1 - General:

USB-CON converter is used to convert the data in the devices (meter, energy analyzer, reactive power control relay etc.) with communication characteristics such as RS485, RS232 or optic (RS232) ports to USB protocol.

USB-CON-1: is not insulated. The device is not used in communication have no insulation. Otherwise, the devices used in the communication unit may be damaged.

USB-CON: is insulated. The device is used in communication have no insulation.

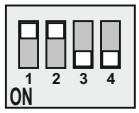
2 - Start-up of the Device

USB-CON/ USB-CON-1 is connected to PC with USB cable. Setup driver using CD with coming device together.

Determine the protocol (RS485 or RS232) that you want to convert to USB. Adjust from dipswitch as shown bellows. Do the connections based on the protocol to be used.

Convert RS485 to USB : Pin numbers of Dip switch are 3 and 4 is "ON" and 1 and 2 is up

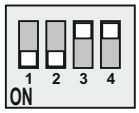
RS485 / USB



SWITCH

Convert RS232 to USB : Pin numbers of Dip switch are 1 and 2 is "ON" and 3 and 4 is up

RS232 / USB



SWITCH

3 - Technical Specifications

Support USB 1.1 and USB 2.0 protocol

Support 300 ..... 230.4k communication speed

Automatic direction control

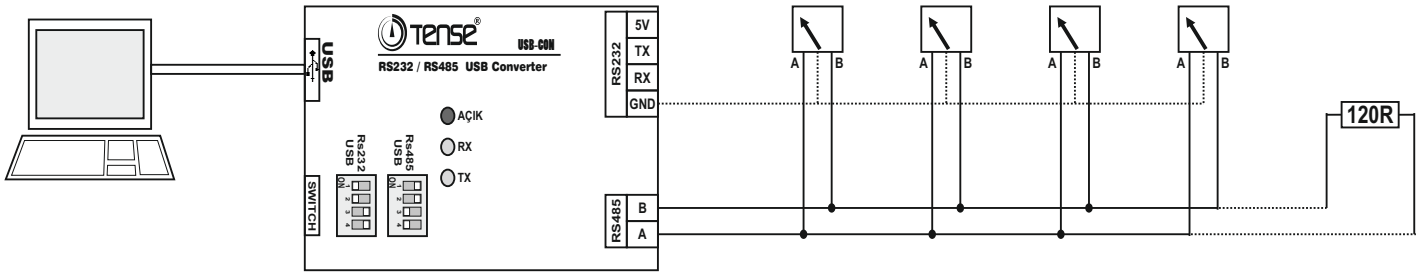
Power Led and communication LED (Tx and Rx)

Selectable RS232 to USB or RS485 to USB converting

Energy supplied from USB port .Do not connect any external power supply through the device.

Insulated is optional .USB-CON is insulated ,USB-CON-1 is not insulated.

4 - Rs485 to USB Connection Schema



RS485 connection cable length should be about 1000 meters. When the cable distance or the number of the devices increases, 120R resistance given with the device can be connected to the network. Maximum 256 devices can be connected.

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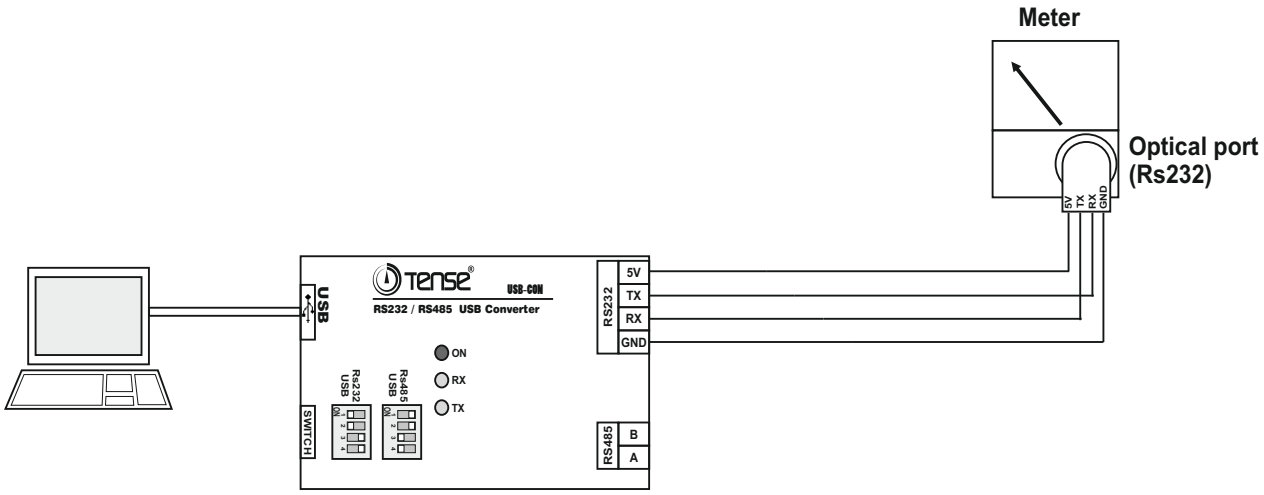
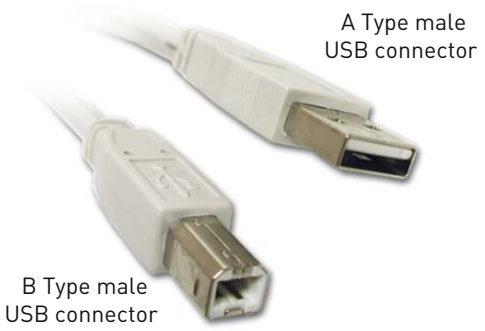
5 - RS232 to USB Connection Schema



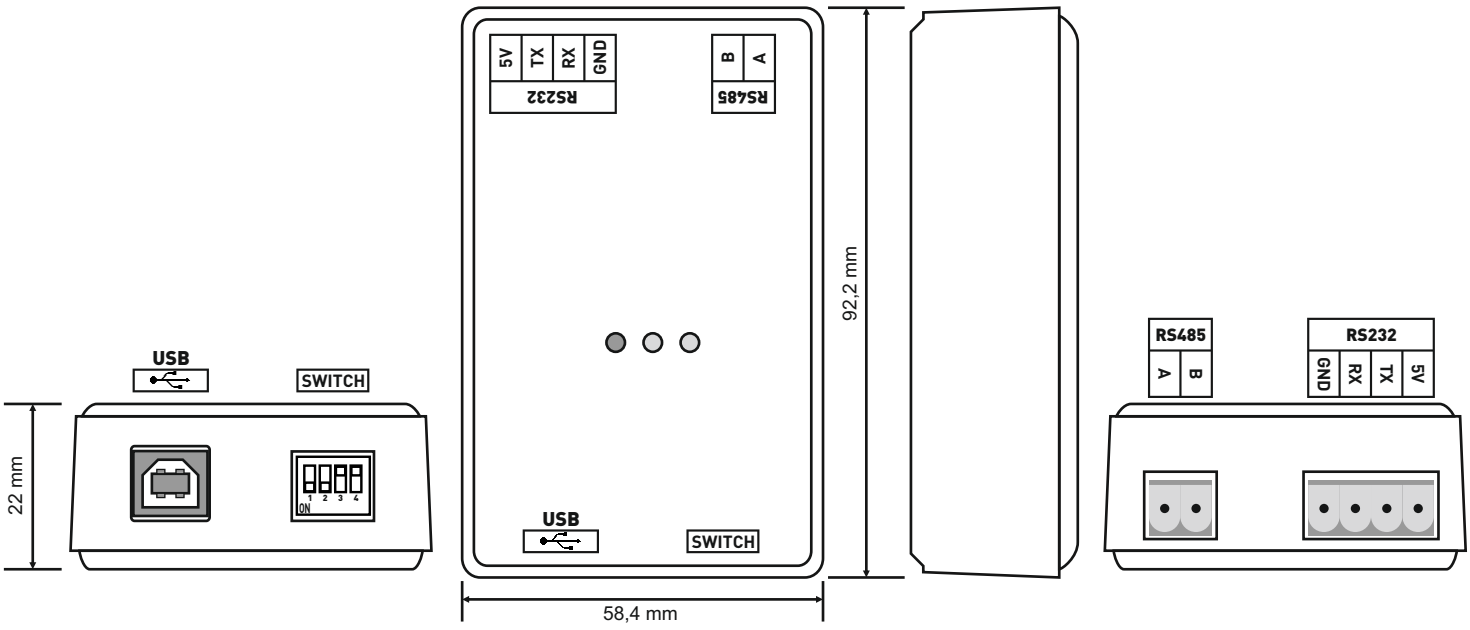
If RS232 connection cable is longer than 2 meter, data loss may occur. You can connect maximum one device. If you use RS485 or Rs232 ports for connection with the meters, you may need to cover the optic head of the meter with black tape. Otherwise, there may be distortion in data.

6 - USB CON and PC Connection Cable



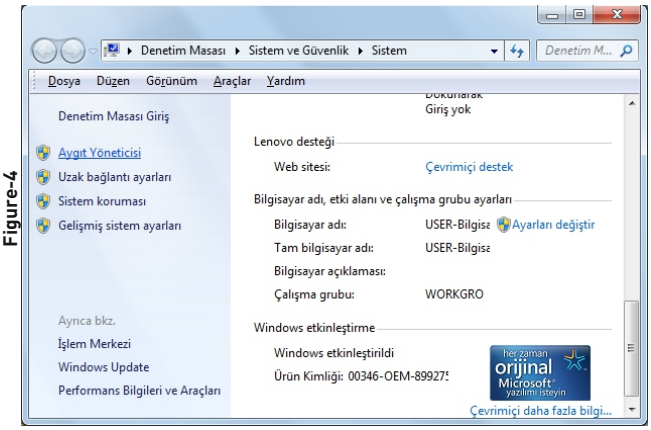
USB-CON and PC connection cable is same type as a figure. Cable of PC connection point should be type –A (male)connector, USB-CON connection point should be type-B (male)

7 - Dimensions



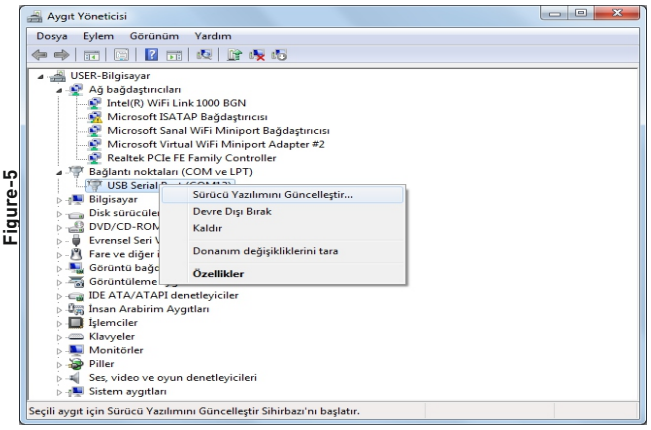
8 - Connect to USB-CON using COM port on Windows 7

Figure-4



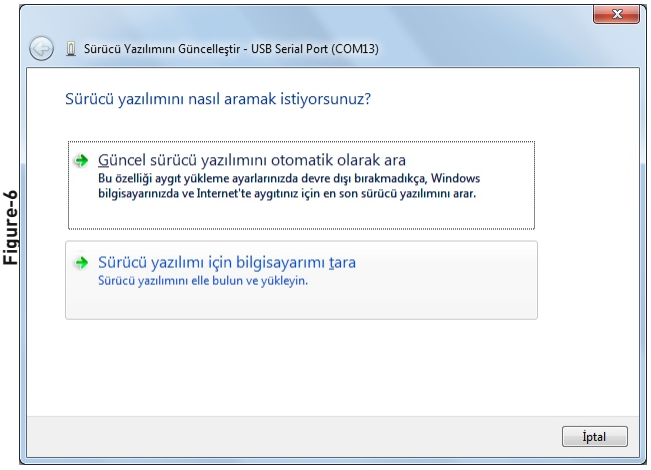
1-) Connect USB-CON to the PC
2-) Right Click on My computer icon and select "Properties"
3-) The figure-4 is displayed when it selected "Properties" and click "Device Manager"

Figure-5



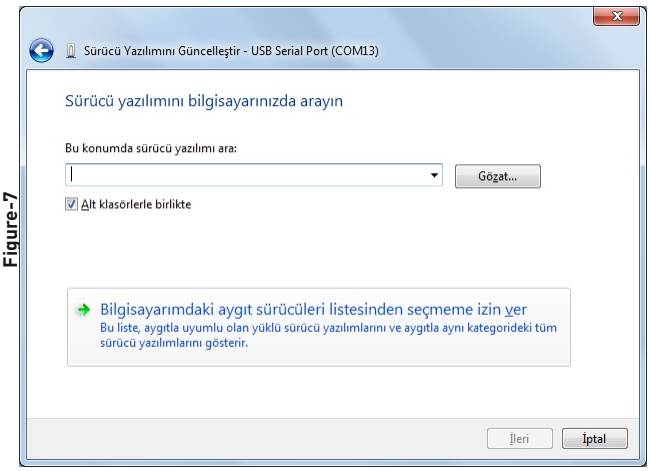
4-) The figure-5 is displayed when it selected. Select Ports tags and right click on "USB serial Port" and select "Update driver software"

Figure-6



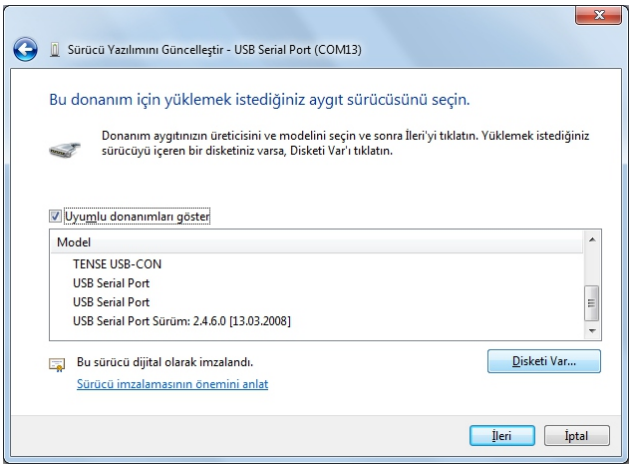
5-) The figure-6 is displayed when it selected. Then click "Browse My computer for driver software"

Figure-7



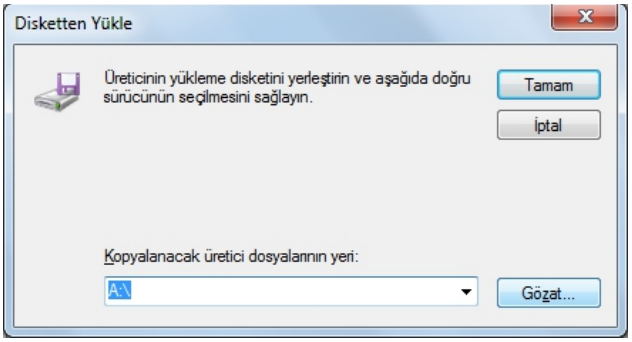
6-) The figure-7 is displayed when it selected. Click
" Let me pick from a list of device drivers on my computer"

Figure-8



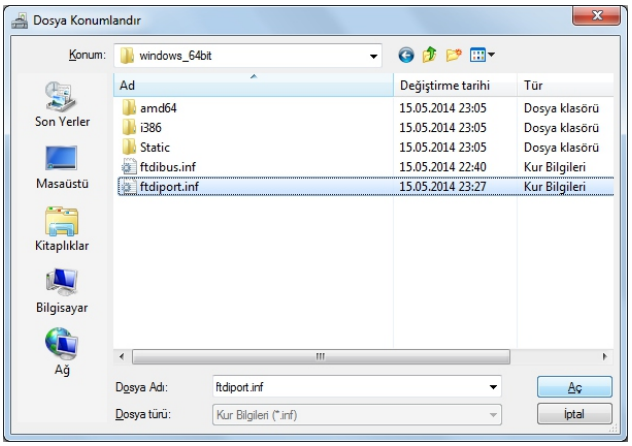
7-) The figure-8 is displayed when it selected. Click "Have disk"

Figure-9



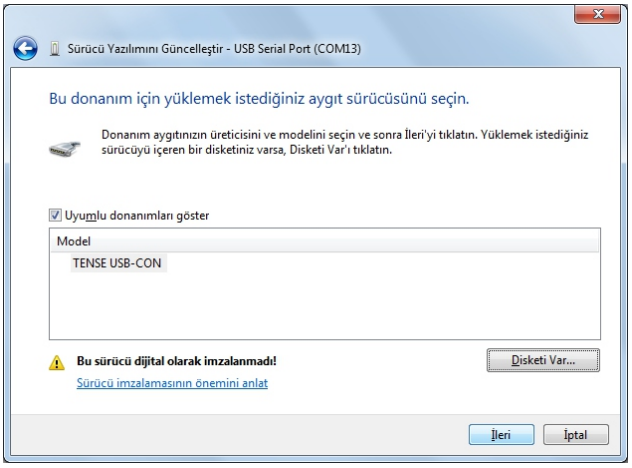
8-) The figure-9 is displayed when it selected. Click "Browse"

Figure-10



9-) The figure-10 is displayed when it selected. Go to driver software location.
10-) Select "ftdiport.inf" and click open.

Figure-11



11-) The figure-11 is displayed when it selected. You should see TENSE USB-CON
12-) Click " next"

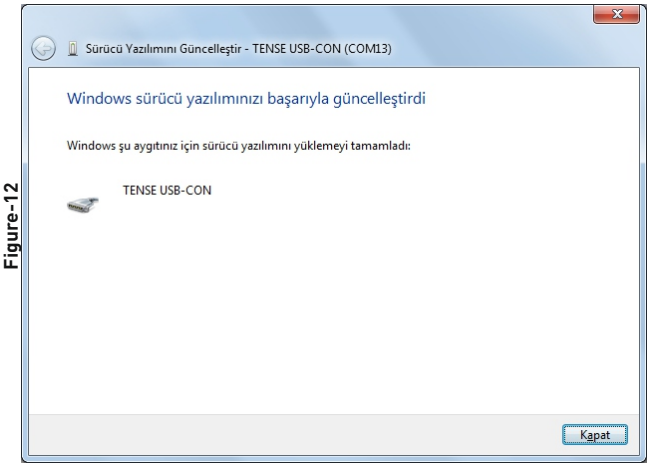


Figure-12

13-) The figure-12 is displayed when it selected. Click "Cancel". USB-CON is installed on your PC.
14-) You can check using for Device Manager.

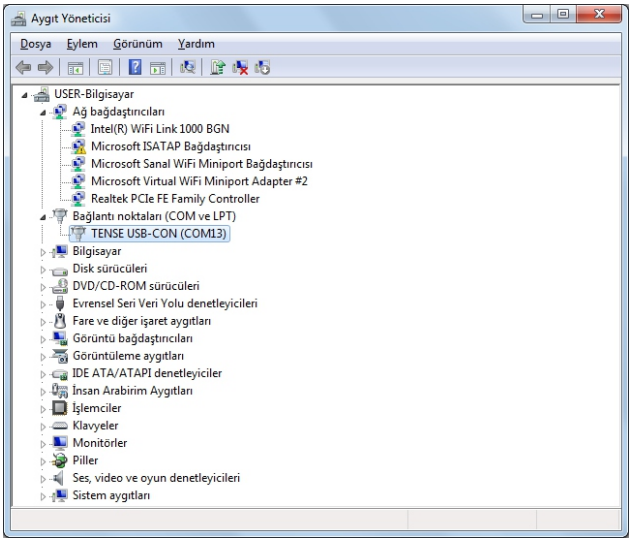


Figure-13

9 - Connect to USB-CON using USB port on Windows 7.

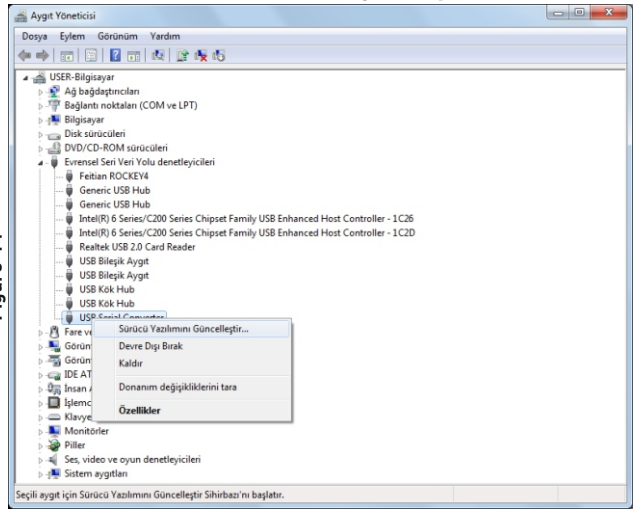


Figure-14

1-) Connect USB-CON to the PC. Right Click on My computer icon and select "Properties"
2-) The figure-4 is displayed when it selected "Properties" and click "Device Manager"
3-) The figure-14 is displayed when it selected. Select Universal Serial Bus Controllers tags and right click on "USB serial Converter" and select "Update driver software"

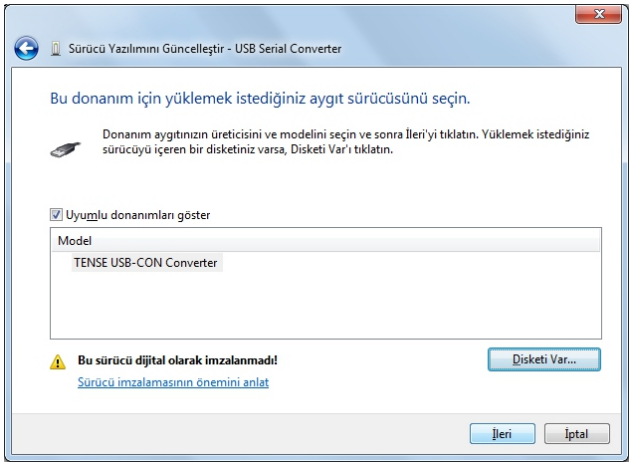


Figure-16

10-) The figure-16 is displayed when it selected. You should see TENSE USB-CON
11-) Click "next"

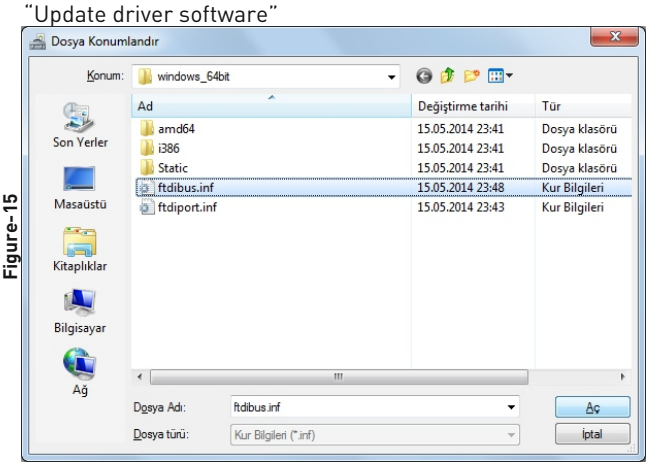


Figure-15

4-) The figure-6 is displayed when it selected. Then click "Browse My computer for driver software "
5-) The figure-7 is displayed when it selected. Click " Let me pick from a list of device drivers on my computer"
6-) The figure-8 is displayed when it selected. Click "Have disk".
7-) The figure-9 is displayed when it selected. Click "Browse".
8-) The figure-10 is displayed when it selected. Go to driver software location.
9-) Select "ftdibus.inf" and click open.

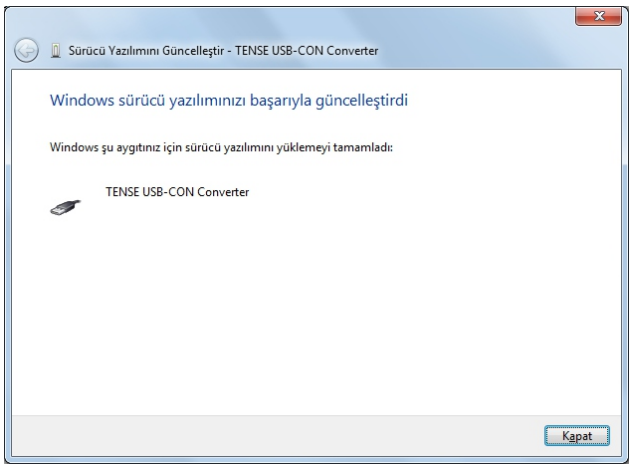


Figure-17

12-) The figure-17 is displayed when it selected. Click " Cancel". USB-CON is installed on your PC

The above process is similar in other Windows OS. You can download the driver from www.tense.com.tr. There are all Windows OS driver from there (Windows XP, Windows Server 2003, Windows Vista, Windows 7, Windows Server 2008 R2 and Windows 8).it is enough to select correct OS driver (32 bits or 64 bits) for setup driver.