

LD400DTM - Device Type Manager

The screenshot shows the configuration interface for the LD400 Series HART Pressure Transmitter. The title bar includes the smar logo and the text "LD400 Series HART Pressure Transmitter". The interface is divided into several sections:

- Left Panel (Tree View):** Shows a hierarchical structure under "OnLine Parameterize".
 - Blocks
 - Identification
 - Device
 - Sensor
 - Adv. Sensor
 - Configuration
 - LCD/Local...
 - Range
 - User
 - Pid
 - Total
 - Table
 - Calibration
 - Pressure
 - Current
 - Temperature
 - Multi-point...
 - General
 - OffLine Parameterize
 - Observe
 - Diagnosis

- Center Panel:** Displays a 3D model of the LD400 Series HART Pressure Transmitter.
- Right Panel (Form):** Contains input fields for various parameters:
- Manufacturer: SMAR
- Device Type: LD400
- Unique ID: 0
- Tag: TAG
- Descriptor: DESCRIPTOR
- Message: MESSAGE
- Bottom Panel:** Includes a "Write" button and a status indicator showing "Connected".




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

LD400DTM is from the family of Smar's DTMs HART. With LD400DTM is possible to have access to many functionalities of LD400 transmitters:

- ✓ Transmitter Identification and Manufacturing Data;
- ✓ Primary Variable Trim – Pressure;
- ✓ Primary Variable Trim – Current;
- ✓ Transmitter Adjustment to the Working Range;
- ✓ Engineering Unit Selection;
- ✓ Transference Function for Flow rates Measurement;
- ✓ Linearization Table;
- ✓ Totalizer Configuration;
- ✓ PID Controller Configuration and MV% Characterization Table;
- ✓ Device Configuration;
- ✓ Equipment Maintenance.

For further details about topics above, refer to the LD400 manual.

TABLE OF CONTENTS

LD400DTM	7
Installation	7
Topology.....	7
Layout.....	7
Communication	8
Response Code.....	8
LD400DTM Functions.....	9

LD400DTM

Pre - Requirements

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

Installation

To do the LD400DTM 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.

LD400DTM could be integrated in all frame applications that comply with the version 1.2 of the FDT/DTM standard.

Topology

After LD400DTM 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 LD400DTM is the last element of topology (represents the LD400).

In some cases, is necessary a DTM gateway type (responsible for communication protocol conversion). The LD400DTM 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 LD400DTM to online, verify in the topology, if the address set in LD400DTM is the same of the LD400 device address. If it is not, change to the correct address through the communication DTM.

While the LD400DTM 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 LD400:

- 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 LD400DTM Online Parameterization navigation tree can be seen. The other options also appear.

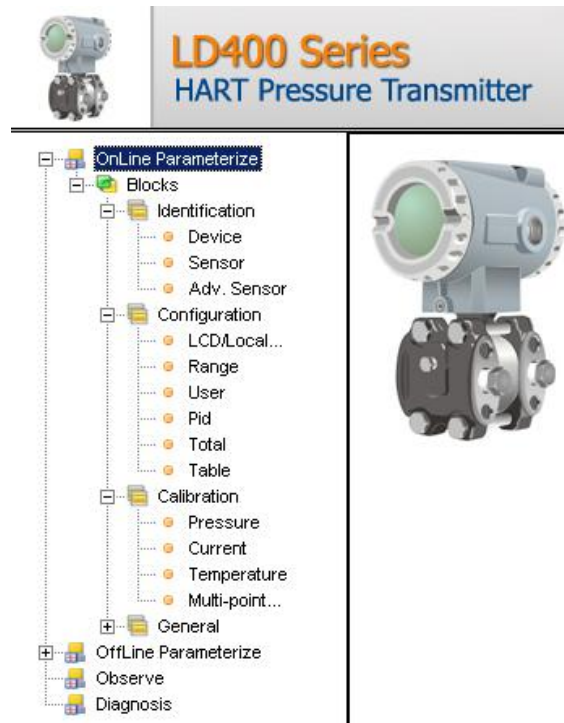



Figure 2 – LD400DTM navigation tree

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:



Communication

LD400DTM sends the #0 command at each 4 seconds and in case LD400 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 LD400, not even the Universal Commands and Common Practice of HART protocol.

Response Code

When some writing or reading fail occurs, the LD400DTM displays a message coming from Response Code sent by LD400.

LD400DTM Functions

Below we have a brief description about each LD400DTM function.

1. **Online Parameterize** – This function is used to make the LD400 online parameterization, is enabled when the LD400DTM is online. The user access level for this function is “Operator” (read only) and “Maintenance” (complete access).

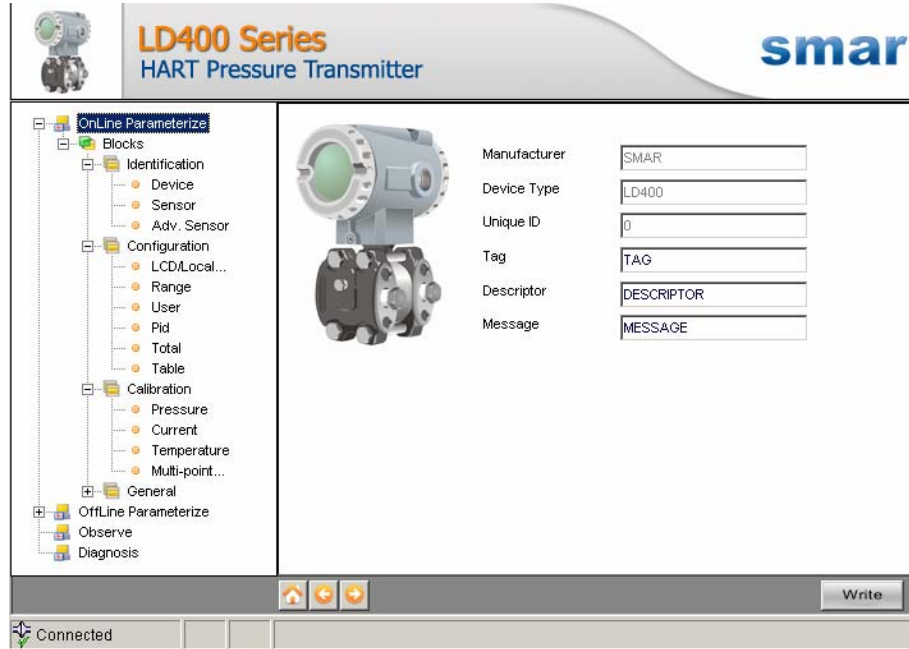


Figure 3 – LD400DTM “Online Parameterize” Screen

2. **Offline Parameterize** - This function is used to make the LD400 offline parameterization, the parameter values configured in this function can be written in LD400 through the **Download** function. The user access level for this function is “Maintenance”.

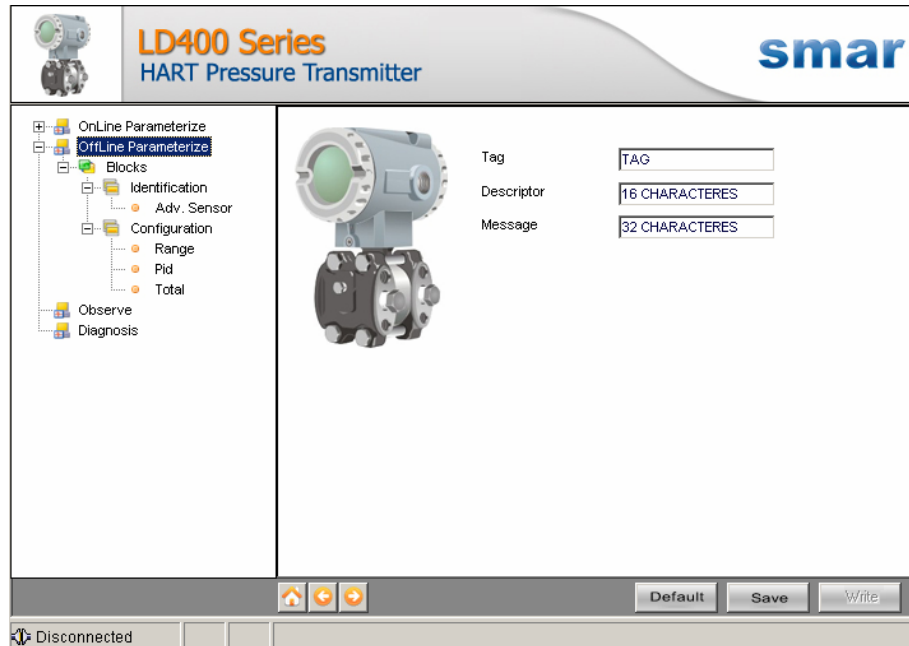


Figure 4 – LD400DTM “Offline Parameterize” Screen

3. **Observe** – Through this function is possible to monitor the LD400 process variables: Out (mA), Out (%), PV (%), PV (mmH₂O).

The user chooses four variables to monitor and also has access to the variables monitoring used in the transmitter calibration.

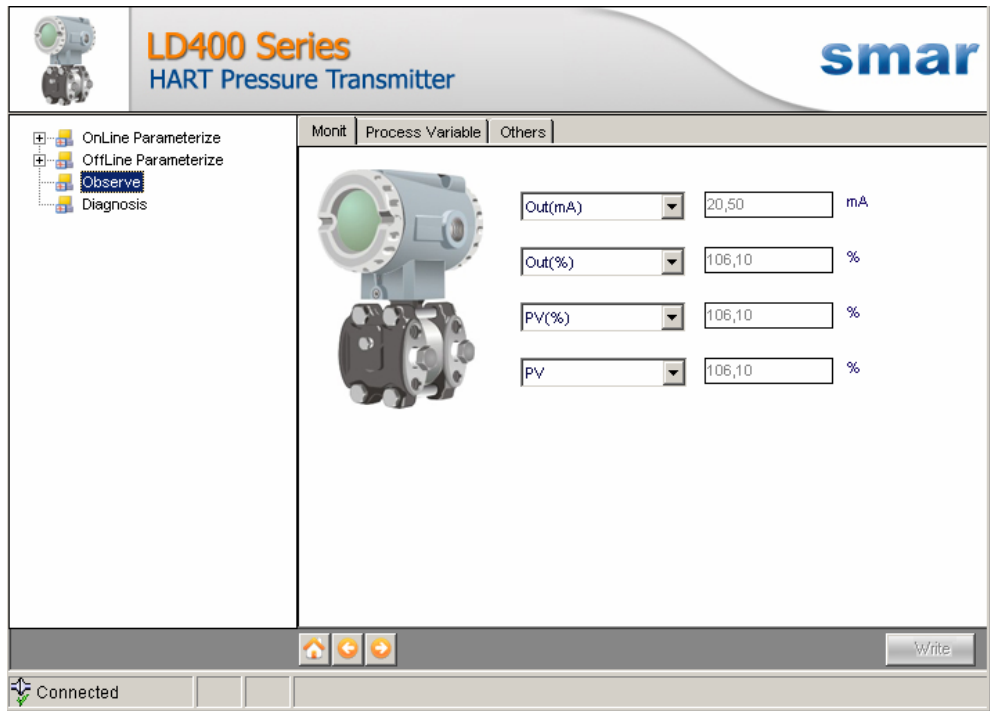


Figure 5 – LD400DTM “Observe” Screen

4. **Diagnosis** – Through this function the user has access to the LD400 diagnostic parameters. This function is enabled when the LD400DTM is online. The user access level for this function is “Operator”.

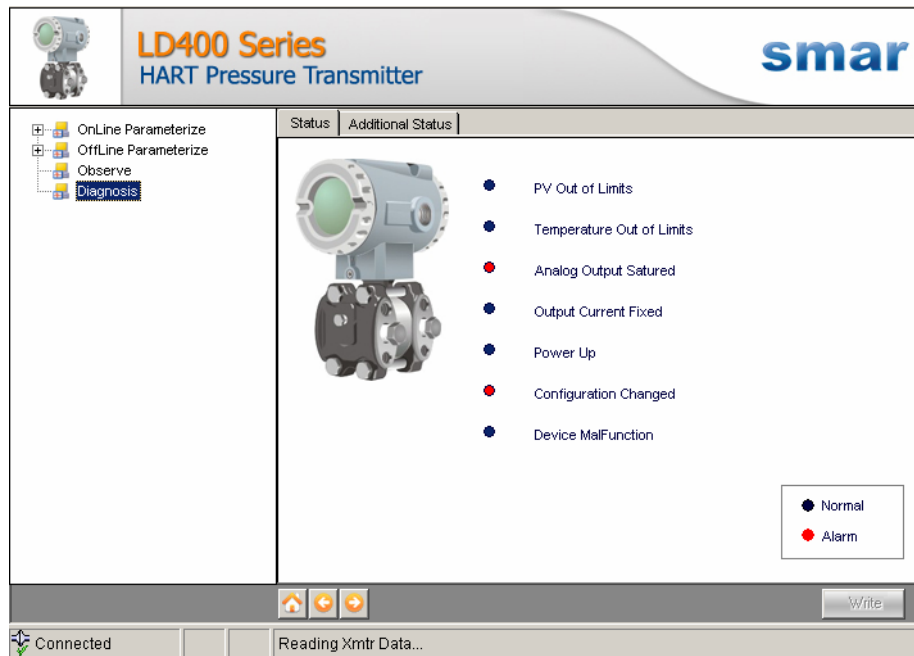


Figure 6 – LD400DTM “Diagnosis” Screen

5. **Upload** - This function reads the LD400 parameters and updates the LD400DTM database with the recent values. This function is enabled when the LD400DTM is online. The user access level for this function is “Maintenance”.

6. **Download** - This function writes the parameters configured in the LD400 **Offline Parameterize** function. This function is enabled when the LD400DTM is online. The user access level for this function is “Maintenance”.

