A personal computer with "Insight" software is a picture-supported operation and indication unit for UNIGYR VISONIK building automation systems. Thanks to the multitasking operating system OS/2, several windows (even with the same "Insight" functions) can always be opened simultaneously.

**Scope of Functions**

- Display of plant pictures and reaction pictures with updated process values.
- Outputs of values to the operating elements and other command outputs directly from the plant pictures.
- Drawing and setting up connections to the plant elements, with a full-graph Picture Editor. Creating of individual descriptions for plant pictures.
- Operator-friendly indication and modification of point parameters and time reaction entries in the server with the Point Operation.
- Continuous plotting of changing variables by means of the Trend Plot function.
- Display of data processing graphs and tables.
- Indication and processing of the process station timeswitch programs and Special Day catalogues.
- Updated display of alarm messages.
- Clear representation of the alarm statuses, acknowledgement of ongoing alarms.
- Changing from one function to another, with retention of the current addresses (Navigation).
- Dialogue with the communication server and with the process stations.
- Display of the arrived messages.
- Prints of the screen contents or any function windows on a local printer.
- Indication and operation of VISONIK network systems (with leased or dial-up lines).
Picture

The Picture function allows for displaying any type of plant picture from the server (with updated process values) or from a local drive (static pictures). Additionally, customer-specific plant descriptions can be created and displayed for the individual plant pictures.

Calling up pictures

The server pictures are selected by entering a number or a user address. Additionally, scrolling the picture library forward and backward is possible. The input of a partial address automatically leads to the appropriate overview picture:
- Without an input, the overview picture of the entire plant is displayed.
- Entering the letter C will cause the overview picture of building C to be displayed.
- The number 1 calls up the ground plan of the first floor of building C.

![Diagram](https://via.placeholder.com/150)

No entry  After C is entered  After C1 is entered

Reaction pictures

Reaction pictures originate from process reactions of the communication server. "Insight" saves the pictures which arrive so that they can be viewed later in sequence as required. "Insight" also allows to print the received reaction pictures.

Updated values

Various updating attributes are available to display process and other parameter values from the process diagram:
- Output of the value, e.g.:
  Room actual value = 22.5 °C
  Plant set value = ON
- Symbol change, e.g.:
  Open switch --- Closed switch
- Colour and flashing of a graphic figure, symbol, value or text, e.g.:
  Fan off: White, without flashing,
  Fan on: Green, with flashing
- Bar or marker display of an analogue value:

![Diagram](https://via.placeholder.com/150)

Changing parameter values

Furthermore, allocating a new value to definable parameters directly in the picture is possible, provided the user has the required access level.

Other actions

Depending on the definition in the communication server, clicking certain figures will start new actions:
- Jump to a particular support picture.
- Starting a server macro which, for example, will call up any status report.
- Starting or stopping a Server-COLBAS task.
Point Operation

The Point Operation provides a clear display of the parameters of a point and the entries in the Time Reaction Register (TRR) of the server and allows for editing the parameter values and times.

PL 1'E01'L2

OFF Fault 6 LKD SS
Ventilation, Conference Hall

Parameter display

In the parameter display, jumps can be made from one parameter group to another (main parameters, operating parameters, service parameters, configuration parameters) or an individual parameter list can be compiled.

Editing definable parameters is simple: When a parameter with discrete values has been activated, the following entry window appears (for example) showing the selection list of the available values:

TRR display

The TRR display not only shows all available time reaction entries for a particular parameter in the form of a clear table, it also permits user-friendly editing of entered times.
The “Timeswitch Catalogue” function allows you to change the Weekday catalogues (WDC) and Exception Catalogues (EXC) for BPS or Overrich Catalogues (OVC) for PRV1 of any point parameters in the process stations as well as to create new catalogues. After the catalogues for the desired process stations have been loaded, overview windows appear on screen:

For the highlighted destination, this window shows all available entries in the catalogues and the defined Special Days in the form of bar diagrams. The time interval displayed can be moved and zoomed as desired.

Actuating the appropriate buttons will open the windows with the input tables for the catalogues and the graphic display of the Special Day calendar for the associated process station.

WDC, EXC, and OVC table in the entry mode display:

<table>
<thead>
<tr>
<th></th>
<th>M0</th>
<th>TUE</th>
<th>WE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>08:00</td>
<td>08:00</td>
<td>08:00</td>
</tr>
<tr>
<td>2</td>
<td>12:00</td>
<td>12:00</td>
<td>12:00</td>
</tr>
</tbody>
</table>

WDC, EXC, and OVC table in the time mode display:

<table>
<thead>
<tr>
<th></th>
<th>M0</th>
<th>TUE</th>
<th>WE</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:00</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>12:00</td>
<td>(0)</td>
<td>(0)</td>
<td>(0)</td>
</tr>
<tr>
<td>13:00</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

WDC, EXC, and OVC entries can be edited in these tables, whereby editing a single cell pair or several cell pairs together is possible. For example: cancelling a column (i.e. all entries for a day) or making the same new entry for a whole line (i.e. for all weekdays).

The following editing actions are possible:

- Making new entries or changing the values and possibly also the start and stop times of existing entries
- Changing the start and stop times of existing entries
- Cancelling and copying entries

Thanks to the optimised loading and saving function, even large catalogues or destinations can be loaded or saved very quickly.
The "Calendar" function is used to edit Special Day calendars of the server for the process stations and to distribute them.

The main window displays respective "calendar pages" with three consecutive months:

<table>
<thead>
<tr>
<th>October 1993</th>
<th>November 1993</th>
<th>December 1993</th>
</tr>
</thead>
<tbody>
<tr>
<td>MO</td>
<td>TU</td>
<td>WE</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>11</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>25</td>
<td>26</td>
<td>27</td>
</tr>
</tbody>
</table>

By scrolling forward or backward or by direct selection, any desired month can be reached quickly. Already defined Special Days are clearly identified. Special identifications show whether a Special Day has elapsed or whether it is valid every year.

New Special days can be entered or existing Special Days can be redefined by highlighting the day in question on the calendar and then actuating the respective Special Day button in the bottom part of the window.

A list shows all the defined Special Days. It allows the user to jump directly to these Special days to define new Special Days or to cancel existing ones:
**Trend Plot**

The “Trend Plot” function is an efficient tool to plot and display graphs of variable process values.

**Loading Trend Sets**

Trend Sets with up to ten graphically displayable process values can be selectively loaded from the server or from the hard disk file. In both cases, redefinition is easy after call-up.

**Saving Trend Sets**

Modified or newly defined Trend Sets are always saved on the hard disk file.

**Operations with data**

The Trend Plot function provides the option of filing all data, which have arrived since the start of a Trend Plot graphic recording, and later to reload them for renewed (offline) display.

In addition, the data can be saved to export files.

**Operations during the Trend Plot display**

- **"Stop":** Temporarily interrupts the continuous display of the incoming values. (Saving the incoming values is not affected by the stop function.)
- **"Zoom in":** Maximises any section of the graph to full display width
- **"Snapshot":** The valid values of all channels at the time of selection are displayed in a separate window.

**Graph setups:**

- "Point setups": Modifying the channel-specific data such as point address and parameter, colour, display mode (point, step, line), scale, and buffer size.
- Additional process values can also be added to the Trend Plot via the "Point setups", or a completely new Trend Set can be defined.
- **Graph setups:** Modifying the data which are valid for the entire Trend Set (display period, time scale, displaying gridlines).
**Dataprocessing**

The "Dataprocessing" function displays the graph profiles defined in the server together with the respective tables and permits for locally saving both the graphs and the tables.

**Calling up graphs**

Loading graphs from the server or from the local hard disk:
- From the server. In this case, "Insight" automatically provides a temporary copy on the hard disk which is overwritten when the same graph is called up again.
- From the hard disk. A choice can be made between the temporary graph profiles provided automatically by "Insight" upon loading from the server or those permanently saved by the user.

**Saving graphs**

You can permanently save any displayed graph under a any desired name (regardless of whether the file was loaded from the local hard disk or from the server).

**Displaying tables**

If desired, "Insight" can display a table pertaining to any particular graph and automatically save it on the hard disk.

The display and save functions can be implemented so that data can be imported from other programs (e.g. from the spreadsheet program "Excel")

**Selections**

A set of selection functions is provided to individualise reproduction of graphs and tables:
- Colour of the graph background, the axes, and the scripts.
- Position and form of the legends: Below, to the right, or no legends. Or the display of buttons which, when actuated, show the desired legends.
- Gridlines: None, horizontal and/or vertical lines.
- Selection for table displays:
  - Number of places after the comma.
  - Choice of hyphen for use in spreadsheet programs.
  - Input as to whether or not the quality attribute should also be displayed.
The "Alarm Operation" function offers an overview display of the alarm statuses and a simple way of acknowledging alarms for all associated points configured in the server.

<table>
<thead>
<tr>
<th>Address Text</th>
<th>Status</th>
<th>No.</th>
<th>Alarm Date/Time</th>
<th>Normal Date/Time</th>
<th>Ackn. Date/Time</th>
<th>User Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ventilation, Conference Hall</td>
<td>ON</td>
<td>04</td>
<td>19-Oct-93 08:34</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plant main switch</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PhB</td>
</tr>
<tr>
<td>1E91L200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1E91L204</td>
<td>0 %</td>
<td>1</td>
<td>03-Nov-93 11:57</td>
<td>03-Nov-93 11:57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dampers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frost protection</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1E91L209</td>
<td>0 %</td>
<td>1</td>
<td>03-Nov-93 11:56</td>
<td>03-Nov-93 11:56</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heating valve</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In addition to the most important information on the point in question (address, status, priority, etc.), the alarm list also contains the following fault status information:

- Time and date when the last fault occurred.
- Time and date when the last fault disappeared.
- Time and date of the alarm acknowledgement and the code of the person who made the acknowledgement.
- Number of times that a fault has occurred since the last fault.

The background colour of the respective point provides visual information on its current status. (Red = Faulty/unacknowledged, yellow = Faulty/acknowledged, etc.)

Sorting

The sequence of the points in the alarm list can be established individually according to optional criteria such as "Date/Time", "Address", or "Priority".

Selection

You can accept only a limited selection of points for the alarm list. The selection criteria are the alarm status, the priority, and the address mask.

Acknowledgement

The individual alarms are acknowledged directly in the alarm list. If more than one alarm must be acknowledged, a selection can be made according to priority and time span.

Point information

The "Point Information" window supplies detailed information on occurrence and disappearance of faults for the selected point.

Alarm statistics

The alarm statistics, in the form of a table, informs on the number of currently existing alarm statuses, subdivided according to priority.
**Alarm messages**

The function "Alarm Messages" immediately displays all incoming alarms in a popup window and allows to easily navigate to alarm operation. Using the options for display and acoustic signal, alarm displays can be set to perfectly suit any situation.

![Alarm Messages screenshot](image)

**Messages**

The message window can always be viewed. It contains all system and alarm messages, in different colours, that have arrived since the opening of the current "Insight" meeting. The arrival of new messages is signalled acoustically.

**Message registration**

"Insight" creates a message file for each day that can be viewed at any time. This file contains all messages for the particular day; the message files are available for a full week.

**Navigation**

With the aid of the Navigation function, the user can change from one "Insight" function to another, carrying over the active address as the default for the destination function.

"Navigation" works between the following functions:

- Point Operation
- Picture
- Timeswitch
- Catalogue Trend Plot
- Alarm Operation

![Navigation diagram](image)
The full-graph Picture Editor supplies all the tools necessary for drawing, managing, and actualising pictures, i.e., for setting up the connections to the plant components.

**Picture Editor**

**Picture operations**

The following operations with pictures are available:
- Loading pictures (local or from the communication server) in order to, for instance, change them.
- Saving pictures (locally in any directory or in the server).
- Deleting pictures
- Copying pictures
- Editing the plant description

**Drawing graphic figures**

The Picture Editor can be used to draw the following graphic figures. Most of the figures can be activated by clicking the appropriate symbols in the "tool bar" on the left of the Picture Editor window.
- Lines, open straight lines (called polylines)
- Rectangles, rounded rectangles, and polygons
- Circles, ellipses, arcs, and sectors
- Texts in different font sizes
- Bars, markers, buttons, and a clock (showing the current time in the Picture).

**Operations with graphic figures**

A wide scope of operations can be carried out with one or more of the drawn graphic figures:
- Selection of colour and line width. There are 16 colours and various line widths available which can be selected even before a figure is drawn.
- Unlimited moving and copying of figures.
- Enlarging and shrinking, both uni- and two-dimensional, whereby in the second case, the shapes of the figures remain unchanged.
- Mirror-imaging (flipping) along the x- and y-axes, and rotating through an angle of 90 degrees.
- Moving figures to the foreground or background to superpose on other figures.
- Combining several figures into a composite figure and later separating them into their original component figures.
- Alignment in the x-direction (left, right, or centre) and in the y-direction (top, bottom, or centre).

**Auxiliary tools**

The auxiliary tools simplify the drawing process in many situations:
- Zooming a section of a picture by a factor ranging from two to eight.
- Expanding the whole picture by 10 % several times in the x- or y-direction.
- Temporary insertion of gridlines.
- Choice of drawing with or without snapping to grid.
- Choice of displaying the coordinates.
- Free choice of the screen’s background colour.
Symbols

Five symbol libraries are provided to assist efficient drawing; pasting these symbols into the drawings is extremely simple.

With symbols and symbol libraries, the following actions are also possible:
- Introducing any figures as new symbols into one of the libraries.
- Changing or deleting existing symbols.
- Reorganising the symbol libraries, i.e. changing numbers, names or symbol sequences.
- Pasting multi-symbols into the picture (for the updating mode “Symbol Change”).
- Saving modified libraries or loading original libraries.
- The libraries can also be distributed in the system.

Updating

An important task of the Picture Editor is to connect the graphic figures with the updating channels and thereby provide the dynamics for the pictures: Various means are used to display updated process and other parameter values in the “Picture” function. Additionally, modifying the parameter values directly without leaving the picture and initiating other actions such as selecting a support picture, starting or stopping a task, or starting a server macro (to call up a report, for example) are possible. Further updating tasks are described under the “Picture” function.
Dialogue

In the Dialogue window, most of the server functions to which the currently logged-in user has access, can be carried out.

Dialogue display

"Insight" creates a dialogue file for each day that can be viewed at any time. This file contains copies of all dialogue interactions occurred on the respective days.

Other Possibilities

Login and logout

The login and logout functions at the communication server occur directly in "Insight". Access protection of the server functions as well as parameter changes is guaranteed.

Choice of language

"Insight" contains three languages which can be easily selected and changed as desired.

Communication

"Insight" can establish a connection to different plants directly or via modem. All necessary settings (port, communication parameters, modem sequences, etc.) can be easily and directly performed in the "Insight" windows.

Colour of messages/ Warning beep

Depending on the message priority of a point, you can choose whether errors should be indicated on the message window in white or in red, and whether they should be accompanied by an acoustic warning beep.