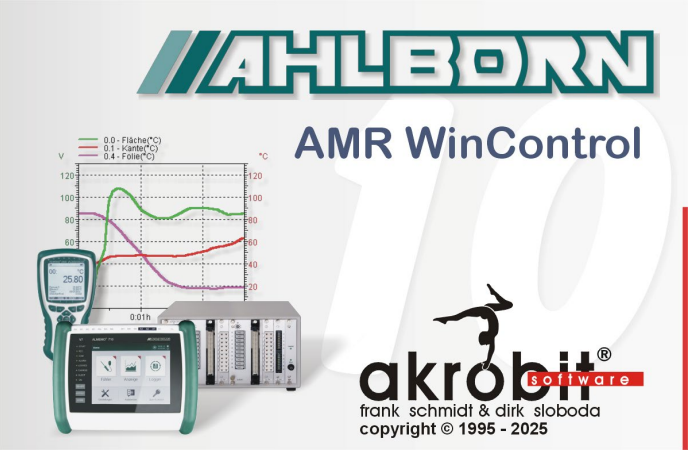
## AMR WinControl the software for all ALMEMO® measuring instruments

**Software Description:**

- Software for acquiring, displaying and processing measured data of the ALMEMO® device series (V5, V6, V7)
- Convenient programming and operation of the devices.
- Graphical display, mathematical processing and printing (measurement report) of current and saved data.
- Appropriate for long term measurements (GMP) or for control and monitoring tasks. Can be easily adapted to every project.
- Fast familiarization and safe operation thanks to Windows interface and the context-sensitive help.
- Further information and the current demo version are available under www.akrobit.de.




| **Software Versions:** | | **Order no.** |
|---|---|---|
| **Light:** | For 20 measuring points and one instrument | **SW5600WC1** |
| **Standard:** | For any number of measuring points and instruments | **SW5600WC2** |
| **Pro:** | For any number of measuring points and instruments, all options included (except Data server, Web server and additional modules) | **SW5600WC3** |
| **Server:** | For any number of measuring points and devices, all options included (except add-on modules), with an integrated data server (simultaneous access by several RMT WinControl clients). | **SW5600WC4** |
| **Update:** | of the latest software version for older versions | **SW5600WCU3** |
| | of the latest software version for newer versions | **SW5600WCU4** |

| **Options:** | **Order no.** |
|---|---|
| Network capability (for addressing several ALMEMO® devices) | SW5600WCO1 |
| Automatic generation of measured data files (daily files / weekly files) | SW5600WCO2 |
| Alarm function (alarm record, output to ALMEMO® relays, starting other applications) | SW5600WCO5 |
| Data server | SW5600WCO8 |
| Web server | SW5600WCO9 |
| Extended evaluation functions | SW5600WCO10 |
| Fast scanning of measured values for V7 devices (up to 1000 mops online) | SW5600WCO11 |
| PIMEX Player: combined measured value display and video display | SW5600WCO12 |

| **Additional modules:** | **Order no.** |
|---|---|
| Thermal comfort and air-conditioning calculations (as per DIN 1946, EN ISO 7730) | SW 5600 WCZM1 |
| Password protection | SW 5600 WCZM2 |
| Test bench manager (prerequisite: WC3 / WC4 or WC1 / WC2 + WCO2) | SW 5600 WCZM3 |
| Thermal transmittance (U) wizard | SW 5600 WCZM4 |
| Thermal quantity wizard | SW 5600 WCZM5 |
| OPC export | SW 5600 WCZM6 |
| Additional protocol (selectable, requires WC3 / WC4) | SW 5600WCZM7 |
| The memory is read out automatically | SW 5600 WCZM9 |
| Automated printing (line diagrams, tables) (needed: WC3/WC4 or WC1/WC2 + WCO2) | SW5600WCZM10 |
| ODBC-Support (export to SQL-databases) | SW5600WCZM11 |
| Assistant for calibrating measuring sensors (needed: WC3/WC4) | SW5600WCZM12 |
| Assistant for calibrating climate cabinets (needed: WC3/WC4) | SW5600WCZM13 |
| PIMEX Recorder: combined measured value recording and video recording (needed: WC3/WC4) | SW5600WCZM14 |
| Assistant for refrigerant | SW5600WCZM15 |
| Assistant for A0/F0 value | SW5600WCZM16 |
| Assistant for process sequence and setpoint generator (needed: WC3/WC4) | SW5600WCZM17 |

| **Complete packages:** | **Order no.** |
|---|---|
| Long-term / continuous monitoring | SW 5600 WCV |
| CAN Trace: combined measured data recording and CAN data recording as well as evaluation functions | SW5600WCCAN |

| **Hardware copy protection:** | **Order no.** |
|---|---|
| USB dongle | SW 5600 HL |
| akrobit® license server | SW5600ALS |

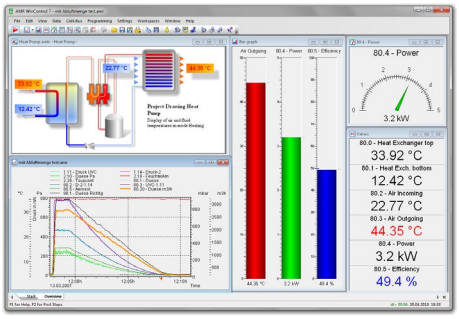
| Function overview | WC1 | WC2 | WC3 | WC4 | WCV |
|---|---|---|---|---|---|
| **Measured values - scanning** | | | | | |
| Number of measuring points supported | 20 | unlimited | unlimited | unlimited | unlimited |
| Number of connections supported | 1 | unlimited | unlimited | unlimited | unlimited |
| Support for ALMEMO® network | | ✓ | ✓ | ✓ | ✓ |
| Fast scanning of measured values for V7 devices (up to 1000 mops online) | | | ✓ | ✓ | ✓ |
| **Connection types** | | | | | |
| Serial (COM), TCP/IP | ✓ | ✓ | ✓ | ✓ | ✓ |
| Modem, GSM, and wireless modem support | | | ✓ | ✓ | ✓ |
| Schedule-controlled connection setup | | | ✓ | ✓ | ✓ |
| **Measured values - display** | | | | | |
| Display of measured values (numeric, bar chart, wind rose, round gauges) | ✓ | ✓ | ✓ | ✓ | ✓ |
| Line graph (YT), XY graph | ✓ | ✓ | ✓ | ✓ | ✓ |
| Save / load presentation characteristics as format type | ✓ | ✓ | ✓ | ✓ | ✓ |
| Table, overview | ✓ | ✓ | ✓ | ✓ | ✓ |
| Zoom functions | ✓ | ✓ | ✓ | ✓ | ✓ |
| Project icons | ✓ | ✓ | ✓ | ✓ | ✓ |
| Work surfaces | | | ✓ | ✓ | ✓ |
| **Measured values - saving** | | | | | |
| Saving to hard disk - manual | ✓ | ✓ | ✓ | ✓ | ✓ |
| Saving to hard disk - automatic | ✓ | ✓ | ✓ | ✓ | ✓ |
| Automatic generation of daily, weekly, monthly files | | | ✓ | ✓ | ✓ |
| Automatic saving on an event-controlled basis | | | ✓ | ✓ | ✓ |
| Automatically saved files - sent by e-mail | | | ✓ | ✓ | ✓ |
| Automated printing of files as line diagram or table | | | | | ✓ |
| Automatically saved files - backed up automatically | | | | | ✓ |
| Fail-safe (only devices with failsafe mode and internal memory) | | | | | ✓ |
| **Measured values - analysis** | | | | | |
| Two measuring cursors with statistics function | ✓ | ✓ | ✓ | ✓ | ✓ |
| Displaying local maximum and minimum values in a line graph | | | ✓ | ✓ | ✓ |
| Loading comparative characteristics in a line graph | | | ✓ | ✓ | ✓ |
| **Arithmetic channels** | | | | | |
| Global arithmetic channels | ✓ | ✓ | ✓ | ✓ | ✓ |
| Local arithmetic channels for files already saved | ✓ | ✓ | ✓ | ✓ | ✓ |
| Calculations based on external table values | ✓ | ✓ | ✓ | ✓ | ✓ |
| Formula editor with syntax highlighting | ✓ | ✓ | ✓ | ✓ | ✓ |
| Formula templates for many application cases | ✓ | ✓ | ✓ | ✓ | ✓ |
| **Measured values - processing** | | | | | |
| Linking /splitting of files | ✓ | ✓ | ✓ | ✓ | ✓ |
| Grouping measured value files in a particular folder (wild card search) | | | ✓ | ✓ | ✓ |
| Grouping measured value files over a particular period of time | | | ✓ | ✓ | ✓ |
| **Exporting measured values** | | | | | |
| Clipboard | ✓ | ✓ | ✓ | ✓ | ✓ |
| File formats (MS-Excel XLS / XLSX, TXT / CSV, FAMOS, QS-STAT, DIAdem, binary) | ✓ | ✓ | ✓ | ✓ | ✓ |
| Dynamic data exchange (DDE, OLE) | ✓ | ✓ | ✓ | ✓ | ✓ |
| Online data transmission to MS-Excel | ✓ | ✓ | ✓ | ✓ | ✓ |
| **Measured values - import** | | | | | |
| ASCII (list, columns, table formats) | ✓ | ✓ | ✓ | ✓ | ✓ |
| ALMEMO® View files | ✓ | ✓ | ✓ | ✓ | ✓ |
| **Programming of measuring points and devices** | | | | | |
| Programming the characteristics of measuring points and devices | ✓ | ✓ | ✓ | ✓ | ✓ |
| Automated scaling of third-party sensors | ✓ | ✓ | ✓ | ✓ | ✓ |
| Measuring points programming - save to file / load from file | ✓ | ✓ | ✓ | ✓ | ✓ |

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| | | | | | |
|---|---|---|---|---|---|
| Editing the programmed file (similar to Excel tables) | ✓ | ✓ | ✓ | ✓ | ✓ |
| **Data reduction** | | | | | |
| Averaging function (ONLINE and OFFLINE) | ✓ | ✓ | ✓ | ✓ | ✓ |
| Smoothing (over time / over number of values, ONLINE and OFFLINE) | ✓ | ✓ | ✓ | ✓ | ✓ |
| **Data logger functions** | | | | | |
| Programming the data logger (including averaging functions) | ✓ | ✓ | ✓ | ✓ | ✓ |
| Read out from device memory (all / selective measured values) | ✓ | ✓ | ✓ | ✓ | ✓ |
| Display of memory occupancy status | ✓ | ✓ | ✓ | ✓ | ✓ |
| **Alarm functions** | | | | | |
| Alarm value display in measuring points list and in all measured value displays | ✓ | ✓ | ✓ | ✓ | ✓ |
| Alarm report with confirmation and comments text | | | ✓ | ✓ | ✓ |
| Events list (audit trail) | | | ✓ | ✓ | ✓ |
| Start a program in the event of a particular fault | | | ✓ | ✓ | ✓ |
| Send e-mail / SMS in the event of an alarm | | | ✓ | ✓ | ✓ |
| Switch ALMEMO® output relays (specific to measuring point) | | | ✓ | ✓ | ✓ |
| In case of an alarm, tones and sound recording are played back (via a sound card) | | | ✓ | ✓ | ✓ |
| Control commands dependent on measured values (KwikScript) | | | ✓ | ✓ | ✓ |
| Advance warning alarm | | | | | ✓ |
| Alarm log printout | | | | | ✓ |
| Schedules for alarm processing | | | | | ✓ |
| Automatic checking of system configuration | | | | | ✓ |
| **Password protection** | | | | | |
| Protection against unauthorized access | | | | | ✓ |
| Protection against operator error by assigning individual access rights | | | | | ✓ |
| Traceability of activities by means of an events list | | | | | ✓ |
| Alarm confirmation with user identification | | | | | ✓ |
| **Control and regulation** | | | | | |
| Two-point controller with ALMEMO® output relays | | | ✓ | ✓ | ✓ |
| Proportional controller with ALMEMO® analog output modules | | | ✓ | ✓ | ✓ |
| PID controller with ALMEMO® analog output modules and arithmetic channels | | | ✓ | ✓ | ✓ |
| **Automation by means of user-defined operating controls** | | | | | |
| Keys and buttons in project icons and as a toolbar | ✓ | ✓ | ✓ | ✓ | ✓ |
| Setting constants | ✓ | ✓ | ✓ | ✓ | ✓ |
| Starting / stopping a measuring operation | ✓ | ✓ | ✓ | ✓ | ✓ |
| Switching relays | | | ✓ | ✓ | ✓ |
| Setting analog output values | | | ✓ | ✓ | ✓ |
| **Configuration management** | | | | | |
| Save / load interface configuration | | ✓ | ✓ | ✓ | ✓ |
| **Printout** | | | | | |
| Diagrams, meas. value tables, meas. point list, file overview including comments | ✓ | ✓ | ✓ | ✓ | ✓ |
| **Network server functions** | | | | | |
| Displaying measured values and diagrams on Intranet or Internet | | | | ✓ | ✓ |
| Embedding diagrams and project icons on your own Internet pages | | | | ✓ | ✓ |
| Accessing the integrated web server via any browser | | | | ✓ | ✓ |
| Accessing measured data and history data via TCP/IP (open text protocol) | | | | ✓ | ✓ |
| Forwarding measured data to RMT WinControl | | | | ✓ | ✓ |
| Availability of already acquired measured data even after program restart | | | | ✓ | ✓ |
| Alarm confirmation via web server | | | | | ✓ |

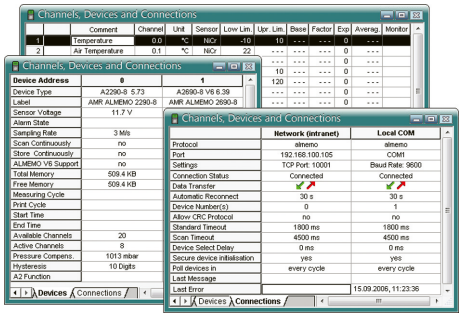
After initial installation AMR WinControl will run in demo mode - comprising the full functionality of the professional version (WC3) - for a trial period of 30 days, after which time it will have to be registered. All the functions incorporated in the professional version can be tried without restriction and without engagement. If further functions (additional modules) are needed for test purposes, these can also be enabled on a temporary basis. Users can thus try the software for the duration of the trial period with the full range of functions normally needed and then place an order after the system has been running to their complete satisfaction. Registration does not need reinstallation.

## Main Window / General View



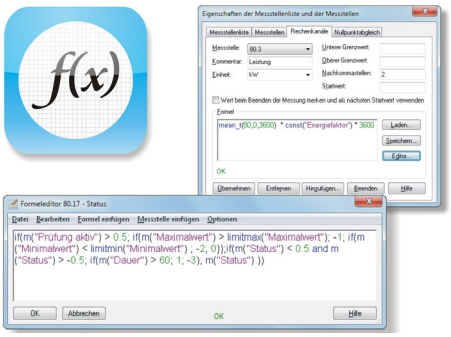
- The main window is the platform for all operations with AMR WinControl. All actions run within this window and can be minimised to a symbol, within the window or together with the window, and run in the background.
- The measuring data can be presented as follows: Numeric presentation of measured values, bar diagram, wind rose, round instruments, line diagram, XY diagram, table, file overview.
- Windows can be distributed over various work surfaces between which it is possible to switch by means of tabs.
- The program can be operated by means of menu commands. Only those commands, which can be executed in the corresponding situation, will be available. For a faster operation context-sensitive menus, keyboard commands and symbols in the tool bar are available.
- Comprehensive help information is available via the function descriptions in the status line, notes in the tool bar and a context-sensitive help system.

## List of Measuring Points, devices and connections



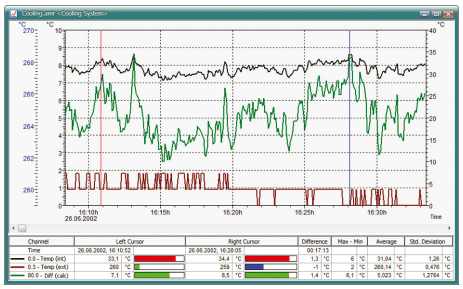
- As soon as the program is started and the serial interface is assigned, all sensors that are programmed and connected to the measuring instrument(s) will be recognized automatically and displayed in the list of measuring points.
- Apart from sensor specific data regarding the measuring range, comment, limit values, correction values the list also contains symbols for limit value exceeding, sensor breakage and online storage.
- Device-specific information, e.g. device type, memory occupancy, and settings for operating the data logger are also displayed.
- Measuring instruments can be connected via various interfaces (COM, TCP, modem) simultaneously; mixed-mode operation over various connections is possible. Information regarding the current status of connections is displayed here.

## Arithmetic channels / new formula editor



- Acquired measured values can be further processed and displayed via arithmetic channels during as well as after the measuring operation.
- The arithmetic channel feature of the program offers the possibility to calculate further variables from the measured data, to derive statuses, and to verify conditions.
- The new formula editor facilitates the color highlighting and checking of the syntax (syntax highlighting) as well as the convenient selection and integration of measuring points.
- For common calculations and tasks there are now formula templates available that can be directly entered and combined in the formula editor.
- Depending on the definition, an arithmetic channel is available either globally in the entire program as a virtual measuring point or just locally in one data record (line diagrams or XY diagrams, table).
- It is also possible to extend already saved data records by any desired number of arithmetic channels.
- Arithmetic channels can be saved together in one file and can be loaded again at any time. This enables a convenient evaluation of saved data with just a few clicks.

## Line graph, measuring cursors and statistics function



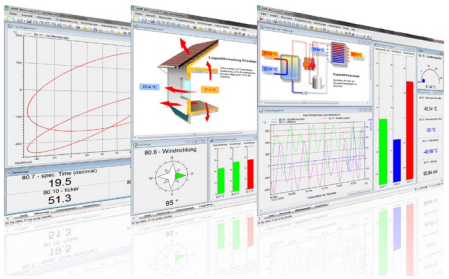
- The line graph displays the temporal evolution of the values of ongoing measurement operations or of saved data.
- Customer specific settings for the line graph can be saved as a template and can be applied in two clicks to other files. Alternatively it is also possible to create a new diagram with the saved template.
- The zoom function and the possibility to shift the axes with the mouse enable an easy navigation through the data.
- Two measuring cursors help to analyze the acquired data.
- The integrated statistics function calculates differences, minimum, maximum, average value and standard deviation of the range defined by the cursors and displays the data in a table.
- The diagram and the table can be printed, or can be copied to the clipboard.

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# Software



## Work spaces



- Better overview and fast navigation between different views thanks to tabs as used in a web browser.
- Division of projects into different views with clear designations of the tabs done by the user himself.
- It is no longer necessary to minimize a window to enable the user to see what he wants to see.
- Automatic switching on an event controlled basis or via active elements in a project illustration that e.g. serves as an overview.
- The navigation between work spaces can be restricted by password protection in order to oblige user to one particular view.
- The structural division of the windows into work spaces can also be fetched via the web server.

## Data logger functions



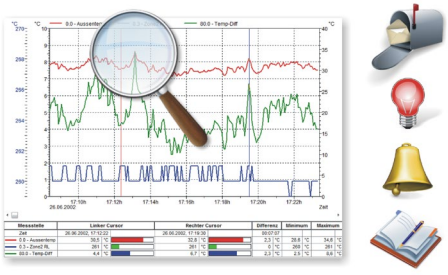

- Settings necessary for operating the data logger can also be programmed via the AMR WinControl software.
- The memory can be read out and deleted. The time of the data logger can be synchronized with the one of the system.
- Important information regarding the memory and the set cycles of the device are displayed in the overview of the measuring device.
- The readout of the memory devices can occur individually or combined for all data loggers in the measuring network, whereat a preview of already read values is displayed in a line diagram.
- Optionally it can be determined that only a selection of the saved values (not all measured values) shall be read out of the device memory.

## The memory is read out automatically



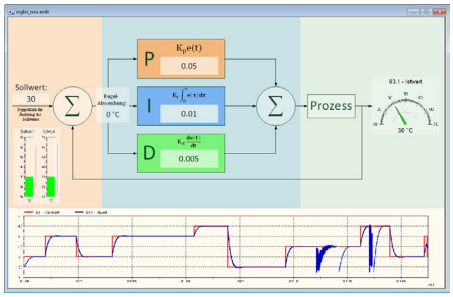
- This module greatly facilitates the task of reading out from the device memory of an autonomous data logger.
- Saving data to the data logger is interrupted, its memory is read out, and, if this is successful, the memory content is deleted. The time-of-day is synchronized and saving data to the data logger is resumed.
- Reading out from memory can be completely automated in the form of schedules.
- All steps and possible errors are documented in the events list.

## Monitoring Functions



- An alarm can be triggered by a component failure or a limit value infringement.
- Alarm processing can be activated individually for each measuring point.
- Alarms are reported visually and / or acoustically.
- The cause and the duration of events responsible for triggering the alarm are documented in an events list.
- Alarm reports can be confirmed either individually or all together.
- If the cause of an alarm persists uncorrected an alarm reminder is issued to ensure that the alarm is not forgotten after it has been confirmed.
- A line graph with settable history can be generated for the variable triggering an alarm.
- In the event of an alarm being triggered e-mails can be sent, ALMEMO® output relays can be switched, and programs or scripts can be executed.
- Alarm reports can be forwarded via the network.
- In the event of a limit value being infringed program control commands can be executed (KwikScript).

## Control and regulation



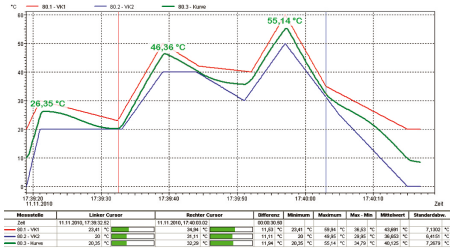

- Two-point controllers, proportional controllers, and time-based controls are available.
- It is also possible, using arithmetic channels, to define PID controllers.
- Setpoint curves und process sequences can be specified by means of files with coordinates pairs.
- Values can be specified and process sequences can be modified - all via command buttons in project icons or the toolbar.

## Automatic saving-to-memory



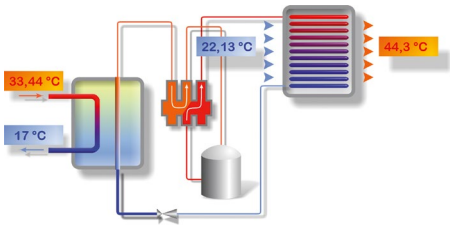

- Measured data can be saved to memory - manually or on a time-controlled or event-driven basis.
- Not only daily / weekly / monthly files can be specified but also files with any random periods of time.
- Data is saved to memory automatically in the background - irrespective of any opened diagrams, tables, or displays.
- Measured value files can be exported automatically on completion of a save-to-memory cycle and be sent by e-mail (as an option with the events list).

## Extended evaluation functions




- Measured value files can be incorporated in new or already existing line charts in the form of comparative characteristics.
- Folders containing a large number of measured value files can be conveniently grouped using various patterns based on file names and filters according to time and measuring point.
- Local maximum and minimum values can be shown in a line chart as any measured value curve required. The search radius between maximum and minimum can be freely set.

## Project illustrations




- Project illustrations allow for visualizing the setup of measurements and processes by using individually designed graphics and/or photographs (bitmaps).
- The presentation of the acquired data is provided in measured value fields that can be freely positioned; size and colors (including limit value violation) can be freely selected.
- Text fields can be filled with legend information and descriptions and can be freely positioned.
- By means of dynamic text fields it is possible to display texts in relation to measured values or conditions.
- All opened diagrams (line diagram, bar diagram, etc.) and displays can be inserted as a live element and arranged as desired.
- Command buttons (keys and switches) can be freely positioned in the project icon and allow changes to values for performing calculations or controlling processes (switching of relays or valves, etc.).
- The design of the command buttons can be changed in any way in the form of icons; the measurement setup can thus be visualized in a completely integrated way.
- Any number of project illustrations can be opened at the same time, allowing, for example, to give a presentation of the total view and detailed views of a project.

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# Software



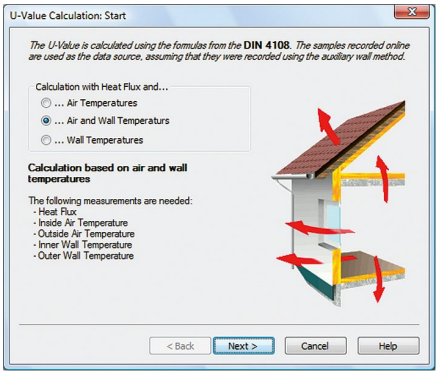
## Individual operation and display panels

- Combination of the operations and display elements into a clearly structured overall entity, focusing on fundamental aspects.
- Direct control and programming of devices, test procedures, and software features.
- Display of conditions – visually or in form of predefined, explanatory, changing texts.
- Integration of opened line diagrams, bar diagrams, and displays directly in the panel.
- Interaction also possible via web server in browser from other computer. Password protection is additionally recommended.
- The user is able to create the operation and display panels according to his own needs by means of the project illustration.
- We offer the service to create panels in case a visually appealing and sophisticated solution is desired.



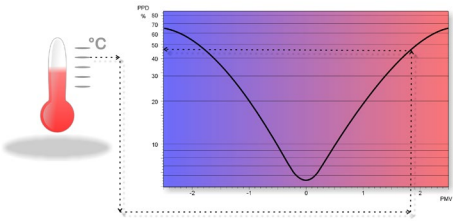
## Thermal transmittance (U) wizard

- The thermal transmittance (U) wizard is available for Online and Offline calculations; it guides the user through all the required steps.
- The user can choose from a selection of calculation methods - for the experimental thermal transmittance value, for the thermal transmittance value according to DIN 4108, and for the official calculated value.
- Determination of the currently calculated value and the sliding average value.
- The calculation methods will be described and the allocation of the corresponding measuring variables will be provided.
- After completing all steps a line diagram will be created, which will then be filled with the measuring data and the calculated variables.
- The cursor function can be used to open the statistic table, which provides further evaluation options (see above).



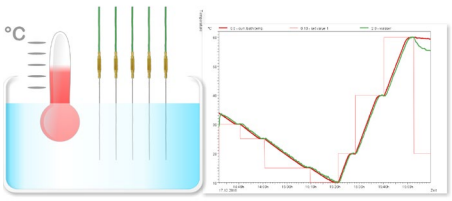

## PPD / PMV wizard (comfort index measurement)

- Calculation of thermal comfort as per DIN 1946 Part 2 and ISO 7730
- User guidance by means of a wizard and easy-to-understand evaluation
- Output in the form of “predicted mean vote” (PMV) and “predicted percent of dissatisfied“ (PPD)
- Online and offline calculation of PMV and PPD in real time or on the basis of measured values already existing
- Graphical representation of measured data and calculated values in a format suitable for export (e.g. ASCII, MS Excel, DiaDEM, etc.)
- Calculation parameters can be saved as a model for subsequent calculations.
- Additional PMV / PPD functions are available for use in arithmetic channels.

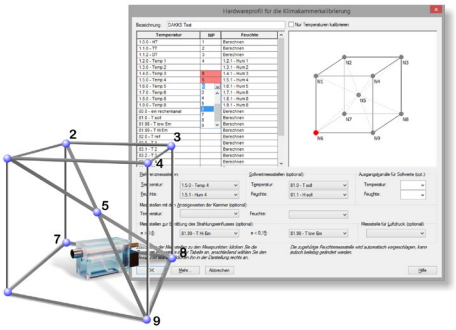



## Assistant for calibrating measuring sensors

- Multilevel calibration via self-defined calibration programs with set point lists and stability criterion
- Hardware profile with set point, reference and calibration measuring points.
- Automated procedure with measured value recording
- Drive a calibrator (set point specification)
- Any desired number of measuring points can be calibrated simultaneously
- Saving the values as AMR, CSV or Excel file
- Saving a configurable number of values per calibration step in case the stability criterion is met
- Overview window with progress bar
- The price for the module depends on the number of calibration station and calibrators that are to be supported simultaneously.

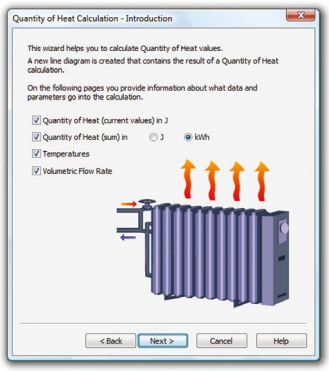


## Assistant for the calibration of climate chambers



- Calibration according to guideline DAkkS-DKD-R 5-7
- Support of methods A and B with 9 and more measuring points
- Fully automatic calibration over any number of temperature and humidity steps with stability criterion
- Direct integration of climate chambers (Weiss/Vötsch, CTS, Memmert, Binder, ESPEC, ATT and Feutron) for setpoint specification and measured value recording
- Online visualization of the calibration process for all measuring points
- Calculation of the local humidity at the temperature measuring points, taking air pressure and dew point into account
- Additional support for dew point mirrors from MBW, DewMaster, DewTrans and Michell
- Automatic creation of a complete Excel report with all measured values, measurement uncertainties and measurement uncertainty budgets
- Excel report template can be easily customized by the user to suit their needs

## Thermal quantity wizard




- The thermal quantity is calculated automatically from the volume flow and the temperature difference.
- You can enter settings easily and conveniently using the wizard.
- Data tables for water are included in delivery; users can define their own extensions for other media themselves.
- The thermal quantity can be calculated in real time or on the basis of existing measured value files.

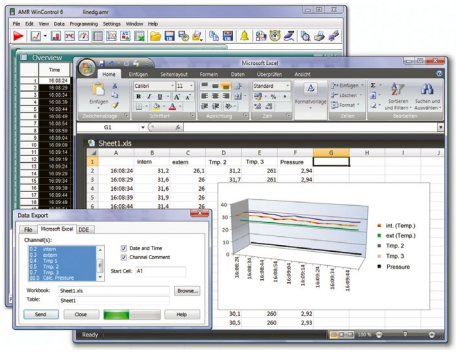
$$\delta Q = c_v \cdot m \cdot dT$$

## Password protection




- Thanks to the integrated user management system, unauthorized access to AMR WinControl is impossible. This policy reduces the security risks to a minimum.
- Every change of user is logged in the events list for subsequent evaluation.
- Access rights can be defined individually per user or can be copied.
- Authentication can be done as WinControl user or Windows user (local or Active Directory). Windows groups are supported.
- Access limitations can be defined for every single program feature.
- Alarm confirmations can be assigned unequivocally to particular users.
- The password protection is the minimum requirement for the system validation according to FDA 21 CFR Part 11.

## Data Export

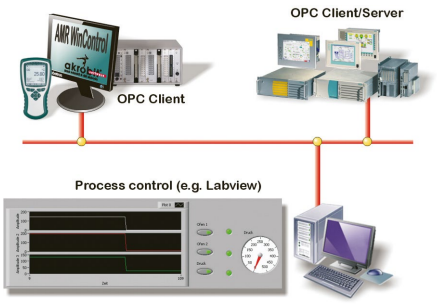


- The data files can be, Online and/or at any later point in time, stored in the following formats Excel (XLS / XLSX), ASCII (TXT / CSV), WK1, FAMOS, QS-STAT, DIAdem.
- With ODBC measured data can be exported in SQL databases (structured query language). This supports all data sources for which an ODBC driver is installed and set up on the system.
- The line and XY diagrams and the tables can be copied to the clipboard and, for example, be inserted into a protocol text.
- Via dynamic data exchange (DDE) it is possible to transfer measured values Online to other applications, for example MS-EXCEL.
- Furthermore, line diagrams can be embedded into text documents (e.g. a MS Word document) via the OLE function.

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## OPC export: Process control system connection

- „Openness, Productivity, and Collaboration”
- OPC is an established industrial standard for access procedures on a multi-vendor basis irrespective of manufacturer.
- AMR WinControl operates as an OPC client; it writes current measured values to the global variables provided by an OPC server.
- Data can be transferred in parallel to several OPC servers.
- Data from AMR WinControl can, with the aid of OPC, be visualized online in LabView™.



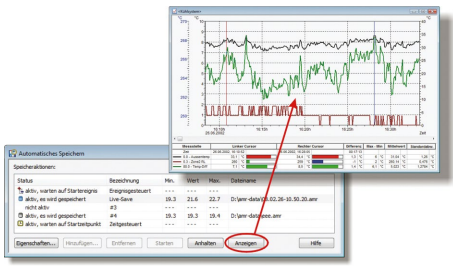

## ODBC support: SQL database connection

- Open database connectivity
- ODBC is a standardized database interface used by SQL as its database language.
- Recorded measured values can thus be transferred to a database.
- Current measured values can be interrogated from a database per measuring cycle.
- A suitable ODBC driver for the database must be installed and set up on the system.



## Test bench manager

- Several autosave managers can be operated and organized via a convenient, easy-to-use graphical user interface.
- Measured data can thus be saved simultaneously to different files.
- Autosave managers can be started and stopped independently of one another and according to various criteria (time-driven or event-driven).
- Different measuring locations (operating in parallel) can thus be treated separately.
- Measured value files can be indicated as write-protected already during recording.
- Including 10 autosave managers (optionally more available)
- If required, we offer to implement individual automations of test stations including input of test parameters, test procedure, signaling (optical/acoustic), and protocol printout.

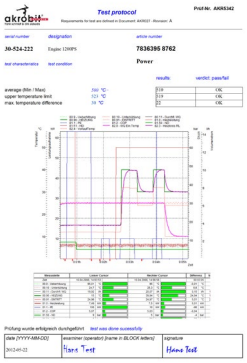


## Connecting Options

- AMR WinControl can handle single measuring instruments as well as a network of measuring instruments of the ALMEMO® series.
- The connection to the measuring instrument(s) can be established via serial interface, USB, radio, or mobile modem.
- In a similar way, the measuring instruments can be addressed via a computer network (TCP/IP address) and VPN.
- Connections can be set up on a time-controlled basis. Reading out from the memory on ALMEMO® devices can be automated. The memory can on request be cleared and saving to memory can be resumed automatically. Any problems encountered are noted in the events list.
- Via mobile radio it is possible to establish connections to devices that have been installed in remote locations. The connection can be established inexpensively and permanently, as the billing is volume-oriented.



## Protocol printout



- With a few clicks, recorded measured values can be printed out as a protocol.
- The customer can create his own individual templates or customize the available sample templates.
- The protocol may include the line graph, measured values, calculated variables, times, and comments.
- Ideal for compiling measurement reports or protocols for customers without having to bother with Excel and data export

## System integration




- Optionally, AMR WinControl offers support for protocols for measured value enquiry from devices from other manufacturers simultaneously for any number of connections.
- MODBUS: flexible protocol and industry standard
- CAN Bus: with PEAK-CAN or USB2CAN adapter
- OPC DA: measured data acquisition from measuring devices/systems or data transfer to an OPC server (e.g. LabView)
- OPC UA: Write and read measured values to/from variables of the integrated OPC UA server
- SCPI: Connection of devices with SCPI protocol
- MQTT: Inclusion of topics of an MQTT server (broker) as measuring points and sending of acquired measured values as topics to an MQTT server.
- ODBC: SQL data base (Oracle, MSSQL, MySQL, …)
- Climate chambers: Feutron®, CTC, Binder, Memmert, Vötsch, and Weiss Umwelttechnik, ESPEC, ATT
- Dew point mirror: DPM 373, DewMaster
- Gas analyzers: ECO Physics CLD 8xx, ABB, MRU Nova H8, as well as Emerson devices X-Stream, MLT, CLD, and NGA
- Power meters & energy meters: Yokogawa WT230 & WT310, Janitza®, Infratek 106A & 108A, Simeas-T, and Hioki
- Calibrators: Julabo, ISOTECH, AMETEK® (JofraTM), JOFRA (ATC/RTC)
- Precision measuring device: Fluke 8508A (with full precision)
- Barcode scanner protocol: network-compatible and serial scanners
- Simple ASCII: implementation of your own measuring devices
- The use of AMR WinControl for acquiring measured data of further devices is possible upon request.

## Barcode scanner protocol



- Acquisition of barcodes in text format via USB, TCP/IP or radio by using appropriate scanners.
- Analysis of the barcode to control program features (e.g. automatic saving) and test procedures.
- The barcode is automatically imported into the name of the file.
- Display of the scanned barcode in text format and storage of numeric barcodes in measured value files.
- Several scanners can be operated in parallel.

## Measured value server




- With the measured value server up to 200 users simultaneously can access current measured values and the measured values history via a TCP network (Intranet / Internet).
- Interface to any data acquisition and process control system
- Online transmission of measured data to other operating systems (e.g. LINUX, WINDOWS CE, UNIX, etc.)
- Data distribution according to any specified criteria
- Customized solutions can be implemented using straightforward ASCII commands issued via the TCP protocol; all these commands are fully documented.
- Open “read-only” interface for any user-defined connection software
- “REMOTE WinControl” and “WinControl Client OCX” provide powerful standard solutions for the measured value clients.

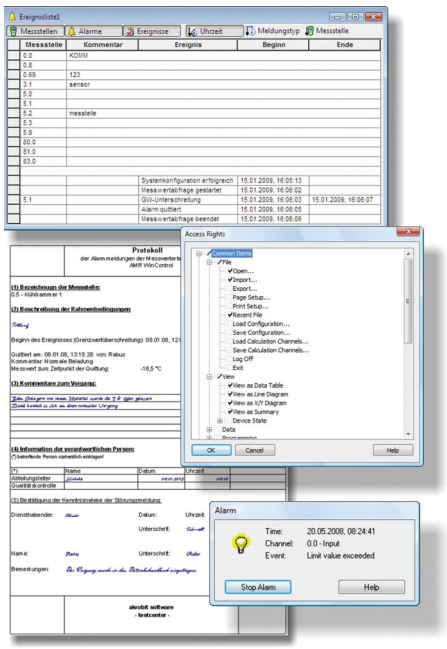
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## Web server



- AMR WinControl provides a full range of web server functions for publishing web pages (HTML) in the Intranet / Internet. It also incorporates additional functions that can be used to output the contents of AMR WinControl windows directly onto web pages.
- Current measured values and measured value histories can be displayed in a variety of ways (line diagrams, XY diagrams, project illustrations) in the Intranet / Internet.
- Visualization of processes and systems
- Visual remote monitoring
- Confirmation of alarms via the browser (only with alarm function and password protection)
- Linking presentation and real-time data on web pages
- The way in which measured values are displayed does not depend on the operating system; only a browser is needed (MS Internet Explorer, Firefox, Chrome, Opera, etc.).
- Diagrams and measured values can also be displayed on smartphones and tablet PCs.
- Security provided by SSL / TLS and user authentication
- Very easy to use: Images generated from the contents of a window can be transmitted as soon as the program starts - without needing any further settings. For particularly demanding tasks the HTML pages must first be adapted and connected to the web server.
- The wide variety of image formats and special parameters make for transparency and loss-free scaling and permit automatic updating. Powerful real-time compression algorithms minimize the volume of data to be transmitted.
- All the layout facilities available in HTML, DHTML, and CSS can be exploited; combining with JavaScript is also possible.
- Graphics, text, and measured value displays can be combined and merged completely seamlessly.
- The web designer is free to specify, more or less independently of AMR WinControl, how the measured value displays are to appear.
- The user receives current measured data without being exposed to any sort of security risk - because there is no need for Java or special plug-ins.

## SW5600WCV Package for long-term / continuous monitoring



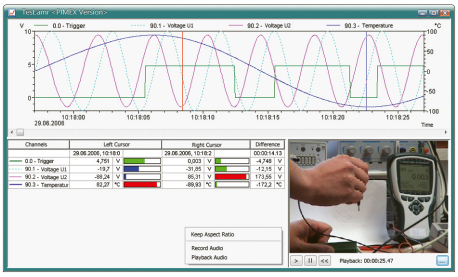
This package, based on the AMR WinControl “professional” version, contains all the options and modules needed to implement long-term and continuous monitoring of critical measurable variables.

- Integrated user management with individually settable access rights and password protection
- Tamper-proof event list with sort and filter functions
- Trend monitoring - pre-alarm for signaling trend developments
- Signaling of alarms and events with user-specific confirmation and comments
- Alarm confirmation per web server (authentication and SSL / TLS available)
- Schedules: Automatic switching ON / OFF of alarm treatment for each measuring point, e.g. alarm treatment on working days between 6 and 18 o’clock only.
- Temporarily withdrawing certain measuring points from alarm treatment, e.g. for defrosting a cold room
- In the event of alarm an MS-Excel log can be printed out automatically. Users can modify the log provided or create their own.
- Failsafe: Automatic reading out of the device memory after loss of connection to the device
- Requirements: ALMEMO® device with failsafe mode and internal memory
- System configuration
- Integrity check on all measuring points and measuring instruments after program start
- Processing of measured and calculated variables in control and regulation functions
- Automatic printout and / or e-mail with daily files and event lists
- Including security package.

**Security package**

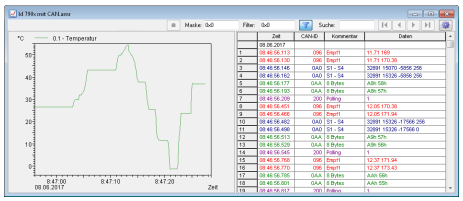
- Data security: Automatic backup of all automatically recorded data (daily and weekly files, measured values recorded on an event-controlled basis, event lists, etc.)
- Fail-safe: In the event of failure a watchdog is triggered for PC restart and / or signaling via relay.
- Including watchdog card

## PIMEX: combined measured value recording and video recording



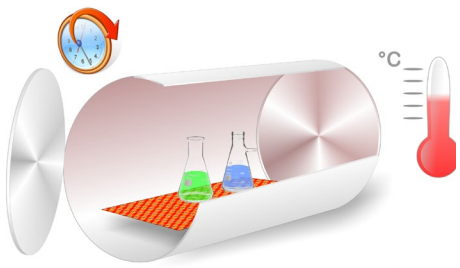
- Simultaneous acquisition of measured values from ALMEMO® devices together with video data from a digital source
- The measured data and video signal are synchronized and displayed together.
- The modes available are preview, record, and playback.
- PIMEX player is included in the professional version (WC3). The recording function is available as module (ZM14).
- Possible applications: Documentation / visualization of the process environment (e.g. for safety in the workplace, quality management, etc.)

## CAN trace: combined measured value recording and CAN data recording



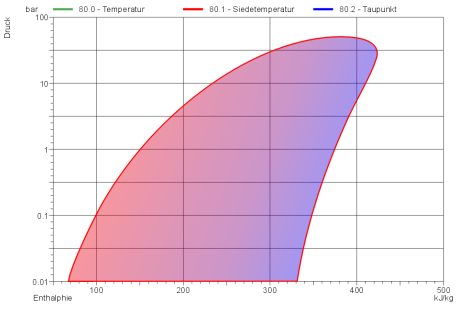
- Synchronous recording and display of measured data and CAN messages
- Navigation with cursor in the line graph and display of the associated CAN messages in a table
- Configurable decoding and color highlighting of the CAN data
- Search and filtering of the CAN data
- Export of CAN data to a TRC file
- Import of CAN data from a TRC file to measured data
- Support of PEAK-CAN adapter (USB or PCIe)

## Assistant for A0/F0 value




- Calculation of the A0 or F0 value during sterilization in AMR WinControl.
- Wizard for creating the appropriate calculation channels with specification of the temperature measuring points, the reference temperature and the z-value.
- Any number of independent calculations in parallel.
- Calculations can be performed live (online) or subsequently for recorded values.

## Assistant for refrigerant




- Calculations of dew point or boiling temperature.
- Wizard for creating the appropriate calculation channels with specification of pressure measuring points and data tables for desired refrigerant.
- Refrigerants can be added by the user.
- Any number of independent calculations in parallel.
- Calculations can be performed live (online) or afterwards.

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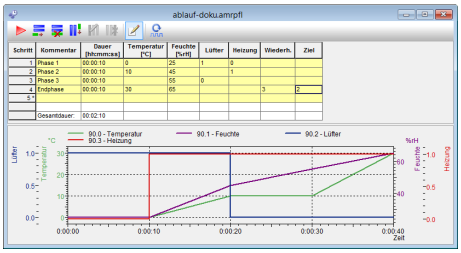
## Automation of test stations

- Management of up to 150 independent test stations (basic configuration: 10).
- Storage of assigned measurement data in separate files for each test station.
- Input of test parameters (DUT, tester, etc.) and data for controlling the test when starting a test station.
- Control of the test station and the test item via calculation channels and the setpoint generator.
- Export and archiving of test results.
- Output of test reports as PDF or to a printer.
- E-mail dispatch after the test.
- Optional: Control of the test station with barcode scanner.
- Optional: Output of test results to an SQL database (ODBC).
- On request complete test station automation by akrobit Software GmbH.



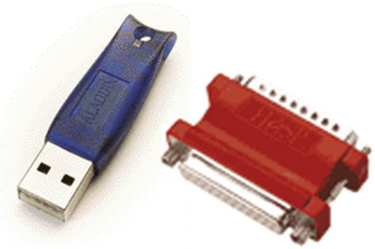
## Assistant for process sequence and setpoint generator

- Creation of time-controlled value and switching sequences via a graphical user interface.
- Tabular specification of times and values with repetitions
- Continuous progressions (ramps) as well as abrupt changes of values
- Waiting for signals
- Representation of the total course in a line diagram
- Parallel operation of several process sequences
- Support for all ALMEMO® analog and relay outputs, as well as supported third-party devices with setpoint specification such as climatic chambers and furnaces.




## Copy protection

- AMR WinControl incorporates a copy protection system which requires a PC-dependent code to enable it. To receive this code the user must first register the software by telephone, fax, or e-mail. Per licence purchased the software may be installed and operated on one computer.
- It is also possible as an option to request a hardware copy protection mechanism, a dongle; with this the software can be installed on any number of computers but will only run on that PC into which the dongle is currently plugged.
- With the akrobit® license server, it is possible to run the software on as many computers in the company network as licenses have been purchased, without the need for cumbersome replugging. The license is assigned dynamically when the software is started and closed. No additional USB dongle is required.



## AMR WinControl system requirements

| Components | Minimum configuration | Recommended configuration |
|---|---|---|
| Computer | Windows-PC (x86/x64) | Windows-PC (x86/x64) |
| Operating system | Windows 8.1, 10, 11, server 2016, 2019, 2022 (32 and 64 bit) | Windows 11 |
| Memory | 8192 MB | 16384 MB |
| Free hard-disk capacity | 30 MB | 100 MB |
| Interfaces | USB | COM (RS232), USB, network card |