

SIEMENS

Published by and copyright © 2013:

Siemens AG
Infrastructure & Cities Sector
Smart Grid Division
Energy Automation
Humboldtstr. 59
90459 Nuremberg, Germany
www.siemens.com/distributionautomation

For more information,
please contact our
Customer Support Center.
Phone: +49 180 524 84 37
Fax: +49 180 524 24 71
(Charges depending on the provider)
E-mail: support.ic@siemens.com

Order No. IC1000-G220-A207-X-4A00 | Printed in Germany | AL=N ECCN=N
Dispo 6200 | c4bs Nr. 768
HL 13108395 WS 11131.0

© 11.2013, Siemens AG



www.siemens.com/distributionautomation

Distribution Automation

Improve reliability, increase efficiency, and reduce costs

Printed on elementary chlorine-free bleached paper.
All rights reserved.

Trademarks mentioned in this document are the property
of Siemens AG, its affiliates, or their respective owners.

Subject to change without prior notice.

The information in this document contains general descrip-
tions of the technical options available, which may not apply
in all cases. The required technical options should therefore
be specified in the contract.

For all products using security features
of OpenSSL the following shall apply:

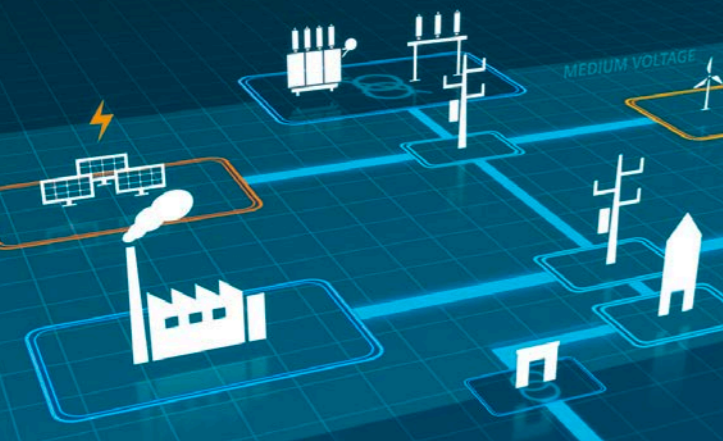
This product includes software developed by the
OpenSSL Project for use in the OpenSSL Toolkit
(www.openssl.org).

This product includes cryptographic software written
by Eric Young (eay@cryptsoft.com).

Answers for infrastructure and cities.

Improve reliability, increase efficiency, and reduce costs: Rely on distribution network automation

Distribution Automation improves significantly the reliability and availability of power distribution grids. The functionality ranges from remote monitoring and control to fully automated applications, like high speed FLISR (Fault Location, Isolation and Service Restoration), Volt/ VAR Control and others.



Everything under control

It concerns the operational control of the grid, e.g. monitoring currents and voltages in the distribution grid and issuing commands to remote units such as switches and transformers.

All-around improvements

Distribution Automation is a family of technologies including electronic equipment (sensors, RTUs, computers, etc.), communication components (routers, modems, etc.) and networks. It also includes dedicated software and algorithms that can perform a number of specific distribution system functions.

Our expertise for your distribution network:

- Grid monitoring
- Grid automation & control
- Automatic operation
- Fast restoration
- Early problem detection

Discover your advantages:

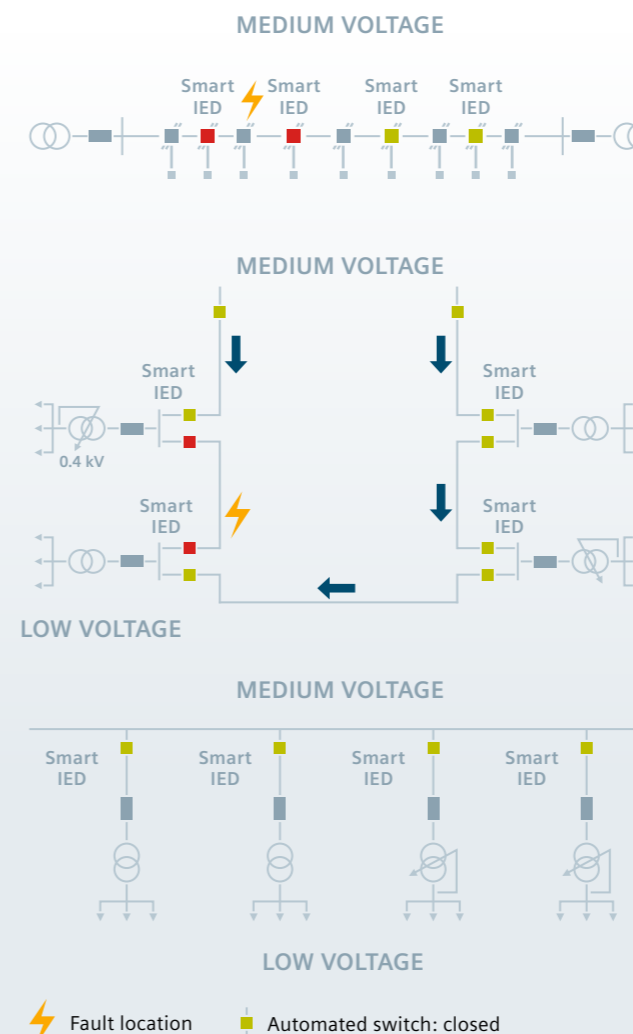
- Improved reliability
- Increased efficiency
- Cost savings

Siemens solutions with expertise: A good choice in every respect

Economic and technical advantages

With Siemens products and solutions for distribution automation, you benefit from wide-ranging expertise in every respect. Siemens offers a complete portfolio for network monitoring, network quality recording, fault recording, phasor measurement, and system software applications.

Power Quality and Measurements supports energy suppliers and consumers with solutions for precise measurement, acquisition and signaling of information. This information is needed for continuously determining, adjusting and improving the network quality. It's always the right solution – also for your application.



Fault Location, Isolation & Service Restoration (FLISR)

Feeder

Intelligent field devices (smart IEDs) are utilized to automatically locate and isolate faults and set the healthy parts of the feeder back to service within less than half a second.

RMU

RMUs (Ring Main Units) are equipped with intelligent field devices (smart IEDs) for fast service restoration in case a fault occurs in the power supply network. Based on the load situation and available back-up strategies, the IEDs isolate the fault and close a loop or restore the services by using an alternative feeder.

Monitoring and Analysis

Intelligent devices distributed in the electrical network provide important information about the current network situation. Measured values like voltage, current, frequency, etc. are used to display the behavior of the power supply network. Based on the data, critical situations can be identified at a very early state and appropriate counter measures can be initiated in order to avoid an outage.

Greater transparency in the distribution network: For optimized network quality

SIPROTEC 7SC80: More than just overvoltage protection

The SIPROTEC 7SC80 is used for protection and automation of medium voltage distribution networks, regardless of whether they are solidly grounded systems, grounded via a low resistance, insulated or compensated.

Technical highlights:

- Comprehensive physical and interactive Web-based HMI
- Conventional and unconventional LPD CT & VT inputs
- Integrated GPS receiver & battery manager
- According to NERC/CIP and BDEW white paper security requirements
- Various Ethernet-based communication modules and protocols

Your advantages:

- Powerful and intuitive configuration and test tool FASE/FAST
- Cost saving, reduced crew sizes, locate faults faster within less time
- Improved availability thanks to fast operation using IEC 61850
- Decentralized operation, without the need of a control center
- Multifunctional device (Volt/VAR, switch, recloser)



Reyrolle 7SR224: Distribution network automation

The 7SR224 digital protection and control device used in conjunction with the 3AD vacuum recloser, the switch for overhead line systems, provides the perfect combination for switching load and short-circuit currents.

Technical highlights:

- Independent Phase Fault, Earth Fault and Sensitive Earth Fault autoreclose sequences
- Automation functions (e.g. loss of voltage, single-triple, loop automation)
- Large number of protection elements
- Local and remote control functions
- Various communication protocols comprising IEC 61850

Your advantages:

- Reliable unattended operation
- Data logging & fault report functions allow post fault analysis
- Individual automation applications based on ReyLogic
- Flexible to work with switch units of different vendors
- Preconfigured parameters reduce installation costs



SICAM CMIC: The intelligent cube for distribution networks

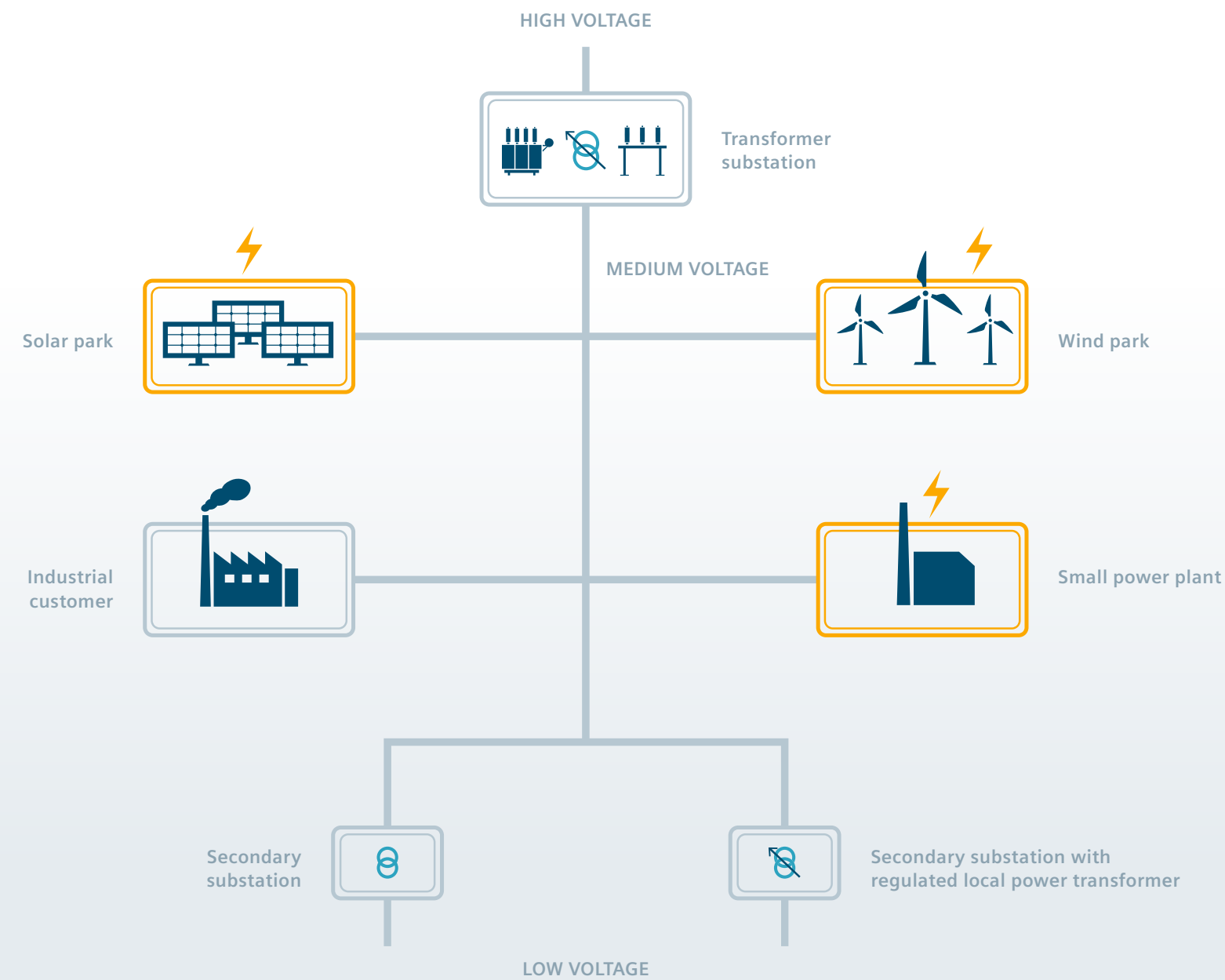
SICAM CMIC is the optimum solution for incorporating small stations in modern control systems.

Technical highlights:

- SD card contains parameters, firmware, user programs, and archive data
- Provides four communication interfaces (2 x RJ45, 1 x RS232, 1 x RS485) and standard protocols, IEC 61850
- Expandable with SICAM I/O modules
- Equipped with crypto chip
- Local display and function keys

Your advantages:

- Time and cost saving thanks to simple maintenance without the need of a specialist
- Flexible application and adaptation to existing communications infrastructure
- Designed for distribution automation, so can be used universally
- State-of-the-art protection against hacking
- All data in view at all times



SICAM FCM: The finger on the pulse of your distribution network

SICAM FCM (Feeder Condition Monitor) with low-power sensors in compliance with IEC 60044* is at home in any station. It covers all switchgear types up to 1,250 A as well as grounded, insulated and compensated networks.

Technical highlights:

- First short-circuit indicator to use IEC 60044-7/-8 standardized sensors
- Selective fault information with direction indicator
- Network condition monitoring
- Load flow monitoring
- High-quality measuring technology with 99% accuracy

Your advantages:

- No time-consuming calibration and adjustment to primary quantities, easy to install
- Fast and precise localization of faults
- Early detection of overload situations
- Load curves for network planning
- Basis for "self-healing" applications

* IEC 61869-10 New Proposal



SICAM P855: Multifunctional and reliable

The SICAM P855 is a multifunctional measuring device for the acquisition, display and reporting of power quality data in electrical power systems.

Technical highlights:

- Input measuring circuits: 4 x AC voltage, 3 x AC alternating current up to max. 10 A
- Measured value acquisition according to power quality standard IEC 61000-4-30 incl. flicker
- Integrated average value, event and fault recorder functionality
- Communication via Ethernet LAN 10/100 BASE-T, IEC 61850 Edition 2; or serial: MODBUS RTU and IEC 60870-5-103
- Data export in PQDIF and COMTRADE format
- Full graphics display incl. operation via function keys

Your advantages:

- Timely identification of problems in the supply quality
- Automatic power quality reporting in accordance with EN 50160
- Simple operation by means of integrated Web server for parameterization, fault diagnosis, analysis and reporting
- Measured values from defined standard measurement methods are comparable between manufacturers
- Guaranteed interoperability through use of standard interfaces and standard protocols



SICAM MMU: The one for almost everything

The SICAM MMU (Measurement and Monitoring Unit) is a compact measurement device for recording all relevant electrical parameters in electrical power systems.

Technical highlights:

- Input measurement circuits: 4 x AC voltage, 3 x AC alternating current up to max. 10 A
- Measured values: True RMS for U and I, f, P, Q, S, cos φ, energy, harmonics
- 2 individually parameterizable binary outputs, 4 status LEDs
- Communication via Ethernet LAN 10/100 BASE-T, HTTP, IEC 60870-5-104, and MODBUS TCP
- Real-time clock (RTC), network synchronization via NTP
- Integrated Web server for parameterization and diagnostics

Your advantages:

- Flexible use thanks to wide current measuring range (up to max. 10 A)
- High accuracy due to low measurement error
- Simple parameterization through integrated Web server
- Secure data storage thanks to battery buffering
- High EMC immunity

