

CS-504 Calibration Software

The screenshot displays the CS-504 Calibration Software interface. The main window is titled 'CALIBRATION REPORT' and shows a summary of instrument information, including company name (Presys Instruments), instrument type (Transmitter), function (Temperature of boiler 1), and calibration frequency (12 months). It also includes technical information such as manufacturer (Presys), model (TY-2090), input/output (RTD-Pt-100 Voltage), and accuracy (± 0.50% of Span).

Overlaid on the report are several windows:

- Calibration Results:** A table showing calibration data for Tag TT-14001 (1) with Serial Number 0720996. The table includes columns for Hour, Calibration, Corr. Cal., Reference, Corr. Ref., Reading, Span Error (%), and F. Scale Error. Data points range from 0.00 to 50.00 calibration values.
- Tags:** A list of instrument tags including LI-10000, LI-10010, LI-10020, LIC-10010, PI-14001, PT-15020, SI-18001, TE-14001, TI-14002, TI-16020, and TT-14001.
- Error Graph:** A line graph titled 'Error Graph' showing calibration error (%) versus calibration value for Tag TT-14001, S.N.:0720996, dated 23/09/96 at 15:02:49. The graph shows data points for 'A.F. Up', 'A.F. Down', 'A.L. Up', and 'A.L. Down' around a 0% error line.

The bottom of the report includes calibration conditions (Laboratory II, 1.001 atm), used standards, comments (AS FOUND - Only one point is out of tolerance), and maintenance type (Preventive). The operator is identified as WILLIAN.

CS-504 Calibration Software was developed to automatize and manage instrument calibration processes together with **PRESYS** calibrators:

- ❑ Allows the registration of instruments and sensors, calibration standards and factory areas, and also the choice of engineering units and signal types to be used in calibrations.
- ❑ Brings more efficiency to the organization of calibrations through work order concepts.
- ❑ Prints calibration reports and certificates, as well as error graphics and calibration history.
- ❑ Sends and receives calibrator information by means of serial communication.
- ❑ Runs in Windows* and it is easily operated.

CS-504 makes possible the Documenting Calibration System accomplishment by means of information shared with PRESYS calibrators, allowing data handling through report and certificate issues, automatic management of tasks, registration of process instruments and sensors, organization and storage of data, for an overall coverage of quality procedure requirements, specially those related to ISO 9000.

CS-504 allows the specification of work orders with calibration strategies of several instruments to be calibrated. Through its instructions, the calibrators perform the correct sequence for calibration of all points and, when it is necessary, organize the data input to be provided by the operator. In the field, the calibrators have sufficient autonomy to inform the operator of the measures already carried out and the deviations found during the calibration process.

CS-504 Calibration Software

CS-504 allows the registration of several instruments and sensors, engineering units, signal types, calibration standards and factory areas, making it easier to configure new calibration strategies by using registers already specified.

It helps to verify calibration standards compliance, due to the registration of their calibration certificate number and validity.

All information concerning the registration of instruments or the results of calibrations are stored in CS-504 database which can also be easily accessed with Access*.

Each instrument is associated to a tag, configured with one or two calibration strategies (for the instrument input and output, for example), including an option for reading ambient temperature with a probe Pt-100 connected to the calibrator. The calibration points must also be defined, either chosen by the user or calculated by the software, and the direction of sequence to be followed (up and/or down).

The automatic calibrations can be performed without interference of the operator when the calibrator generates a sequence of signals which are associated to the values measured simultaneously in its input. When the calibrator does not measure or when it does not generate a certain type of signal, as in a calibration of an indicator or manual station, for example, the calibrator asks the operator to enter through the keypad the value corresponding to each measure carried out during the calibration.

Calibration strategies of up to 10 tags are organized in work orders and transmitted to a calibrator by means of serial communication.

The calibrators perform two types of calibration: *as found* and *as left*. The *as found* calibration is carried out to verify the instrument present conditions, while the *as left* allows the calibration points to be checked over more than one up/down sequence, usually after the instrument adjustment.

After returning calibration data to the computer, it is possible to visualize through tables the results of the *as found* and *as left* calibrations, and to print error graphics for the calibration points.

CS-504 offers three kinds of calibration reports, distinguished from one another by the layout of the measured values presentation, which also show the instrument description, calibration conditions, used standards, failures and comments. All the information mentioned is stored in the database.

The software also allows the printing of reports with information about previous calibrations registered in the database, as calibration history per instrument or tag, and annual statistics of the number of calibrations for each factory area.

System and Hardware Requirements

- Computer compatible with IBM-PC 486DX or higher. Windows* 3.x or higher.
- Minimum of 4MB of RAM (8MB is recommended) and 8MB of free hard disk area.
- 3 ½ " disk drive and mouse.
- VGA monitor.
- Serial port available for communication.

* Windows and Access are Microsoft trademarks.