# Process Control System ECS

Process control software to control, monitor and log processes


## Automating heat treatment plants with ECS

The ECS process control system (SCADA) is designed for the visualization and control of industrial heat treatment processes. All necessary functions to control, monitor and log processes are fulfilled. Apart from the plant visualization, ECS offers various data evaluation and log possibilities.

Up to 16 plants can be controlled in the system network with integrated modules for configuration, program creation and administration, online operation with visualization and recording function, batch data evaluation with administration and operating picture design for process visualization.

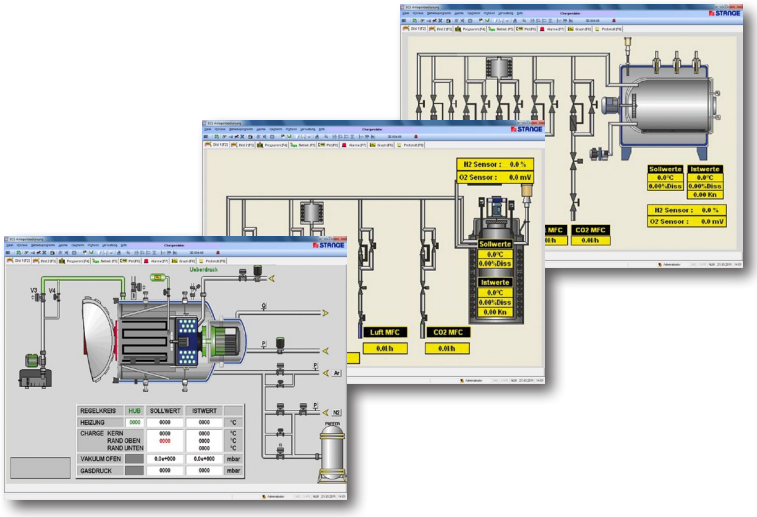
Different program components process the different parameters and/or offer further functions.

ECS offers functionalities for modern heat treatment methods in order to operate processes easily and save and integrate process control requirements (nitriding potential control, online diffusion, carburizing simulation). TELEPHONY is designed for alarm notification via E-Mail.

### Application fields:

- Hardening plants metal
- Glow systems and forging line
- Ceramic furnaces
- Cold and climatic chambers
- Autoclaves (food/pharmacy)
- Glass autoclaves
- Aircraft industry autoclaves
- Semiconductor furnaces
- Laboratory furnaces

... and much more



## Functions

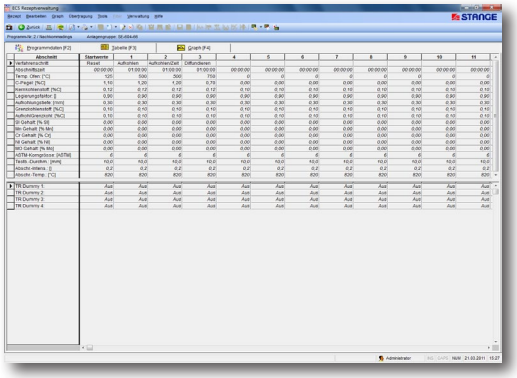
- Easy handling and continuous uniform user interface in all modules
- Optimized for the use with STANGE program controllers SE-4xx, SE-5xx, SE-6xx, SE-7xx and Siemens S7
- Operating system Windows 7/10/11
- Program creation and administration for up to 9999 programs
- Graphic and tabular report print-out
- Online plant operation with vizualiation and recorder function
- Batch data evaluation and administration
- Graphic evaluation with comparison of process curves
- Graphic representation of setpoint curves and digital tracks
- Batch protocol print-out with screen preview
- Tabular batch overview with filter-/ search function
- Operation picture designer for process visualization
- Reduction of project work by simple duplication of plants
- Configuration program
- Batch data storage, administration and evaluation
- Process data overview tabular or as tree structure
- Operation picture designer for process visualization with symbol library
- Visualization and storage of measuring data for Siemens S7 as well as other OPC compatible systems
- OPC driver for STANGE devices
- ECS Replication for batch data backup in a superordinate directory

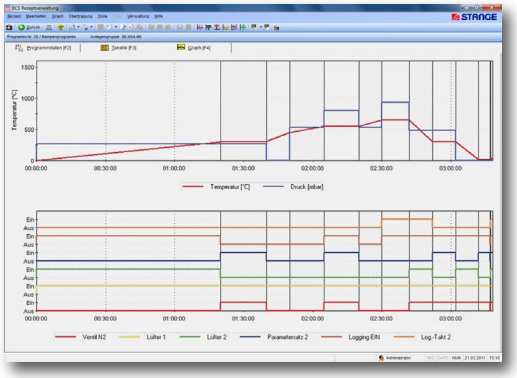
Optional

- Alarm notification via e-mail
- Carburizing simulation software with integrated material data base
- Nitriding potential calculation on PC
- Nitriding case depth precalculation on PC
- Interface ECS to the office TTC software for hardening shops or other ERP systems
- Software maintenance contract

# Process Control System ECS

Process control software to control, monitor and log processes

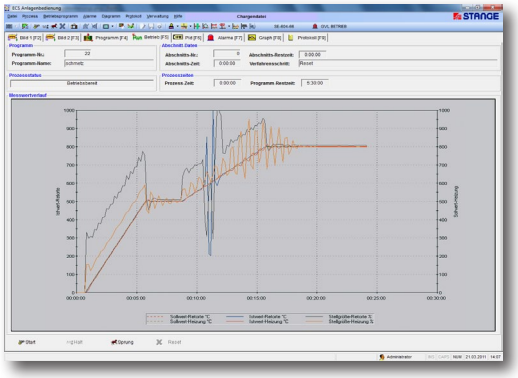


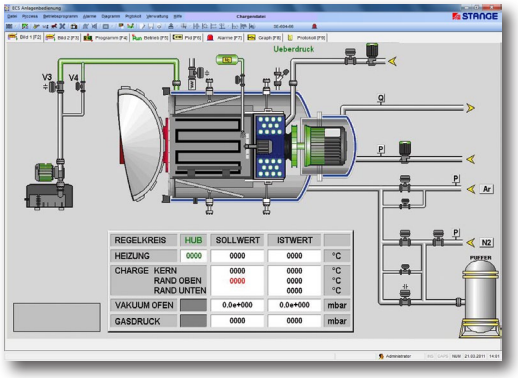


## Recipe Manager

Recipes (programs) are created and edited in the Recipe Manager. These can be loaded into the program controller. It is also possible to load recipes from the device onto the PC and to save or edit them from there.

- Program manager
  - Administration of up to 9999 programs (recipes) for each plant
  - Tabular display of stored batches with various group and sort functions
- Program header
  - Program header with program number, description, date of creation and modification
  - 20 freely configurable information fields for each program
  - Free text field for each program
- Program table
  - Easy and clear tabular program input
  - One column per segment, sorted according to process step, segment time, setpoint values and control tracks
- Program graph
  - Real-time setpoint value and control track graph
  - Graphical representation of segments
- Login level (available in all program modules)
  - Assignment of user privileges for the individual program parts by administrator
  - Each user account can be created individually





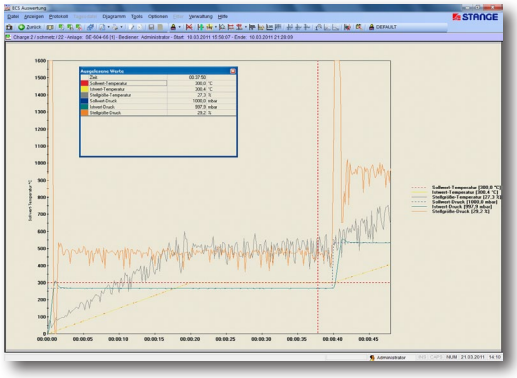

# Unit Control

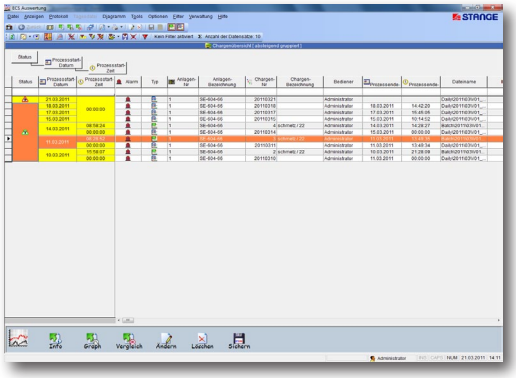
Up to 16 plants can be monitored and operated by the unit control. Thereby self created plant pictures are used for each plant with data such as measuring values, valve positions, alarms. Furthermore, fixed pages for program process, control cycles and graphic program profile are available.

- Visualization
  - General survey of all plants (floor overview), selection of a plant from there
  - Freely creatable, dynamic visualization pictures (data, picture animations)
  - Free user interface design (e.g. manual mode)
  - Chart creation and animation is carried out by the Graph Designer
- Programmer
  - Tabular representation of all current programmer data with control functions
- Operation Graph
  - Graphical representation of process data
- Controller
  - Tabular display of all control zones with designation, setpoint value, manipulated value and deviation
  - Window for each controller with all parameters
- Recorder
  - Recorder with up to 150 channels. Free configuration of all parameters (channels, colour, labelling, etc.)
  - As many configurations as desired can be stored
  - Cross line to read off detail values
  - Zoom can be freely positioned by mouse
- Online Alarms
  - Up-to-date display of alarms with time, text, event display (configurable) and status
    256 characters of additional text for each alarm
- Alarm History
  - Alarm history display, with text, date, configurable events and status (appeared, disappeared, acknowledged)
- PopUp Window
  - In case of a defined result, a PopUp window is automatically generated with corresponding note
- Protocol
  - Input of additional information according to running batch (batch name, name of plant operator and remark text (255 characters long))
  - Up to 20 freely definable information fields

# Process Control System ECS

Process control software to control, monitor and log processes

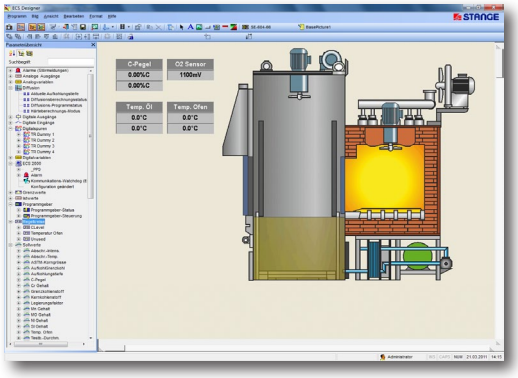


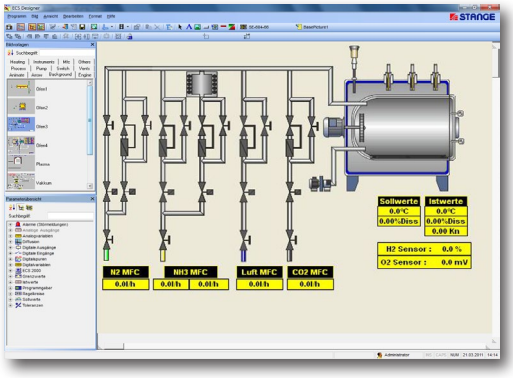


## Evaluation

Stored process data are analyzed in the batch evaluation. They can be edited according to individual ideas and printed as process documentation.

- Batch Manager
  - Administration of any number of programs (recipes) for each plant
  - Tabular display of stored batches with various group and sort functions
- Batch Header
  - Batch header with number, operator, text, date of creation and modification
  - 20 freely configurable information fields for each batch (e.g. order number etc.)
  - Free text field for each batch
  - Extended documentation based on MS-Word
- Batch Graph
  - Graphic presentation of stored analogue and digital values (150 maximum)
- Table
  - Representation of logged data in a table with time stamp
  - Two cycle rates (fast/slow) selectable for storage
- Events (Alarms)
  - Display of events (alarms) / intervention according to batch with date, event, text and status
- Graph Evaluation
  - Graph evaluation with all stored channels
  - Free configuration of all parameters (channels, colours, text, etc.)
  - Any number of configurations can be stored
  - Zoom can be freely positioned by mouse
  - Cross line to read off detail values
  - For comparison, another batch can be displayed at the same time
- Graph Comparison
  - Up to 10 batches can be compared channel-wise one upon the other (zoom, cross lines)
- Daily Files
  - Enables the display of plant values over a period of up to 6 weeks including event display
- Export as CSV or XML file



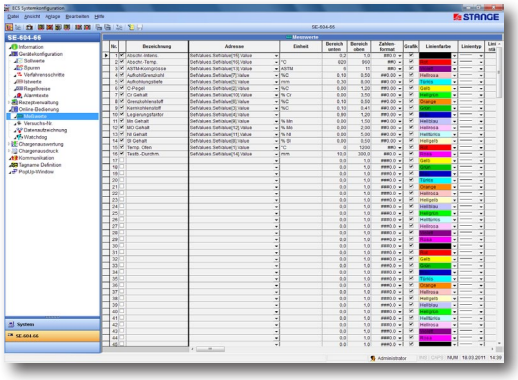

# Designer

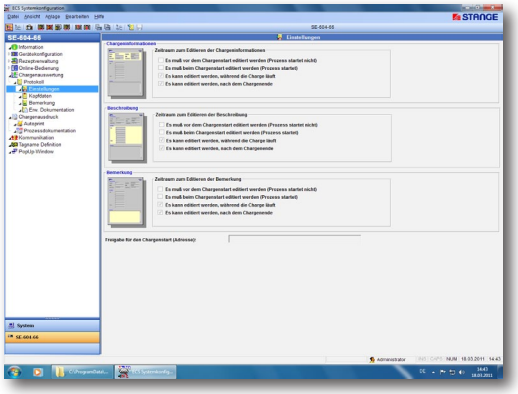
The Designer is the tool used to create animated plant pictures, which can be used as a plant chart in the Unit Control. A library with screen blocks is integrated and can be edited according to requirements or completed with your own pictures.

- Background Pictures
  Creation of background pictures using any bitmap editing software (e.g. Paintbrush);
  Stored in BMP format. The background picture can be changed in the editor at any time without this having any effect on the animations.
- Data
  Insertion of programmer data (setpoint values, actual values, formula values, etc.) by drag-and-drop. Trouble-free input of values directly into the picture.
- Digital Animations
  Up to 3 bitmaps (e.g. on/off/alarm) can be assigned to any digital value from a directory by drag and drop. Trouble-free input of digital states directly into the picture.
- Text
  Text can be inserted and freely positioned in the picture.
- Keys
  Another plant picture can be retrieved via a 3D button; as many pictures as desired possible.
- Picture Field
  With this function scalable bitmaps can be positioned in the main picture.

# Process Control System ECS

Process control software to control, monitor and log processes





## Configuration

The available plant(s) is/are set up in the System Configuration. The configuration of the programmer can either be prepared in the System Configuration or an existing configuration readout from the device.

- Configuration Administration
  Configuration administration related to plants (structure tree as the Windows Explorer).
- Plant Administration
  Up to 16 plants (ECS-16) can be administrated.
- Representation
  Representation of configuration groups in clearly arranged tabular form.
  Modifications can be made directly in the table.
- Data Import
  Importing of external data into the batch protocol. During the batch start, the batch protocol can be filled with external data sources via the DDE, OPC interfaces or file.

### ECS Log-In Level

ECS log-in level for allocation of user privileges for the various program modules of ECS.
The administrator defines which parts of the software are available for the various users.

### ECS Telephony

Transmission of the alarms via e-mail.
Communication module for transmission of defined alarms to the chosen persons via e-mail (option).

### ECS Replication

Data back-up module
The data (completed batches) from several plants (computers [IPCs]) are automatically duplicated to a back-up PC.

| Licence Versions ECS | |
|---|---|
| Version | Art. No. |
| Process control system ECS for one plant | ECS-01 |
| Process control system ECS upgrade for one plant<br>Extension module to connect one additional plant (16 plants maximum) to the existing ECS. Complete operating interface with full ECS scope of supply, upgrade for one plant. | ECS-UG |
| Process control system ECS-Light for one plant<br>Unit control without programmer and recipe manager.<br>Includes the following software modules:<br>Configuration; Online recorder function of plants; batch data storage; administration and evaluation; process data overview as tree structure; simple graphic evaluation; configuration program ECS-KONF; OPC driver for STANGE devices (JBUS). | ECS-L01 |
| Process control system ECS-Light, upgrade for one plant<br>Extension module to connect one additional plant (16 plants maximum) to the existing ECS. Operating interface with the scope of supply like ECS-2K-1L, upgrade for one plant. | ECS-LUG |
| Recipe manager and input (client without OPC driver) for ECS recipe data<br>- Input and administration of up to 9999 recipes per plant<br>- Graphic representation of set value curve and digital tracks<br>- Graphic and tabular report print | ECS-RZ |
| Recipe manager (incl. OPC driver) for one plant | ECS-RZ01 |
| Recipe manager (incl. OPC driver), upgrade for one plant, base module to connect one plant. | ECS-RZUG |
| Batch evaluation (without OPC driver)<br>- Tabular overview of process data<br>- Graphical evaluation, process curves comparison<br>- Batch protocol print with screen preview<br>- Tabular batch overview with filter/search functions | ECS-AW |
| Batch evaluation (incl. OPC driver), for one plant, base module to connect one plant. | ECS-AW01 |
| Batch evaluation (incl. OPC driver), upgrade for one plant<br>Extension module to connect an additional plant (16 plants maximum) to the existing ECS. | ECS-AWUG |
| Software maintenance contract for ECS<br>The maintenance contract includes the following features:<br>Premium support hotline free of charge, help via remote control on your computer free of charge, ECS software free of charge (1x per year minimum); 15% special discount on appropriate valid service hourly rates for services related to ECS; 15% special discount for upgrades and/or additional ECS extension modules (e.g. from 4 to 8 plants); ECS software update to the current version free of charge. | ECS-WV |