Cubis® II QApp

More Efficiency and Fail-Safe Reliability With QApps for Your Cubis® II Laboratory Balance

Simplifying Progress

SARTORIUS

Expand the Application Range of Your Cubis® II MCA Laboratory Balance Licensing QApp Software Solutions

On the premium laboratory balance Cubis® II MCA, essential QApp software solutions covering a broad range of different applications like mixing, weighing with statistics, totalization, density determination of solids, percentage weighing, multiplication, averaging, checkweighing, highest peak value, counting, interval print and barcode print are factory installed and licensed. The applications focus on weighing activities often required in everyday life.

Of course, the essential applications can not cover all requirements. Every Cubis® II MCA balance offers pre-installed additional weighing applications or function extension for special applications.

These QApp software applications are grouped into the packages pharma, advanced, utilities and connectivity and can be permanently licensed on demand. Either one or more packages can be purchased with the balance and will be factory licensed or a license for packages or individual QApps can be acquired after installation. In addition to the packages for very advanced applications additional special QApps are pre-installed. These QApps must be purchased and licensed individually.

For all QApps a descriptive text inclusive formulas used for results calculation plus selected screenshots are shown in the balance QApp Center and each QApp can be licensed 30 days for trial. So before paying for a license users can test the pre-installed software applications.

Purchased software licenses remain valid for the total balance lifetime. If Sartorius publishes a new QApp version no additional licensing costs have to be paid. By this licensing concept our customers can be sure that their applications are future proven.

Individual Customer Solutions

Pre-installed standard applications on Cubis® balances and QApps cover a wide variety of laboratory applications. In addition, Sartorius is able to cover special applications using customer-specific software modules. Based on your SOP, we create workflows that depict your process and can also help to make these processes more efficient.

To use QApps in a regulated environment, they must be validated. For the validation of computer-assisted systems, the GAMP® Guideline of the International Society for Pharmaceutical Engineering (ISPE) has established itself as the generally recognized standard regulation in the pharmaceutical industry in recent years. The GAMP® guide was first published in 1994 and has been available since 2008 in the 5th version.

Based on the GAMP® 5 guideline, Sartorius developed the Product Development Life Cylce (PDLC). It forms the basis for all development activities and thus also for the conception, creation and validation of QApps. In order to meet the highest quality requirements, the PDLC is implemented via workflows in a software-supported application lifecycle management system (ALM). This guarantees the adherence to the process and thus the quality-assured procedure.

The Sartorius PDLC therefore guarantees the customer a GAMP®-compliant development of GxP-relevant QApps and a complete life cycle documentation.

Package Overview

Package Overview
Essential Package
Pharma Package QP1
Advanced Package QP2
Utilities Package QP3
Connectivity Package QP4
Special QApps
All-Inclusive Package QP99

Package Overview

QApp Name	Material Number	Package	Keywords	Short Description
Averaging	No material number	Essentials	Animal weighing, unstable conditions, nutrition, medication	Weighing of animals or in instabile enviroments
Multiplication	No material number	Essentials	Multiplication, factor	Multiplies the weight value by a user-defined factor
Checkweighing	No material number	Essentials	Check weighing, tolerance, pack weight, filling, finished good check	Checks if a sample weight is within a specified tolerance
Counting	No material number	Essentials	Particles, objects, number of pieces, quantity	Number of objects of approximately equal weight
Density of solids	No material number	Essentials	Reference liquid, water, alcohol, ethanol, octane, density, volumetric mass density, weight per unit volume, buoyancy, relative density, specific gravity, homogenity test, hydrostatic weighing, bulk density, thermal expansivity, compressibility	Density of solids using buoyancy method
Mixing	No material number	Essentials	Compounds, mixing, recipe	Weighing of recipes (w/o database)
Highest peak value	No material number	Essentials	Highest peak value	Captures the highest positive stable or unstable weight value
Percentage weighing	No material number	Essentials	Percentage weighing, percentage share	Percentage share of an unknown sample in comparison to a reference weight
Statistics	No material number	Essentials	Mean, max, min, standard deviation	Statistical evaluation of weight values

QApp Name	Material Number	Package	Keywords	Short Description
Weighing	No material number	Essentials	Weighing	Weighing of samples
Totalization	No material number	Essentials	Sum, total weight	Calculates the sum of weight values
Interval print	No material number	Essentials	Duration, interval, with stability, without stability, CSV export	Collection of weight values at set intervals and export to CSV
Barcode print	No material number	Essentials	Output format, QR code, barcode, printout, data transfer	Printing of barcodes or QR codes
Weighing with SBI output	No material number	Essentials	Weighing, SBI output, data transfer	Weighing of samples with SBI output of acquired data
User management	QAPP100	Pharma	21 CFR part 11, user management, user role, LDAP, identity management, access management, user group, password management, security, Pharma & Biopharma	21 CFR part 11 compliance
Electronic signature	QAPP101	Pharma	21 CFR part 11, electronic signature, digital signature, cryptography, data integrity, user identification, checksum, authentification, data safety, Pharma & Biopharma	21 CFR part 11 compliance
Audit trail	QAPP102	Pharma	21 CFR part 11, audit trail, data integrity, electronic records, data modification, Pharma & Biopharma	21 CFR part 11 compliance

QApp Name	Material Number	Package	Keywords	Short Description
Minimum weight	QAPP103	Pharma	minUSP, SQmin, USP Chapter 41, Ph.Eur. Chapter 2.1.7, EURAMET, minimum weight, operating range, repeatability, accuracy, standard deviation, operating starting point, minimum sample quantity	Monitors compliance of the permitted working range acc. to different guidelines
USPAdvanced	QAPP104	Pharma	USP Chapter 41 or Ph.Eur. Chapter 2.1.7, minimum weight determination, operating range, repeatability, accuracy, standard deviation, operating starting point, minimum sample quantity	Determination of the starting point of the permitted working range acc. to USP chapter 41 or Pr.Eur. Chapter 2.1.7
Measurement uncertainty	QAPP105	Pharma	Measurement uncertainty, repeatability, random error, systematic error, readability, sensitivity, EURAMET cg18 non-linearity, eccentricity, DAkkS certificate, SURE	Dynamic display of measurement uncertainty
User calibration	QAPP106	Pharma	User calibration, external calibration, EURAMET Calibration Guide, NIST Handbook 44, OIML, ASTM, hysteresis, linearity, multiple calibration weights	External calibration process
Density of solids with statistics	QAPP200	Advanced	Particles, objects, number of pieces, quantity, reference weight, preset reference weight, reference weight optimization, piece weight, statistics	Density of solids using the buoyancy method
Density of liquids	QAPP201	Advanced	Liquid density determination, liquid sample, solvent, solution, volumetric mass density, weight per unit volume, buoyancy, relative density, specific gravity, homogenity test, hydrostatic weighing, bulk density, thermal expansivity, compressibility, reference plummet, volume participation, glass sinker	Density of liquids using a glass plummet

QApp Name	Material Number	Package	Keywords	Short Description
Density with pycnometer	QAPP202	Advanced	Reference liquid, water, alcohol, ethanol, octane, density, volumetric mass density, weight per unit volume, buoyancy, relative density, specific gravity, homogenity test, hydrostatic weighing, thermal expansivity, compressibility, pycnometer, pasty substances	Density of powders, liquids and pasty substances using a pycnometer
Percentage weighing with reference	QAPP203	Advanced	Percentage weighing, reference weight, initial weight, DIN 1310, percentage share, percentage difference	Percentage share or difference in comparison to a reference weight
Counting with reference weight	QAPP204	Advanced	Particles, objects, number of pieces, quantity, reference weight, preset reference weight, reference weight optimization, piece weight	Number of parts with approximately equal weight
Counting with checkweighing	QAPP205	Advanced	Particles, objects, number of pieces, quantity, reference weight, preset reference weight, reference weight optimization, piece weight, check weighing, good counter, bad counter	Number of parts plus check if number is within limits
Counting with statistics	QAPP206	Advanced	Particles, objects, number of pieces, quantity, reference weight, preset reference weight, reference weight optimization, piece weight, statistics	Number of parts plus statistical evaluation
Backweighing	QAPP207	Advanced	Backweighing, initial weight, back weight, final weight, residue, atro, moisture, dry weight, residual weight, dry mass, lut	Differential sample weighing incl. initial & back weight

QApp Name	Material Number	Package	Keywords	Short Description
Residual dirt analysis	QAPP208	Advanced	Backweighing, initial weight, back weight, final weight, residue, dry weight, residual weight, dry mass, dirt, machine parts, particles, VDA19, filter, solvent, blank value, extraction, methods, sonication, rinsing, shaking, filtration, gravimetry, residual dirt, DIN EN ISO 16232, hydac, automotive industry	Residual dirt according to VDA19
Residue on ignition	QAPP209	Advanced	DIN EN ISO 53568, backweighing, crucible, silica, platinum, quartz, porcellane, desiccator, residue, percentage residue, furnace, inorganic impurities, thermographic analysis, loss on drying, water content, sulfated ash, dry weight, USP 221, USP 40.281	Differential weighing incl. initial & back weight & residue on ignition
Loss on drying	QAPP210	Advanced	USP Chapter 42 <731>, backweighing, sample drying, residue, percentage residue, Pharma & Biopharma, contract manufacturers	Loss on drying acc. to USP Chapter 42 <731> and PhEur
Filter particulate matter	QAPP211	Advanced	FDA, 40 CFR86.1310, pm 2.5, pm 5, pm 10, borosilicate filter, ultra-micro balance, micro balance, humidity, climate control exhaust gas sampling, emission of enginers, diesel enginesparticulate emission, Highway vehicles, test procedure, gaseous emission, particulate sampling, ambient conditions, weighing chamber, reference filters, buildup of static charges, Po-210 sources, filter cassette, buoyancy correction, air density calculation, Magnus formula	Differential weighing of filters with individual sample ID

QApp Name	Material Number	Package	Keywords	Short Description
Checkweighing with counter	QAPP212	Advanced	Check weighing, tolerance, pack weight, filling, finished good check, cGMP, good and bad statistics, verification	Checks if a sample weight is within a specified tolerance & counting
Manual or automatic totalization	QAPP213	Advanced	Totalization, bulk product, bulk material, balance capacity, sum, summation, components, number of components	Summation of weight values for up to 100 components
Flexible formulation	QAPP214	Advanced	Compounds, mixing, pharmacy, tablet, capsule, pill, emulsion, formulation	Weighing of recipes with defined the number of components
Formulation single vessel	QAPP215	Advanced	Compounds, mixing, pharmacy, tablet, capsule, pill, emulsion, formulation, single vessel, single vial, single flask	Weigh in recipes in one single vessel
Formulation in different tare vessels	QAPP216	Advanced	Compounds, mixing, pharmacy, tablet, capsule, pill, emulsion, formulation, multiple vessels, multiple vials, multiple flasks	Weigh in recipes in multiple vessels
Averaging with factor	QAPP217	Advanced	Animal weighing, unstable conditions, nutrition, medication, factor	Animal weighing plus multiplication by the factor
Averaging with statistics	QAPP218	Advanced	Animal weighing, unstable conditions, growth function, statistics	Animal weighing plus statistics
Averaging with checkweighing	QAPP219	Advanced	Animal weighing, unstable conditions, growth function, checkweighing	Animal weighing plus check of the average values
Averaging with backweigher	QAPP220	Advanced	Animal weighing, unstable conditions, growth function, backweighing	Animal weighing with tare-, initial and up to 3 back weights

QApp Name	Material Number	Package	Keywords	Short Description
Color scheme	QAPP301	Utility	Color scheme, design, user interface	User interface color scheme
Free formula	QAPP302	Utility	Free formula, calculation, plus, minus, multiplication, division, square, square root, formula library	Applies user-defined free formula to the weight value
Diameter determination	QAPP304	Utility	Diameter determination, round wire, metal thread, filament, density, rho	Diameter of round wires and metal threads
Paper weight	QAPP305	Utility	Paper weight, paper type, paper size, area detemination, irregular shape, grammage, filter weight	Area or grammage of irregularly cut pieces of paper
Air buoyancy correction	QAPP306	Utility	Air buoyancy, density, rho, calculated mass, nominal mass, reference weight, unknown weight	Weighing error correction that can arise due to air buoyancy
Statistics manual	QAPP307	Utility	Components, average mean weight, standard deviation, variation coefficient, sum of all weights, lowest value (min), highest value (max), minimum value (min), maximum value (max), variance, number of components, manual data capturing	Manual acquisition of weight values and statistical evaluation
Statistics automatic	QAPP308	Utility	Components, average mean weight, standard deviation, variation coefficient, sum of all weights, lowest value (min), highest value (max), minimum value (min), maximum value (max), variance, number of components, automatic data capturing	Automatic acquisition of weight values and statistical evaluation

QApp Name	Material Number	Package	Keywords	Short Description
Windows file server connector	QAPP400	Connectivity	Windows File Server, client, server, data transfer, LAN	File transfer from and to servers using the SMB protocol
Connector to FTP/FTPS	QAPP401	Connectivity	FTPS, FTP/SSL, client, server, data transfer, PDF printout	File transfer from and to file FTP/FTPS servers
Connector STARLIMS	QAPP402	Connectivity	LIMS, STARLIMS, connectivity, calibration	Calibration or weighing orders from STARLIMS
Connector OMNIS	QAPP404	Connectivity	LIMS, Methrom, titration, QC labs	Interface to Methrom OMNIS
Sampling with IDS Sensor	QAPP406	Connectivity	pH measurement, IDS gate & sensor, data transfer	Weighing samples with IDS sensor integration
Standard preparation	QAPP001	Specials	Standard, mixed standard, unknown, stock solution, buffer preparation, dosing, dispenser, compound, solvent, Chromeleon, Chromatography Data System, CDS, HPLC, sample, QC labs preparation	Preparation of standards and buffers
Tablet Checker	QAPP002	Specials	Tablets, pills, capsules, sachets, Pharmacopeia, tolerance, dynamic tolerance, plausibility, Pharma & Biopharma	Average weight control of tablets and capsules
Average weight control	QAPP003	Specials	Average weight control, 76/211/EEC, FPVO, tolerance, plausibility, Food & Beverage, checkweighing	Average weight control of solid and liquid samples

QApp Name	Material Number	Package	Keywords	Short Description
Filterability Index	QAPP004	Specials	Filterability Index, Clogging Index, Vmax, Beverages, Wine, Sterile Filtration	Filterability Index dermination of beverages
Pipette Check Advanced	QAPP005	Specials	Pipette check, DIN EN ISO 8655, quick check, fixed volume, adjustable volume, piston pipette, single channel, multi channel, nominal volume, maximum permissible systematic error, maximum permissible random error, z-factor, moisture trap, climate module, environmental data	Testing of piston stroke pipettes acc. to DIN EN ISO 8655
Average Weight Control F&B	QAPP006	Specials	Average weight control, 76/211/EEC, FPVO, tolerance, plausibility, Food & Beverage, checkweighing	Average weight control of solid and liquid samples with successive measurement of tare vessels
Fogging Test	QAPP007	Specials	DIN EN ISO 75201, volatile and semi-volatile substances, SVOC, VOC, DIDP, automotive industry	Fogging test acc. to DIN EN ISO 75201
Pharma Filling	QAPP008	Specials	Peristaltic pump, liquid transfer, filling of bags or flasks, Smartlink RS module, Pharma & Biopharma	Filling of pharma products into bags or flasks
MYCAP CCX Processing	QAPP009	Specials	Peristaltic pump, cell expansion, transfer of incolum or media, MYCAP consumables, Pharma & Biopharma	Cell culture expansion using MYCAP CCX flasks

Essential Package

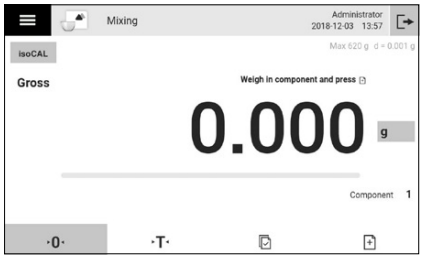
Included in every Cubis® balance — no license needed
Every Cubis® II balance includes a number of native apps for scientists in R&D and analytical laboratories needing the most reliable lab weighing results. These applications cover the following:

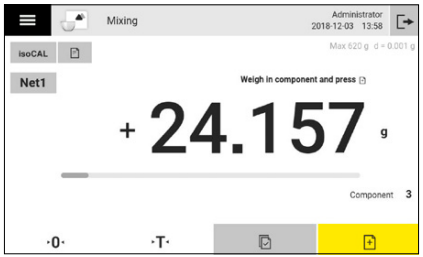
- Mixing
- Density of Solids
- Averaging
- Counting
- Weighing with SBI output
- Statistics
- Percentage Weighing
- Checkweighing
- Interval print
- Totalization
- Multiplication
- Highest Peak Value
- Barcode print

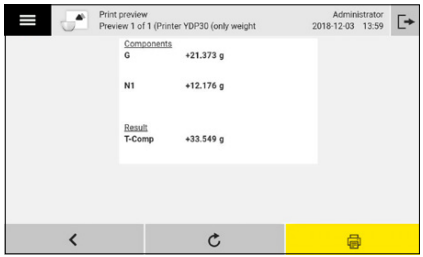
Available languages:
English, German, Chinese, French, Italian, Japanese, Korean, Russian, Spanish and Portuguese

Essential Package – Mixing

Weighing of recipes (w/o database)
With this application, up to 100 components of a recipe are successively weighed into a vessel. The balance is automatically tared after each component. The weight values of all individual components as well as the total weight values are recorded and documented.

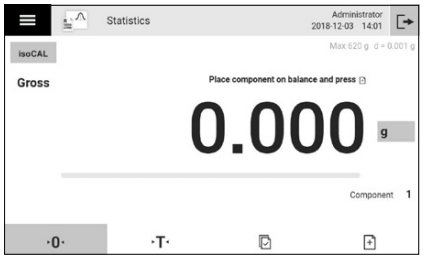


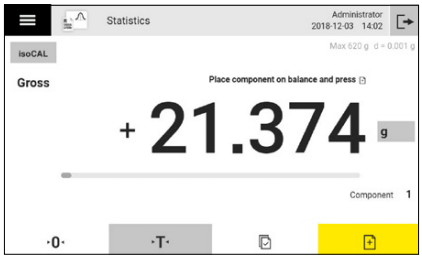


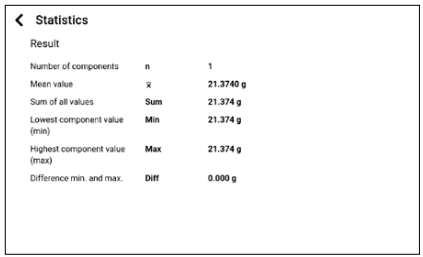


Essential Package – Statistics

Statistical evaluation of weight values
This application saves up to 100 weight values (components) and statistically evaluates them. Statistical results are: Number of components, Average mean weight, Standard deviation, Variation coefficient, Sum of all weights, Lowest weight value (min.), Highest weight value (max.), Difference between min. and max.



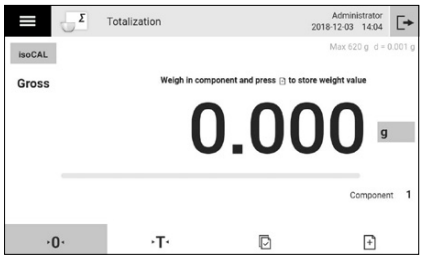


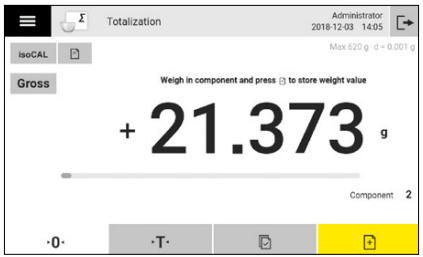


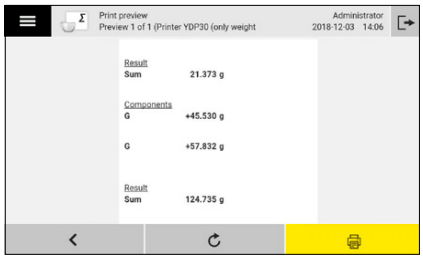
Essential Package – Totalization

Calculates the sum of weight values
This application calculates the sum of weight values (totalization) of up to 100 components that must be weighed in various containers, vials or vessels. With this application, weight values from successive, mutually independent weighing steps can be summed up to a total that exceeds the capacity of the balance. The result can be exported (serial communication, PC-Direct) or printed by a line or label printing device.

The operator can switch the display between two modes:
- “normal mode”: the display shows the current weight on the balance
- “sum mode”: the display dynamically shows the sum of “current value” + “sum of all stored values”

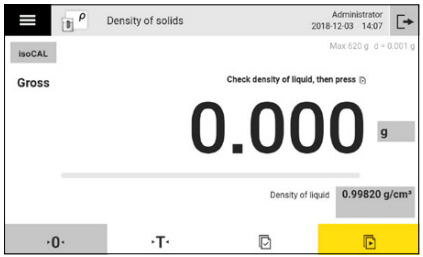


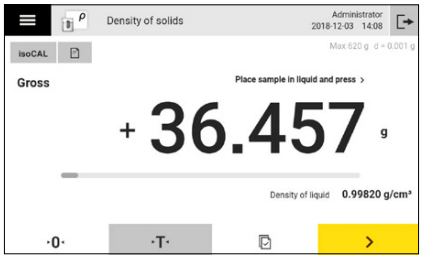


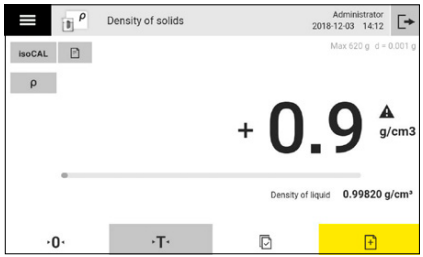


Essential Package – Density of Solids

Density of solids using buoyancy method
This application determines the density of solids using the buoyancy method. The sample is first weighed in air and then submerged in liquid. Based on the two weight values the application calculates the sample density.

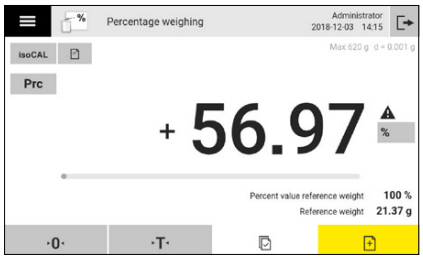


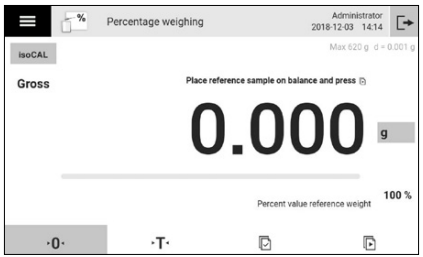


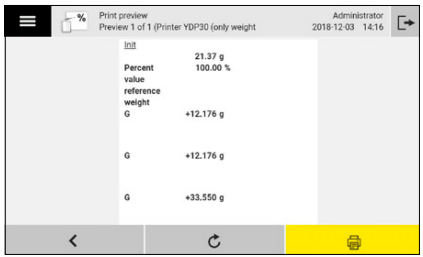


Essential Package – Percentage Weighing

Percentage share of an unknown sample in comparison to a reference weight
This application is used to determine the percentage share of an unknown sample in comparison to a reference weight. In the initial step the reference weight (initial weight value) is determined which corresponds to a defined percentage. In the following step an unknown sample is weighed and the percentage of the weight compared to the reference is calculated.

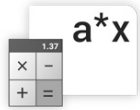


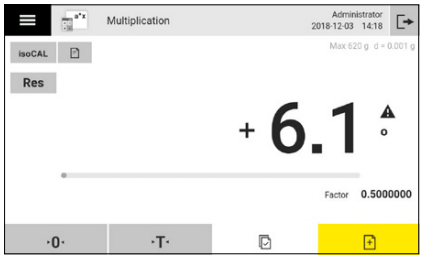


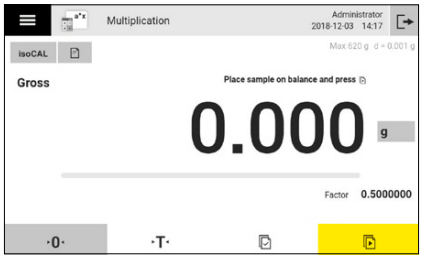


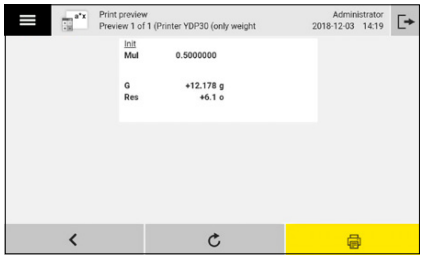
Essential Package – Multiplication

Multiplies the weight value by a user-defined factor
This application multiplies the weight value by a user-defined factor between 0.0000001 to 99999999. The last three multiplication factors are permanently stored in the memory.



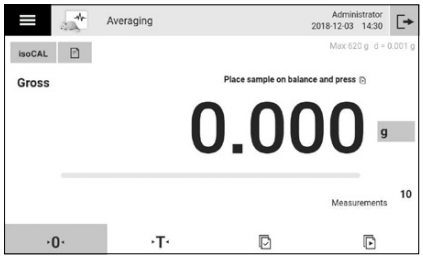


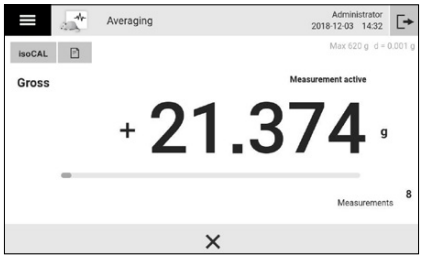


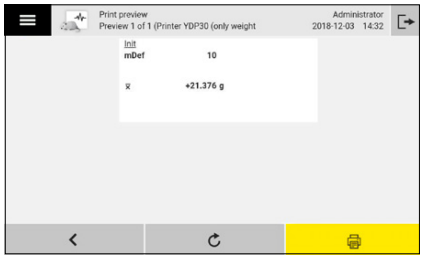


Essential Package – Averaging

Weighing of animals or in instabile enviroments
This application is used for moving samples (e.g. live animals) and for weighing in unstable environments. Multiple individual measurements without stability are averaged and this average is displayed as the result.



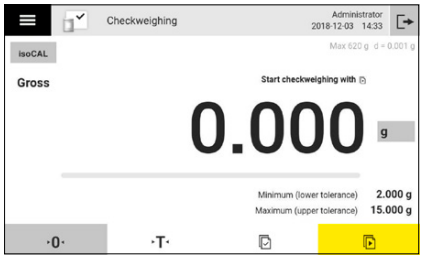


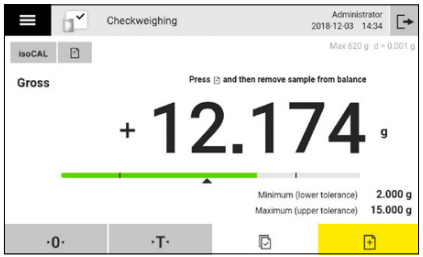


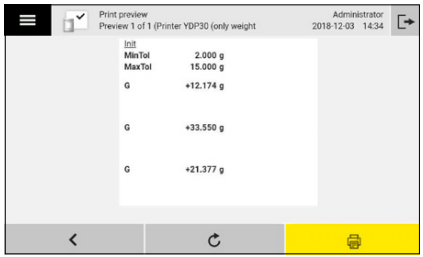
Essential Package – Checkweighing

Checks if a sample weight is within a specified tolerance
Checkweighing checks if a sample weight is within a specified tolerance.

The result is visualized through color changes in the tolerance bar:
- yellow (below min.)
- green (between or equal to min. and max.)
- red (above max.).

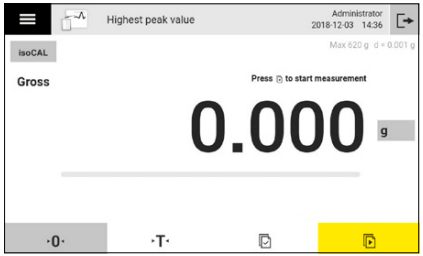


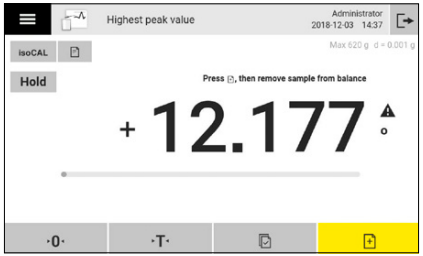


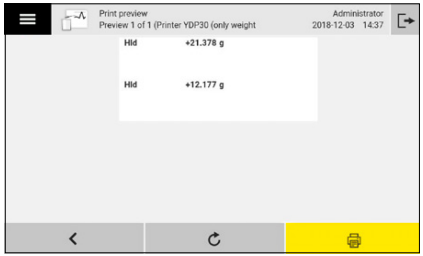


Essential Package – Highest Peak Value

Captures the highest positive stable or unstable weight value
This application captures and stores the highest positive stable or unstable weight value (peak).

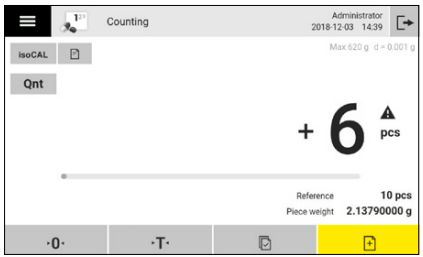


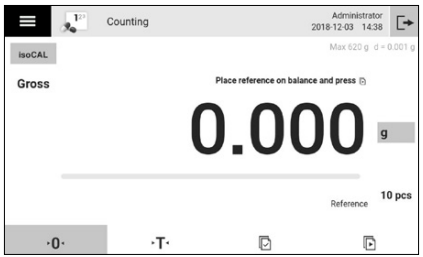


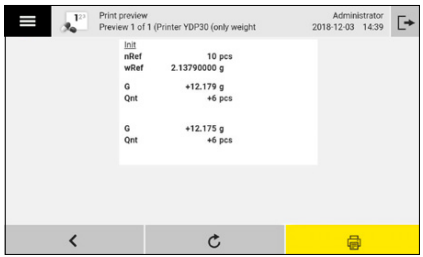


Essential Package – Counting

Number of Objects of Approximately Equal Weight
This application is used to determine the number of objects which each have approximately equal weight. In the first step a reference weight with a defined quantity is weighed, and in the second step a sample with an unknown quantity is weighed. The Counting application calculates the quantity and the piece weight.

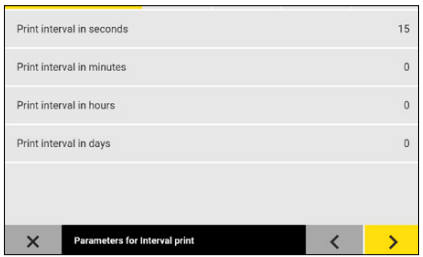


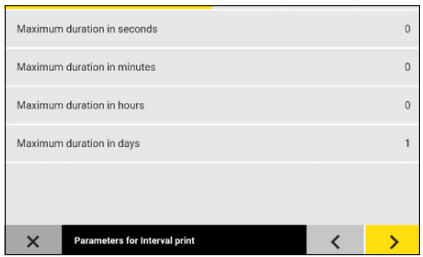




Essential Package – Interval Print

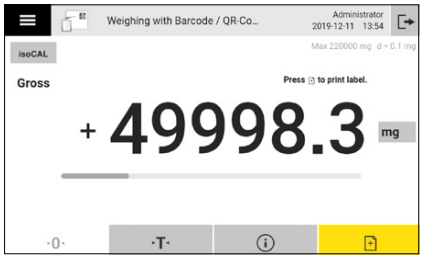
Collection of weight values at set intervals and export to CSV
This application exports weight values to a *.CSV file at set intervals. The print interval and maximum duration are set in days, hours, minutes and seconds to define the frequency and duration of the export. Depending upon the settings either all weight values or stable weight values only are acquired and collected in a print queue and for data export the decimal separator can set to point or comma. Depending on the set connector (FTP, FTPS, Windows® File Server, etc.) collected data is saved as *.CSV file by Date;Time;WeightValue; Unit to the selected target directory.

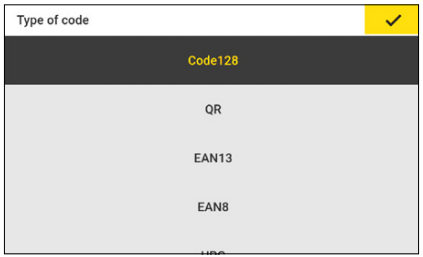


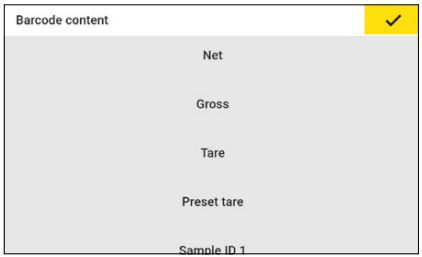


Essential Package – Barcode Print

Printing of barcodes or QR codes
This application prints barcodes (code 128-N) or QR codes on continuous paper or labels. Depending upon the settings either all weight values or stable weight values only above a set minimum load are acquired manually or automatically. The values are printed as barcode or QR code only or with sample or lot IDs and net, tare, gross or preset tare value as additional text element.

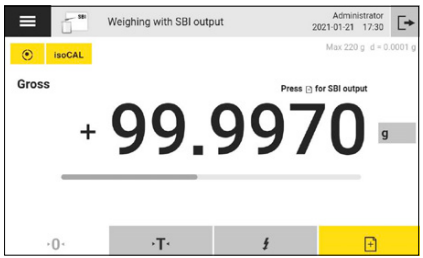


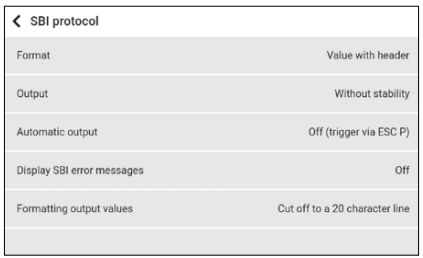


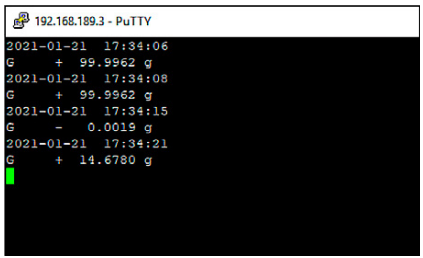


Essential Package – Weighing With SBI Output

Weighing of samples with SBI output of acquired data
This application will output the current weight value in the SBI-Format (ASCII Protocol) on all interfaces that are configured for SBI output after taking over the value. The SBI format can be configured via the menu \Connections\ -> \SBI protocol\. This QAPP does not support any print profile.







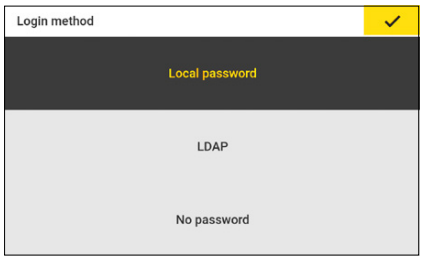
Pharma Package QP1

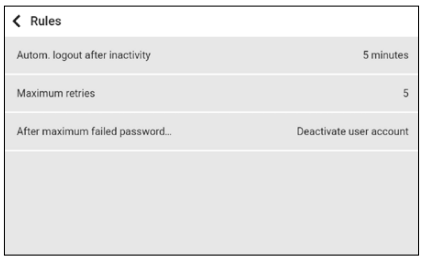
The Pharma software application package contains applications concerning the topic compliance with pharmaceutical-relevant guidelines, such as 21 CFR Part 11 and USP 39, Chapter 41. The Pharma package includes applications such as user management, digital signatures, audit trail, USP minimum weight.

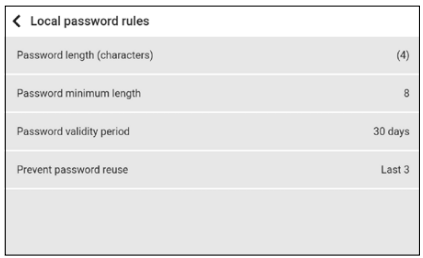
- User Management QAPP100
- Electronic Signature QAPP101
- Audit Trail QAPP102
- minUSP QAPP103
- USP Advanced QAPP104
- Measurement Uncertainty QAPP105
- User Calibration QAPP106

Pharma Package QP1 – User Management

21 CFR part 11 compliance
The function extension user management enables user accounts and access management to be set up as per guidelines in Directive 21CFR Part 11.
Virtually any number of user accounts can be configured and are assigned freely definable roles with specific access rights.
A user account can be used either without a password, with a local password, or with a network password (single sign-on with LDAP). All settings, as well as login and log-out actions, are logged in the audit trail.
User accounts, roles and access management are configured in the Settings menu. Rules for logging in, logging out and the local password assignment can be fully configured in line with Directive 21CFR Part 11.



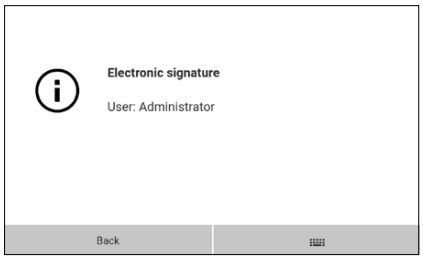


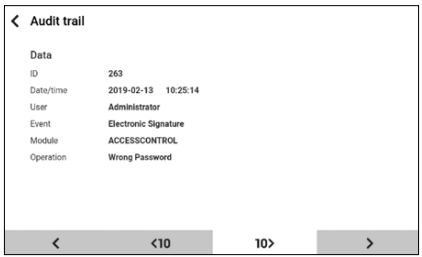


Material No. QAPP100

Pharma Package QP1 – Electronic Signature

21 CFR part 11 compliance
The function extension electronic signature enables an electronic report or printout to be signed using electronic signatures.
The electronic signature process complies with Directive 21CFR Part 11 and is conducted in the workflow by entering the user password immediately before creating a report. All signature actions and results are logged in the audit trail, as well as on the electronic report or printout.
In order to use electronic signatures, separate user accounts and passwords are mandatory as per 21CFR Part 11. It is not possible to use accounts without a password.
The electronic signatures can be activated | deactivated in the Settings menu under Device settings. This setting affects all tasks.
The permitted user accounts and password must also be set up in User management.





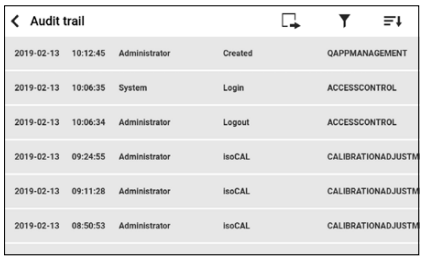
Material No. QAPP101

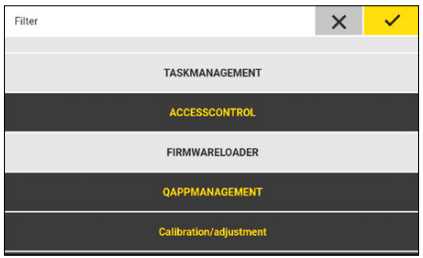
Pharma Package QP1 – Audit Trail

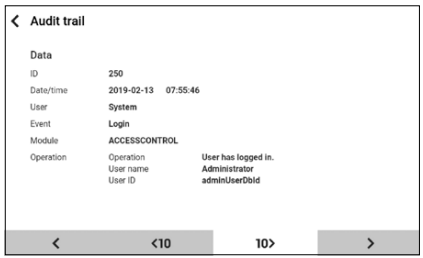
21 CFR part 11 compliance
The function extension audit trail enables the activities on the device to be logged in an audit trail as per guidelines in Directive 21CFR Part 11. The audit trail charts all relevant results and modifications on the device, for example:

- Creation | modification | deletion of tasks, users or roles – Login, logout, electronic signature
- Modifications to clock, apps, settings menu
- Leveling, calibration and adjustment
- and much more.

The audit trail can be viewed in the Settings menu under Device information and can be filtered and sorted by several criteria. These functions are also available on the network via the website for the balance. It is possible to export as a PDF. The audit trail is a ring buffer with 150,000 entries and cannot be manipulated.





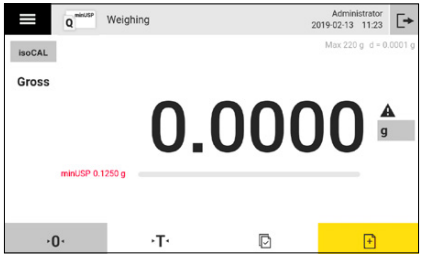


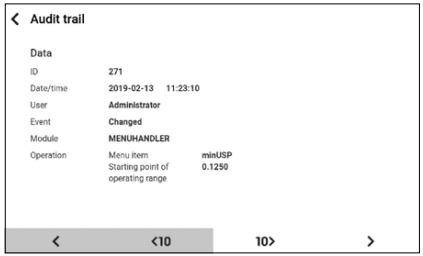
Material No. QAPP102

Pharma Package QP1 – Minimum weight

Monitors compliance of the permitted working range acc. to different guidelines
The function extension Minimum weight monitors compliance of the permitted working range as per US Pharmacopeia (USP) Section 41 or European Pharmacopeia Chapter 2.1.7and alerts the user when weighing values fall below the working range. The Minimum weight function can be activated | deactivated in the Settings menu under Device Settings. The starting point of the working range must be entered as the parameter in line with US Pharmacopeia (USP) Section 41. To calculate the valid starting point, you can either use QApp USPAdvanced or contact Sartorius Service. The Minimum weight function is also able to mark measuring values outside the working range as invalid, thus preventing impermissible values from being transferred.

The Minimum weight function can also be used to monitor working ranges in line with other regulations by calculating and entering the starting point accordingly.

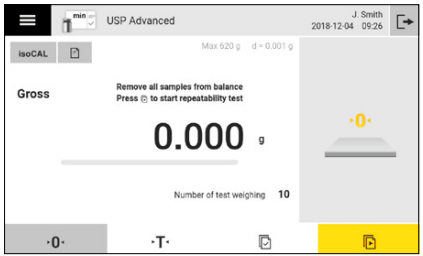


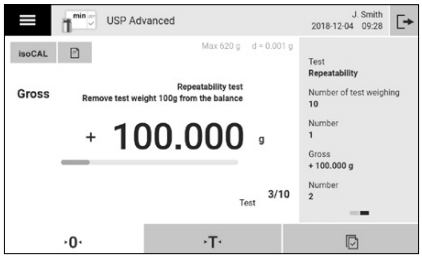


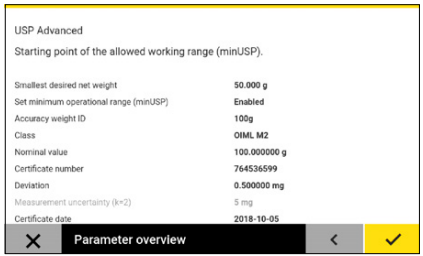
Material No. QAPP103

Pharma Package QP1 – USP Advanced

Starting point of the permitted working range acc. to USP Chapter 41 or Ph.Eur. 2.1.7
The USP Advanced application determines the value for the starting point of the permitted working range according to US Pharmacopeia (USP), Chapter 41 or European Pharmacopeia Chapter 2.1.7. The procedure starts with the repeatability test where 10 weight values of the same weight are measured and the balance is zeroed/tared automatically between the measurements. The second test segment is the accuracy test, which uses an OIML or ASTM weight or a calibrated weight to acquire one weight value. The USP Advanced application calculates the standard deviation, minimum operating range (ORmin), maximum operating range (ORmax) and determines if the result of the repeatability and accuracy test meets the requirements of USP Chapter 41 or Ph.Eur. Chapter 2.1.7.



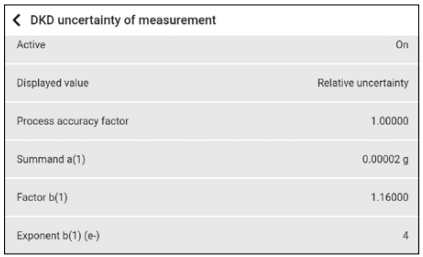


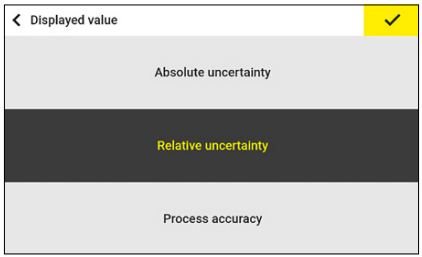


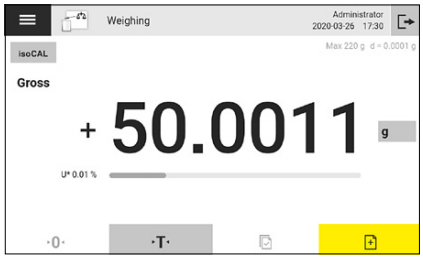
Material No. QAPP104

Pharma Package QP1 – Measurement Uncertainty

Dynamic display of measurement uncertainty
This application is used to ensure that the measurement uncertainty is displayed dynamically so that it conforms to the data documented on the DKD calibration certificate. The measurement uncertainty can be displayed as an absolute value (U), a relative value (U*) or as process accuracy (PA) in relation to the maximum capacity of the balance.



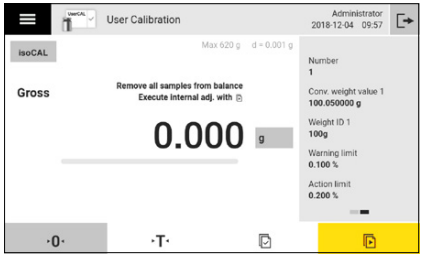


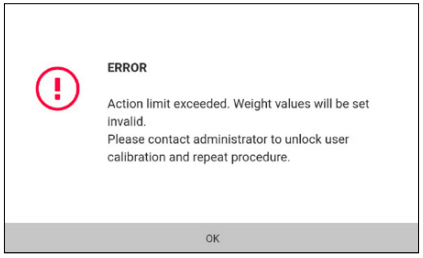


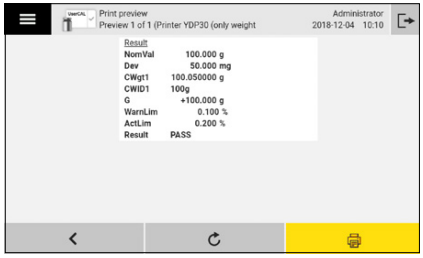
Material No. QAPP105

Pharma Package QP1 – User Calibration

External calibration process
The application user calibration features a guided external calibration process with up to 5 different OIML or ASTM weights. The user is guided through the complete calibration process and gets a comprehensive report if the calibration is passed or failed. Additionally the application for each calibration weight offers a long time evaluation of results based on the user defined warning and action limit. If the warning limit is reached or exceeded the user gets a warning message, if the action limit is reached or exceeded weight values become invalid and the user calibration procedure must be repeated.







Material No. QAPP106

Advanced Package QP2

The Advanced software application package includes various complex weighing applications incl. evaluation. This includes applications used for density determination, percentage weighing, counting, backweighing, residual dirt analysis, residue on ignition, loss on drying, filter weighing, checkweighing, formulation, averaging, etc.

- Density of Solids QAPP200
- Density of Liquids QAPP201
- Density with Pycnometer QAPP202
- Percentage Weighing QAPP203
- Counting with Reference Weight QAPP204
- Counting with Checkweighing QAPP205
- Counting with Statistics QAPP206
- Backweigher QAPP207
- Residual Dirt Analysis QAPP208
- Residue on Ignition QAPP209
- Loss on Drying QAPP210
- Filter Particulate Matter QAPP211

Checkweighing with Counter
QAPP212

Manual or Automatic Totalization
QAPP213

Flexible Formulation
QAPP214

Formulation in Single Vessel
QAPP215

Formulation in Different Tare Vessels
QAPP216

Averaging with Factor
QAPP217

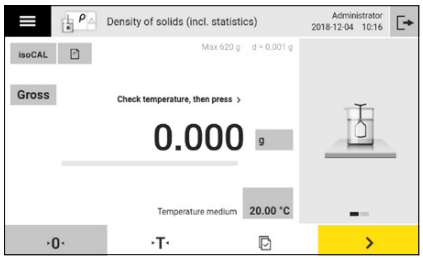
Averaging with Statistics
QAPP218

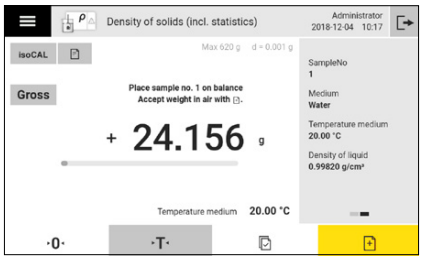
Averaging with Checkweighing
QAPP219

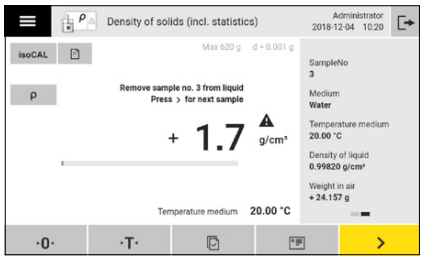
Averaging with Backweigher
QAPP220

Advanced Package – Density of Solids

Density of solids using the buoyancy method
This application determines the density of solids using the buoyancy method and the formula with correction for wires and air buoyancy. It supports the measurement of water temperature with temperature sensors, if such a sensor is connected to the balance. The sample is first weighed in air and then submerged in liquid. Based on the two weight values the application calculates the sample density.

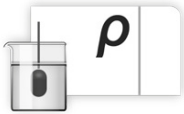




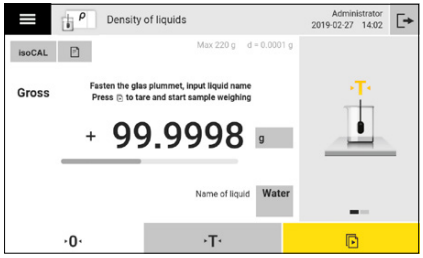


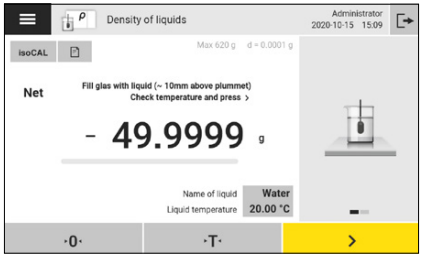
Material No. QAPP200

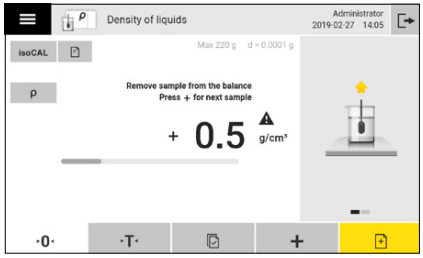
Advanced Package – Density of Liquids



Density of liquids using a glass plummet
The application determines the density of liquids using YDK03MS or YDK04MS with glass plummet. It supports the measurement of water temperature with temperature sensors, if such a sensor is connected to the balance. In the first step the glass plummet is fixed on the frame of the density kit, placed in the center of a glass vessel and the setup is tared. In the second step the liquid to be measured is filled in the glass vessel until the glass plummet is covered and the weight is measured. Because of the buoyancy the glass plummet weight in liquid is a negative value and from this negative weight the liquid density is calculated.



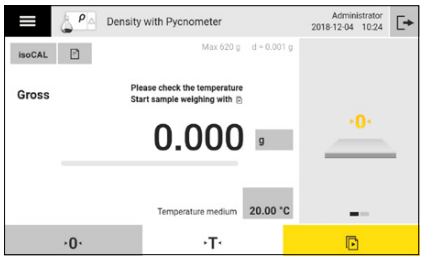


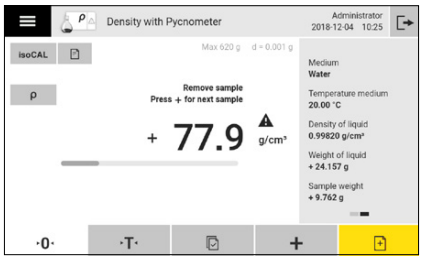


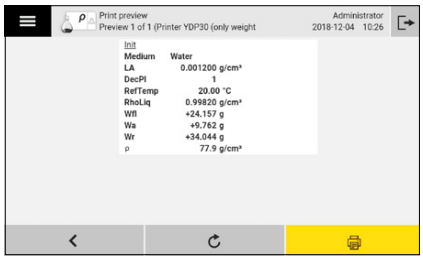
Material No. QAPP201

Advanced Package – Density with Pycnometer

Density of powders, liquids and pasty substances using a pycnometer
This application determines the density of powders, liquids and pasty substances using a pycnometer. It supports the measurement of water temperature with temperature sensors, if such a sensor is connected to the balance. The sample is first weighed in air and then submerged in liquid. Based on the two weight values the application calculates the sample density.



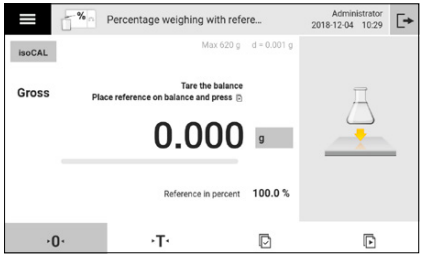


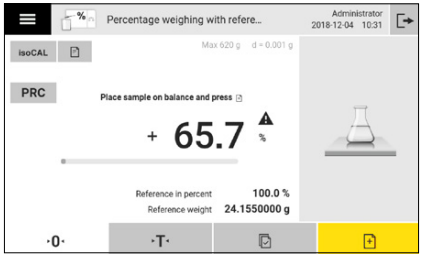


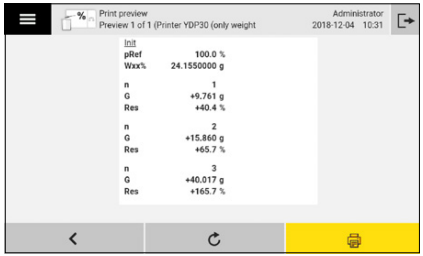
Material No. QAPP202

Advanced Package – Percentage Weighing

Percentage share or difference in comparison to a reference weight
The application determines the percentage share or the percentage difference of a sample in comparison to a reference weight.



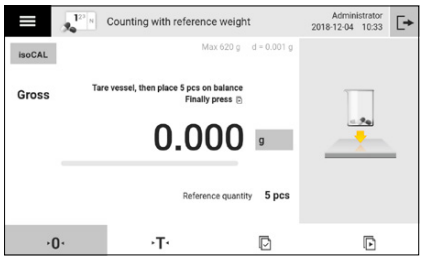


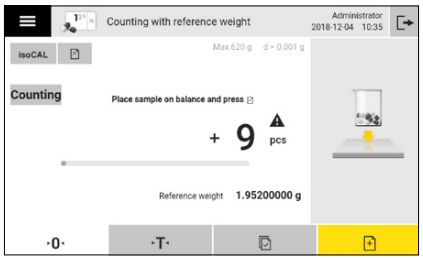


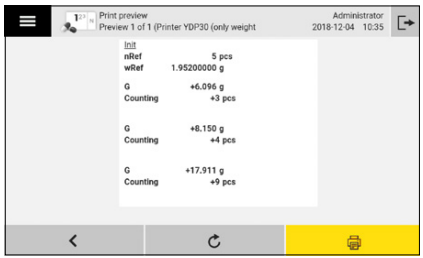
Material No. QAPP203

Advanced Package – Counting with Reference Weight

Number of parts with approximately equal weight
The application determines the number of parts with approximately equal weight. In the first step the reference weight value is determined and divided by the quantity to calculate the weight of one piece. With this reference piece weight, the application then calculates the unknown number of pieces within samples. The balance displays the number of parts and the piece weight.



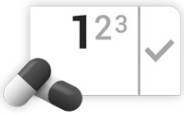


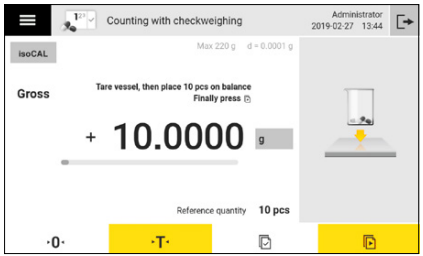


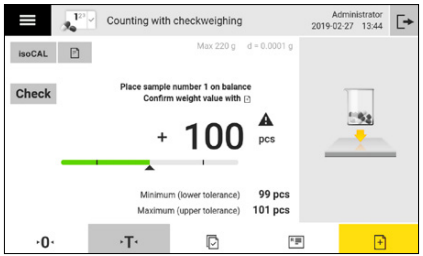
Material No. QAPP204

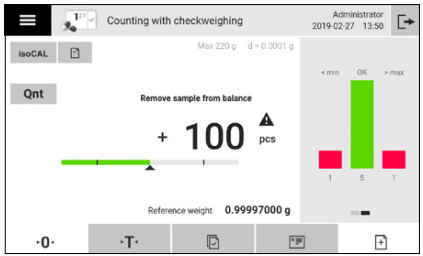
Advanced Package – Counting with Checkweighing

Number of parts plus check if number is within limits
This application determinates the number of parts with approximately equal weight and checks if the number of pieces is within defined limits. The weight of counted reference sample is calculated to the weight of one piece. With this reference piece weight the application calculates the number of parts of a unknown piece count weight. The balance displays the number of parts and the piece weight. The user can change the setpoint and limits for checkweighing.





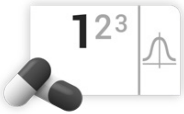


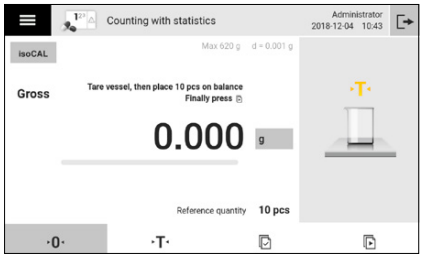


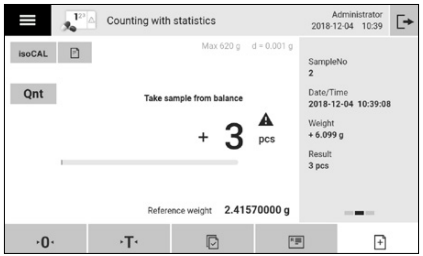
Material No. QAPP205

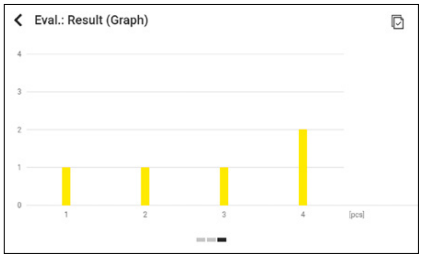
Advanced Package – Counting with Statistics

Number of parts plus statistical evaluation
The application determines the number of parts with approximately equal weight and statistically evaluates the results. In the first step the reference weight value is determined and divided by the quantity to calculate the weight of one piece. With this reference piece weight, the application then calculates the unknown number of pieces within samples. The balance displays the number of parts and the piece weight.





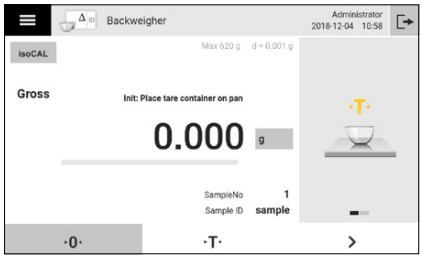


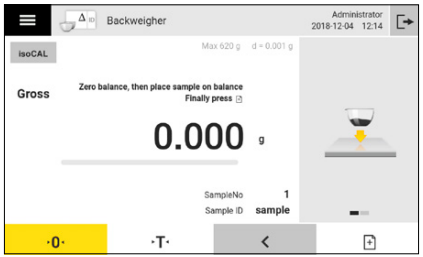


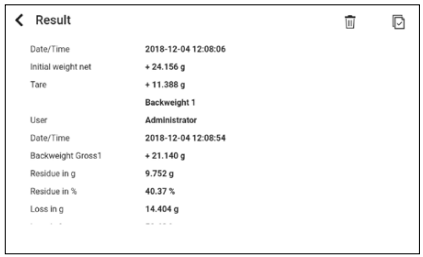
Material No. QAPP206

Advanced Package – Backweigher

Differential sample weighing incl. initial & back weight
The Backweighing application is used for simple differential weighing with lot tracking (alphanumeric).
First the initial weight (with tare) is measured and then up to three back weights per sample.
The application calculates the difference between the initial and back weight of samples.





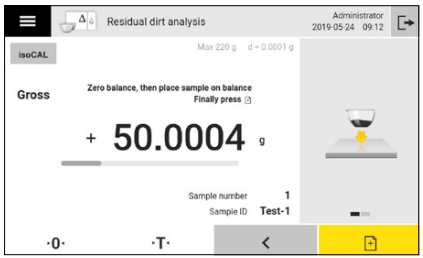


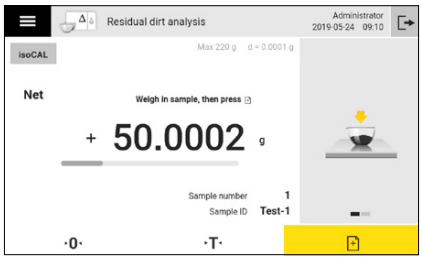
Material No. QAPP207

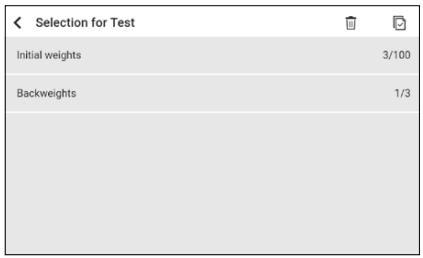
Advanced Package – Residual Dirt Analysis

Residual dirt according to VDA19

This application is used to gravimetrically determine the residual dirt according to VDA19. In the workflow a tare-, initial- and back weighing are performed and the difference between the corresponding initial and back weight is calculated to determine the residual dirt. The back weighing can be repeated as often as desired and previous back weights overwritten and the software will always use latest value to calculate the residue.



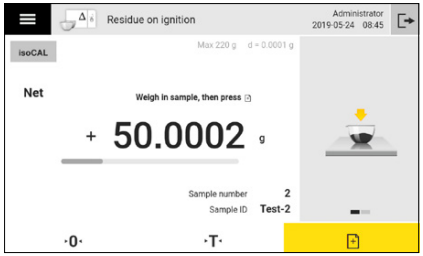


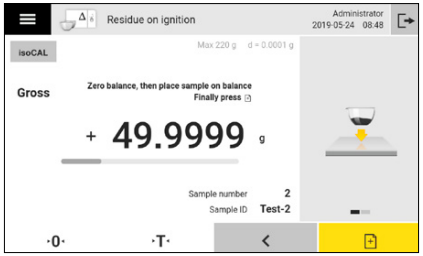


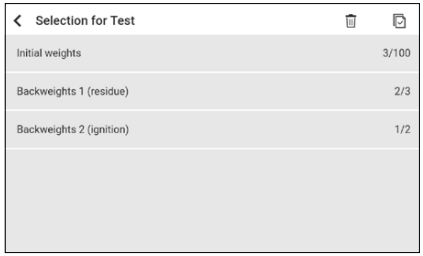
Material No. QAPP208

Advanced Package – Residue on Ignition

Residue on Ignition
The application residue on ignition is used to determine the sample initial weight, back weight and residue on ignition. Based on the first back weight, the remaining substance weight (rest) before drying is determined and based on the second back weight the residue on ignition after drying. The first and second back weighings can be repeated as often as desired and previous back weights overwritten, and the most recent values are always used by the software to calculate the rest and the residue on ignition.



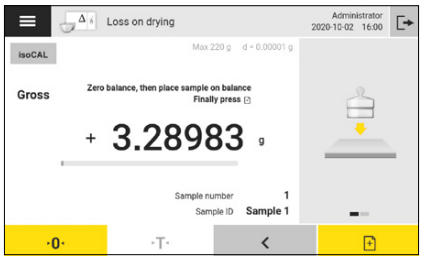


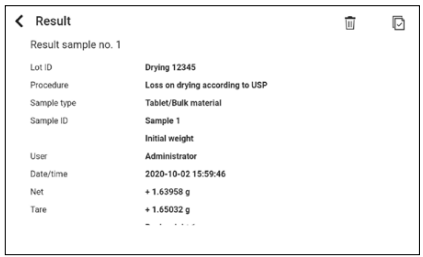


Material No. QAPP209

Advanced Package – Loss on Drying

Loss on drying acc. to USP Chapter 42 <731> and PhEur
The loss on drying application is used for differential weighing according to USP Chapter 42 <731> and European Pharamacopoeia (PhEur). First the initial weight (with tare) is measured and then up to three back weights per sample. The application calculates the difference between the initial and back weight of samples and determines if the weight difference is within the range allowed by USP Chapter 42 <731> or European Pharamacopoeia (PhEur).

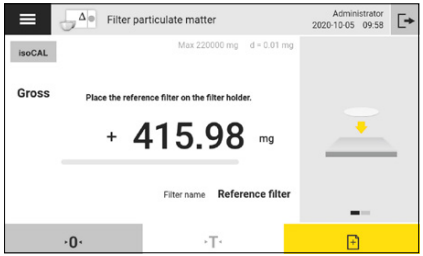


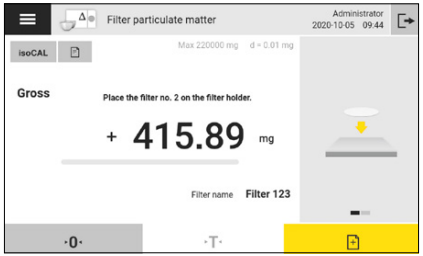


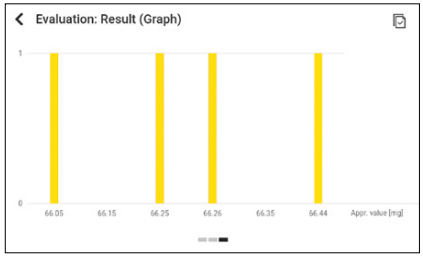
Material No. QAPP210

Advanced Package – Filter Particulate Matter

Differential weighing of filters with individual sample ID
This application is used for the differential weighing of filters with individual sample ID. During the process the initial and back weighing of filters is performed and difference between the initial and back weight.





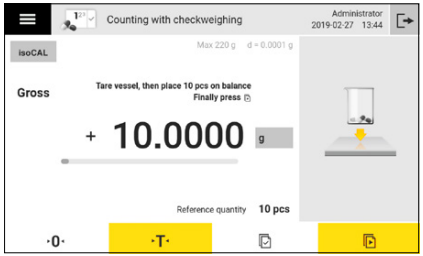


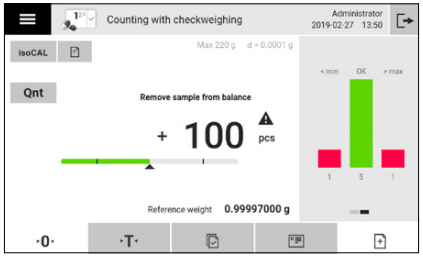
Material No. QAPP211

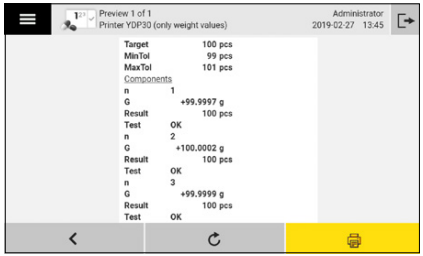
Advanced Package – Checkweighing with Counter

Checks if a sample weight is within a specified tolerance & counting

This application is used to check whether a weight value falls in a specified tolerance. The application works with a target weight value, minimum and maximum tolerance values in absolute values or as a percentage and makes it easy to fill sample materials to a specified target weight range. Tolerances (min., max.) can be modified during



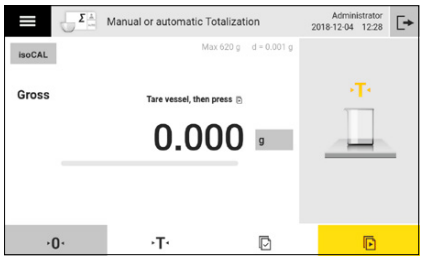


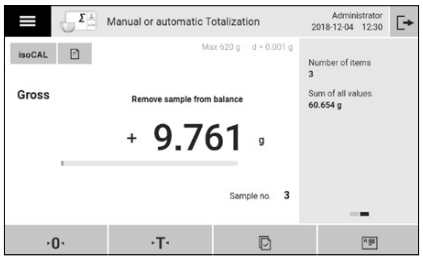


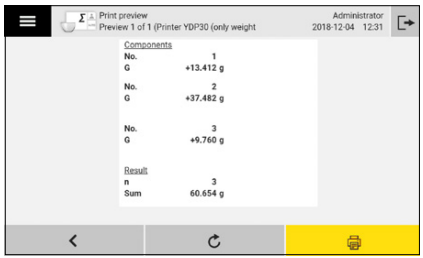
Material No. QAPP212

Advanced Package – Manual or Automatic Totalization

Summation of weight values for up to 100 components
This application totalizes weight values for up to 100 components. The application allows you to save components that must be weighed in various containers, and each container can be tared before a component is added.
With this application, values from successive, mutually independent weight values can be added up to a total that exceeds the capacity of the balance.



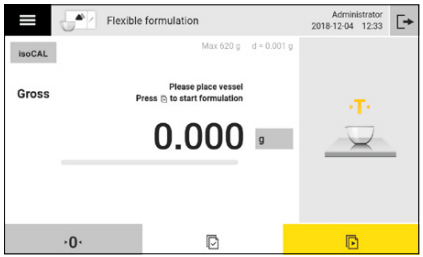


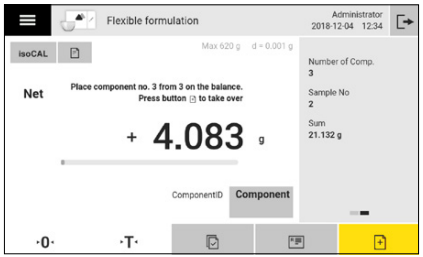


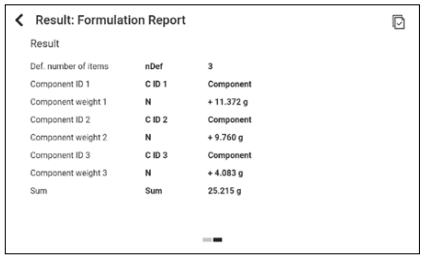
Material No. QAPP213

Advanced Package – Flexible Formulation

Weighing of recipes with defined the number of components
This application is used to weigh in recipes. The user defines the number of components to be weighed in and starts the process. The application documents the name and weight of each component and calculates the sum of the total weight.



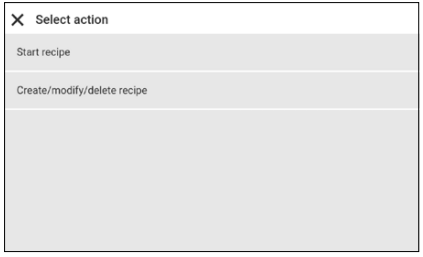


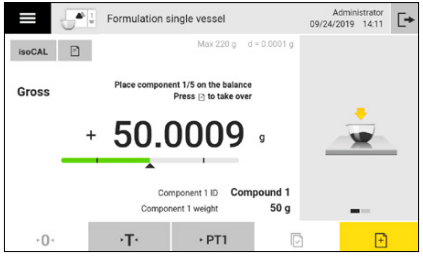


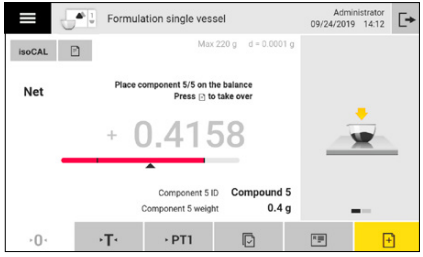
Material No. QAPP214

Advanced Package – Formulation in Single Vessel

Weigh in recipes in one single vessel
This application is used to weigh in recipes in one single vessel and uses the databases SQLite or Postgres.
In the database recipes with up to 50 components are stored and used by a single balance (local SQLite database) or multiple balances (central Postgres database). Recipes stored in the database can be used by this application (QAPP215) or the application Formulation in different vessels (QAPP216). The user defines the components, component target weight and permissible tolerances for each recipe. During the weighing process the target weight of each component is displayed, highlighted with a yellow/green/red bar graph and the weight value can be acquired automatically or manually. The application documents the measured component weights, determines the difference from the set target weight and calculates the sum of the total weight.





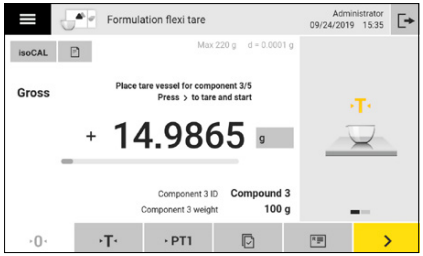


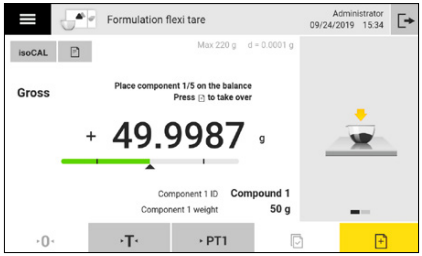
Material No. QAPP215

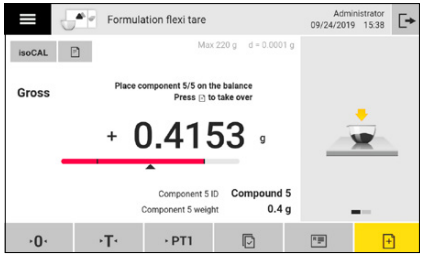
Advanced Package – Formulation in Different Tare Vessels

Weigh in recipes in multiple vessels

This application is used to weigh in recipes in multiple vessels and uses the databases SQLite or Postgres. In the database recipes with up to 50 components are stored and used by a single balance (local SQLite database) or multiple balances (central Postgres database). Recipes stored in the database can be used by this application (QAPP216) or the application Formulation single vessel (QAPP215). The user defines the components, component target weight and permissible tolerances for each recipe. During the weighing process the target weight of each component is displayed, highlighted with a yellow/green/red bar graph and the weight value can be acquired automatically or manually. The application documents the measured component weights, determines the difference from the set target weight and calculates the sum of the total weight.



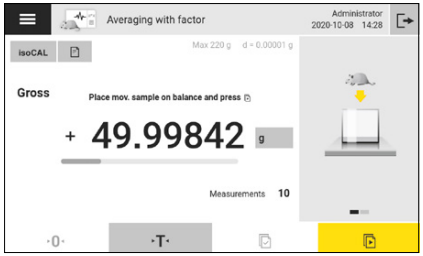


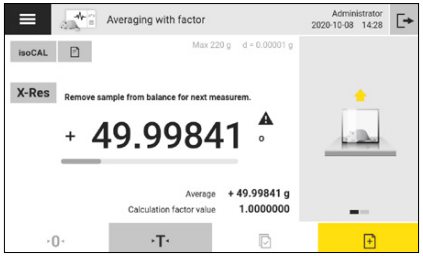


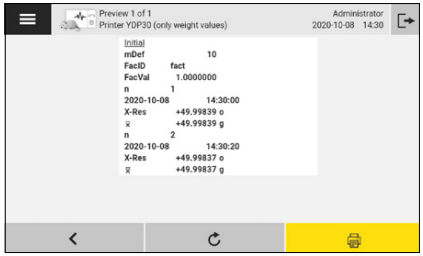
Material No. QAPP216

Advanced Package – Averaging with Factor

Animal weighing plus multiplication by the factor
This application calculates the average weight value over a defined period and calculates the value (x-Net), which is multiplied by the factor (x-Res) and shown as a result. The application is used for measuring moving samples (e.g. live animals) and for weighing in unstable environments. A measurement cycle is automatically carried out with a defined number of measurements for each object to be weighed.
The individual measurements are averaged and the average weight value and the calculated value (average × factor) are displayed as the result.



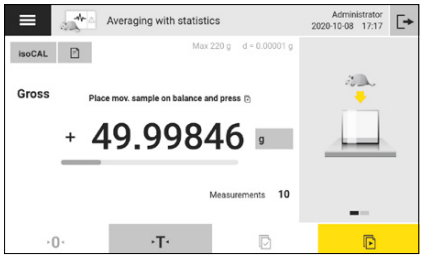


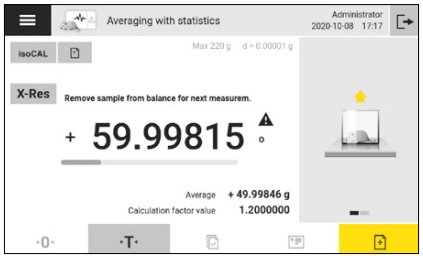


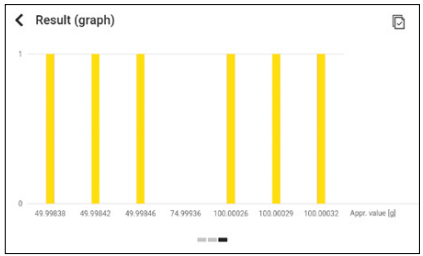
Material No. QAPP217

Advanced Package – Averaging with Statistics

Animal weighing plus statistics
This application calculates the average weight value over a defined period. The application is used for measuring moving samples (e.g. live animals) and for weighing in unstable environments and for storing results in statistics. A measurement cycle is automatically carried out with a defined number of measurements for each object to be weighed. The individual measurements are averaged and the average weight value is displayed as the result.



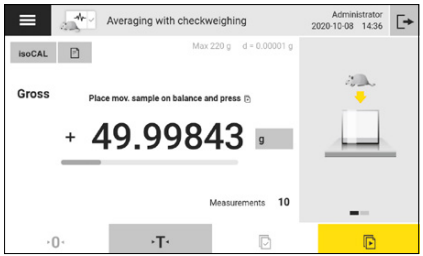


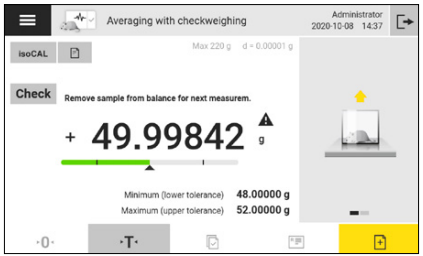


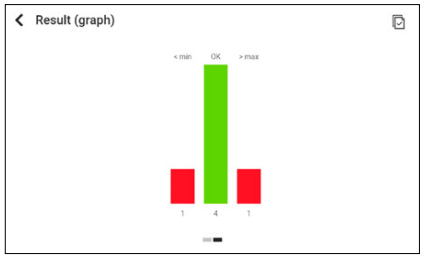
Material No. QAPP218

Advanced Package – Averaging with Checkweighing

Animal weighing plus check of the average values
This application is used for measuring moving samples (e.g. live animals) and for weighing in unstable environments. A measurement cycle is automatically carried out with a defined number of measurements for each object to be weighed. The individual measurements are averaged and this average is displayed as the result. The application multiplies the average weight value by a defined factor and shows the result as a calculated value. The checkweighing only checks the averaged weight values, not the calculated values.



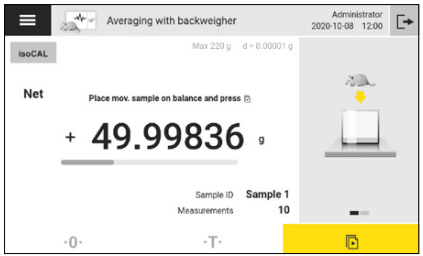


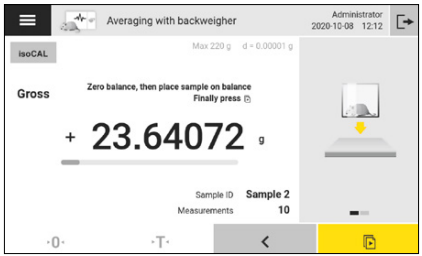


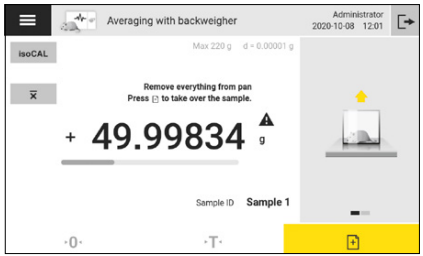
Material No. QAPP219

Advanced Package – Averaging with Backweigher

Animal weighing with tare-, initial and up to 3 back weights
This application is used for moving samples (e. g. living animals) and for weighing in unstable environments. A measurement cycle is automatically carried out with a defined number of measurements for each object to be weighed. The individual measurements are averaged and this average is taken for initial weight.
Tare-, initial and up to 3 back weighings are performed. The process determines the difference between the corresponding initial and final weighing.







Material No. QAPP220

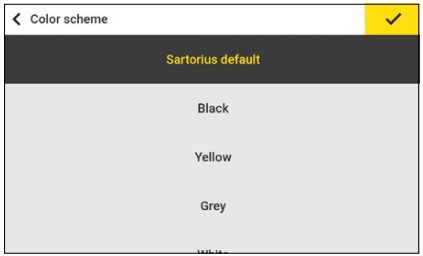
Utilities package QP3

The Utility software application package contains weighing applications and function extensions such as bootscreen, color scheme, free formula, fiber coarseness, diameter determination, air buyoancy correction, paper weight, statistics and printing of QR | bar codes.

- Color Scheme QAPP301
- Free Formula QAPP302
- Diameter Determination QAPP304
- Paper Weight QAPP305
- Air Buoyancy Correction QAPP306
- Statistics Manual QAPP307
- Statistics Automatic QAPP308

Utilities package QP3 – Color Scheme

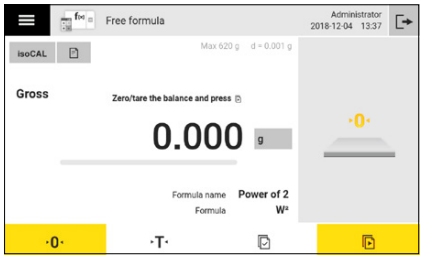
User interface color scheme
This function extension enables the color scheme of the user interface to be selected.
There are five different default settings to choose from.
The color scheme can be selected in the Settings menu under Device settings | Display parameters.

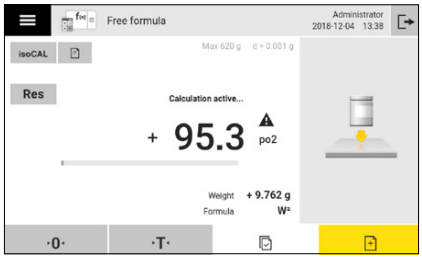


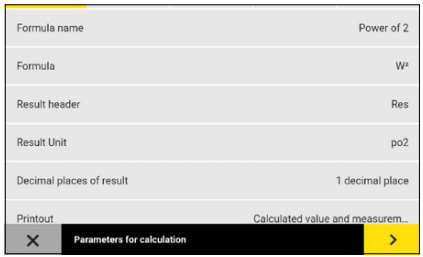
Material No. QAPP301

Utilities package QP3 – Free Formula

Applies user-defined free formula to the weight value
This application applies user-defined free formula to the weight value.
Operations: plus, minus, mul, div, (), square, square root, 2 variables.
Up to 100 formulas are permanently stored in memory.



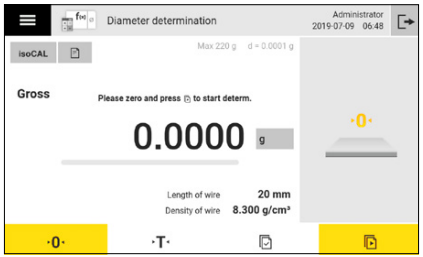


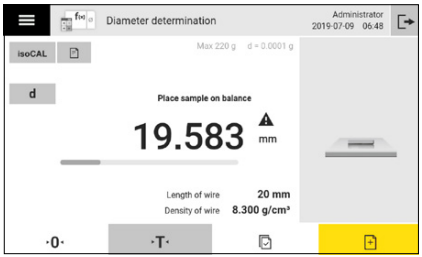


Material No. QAPP302

Utilities package QP3 – Diameter Determination

Diameter of round wires and metal threads
This application is used to determine the diameter of round wires and metal threads (cylindrical solid bodies) based on the density and length of the samples. The density and length must be known and entered by the user. The density of the sample can be determined, for example, with the application Density of solids or Density of solids with statistics (QAPP200).

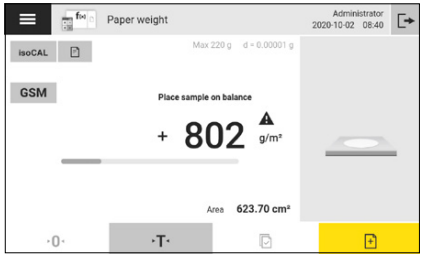




Material No. QAPP304

Utilities package QP3 – Paper Weight

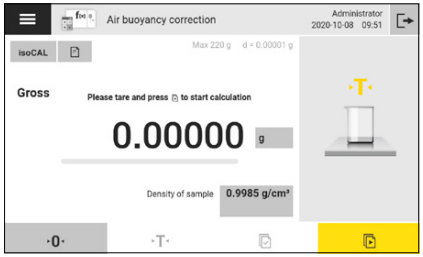
Area or grammage of irregularly cut pieces of paper
This application determines the area of irregularly cut pieces of paper if the grammage of the respective paper type is known or determines the grammage of the respective paper type if the area of paper (e.g. A4, A5, ..) is known.

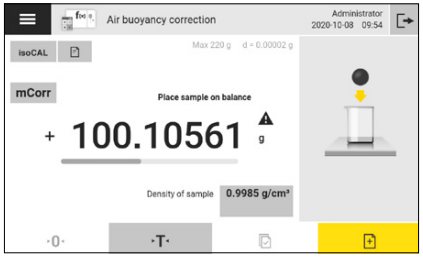


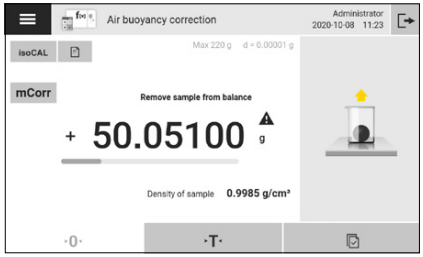
Material No. QAPP305

Utilities package QP3 – Air Buoyancy Correction

Weighing error correction that can arise due to air buoyancy
This application corrects weighing errors that can arise due to air buoyancy when working with weights of different densities. The air density value is required when calculating the air buoyancy correction.



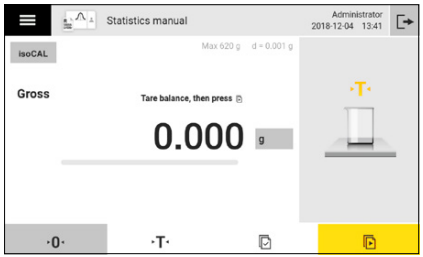


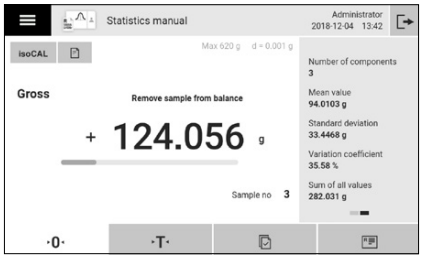


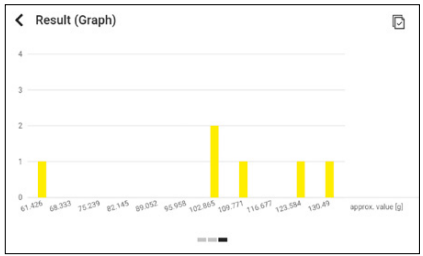
Material No. QAPP306

Utilities package QP3 – Statistics, Manual

Manual acquisition of weight values and statistical evaluation
This application manually takes over weight values of samples and statistically evaluates them. The number of components, average mean weight, standard deviation, variation coefficient, sum of all weight values, lowest weight value (min.), highest weight value (max.) and difference between min. and max. are shown as the result.



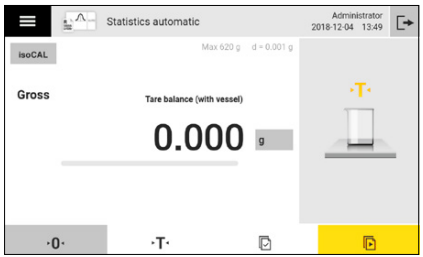


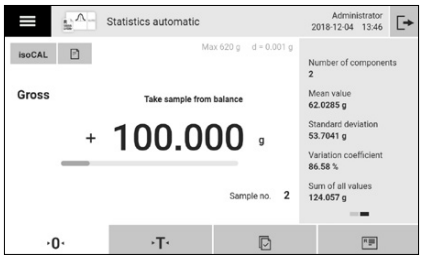


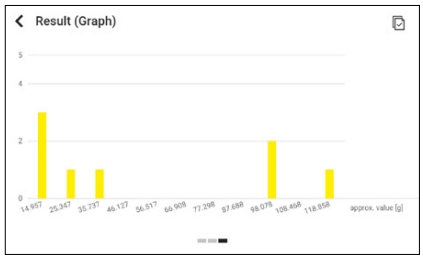
Material No. QAPP307

Utilities package QP3 – Statistics, Automatic

Automatic acquisition of weight values and statistical evaluation
This application automatically takes over weight values of samples and statistically evaluates them. The number of components, average mean weight, standard deviation, variation coefficient, sum of all weight values, lowest weight value (min.), highest weight value (max.) and difference between min. and max. are shown as the result.







Material No. QAPP308

Connectivity Package QP4

The Connectivity software application package includes applications for data exchange, for example to Windows® file server, FTPS, STARLIMS™, etc.

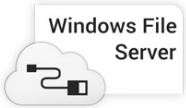
- Connector Windows® File Server QAPP400
- Connector FTPS QAPP401
- Connector STARLIMS™ QAPP402
- Omnis QAPP404
- Sampling with IDS Sensor QAPP406

Connectivity Package QP4 – Connector Windows® File Server

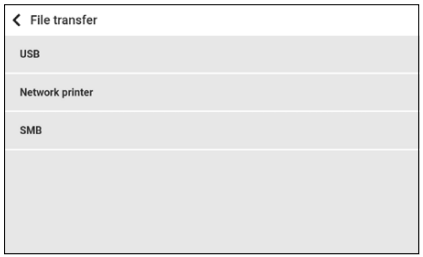
File transfer from and to servers using the SMB protocol
The connection to the Windows® file server facilitates the file transfer from and to servers using the Server Message Block (SMB protocol).

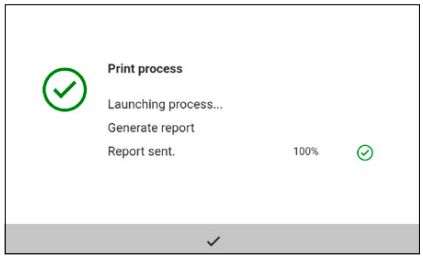
This function enables the transfer of electronic reports and other data outputs (e.g. backups) to an SMB server. It is also possible to perform data imports and install software updates.

The connector is configured in the Settings menu under Connections | Data transfer.
It is then possible to use as an input and output interface with other device functions.



Example: Configuration of an electronic report to a Windows® file server in three steps:
1. Create a connector with settings for Windows® file server (address, path, port, login)
2. Create a print profile and select the pre-configured connector
3. Create a task and select the pre-configured print profile



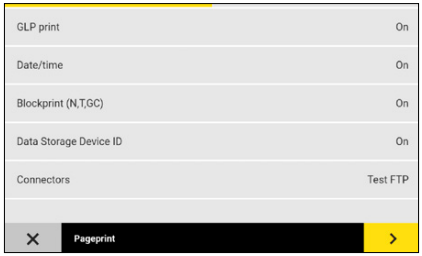


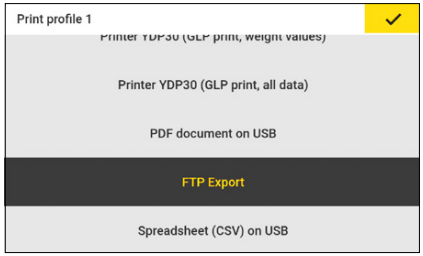
Material No. QAPP400

Connectivity Package QP4 – Connector FTPS

File transfer from and to file FTP | FTPS servers
The connection to the FTP | FTPS facilitates the file transfer from and to file servers using the FTP or FTPS protocol. This function enables the transfer of electronic reports and other data outputs (e.g. backups) to an FTP | FTPS server. It is also possible to perform data imports and install software updates. The connector is configured in the Settings menu under Connections | Data transfer. It is then possible to use as an input and output interface with other device functions.

Example: Configuration of an electronic report to an FTP server in three steps:
1. Create a connector with settings for FTP | FTPS server (address, path, port, login)
2. Create a print profile and select the pre-configured connector
3. Create a task and select the pre-configured print profile.



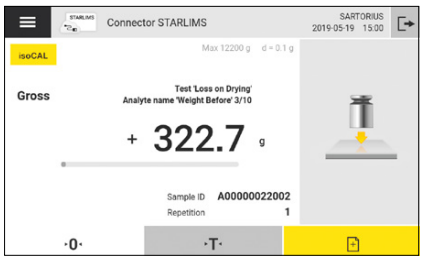


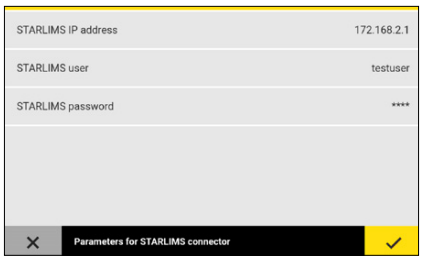
Material No. QAPP401

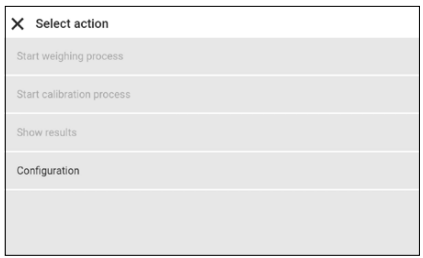
Connectivity Package QP4 – Connector Starlims™

Calibration or weighing orders from STARLIMS™
This application receives and saves calibration or weighing orders from STARLIMS™. The application offers a settings menu for connecting the balance to STARLIMS™ using the STARLIMS™ IP address, user and password and in multiple steps checks the connection between balance and STARLIMS™ and the integrity of the transferred orders (JSON files). Furthermore it is checked if the user logged in to the balance is allowed to start the STARLIMS™ calibration or weighing process.

The STARLIMS™ user calibration procedure features a guided external calibration process. The user is guided through the complete calibration process and obtains a comprehensive report if the calibration is passed or failed. The calibration results incl. metadata are transferred to STARLIMS. During the weighing process each measured weight value inclusive metadata is transferred to STARLIMS and a record is created in the alibi memory.







Material No. QAPP402

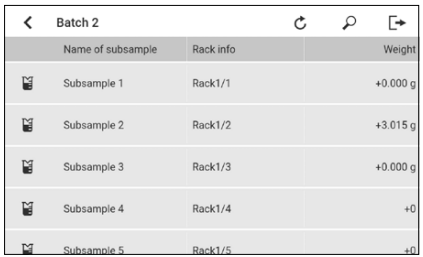
Connectivity Package QP4 – OMNIS

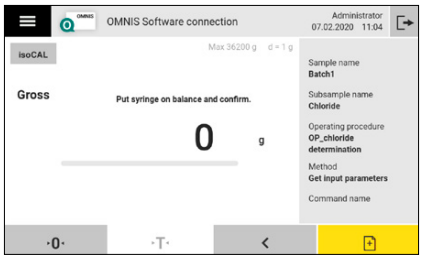
Connection to Metrohm OMNIS software
This application establishes the connection to the OMNIS software, which must be installed separately on the computer. The OMNIS software is an analysis system with which devices can be controlled, methods created, work systems configured, determinations carried out and results calculated.

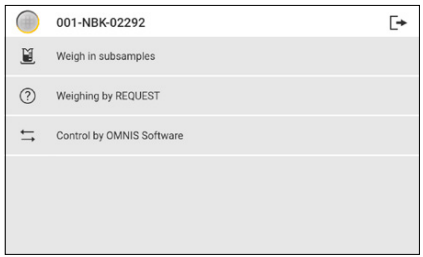
All results are linked to the corresponding sample. After installing this application, workflows for weighing in, weighing back and querying partial sample data can be carried out directly on the scale without any action on the software. It is also possible to run automated processes from the OMNIS software.

The application offers 3 work processes: \ “Weigh in partial samples \”: You can select a sample list on the balance and weigh all partial samples on it. \ “Weighing in by REQUEST \”: You can query partial sample data or variables for ongoing determinations using a REQUEST command. \ “Control by OMNIS software \”: You can control the balance automatically using the OMNIS software.

Access to the application is checked via the settings for user management on the OMNIS software, so that it is ensured that the user has the necessary authorizations. The work on the OMNIS software complies with FDA 21 CFR Part 11 and EudraLex, Volume 4, Annex 11. All interactions between the scale and the OMNIS software are recorded in the software's audit trail. The application can only be used with an Ethernet connection.





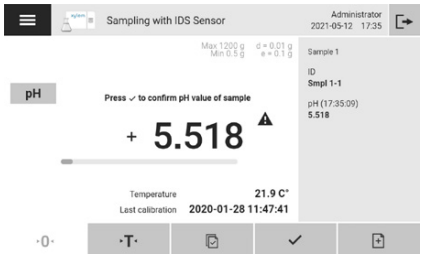


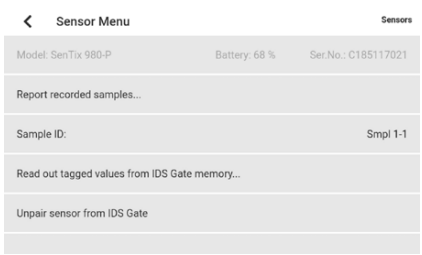
Material No. QAPP404

Connectivity Package QP4 – Sampling with IDS Sensor

Sampling with IDS Sensor

This application is used to record and report a series of samples (generally liquids or solvents). Each sample exists of an ID and optionally a weight. Additionally, measured values (e.g. pH, temperature) from a connected IDS sensor can be acquired and added to each sample. The Cubis® MCA balance can communicate with an IDS sensor via the IDS Gate, which must be located in the same network. Tagged values, which are stored internally inside the IDS system, can also be read out and reported by this application.





Material No. QAPP406

Special QApps

- Standard Preparation QAPP001
- Tablet Checker QAPP002
- Average Weight Control QAPP003
- Filterability Index QAPP004
- Pipette Check Advanced QAPP005
- Average Weight Control F&B QAPP006
- Fogging Test QAPP007
- Final Pharma Filling QAPP008
- Mycap® CCX Cell Passaging QAPP009

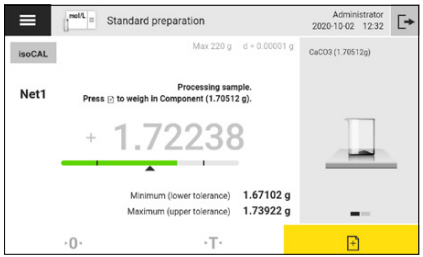
Special QApps – Standard Preparation

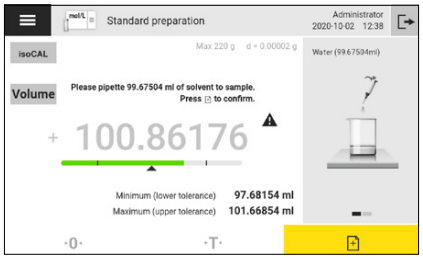
Preparation of standards and buffers
The application standard preparation is used to prepare standards or buffer solutions of known concentration. During the task setup, for documentation purposes the system devices (balance, thermometer, density meter and printer) can be set. Furthermore, the permissible sample weight tolerances in percent and the mode for samples out of tolerances can be defined. If the sample weight is below or above the set tolerance, the user either a) cannot accept the weight value, or b) must enter the set password to take over the weight value, or c) can accept any value, even if the weight is out of tolerance.

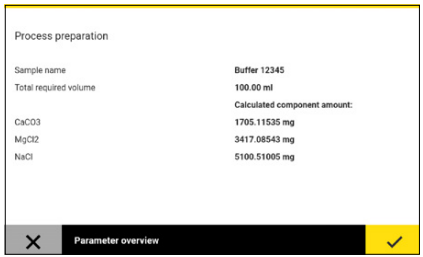
Users with the role right to create or modify tasks have access to the application's sample management. The sample management offers a solvent, component and sample library that can be edited by this user group. Solvents are defined by name and density and components by name, molecular weight, and purity. Newly created solvents or components are added to the corresponding libraries and by combining a solvent and at least one component, as well as entering the desired final concentration, the composition for the standard solution can be defined and saved in the sample library. The target concentration can be selected as a weight unit per volume or molar concentration. For the preparation of mixed standards or buffers, up to 20 components can be selected for each sample.

The user without the right to create or change tasks may only prepare standard solutions from stored samples. The user selects a sample from the library and is guided through the process by the software. On the basis of the volume entered by the user, the software automatically calculates the quantities of components to be weighed in and provides direct visual feedback by means of a graphic tolerance bar as to whether or not the weight is within the specified tolerance. Based on the components weights measured by the balance, the software application calculates the amount of solvent required to achieve the desired target concentration. Finally, the effective added solvent weight is determined gravimetrically, converted to volume using the density, and using this value the effective final concentration of the standard solution is calculated.

Finally, the software application creates a comprehensive report that can be printed out in standard or GLP format including a list of the system devices used during the procedure. In addition, the application allows the printing of labels that can be attached to the used vessels.

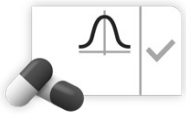






Material No. QAPP001

Special QApps – Tablet Checker



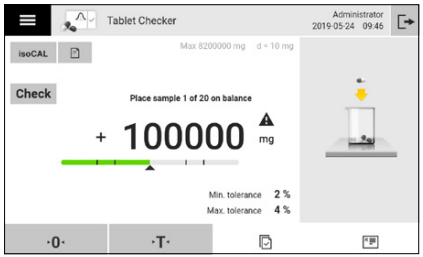
Average weight control of tablets and capsules
This application is for average weight control of tablets and capsules according to Pharmacopoeia and includes an administrator and a user level. The administrator can define products (definition of weight, type, tolerances and ratings) or modify or delete stored products. All products are stored in a product database and can be accessed by the user if required.

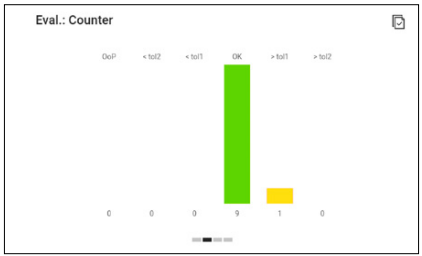
The workflow provides a quick test option and testing of a stored product. The quick test option can be used to test products that were not previously saved. For the quick test, all product data must be entered before starting the test, while when selecting a stored product, all relevant settings can be loaded from the product database and tested according to the specified specifications.

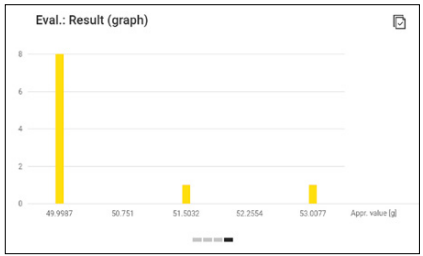
The application offers different procedures for the test of tablets and capsules. To test tablets their weight is determined and whether this is within the defined tolerances. For capsules, first the empty capsule weight is determined or entered by the user and then the weight of filled capsules is measured. Again, there is a check to see if the total weight of the capsules is within acceptable tolerances.

In terms of tolerance consideration, the application offers three different modes:

1. Fixed tolerances (dynamic tolerance off). The permissible tolerances do not change during the measurement and each sample is evaluated based on the fixed limits.
2. Tolerances calculated on the total mean value (dynamic tolerance on). The tolerances are applied to the calculated average of the weights of all samples at the end of all measurements.
3. Tolerances calculated on the current mean value (dynamic tolerance on). The tolerances are recalculated after each measurement on the basis of the current mean value of the weighing values and the samples are evaluated.

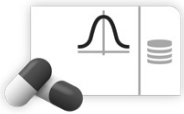






Material No. QAPP002

Special QApps – Average Weight Control



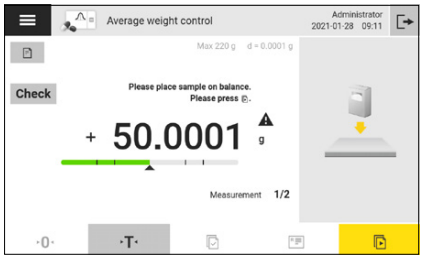
Average weight control of solid and liquid samples
This application serves for average weight control of packaged goods according to the 76/211/EEC and is used to optimize filling processes and to document compliance with legal requirements. The software offers an administrator and a user level. The administrator can create products or edit or delete saved products. All products are stored in a product database and called up by the user to test a product according to the specified paragraph. Before starting the average weight control, the software application checks for safety whether the used balance is verified and whether the verification scale interval e for measuring the product corresponds to the minimum requirement according to 76/211/EEC. If one of the requirements is not fulfilled, the software application displays a warning message and the average weight control measurement cannot be started.

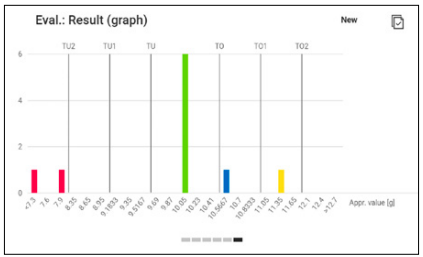
The application offers the test of products with tolerances according to 76/211/EEC and with freely definable tolerances. You can choose between destructive and non-destructive methods for testing products. With the destructive measurement, the filled packaging is measured in the first step and the empty weight of the packaging (tare) is determined in the second step, with the non-destructive measurement this process is reversed, i.e. first the empty weight of the packaging is measured and then the weight of the filled packaging. To simplify matters, the mean tare weight can also be entered. In this case, only the filled packaging is weighed and the filling weight is automatically calculated by subtracting the mean tare weight.

Based on the nominal filling quantity and the selected paragraph, the permissible tolerances according to 76/211/EEC are automatically applied by the software. The number of samples inside and outside the tolerances (TU, TU1, TU2 and TO, TO1, TO2) and outside the plausibility limit (OOP) is counted and displayed dynamically on the weighing screen.

TU = nominal filling quantity - internal, lower tolerance limit
TU1 = nominal filling quantity - tol. S.
TU2 = nominal filling quantity - 2 * tol. S.
TO = nominal filling quantity + internal, upper tolerance limit
TO1 = nominal filling quantity + tol. S.
TO2 = nominal filling quantity + 2 * tol. S.
OOP = nominal filling quantity outside the set plausibility limit
Tol. S = permissible minus deviation

The statistics for each measurement is saved by the average weight control software application and can be used to generate shift and lot statistics. For the shift statistics, all results that were measured for a lot between a defined shift start and end time are saved and for the lot statistics, the result of selected measurements are summarized in a single statistic. Users with the role right to create tasks can finish the lot statistics. All measurement results for a lot are summarized in a report and can be printed for documentation.



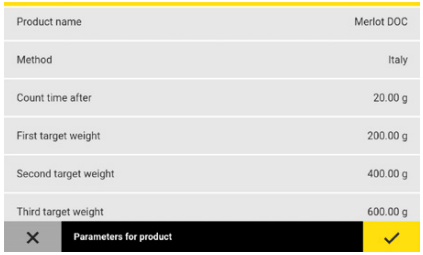


Material No. QAPP003

Special QApps – Filterability Index

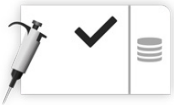
This software application provides a method for identifying wines that have the potential to be problematic during sterile filtration and could foul the membrane by particulate and colloidal materials. Particulates can include microbes and crystals whereas large colloidal particles can be associative colloids and macromolecular colloids.

The software application offers to determine the filterability index according to the Italian and French method. For the Italian method the software measures the time for the initial flush and three set volumes to calculate the Filterability Index (IF), modified Filterability Index (IFM) and Vmax1. For the French method additionally, the volume (weight) filtered at two set time points is determined to calculate Vmax2.



Material No. QAPP004

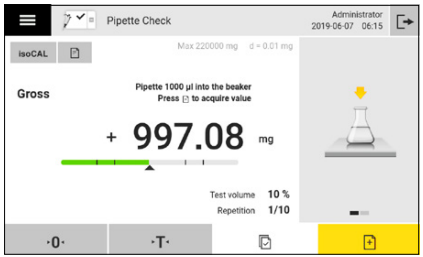
Special QApps – Pipette Check Advanced

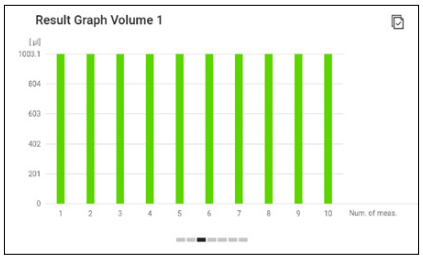


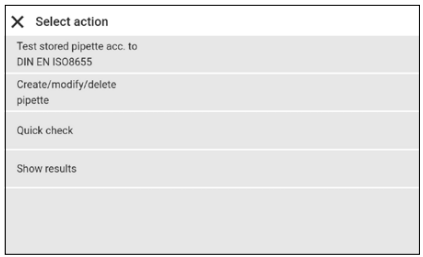
Testing of piston stroke pipettes acc. to DIN EN ISO 8655
The Pipette Check application is used for the simple and reliable testing ofpiston stroke pipettes with fixed or variable volume type A or D1. In the application, the pipette and climate data can be recorded,as well as the used measuring instruments and pipette tips documented. For 140 different Sartorius pipettes, templates are stored in the software,of which the data is automatically adopted after selection. Created pipettes and used measuring instruments are stored in a database. On base of the nominal volume specified for a pipette, the software automatically determines the permissible tolerances for the random and systematic error in accordance with DIN EN ISO 8655 and by the climate data temperature and barometric pressure determines the z factor used to convert the measured weight values into volume values.
There are two test methods available:

1. The “Quick check” is based on a number of 1 to 9 measurements, for pipettes with variable volume setting per volume range, and is used to quickly check a pipette.
2. The “according to ISO8655” method requires 10 measurements per volume range to be tested

Depending on the selected test method, the software guides the user through the entire process.
For visual support, a tolerance bar with the permitted tolerances is displayed to the user. The software immediately evaluates the measurement result after each measurement and produces a summary report after completion of all measurements. In addition, a bar chart is displayed for each measured volume, in which the number of measured values within and outside the tolerance is graphically displayed.







Material No. QAPP005

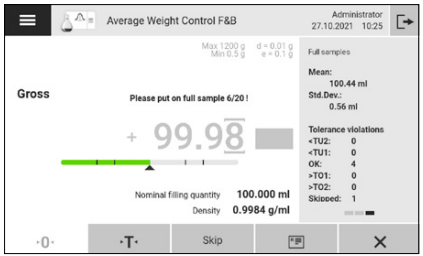
Special QApps – Average Weight Control F&B

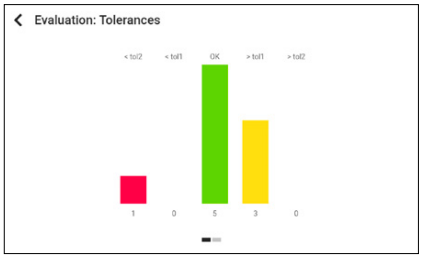
This application serves for average weight control of packaged goods according to the 76/211/EEC and is used to optimize filling processes and to document compliance with legal requirements. The software offers an administrator and a user level. The administrator can create products or edit or delete saved products. All products are stored in a product database and called up by the user to test a product. Before starting the average weight control, the software application checks for safety whether the used balance is verified and whether the verification scale interval e for measuring the product corresponds to the minimum requirement according to 76/211/EEC. If one of the requirements is not fulfilled, the software application displays a warning message and the average weight control measurement cannot be started.

The application offers the test of products with tolerances according to 76/211/EEC and with freely definable tolerances. You can choose between destructive and non-destructive methods for testing products. With the destructive measurement, the filled is measured in the first step and the empty weight of the vessels is determined in the second step, with the non-destructive measurement this process is reversed, i.e. first the empty weight of the vessels is measured and then the weight of the filled vessels. To simplify matters, the mean tare weight can also be entered. In this case, only the filled vessels are weighed and the filling weight is automatically calculated by subtracting the mean tare weight.

Based on the nominal filling quantity, the permissible tolerances according to 76/211/EEC are automatically applied by the software.

The statistics for each measurement is saved by the average weight control software application and can be used to generate For the lot statistics, the result of measurements for a lot are summarized in a single statistic. Users with the role right to create tasks can finish the lot statistics. All measurement results for a lot are summarized in a report and can be printed for documentation.



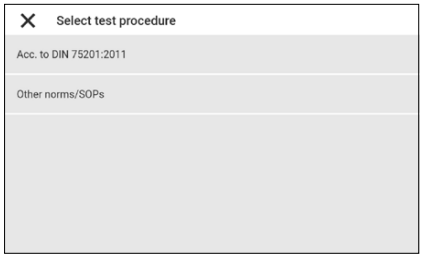


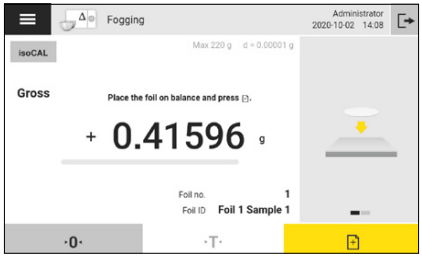
Material No. QAPP006

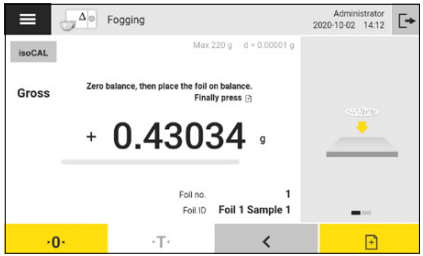
Special QApps – Fogging Test

Fogging test acc. to DIN EN ISO 75201
The application Fogging test measures the weight of semi-volatile organic compounds (SVOC) according to the procedure described in standard DIN EN ISO 75201 method B. High surface and interior temperatures cause the polymers, textiles and natural materials used in automotive interiors to outgas volatile and semi-volatile organic compounds (VOC and SVOC) at accelerated rate.
The SVOCs can condense onto the cooler surface of the windshield potentially creating a visibility and safety problem for the driver. The purpose of the fogging test is to assist manufacturers of materials used in the interior of vehicles and the companies that use the products in identifying and developing products that outgas SVOCs at a reduced rate.

The fogging test procedure as described in DIN EN ISO 75201 helps to recreate automotive interior outgassing in a timely, measurable and repeatable way. During the gravimetric test procedure the initial and back weight are measured. The amount of fogging condensate is determined by subtracting the initial weight from the back weight (Gj = G1 – G0) and the degree of divergence v% is calculated.





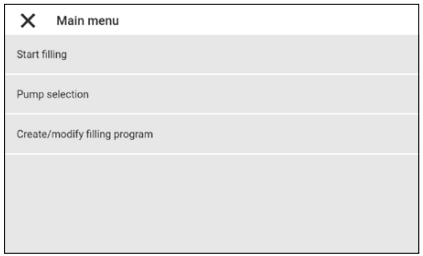


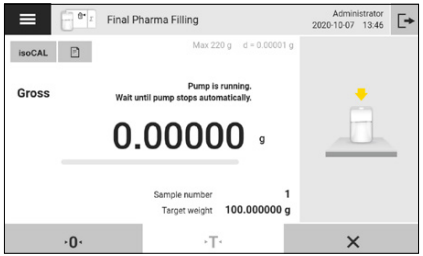
Material No. QAPP007

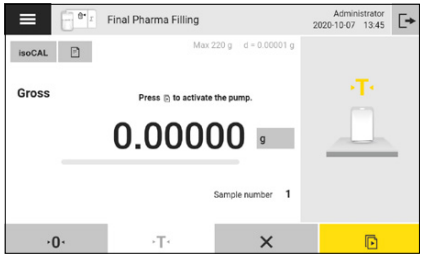
Special QApps – Final Pharma Filling

Final filling of pharma products
This application is used to fill liquid products using peristaltic pumps. By means of the pump, the liquid is transferred from a reservoir into vessels or bags and the transferred weight is checked gravimetrically. The application can control and regulate Rotarus pumps from Hirschmann and the pump models 323Du, 530Du and 630Du from Watson-Marlow via a serial communication.

When filling products, product data and pump settings are stored in a product database. The start, fill and end speeds of the pump can be set product-specifically. In addition, a reverse run can optionally be defined to pump liquid back in the feeding hose so that this portion is not counted as fill weight. The filling process is repeated according to the set number of samples and the results are calculated automatically. The filling weight in each vessel or bag, the minimum, maximum and average filling weight, as well as the standard deviation are determined in the statistical evaluation and are stored batch-specific in the product database. In addition, for filled vessels or bags labels can be printed, including information such as sample number, filling weight and expiry date.







Material No. QAPP008

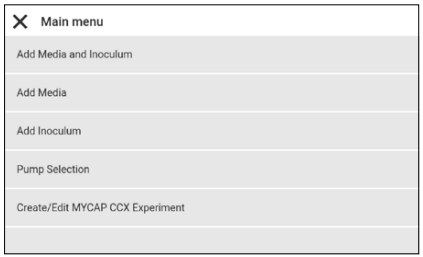
Special QApps – Mycap® CCX Cell Passaging

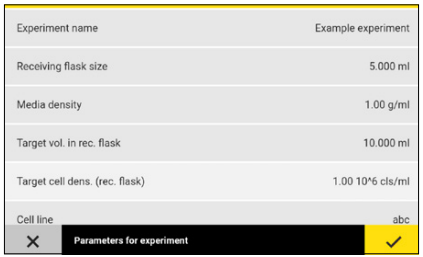
Cell culture expansion using Mycap® flasks
TThis application is for the aseptic transfer of media or inoculum between Mycap® CCX flasks using peristaltic pumps. By means of the pump, media or inoculum is transferred from a donor flask into a recipient flask and the amount transferred is checked gravimetrically. The application can control and regulate the pump models 323Du, 530Du and 630Du from Watson-Marlow via a serial communication.

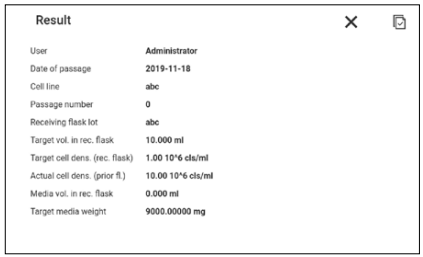
To define an experiment, there is an administrator and a user menu in which various parameters are recorded. The most important parameters are information on the cell density in the donor flask and the desired cell density in the target flask, as well as information on the available and desired volume of the medium in the target flask. In addition, the pump speed for different process steps can be defined in rpm. All settings are stored in an experiment database.

From the concentration and volume data, the application automatically calculates the target weight of the inoculum or medium to be transferred and controls the peristaltic pump accordingly. The pumping procedure includes an optional priming step of the tube, the rapid transfer of medium or inoculum to a defined percentage of the target weight and finally the running of the pump at slow speed until reaching the target weight. The process is repeated according to the number of flasks to be filled u ntil all samples have been processed.

The results including the final volume and the effective final cell density are automatically calculated for each sample and can be documented by means of a printer connected to the balance. You can also optionally print labels with cell line information, lot number, passage number, cell density, and the volume to label the filled flasks.







Material No. QAPP009

All-Inclusive Package QP99

The software application package All-Inclusive includes 4 different sub-packages for compliance (Pharma (QP1)), complex weighing applications (Advanced (QP2)), weighing applications and helpful tools (Utilities (QP3)) and connectors for data exchange (Connectivity (QP4)). The All-inclusive package QP99 is available by factory licensing, means for new balances, only. QP99 is not available for after sales licensing.

Request an Activation Code

To continue using your QApp on your Cubis® balance over the long term, you will need to activate this app as a permanent download. The activation code required for this purpose will be displayed online and e-mailed to you at the e-mail address you specified once you have sent the completed form below and a plausibility check has been performed.

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