Relay Setting Tools

CAP 501

Product Guide

ABB

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CAP 501

1MRS750438-MBG

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Features

- General parameter setting support for ABB protection relays and terminals range of products for distribution applications

- User friendly tool management

- Parameter file upload/download and compare function

- Graphical I/O Setting Tool for REX 521

- Parameter file printing support

- Manually initiated uploading of disturbance recorder data

- Versatile integration of disturbance data evaluation tools of your choice

- Easy switching between verified setting groups or setting banks

- Reset of protection relay

- Presents relay indications, measurement, calculated values and registered values.

- Direct cable connection to a protection relay or a terminal using SPA communication protocol

- Support for SPA communication over the TCP/IP network is included in CAP 501 v.2.4.0. When using the SPA TCP/IP, an Ethernet adapter has to be connected to the protection device.

- Flexible tree-structure navigator

- Excellent commissioning tool

- Easy to upgrade to support new functions and products

- All tools and documentation provided on one CD

- Uninstall function

Application

The CAP 501 Relay Setting Tools is aimed for commissioning, maintenance, service and monitoring of the process and its secondary equipment in distribution substations. The package includes following tool functions:

- Parameter setting and archiving

- Compare between parameter settings in the relay and the archive

- Upload and download of paramer setting files

- Printing of parameter setting files

- Edit history of parameters

- Protection relay setting bank switching

- Reset of protection trip function

- Upload of disturbance recorder files

- Upload of registered, measured and calculated values

- Multi layered tree structure navigator

As the tools in CAP 501 are fully consistentwith CAP 505 stand-alone tool packages, SMS 510 substation monitoring system and the LIB 500 application libraries, work generated by CAP 501 can easily be reused in a larger SMS system or in a full-fledged SA system.

The range of protection and control terminals with SPA communication supported in CAP 501 Revision 2.4.0:

- The entire SPACOM range including SACO annunciators

- The Multipurpose Relay Series REJ 5__ and REU 5__

- The REF 541/543/545 Integrated Protection and Control Terminals

- The REM 543/545 Integrated Machine Protection and Control Terminals

- The RET 541/543/545 Integrated Transformer Protection and Control Terminals

- The REX 521 Integrated Protection and Control Terminal

- The REC 501/523 Control Terminals

- The REF 610, REM 610 and REU 610 protection relays

Further information about CAP 501 and its application in single relay applications and in local and remote system solutions can be found in the full product documentation on the product CD-ROM.

Design

The CAP 501 product consists of a base system with a navigator on which support tools for the protection and control terminals are run.

Categorization of the software parts

Base System
Kernel software, navigator, communication configuration, additional base tools and services are providing a framework for the object types and tools
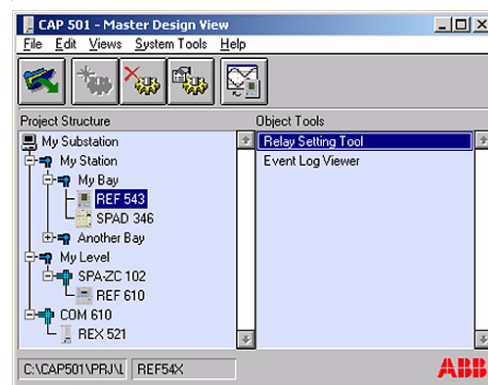

Fig. 1   CAP 501 Navigation window

Relay Setting Tool
Including all functions belonging to parameter, register- and input values and reset functions. The package include one tool for SPACOM products and one tool for all other terminals.
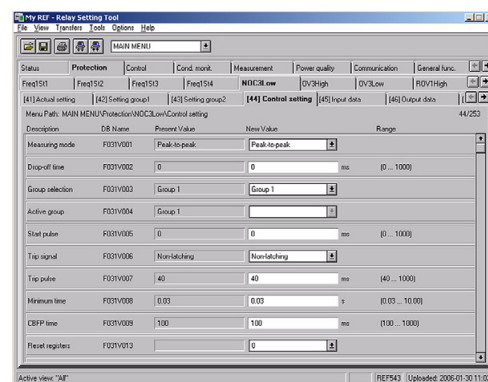

Fig. 2   Relay Setting Tool

Graphical I/O Setting Tool
Graphical I/O SettingTool is a complementary to Relay Setting Tool, and it is used to set digital inputs, digital outputs and alarm LED

signals of REX 521 relays in an easy way. The routing of signals is presented with graphical connection matrix where it is possible to connect a signal to a function block, or vice versa.
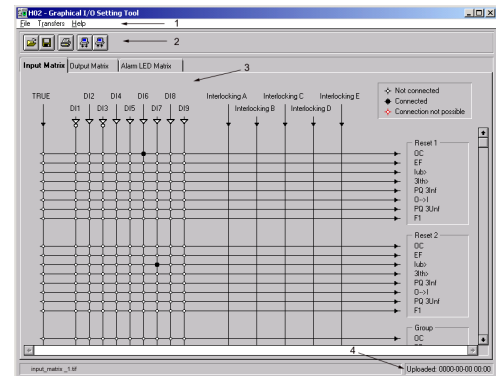

Fig. 3   Main view of the graphical I/O setting tool

Disturbance recorder tool
Includes the functionality to upload and present disturbance recordings.
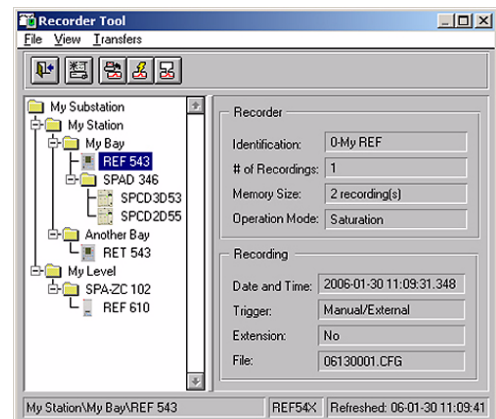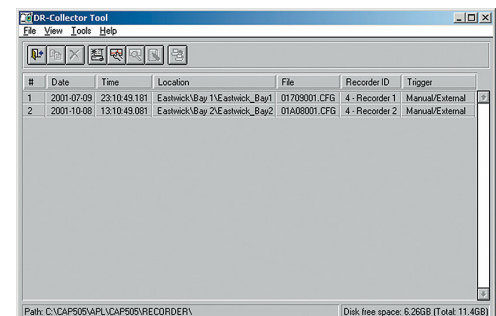

Fig. 4   Recorder tool window

Fig. 5   DR tool window

System configuration

The tool package is delivered on a CD which can be installed on a PC with Win NT, Win 2000 or Windows XP Professional operating system.

The PC communicates to the protection relay or terminal using the SPA protocol via a product specific cable connected between the PC's COM port and the communication interface of the relay or over the TCP/IPvia an Ethernet adapter connected to the relay. The communication is always point to point.

Document files

CAP 501 documentation in PDF format and an installer for installing the Acrobat® Reader from Adobe Corporation are included on the

CD. The Acrobat Reader is needed to view the documentation

Technical data

CAP 501 v.2.4.0 sets the following hardware and software requirements for the PC:

Software requirements

Operating system	Microsoft® Windows NT® 4.0 Workstation, Microsoft Windows 2000® or Windows XP® Professional. Latest Service Packs installed.
Network	Operating system network software installed with at least one network protocol (e.g. TCP/IP)

Hardware requirements

Item	Minimum	Recommended
Processor	233 MHz or higher Pentium® compatible CPU	1 GHz or higher Pentium compatible CPU
Memory	128 MB	256 MB
Display	SVGA, 800x600, 256 colours	SVGA, 1024x768, 256 colours
File system	NTFS file system on the installation drive	
Hard disk space	300 MB	500 MB
CD-ROM drive	Any device supported by the operating system. Required for installation	
Mouse	Any device supported by the operating system	
PCI slots	One slot for each PCLTA-20 card	
PCMCIA slots	One slot for each PCC-10 card	
Network adapter card	Any device supported by the operating system	

Ordering

The following alternatives are available:

- CAP 501 version v.2.4.0. tool package CD-ROM is delivered free of charge with a protection relay or terminal when requested.

- If ordered separately, an order handling fee will be charged.

Ordering number: 1MRS151019

Communication cables listed in the next table are not included in the CAP 501 delivery. Required communication cables can be acquired by placing a separate order, see the table below:

Communication hardware

Relay	Type	Order number
REF 541, 543, 545 REM 543, 545 RET 541, 543, 545 REX 521 REJ 51_ / 52_ REU 513, 523	Opto	1MKC950001-2
REC 523	RS 232	1MRS120520
REF 610 REM 610 REU 610	Opto.	1MRS050698
SPTO front connector SPCR front connector	RS 232 - RS 232	SPA-ZP 17A3
SPACOM 100/300 series	RS 232 - TTL connector	SPA-ZP 5A3
SPAC 300/500/600 rear	RS 232 - RS 485	SPA-ZP 6A2
SACO 16A3, 16D1, 16D3 and 64D4	*Connection cable for SPA-ZP 6A2 to SACO screw terminal	SPA-ZP 21A* and SPA-ZP 6A2

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ABB Oy
Distribution Automation
P.O. Box 699
FI-65101 Vaasa, FINLAND
Tel +358 10 22 11
Fax +358 10 224 1094
www.abb.com/substationautomation