



zenon
by COPA-DATA

zenon Energy Edition

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zenon Software Platform

COPA-DATA is an independent manufacturer of software for industrial and energy automation. Its products are used in the manufacturing and energy industries for the automated control, monitoring, and optimization of machines, equipment, and power grids. COPA-DATA combines a wealth of experience in automation with new opportunities for digital transformation and helps customers to put their strategies into practice in an easier, faster, and more purposeful way.

zenon is the software platform that makes the engineering and automated operation of manufacturing and infrastructure equipment incredibly easy.

COMPREHENSIVE SOFTWARE FOR MANUFACTURING AND ENERGY

zenon ensures that equipment runs reliably, flexibly and efficiently. In doing so, you use the abilities of this comprehensive software platform to connect all relevant areas, from project creation through to maintenance. The result is a notable increase in overall equipment effectiveness.

EMPOWERING PEOPLE

Using zenon, all users – from production through to management – can create synergies and make a lasting impact on business in a measurable and positive way.

ENABLING THE DIGITAL TRANSFORMATION

The zenon software platform provides one integrated environment that combines data recording, machine operation, and business intelligence. This helps businesses to maintain a competitive edge throughout the digital transformation.

zenon for your challenges

ANALYTICS AND REPORTING

One of the greatest challenges of the rising flood of data is in evaluating the obtained information and drawing the correct conclusions from it. zenon enables both simple calculations and comprehensive key performance indicators to be generated.

VISUALIZATION AND CONTROL

zenon reduces complexity for operators and makes it possible to make well-founded decisions. The software platform visualizes wide-ranging processes in real time to give operators control over equipment, whether individual machines, entire production locations, or spanning the whole company.

DATA MANAGEMENT

zenon makes linking and comparing data possible for entire operations.

DATA ACQUISITION

Operational data is often not stored centrally, leaving the potential for process optimization untapped. Using zenon, data is systematically collected, processed and transferred to other systems as necessary. Heterogeneous hardware landscapes can be easily connected and expanded. This is made possible by numerous drivers and open interfaces.

APPLICATION ENGINEERING AND MAINTENANCE

No programming skills are required to create projects, even multi-location projects or those that require redundancy. Projects are configured by setting parameters, supported by configurable wizards. This even applies to the maintenance and extension of existing applications, regardless of the software version originally used.

Licensing possibilities

HARDWARE DONGLE

A hardware dongle is connected directly to the PC on which zenon is installed.

- ▶ Easy handling.
- ▶ License can be transferred from one computer to another by reinserting the hardware dongle.
- ▶ Easy operation in the event of replacement of a hard drive or other hardware.

SOFTWARE DONGLE

A software dongle is created automatically on the computer. It is based on the computer hardware. If the hardware changes too often, the license becomes invalid.

- ▶ The license cannot be stolen; no dongle gets "lost".
- ▶ The license is computer related. If the computer hardware or the operating system is changed, the license must first be returned and reactivated after the change (a maximum of three times, otherwise charges are payable).
- ▶ Practical for notebooks: The license is always present.

NETWORK DONGLE

A certain quantity of licenses are activated on a central dongle in the network. The dongle can be implemented as a hardware dongle or as a software dongle.

- ▶ One central dongle manages several licenses within one network simultaneously.
- ▶ If the maximum number of simultaneous licenses is exceeded, zenon is started in Demo mode (Concurrent User Licensing).

ATTENTION!

Fees are applicable if a new license is issued.

Ascertaining the license size

To ascertain the license size, the total number of TAGs (= variables) of all PLC and Bus drivers used has to be considered.

Variables based on following drivers do not count for the TAG calculation:

- ▶ Internal driver*
- ▶ System driver
- ▶ Mathematics driver
- ▶ Simulator driver and
- ▶ Alternative Datapoint driver

*Internal driver -> If for the internal driver, status management is activated, the variables of the internal driver also count towards the TAG calculation.

zenon Energy Edition

International system integrators use zenon Energy Edition (EE) as a reliable and open platform, with special features for the Energy Industry that saves valuable project configuration time. For both large and small power companies, zenon Energy Edition delivers outstanding automation control, performance, stability and scalability.

ZENON & COPA-DATA

COPA-DATA as one of the biggest independent software vendors offers you zenon, the most scalable and modular automation software. Thus, we are able to fulfill your needs excellently, and secure your investment for a long time. Moreover, zenon ensures your future competitive advantage with its trailblazing technology.

COMPETENCE CREATES CONFIDENCE

COPA-DATA has over 30 years of experience in Windows® based HMI/SCADA solutions. With zenon we offer you an award winning automation software for HMI (Human Machine Interface) and SCADA (Supervisory Control and Data Acquisition). The Energy Edition is tailored to the needs of electricity production, transfer and distribution.

Supported desktop operating systems

Supported desktop operating systems and minimum required Windows service or build number:

Operating system	zenon Editor	zenon Runtime	zenon Web Server	zenon Web Client	zenon HTML Web Engine	zenon Logic Runtime	zenon Analyzer Server
Windows 7 (Professional, Enterprise and Ultimate version, x86 and x64 versions).	Cannot run	SP 1	SP 1	SP 1	SP 1	SP 1	Cannot run
Windows Embedded Standard 7 (if all necessary operating system components exist).	Cannot run	SP 1	SP 1	SP 1	SP 1	SP 1	Cannot run
Windows 8 and 8.1 (Standard, Professional, Enterprise version, x86 and x64 versions)	Only x64 from SP 0	SP 0	SP 0	SP 0	SP 0	SP 0	Only x64 from SP 0
Windows Embedded 8 Standard (if all necessary operating system components exist).	Cannot run	SP 0	SP 0	SP 0	SP 0	SP 0	Cannot run
Windows 10 (Home, Pro, Enterprise, Education, Pro Education, Enterprise LTSB, IoT Enterprise, Pro for Workstations)	Only x64 from 1507	1507	1507	1507	1507	1507	Only Home, Pro and Enterprise (each x64) from 1507

- ▶ All operating systems are supported in the multi-lingual version.
- ▶ Windows RT 8 and Windows RT 8.1 are not supported due to the system.
- ▶ Itanium processors are not supported for any operating system.

Supported server operating system

Supported desktop operating systems and minimum required Windows service pack/version:

Server operating system	zenon Editor	zenon Runtime	zenon Web Server	zenon Web Client	zenon HTML Web Engine	zenon Logic Runtime	zenon Analyzer Server
Windows Server 2008 R2 (All editions with the exception of Core)	Cannot run	SP 1	SP 1	SP 1	SP 1	SP 1	Cannot run
Windows Server 2012 and 2012 R2 (All editions with the exception of Core)	SP 0	SP 0	SP 0	SP 0	SP 0	SP 0	SP 0
Windows Server 2016 (All editions with the exception of Core)	10.0.14393	10.0.14393	10.0.14393	10.0.14393	10.0.14393	10.0.14393	10.0.14393
Windows Server 2019 (All editions with the exception of Core)	10.0.17763	10.0.17763	10.0.17763	10.0.17763	10.0.17763	10.0.17763	10.0.17763

zenon Energy Edition

Server License

ZENON ENERGY EDITION SERVER

Delivery includes:

- ▶ Runtime with direct connection to hardware (e.g. IEDs)

The zenon Energy Edition Server license contains:

- ▶ Alarm Areas
- ▶ Interlocking
- ▶ Command Processing
- ▶ Programming Interface VBA/C#/VB.NET
- ▶ Automatic Line Coloring (ZM-ALC incl. Transformer)
- ▶ Historian with SQL Export (ZM-ARCHEXP)
- ▶ Extended Trend (ZM-ETM)
- ▶ Recipegroup Manager (ZM-RGM)
- ▶ Reporting (read-only access)
- ▶ zenon Logic Runtime (same TAG amount as with EE Server)

Included zenon drivers:

- ▶ IEC 60870-5-101/-104 driver (ZT-IEC870)
- ▶ IEC 60870-5-103 driver (ZT-IEC870-103)
- ▶ DNP3 NG driver (ZT-DNP3_TG)
- ▶ IEC 61850 driver (ZT-IEC61850)
- ▶ IEC 61400-25 driver (ZT-IEC61400-25-4-C)
- ▶ IEC 62056-21 driver (ZT-IEC62056)
- ▶ Modbus Energy driver (ZT-MODBUS_E)

The TAG limitation is oriented on external connections. Internal calculations are not counted for the license scale.

Item	Item No.
zenon EE Server 1500 TAGs	ZEE8-SRV-1500
zenon EE Server 4500 TAGs	ZEE8-SRV-4500
zenon EE Server 7000 TAGs	ZEE8-SRV-7000
zenon EE Server unlimited TAGs	ZEE8-SRV-UNLMTD
Variable Expansion	ZEE8-EXP
Change from Client to Server license	ZEE8-SRV-UP

Only for PC platforms with Windows Embedded (Windows Embedded Compact (CE) not supported):

zenon EE Server 750 TAGs emb	ZEE8-SRV-750E
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Included zenon Logic drivers:

- ▶ IEC 61850 Client (ST-850CI)
- ▶ IEC 61850 Server + GOOSE (ST-850SeGo)
- ▶ IEC 60870 Master (ST-870M101104)
- ▶ IEC 60870 Slave (ST-870S101104)

Options:

- ▶ Development Environment (ZEE8-ED, ZEE8-ED-SA)
- ▶ Load Management (ZM-EMS)
- ▶ Process Recorder (ZM-PR)
- ▶ Process Gateways (ZGW-XY)
- ▶ Reporting (write access) (ZM-REPORT)
- ▶ Message Control (ZM-MC)
- ▶ Command Sequencer (ZM-CS)
- ▶ Process Recorder (ZM-PR)
- ▶ Everywhere Server (ZM-EVWH)
- ▶ Historian SQL Server Interface (ZSQLSRV)
- ▶ GIS Editor and Control (ZM-GIS)
- ▶ PLC and bus driver - see "Standard" price list
- ▶ Dongle - (DIV-DONG-USBCM)

zenon Energy Edition

Client License

ZENON ENERGY EDITION CLIENT

Delivery includes:

- ▶ Runtime WITHOUT direct connection to hardware (e.g. IEDs)

The zenon Energy Edition Client contains:

- ▶ Alarm Areas
- ▶ Interlocking
- ▶ Command Processing
- ▶ Programming Interface VBA/C#/VB.NET
- ▶ Automatic Line Coloring (ZM-ALC incl. Transformer)
- ▶ Historian with SQL Export (ZM-ARCHEXP)
- ▶ Extended Trend (ZM-ETM)
- ▶ Recipegroup Manager (ZM-RGM)
- ▶ Reporting (read-only access)

The TAG limitation is oriented to external connections of the server. Internal calculations are not counted for the license scale.

If the Energy Edition client is used in combination with an integration project, up to 64 TAGs are possible as a direct connection to hardware.

Options:

- ▶ Development environment (ZEE8-ED, ZEE8-ED-SA)
- ▶ zenon Logic (ZLO8-OPEN)
- ▶ Process Gateways (ZGW-XY)
- ▶ Reporting (Write Access) (ZM-REPORT)
- ▶ Dongle (DIV-DONG-USBCM)

Item	Item No.
zenon EE Client 1500 TAGs	ZEE8-CLI-1500
zenon EE Client 4500 TAGs	ZEE8-CLI-4500
zenon EE Client 7000 TAGs	ZEE8-CLI-7000
zenon EE Client unlimited TAGs	ZEE8-CLI-UNLMTD
Variable Expansion	ZEE8-EXP

zenon Energy Edition

DMS Package - redundant server license

ZENON ENERGY EDITION DMS PACKAGE REDUNDANT SERVER

Delivery includes:

- ▶ Runtime with direct connection to hardware (e.g. IEDs)

The zenon Energy Edition DMS Package server license includes:

- ▶ 2x ZEE8-SRV-100K/UNLMTD
- ▶ All modules of the EE Server
- ▶ Topology (ZM-TOP-DMS)
- ▶ Process Recorder (ZM-PR)
- ▶ Command Sequencer (ZM-CS)
- ▶ Loadflow Calculation (ZM-LFC-DMS)
- ▶ State Estimator (ZM-SE-DMS)
- ▶ GIS Editor (ZM-GIS)
- ▶ Historian SQL Server Interface (ZSQLSRV)
- ▶ Load Management (ZM-EMS)
- ▶ Reporting (ZM-REPORT)

Included zenon drivers:

- ▶ IEC 60870-5-101/-104 driver (ZT-IEC870)
- ▶ IEC 60870-5-103 driver (ZT-IEC870-103)
- ▶ DNP3 NG driver (ZT-DNP3_TG)
- ▶ IEC 61850 driver (ZT-IEC61850)
- ▶ IEC 61400-25 driver (ZT-IEC61400-25-4-C)
- ▶ IEC 62056-21 driver (ZT-IEC62056)
- ▶ Modbus Energy driver (ZT-MODBUS_E)

The TAG limitation is oriented on external connections. Internal calculations are not counted for the license scale.

Options:

- ▶ Development environment (ZEE8-ED, ZEE8-ED-SA)
- ▶ Process Gateways (ZGW-XY)
- ▶ Message Control (ZM-MC)
- ▶ Everywhere Server (ZM-EVWH)
- ▶ Energy Communication Options (see page 15)
- ▶ PLC and Bus Drivers (see "standard" price list)
- ▶ Dongle (DIV-DONG-USBCM)

Item	Item No.
zenon DMS Server 100k TAGs dedicated	ZDMS8-SRV-100K-DS*
zenon DMS Server unlimited TAGs dedicated	ZDMS8-SRV-UNLMTD-DS*
Server as full workstation	
zenon DMS Server 100k TAGs	ZDMS8-SRV-100k
zenon DMS Server unlimited TAGs	ZDMS8-SRV-UNLMTD

Framework conditions for supply:

- ▶ *The included servers are dedicated servers: only one screen can be displayed. For full operation, an upgrade to a full workstation is necessary (ZDMS8-SRV-100k for example).
- ▶ DMS Server Package only available in combination with at least one DMS client license (ZDMS8-CLI-UNLMTD).

Included zenon Logic drivers:

- ▶ IEC 61850 Client (ST-850CI)
- ▶ IEC 61850 Server + GOOSE (ST-850SeGo)
- ▶ IEC 60870 Master (ST-870M101104)
- ▶ IEC 60870 Slave (ST-870S101104)

zenon Energy Edition

DMS Package - Client License

ZENON ENERGY EDITION DMS PACKAGE CLIENT

Item	Item No.
zenon DMS Client unlimited TAGs	ZDMS8-CLI-UNLMTD

Delivery includes:

- ▶ Runtime WITHOUT direct connection to hardware (e.g. IEDs)

The zenon Energy Edition Client contains:

- ▶ Alarm Areas
- ▶ Interlocking
- ▶ Command Processing
- ▶ Programming Interface VBA/C#/VB.NET
- ▶ Automatic Line Coloring (ZM-ALC incl. Transformer)
- ▶ Historian with SQL Export (ZM-ARCHEXP)
- ▶ Extended Trend (ZM-ETM)
- ▶ Recipegroup Manager (ZM-RGM)
- ▶ Reporting (read-only access)

The TAG limit is based on the servers' external connections. Internal calculations are not counted for the license scale.

If the DMS client is used in combination with an integration project, up to 64 TAGs are possible as a direct connection to hardware.

Options:

- ▶ Development environment (ZEE8-ED, ZEE8ED-SA)
- ▶ zenon Logic Runtime unlimited (ZLO8-UNLMTD)
- ▶ Process Gateways (ZGW-XY)
- ▶ Reporting (Write Access) (ZM-REPORT)
- ▶ Dongle (DIV-DONG-USBCM)

zenon Energy Edition

Development environment

ZENON ENERGY EDITION EDITOR OPTION FOR SERVER OR CLIENT

Delivery includes:

Development environment for creating and maintaining zenon projects. All modules of a licensed EE server or EE client are included.

Item	Item No.
Energy Edition Editor Option for Server or Client	ZEE8-ED

License:

zenon Energy Edition Editor running on the same computer as the Server or Client. Server/Client license number required for order.

zenon Energy Edition

Development environment

ZENON ENERGY EDITION EDITOR STANDALONE VERSION

Delivery includes:

Development environment for creating and maintaining zenon projects. All modules of a licensed EE server or EE client are included.

Options for Editor:

- ▶ Dongle (DIV-DONG-USBCM)

Item	Item No.
Energy Edition Editor Standalone version	ZEE8-ED-SA

License:

zenon Energy Edition Editor runs on a separate computer. Valid server license number required for order.

zenon Energy Edition

Development package

ZENON ENERGY EDITION EE DEV

Delivery includes:

zenon Energy Edition Editor with zenon Energy Edition Server

Item	Item No.
zenon Energy Edition Development Environment	ZEE8-DEV

The following items are included:

- ▶ zenon EE Server, unlimited Tags (ZEE8-SRV-UNLMTD)
- ▶ EE Editor (ZEE8-ED)
- ▶ Reporting (Report Generator/Report Viewer) (ZM-REPORT)
- ▶ Message Control (ZM-MC)
- ▶ Industrial Performance Analyzer (ZM-IPA)
- ▶ PLC Diagnosis (ZM-PLC-DIAG)
- ▶ Industrial Maintenance Manager (ZM-IMM)
- ▶ Gateways, (OPC / OPC UA Server, Modbus Slave, SNMP, SQL, DEC, DNP3, IEC60870, ICCP/ Tase.2, Azure Gateway)
- ▶ zenon Logic Workbench Pro (IEC 61131-3)
- ▶ zenon Logic Runtime unlimited (ZLO8-UNLMTD)
- ▶ Historian SQL Server Interface (ZSQLSRV)
- ▶ Load Management (ZM-EMS)
- ▶ 3D Integration (ZM-3D)
- ▶ GIS Editor and Control (ZM-GIS)
- ▶ Command Sequencer (ZM-CS)
- ▶ Process Recorder (ZM-PR)
- ▶ Everywhere Server (ZM-EVWH)
- ▶ All PLC and bus drivers - see "Standard" price list

zenon Energy Edition

DMS Development package

ZENON ENERGY EDITION

DMS DEV

Delivery includes:

zenon Energy Edition Editor with zenon Energy Edition Server

Item	Item No.
DMS Development Environment	ZDMS8-DEV

The following items are included:

- ▶ zenon EE Server unlimited TAGs (ZEE8-SRV-UNLMTD)
- ▶ EE Editor (ZEED8)
- ▶ Reporting (Report Generator/Report Viewer) (ZM-REPORT)
- ▶ Message Control (ZM-MC)
- ▶ Industrial Performance Analyzer (ZM-IPA)
- ▶ PLC Diagnosis (ZM-PLC-DIAG)
- ▶ Industrial Maintenance Manager (ZM-IMM)
- ▶ Gateways, (OPC / OPC UA Server, Modbus Slave, SNMP SQL, DEC, DNP3, IEC60870, ICCP/ Tase.2, Azure Gateway) (ZGW-XX)
- ▶ zenon Logic Workbench Pro (IEC 61131-3)
- ▶ zenon Logic Runtime unlimited (ZLO8-UNLMTD)
- ▶ Historian SQL Server Interface (ZSQLSRV)
- ▶ Load Management (ZM-EMS)
- ▶ 3D Integration (ZM-3D)
- ▶ GIS Editor and Control (ZM-GIS)
- ▶ Command Sequencer (ZM-CS)
- ▶ Process Recorder (ZM-PR)
- ▶ Everywhere Server – Smartphone Integration (ZM-EVWH)
- ▶ Topology DMS (ZM-TOP-DMS)
- ▶ Loadflow Calculation (ZM-LFC-DMS)
- ▶ State Estimator (ZM-SE-DMS)
- ▶ SAP Interface (ZM-SAP)
- ▶ Production & Facility Scheduler (ZM-PFS)
- ▶ All PLC and bus drivers (see "Standard" price list)

zenon Energy Edition

Communication Options

for zenon Supervisor

IEC 61850

The communication between driver and IED is based on the IEC 61850 protocol, using server client services via TCP/IP (profile A1/T1). The driver acts as Client during communication. The driver supports IED time stamping and IED Quality. The IEC 61850 driver is TÜV SÜD certified (Edition 2).

Item	Item No.
IEC 61850 connection	ZT-IEC61850

License:

Included in EE Server license.

IEC 61400-25-4 ANNEX C

The communication between driver and PLC is based on the IEC 61850 MMS protocol, using server/client services via TCP/IP (profile A1/T1). The driver acts as Client during communication. The driver supports IED time stamping and IED Quality.

Item	Item No.
IEC 61400-25-4 Annex C connection	ZT-IEC61400-25-4-C

License:

Included in EE Server license.

IEC 60870-5-101/104

Driver for the communication according to IEC 60870-5-101 (serial) and the IEC 60870-5-104 (TCP/IP) protocol. Driver acts as master (controlling station).

Item	Item No.
IEC 60870-5-101/104 driver	ZT-IEC870

License:

Included in EE Server license.

IEC 60870-5-103

Driver for IEC 60870-5-103 communication (for protection relays). Driver acts as Master.

Item	Item No.
IEC 60870-5-103 connection	ZT-IEC870-103

License:

Included in EE Server license.

zenon Energy Edition

Communication Options

for zenon Supervisor

IEC 62056-21

Driver for read out of values from energy meters supporting DLMS/COSEM. The driver supports mode C of IEC communication.

Item	Item No.
IEC 62056-21 connection	ZT-IEC62056

License:

Included in EE Server license.

MODBUS ENERGY

Open Modbus TCP/IP driver with the following differences compared to the standard Modbus driver:

- ▶ Channel bundling
- ▶ Improved communication with gateways
- ▶ Read and write only for Holding Register
- ▶ Supports only Open Modbus TCP/IP protocol

Sequence of events (SOE) for:

- ▶ AREVA MiCOM 126/127
- ▶ GE Multilin F650 and GE UR-series
- ▶ ICE NPx800
- ▶ Schneider MODICON TSX Premium (COSTRONIC Function block required)

Item	Item No.
Modbus Energy Driver	ZT-MODBUS_E

License:

Included in EE Server license.

IEEE 1815 DNP3

Driver for communication according to DNP3 (serial and TCP/IP). Driver acts a master for connection to DNP3 outstations.

Item	Item No.
DNP3 Driver	ZT-DNP3_TG

License:

Included in EE Server license.

For more communication options please refer to the zenon standard price list or ask your local sales representative.

zenon Energy Edition

Process Gateways for Server or Client

The Process Gateway serves as an interface to higher-level systems. Numerous interfaces and protocols are available for unidirectional as well as bidirectional data exchange.

MODBUS SLAVE

Bidirectional communication with Modbus masters. The Process Gateway acts as a Modbus-compatible PLC in the process. Modbus RTU is used as a protocol for serial connections and Open Modbus TCP is used for Ethernet connections.

Item	Item No.
Process Gateway – Modbus Slave	ZGW-Modbus

OPC UA SERVER

Bidirectional communication to OPC UA clients. The following are supported:

- ▶ Data access to connect zenon process variables
- ▶ Alarms & Conditions for read access to zenon alarms
- ▶ Historical data access for read access to the zenon Historian

Item	Item No.
Process Gateway – OPC UA Server	ZGW-OPCUA

DNP3 SLAVE/OUTSTATION

Bidirectional communication with DNP3 masters. The Process Gateway acts as a DNP3-compatible PLC or RTU in the process.

Item	Item No.
Process Gateway – DNP3 Slave	ZGW-DNP3

SNMP SERVER/AGENT

The SNMP Server allows for the integration of the control system into the Network Management Systems (NMS) running in a company. This makes it possible to evaluate, display and control parts of the process image of the process control system in a NMS.

Item	Item No.
Process Gateway – SNMP Server	ZGW-SNMP

IEC 60870 SLAVE

Bidirectional communication with IEC-60870 masters. Here, the Process Gateway acts as an IEC 60870 101/104-compatible PLC.

Item	Item No.
Process Gateway – IEC60870 Slave	ZGW-IEC60870SL

zenon Energy Edition

Process Gateways for Server or Client

ICCP/TASE.2/IEC 60870-6 CONNECTION

Communication interface for the Inter-Control Center Communication protocol

The ICCP/TASE.2 Process Gateway acts as a server for establishment of the connection. This means it does not establish the connection by itself but waits for a client to do the initial steps. Once the connection is set up the ICCP/TASE.2 Process Gateway sends data as a server and receives data as a client.

Item	Item No.
Process Gateway – ICCP/TASE.2/IEC 60870-6	ZGW-ICCP

AZURE GATEWAY

Unidirectional communication (writing) of online values from zenon Runtime to any desired Microsoft Azure Service Bus queue.

Item	Item No.
Process Gateway - MS Azure	ZGW-AZU

zenon Logic

for client

ZENON LOGIC RUNTIME

Standalone soft PLC or extended SCADA logic TAG support for Windows-based (I)PC systems. With the integration of the IEC 61131-3 programming environment with zenon, you can create PLC and SCADA projects in one environment.

Delivery includes:

- ▶ Real time soft PLC for deterministic program execution of IEC 61131-3 programs.
- ▶ All I/O drivers for the PC in price group "T" are supplied with the zenon Logic Runtime (see driver list); see the product documentation for restrictions during the operation of real time soft PLC or SCADA logic.
- ▶ Networked zenon Logic systems via TCP/IP network (binding)
- ▶ zenon Logic Monitoring Builder & Monitoring Viewer included

Item	Item No.
zenon LO RT Unlimited	ZLO8-UNLMTD

Option:

- ▶ Dongle - DIV-DONG-USBCM
- ▶ zenon Logic communication options (see zenon Logic - communication options (on page 23))

Attention:

This license requires an existing zenon Energy Edition Server or zenon Energy Edition Client license or can only be ordered in combination with a zenon Energy Edition Server or zenon Energy Edition Client license.

Real-time system not supported in virtual machines.

zenon Logic

Communication options for client

IEC 61850 CLIENT FOR ZENON LOGIC

zenon Logic IEC 61850 client driver

The driver supports the following functions:

- ▶ Browse the data model (logical devices, logical nodes, data objects and data attributes)
- ▶ Read and write Data values
- ▶ Read and write Data Set values
- ▶ Dynamically create and delete Data Sets
- ▶ Control Model (all models)
- ▶ Reporting (buffered and unbuffered)
- ▶ File transfer

Item	Item No.
IEC 61850 Client	ST-850Cl

IEC 61850 SERVER INCLUDING GOOSE FOR ZENON LOGIC

zenon Logic IEC 61850 Server driver.

The driver supports the following IEC 61850 features:

- ▶ Multiple connections through IEC 61850 clients via TCP/IP
- ▶ Browse the data model (logical devices, logical nodes, data objects and data attributes)
- ▶ Read and write Data values
- ▶ Read and write Data Set values
- ▶ Dynamically create and delete Data Sets
- ▶ Control Model (all models)
- ▶ Reporting (buffered and unbuffered)
- ▶ File transfer
- ▶ GOOSE Publisher & Subscriber

Item	Item No.
IEC 61850 Server	ST-850SeGo

zenon Logic

Communication options for client

IEC 60870-5-101/104 SLAVE FOR ZENON LOGIC

zenon Logic Slave driver for communication with an IEC 60870-5-101 or IEC 60870-5-104 Master.

Item	Item No.
IEC 60870-5-101/104 Slave	ST-870S101104

IEC 60870-5-101/104 MASTER FOR ZENON LOGIC

zenon Logic Master driver for communication with an IEC 60870-5-101 or IEC 60870-5-104 Slave.

Item	Item No.
IEC 60870-5-101/104 Master	ST-870M101104

DNP3 SLAVE/OUTSTATION

zenon Logic Outstation driver for communication with a DNP3 Master.

Item	Item No.
DNP3 Slave/Outstation	ST-K5BusDNP3SCD

DNP3 MASTER

zenon Logic Master driver for communication with a DNP3 Master.

Item	Item No.
DNP3 Master	ST-K5BusDNP3MCD

IEEE C37.118 CLIENT

Driver for IEEE C37.118 Synchrophasor communication with PMUs and PDCs.

Item	Item No.
IEEE C37.118 Client	ST-IEEEEC37118CI

IEEE 61850-90-5 CLIENT

Driver for IEC 61850-90-5 Synchrophasor communication with PMUs and PDCs. Supports Routable Sampled Values. Connection possible to GE Multilin N60 and L90.

Item	Item No.
IEEE 61850-90-5 client	ST-IEC850905CI

zenon Energy Edition

Optional Modules

TOPOLOGY

The optional Topology module includes all the functionality of Automatic Line Coloring (ALC) and also:

- ▶ The procedural elements Generator and Disconnecter
- ▶ Topology check e.g.: voltage to ground-interlocking and disconnecter under load-interlocking
- ▶ Ground fault location (impedance based)
- ▶ Ground fault location

PROCESS RECORDER

With the optional Process Recorder module, processes that have already happened can be played back in process screens. To do this, the Process Recorder records data in its own archive system. This data is then transferred in the simulation mode and fed into the process screens. Navigation bars can be used to skip forwards or backwards in time, or the screen is played back like a video.

COMMAND SEQUENCER

With the optional Command Sequencer module, the user can create, change and teach stacked programs of switching commands in Runtime and execute these with the click of a mouse.

Item	Item No.
Topology	ZM-TOP-DMS

License:

Has to be licensed on the Server/Standby and zenon Editor. The module automatically licenses each connected client.

Item	Item No.
Process Recorder	ZM-PR

License:

Has to be licensed on the Server, Standby and zenon Editor. The module automatically licenses each connected client. This module automatically activates the Project Simulation module.

Item	Item No.
Command Sequencer	ZM-CS

License:

Has to be licensed on the Server, Standby and zenon Editor. The module automatically licenses each connected client. This module automatically activates the Project Simulation module.

zenon Energy Edition

Optional Modules

LOAD FLOW CALCULATION

The load flow calculation provides information on load distribution over a mesh network. To do this, the measured points of all generators and all loads are used. The load and distribution to the equipment parts in between is calculated.

Load flows can thus be displayed and the safety when executing switching commands can be increased: The load flow calculation provides advance information in order to prevent a possible overload of equipment parts (lines, cables or transformers).

STATE ESTIMATOR

The State Estimator calculates the distribution of the load flow over a mesh network using any desired measured points in the network. A mathematical approximation method of the non-measured parts of the network is used to determine voltage, current, phase angle, active and reactive power. Firstly, load flows of non-measured parts of the network can thus be displayed. Secondly, the safety when executing switching commands can be increased in that the module provides advance information about switching actions. A possible overload of equipment parts (lines, cables or transformers) is thus predicted.

Item	Item No.
Load Flow Calculation	ZM-LFC-DMS

License:

Has to be licensed on the Server/Standby and zenon Editor. The module automatically licenses each connected client.

Item	Item No.
State Estimator	ZM-SE-DMS

License:

Has to be licensed on the Server/Standby and zenon Editor. The module automatically licenses each connected client.

zenon Energy Edition

Optional Modules

LOAD MANAGEMENT

The Load Management is a tool for the support of the economical management. It is for implementation of energy supply management for small and medium-sized power supply companies and also for industrial firms whose energy supply is arranged by special contracts. Energy trend calculations are used as a significant aid; these serve as the basis for automated optimization of energy consumption.

Functionalities:

- ▶ Forecast (short-term forecast):
To avoid load peaks and to automate load shedding.
- ▶ Optimization:
Optimization of the averaged energy consumption of a billing period.

Item	Item No.
Load Management	ZM-EMS

License:

Has to be licensed on the Server/Standby and zenon Editor.

GIS EDITOR AND CONTROL

GIS control can display map material online and offline (cached). A separate layer of markers, lines and areas is created by the GIS editor. zenon information such as limit value colors and ALC information can be linked to the lines and areas. There is the possibility to use KMZ files.

Item	Item No.
GIS Editor and Control	ZM-GIS

License:

Has to be licensed on the Server/Standby and zenon Editor. The module automatically licenses each connected client.

zenon Energy Edition

Optional Modules

HISTORIAN SQL SERVER INTERFACE

The Historian SQL Server Interface allows transparent evacuation of archive data into any desired OLE DB-compatible SQL database.

When storing data in an SQL database, archive data can be written directly to an SQL database by the Historian module after a freely-definable time.

The reference to the original archive data is retained. As a result, numerous zenon modules (ETM, Report Generator, etc.) can transparently access data evacuated in this way, i.e. display archive data as if it were still stored in the internal zenon archives.

Other functionality:

Archive data, alarms and entries to the Chronological Event List can be exported directly to any desired SQL database. There must be an OLE DB connection as an interface to the SQL database.

Evacuation to Microsoft Azure:

As an alternative to evacuation to OLE-DB-compatible databases, the data from zenon Historian can be evacuated to the Microsoft Azure IoT Hub directly and other applications can be provided.

Included:

1 CAL for Microsoft SQL Server 2016 included.
Ideal for use with zenon Analyzer.

Item	Item No.
Historian SQL Server Interface	ZSQLSRV

License:

The module has to be licensed in the Development Environment and in the Runtime (Standalone and Server).

zenon Energy Edition

Optional Modules

REPORTING

REPORT GENERATOR

- ▶ Cell-oriented report generator with free graphical drafting of listings and extensive analyses
- ▶ Documentation, evaluation and presentation of production data
- ▶ Comfortable user interface in table form
- ▶ Access to online data and archived data
- ▶ 150 processing functions are available for calculation and output of the data
- ▶ Set and read values
- ▶ Integrated in the zenon user interface
- ▶ Export possible in .txt, .xrs or .xml
- ▶ Rule sheet 13 and ATV H260 compliant

REPORT VIEWER

- ▶ Graphical reports based on MS Report Builder 3.0.
- ▶ Direct access to Alarm, CEL, Historian, RGM and Online Values.

MESSAGE CONTROL

- ▶ Output to e-mail, mobile phone or land line
- ▶ Voice output for Windows Server 2008 (R2)/2012, Windows 7, 8, 8.1 each 32 and 64-bit.
- ▶ Transfer of freely-definable text and limit value texts
- ▶ Positive or negative message transmission is logged in the CEL
- ▶ Free group assignment
- ▶ Shift Management
- ▶ zenon User Administration
- ▶ E-Mail sending is also possible for accounts without MS Exchange
- ▶ Freely-configurable escalation management
- ▶ Can be administered in full via zenon Client
- ▶ Sending of the message to all users from shift management (currently-active shift)

Item	Item No.
Reporting	ZM-REPORT

License:

This module has to be licensed in the Editor and in the Runtime (Standalone, Server/Standby and Clients).

If the module is not licensed in the Runtime, the following functions are not available for the Report Generator:

- ▶ Save archive (for manual inputs)
- ▶ Write set values.

Read access is available in the Runtime for Report Generator and Report Viewer without a license.

Item	Item No.
Message Control	ZM-MC

License:

The module has to be licensed in the Development Environment and in the Runtime (Standalone and Server).

zenon Energy Edition

Optional Modules

EVERYWHERE SERVER BY ZENON

OData service interface, for example for the COPA-DATA Smartphone-App. Read and write access between the zenon Runtime and a Smartphone (write access must be activated manually).

Security features:

- ▶ HTTPS support
- ▶ Encryption: TLS (via HTTPS)
- ▶ User authentication, HTTP basic authentication
- ▶ User level for access to Everywhere Server can be defined

Data access to:

- ▶ zenon Equipment Model
- ▶ Online values of variables
- ▶ Alarms & CEL (including groups and classes)
- ▶ Historian values

Supported operating systems

(app available via respective store):

- ▶ Windows Phone from version 7
- ▶ iOS from version 6.1
- ▶ Android from version 2.2
- ▶ Windows from version 8

ZENON ANALYZER

Please find further details regarding zenon Analyzer in the zenon standard price list.

Item	Item No.
Everywhere Server by zenon	ZM-EVWH

License:

The module requires a license in Runtime and can be licensed for any desired Runtime in the project (standalone, server, standby).

Web Server for Energy Edition

WEB SERVER

Functionalities:

- ▶ All process data in the intranet/ internet
- ▶ Full process overview from every Windows PC workstation with different web browsers
- ▶ Support for Internet Explorer 8+
- ▶ Web client starter (allows zenon web client to be started from any desired browser)
- ▶ No additional project configuration required
- ▶ Screens are displayed 1:1. No need to adjust
- ▶ Changes to the project are recognized and updated online
- ▶ Compatible with Windows Terminal Services, no additional installation on web or thin clients necessary
- ▶ Client authentication
- ▶ Read access to the project possible
- ▶ 128-bit encryption
- ▶ Optional HTTP tunneling can be activated
- ▶ Routing possible; the web server can be installed on any desired computer in the network
- ▶ The zenon Web Server can also be executed in redundant operation. This requires two identical installations on two independent PCs.
- ▶ Redundancy
- ▶ HTML Web Engine:
Plug-in free, platform-independent HTML5 visualization. For simple dashboards and applications for the observation and operation of processes. You can find details in the HTML web engine chapter.

Item	Item No.
Web Server 1 Client	ZWEBSRV8-1
Web Server 3 Clients	ZWEBSRV8-3
Web Server 5 Clients	ZWEBSRV8-5
Web Server 10 Clients	ZWEBSRV8-10
Web Server 15 Clients	ZWEBSRV8-15
Web Server 20 Clients	ZWEBSRV8-20
Web Server 25 Clients	ZWEBSRV8-25
Web Server 50 Clients	ZWEBSRV8-50
Web Server 100 Clients	ZWEBSRV8-100
Web Server 200 Clients	ZWEBSRV8-200
Expansion of the Web Server x to y	ZWEBSRV8-EXP

Clients:

Web Server Clients are based on "concurrent user connections". The maximum number of users that can access the Web Server at the same time is defined.

Attention:

Archive revision and main menus are not available on the Web Server. Please include the serial number of the existing zenon Runtime system with your order.

This item can also be licensed on an existing license.

Also available as a standalone license with its own software or hardware protection.

Web Server Pro

for Energy Edition

WEB SERVER PRO

Functionalities:

- ▶ All process data in the intranet/ internet
- ▶ Full process overview from every Windows PC workstation with different web browsers
- ▶ Support for Internet Explorer 8+
- ▶ Web client starter (allows zenon web client to be started from any desired browser)
- ▶ No additional project configuration required
- ▶ Screens are displayed 1:1. No need to adjust
- ▶ Changes to the project are recognized and updated online
- ▶ Compatible with Windows Terminal Services, no additional installation on web or thin clients necessary
- ▶ Client authentication
- ▶ Writing of set values and write access to all Runtime project data of all available modules is possible
- ▶ Strong encryption
- ▶ Optional HTTP tunneling can be activated
- ▶ Routing possible; the web server can be installed on any desired computer in the network
- ▶ The zenon Web Server can also be executed in redundant operation. This requires two identical installations on two independent PCs.
- ▶ Redundancy
- ▶ HTML Web Engine:
Plug-in free, platform-independent HTML5 visualization. For simple dashboards and simple applications for the observation and operation of processes.
You can find details in the HTML web engine chapter.

Item	Item No.
Web Server Pro 1 Client	ZWEBSRV8-P-1
Web Server Pro 3 Clients	ZWEBSRV8-P-3
Web Server Pro 5 Clients	ZWEBSRV8-P-5
Web Server Pro 10 Clients	ZWEBSRV8-P-10
Web Server Pro 15 Clients	ZWEBSRV8-P-15
Web Server Pro 20 Clients	ZWEBSRV8-P-20
Web Server Pro 25 Clients	ZWEBSRV8-P-25
Web Server Pro 50 Clients	ZWEBSRV8-P-50
Web Server Pro 100 Clients	ZWEBSRV8-P-100
Web Server Pro 200 Clients	ZWEBSRV8-P-200
Expansion of the Web Server x to y	ZWEBSRV8-EXP

Clients:

Web Server Clients are based on "concurrent user connections". The maximum number of users that can access the Web Server at the same time is defined.

Attention:

Archive revision and main menus are not available on the Web Server.

Please include the serial number of the existing zenon Runtime system with your order.

This item can also be licensed on an existing license.

Also available as a standalone license with its own software or hardware protection.

Dongle

A dongle allows you to use your project on different computers with the same serial number. Simple plug your dongle from one PC to the other PC, this will keep you flexible. This applies for both Editor and Runtime.

DONGLE USB

Connection to the USB interface

Item	Item No.
Dongle	DIV-DONG-USBCM

On request also as:

NETWORK DONGLE (USB)

Many zenon licenses can be acquired via a dongle in the network.

Item	Item No.
Dongle	DIV-DONG-USBCM-NET

The following dongles are available on request:

CM CARDS

Item	Item No.
Dongle	DIV-DONG-CMCARD

CM STICKS

Item	Item No.
Dongle	DIV-DONG-CMSTICK

Company Address

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