

REM 543

Machine Terminal

User's Guide for Modbus Configurations



We reserve the right to change data without prior notice.

1. General

REM 543 Modbus Configurations CD-ROM includes four pre-engineered configurations for the REM 543 machine terminals to be used with Modbus protocol. Modbus protocol support for the REM 543 is based on these configurations. Modbus is supported in the machine terminal revisions of the release 2.5 or later.

Although the Modbus configurations are complete, some changes may be needed to adapt a specific configuration to the application concerned. The configurations can be edited in the Relay Configuration Tool. However, it should be noticed that in case a new function block is added to the configuration, it is not visible in the Modbus protocol. Also, in case a function block is deleted it is not deleted from the Modbus protocol. A deleted function block will return zero values to the Modbus protocol. Standard function blocks such as AND gates, OR gates, bay interlocking logic etc. can be freely added, deleted or modified because they are not visible in the Modbus protocol. A detailed Modbus point list is available for each configuration in HTML format.

The following documents and files are included for each application in the REM 543 Modbus Configurations CD-ROM:

- Functional diagram of the bay (AutoCAD R13)
- Connection diagram of the bay (AutoCAD R13)
- Functional description of the configuration (MS Word)
- Configuration file for bay (*.ar) including POD (CAP 505)
- Point list for modbus addresses (*.html)

For more information, instructions or technical details, please refer to the following manuals:

- REF 54_, REM 54_, REC 523 Configuration Guideline (1MRS 750745-MUM)
- REM 54_ Machine Terminal; Technical Reference Manual, General (1MRS 750915-MUM) Version E or later
- CAP 505; Operator's Manual (1MRS751902-MUM)
- Modbus Remote Communication Protocol for REM 54_, Technical Description (1MRS 750781-MUM)

2. **Creating a project by using the REM 543 Modbus configurations**

This instruction describes in general the procedure for creating a project by using configurations included in the REM 543 Modbus Configurations CD-ROM. If you are not familiar with the CAP 505, please refer to the CAP 505 manuals when executing the following steps.

1 Create a new project

- File/Organize Projects/Create

2 Open the project

- File/Open/Open

3 Create a project structure

- Edit/Insert Object/Plant Structure/Station
- Edit/Insert Object/Plant Structure/Bay
- Edit/Insert Object/Protection & Control/(e.g. REM54X)

4 Import the configuration to the application library

- In the Project Structure Navigator window, select the Protection & Control object
- Edit/Object Properties/General/Attributes.../Apl Utils/Import
- Browse the configuration file *.ar and import it
- Change the imported application in use from the Apl library list and select the correct SW library
- Confirm the change

5 Make changes to the configuration if necessary

- Standard function blocks such as AND gates and OR gates, bay interlocking logic, MIMIC, switchgroups etc. can be freely added, deleted or modified because they are not visible in the Modbus protocol.
- If you add a function block it will not be visible in the Modbus protocol
- If you delete a function block it will return zero values in the Modbus protocol

6 Save the application with a new name and select a new application into use

- Edit/Object Properties/General/Attributes.../Apl Utils/Save
- Select the saved application as a new application for the relay

7 Download the Relay Configuration, MIMIC Configuration, RCT Project and add-on protocol (Modbus) to the relay (refer to CAP 505 Operator's Manual; 1MRS751902-MUM). Store and reset.

- Configuration can be downloaded by using SPA or LON. Check the communication settings before downloading. Edit/Object Properties/Communication.

8 Set the Modbus parameters (refer to Modbus; Remote Communication Protocol for REM 54_, Technical Description, 1MRS 750781-MUM). Store and reset.

- Modbus parameters can be set only by using the local menu of the relay

9 Repeat the steps from 4 to 8 for the other bays if needed

10 Save a backup file of the project

- File/Organize Projects/Export



ABB Oy

Substation Automation

P.O. Box 699

FIN-65101 VAASA

Finland

Tel. +358 10 22 11

Fax. +358 10 224 1094

www.abb.com/substationautomation