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viva 2.0

Release Notes

1 Purpose

The new software version viva 2.0 contains the most common measuring modes and calibration techniques used in quantitative trace analysis. In addition to the use of solid-state electrodes and rotating disk electrodes, it now also allows the use of the Multi-Mode Electrode pro.

A number of further adjustments, improvements and bug fixes expand the application range and increase the analysis system's usability and operational reliability.

2 New features

General

- **FPGA update by Metrohm Service**
  Devices of the type 894 Professional CVS with the FPGA version 114 and the program version 5.884.0011 have to be updated by Metrohm Service for the use with viva 2.0.
- **Firmware update subject to compatible FPGA version**
  An update of the 884 Professional VA or 894 Professional CVS firmware is only possible if the FPGA version is compatible with the new firmware version. If this is not the case, then a message is displayed that the FPGA version needs to be replaced by Metrohm Service first. The device cannot be operated before this replacement has taken place.
- **Russian time zones**
  The Russian time zones are now correctly used in viva if they are correctly available in the Windows operating systems.

New instruments

- **884 Professional VA**

New commands

- **Voltammetry command DP**
  The **DP** command is a voltammetry command for carrying out measurements with the 884 Professional VA using **DP** (differential pulse measuring mode).

- **Voltammetry command SQW**
  The **SQW** command is a voltammetry command for carrying out measurements with the 884 Professional VA using **SQW** (square-wave measuring mode).
- **Voltammetry command ELECTRODE TEST**
  The **ELECTRODE TEST** command performs the electrode test irrespective of a voltammetry command in the method run.
- **Call command CALL BLANK**
  The **CALL BLANK** command calls VA tracks for blank value determination.
- **Automation command MAIN VALVE**
  The **MAIN VALVE** command opens and closes the main valve of the 884 Professional VA for the inert gas. The command is mainly used for turning off the gas supply at the end of the determination.
- **Automation command STIR & PURGE**
  The **STIR & PURGE** command is used to switch the stirrer on and off and to purge the measuring solution. The command can only be used with the 884 Professional VA.

New sensors/electrodes

- **MME**
  The Multi-Mode electrode pro (MME pro) combines the following polarographic and voltammetric mercury electrodes in one single construction:
  - **HMDE** (hanging mercury drop electrode)
  - **DME** (dropping mercury electrode)
  - **SMDE** (static mercury drop electrode)
- **scTRACE Gold**
- **RDE/SSE** (rotating disk electrode / solid-state electrode)

New calibration methods

- **Standard addition**
  The standard addition is a calibration method in which a sample is spiked several times with a known amount of standard solution. The calibration method is used in trace analysis to minimize matrix effects.
- **External calibration**
  The external calibration is a calibration method in which the sample content is calculated on the basis of a calibration curve that has already been determined with reference solutions.

New method templates

- Existing method templates have been adjusted for use in viva 2.0. Additional method templates for the use of new commands and calibration methods are offered.

Database program part

- The baseline parameters can be newly defined per variation and replication for each detected peak during reprocessing.
- New report templates have been created that provide statistical data for the height of the peaks.

Manual program part

- Devices of the type 884 Professional VA, including operation of the Multi-Mode Electrode pro (MME pro), have been added to the manual control.

3 Improvements

General

- **New variables for the STIR** command
  - **DBL** - Total duration for the processing of the command in s
  - **RPM** - Stirring rate in min^{-1}
  - **STY** - Type of stop with which the command was stopped
- **New result variable BTYPE**
  This variable indicates the baseline type used for curve evaluation.

Workplace program part

- **New message for failed electrode test**
  If the electrode test has failed, then it can now be repeated within 120 s without having to restart the method.

Method program part

- **Dosing commands**
  In the **LQH**, **PREP**, **EMPTY** and **RLS DOS** dosing commands, only the dosing unit to be used has to be specified - just like in the **ADD SAMPLE** and **ADD SAMPLE DT** commands. The dosing device and instrument are assigned automatically, according to the settings in the configuration.
- **Cyclovoltammetric and potentiostatic pretreatment**
  A cyclovoltammetric pretreatment was added to the voltammetry commands **CVS**, **CPVS** and **CP** on the **Pretreatment** tab. Furthermore, two new potentials have been added to the potentiostatic pretreatment.
- **Default value for unit of standard solution changed**
  The default value for the unit was changed to **mg/L** for creating a new standard solution.
- **Input range for the potential step**
  The lower value for the input range of the parameter **Potential step** was increased to **0.00016 V** in the **CVS** command.

Configuration program part

- **Number of places for serial number increased**
  The maximum number of character has been increased to 15 for the **Sensor serial number** field.
- **Number of characters for comment increased**
  The maximum number of characters has been increased to 125 for the **Comment** field of the sensors/electrodes.
- **Default value for unit changed**
  The default value for the unit was changed to **mg/L** for creating a new common variable or global variable.

4 Fixed bugs and problems

Several small errors have been eliminated.

Workplace program part

- **Concentration calculations in the measuring cell**
  An error in the volume calculation when using different standard solutions was corrected.

Database program part

- **Curve smoothing**
  Smoothing artifacts at the beginning and at the end of voltammetric curves have been eliminated.
- **Axis labels and scaling of curves**
  Axis labels and manual scaling of voltammetric curves are no longer transferred to the calibration curves.

5 Signatures

Herisau, May 25, 2015

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