HIGHLIGHTS

Far more than Pharma!

The life sciences and process industries operate under strict regulations, requiring multiple steps, sterile environments, and costly equipment. Government mandates add further complexity, demanding extensive testing and validation. As an enabler for modular process Automation zenon streamlines these challenges. Get ready for intuitive workflows and fully compliant automation, efficient drug development and faster time to market.

Open and modular process orchestration

Supported parts with zenon 15 – MTP 2.0 will be fully supported

VDI/VDE/NAMUR 2658	SUPPORTED
1. Basic Concept	✓ v2.0
2. HMI Concept	✓ v2.0
3. HMI Interfaces	✓ v2.0
4. Process Control	✓ v2.0
5. Runtime Concept	✓ v2.0
5.1 Runtime Concept – OPC UA	✓ v2.0
6. Alarm profile basic + managed (former 7 and 7.1 are merged into 6)	✓ v2.0
8. Safety Concept	✗
9. Safety Interfaces	✗
10. Diag./Maint. -PEA	✗
11. Diag./Maint. -Plant	✗
12. Validation/Commissioning	✗

What's new in the Orchestration Studio

Import and use projects from previous zenon versions:

- Using projects from zenon 14 in zenon 15
- *.cdpol import and upgrade
- zenon project upgrade (standard zenon functionality)

Template enhancement:

- The Orchestration Studio is adding zenon project content

Improved usability:

- Keep overview of your process with
  - Multiple overview screens
  - Multiple HMI views per PEA (Process Equipment Assembly) at the screens

Structure your process:

- Definition of the Equipment Model via the Orchestration Studio
- Assign HMI views to the Equipment Model
- Automatic variable assignment and Equipment Model screen
- Automatic configuration of hierarchic alarming

Easier re-orchestration:

- Synchronize the orchestration with the current zenon screens
- On generation, do not overwrite existing content

Configure your PLCs efficiently:

- Central PLC definition at the Orchestration Studio (OS) Settings
- At the device: select PLC instead of separate connection parameters

Easy integration of Open Controllers:

- Central PLC definition: activate IoT project checkbox
- On generation: a separate zenon project is created. This project contains the zenon Logic project and is ready for deployment via zenon Device Management

Performance optimization when creating many objects

Creation of Equipment Modules (EQMs) made easy:

- Typicals are device templates containing multiple DCS blocks. They are like Symbols or SOTs in zenon. Typicals can be compared with EQMs
- Service Control blocks are supportet within Typicals
- On generation the required zenon Logic program is created automatically
- A custom zenon Logic program can be added to the Typical
- The Excel import supports Typicals as well

Advanced reporting added

Template and Design for MTP/OpenDCS:

- List of active batch recipes
- Rework of top screen menu (submenus for PEAs)

Electronic Signature support:

- Orchestration Studio: Recipe release method is defined at project level; selected option is linked to the "Release master recipe" button in the Batch Control screen.
- New authorization levels are added and preconfigured to the button with "Release master recipe" function in the Batch Control screen (Operation: Release - Verify, Operation: Release - Approve)

Continuous Phase support in Batch Control:

- Phases can now be defined as *continuous* in the batch recipe if supported by the autogenerated phase
- For each service (e.g. *Stirring*), an additional phase with the suffix *_Complete* (e.g. *Stirring_Complete*) is generated.
- Executing the *_Complete* phase sends a complete command to the corresponding service (e.g. MTP service of the PEA), finalizing it

Performance improvements for faster orchestration

Process Library:

- A new set of symbols is available, called BASIC symbols
  - BLOCK symbols are still available for compatibility
  - For DCS blocks, there is a project setting to specify which block layout should be used. By default, the new BASIC symbols are used

MTP Part 4 – Service Encapsulation

In accordance with MTP Part 4, process engineering functions within a PEA are encapsulated as services. These services can be parameterized and are accessed via a standardized, state-based interface by the POL or other services.

- Blocks are available for zenon Logic as well as TIA
- As the blocks are interconnected, they are engineered via Typicals

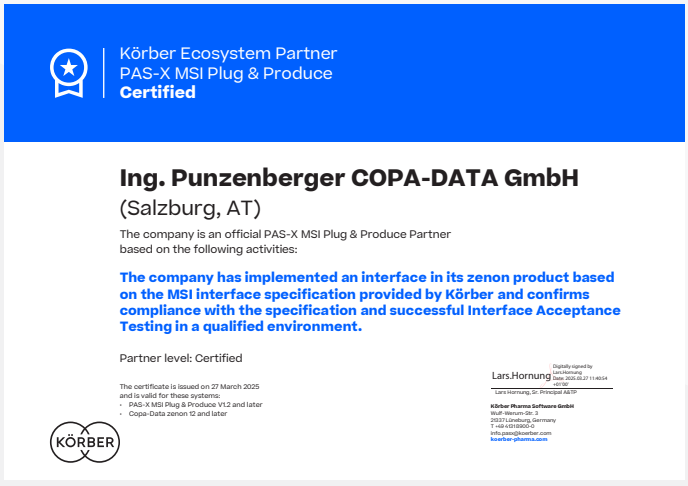
New Blocks available:

- Alarm Management
- Bypass Interlocking
- Added Simulation mode
- And many more

MSI Interface

MSI Interface has reached 2nd level of certification

PAS-X MSI Plug & Produce Certified



Reliable alarm/event transfer to PAS-X:

- CEL entries log all relevant configuration changes and each send attempt (successful or not).

Improved message handling and extended message parameter definitions

- Disable exceptions at runtime or by unit (via equipment model groups)
- Filter audit trail exceptions by specific equipment model entries
- Option to globally deactivate exception message sending

Audit Trail as Exception Message

ensure complete RBE (Review by Exception) coverage, including GMP-relevant alarms and audit trail events (a subset of CEL), for full traceability in PAS-X.

- Selected CEL entries can be forwarded as Exception Messages
- Equipment identification via EQM group is supported for both AML and CEL-based exceptions

New message types

- Material Usage Check
- Stock Consumption
- Stock Creation

  Responses from PAS-X can be processed accordingly , based on PAS-X Integration Guideline v1.4

Message Logging in CEL

  Comprehensive logging in the CEL is essential for reliable MSI communication.

- All message-related log entries include the full XML content of the message
- Log entries are linked to corresponding CEL entries via a shared CEL entry key
- Message content can be viewed directly by selecting the related CEL entry

Device agnostic access to process information and dashboards

Web Visualization Service

Platform independent, mobile access to your processes

- Automatic Line Coloring
  - Basic coloring and advanced illustration
- Network Operating Authorization
  - Safe allocation of assets within a multi-client architecture
- Extended Trend
  - Support Extended Curve List
- Batch Control
  - View and operate Matrix Recipes

zenon Dashboard Service

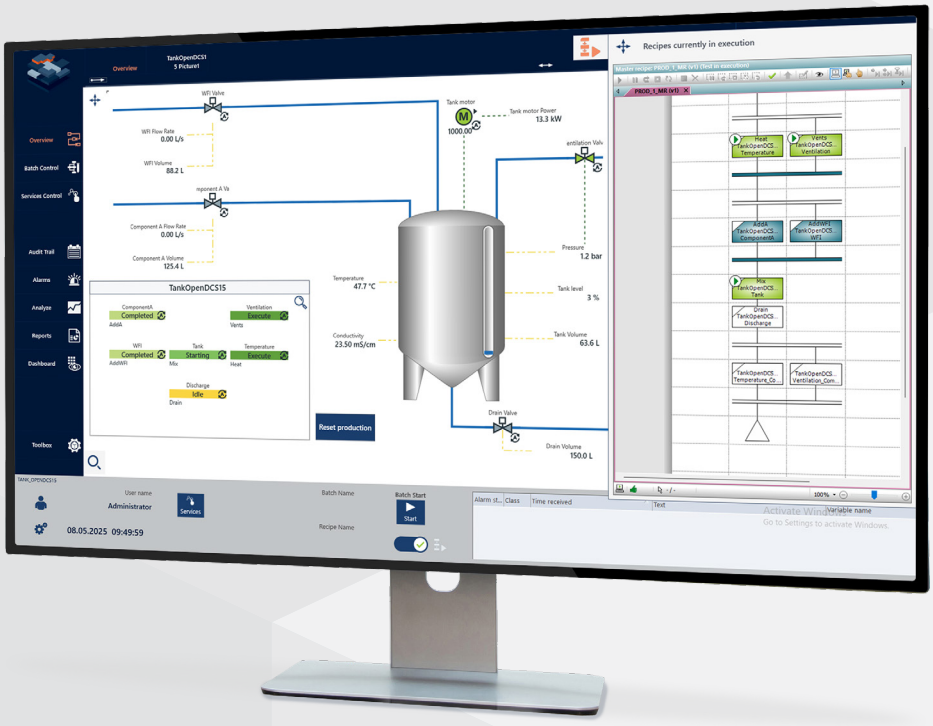
Customize and organize your dashboards with simple access to all data, simple and flexible.

- New widgets
  - Bargraph, Table, Gauge, Trend, „Website“, Multivalue, Sparkline
- Improved management of dashboards
  - Display list of dashboards with meta data
  - Update, delete (CRUD)

zenon IIoT Services

Easily setup, run & maintain applications – on Linux Controllers or virtually

- Device Management: deploy zenon projects to your devices
  - Service Engine within Docker
  - Selection of runtime changeable files on deployment
  - Start/Stop/Reload Service Engine
- Asset Model Service
  - Link data models to metadata
- Identity Service
  - EntraID: Automatic group mapping for users



Level up your engineering

Efficient engineering

Offer more options to QA team and inspectors for an accurate and quick analysis during batch review!

- Direct online filters on AML and CEL lists
  - Easy filtering by keywords on AML and CEL columns

Smart Objects (SOT)

Modularize your solution for better consistency, re-usability of components and scalability with Smart Objects in zenon!

- Support of distributed engineering (Multi-User)
  - Working smoothly in a team on Smart Objects
- Variable mapping
  - Use wildcards (*.*) to filter and apply mapping rules to multiple datapoints
  - Applying variable mapping configuration to all related Smart Objects in the project

Batch Control

Get an enhanced overview & flexibility of recipe handling

- Continuous Batch Phase runs until the phase done condition is met (no need of parallel branches)

Data Historian and Data Analytics

More efficient and flexible data archiving enabling performant and robust historian solutions.

- New way of data historization
  - Percentual values for Swinging Door Algorithm and Archive Hysteresis
  - Read data from archives readback folder

Further possibilities with zenon Report Engine

Retrieve data and extract information in the format you need.

- GraphQL: statistical query functionalities (minimum, maximum, average, count, sum, variance, standard deviation)
- OT Data Integration based on Excel: Load archived data into your Excel sheets
- RGM information in reports

zenon User Management

This enables the flexible implementation of well-structured user management schemes.

- Extension of authorization levels (65535 levels in total, former limit: 127)
- Authorization based on Equipment Model

AML/CEL improvements

Extended information capabilities for critical situations

- Comments extended to up to 255 characters (former limit: 79)
- Summer/Wintertime and offset to UTC

Dynamically load archives

For enhanced performance when engineering & maintaining data collection

Login once within Engineering Studio

- Access multiple protected projects with a single Log-in
- Effective handling of big Engineering Studio workspaces

Connectivity News

Drivers

High quality and flexible integration of every solution within OT/IT landscape.

OPC UA Driver (Client)

- Support for reading historical data into RDA archives
  - Aggregated historical data from the OPC Server is available in zenon for comparison against historical data aggregated by the zenon historian, based on live values.
- Support of 1.04 specification data type definitions

BACnet Driver

- BACnet Secure Connect
  - Driver extension to provide secure BACnet communication into another network

zenon Service Engine on Linux

Linux and Windows Service Engine (SE) are compatible (i.e. Server/Client) and use the same engineering files – no extra engineering effort when combining or switching between Linux and Windows!

- zenon Network support
  - Linux Service Engine can act as process server for a Linux or Windows-based client*
- Remote Transport support
  - Project download directly from zenon Engineering Studio
  - SE start, stop, reload etc. from Engineering Studio
- User Management enhancements
  - Local User Management support
  - User Management via Identity Service
- zenon Logic Fieldbus Drivers
  - MQTT-Client
  - EtherNet/IP Adapter and EtherNet/IP Scanner

Flexible process automation, control and data processing with zenon Logic

zenon Logic Soft PLC

Python integration

Unified and integrated architecture for both, process calculation and automation (IEC 61131-3) and advanced data analytics (Python).

- Utilize Python programming
- Asynchronous execution of scripts, triggered by PLC function block
- Variable exchange via fieldbus configuration

Support of IEC 61131-10 a.k.a. PLCopen: XML-based exchange format for the export and import of IEC 61131-3 projects

- Migrate PLC applications effortless from 3rd party systems to zenon Logic!
- A complete IEC 61131-3 project can be transferred between different vendor IDEs
- Exchange of configuration elements, data types, and POUs written in the standard IEC 61131-3 languages

Modular Runtime

Update and extend your devices and Soft-PLCs without interruption

- Optionally allow (incremental) adding and reloading of individual modules on-the-fly

Buffered Events

- Improved event-based communication
- Offline buffering of configured variables (up to 48 hours)
- Ensure data integrity