

TT301DTM

smar

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TT301DTM

TT301DTM - Device Type Manager

The screenshot shows the 'TT301DTM - Device Type Manager' software interface. At the top, the title bar reads 'TT300 Series 4 to 20 mA + Hart Temperature Transmitter smar'. The interface is split into three main sections:

- Left Sidebar (Tree View):** Contains 'OnLine Parameterize' (expanded) with sub-items: 'Blocks' (expanded) containing 'Identification' (with sub-items 'Device', 'Sensor', 'PID'), 'Configuration', 'Calibration' (with sub-items 'Methods', 'General'), and 'OffLine Parameterize' (with sub-items 'Observe', 'Diagnosis').
- Central Area:** Features a 3D image of the TT301DTM transmitter. To its right are input fields for: 'Manufacturer' (SMAR), 'Device Type' (TT301), 'Device ID' (5), 'Tag' (TT301), 'Descriptor' (16 CHARACTERS), and 'Message' (32 CHARACTERES). A 'Write' button is located at the bottom right of this section.
- Bottom Status Bar:** Shows 'Connected' with a green status icon and three navigation buttons (Home, Back, Forward).



TT301DTMME



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

TT301DTM is from the family of Smar's DTMs HART. With TT301DTM is possible to have access to many functionalities of TT301 transmitters:

- ✓ Identification and Transmitter Manufacturing Data
- ✓ Primary Variable Trim
- ✓ Primary Variable Trim – Temperature
- ✓ Current Trim
- ✓ Transmitter Adjustment to the Working Range
- ✓ Special Sensor
- ✓ PID Controller Configuration
- ✓ Device Configuration
- ✓ Device Maintenance

For further details about the topics above, refer to the TT301 manual.

TABLE OF CONTENTS

TT301DTM.....	7
Installation	7
Topology.....	7
Layout.....	8
Communication	8
Response Code.....	9
TT301DTM Functions.....	9

TT301DTM

Pre - Requirements

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

Installation

To do the TT301DTM 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.

TT301DTM could be integrated in all frame applications in compliance with the version 1.2 of the FDT/DTM standard.

Topology

After TT301DTM 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 TT301DTM is the last element of topology (represents the TT301).

In some cases, is necessary a DTM gateway type (responsible for communication protocol conversion). The TT301DTM 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 TT301DTM to online, verify in the topology, if the address set in TT301DTM is the same of the TT301 device address. If it is not, change to the correct address through the communication DTM.

While the TT301DTM 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 TT301:

- Online Parameterize
- Observe
- Diagnosis

Layout

The DTMs 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 TT301DTM Online Parameterization navigation tree can be seen. The other options also appear.

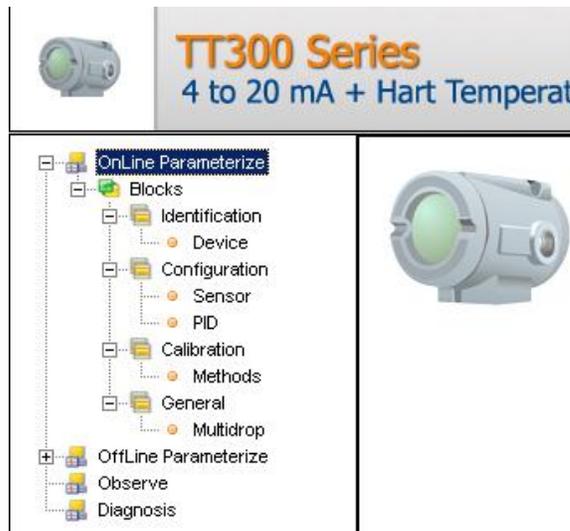


Figure 2 – TT301DTM navigation tree

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:



TT301 Version

In case TT301’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

TT301DTM sends the #0 command at each 4 seconds and in case TT301 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 TT301, not even the Universal Commands and Common Practice of HART protocol.

Response Code

When some writing or reading fail occurs, the TT301DTM displays a message coming from Response Code sent by TT301.

TT301DTM Functions

Below we have a brief description about each TT301DTM function.

1. **Online Parameterize** – This function is used to make the TT301 online parameterization, is enabled when the TT301DTM is online. The user access level for this function is “Operator” (read only) and “Maintenance” (complete access).

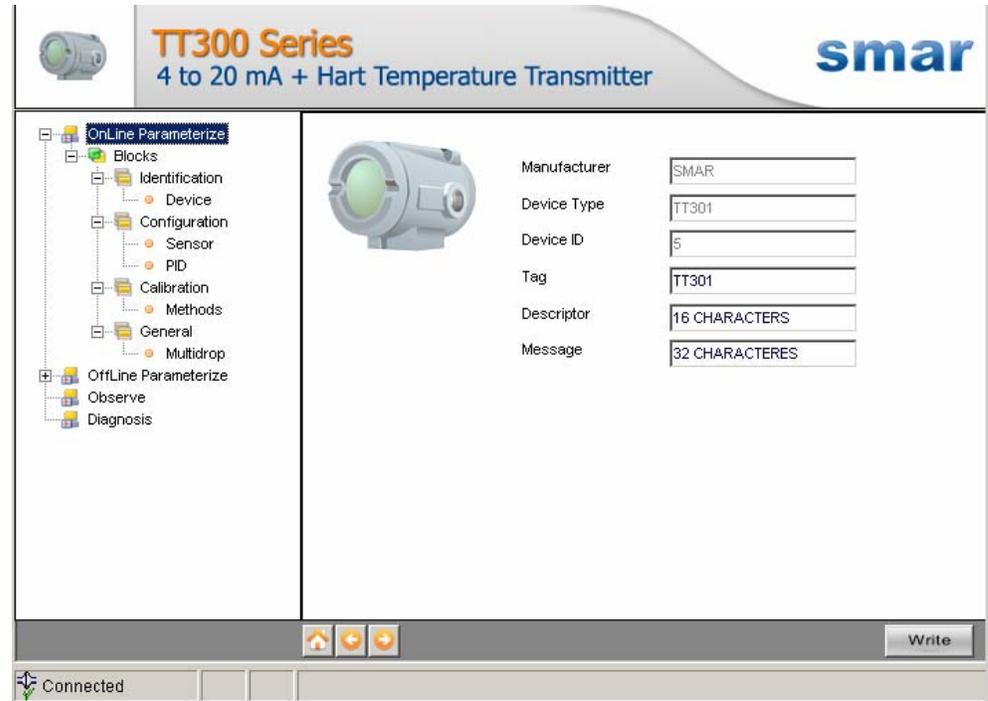


Figure 3 – TT301DTM “Online Parameterize” Screen

2. **Offline Parameterize** - This function is used to make the TT301 offline parameterization, the parameter values configured in this function can be written in TT301 through the **Download** function. The user access level for this function is “Maintenance”.

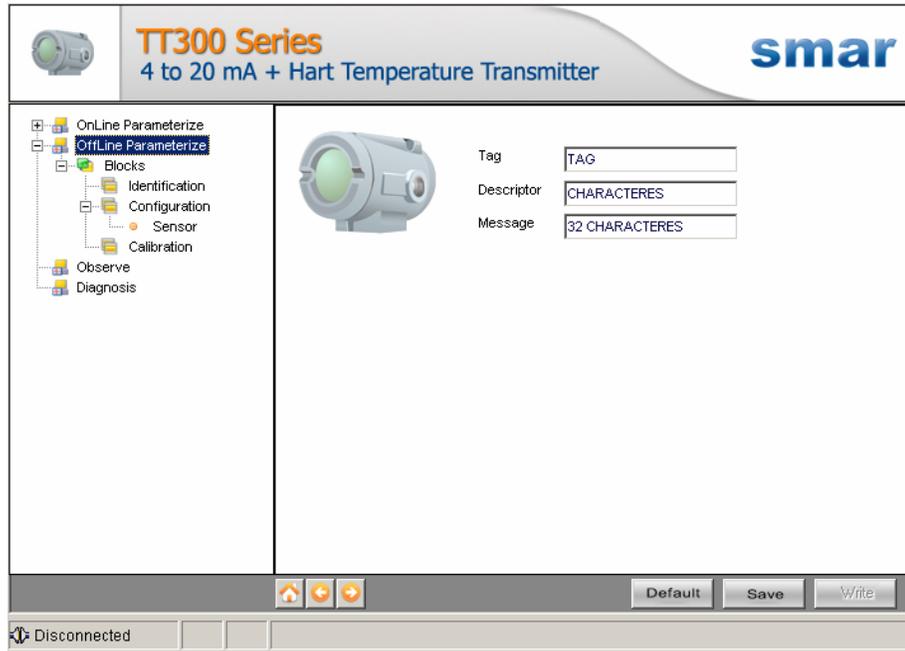


Figure 4 – TT301DTM “Offline Parameterize” Screen

3. **Observe** – Through this function is possible to monitor the TT301 process variables: Out (mA), Out (%), PV (%), Temp (°C).

The user chooses four variables to monitor and also has access to the variables monitoring used in the transmitter calibration. This function is enabled when the TT301DTM is online. The user access level for this function is “Operator”.

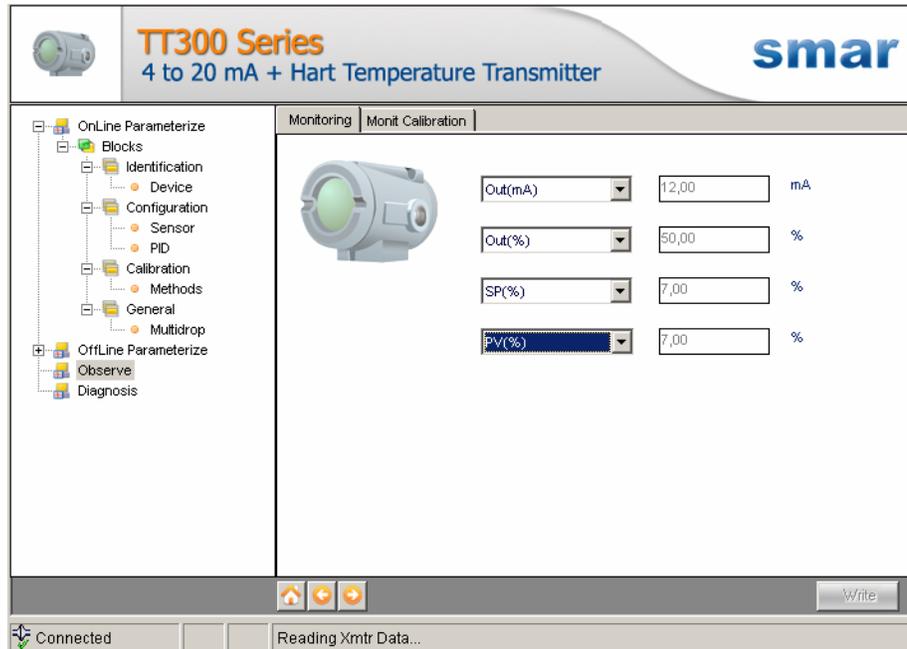


Figure 5 – TT301DTM “Observe” Screen

4. **Diagnosis** – Through this function the user has access to the TT301 diagnostic parameters. This function is enabled when the TT301DTM is online. The user access level for this function is “Operator”.

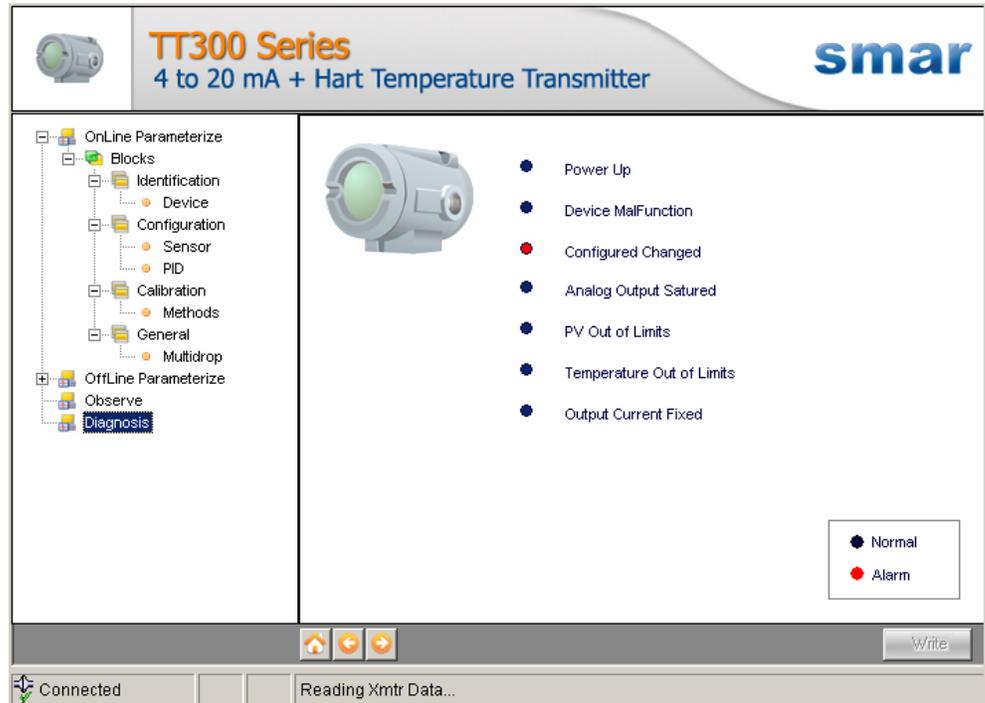


Figure 6 – TT301DTM “Diagnosis” Screen

5. **Upload** - This function reads the TT301 parameters and updates the TT301DTM database with the recent values. This function is enabled when the TT301DTM is online. The user access level for this function is “Maintenance”.
6. **Download** - This function writes the parameters configured in the TT301 **Offline Parameterize** function. This function is enabled when the TT301DTM is online. The user access level for this function is “Maintenance”.

