



Power Quality

Catalog
SR 10.1.3 · 2004

OSCOP P
System Program

SIEMENS



C E R T I F I C A T E

**DQS Deutsche Gesellschaft zur Zertifizierung
von Managementsystemen mbH**

herby certifies that the company

SIEMENS AG
Power Transmission and Distribution Group (PTD)
Power Automation (PTD PA)

Humboldtstraße 59
D-90459 Nürnberg

Wernerwerkdam 5
D-13029 Berlin

for the scope

Protection, Substation Control, Telecontrol, Power Quality

has implemented and maintains a

Quality and Environmental Management System.

Audits, documented in a report, have verified that this
management system fulfils the requirements of the following standards:

DIN EN ISO 9001 : 2000
December 2000 edition

DIN EN ISO 14001
October 1996 edition

This certificate is valid until 2004-05-31

Certificate Registration No.: 000876 QM / UM

Frankfurt am Main, Berlin 2003-06-01

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OSCOP P System Program

Power Quality

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System Overview

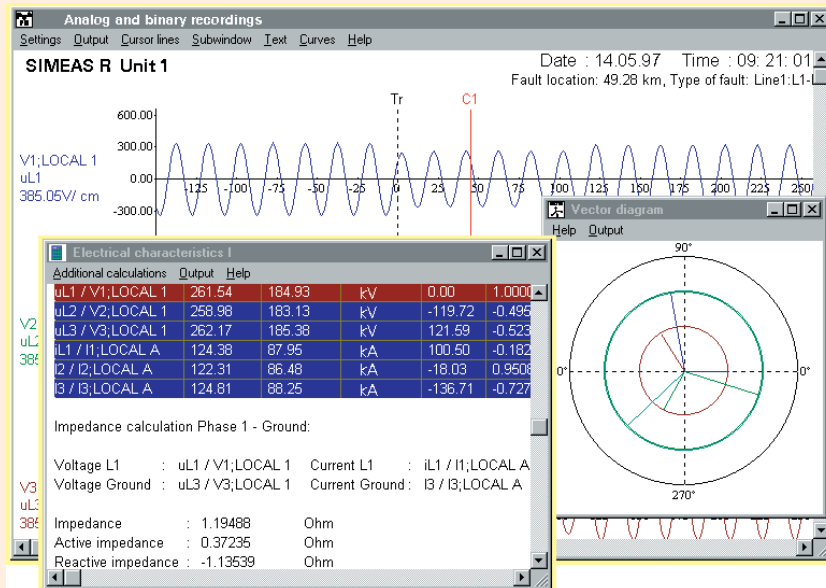


Fig. 1

OSCO P is a PC program for retrieving and processing of records made with the SIMEAS R digital fault and power quality recorder, the SIMEAS Q power quality recorder, or with numerical protection relays using the IEC 60870-5-103 protocol.

- Fully automatic remote data transfer via a dedicated line or with an analog or ISDN modem via the telephone network or via an Ethernet link (TCP/IP)
- Several PCs connected through Ethernet in client-server mode so that they can share various network resources such as printers, etc.
- Fully automatic display on the monitor, or output of fault records as sine wave or rms value curves, and output of event logs
- Remote configuration of the SIMEAS R digital fault and power quality recorder and OSCILLOSTORE P531
- Archiving of bulk data in a database system

- Convenient graphic evaluation program for analyzing recorded data; with extensive zoom functions, grid network, variable scaling, print preview and clipboard. A number of fault records can be displayed simultaneously, even from different devices, with any number of curves
- Computation of diverse power system variables at the cursor position, e.g. impedance, reactance, active power, reactive power, apparent power, harmonics, rms and peak values, and voltage symmetry
- Filtering function for signals from protection relays
- Function for automatic preparation of a power balance in a power plant.
- Tables for evaluating power quality from all variables recorded by the SIMEAS R
- Additional DIAGNOSE (diagnostics) function for automatic analysis of faults in the power system with fault localization (optional)
- Operating system
 - Windows 98 SE (DAKON 98 only)
 - Windows NT 4.0
 - Windows 2000
 - Windows XP Professional

OSCOPE system program

OSCOPE is a PC program for retrieving and processing of records made with the SIMEAS R digital fault and power quality recorder, the SIMEAS Q power quality recorder, or with numerical protection relays using the IEC 60870-5-103 protocol.

The following tasks can be performed manually or automatically using OSCOP P:

- Retrieving measurement data from connected devices and storing it in the database
- Evaluation of data
- Visualization of results
- Output of results via a fax or printer
- Archiving of records

Appropriate installation of the OSCOP P on application-specific PC hardware enables the fault recorder system to perform its task without interruption.

DAKON-PC

A number of devices (SIMEAS R, SIMEAS Q, protection relays) can be connected to a data concentrator PC (called the DAKON PC). A DAKON-PC can collect the required data and automatically pass them on to a server PC.

Server PC

A number of DAKON PCs can be connected to one server PC. Data from the server PC can be retrieved and evaluated by several connected client PCs.

One server PC can pass on the collected data to a higher-level server PC.

Evaluation PC

A number of DAKON PCs, SIMEAS Rs and SIMEAS Qs can be connected to one evaluation PC. This configuration is primarily for local parameterization and data evaluation. An evaluation PC can also be installed in the office and connected to a DAKON PC or server PC.

Client PC

A client PC is connected to a server PC and is used for data evaluation. The client PC cannot pass on data to higher-level PCs.

Client-server network

All the above PCs can be interconnected via an Ethernet protocol. This ensures fast data exchange, e.g. between the PCs in several substations and a central server.

Data transfer

The remote data transfer between the PC and the connected units can be fully automatic. Here are some examples of possible communication links:

- Direct link, e.g. connection of numerical protection relays to an RS232 interface via a star coupler
- Connection of SIMEAS R and SIMEAS Q units via an analog or ISDN modem and public telephone network
- Networking of several evaluation PCs, DAKON PCs, server PCs and SIMEAS R via the Ethernet with the TCP/IP protocol.

Automatic operation

OSCOPE P can be parameterized to perform many tasks either manually or automatically. Complete automation of tasks – such as retrieving data, evaluation, on-screen display, printing and faxing – can reduce the user's workload. Addressing a device specifically and analyzing its data can also be performed manually.

Evaluation program

The evaluation program allows simultaneous display of any number of curves in any combination. Easy-to-use zoom functions, grid lines, several measuring cursors and additional calculations for diverse power system variables enable optimum evaluation of power system faults. Via the clipboard function, extracts from records can be re-used for a report in nearly all Windows applications, for example MS Word.

Peripheral equipment

OSCOPE P can address all peripheral devices such as printers and faxes supported by the operating system.

Data processing

OSCOPE P can perform the tasks of collecting data, writing it to the database, evaluating it, visualizing it, printing it and faxing it. This ensures uninterrupted functioning of the installed fault recorder system without intervention by maintenance personnel.

Supplementary functions (options)

DIAGNOSE (fault locator)

The optional "DIAGNOSE" software module performs automatic analysis of the fault records of power transmission and distribution lines. This function serves to compute a fault location on the line. The result is presented in clear text. As part of the parameterization, the line can be divided into several segments to facilitate fault localization (applies to one-end calculation only). If the current and voltages of a parallel line are recorded, the inductive effect is automatically taken into account. If the data relating to a fault are available at both ends of a transmission line, the fault location can be determined more accurately from two sources. When parameterized accordingly, and with automatic data transfer, these functions are performed automatically. If desired, the results are logically linked to the fault record and automatically printed or displayed on the monitor.

Power system faults can be filtered selectively to save time. Experts can then concentrate their efforts on more complex events.

Importing and exporting data

The additional "data import" function permits processing of events that have been recorded by devices of other manufacturers in OSCOP P. These data must be in Comtrade or ASCII format. The data are imported by OSCOP P and are available for further processing. The additional "export" function can provide from the SIMEAS R in the above format to other programs.

Applications

Supplementary functions (cont'd)

SICARO PQ analysis of power quality

This software package permits analysis of SIMEAS R measurement data (rms voltage and current, frequency, THD, active and reactive power, etc.) based on the power quality standard EN 50160 or freely definable limits. The measured values are automatically compared with the set-points and evaluated. After analysis, a report is automatically generated by the software, its structure and layout having been predefined by the user. It is also possible to convert the completed report to HTML format. In this format the report can be easily sent via e-mail. The HTML report can be visualized and printed out using an Internet browser. SICARO PQ also permits analysis of data measured by SIMEAS Q quality recorders. In conjunction with OSCOP P, measured values can be retrieved and analyzed automatically. The SICARO PQ software package is also available as single license software, permitting power quality analysis even without an OSCOP P license. However, automated operation is then not supported and the data required for power quality analysis must be provided in files.

Parameterization

One important component of the parameterization is the definition of the network topology, followed by assignment of devices. The communication structure with individual devices and other PCs must then be configured in the OSCOP P program. When these steps have been performed each individual device can then be parameterized.

Definition of network topology

- Region(s)
- Substation(s)
- Feeder(s)
- Followed by assignment of each device to a region, substation, feeder and voltage level

Type of communication link to the PC per device:

- Null modem (direct link)
- Dedicated line modem
- Analog modem, including telephone number
- ISDN modem, including ISDN number
- Ethernet link (LAN/WAN), including TCP/IP number
- X.25 network, including X.25 address

Device password:

- For each SIMEAS R
- For each protection relay

Serial PC interfaces per device

- Address (in the PC)
- Baud rate
- Number of data bits
- Number of stop bits
- Parity

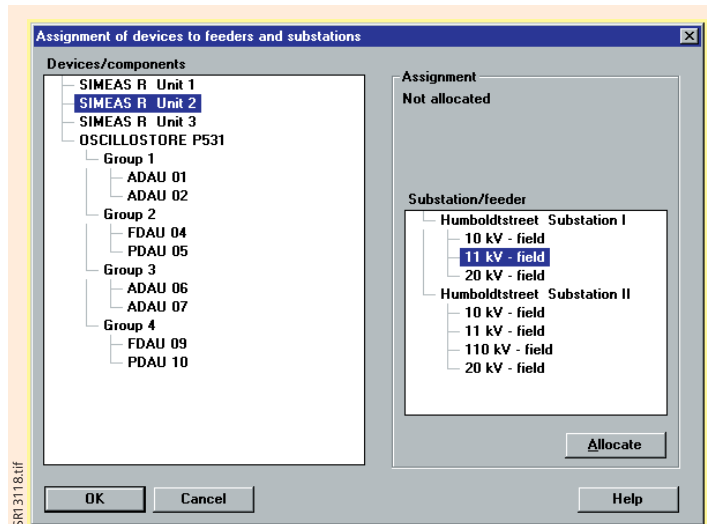


Fig. 2 Assignment of devices to feeders and substations

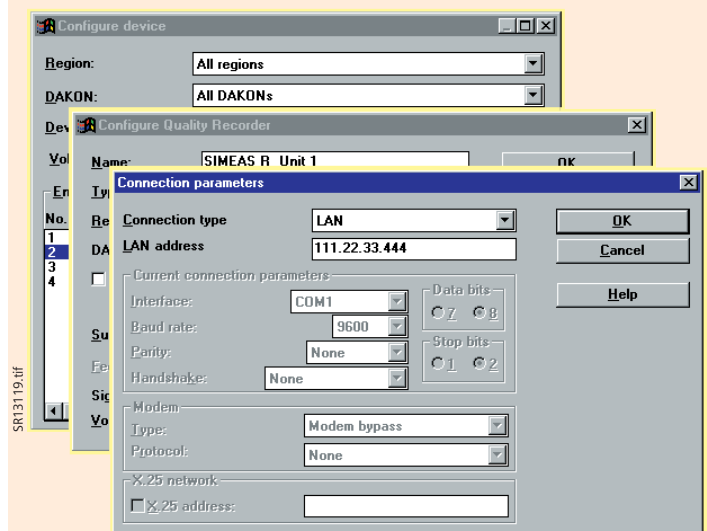


Fig. 3 Connection parameters

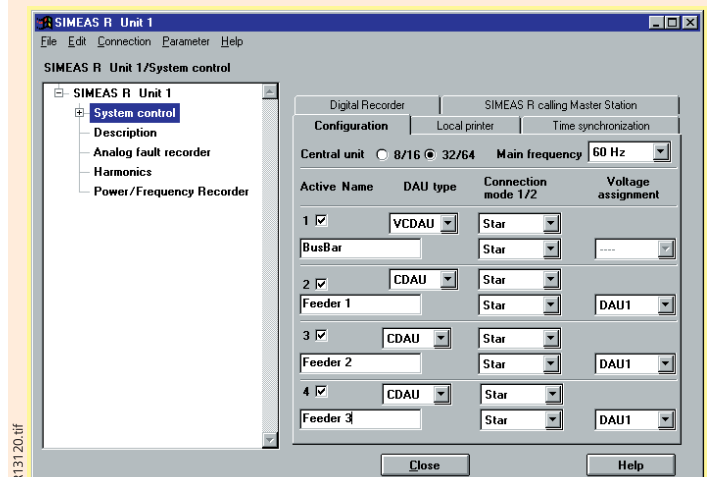


Fig. 4 Parameters for SIMEAS R / system control

Parameterization (cont'd)

Program password

Depending on the requirements, different rights can be assigned to each user. This ensures coordinated parameterization of devices. The intention is to avoid non-harmonized parameterization of identical devices from different PCs.

The following access rights can be assigned:

- a) Access to all functions is permitted
- b) PC parameterization is disabled
- c) Device parameterization and diagnosis are disabled, plus b)
- d) All delete functions are disabled, plus c)
- e) Retrieving data from lower-level PCs is disabled, plus d)

Storage of files / data base:

- Name of drive for storing the data
- Limitation of the database in Mbytes

Language setting for user interface

- English
- German
- French
- Spanish
- Italian

Parameterization of the SIMEAS R digital fault and power quality recorder

- Device designation
- Short identification of a measurement channel
- Channel legend
- Measuring range of a measurement channel
- Dimension of a measurement channel
- Color of a measurement channel
- System time
- Storage capacity per recording function
- Transmission type (ASCII or binary)
- Local printer

Activation of the functions

- Fault recorder
- Power and frequency recorder
- Mean value and power quality recorder
- Voltage dip and flicker
- Event recorder
- Report printer
- Parameterization of the fault record
- Trigger values
- Pre-fault recording
- Recording times
- Trigger disable

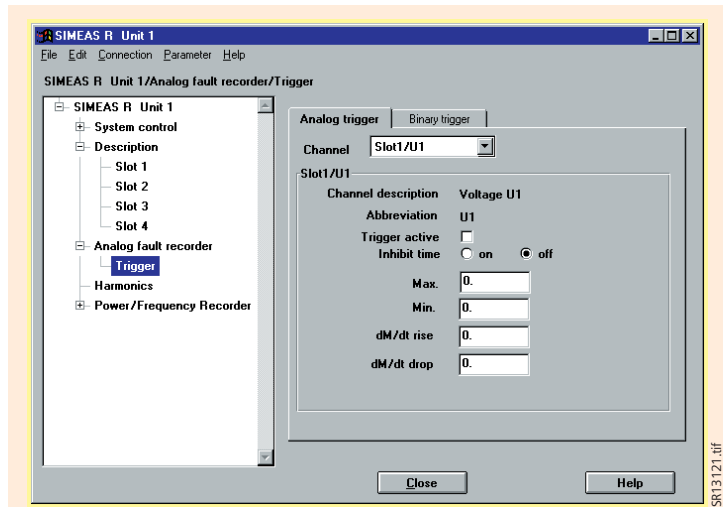


Fig. 5 SIMEAS R parameters/fault recorder/trigger settings

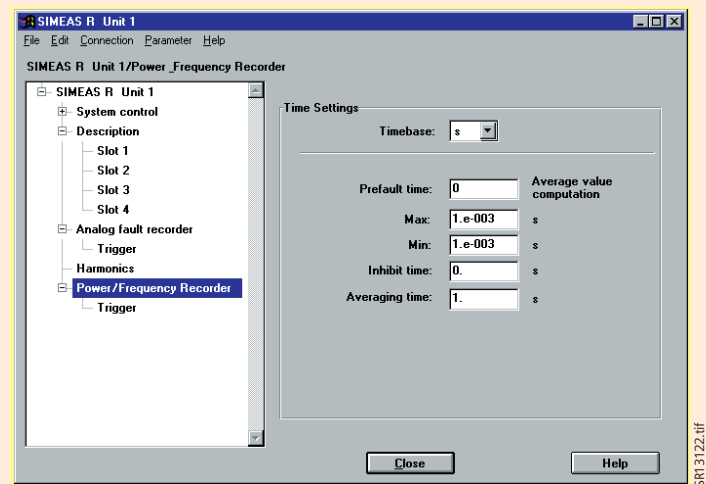


Fig. 6 SIMEAS R parameters/power/frequency recorder

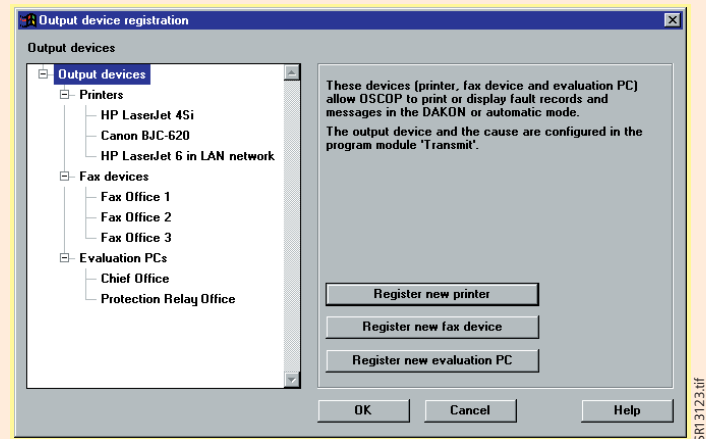


Fig. 7 Parameters of the output devices

Features

Parameters for automatic functions

Fault recordings can be automatically displayed on the screen, printed, faxed and exported in a predefined format.

Printing

- Fault records on/off per device
- RMS value curve or sine wave per device
- Number of curves per sheet
- Max. number of sheets
- Time scale
- Amplitude scale
- Color display on/off
- Event log on/off per device

Fax transmission

- Telephone number for each fax terminal
- Designation of the fax terminal
- Assignment of a device to the fax terminal
- Fault record on/off per device
- RMS value curve or sine waves per device
- Event log on/off per device

Display on the monitor

- Fault records on/off per device
- RMS value curve or sine waves per device
- Event log on/off per device

Diagnostic function (option)

- Diagnostic function on/off per device
- Print-out on/off per device
- Output on monitor on/off per device

Export functions (ASCII, Comtrade)

- On/off per data type and device
- Indication of target drive and directory

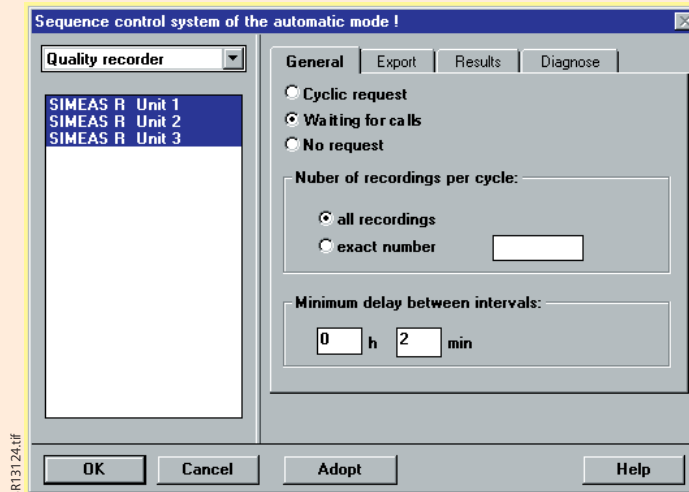


Fig. 8 Sequence control system of automatic mode

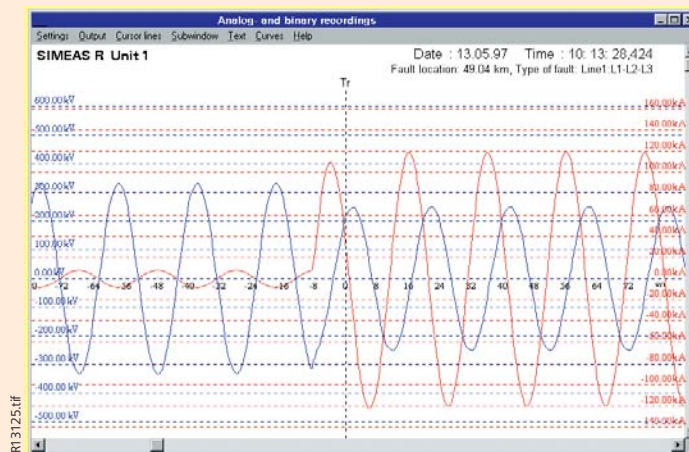


Fig. 9 Zoomed display of the current and voltage of a phase (with grid lines)

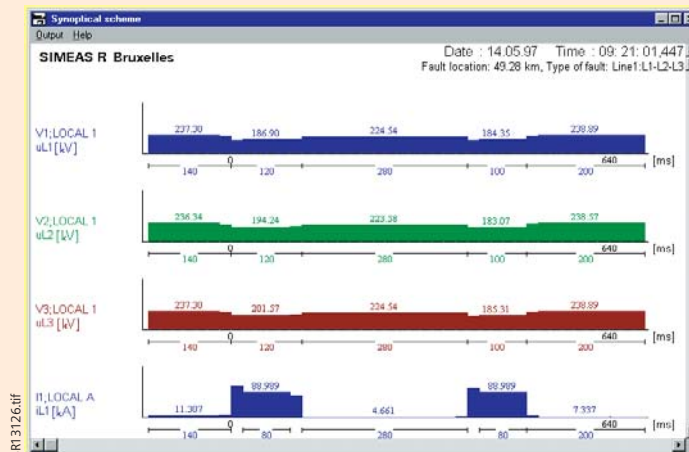


Fig. 10 RMS value of a three-pole fault

Automatic and manual data transfer

One or more SIMEAS Rs can be connected to a DAKON PC or server PC. Data transfer may be manual or automatic. A server PC retrieves the data either directly from the SIMEAS R or via a DAKON PC. Here are some examples of settings for data transfer.

Automatic data transfer

- Interrogation of all or selected systems
- Continuous operation via all available communications channels
- Time-controlled operation
- Transfer of header data with event information only
- Transfer of rms value curve of DAKON PC only
- Transfer of diagnosis result of DAKON PC only
- Transfer of a combination of the rms value curve or sine wave with the results of diagnosis
- Matching of the parameters between SIMEAS R, DAKON PC and OSCOP P

Manual sorting of records/ filtering function:

- Sorting by region
- Sorting by substation
- Sorting by voltage level
- Sorting by cause of recording
- Sorting by date and time
- Header data transfer
- Measurement data transfer
- Local print-out of events
- Deletion of all manual starts
- Directory of all events
- Retrieve diagnosis results of DAKON PC
- Retrieval rms value curve of DAKON PC
- Measuring signals (sine wave)
- Combination of measuring signal and rms value curve with diagnosis results
- Interrogation of the status of SIMEAS R and DAKON PC

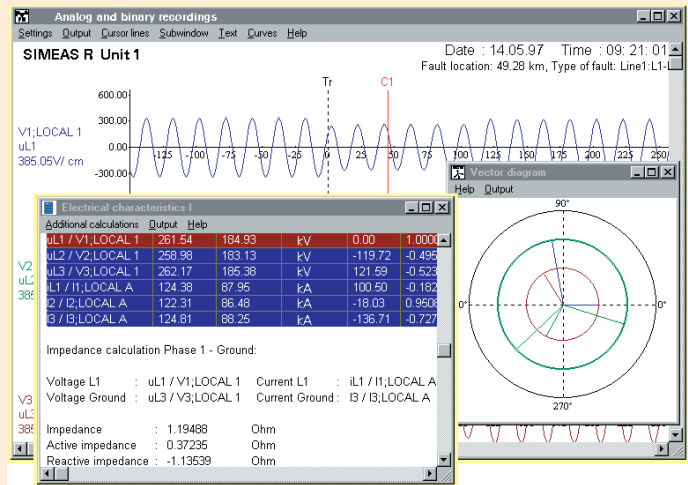


Fig. 11 Example of a measurement by cursor with vector diagram

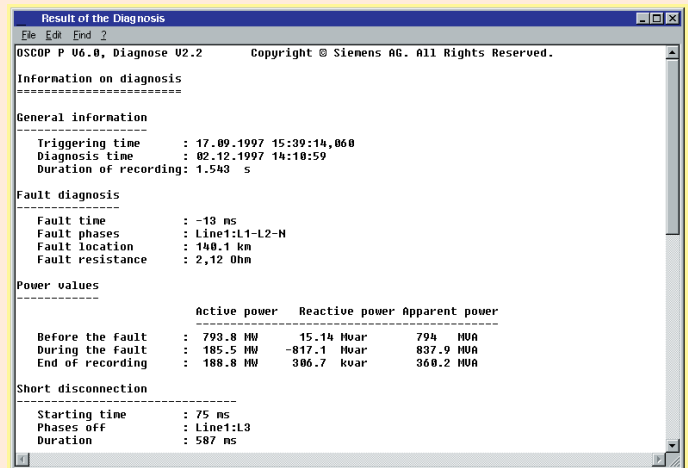


Fig. 12 Example of diagnosis results

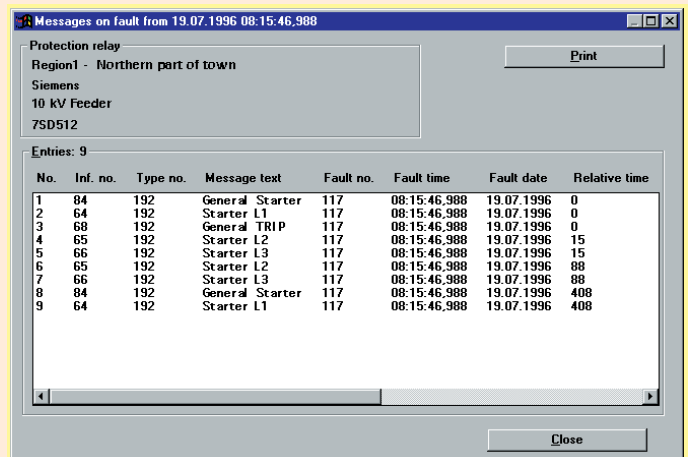


Fig. 13 Example of a protection relay event log

Features

Evaluation

Selection of the recording

- Extensive filtering function covering region, substation, voltage level, feeder, date and time window, type of event, type of device, etc.
- All or selected channels
- Mixing of different systems and channels
- Changing the channel designation
- Changing the color of a channel

Display

- RMS value curve
- Instantaneous value curve (sine wave)
- Computed phase-to-phase voltages as instantaneous or rms value
- Instantaneous values with grid lines
- Instantaneous values of several superimposed curves each with scaling
- Computed differential quotient ($\Delta M/\Delta t$) as a curve with time interval settable from 1ms to 99999 s
- Computed relative deviation ($\Delta M/M$) as a curve
- Computed absolute deviation (ΔM) as a curve

Zoom function

(positive and negative)

- Amplitude and time axis
- General zoom
- Channel-specific zoom (for enlarging very small individual signals)
- Window zoom (magnifying function)
- Horizontal zoom
- Vertical zoom

Moving individually selected channels

- In x-direction
- In y-direction
- In x- and y-directions

Measuring

- Eight measuring value cursors for instantaneous value and time (including differences between the cursors)
- Trigger line (can also be used as a measuring value cursor)
- Data records can be moved from the value window to the clipboard and can then be integrated in a report.

Computation with reference to the cursor position

Calculation of all values is updated with cursor movements

- Amplitudes and rms values
- Phase angle and power factor (p.f.) ($\cos \varphi$) relative to any channel
- Impedance and reactance between one phase and earth
- Impedance and reactance between two phases
- Active, reactive and apparent power; single or three-phase
- Voltage symmetry
- Vector diagram with selected curves (one curve is defined as the reference)
- 1st to 21st order harmonics and DC components as percentage or rms value
- Total harmonic distortion

Print-out of the rms value curves

- Print layout corresponding to the window contents on the monitor
- Complete print-out from the beginning to the end of recording

Print-out of the instantaneous value curve

- Print layout corresponding to the window contents on the monitor (full graphic resolution, no hardcopy)
- Complete print-out from the beginning to the end of the recording
- Print-out of the instantaneous value curve, including the computed curves (e.g. calculation of the phase-to-phase voltages from the phase-to-earth voltages)
- Print-out of all initially selected curves between two cursors
- All computed values in table form
- Vector diagrams

To transfer the window contents to other Windows applications with the highest possible graphic resolution, the clipboard function of the Windows operating system is used. A typical example is writing a report using a word processing program (for example MS Word).

Printing

On printers (also color) supported by the Windows operating system:

- All system parameters
- All curves
- All event logs
- All computed values
- All tables and
- Vector diagrams

Automatic print-out and display on the monitor

For the various possibilities, see parameters for the automatic functions

Measured-value and parameter files

- Import and export of measured-value and parameter files from diskette or hard disk
- Annotation of measured-value files with comments

DIAGNOSE with fault-locating function for transmission lines (option)

The optional DIAGNOSE software package is used with OSCOP P for calculating fault locations on a transmission line after a short-circuit. DIAGNOSE is software that supports the user in routine work. This module provides extensive setting options to calculate the fault location as accurately as possible.

Line segments

This module permits entry of several line segments, to take account of their differing properties, e.g. overhead line and buried cable segments.

Parallel lines

In the event of a fault on a line, the absolute error of the calculated fault location may be substantial if the inductive coupling of the parallel line is not taken into account. If the parameters of a parallel line are known, it is possible to improve the accuracy of the calculated fault location with correct parameterization of the DIAGNOSE program.

Double-end computation of the fault location

If the current and voltage signals of a line are registered at both ends by different SIMEAS Rs during a short-circuit, the fault location can be computed by evaluating both recordings. This calculation usually leads to a more accurate fault location. Appropriate parameterization of the substation and device assignment activates double-end computation.

Results

The result is output as an absolute value in km and as impedance in ohms. The fault type (e.g. phase L1-L2) is assigned to the measured-value files with a distance in km. On request, the peak and rms values with phase angle are specified before and during the fault and the active, reactive and apparent power before, during and after the fault. The diagnostic result is displayed on the screen in clear text or output on the printer. With appropriate parameterization the result can be faxed via a DAKON PC or server PC. The explanatory component is implemented as a graphic curve display. Besides the fault location, time data concerning rapid auto-reclosure (RAR) and automatic reclosures (ARC) are stated.

Accuracy

For one-end fault localization, the error is typically 5 % with correct parameterization and low-resistance short-circuits. The algorithm used provides data about the accuracy of the fault location calculation (reliability data in %).

Parameters for the diagnostic module

The following parameters can be defined for the diagnostic module:

- Rated frequency
- Single or parallel line
- One or two-end calculation of the fault locations (only if recording devices have been installed at both ends)
- Number of line segments (for one-end calculation only)
- Line length per segment (for one-end calculation only)
- Positive sequence impedance per segment
- Negative sequence impedance per segment
- Allocation of the feeder currents to the respective voltages

Several parameter sets are possible per line; for example, the different line parameters for single or parallel line calculation. Changeover is performed manually.

The diagnostic software works either automatically or manually.

Data required for a single line:

- Phase currents L1, L2, L3
- Phase-to-earth voltages V_{L1} , V_{L2} , V_{L3}

Data required for a parallel line:

- Phase currents L1, L2, L3 per line
- Phase-to-earth voltages V_{L1} , V_{L2} , V_{L3} from busbar or per line

Additional function: Import and export of data (option)

With this additional module, all fault events can be imported and exported in a standard format complying with the international IEEE standard (Comtrade or ASCII format). This allows import of fault events from another device or system for processing with OSCOP P. Fault events exported according to this standard can be used for testing numerical protection relays with the aid of appropriate equipment.

Additional function: SICARO PQ analysis of power system quality (option)

SICARO PQ permits automated analysis of data and also generates an analysis report. The criteria for the evaluation of the analysis are limit values specified in the EN 50160 standard. This standard is preset, but analysis on the basis of application-specific limit values is also possible.

Networking of evaluation stations

OSCO P expansion level "Server" permits design of a network of evaluation stations via a LAN or WAN (TCP/IP). In this case, a server PC or a DAKON PC is used as the server. All fault events of the connected fault recorders or numerical protection relays (IEC 60870-5-103) are read into the database and archived by this server.

OSCO P can then run on any number of client PCs within the network (10 licenses are possible in the basic version).

Due to the fact that OSCOP P is installed completely at each workstation, autonomous data archiving is possible throughout a company, e.g. according to different areas of responsibility.

Configuration Information

Operating system

- Windows 98 SE (DAKON 98 only)
- Windows NT 4.0
- Windows 2000
- Windows XP Professional

Hardware requirements

Evaluation PC / Client PC

- Personal computer, 500 MHz processor or better
- RAM 128 Mbytes
- Hard disk, recommended minimum 10 Gbytes
- Color graphic card VGA or S-VGA
- Printers supported by the Windows operating system
- Mouse / keyboard for operation
- Network card as required

DAKON PC / Server PC

- Personal computer, 2 GHz processor or better
- RAM 512 Mbytes
- Hard disk, recommended minimum 40 Gbytes
- Network card as required
- Color graphic card VGA or S-VGA
- Printers supported by the Windows operating system
- Mouse / keyboard for operation

Selection and Ordering Data

Description	Order No.
OSCO P 6.40 system program	7KE6010-1 □ □ □ □ - □ □ □ □
	▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲
For evaluation PC	
Version 1 with database for a max. of 1 device ¹⁾	A 0 B
Version 2 with database for a max. of 5 devices ¹⁾	B 0 B
Version 3 with database for a max. of 10 devices ¹⁾	C 0 B
Version 4 with database for a max. of 1000 devices ¹⁾	D 0 B
For DAKON PC With database for a max. of 1000 devices ¹⁾	
Version 5 with IEC 60870-5-103 protocol for communication with numerical protection devices	E 0 B
For Server PC + 10 clients	
Version 6 with database for a max. of 1000 devices ¹⁾ Communication server incl. 10 network clients. With IEC 60870-5-103 interface for communication with numerical protection devices	F
Additional function 1	
With diagnosis and fault locator	A
Without	B
Additional function 2	
With import and export of fault data in data format in accordance with the IEEE Comtrade standard	1
Without	0
Additional function 3	
With SICARO PQ analysis of network quality in accordance with EN 50160 standard and IEC 1000-2-2	1
Without	0
Additional function 4 (server PC only)	
With SICAM Archive, additional function 2 ²⁾ included	1
Without	2
Additional function 5 (server PC only)	
With COMTRADE Archive, additional function 2 ²⁾ included	A
Without	B
Manual	
German	A
English	B
French	C
Spanish	D
Italian	E
Supplied on the following data media:	
On CD-ROM	0
(including manual in printed form and in the corresponding language)	
1) Device: SIMEAS R, OSCILLOSTORE P531, protection device with IEC 60870-5-103 interface, unlimited number of SIMEAS Q.	
2) The application of this function must be clarified with the Siemens Product Management before ordering.	
Version 6.40 released only for operating systems Windows 2000 and Windows XP; not released for DAKON 98.	

Description	Order No.
OSCO P 6.40, dongle-free version	7KE6010-2AA00 - 0A □ □ - ZX01
	▲ ▲
For users with a license agreement for a version without dongle. The order is only valid if a copy of the signed license agreement is sent to the factory.	
Manual	
German	A
English	B
French	C
Spanish	D
Italian	E
Supplied on the following data media:	
On CD-ROM	0
OSCO P upgrade 6.x	7KE6010-3A □ □
	▲ ▲
Upgrade of an existing <u>dongle-connected</u> OSCO P license to a higher level. Delivery comprises a software to reprogram the dongle for OSCO P. No dongle will be supplied. An OSCO P update-CD or a manual must be ordered separately, if required. When placing a purchase order, please <u>always</u> submit the serial number of the original OSCO P license.	
Level 1 to level 2	A
Level 1 to level 3	B
Level 1 to level 4	C
Level 1 to level 5	D
Level 1 to level 6	E
Level 2 to level 3	F
Level 2 to level 4	G
Level 2 to level 5	H
Level 2 to level 6	J
Level 3 to level 4	K
Level 3 to level 5	L
Level 3 to level 6	M
Level 4 to level 5	N
Level 4 to level 6	P
Level 5 to level 6	Q
Supplied on the following data media:	
On floppy disks	1

Selection and Ordering Data

Description	Order No.
<p>OSCOPE P 6.40 – Additional functions 6.40 KE6010-4□□□</p> <p>For the enhancement of the functionality of OSCOPE P version 6.40; available as single license after the first installation. Delivery comprises a software to reprogram the dongle for OSCOPE P. No dongle will be supplied. The corresponding software modules can be found on the original CD (except for SICARO PQ). When ordering SICARO PQ, the current version of the software will be supplied on documentation CD + floppy disk, manual in German and English contained on documentation CD. If required, OSCOPE P update CD or manual have to be ordered separately. When placing a purchase order, please <u>always</u> submit the serial number of the original OSCOPE P license.</p> <p>Diagnosis with fault locator A</p> <p>COMTRADE Routines for data import und export B</p> <p>SICARO PQ - Analysis of network quality C</p> <p>SICAM Archive incl. option B¹⁾ D</p> <p>COMTRADE Archive incl. option B¹⁾ (for server PC only) E</p> <p>Supplied on the following data media</p> <p>On floppy disks 1</p> <p>Note</p> <p>Please note that ordering of additional functions is only possible if you have an original OSCOPE P license + dongle.</p> <p>1) The application of this function must be clarified with the Siemens Product Management before ordering.</p>	
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Description	Order No.
<p>OSCOPE P update 6.40</p> <p>Update for the 6.1x; 6.3x; 6.40x versions to the current 6.40 version.</p> <p>Dongle-connected version</p> <p>Only for users with an older version of the OSCOPE P 6.1.x / 6.3.x / 6.40.x Supplied without dongle; manual on documentation CD Current version of OSCOPE P 6.40 on CD C53207-A409-D997-1</p> <p>Dongle-free version</p> <p>Only for users with a signed license agreement for the version of OSCOPE P 6.1.x/6.3.x/6.40.x without dongle Supplied with manual on documentation CD Current version of OSCOPE P 6.4 on CD C53207-A409-D998-1</p> <p>Version 6.40 released only for operating systems Windows 2000 and Windows XP; not released for DAKON 98.</p> <p>OSCOPE P update 6.3</p> <p>Update for the older versions 6.1.x/6.3.x to the current 6.3 version</p> <p>Dongle-connected version</p> <p>Only for users with an older version of the OSCOPE P 6.1.x/6.3.x Supplied without dongle; manual on documentation CD Current version of OSCOPE P 6.3 on floppy disk C53207-A409-D993-1 Current version of OSCOPE P 6.3 on CD C53207-A409-D994-1</p> <p>Dongle-free version</p> <p>Only for users with a signed license agreement for the versions of OSCOPE P 6.1.x / 6.3.x / 6.40.x without dongle Supplied with manual on documentation CD Current version of OSCOPE P 6.3 on floppy disk C53207-A409-D995-1 Current version of OSCOPE P 6.3 on CD C53207-A409-D996-1</p> <p>OSCOPE P update 6.1</p> <p>Update for the older version 6.1.x to the current 6.1 version</p> <p>Dongle-connected version</p> <p>Only for users with an older version of OSCOPE P 6.1 Supplied without dongle; manual on documentation CD Current version of OSCOPE P 6.1 on floppy disk C53207-A409-D984-1 Current version of OSCOPE P 6.1 on CD C53207-A409-D985-1</p> <p>Dongle-free version</p> <p>Only for users with a signed license agreement for the version of OSCOPE P 6.1.x without dongle Supplied without dongle; manual on documentation CD Current version of OSCOPE P 6.1 on floppy disk C53207-A409-D986-1 Current version of OSCOPE P 6.1 on CD C53207-A409-D987-1</p>	

Selection and Ordering Data

Description	Order No.
OSCO P manual	
A manual is always supplied when ordering OSCO P	
German	E50417-H1000-C170-A2
Italian	E50417-H1072-C170-A2
English	E50417-H1076-C170-A2
French	E50417-H1077-C170-A2
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Published by

Siemens Aktiengesellschaft

Power Transmission and Distribution

Power Automation Division

Postfach 48 06

90026 Nuernberg
Germany