SERIAL BRIDGE II Configurator

SUMMARY

Revision notes

Revision of the document: **ENG 1.0.0 del 2004.03.31**
Revision of the SB2Conf: **1.0 (303)**

EFA AUTOMAZIONE

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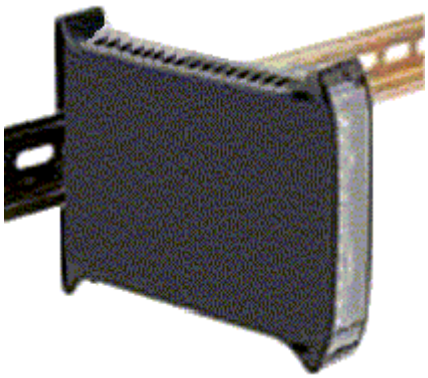
The Serial Bridge II

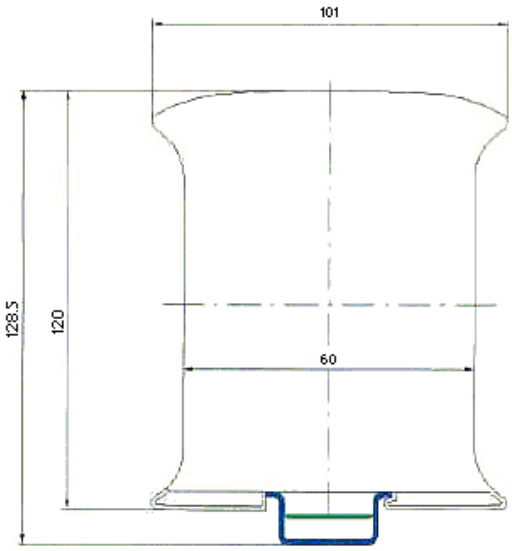


Power input	11-32 VDC
Power consumption (typical)	2,5 W
Size	120mm x 101mm x 22.5 mm (L x W x H)
Protection index	IP 20
Temperature	From 0 a +50 ºC
Relative humidity	5 to 95% (non-condensing)
Housing	Mix PC/ABS (UL-94 V0)
Flammability	Materials UL 94V-0
	IEC 695.2.1 @ 960 °C
Mounting	C type DIN EN 50035;
	Ω type DIN EN 50022-50045

The ***Serial Bridge II*** is a compact and highly configurable instrument, planned to solve most of problems related to communication between devices. Under the front panel, protected from a tiny plastic door, there are 2 buttons and 3 LEDs of different colours to show state and activities.

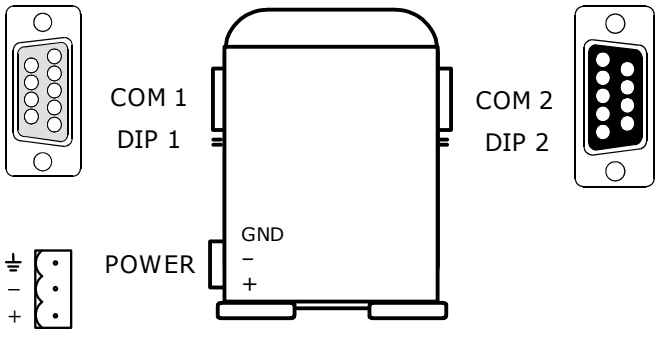
LED	State	Description
COM 1 (Orange)	Off	No communication
	Flashing	Communication
	On	Wiring Error (related with RS-485)
COM 2 (Orange)	Off	No communication
	Flashing	Communication
	On	Wiring Error (related with RS-485)
STATUS (Green)	Off	Power off
	1 Hz	Communication error
	On	OK

120mm x 101mm x 22.5 mm (L x W x H)



Sub-D 9 male

① RS422 Tx+ (or special functions)
② RS232 Rx
③ RS232 Tx
④ RS422 Rx+ (or special functions)
⑤ GND
⑥ RS422 Tx- (or special functions)
⑦ RS232 RTS
⑧ RS232 CTS
⑨ RS422 Rx- (or special functions)



Sub-D 9 male

① RS422 Tx+
② RS232 Rx (or special functions)
③ RS232 Tx (or special functions)
④ RS422 Rx+
⑤ GND
⑥ RS422 Tx-
⑦ RS232 RTS (or special functions)
⑧ RS232 CTS (or special functions)
⑨ RS422 Rx-

Note 1: Marked pins with "special functions" can be configured and used by specific driver to create control with particular kind of handshake.
Note 2: Communication in RS-485 is achieved connecting the signal of **RS422 Tx+** with **RS422 Rx+** and the signal **RS422 Tx-** with **RS422 Rx-**.
Note 3: The Serial Bridge II has 2 independent DIP switches for each communication port. These DIP switches behave to active the *fail save* with communication both RS-485 (only a DIP switch ON), and RS-422 (both DIP switches ON).

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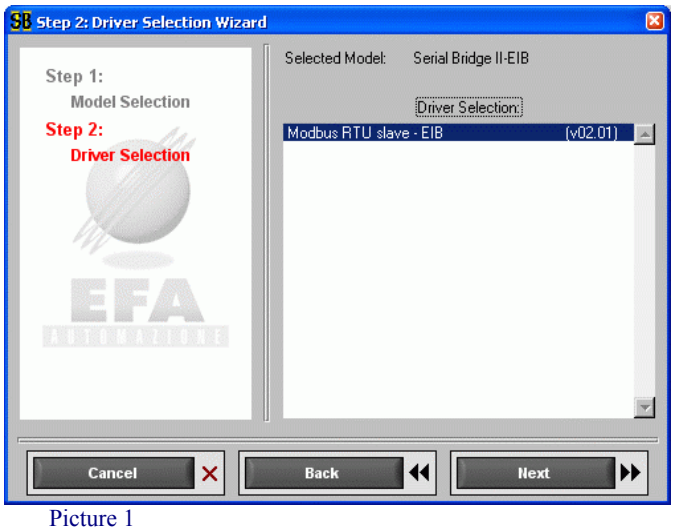
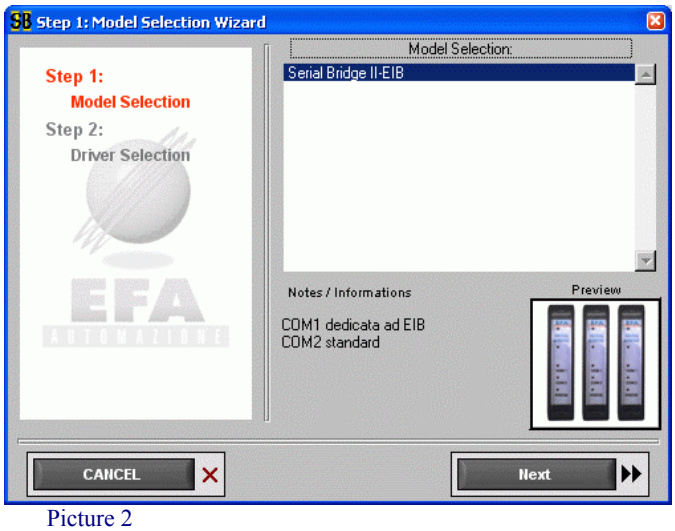
Create a new configuration

With the creation of a new configuration we can, through an apposite driven procedure *(wizard)*, select the model of the Serial Bridge II and the relative communication driver.

To start the procedure, select the [***New Project***] item in the [***File***] menu.
There will appear the first window of the wizard where we can select the model of the Serial Bridge II (picture 1). Select the model and then push the [***Next***] button to visualize the second wizard window (picture 2). Select the communication driver and then push again the [***Next***] button.



Picture 1



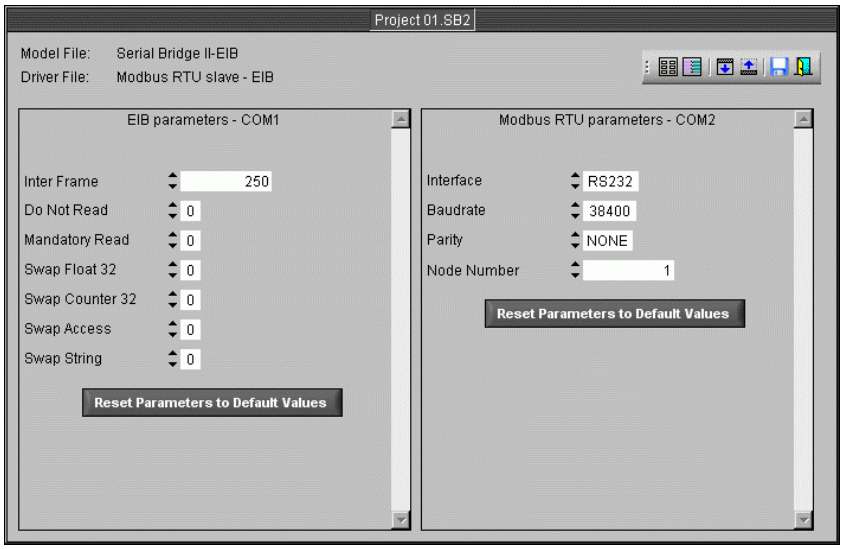
Picture 2

The configuration window

Through the configuration window it is possible to execute specific operation to set the configuration of the Serial Bridge. With SB2Conf it is possible to open and to use several configurations together. In each window we can visualize the parameters or the address tables. Moreover we can reduce or extend the window, save the whole configuration specific or shut it.

Configuration parameters

When we open the configuration window we can see the form where it is possible to set the communication parameters.



In the example in the picture, the selected model is about the interfacing of an EIB network through Modbus RTU.
This indication is always visible in each configuration window, also when we minimize () it. In this way we can always identify it.
The second part is dedicated to the visualization of the communication parameters and the window is divided in two parts. In the left part there will be present the communication parameters about COM1, whereas in the right part there will be about COM2. In any case, it is present in both parts a button that reset all parameters to the default value.

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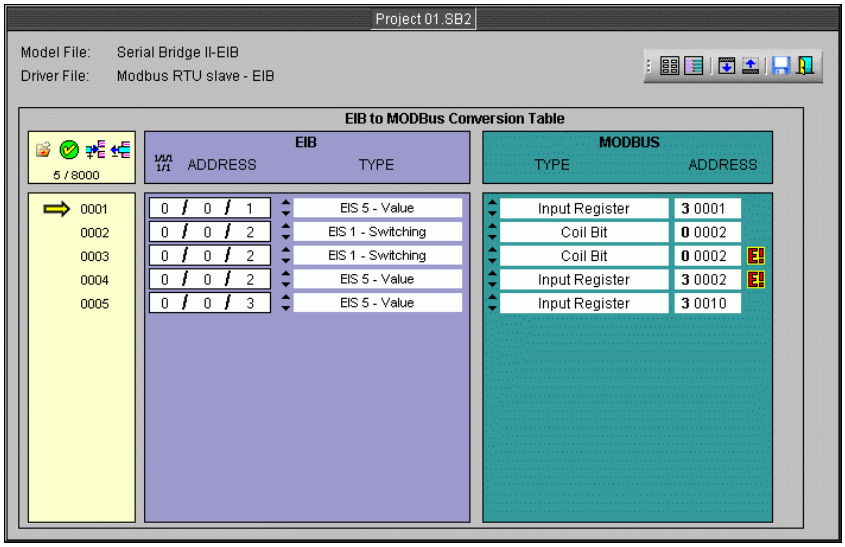
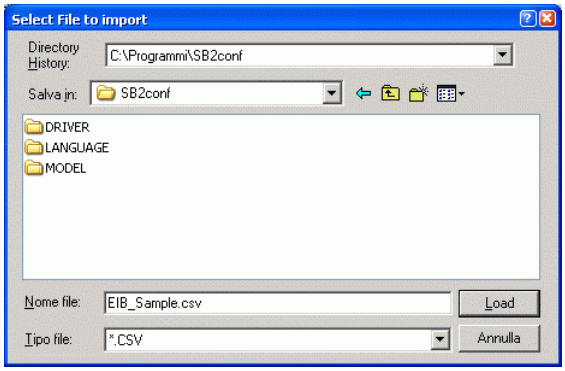
Table of data exchange

The visualization of the table of data exchange is available only when we use drivers that need this type of configuration. Others drivers can have a fixed map and don't need this configuration.



In the left part of this configuration there is a tool bar through that it is possible to manage the table: .
The and keys permit to insert and to remove lines in the table. The new line is inserted in the next position respect the arrow.
The key consents to verify the correctness of the table and to select possible error, before to send it to the Serial Bridge II. In the example in the picture there are 2 errors: in the line 0003 the Modbus address is the same of the line 0002, whereas in the line 0004, the Modbus address have a partial superimposition with the line 0001, infact EIB objects (not bit type) need at least 8 Modbus register in order to be well managed.

The key permits to import the standard CSV file (Comma Separated Values), through that a customer can define a data exchange using a simple text editor (ex. 'Notepad' from Windows®) or with a spreadsheet (ex. 'Microsoft Excel'®), without having the configuration program of the Serial Bridge II.



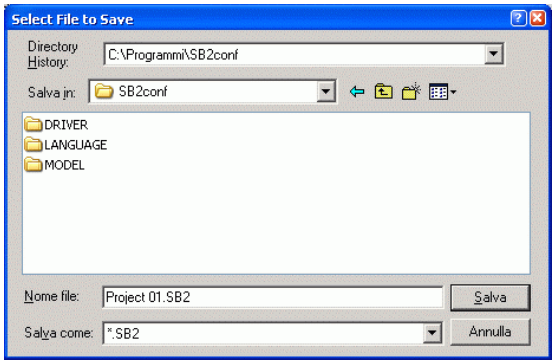
Note:

Using this option we can use the same files already used with the previous method of configuration of the Serial Bridge II.

Refer to the dedicated appendixes to know about fields and formats of the driver related .CSV file.

Save and to open a project

Right on the configuration window is placed the command tool to save all data ( ). In any case it is possible also to use the principal 'menu' under the [***File***] item. The result is a single file with .SB2 extension that it is easy to store having a small size.



In the picture, there is a typical window that appear when we push the save button. This window permits us to choose the name and the directory where we want to save the configuration.
The load operation of a configuration already recorded is similar. We have to use the ( ) button on the tool bar to open a window as we can see in the picture, where we can select the file about the configuration we want. The read operation of a configuration will open a new configuration window.

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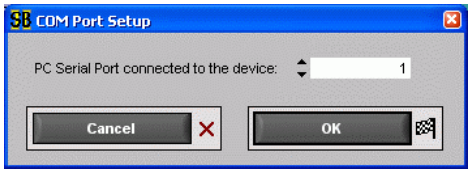
Setup

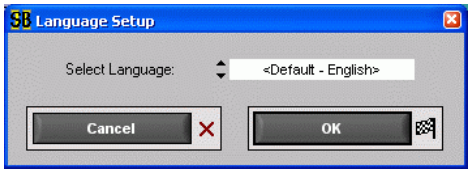
Setup functionalities permit to make simpler the configuration operations of Serial Bridge II.

Under [***Setup***] item it is possible to select the serial port of the PC through that it is possible to send the configuration to the Serial Bridge II [***Communication Setup…***] and the language to use to visualize every menu of the configurator [***Language Setup…***].

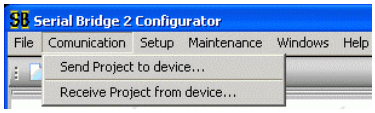
We can use any serial port that is identified with a number from 1 to 255. This permits both the use of classic serial boards (typically from COM1 to COM4), and every board has been generated from USB or Bluetooth adaptors. It is also possible to use virtual board coming from products defined as "serial server" used to remote serial boards over Ethernet.



We can set the language selecting one of these in the list. The visualization with the selected language will start the next time SB2Conf configurator will be opened.



Send the configuration to the Serial Bridge II



To this point we have configured and verified the communication parameters for both the boards of the serial bridge and may we have configured the table for data exchange (and we have done the test of consistency ( )), it is possible to send this configuration to the Serial Bridge II selecting [***Send Project to device***] item under [***Communication***] menu.

To do this operation, follow the subsequent steps, starting with the Serial Bridge II powered off:

① Connect the PC serial port (selected as we have seen in the Set-up chapter) with the COM1 of the Serial Bridge II, using the cable CV-SB-DIAG.

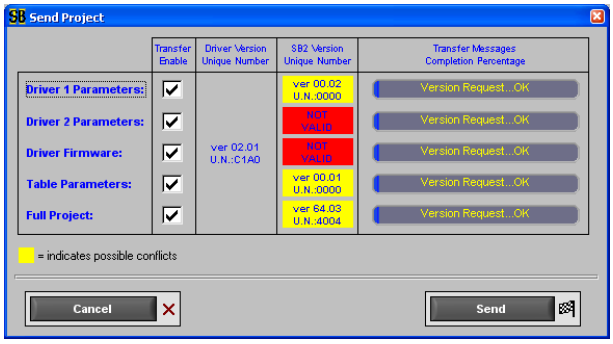
> **Pay attention to the reference labels on the cable, in order to combine in the correct way cable connectors with serial ports connectors.**

② Start the transfer procedure pushing the button or selecting [***Send Project to device***] item under [***Communication***] menu.
SB2Conf configurator will start the sending procedure and will visualize a message similar to that in the picture where it'll inform to be waiting of the connection to the Serial Bridge II.

③ Power on the Serial Bridge II and wait for the result of configurator check about the model and the components may already present in the Serial Bridge II.

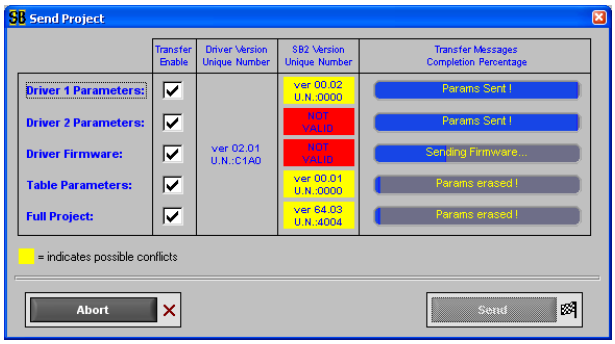
Select the wanted options in the apposite window (Send Project) that will appear after all tests will be done.
Full project is optional: it is possible to choose to not select it for security reasons.

Driver Firmware is mandatory only the first time a Serial Bridge II is configurated.

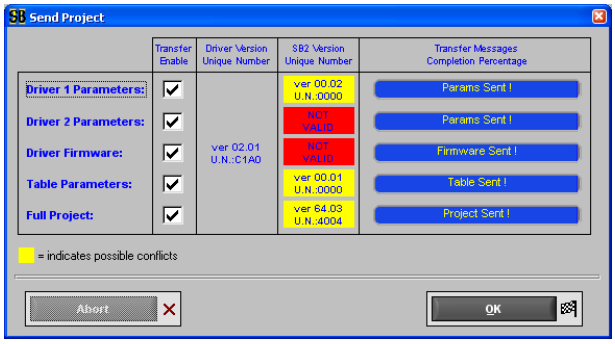


Test in the column “Transfer Message” there is the “Version Request…OK” message. (It is possible to correct eventual error if near there is this message).
Push [**Send**].

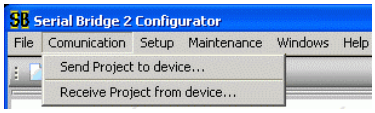
④ Wait the completion or abort the procedure.



⑤ When all is finished, confirm pushing [**OK**].



Receive the configuration from the Serial Bridge II



There is also the possibility to receive the configuration from the Serial Bridge II. This operation is performed selecting [***Receive Project from device***] item, under [***Communication***] menu.

To execute this operation, follow the subsequent steps, starting with the Serial Bridge II without power:

① Connect the serial Board1 of the PC (selected as we have seen in the Set-up chapter) with the COM1 of the Serial Bridge II , using the cable CV-SB-DIAG.

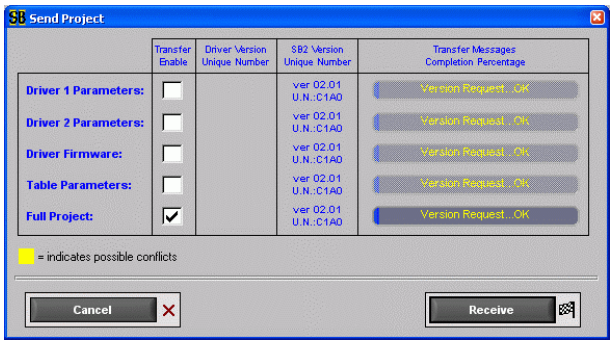
Pay attention to the reference labels on the cable, in order to combine in the correct way cable connectors with serial ports connectors.

② Start with the receiving procedure pushing the button or selecting [***Receive Project from device***] item under [***Communication***] menu. SB2Conf configurator will start the receiving procedure and will visualize a message similar to that in the picture where it’ll inform to be waiting for the connection to the Serial Bridge II.

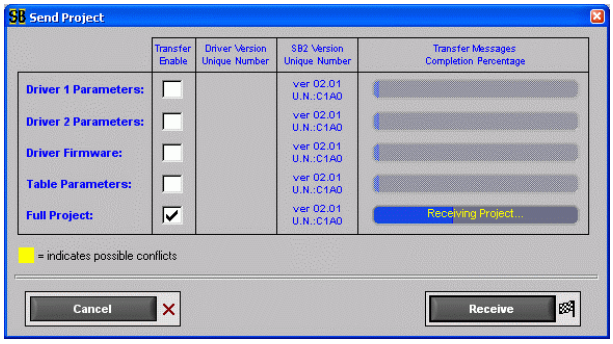
③ Power on the Serial Bridge II and wait for the check about already installed components in the Serial Bridge II.

When all tests will be completed, there will appear the Send Project window. In this window there will be selected only the "Full Project" option because the goal of this procedure is only to do the project upload.

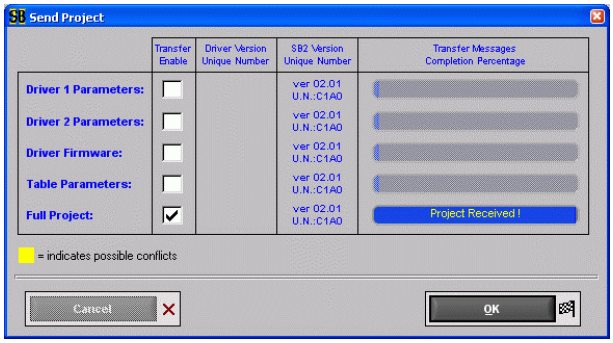
Push the [**Receive**] button to confirm the operation or [**Cancel**] to abort it.



④ After the confirm with the [**Receive**] button the upload project procedure will start. Push the [**Cancel**] button if we want to annul it.

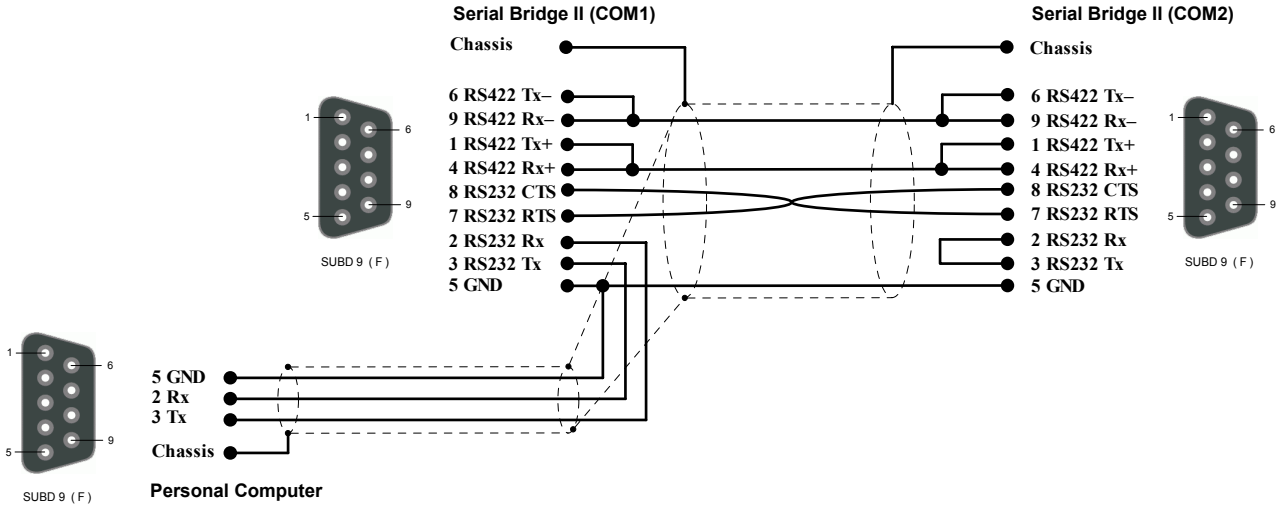


⑤ Push [**OK**] to confirm the project has been received.

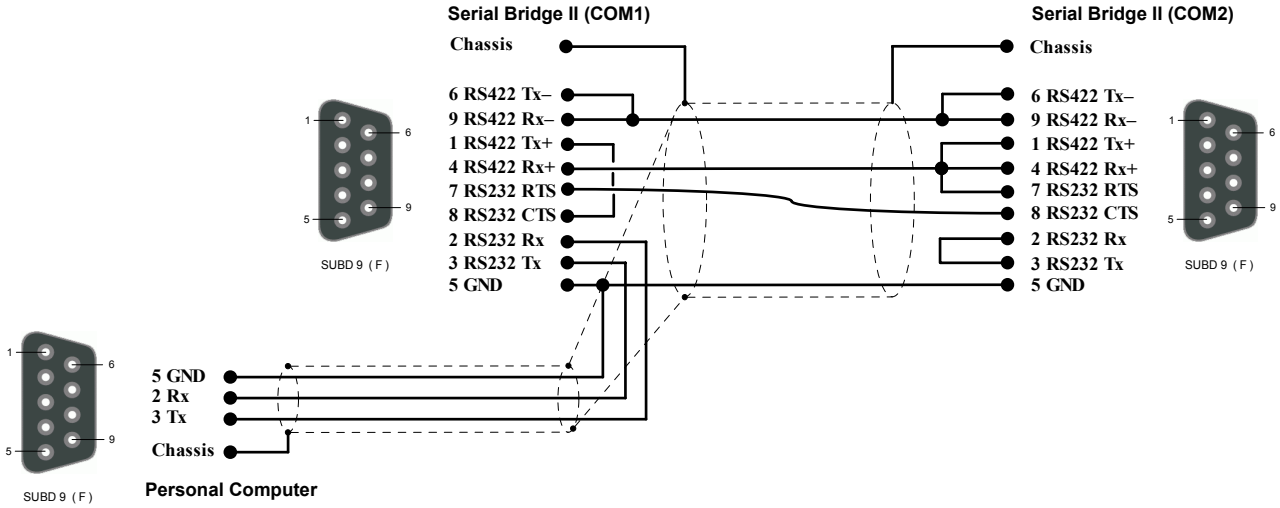


Cables

CV-SB-DIAG Configuration and diagnostics cable for standard Serial Bridge II.

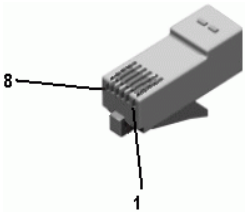


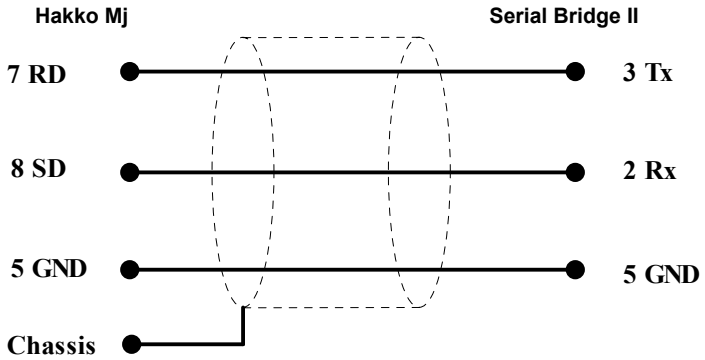
CV- SB-DIAG- EIB Configuration and diagnostics cable for standard Serial Bridge II special for EIB.

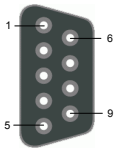


CV- SB-HK232 RS232 communication cable between Serial Bridge II and HAKKO panel on Mj connector.

RJ45 (8/8 plug)



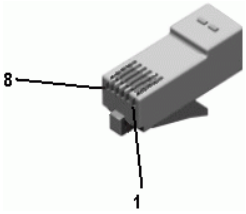


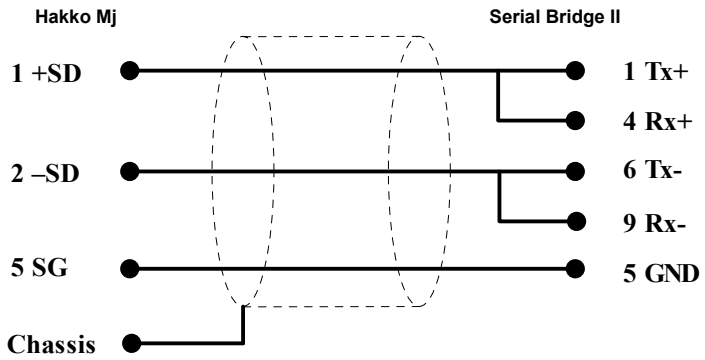


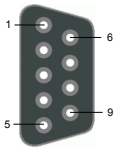
SUBD 9 (F)

CV- SB-HK485 RS485 communication cable between Serial Bridge II and HAKKO panel on Mj connector.

RJ45 (8/8 plug)

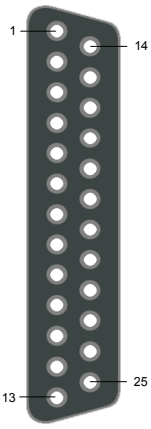




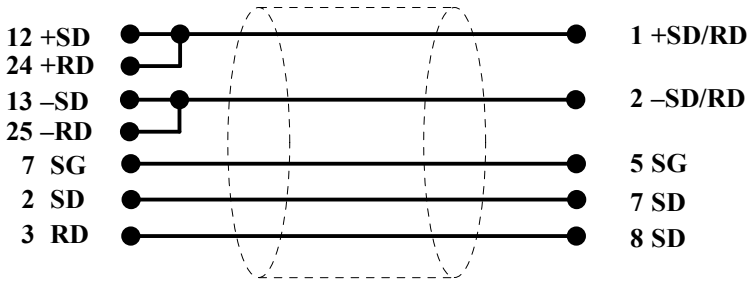


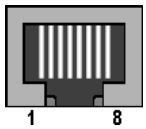
SUBD 9 (F)

CV- HK-CN1-MJ HAKKO panel adaptor from CN1 connector to Mj connector.



SUBD 25 (F)





RJ45 (Modular Socket)