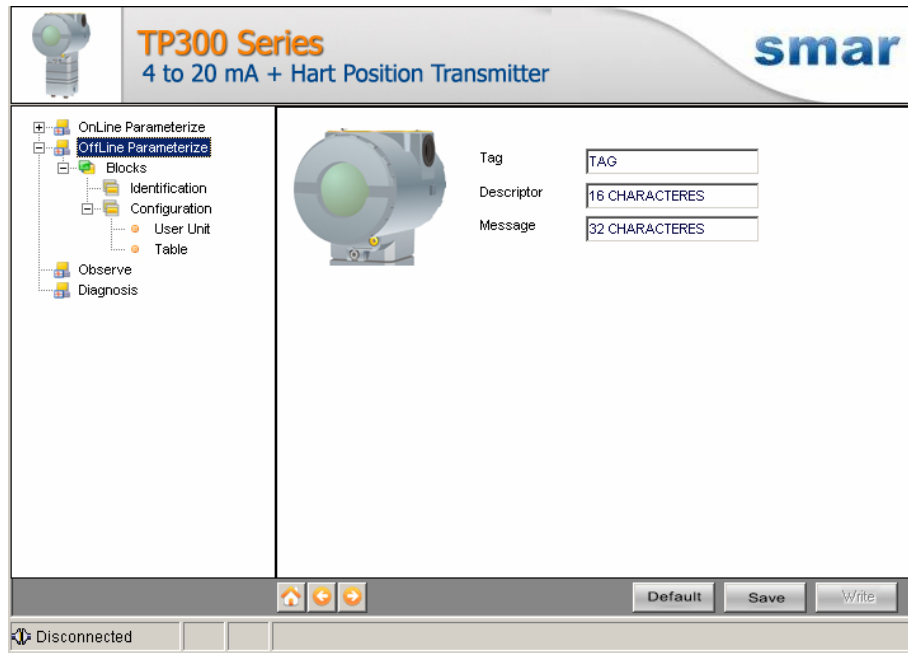


Figure 4 – TP301DTM “Offline Parameterize” Screen

3. **Observe** – Through this function is possible to monitor the TP301 process variables: Out (mA), Out (%), PV (%), Temp (°C).

The user chooses four variables to monitor. This function is enabled when the TP301DTM is online. The user access level for this function is “Operator”.

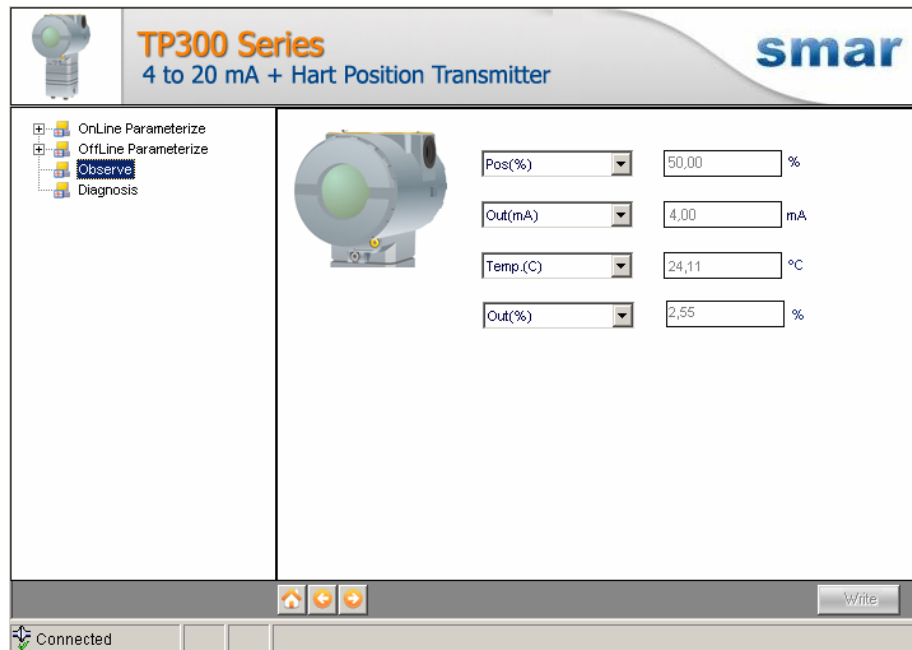


Figure 5 – TP301DTM “Observe” Screen

4. **Diagnosis** – Through this function the user has access to the TP301 diagnostic parameters. This function is enabled when the TP301DTM is online. The user access level for this function is “Operator”.

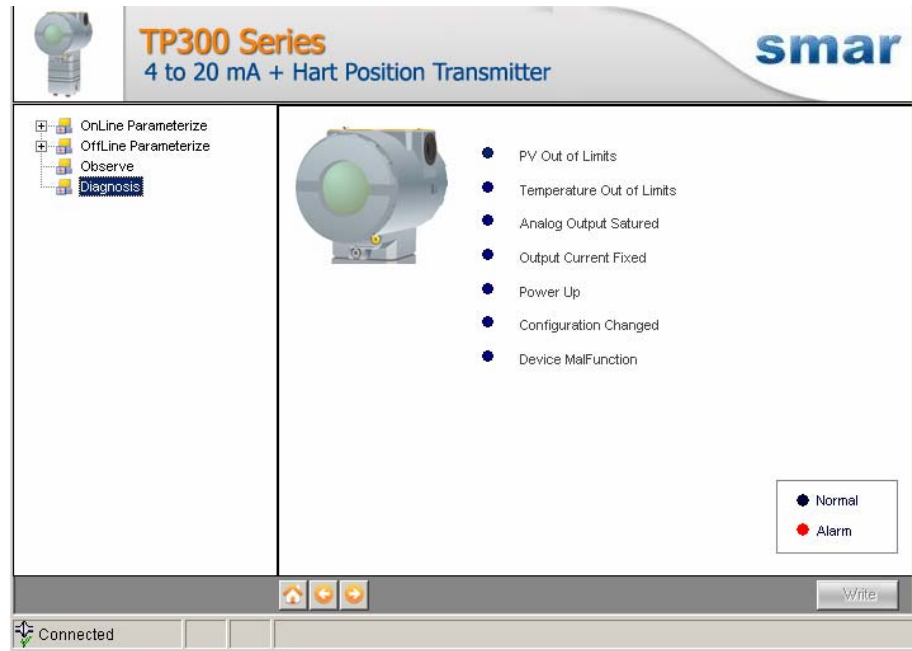


Figure 6 – TP301DTM “Diagnosis” Screen

5. **Upload** - This function reads the TP301 parameters and updates the TP301DTM database with the recent values. This function is enabled when the TP301DTM is online. The user access level for this function is “Maintenance”.
6. **Download** - This function writes the parameters configured in the TP301 **Offline Parameterize** function. This function is enabled when the TP301DTM is online. The user access level for this function is “Maintenance”.

