

User's Manual

HV/REx 500*4.0



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This is the User's manual for the software HV/REx 500*4.0.

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As a result, it is possible that there may be some differences between the HW/SW product and this information product.

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1 Introduction

1.1 Preface

Welcome to the HV/REx 500 User's Manual. The HV/REx 500 software is intended for parameter setting and event handling, in MicroSCADA applications, of the corresponding REx 500, RET 521 and RED 521 terminals, versions of these:

- REx 500 multi functional terminal ¹⁾
- REL 501 line distance protection terminal ¹⁾
- REL 511 line distance protection terminal ¹⁾
- REL 521 line distance protection terminal ¹⁾
- REL 531 line high speed distance protection terminal ¹⁾
- REL 551 line differential protection terminal ¹⁾
- REL 561 line differential and distance protection terminal ¹⁾
- REB 551 breaker protection terminal ¹⁾
- REC 561 control terminal ¹⁾
- REO 517 line distance protection terminal (railway specific) ¹⁾
- RET 521 transformer protection terminal ²⁾
- RED 521 busbar differential protection terminal ³⁾

See "MicroSCADA software available for REx 5xx" on page 12 for mapping of software and terminal versions.

This is the User's Manual for version 4.0 of the software module HV/REx 500.

The HV/REx 500 software module is an add-on software to MicroLIBRARY which is used as a programming tool within MicroSCADA applications. The information presented on the MicroSCADA screen is similar to the presentation of the Station Monitoring System (SMS).

The HV/REx 500 software consists of three functional parts:

- Read terminal information
- Change terminal settings
- Handling of spontaneous events for presentation in lists.

To be able to understand this document the user should be familiar with MicroSCADA and MicroLIBRARY.

1) REx 500
2) RET 521
3) RED 521

This software module is developed and manufactured by ABB Automation Technologies AB, Västerås, Sweden.

1.2

Abbreviations and definitions

DDE	Dynamic Data Exchange - Application Communication protocol
LIB500	Base library package
LIB520	High Voltage MicroLIBRARY
LON	Local Operating Network
LAN	Local Area Network
MicroLIBRARY	Application library
MicroNET	Frontend used in MicroSCADA (separate PC slot card)
MicroSCADA	Family name of the control and supervision system used as HMI platform for HV/REx 500.
PCLTA	PC slot card used for LON communication together with PCNET
PCNET	Frontend used in MicroSCADA (communication software)
POT	Process Object Tool
PST	Parameter Setting Tool
SCT	Standard Configuration Tool (Picture Editing)
SMS	Substation Monitoring System
SPA	ASCII communication protocol
SPANET	SPA master based on MicroNET
SRIO	SPA master
TCP/IP	Transmission Control Protocol/Internet Protocol.

1.3

System overview

The HV/REx 500 function is a part of the LIB520 in the MicroSCADA. In figure 1 the HV/REx 500 function is shown as a part of a system. The User's Manual covers only the HV/REx 500 function.

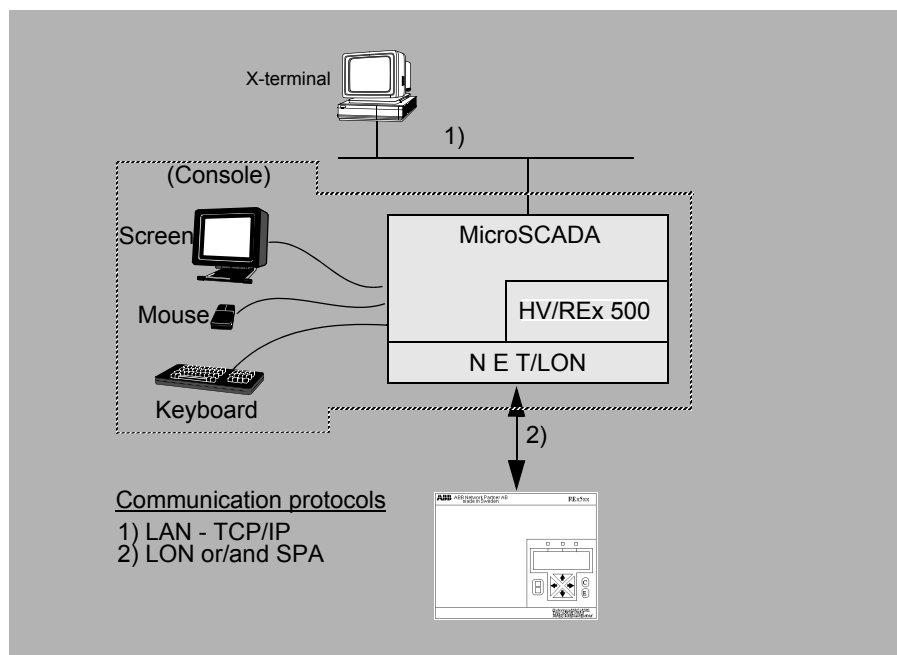


Figure 1 HV/REx 500 system overview

The HV/REx 500 software is developed for direct LON and the two different SPA-masters, SPANET and PCNET.

1.4

Product overview

The concept contains a full range of flexible and functional systems for monitoring, protection and control of all parts in the power system.

The terminals in the REx 5xx series consists of several numerical high-performance terminals for medium and high voltage applications. Almost all information and settings available in the terminal can also be made available in a PC equipped with SMS programs. Since SMS also supports communication via telephone modems this makes SMS a way to travel to the station by wire, making physical presence in the station unnecessary.

1.5 Protection parameter setting

Protection parameter setting, is a mean for getting the same information on the MicroSCADA screen as on the built-in HMI (Human-Machine-Interface) on the front of the protection and control terminal. In this case, even more information is available through the MicroSCADA. This means that the HV/REx 500 program is a way to access information stored in the protection terminal, that is not available on the built-in HMI on the front of the terminal.

1.6 MicroSCADA software available for REx 5xx

The overview of available software versions for corresponding terminal versions can be found in “LIB520/580 Compatibility Overview”, 1MRK 511 124-REN.

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About the product

HV/REx 500 is a package included in the LIB 520 product for parameter setting and event handling of the corresponding terminal REx 5xx. The package is delivered on 2 CD-ROMs, includes the software and the User's Manual.

The software contains the module of HV/REx 500 which includes specific description files for communication with REx 5xx.

Please note that the HV/REx 500 can only be used to communicate with the corresponding REx 5xx terminal. "MicroSCADA software available for REx 5xx" on page 12

Usage of this product in a MicroSCADA Hot standby configuration has a limited functionality. The limitation is that the configuration data read from the protections and stored on disk is not included in the file shadowing which is transferring updated files to the standby PC in a normal operating system. These files are only copied when a MicroSCADA restart is made on the standby PC and the file dump from the hot PC to the standby PC is ready. How to install and set-up this product to work correctly in a Hot standby system configuration, See "Preparations to be made before installation of a library function" on page 23.

1 Preparations before software installation

1.1 System requirements

In order to operate, the software module HV/REx 500 poses the following requirements on its environment.

1.1.1 At the REx 5xx terminal end

Remote SPA-bus communication or LON-bus communication option installed in the terminal, which is used for process communication in HV/REx 500. The built-in connectors for SPA or LON are used. Make sure that these are included when ordering the terminal.

1.1.2 The MicroSCADA PC

The following basic requirements on MicroSCADA PC:

- MicroSYS revision 8.4.4 or later
- LIB500 revision 4.0.4 or later
- Parameter Setting Tool (PST) v1.2 or later

1.1.3**Installation**

Installation of the HV/REx 500 and Parameter Setting Tool software contains two steps:

1 Installing the software:

- Installation of the HV/REx 500 software and Parameter Setting Tool software means running Lib 520 provided from CD-ROM and copying files from the CD-ROM to the hard disk.
- Installation of the documentation and on-line help and the necessary applications to use these, are copied from the CD-ROM to the hard disk.

2 Installing the library function:

- Installation of the HV/REx 500 library function means copying the library function into a picture and create the necessary database.

Important note:

In order to avoid problems, it is strongly recommended not to have the MicroSCADA or any other application running during the installation.



For latest information about the HV/REx500 package, please refer to the release notes.

2 Installation of HV/REx 500 packages

Before using HV/REx 500 and Parameter Setting Tool the software have to be installed on the hard disk of a MicroSCADA computer.

2.1 Installation of MicroSCADA software

Before installation of HV/REx 500 can take place, the user must make sure that the MicroSYS and LIB500 software is already installed on the PC.



2.2 Installation of HV/REx 5xx software

To install from the CD-ROM to the hard disk, please follow the steps below. The installation can at any time be terminated by clicking on the Exit button in the Installation dialogs.

- 1 Insert the Program CD-ROM in CD drive and start up the Windows Explorer.
- 2 Navigate to [drive:]\LIB_520. Double click on LIB520_XXX.EXE. In the appearing dialog, Click OK to continue the installation.

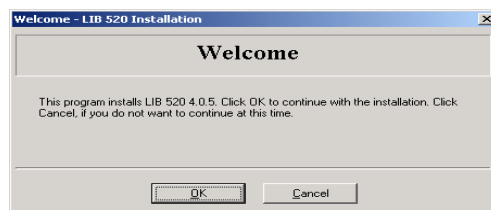


Figure 1 LIB 520 Software Installation - Welcome dialog

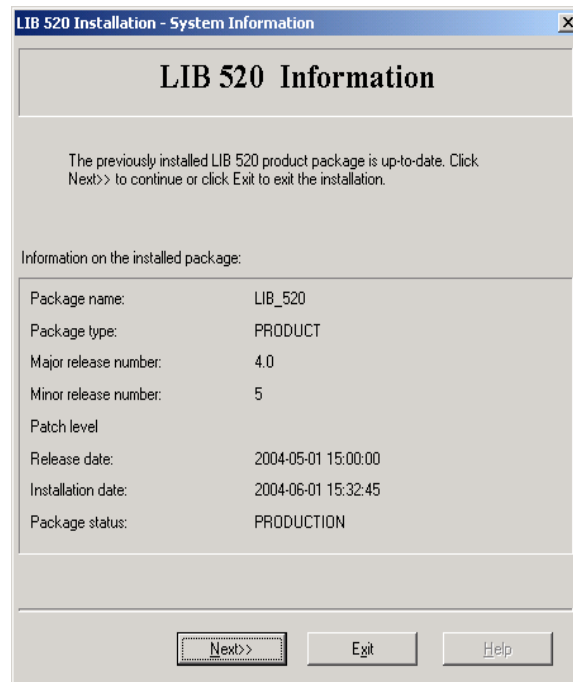
3 Click the Next>> button to continue the installation.

Figure 2 LIB 520 Software Installation - System information

This dialog has no information about earlier installed versions when the installation of LIB 520 is made for the first time.

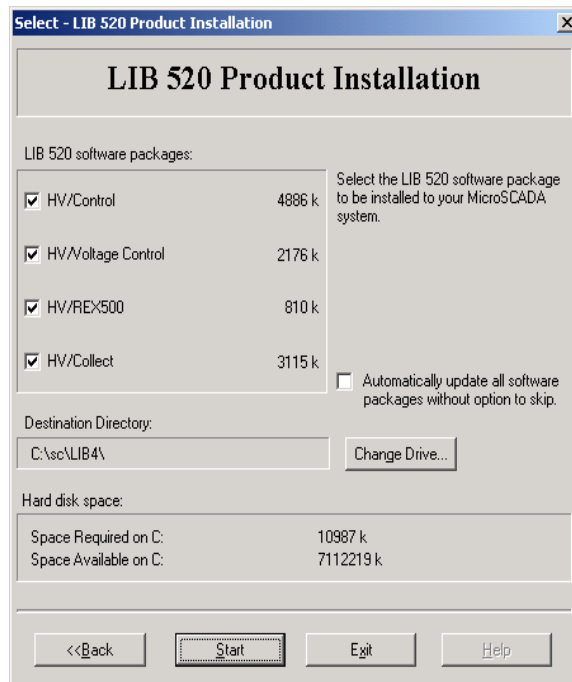
4 Select one more of the HV/REx 500 package by selecting the check boxes.

Figure 3 LIB 520 Software Installation - Package selection

If an earlier installation of LIB 520 has been made, package installation confirmation can be avoided by selecting the check box “Automatically update all software packages without option to skip. There is also a possibility to jump back to the previous installation dialog by clicking “<<Back” button.

5 Change destination drive by clicking on Change Drive... (optional)

If the LIB 520 is installed for the first time default drive is C:. If an earlier installation has been made, the current target drive is default. Note that only the drive is selectable. The directory destination is fixed [drive:]\sc\lib4\....

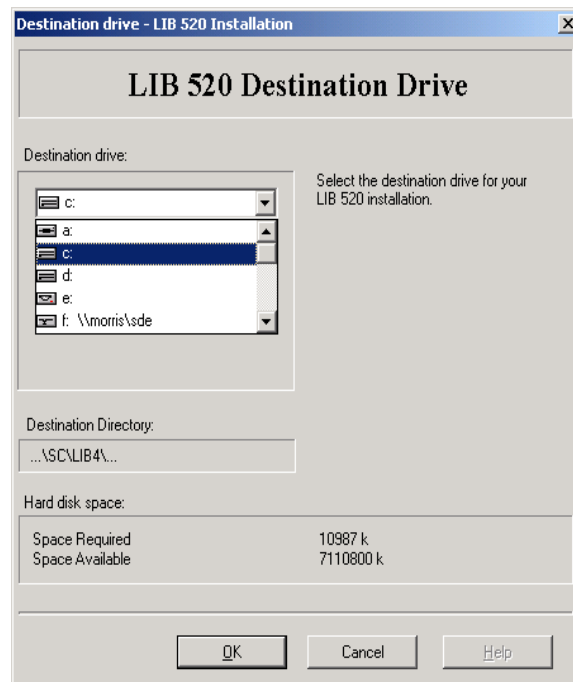


Figure 4 LIB 520 Software Installation - Destination drive selection

6 Click Start to execute the installation.

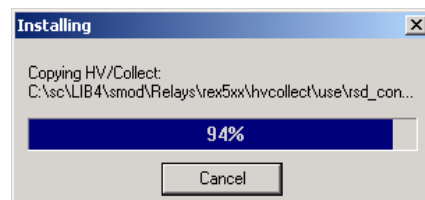


Figure 5 LIB 520 Software Installation - Installation progress

Now the files are copied to the selected destination drive.

7 Read the message in the appearing dialog before clicking OK.



Figure 6 LIB 520 Software Installation - Parameter Setting Tool installation attention



After installation of the HV/REx 500 packages the Parameter Setting Tool **HAVE TO** be installed before any configuration of the installed terminal picture functions can take place. The configuration needs Parameter Setting Tool to create proper terminal instances.

8 Installation is now complete. Click OK.



Figure 7 LIB 520 Software Installation - Installation finalized

9 To read the ReadMe file, click Yes. Else No.

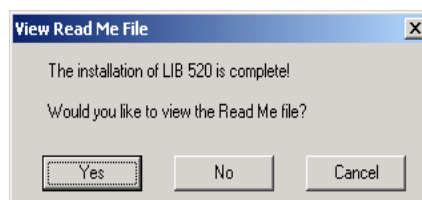


Figure 8 LIB 520 Software Installation - Open Read Me file

It is strongly recommended to read this file to be updated with the latest information of packages included in the LIB 520 where HV/REx 500 is a part.

2.2.1

LIB 520 Readme file

It is important to read and follow the instructions in the README.WRI file, which is installed to the directory

```
[drive]:\SC\LIB4\SMOD
```

Any specific release information, known errors and limitations are stated in this file. It is therefore very important to **ALWAYS** read the README.WRI file.

3

Installation of Parameter Setting Tool (PST) software

Please see PST Users Guide for installation instructions.



MicroSCADA Hot standby configuration

When MicroSCADA is configured for Hot Standby study that section in the PST User Guide thoroughly to get the installation correctly and to avoid unnecessary problems.

4

HV/REx 500 documentation

The HV/REx 500 Users Guide (this document) is available in software form and can be found on the documentation CD. The document is in **PDF**-format, and Acrobat Reader is needed to view them. Acrobat Reader is a free downloadable PDF file viewer from Adobe Systems Incorporated.

If Acrobat Reader is not installed in computer, it can be downloaded from **www.adobe.com**.

5 Installing and configuring HV/REx500 function

5.1 Preparations to be made before installation of a library function



The following steps are essential when creating a new application and preparing it for use with HV/REx500 functions. Some are basic which should always be considered and carried out. Some are related to special system configurations which only have to be considered in those situations.

5.1.1 Consider and define the *Authorization grouping*.

The *Authorization levels* can be defined later. The setup is taken in account during standard function configuration. The *Authorization grouping* is defined in the User Management tool.

5.1.2 Setup the *APL:BSV15* in *SYS_BASCON.COM* for *OI* attribute in *Process database*.

See more See “Object identifier” on page 26

5.1.3 Define all stations with correct type (*SPA, REX*) in the base system before configuration of function.

This is needed to get the correct configuration. Since naming of command procedures and addressing of process objects (LON communication) is depending of type verification against the base system configuration. To make the Event database creation as smooth has possible it is a good convenience step to take.

5.1.4 Activate the *DDE server function* in *SYS_BASCON.COM*

Set the *SYS:BDE* to 1 to activate DDE functionality in MicroSCADA. Parameter Setting Tool and MicroSCADA uses this to communicate.

5.1.5 Define local printer for printouts in *Parameter Setting Tool*

See MicroSCADA documentation how to add a local printer to the MicroSCADA system.

5.1.6 Additional configurations regarding *LAN communication*.

With LAN communication

To get PST working correctly it have to be prepared for working over LAN. Please see the PST documentation for this matter.

Without LAN communication

The start-up of the Parameter Setting Tool is dependent on how the MicroSCADA system is configured. If no LAN is used, a stand alone PC, additional configuration must be made after installation of the LIB 5xx and Parameter Setting Tool software. Follow the instructions below to accomplish this:

- **Modify the PST_LAN_CFG.INI file**

In the [drive]:\ac\apl\'apl_name'\par\apl directory open the PST_LAN_CFG.INI file with an editor e.g. Notepad.

Change the LAN INSTALLED from 1 to 0. Note No space allowed.

- **Define startup Monitor shortcuts to start-up MicroSCADA monitors.**

Define a short-cut to the monitor start-up program `mons.exe`. Right click on the desktop. In the appearing popup dialogs select **New** and **Shortcut**. In the appearing dialog, click **Browse**. In the appearing dialog **navigate** to

[drive]:\sc\prog\exec\mons.exe and click **Open**. Now the previous dialog text field in containing [drive]:\sc\prog\exec\mons.exe.

Before clicking **Next** the text field contents some arguments must be added. Add at the end of the line so it will look like following:

```
[drive]:\sc\prog\exec\mons.exe -d your computer name
1 -start_as_logon_user where your computer name is the name of the
MicroSCADA computer.
```

Comments:

- This particular example expects that MicroSCADA service is up and running. Other arguments can be added to both startup the MicroSCADA service and open a monitor. The monitor definition can also be configured so that the size on the monitor can be modified. To go deeper regarding this see further MicroSCADA System Configuration manuals.
- The argument **-start_as_logon_user** is the important part of the setup. It tells to MicroSCADA to use the logged on users context regarding authority and security within Windows.
- To use the MicroSCADA Monitor dialog so that the **-start_as_logon_user** argument is taken in account when creating a monitor see the MicroSCADA System documentation.

5.1.7

Hot standby configuration

When using PST in a Hot standby configuration 2 important preparations have to be made before installation of the HV/REx500 picture functions can be performed. First installation of PST have to be made to fit the Hot standby configuration, See “Installation of Parameter Setting Tool (PST) software” on page 22 in this Users Manual to perform this correctly.

During the configuration process of a HV/REx500 picture function, if the **HOTSTANDBY_SYSTEM** attribute is set and if the current system setup is for Hot-standby, modification of the watchdog (WD) applications is made. Three command procedures will be created and modified to be able to handle the PST configuration data during the file shadowing. The PST_SWEEP:C and PST_UPDREG:C will be created and the SHADUSR:C will be modified so that invocation of PST_UPDREG:C can be made.

There are two “ifs” to be aware of regardless if the **HOTSTANDBY_SYSTEM** attribute is set or not. The 1st is if the current system is NOT Hotstandby then the creation nor the modification is performed. The 2nd is if the SHADUSR:C contains executable code (not only comments) the modification of the current version of the SHADUSR:C is not performed. If any of these situations occur the updating of the watchdog application have to be made manually. The source code for this is found in [drive:]\sc\lib4\smod\relays\rexyxx\inst.

Following files is for the different command procedures:

```
SRI_PST_UPDREG.CIN -> PST_UPDREG:C  
SRI_PST_SWEEP.CIN  -> PST_SWEEP:C  
SRI_SHADUSR.CIN    -> SHADUSR:C
```

5.1.8

Object identifier

Before installation the use of the attribute OI (Object Identifier) must be decided. Start the MicroSCADA Control Panel. Select “Admin” and in the appearing dialog select “Config”. In the system configuration file SYS_BASCON.COM locate the following section:

```

;*****
;
; APPLICATIONS
;The usage of OI & OX -attributes (required by LIB 500)
@SV(15) = LIST(-
    Process_Objects=LIST(-
        OI=LIST(-
            Title1=VECTOR("Station"),-
            Title2=VECTOR("Bay"),-
            Title3=VECTOR("Device"),-
            Title4=VECTOR(" "),-
            Title5=VECTOR(" "),-
            Length1=10,-
            Length2=15,-
            Length3=5,-
            Length4=0,-
            Length5=0,-
            Field1=VECTOR("STA"),-
            Field2=VECTOR("BAY"),-
            Field3=VECTOR("DEV"),-
            Field4=VECTOR(" "),-
            Field5=VECTOR(" ")),-
        OX=LIST(-
            Title1=VECTOR("Object text"),-
            Length1=30)))

```

The parameters Length1, Length2 and Length3 must now be set as follows:

The Length1 is definition of the *Station name* (minimum length is 2), Length2 is the definition of *Bay name* (minimum length is 2) and Length3 is the definition of the *Device (Object) name*. The sum of these 3 values must be not exceed 63, however 30 characters is recommended for e.g. Event- and Alarm lists and printer. For Length1 and Length2 1 character is used for space (between *Station name/Bay name* and *Bay name/ Device name*).

Two optional parts, *Special_Identifier_1* and *Special_Identifier_2* can be added to the above described *Station-/Bay-/Device name*. Still the maximum length is 30 characters. They can be used as additional identification of the objects and their signals. Lets assume that *Special_Identifier 1*, which is reflecting the Voltage level of a station, is added. The definition in the SYS_BASCON.COM shall look like this,

```
@SV(15) = LIST(-
  Process_Objects=LIST(-
    OI=LIST(-
      Title1=VECTOR("Station"),-
      Title2=VECTOR("Voltage Level"),-
      Title3=VECTOR("Bay"),-
      Title4=VECTOR("Device"),-
      Title5=VECTOR(""),-
      Length1=10,-
      Length2=3,-
      Length3=12,-
      Length4=5,-
      Length5=0,-
      Field1=VECTOR("STA"),-
      Field2=VECTOR(""),-
      Field3=VECTOR("BAY"),-
      Field4=VECTOR("DEV"),-
      Field5=VECTOR("")),
    OX=LIST(-
      Title1=VECTOR("Object text"),-
      Length1=30)))
```

It is of **great importance** that this is made before configuration of the installed functions because the configuration process takes these values in account when creating the process database. If variable @OI_LENGTH is not defined in the configuration file, then override value defined in standard function configuration file is valid, which means LENGTH1=2, LENGTH2=14 and LENGTH3=14. This may cause unexpected behavior in run-time, especially in the case where medium voltage and high voltage functions are installed in the same station picture.

For the event list, it can be configured if 'Station_name', 'Bay_name' and 'Device_name' shall be shown (in the 'Object-ID' column of the event list). This is configured using the "Settings" tool (available under the 'Options' menu). Select 'Tools' and 'Show Object ID'. In the appearing dialog it is possible to configure if the 'Station_name', 'Bay_name' and 'Device_name' shall be shown in the event list.

5.1.9

Timeout setup

The timeout for the two different SPA masters must be setup as follows:

- SPANET and PCNET

The line attribute Header Timeout (HT) shall be set to 2000 ms.

5.2

Installation of HV/REx 500 library function

When the HV/REx 500 software is installed on the hard disk, it will be integrated in the MicroLIBRARY software structure. The next step is to install the library function in a process picture. To be able to understand the following description the user should be familiar with MicroSCADA and how to use MicroLIBRARY.

Note!

It is important to complete all steps in the order described below!



Note!

If a Hot standby system configuration is used then step 15 is very important to carry out.



1 Go to the Picture Editor.

Open the picture in which the installation of the HV/REx 500 library function shall be made. Minimum requirements for this picture is that the base function is installed.

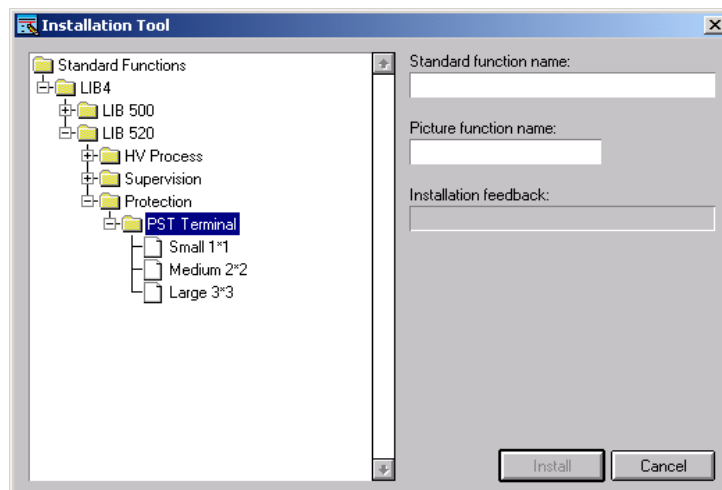


Figure 9 Picture function installation dialog

-
- 2 In the Installation tool, select LIB4, LIB 520, PROTECTION, PST_TERMINAL and the desired symbol size SMALL 1*1, MEDIUM 2*2 or LARGE 3*3 (which shall be highlighted).**

Enter a name ('Picture Function name') for the function. 'ID' must be unique within the picture.

- 3 Select Install.**

The installed Picture function will be placed in the upper left corner area of the picture. Close the Installation tool.

- 4 By default the latest installed picture function is marked selected. Grab the picture function by click on it and hold the mouse button down and move the mouse to place in the picture were it shall finally be placed. Release the mouse button.**

- 5 Select the picture function configuration button for configuration.**



Figure 10 Standard Configuration Tool icon

The Standard Configuration Tool (SCT) dialog will appear,

Figure 11 Standard Configuration Tool (SCT) dialog - Attribute view

- 6 Enter STATION_NAME.** Maximum length see “Setup the APL:BSV15 in SYS_BASCON.COM for OI attribute in Process data-base.” on page 23. Default is “”.

This name is set as a part of the Object Identifier (OI) attribute the Event database process objects.

- 7 Enter BAY_NAME.** Maximum length see “Setup the APL:BSV15 in SYS_BASCON.COM for OI attribute in Process data-base.” on page 23. Default is “”.

This name is set as a part of the Object Identifier (OI) attribute the Event database process objects.

- 8 Enter DEVICE_NAME.** Maximum length see “Setup the APL:BSV15 in SYS_BASCON.COM for OI attribute in Process data-base.” on page 23. Default is “”.

This name is set as a part of the Object Identifier (OI) attribute the Event database process objects.

-
- 9 Enter SPECIAL_IDENTIFIER_1 and SPECIAL_IDENTIFIER_2 (optional parts). Maximum length see “Setup the APL:BSV15 in SYS_BASCON.COM for OI attribute in Process data-base.” on page 23. Default is “”.**

This name is set as a part of the Object Identifier (OI) attribute the Event database process objects.

- 10 Enter P_OBJECT_LN. Maximum 10 characters is allowed. Default is “”.**

The logical name (LN) of the process objects..

- 11 Enter STATION_NUMBER. Range 0-5000 is allowed. Default is 0**

The Unit number (UN) the process objects will get during event database creation.

- 12 Select TERMINAL_TYPE. REX500, RET521 or RED521. Default is None**

The target terminal type which the function shall communicate with. This attribute is controlling and effecting the appearance of the COMMUNICATION, TERMINAL_VERSION, DATA_ACQUISITION_UNIT and EVENT_DB_TEMPLATE attributes. Note that the REX500 is common for several REX5xx terminal types e.g. REL561, REC561 and REL531.

- 13 Select COMMUNICATION. LON or SPA. Default is depending of the TERMINAL_TYPE attribute.**

The type of communication between the terminal and MicroSCADA.

- 14 Select TERMINAL_VERSION. Default is depending of the TERMINAL_TYPE attribute.**

The terminal version number. This number may be read on the built in HMI.

- 15 Enter DATA_ACQUISITION_UNIT. Free text of 10 characters. Default is a suggestion depending of the TERMINAL_TYPE attribute. This may be manually changed.**

This identifier is used to separate several configured devices of the same kind for the same bay object. If not any similarity is found “Not defined” is set instead. Identifier for SigTool Engineering Tool. This attribute is configured in two steps. First select the type in the list and secondly edit the selected type by alter the “?” to a number, e.g REC 561_2. “xx_?” or “xx_” is treated as REC 561_1 which means that if one unit is used the second step is not necessary. It is set as a part of the RX attribute for the process objects during Event database creation.

- 16 Select EVENT_DB_TEMPLATE. Default is depending of the TERMINAL_TYPE attribute.**

This attribute is which database template the Event database shall be created from. A number of predefined templates are supplied with the HV/REx500 application package. These can be used “as is” or be modified via the “Event Database Template Editor” found under the **Tools** folder of the SCT.

17 Enter TERM_OBJECT_NAME. Maximum 50 characters, default is "".

This is a freely selected text which is used for showing which terminal object is selected. This is shown in the Parameter Setting Tool menu bar. Note if this is left empty "", a default string "UNKNOWN INSTANCE" is shown.

18 Enter LABEL. Maximum 20 characters, default is "".

This is a freely chosen label, that will be shown in the process picture for this picture function.

19 Select LABEL_POSITION. Choices are "ABOVE", "BELOW", "LEFT" and "RIGHT, default is "BELOW".**20 Select AUTHORIZATION_GROUP from the list of alternatives.**

The authorization groups are defined in the User Management Tool.

21 Select HOT_STANDBY_SYSTEM if used

Select this checkbox if the system is a Hot standby system. This selection is important for extracting configuration data from the registry, where PST instance information is stored, to a file which is during the file transmission transferred to the standby PC. Registry on the standby PC is updated with the file content after completed transmission and the file is deleted.

22 Select USE_DIST_COLLECTOR if used

Select this checkbox if the system should use the HV/Collect for disturbance upload and handling.

23 Select VISIBLE, if the function should be visible or not. Choices are "TRUE" or "FALSE", default is "TRUE"

If the function is accessible from the bay function, the VISIBLE button should be unset. Note If TERMINAL_TYPE is selected to RED521 then this attribute is NOT selectable. The reason for this is that RED521 has NO settings and therefore the appearance in the process picture is NOT applicable.

24 In the Standard Configuration Tool folders, select folder Tools and necessary tools for the desired action. Event Database Template Editor, Process Object Tool or Representation Tool in the list.

To create the Event database use the Process Object Tool. To modify the Event database template, use the Event Database Template Editor and finally to select another appearance of the push button in the process picture use the Representation Tool.

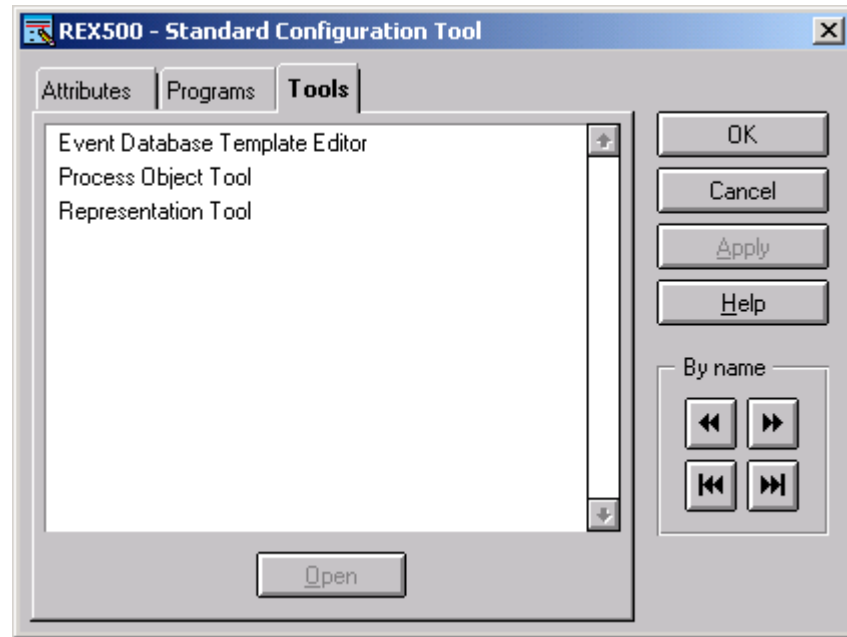


Figure 12 Standard Configuration Tool

5.2.1

The Event Database Template Editor

The Event Database Template Editor is used for modifying the selected template, made by the setting of EVENT_DB_TEMPLATE attribute.

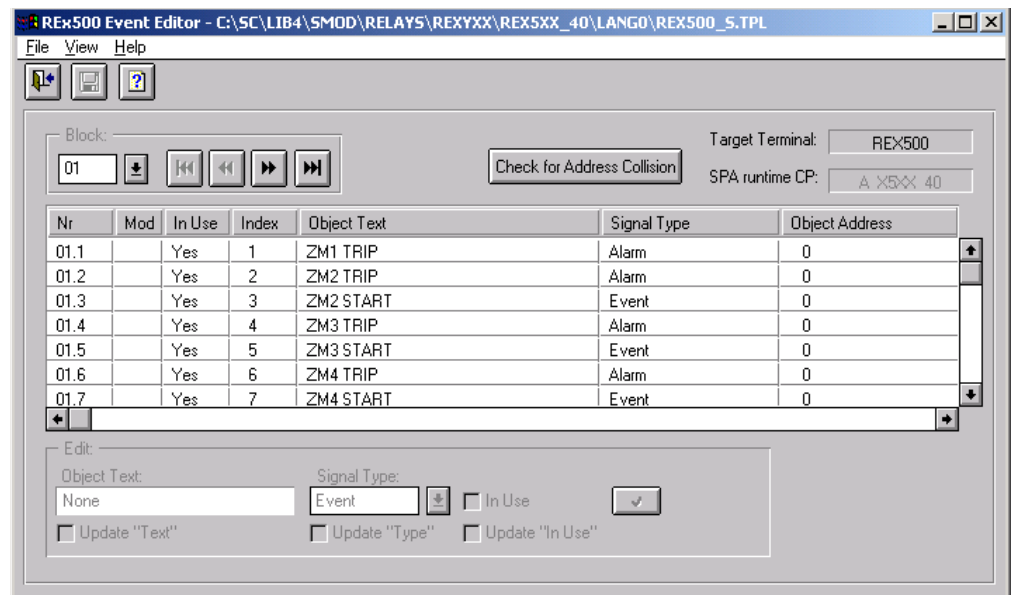


Figure 13 Event Database Template Editor

5.2.1.1

Usage

When opening the editor the selected template of the EVENT_DB_TEMPLATE attribute is shown. A template is a text file which contains information for the event objects that can be created for the selected Terminal Type. The information in the template is to some extent editable. Some information, e.g. Nr, Index, Address, is for displaying information about the particular signals which makes it easier for the choices to make.

Information which are editable by the user is,

- In Use, To be created or not
- Object Text, the OX attribute of the process object
- Signal Type, only Event or Event and Alarm

In the list presentation of the signals, selections is made, either one by one or several by dragging the mouse. The selected signals editable information appears in the Edit area of the editor.

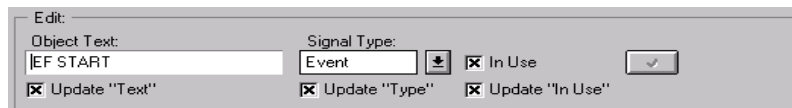


Figure 14 Event Database Template Editor - Edit area

The editable signal information appears in the different fields of the Edit area and beneath each field there is a checkbox which is controlling if the contents of respective field shall be transferred back to the list if the Save button is clicked. These checkboxes is preset to “Update” but can be changed before clicking OK.



If several signals are selected the appearance of the Edit area is different. The Object text may Not be edited and the checkboxes are Not set to “Update”

Modifications that has been made is Not stored in the template file until Save has been invoked. This is made via the **File > Save** in the menubar

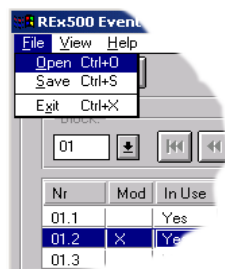


Figure 15 Event Database Template Editor - Menu selection “Save”

or the Save button in the toolbar



Figure 16 Event Database Template Editor - Toolbar selection “Save”

or simply **Ctrl + S** on the keyboard.

The HV/REx500 package comes with a number of predefined templates which can be selected among. As soon as a file is modified and saved, either as the same file or with another file name, the file will be placed in the /SC/APL/'apl_name'/APLMOD4/LANG'lang' directory. Where apl_name is the application name and lang is the language number (0 is factory default e.g. English). How to save the template file is decided during the saving process.

After saving the template the attribute EVENT_DB_TEMPLATE will immediately be updated with either the same template name and an incremented version number or a new template name with version number 1.00.

File data is possible to see by selecting **View > Show File Data** in the menubar.

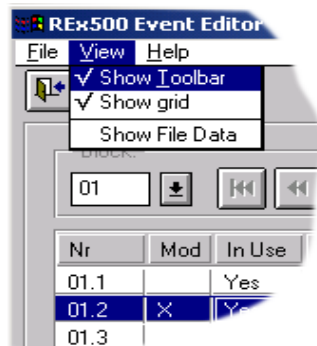


Figure 17 Event Database Template Editor - Menu selection “Show File Data”

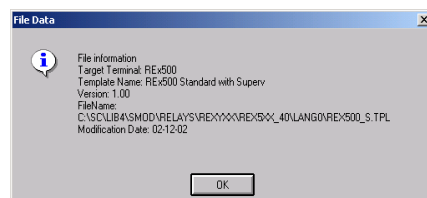


Figure 18 Event Database Template Editor - Show File Data dialog



Note that template file name and template name is NOT the same. Template name is a descriptive text stored in the template file and is displayed in the `EVENT_DB_TEMPLATE` attribute together with the version number.

The template should be edited before the process objects are created so the user have a chance to effect what to be created. If the Event Database Template Editor is not entered the current setup of the file is used.

5.2.1.2

Address Overlap Check

The editor is equipped with a possibility to check if the event objects marked as “in use” can be created without any problems regarding Address Overlapping.

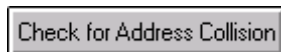


Figure 19 Event Database Template Editor - Address Overlap Check

Address Overlapping is when a process object is being created or modified with the same value for the Unit Number (UN) and Object Address (OA) as for an already existing process object. The result is that the process object will not be created or modified. The Process Object Tool will show the following message:

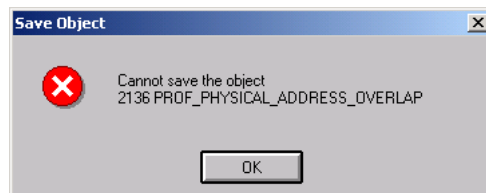


Figure 20 Process Object Tool - Error message box “Address Overlap”

Note that it occurs ONLY when LON is selected as communication.

5.2.2

The Process object Tool

This tool is used for creating the process objects for the Event database.

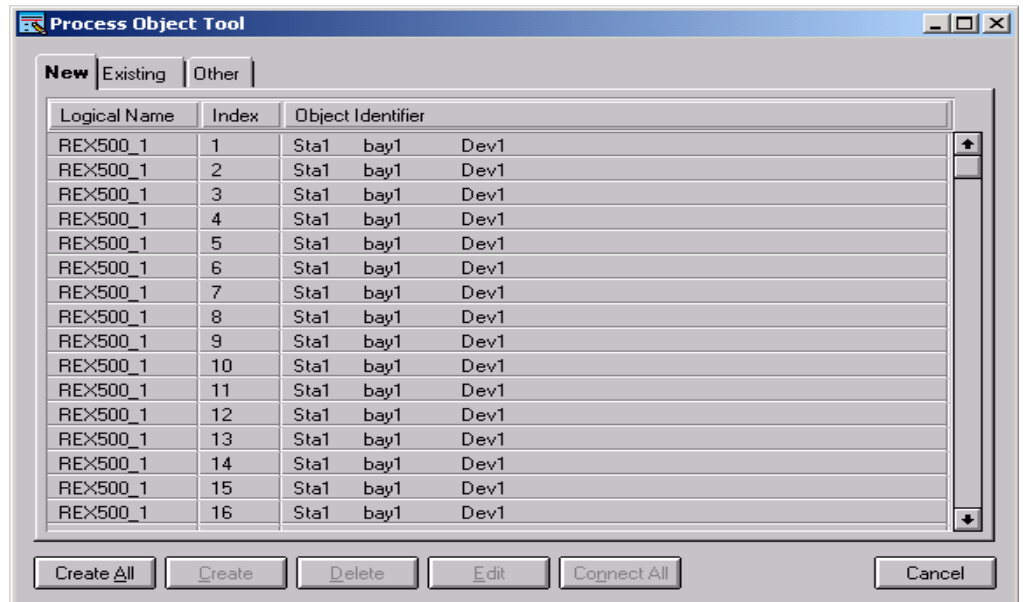


Figure 21 Process Object Tool

The Process Object Tool is a standard tool and included in the core MicroLIBRARY functionality.

5.2.3

The Representation Tool

The Representation Tool is for viewing and selecting the graphical representation of the push button appearing in the process picture.

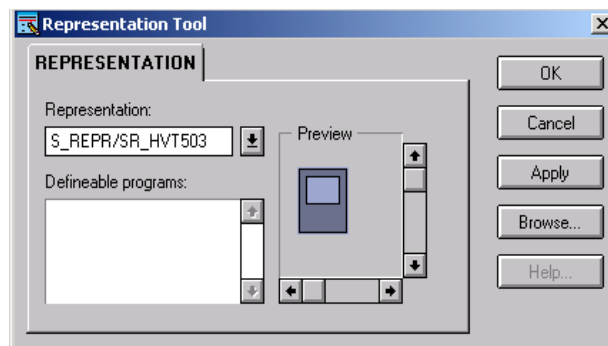


Figure 22 Representation Tool

The Representation Tool is a standard tool and included in the core MicroLIBRARY functionality.

5.3 General Bay connected Terminal function

Not supported in this version.

5.4 Modifying event database

Some signals in the HV/REx 500 modules are also included in HV/Control (Supervision function) package and the HV/Voltage Control package. To avoid collisions at configuration of the system when these packages are used together, the decision must be taken which of these packages shall handle these signals. If not, the address overlapping (error 2136) will occur. If HV/REx 500 exists alone then masking of these signals is not necessary.

To mask these signals use the Event Database Template Editor.

5.5 Address overlap with other HV functions

5.5.1 Specific for REx 500

HV/Control (Supervision) signals in HV/REx 500 are connected to its resp. EV-block according to Table 1, “HV/Control (supervision) signals in HV/REx 500.” on page 38. These signals must be masked not to be created in HV/REx 500 if HV/REx 500 is used together with HV/Control (Supervision function).

Table 1: HV/Control (supervision) signals in HV/REx 500.

Signal	PDB index	Event block
Internal fail	177	EV12/1
Internal warning	178	EV12/2
Internal num fail	179	EV12/3
Internal num warn	180	EV12/4
A/D conv fail	181	EV12/5
IO board error	185	EV12/9

5.5.2 Specific for RET 521

HV/Voltage Control signals in HV/RET 521 are connected to its resp. EV-block according to Table 2, “HV/Voltage Control signals in HV/RET 521” on page 39. These signals must be masked not to be created in HV/RET 521 if HV/RET 521 is used together with HV/Voltage Control

Table 2: HV/Voltage Control signals in HV/RET 521

Signal	PDB Index	Event block
TC IN REMOTE MODE	161	EV11/1
TC IN STATION MODE	162	EV11/2
TC IN LOCAL MODE	163	EV11/3
TC IN LOCAL HMI	164	EV11/4
TC IN MANUAL MODE	165	EV11/5
TC IN AUTO MODE	166	EV11/6
TC IN AUTO MODE BLOCK	167	EV11/7
TC BLOCK ABNORMAL U	168	EV11/8
TC HUNTING	169	EV11/9
TC LOW POSITION	170	EV11/10
TC HIGH POSITION	171	EV11/11
TC ERROR	172	EV11/12
TC RAISE SIGN	173	EV11/13
TC LOWER SIGN	174	EV11/14

HV/Control (Supervision) signals in HV/RET 521 are connected to its resp. EV-block according to Table 3, “HV/Control (supervision) signals in HV/RET521” on page 39. These signals must be masked not to be created in HV/RET 521 if HV/RET 521 is used together with HV/Control (Supervision).

Table 3: HV/Control (supervision) signals in HV/RET521

Signal	PDB Index	Event block
INTERNAL FAIL	145	EV10/1
INTERNAL WARNING	146	EV10/2
INTERNAL NUM FAIL	147	EV10/3
INTERNAL NUM WARN	148	EV10/4
REAL T CLOCK ERR	149	EV10/5

Table 3: HV/Control (supervision) signals in HV/RET521

Signal	PDB Index	Event block
TIME SYNC ERR	150	EV10/6
TEST MODE ACTIVE	151	EV10/7
AIM BOARD 1 ERROR	152	EV10/8
AIM BOARD 2 ERROR	153	EV10/9
MIM BOARD ERROR	154	EV10/10
IO BOARD 1 ERROR	155	EV10/11
IO BOARD 2 ERROR	156	EV10/12
IO BOARD 3 ERROR	157	EV10/13
IO BOARD 4 ERROR	158	EV10/14
DISTURB MEM>80%	160	EV10/16



As help during Event database creation to avoid Address Overlapping, the Event Database Template Editor provides a function (Check For Address Collision) which can be used to see if the selected to be created may get an already occupied address. If so actions can be taken before the objects are created. See further “Address Overlap Check” on page 36

5.6

Change of password

The REx 5xx terminal has no password handling of its own. Instead, remote setting activities are depending on the users authority level in the MicroSCADA. All users with authority level 2 or higher have access to remote setting activities.

New MicroSCADA users can only be added by the MicroSCADA system manager.

6

Trouble shooting

In this section the help can be found when errors occur.

6.1

Diagnosing errors

When errors occur, which they do tend to happen, the system produces error messages differently in MicroSCADA and in the Parameter Setting Tool. In MicroSCADA messages are either shown in popup dialogs or with yellow text in on the status bar at the bottom of the MicroSCADA window. In the Parameter Setting Tool errors are only shown in popup dialogs.

6.1.1

MicroSCADA errors

Errors can occur at two situations, when configuration the picture functions and during runtime. Errors can be categorized in two groups, *controlled* and *uncontrolled*. The *controlled* errors are shown in a popup dialogs. Typical controlled errors are, configuration incompatibility and Parameter Setting Tool is not installed. *Uncontrolled* error messages are composed of one or two status codes, and with or without a SCIL statement or expression. These messages are shown on the status bar at the bottom of the MicroSCADA screen. *Uncontrolled* errors are programming errors (bugs).

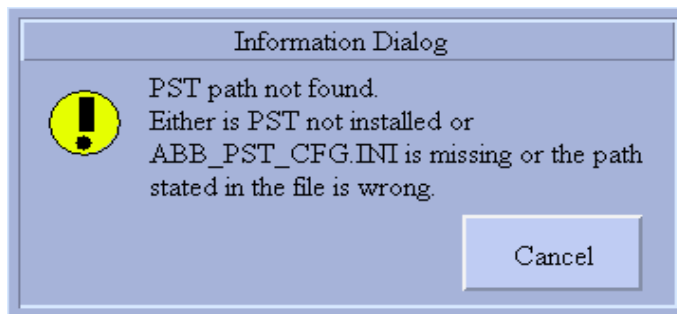


Figure 23 MicroSCADA Error Message - Controlled Error

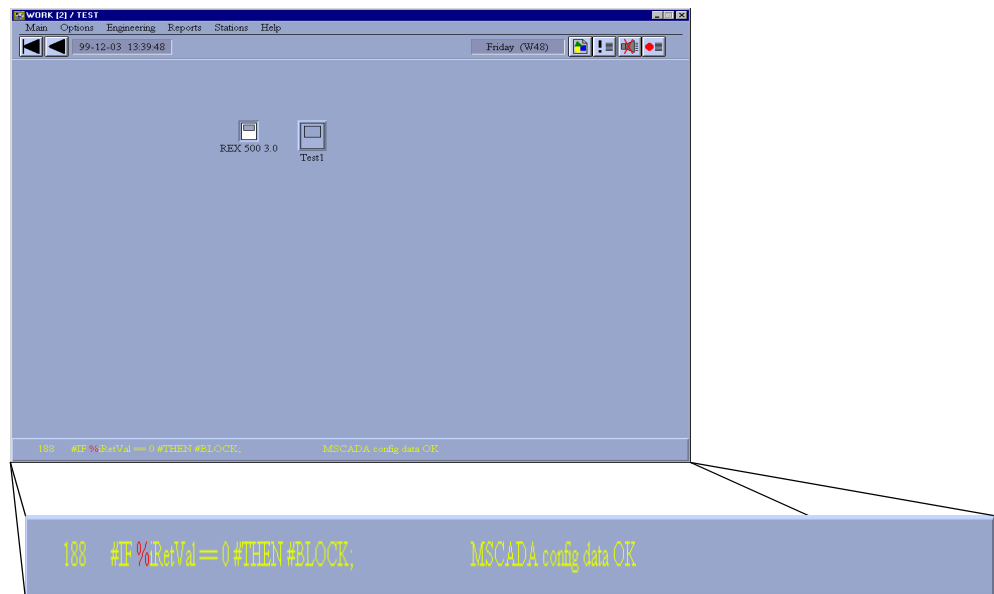


Figure 24 MicroSCADA Error Message - Uncontrolled error



Errors shown this way are **very serious** which means that they should be reported to ABB representative as soon as possible.

The meaning of these codes are described in MicroSCADA document, Status Codes, 1MRS751850-MEN.

6.1.2

Unlock terminal function

There is a hidden “escape” door when it is not possible to open the Parameter Setting Tool, even when it is not opened on any other monitor. A hidden push button is located up in the right corner, below the dialog bar

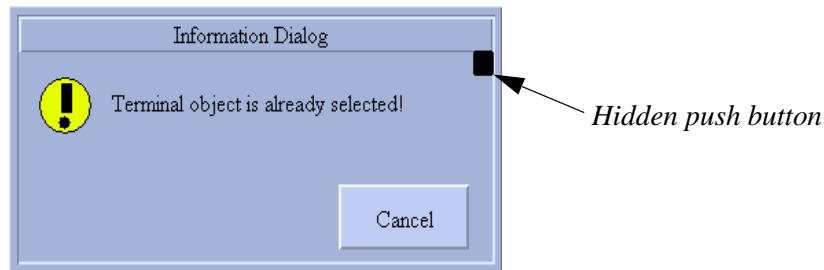


Figure 25 HV/REx 500 Information dialog - Emergency escape door button

Click one or several times on that position and a timer is started in the dialog. After the time expires the dialog will get a new appearance.

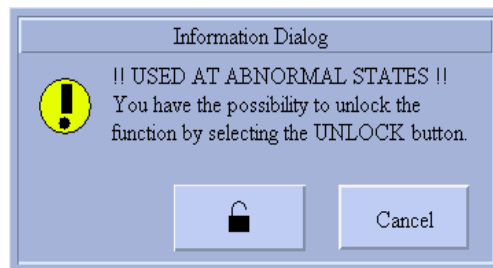


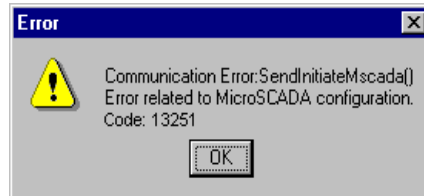
Figure 26 HV/REx 500 Information dialog - Emergency escape door

Click on the padlock push button and the former selection is released and opening the Parameter Setting Tool is now possible.

6.1.3

Parameter Setting Tool errors

Like MicroSCADA errors these errors can occur both when configuring the picture functions and during runtime. Errors generated when running to the Parameter Setting Tool are shown in dialogs.



See the Parameter Setting Tool User's Manual for Error explanation.

6.2

Terminal busy

During communication with the terminal it sometimes happens that the terminal gets busy. This is a normal behavior and it occurs when the terminal has too much to handle e.g. when SMS and MicroSCADA is reading from the same terminal at the same time. In these situations the program does not resend the message automatically. Instead the user can decide whether to continue, wait or to cancel.

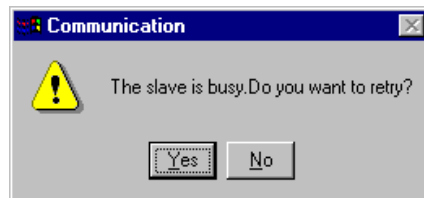


Figure 27 Terminal busy

A probable cause for terminal busy can be:

- The terminal is occupied with storing e.g. Disturbance data
- If the both communication ports are connected on the terminal and reading and writing is performed at the same time.

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