FDI302

smar

FIRST IN FIELDBUS

FIELD DEVICE INTERFACE

FDI302ME

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Introduction

The FDI302 Smar interface, (Field Device Interface 302), allows firmware update of the FOUNDATION fieldbus^{TM} field devices through a PC and Smar FBTools application software.

NOTE
The FDI302 also allows firmware update of Smar Profibus PA devices.

Characteristics

- Compatible with all field devices of Smar 302 and 303 series;
- 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 downloaded into field devices very quickly.

Used Signals

TxD (Pin #3): TRANSMITTED DATA. PC 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. PC 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. PC output signal and FDI302 interface input. This signal along with the RTS signal supplies the interface electronic circuit.

RTS (Pin #7): REQUEST TO SEND. PC 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™ 302 series can be updated. The device must be connected and powered through the communication bus, or powered directly by a 24V power supply.

Attach the DB9 female connector interface into the serial port, COM1 or COM2, of the PC. Remove the field device front cover that will receive the new firmware. If the field device has a display, IT IS NOT necessary to remove it.

Carefully fit the other end with care 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 until it is fixed. See figures 2 and 3.
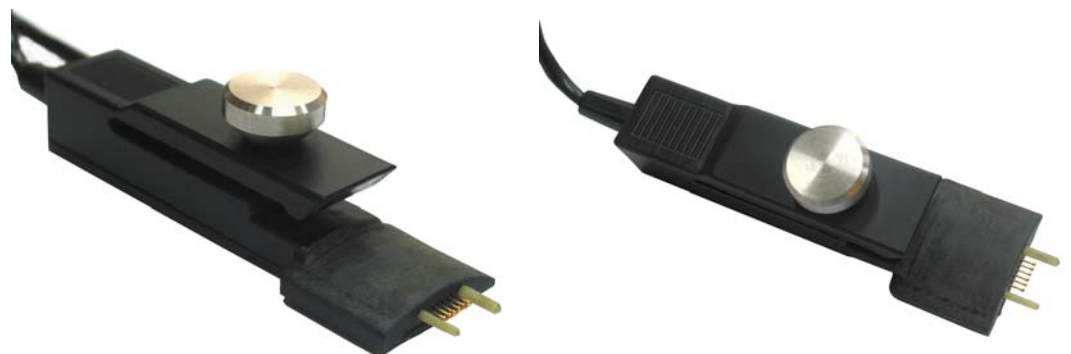
Side view   Top view
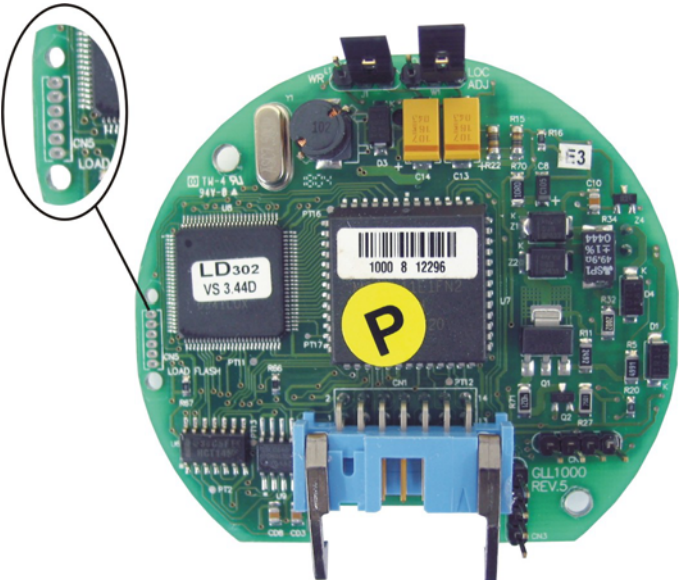
Fig.2 – FDI302's Connection Point with the Field Devices

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

After setting the interface and connecting it to the PC execute the FBTools Wizard program, choosing the device and the appropriate port (COM1 or COM2). See figures 4 and 5.
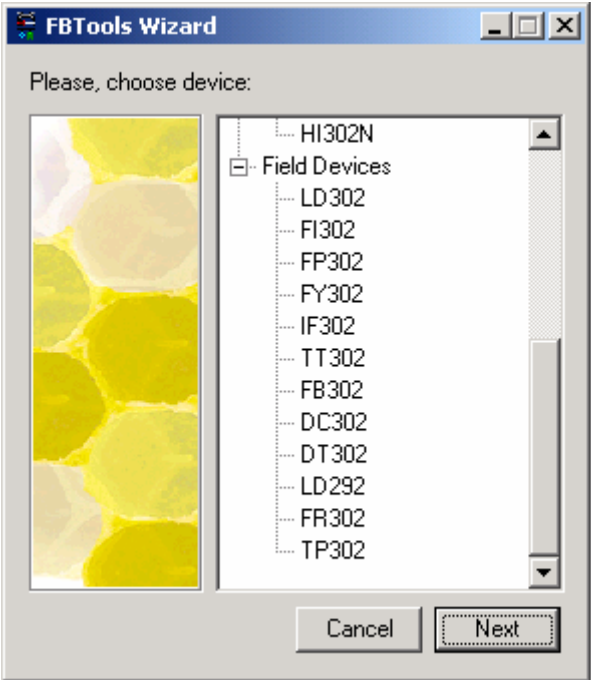

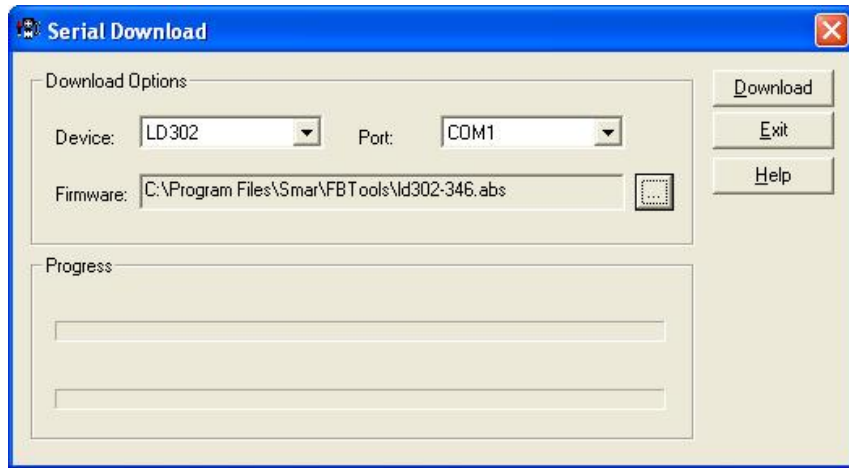*Fig. 4 – FBTools Wizard.*

Fig.5 – FBTools 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. |

Once the download is finished, just turn off the device and remove the interface. Place the front cover to close it.

When the device is turned on, the display will show "init" message followed by "factory init" message.

While "5" is lit on LCD screen, the device should not be turned off, because it indicates active EEPROM saving operation.
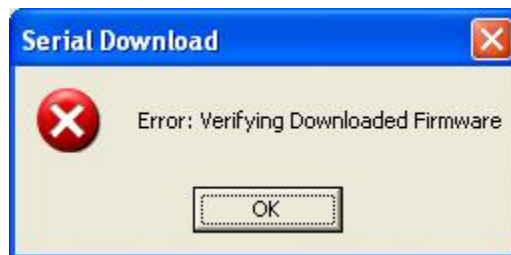
Download Errors

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:
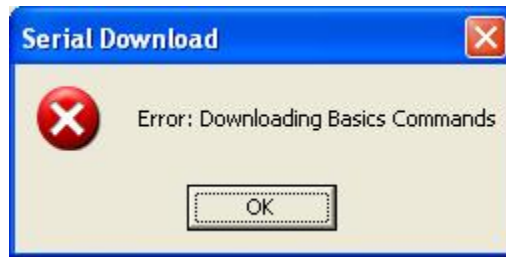
Causes: the FDI302 interface may be not connected correctly or the device may be powered off.
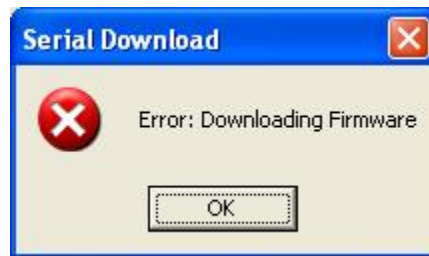
Causes: the communication may be lost during the firmware download or the download process was not well performed.

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