BMS-Graf-pro Version 7.x.x.x
Smart HMI Update

Additional manual
Installation manual

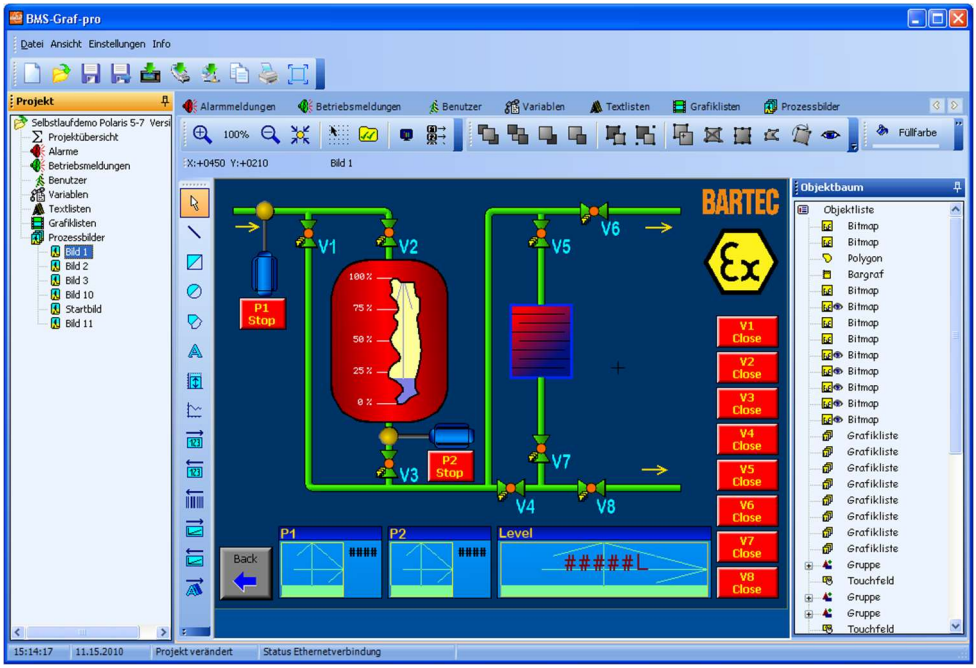


Table of contents

1. General information

1.1 Publisher

BARTEC GmbH
Max-Eyth-Strasse 16
97980 Bad Mergentheim
Germany

Telefon: +49 7931 597-0
Email: Support-Polaris@Bartec.com

1.2 Rights

1.3 Trademark

IBM	is a registered trademark of IBM Corporation
SIMATIC S7	is a registered trademark of Siemens AG
WINDOWS	is a registered trademark of MICROSOFT Corporation

2. Update installation

2.1 Requirements for installing the update

the update for the Smart HMIs requires an existing installation of the BMS-Graf-pro V7.x.x.x. If this not installed, please install it first.

2.2 Preparation of the installation

Download the update from the download page:

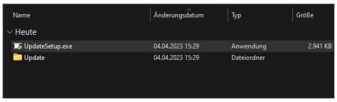
https://automation.bartec.de/bmsgraf.htm

1

ZIP - Open and extract file

2

2.2 Installation des Updates



Start the update by calling up the „UpdateSetup.exe“

1

Select the "Further information" button

2

Select the "Execute anyway" button

3

Select "Yes" to run the setup with administrator rights.

4

Select the "Install Update" button.

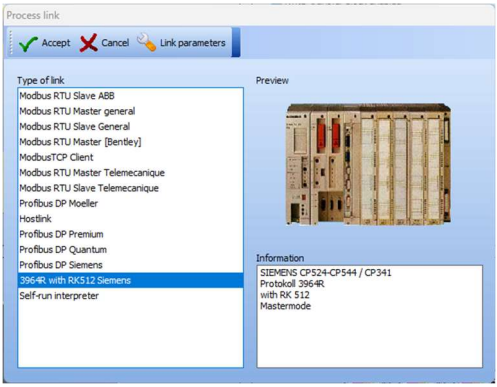
5

Update is executed and can be ended via the "Finish" button.

6

3. Additions / Changes

3.1 Extension of the PLC protocols by the Siemens 3964R RK512



The following Siemens systems are supported:

- S5 115U with CP 544
- S5 115U or 135U with CPU 928B or CPU 943B on 2nd PG-Port
- S7-300 with CP340 with Software 3964R RK512
- S7-300 with CP341
- S7-400 with CP441-2

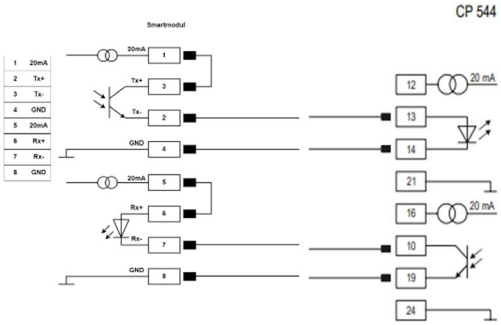
3.1.1 Settings / configurations on the CP 544 of the S5 controller

The CP544 must be set with the Siemens parameterisation software "COM PP" so that the baud rate, data bits, stop bits and parity match the settings of the Smart HMI.

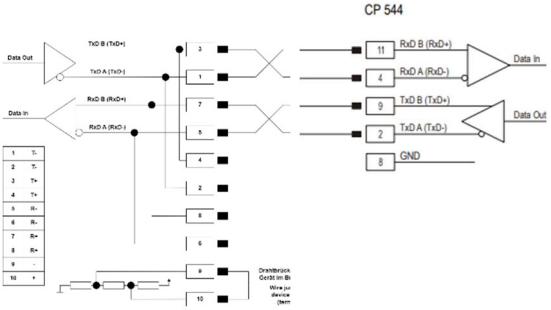
The CP must also be set to the 3964R with RK512 protocol. The priority must be set to low.

A SYNCRON function call must be inserted in the PLC programme in each start-up OB.

The function calls "SEND ALL" and "RECEIVE ALL" must be called at least once in the programme cycle; for very long PLC programmes, it is recommended to insert several calls.

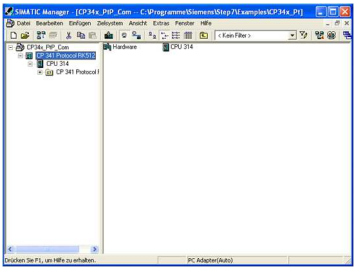


Wiring diagram CP544 with TTY plug-in card (6ES5752-0AA12)

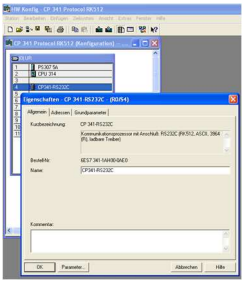


Wiring diagram CP544 with RS422/485 plug-in card (6ES5752-0AA43)

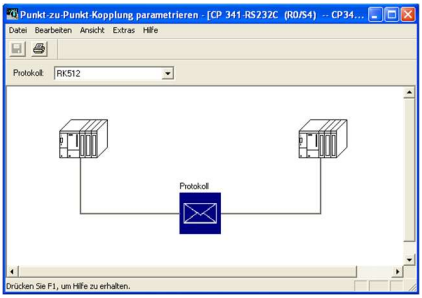
3.1.2 Settings / configurations S7-3xx with CP341 for 3964R RK512 protocol



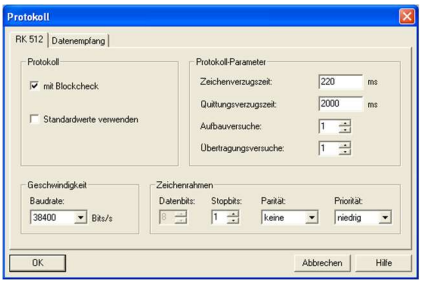
Open Step7 Manager. Then open "Hardware”



In HW Config, double-click to open the properties of the CP341. Here again, press the "Parameters..." button.



The parameterise point-to-point coupling dialogue opens. Now double-click on the "envelope" to enter the protocol dialogue.



Mark "**with block check**" to activate the 3964R frame.

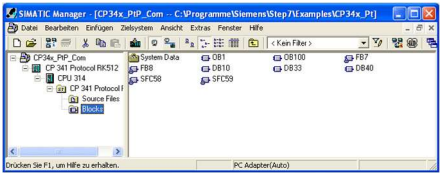
Do not mark "**use default values**" as these must be changed.

Keep the default values in "**character delay time**" and "**acknowledgement delay time**".

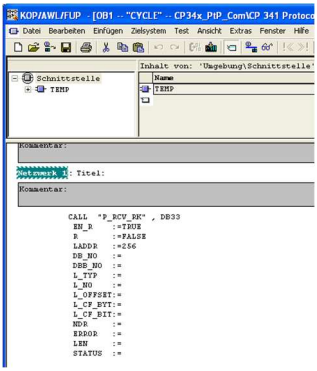
"**Set-up attempts**" and "**Transmission attempts**" must each be set to the value "**1**".

Set "**Baud rate**", "**Stop bits**" and "**Parity**" the same as in the HMI.

“**Priority**" must be set to "**low**".



Open OB1 in the data block area



Here the function "P_RCV_RK" must be called cyclically with an instance DB.

For further parameters see left side, whereby the hardware address of the CP341 must be entered in "LADDR".

3.1.2 Project settings in the BMS-Graf-pro interface for 3964R RK512 protocol

The settings for baud rate, data bits, stop bits and parity must be the same as the settings in the controller.

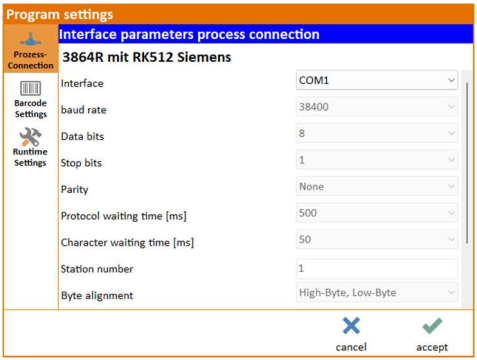
The protocol delay time (default 2000ms) corresponds to the maximum waiting time for a response from the controller in case of a protocol request.

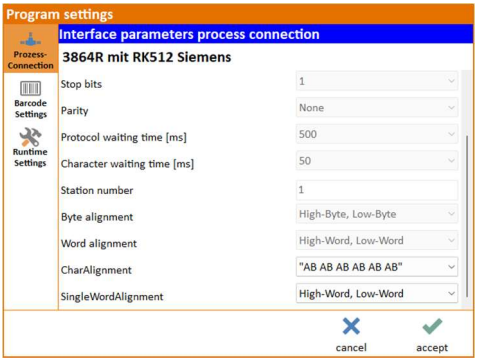
The character delay time (default 200ms) corresponds to the maximum time between two consecutive characters.

Byte and word alignment is used to correct the byte and word order (big endian format / little endian format).

A3.1.3 Settings in the BMS-Graf-pro Runtime for 3964R RK512 Protocol

After transferring the project to the Smart HMI, the interface to the controller must be set. This is necessary, because the first time the Smart module is connected, the interface number is set. In addition, Smart module installs four interfaces (2xRS232, 1xRS422/485 and 1xTTY), so the correct one must be set for the connection to the control. Once this is set correctly and the hardware is no longer changed, the setting remains valid.

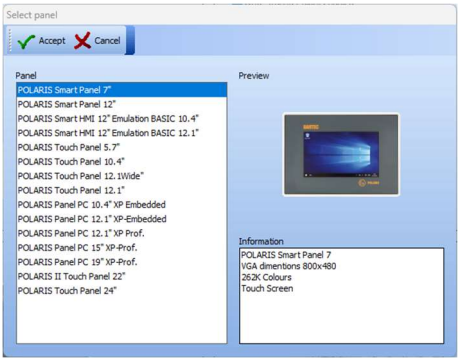




The settings, baud rate, data bits, stop bits, parity, protocol delay time, character delay time, as well as the byte and word alignment are taken from the project settings.

The “CharAlignment” and “SingleWordAlignment” is an additional possibility to correct the byte or word alignment of strings and floating-point numbers of low precision.

3.2 Expansion of selectable HMIs



The following HMIs are now also available:

POLARIS Smart HMI 7 inch
800x480 pixels
Touch panel

1

POLARIS Smart HMI 12 inch
1280x800 pixels
Touch panel

2

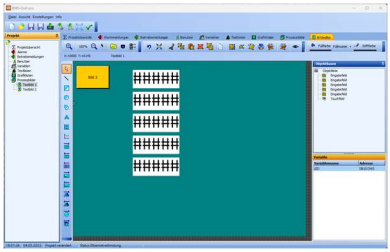
POLARIS Smart HMI 12 inch
with software emulation of a
POLARIS BASIC 10.4"

3

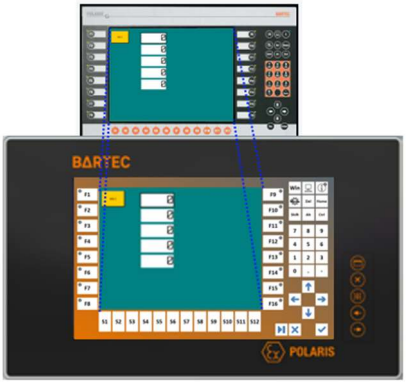
POLARIS Smart HMI 12 inch
with software emulation of a
POLARIS BASIC 12.1"

4

Description of emulation variants

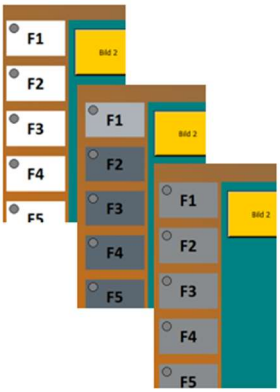


In the BMS-Graf-pro interface, the images of the project are displayed as usual when an emulation variant is selected.



After the transfer to the HMI, the corresponding keyboard is displayed as touch fields, depending on the selected emulation.

The images are displayed in the virtual screen area.



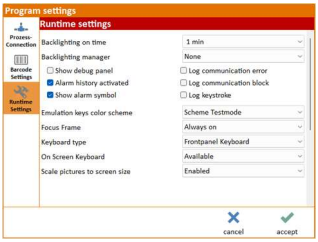
The "keyboard" performs all keystrokes as on the "old" device except for a few restrictions. The restriction is the pressing of key combinations that are not possible with the touch.

Three colour schemes can be selected via the settings.

3.3 Extension of the settings in the Runtime menu

The following items can be set in the BMS-Graf-pro Runtime:

With "HB-An-Time" and "HB-Manager" it is possible to activate the screen saver set in Windows. Previously only the backlight was switched off, now the complete monitor unit, except for the touch, is switched off.



The checkboxes "Show debug panel" and

"Log ..." are for troubleshooting during commissioning and should be switched off during normal operation.

If an emulation mode is active, a colour scheme can be selected with "Emulation keys colour scheme".

With "Keyboard type", the type of keyboard used can be set. It is important here that the keyboard displayed in emulation mode is equated with the "Front Panel Keyboard". An external keyboard therefore corresponds to an "MF2 keyboard".

The on-screen keyboard integrated into the runtime is activated when an input field is selected with the touch. Depending on the type of field, numeric or alphanumeric, the appearance changes. If you do not want the on-screen keyboard to appear, it can be switched to inactive.

The last item can be used to instruct the runtime to scale the project image to the actual resolution of the screen. This function cannot be activated in emulation mode.

BARTEC

BARTEC GmbH
Max-Eyth-Strasse 16
97980 Bad Mergentheim
Germany

Tel: +49 7931 597 0
Fax:
Mail: Support-Polaris@bartec.com

bartec.com