FDI302

smar

FIRST IN FIELDBUS

Fieldbus Communication Interface
for Firmware Update

FDI 302-2
FIELD DEVICES INTERFACE
smar S/N 00367

FDI302ME

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www.smar.com

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

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FDI302 - FIELDBUS COMMUNICATION INTERFACE FOR FIRMWARE UPDATE

Introduction

The FDI302 Smar interface, (Fieldbus Communication Interface for Firmware Update), allows firmware update of the FOUNDATION™ fieldbus and PROFIBUS-PA field devices using a computer and Smar FBTools application software.

There are two models available:
   FDI302-1: Fieldbus Communication Interface for Firmware Update - 302 and 303 series
   FDI302-2: Fieldbus Communication Interface for Firmware Update - DC302

Characteristics

- Compatible with all field devices of Smar 302 and 303 series, and also DC302;
- Powered by the computer, it does not need external power supply;
- Electrically isolated between the field device and the port EIA-232;
- Female DB9 standard serial connector;
- Easy and quick installation.

Functional Description

Smar FDI302 allows firmware to be updated into field devices very quickly.

Used Signals

TxD (Pin #3): TRANSMITTED DATA. Computer output signal and FDI302 interface input. This signal defines the serial data that will be transmitted. The nominal baud rate is 115200 bps.

RxD (Pin #2): RECEIVER DATA. Computer input signal and FDI302 interface output. This signal defines the serial data that will be read from the device. The nominal baud rate is 115200 bps.

DTR (Pin #4): DATA TERMINAL READY. Computer output signal and FDI302 interface input. This signal along with the RTS signal supplies the interface electronic circuit.

RTS (Pin #7): REQUEST TO SEND. Computer output signal and FDI302 interface input. This signal along with the DTR signal supplies the interface electronic circuit.

GND (Pin #5): SIGNAL GROUND. This signal is connected to the FDI302 interface circuit ground.

NOTE
This ground is isolated from the field devices.

Technical Specifications

TECHNICAL SPECIFICATIONS	
Communication Baud Rate	115200 bps (maximum)
Power Consumption	10 mA (maximum)
Electrical Isolation	1000 Vdc (typical)
Firmware Download Time	3 min (average)

Operation

Any firmware of the Smar field devices, FOUNDATION fieldbus and PROFIBUS-PA, 302 and 303 series, besides the DC302 can be updated. The device must be connected and powered through the communication bus, or powered directly by a 24V power supply.

Field devices

To update the firmware of field devices follow the steps below:

Attach the DB9 connector of the **FDI302-1** interface to the computer serial port, COM1 or COM2. Remove the front cover of field device that will receive the new firmware. If the field device has a display, it is not necessary to remove it.

Carefully attach the other end to the device interface according to figure 1 (this will freeze the device display).

Fig. 1 – Interface Connected to the Device.

Insert both guiding pins through the holes of the equipment's circuit board. Tighten on the screw, clockwise, until it is fixed. See figures 2 and 3.

Side view   Top view

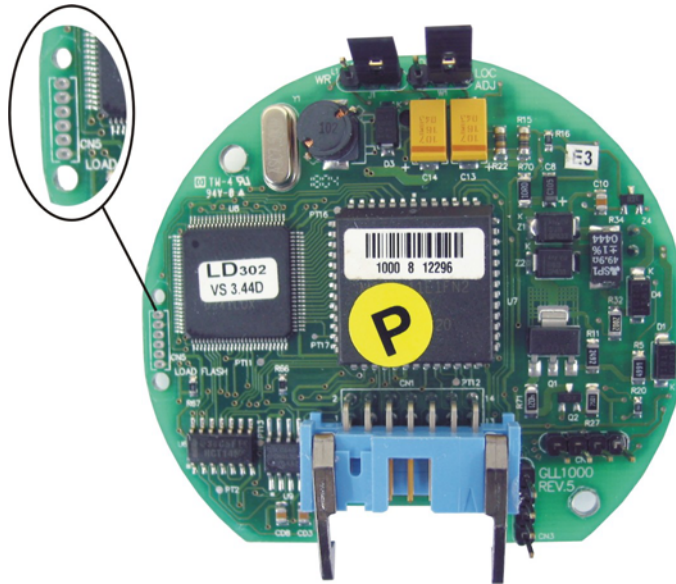*Fig.2 – FDI302-1's Connection Point with the Field Devices*

Fig. 3 – Field Device's Connection Point with the FDI302-1

After fixing the interface and connecting it to the computer execute the FBTools Wizard program. The following figure will appear. Choose the device and click **Next**.
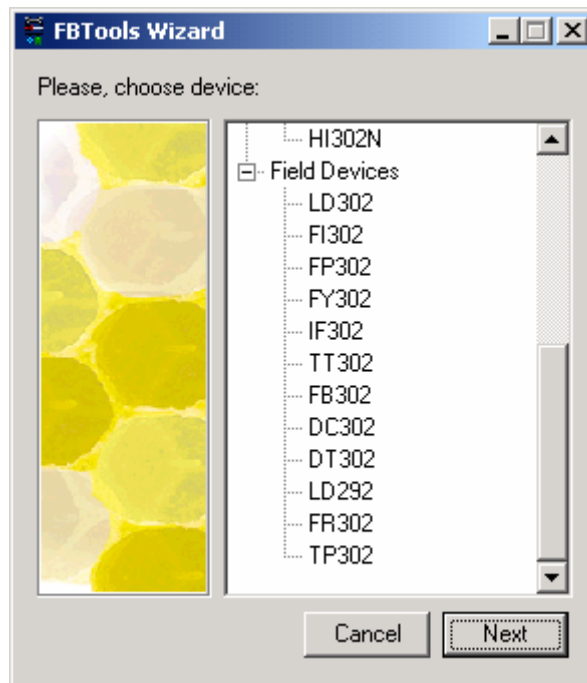

Fig. 4 – FBTools Wizard.

The following figure will appear. Choose the appropriate port (COM1 or COM2) and the firmware file (***.ABS).
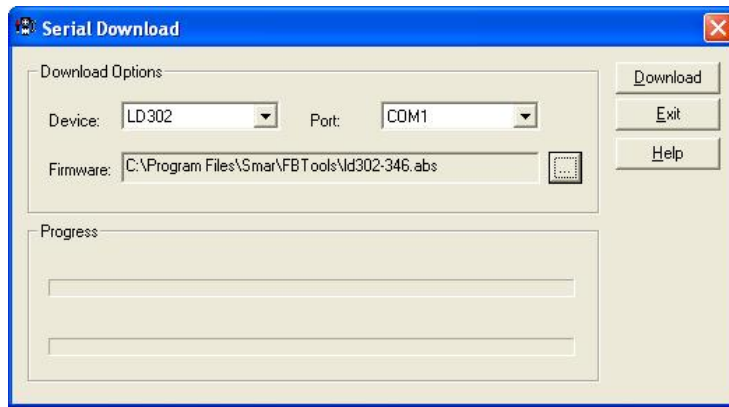
Fig.5 – FBTools Download.

Click **Download**. The program will erase the Flash memory and download the new firmware. For further details see the FBTools' manual. It can be obtained at Smar's website: www.smar.com

NOTE
This process will take about 3 minutes to be concluded.

While "**5**" is lit on display, the device should not be turned off, because it indicates active EEPROM saving operation.

Once the download is finished, just turn off the device and remove the interface. Place the front cover to close it. Turn on the device, the display will show "init" message followed by "factory init" message.

DC302

The procedure to update the firmware of DC302 is similar to that to the field devices. The appropriate interface is the **FDI302-2**.

Attach the DB9 connector of the **FDI302-2** interface to the computer serial port, COM1 or COM2. Remove the protective front cover of the DC302 that will receive the new firmware. See the following figure.

Top view   Connection's detail
Fig.6 – DC302's Connection Point with the FDI302

Carefully attach the other end to the device interface.

Fig. 7 – FDI302-2's connection end for DC302

Insert the two guiding pins through the holes of the equipment's circuit board. See the following figure.


Fig. 8 – FDI302-2 connected to the DC302

After fixing the interface and connecting it to the computer execute the FBTools Wizard program. The steps to be followed are the same done for the field devices.

While the "**Saving**" LED is lit on the device's frontal, it should not be turned off, because it indicates active EEPROM saving operation.
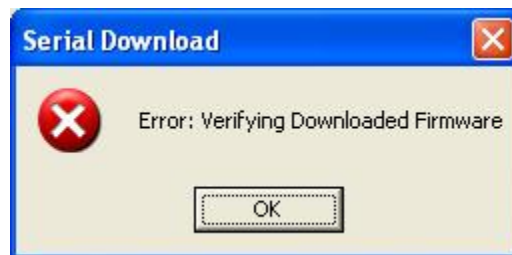
Download Errors

During the download process, some errors may occur. When any error happens, the download process should be restarted. See following the causes of these errors:
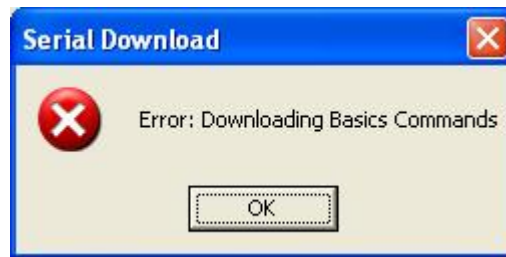
Causes: the FDI302 interface may be not connected correctly or the device may be powered off.
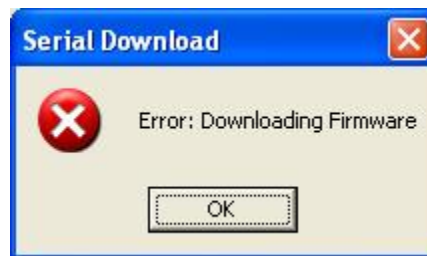
Causes: the communication may be lost during the firmware download or the download process was not well performed.

Causes: the communication may be lost during the firmware download verification or a writing error in the flash memory occurred during the download process.

Appendix A

	SRF – Service Request Form
smar	**FDI302 - Fieldbus Communication Interface for Firmware Update** **Proposal Nº:**

COMPANY INFORMATION

Company: _____

Unit: _____

Invoice: _____

COMMERCIAL CONTACT

Full Name: _____

Phone: _____ _____ _____ _____   **Fax:** _____

E-mail: _____

TECHNICAL CONTACT

Full Name: _____

Phone: _____ _____ _____ _____   **Extension:** _____

E-mail: _____

EQUIPMENT DATA

Model: _____

Serial Number: _____

PROCESS DATA

Process Type (Ex. boiler control)**:** _____

Operation Time: _____

Failure Date: _____

FAILURE DESCRIPTON

(Please, describe the failure. Can the error be reproduced? Is it repetitive?)
_____
_____
_____
_____
_____

OBSERVATIONS

_____
_____
_____
_____
_____

USER INFORMATION

Company: _____

Contact: _____

Section: _____

Title: _____   **Signature:** _____

Phone: _____ _____ _____ _____   **Extension:** _____

E-mail: _____   **Date:** _____/ _____/ _____

For warranty or non-warranty repair, please contact your representative.
Further information about address and contacts can be found on **www.smar.com/contactus.asp**.