What's New?

A number of smaller internal improvements have been applied, like a revision of the smoothing algorithm to better cope with non-linearly scoped time series data, and underlying software libraries have been updated. Find the full list in the detailed release history.

Let's take a look at some of the bigger changes and additions.

Time Guide

During a roast it is now possible to have Artisan draw a line at the current point in time, which helps to compare the current roast state with that of the template (RoR, background event markers,..). You can activate this feature in the Events dialog (menu `Config >> Events`) by ticking the flag *Show Time Guide.*

New PhasesLCD Mode Configurations

The phases setup got simplified by reducing the number of manual roast phase settings from two (Espresso and Filter) to just one. At the same time it is now possible in the Roast Phases dialog (menu `Config >> Phases`) to define the display mode (Time, Percentage or Temperature) to be used on entering any of the three phases.
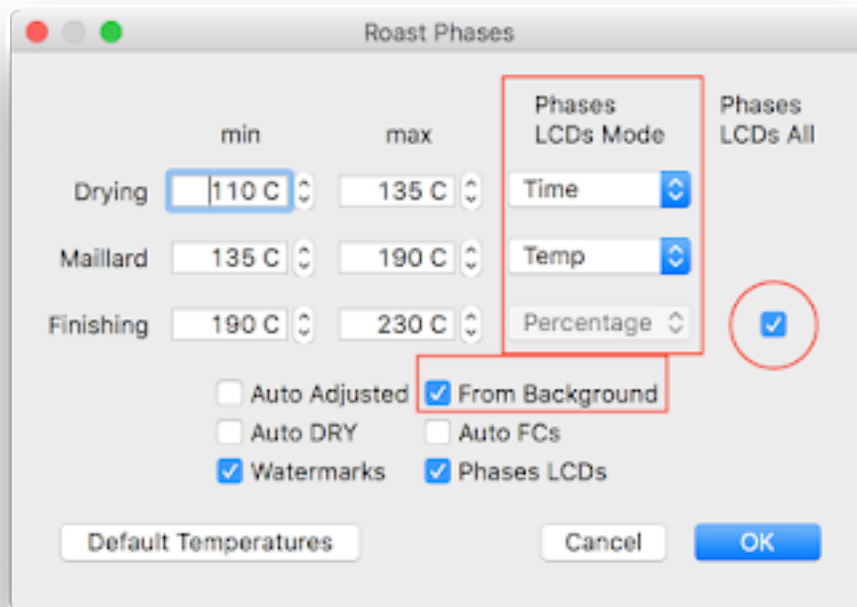
For the last phase one can decide to display all information of this phase across the 3 available PhasesLCDs in parallel instead of having each PhaseLCD displaying its phase information in the current mode by ticking the flag at the end of the Finishing phase row. This specific mode avoids having to right-click the PhasesLCDs regular to check all this relevant information during that last busy phase.

The following screenshots document the information displayed by the 3 PhasesLCDs during each of the 3 roast phases under the configuration shown above (click to enlarge!).
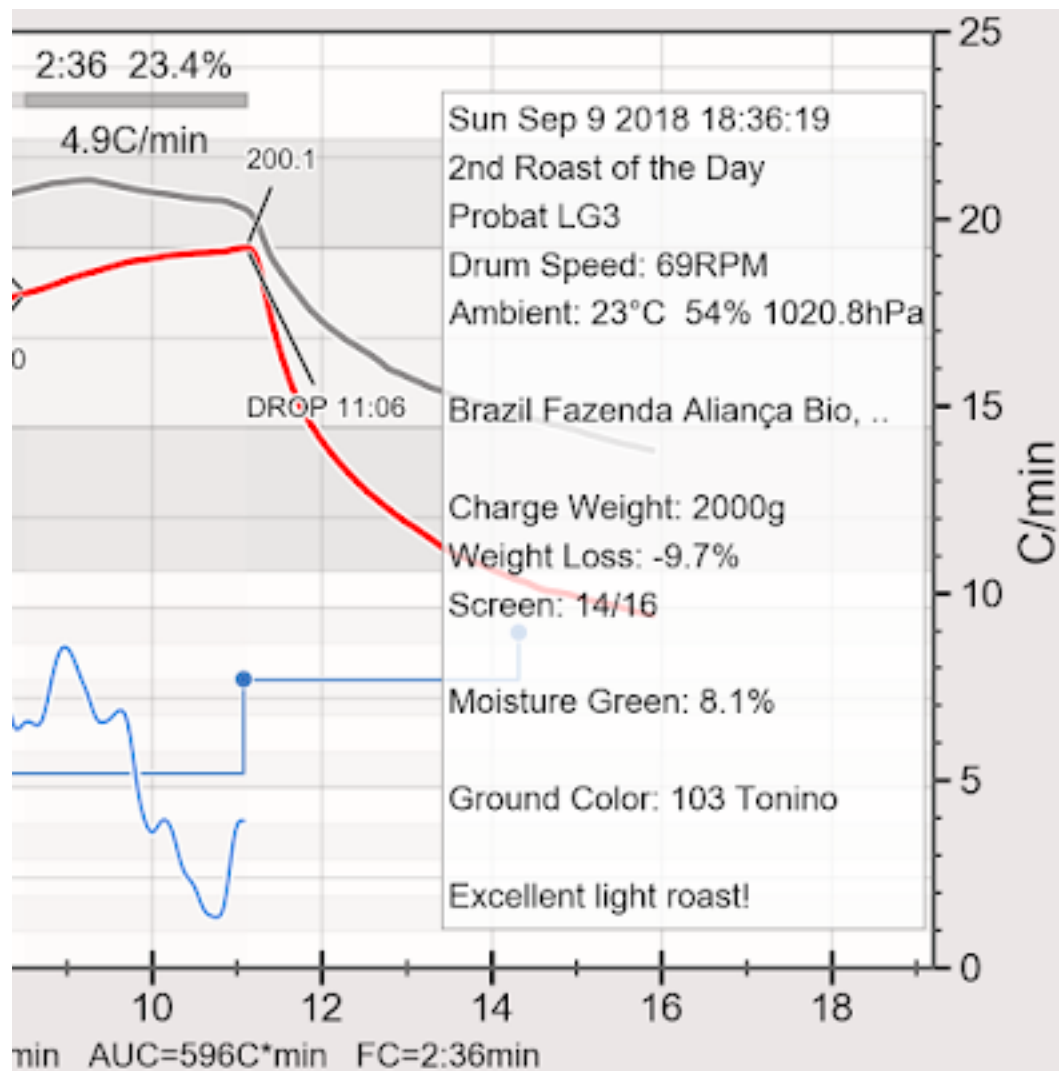
ARTISAN 1.4 UPDATE
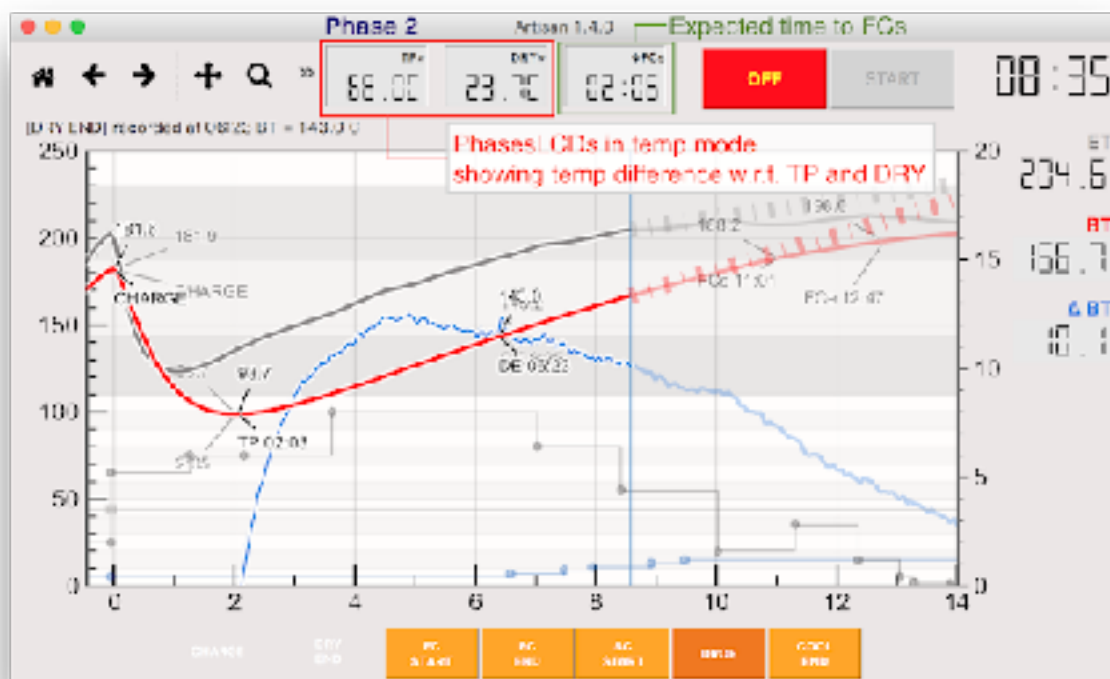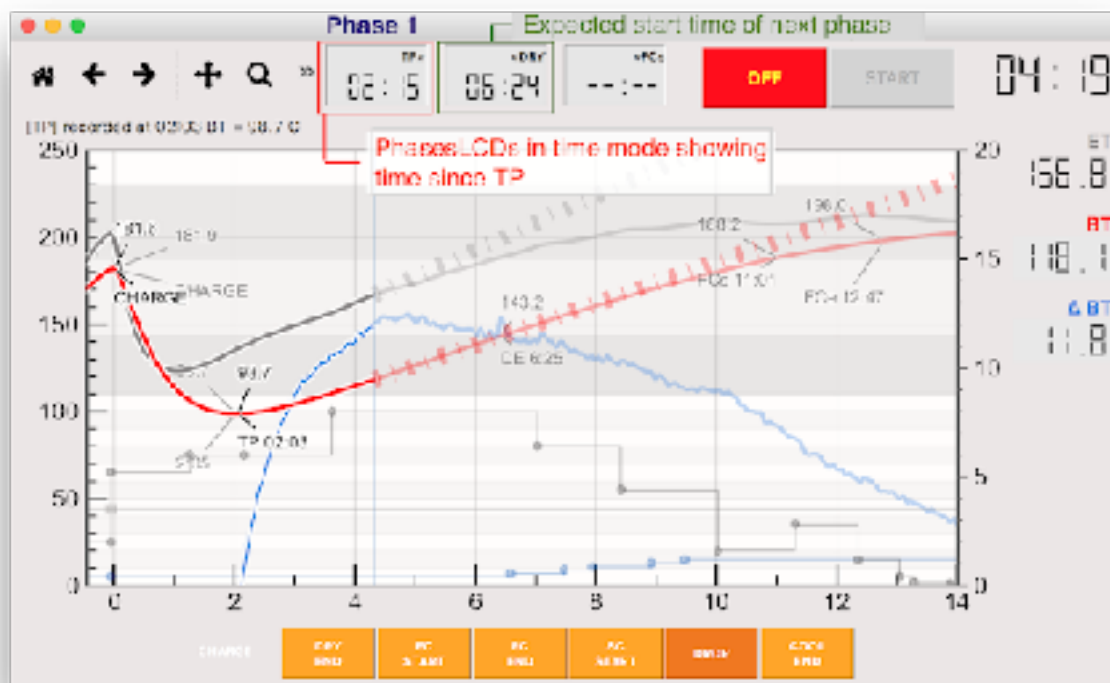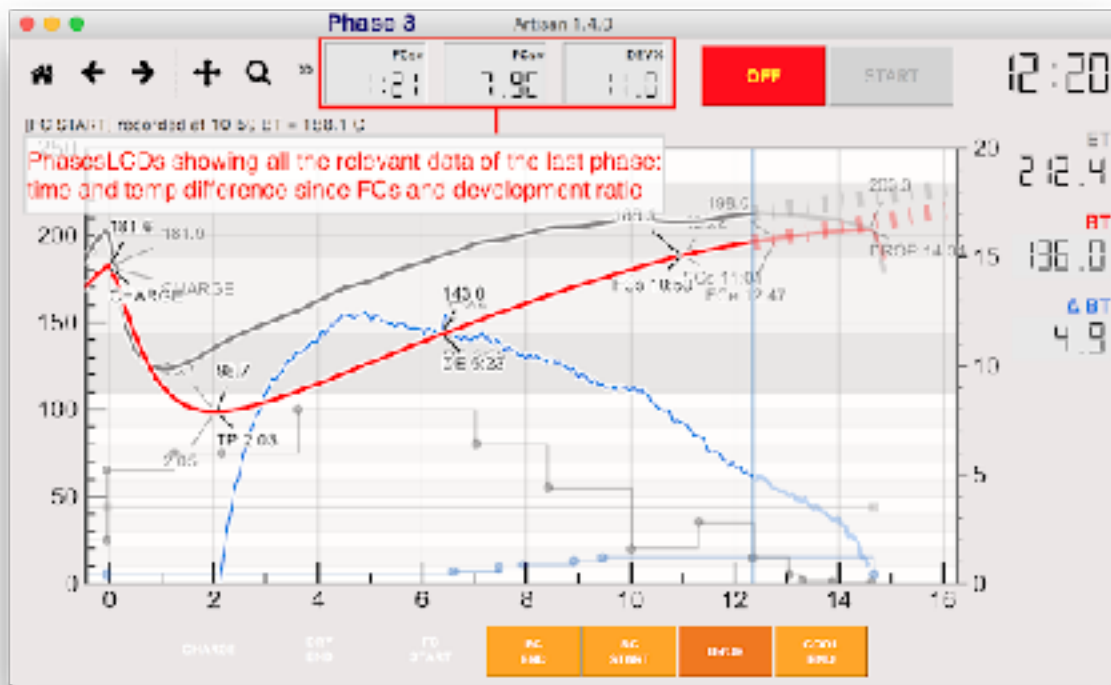
By ticking the *From Background* flag one can instruct Artisan to read phases information on loading a background profile.
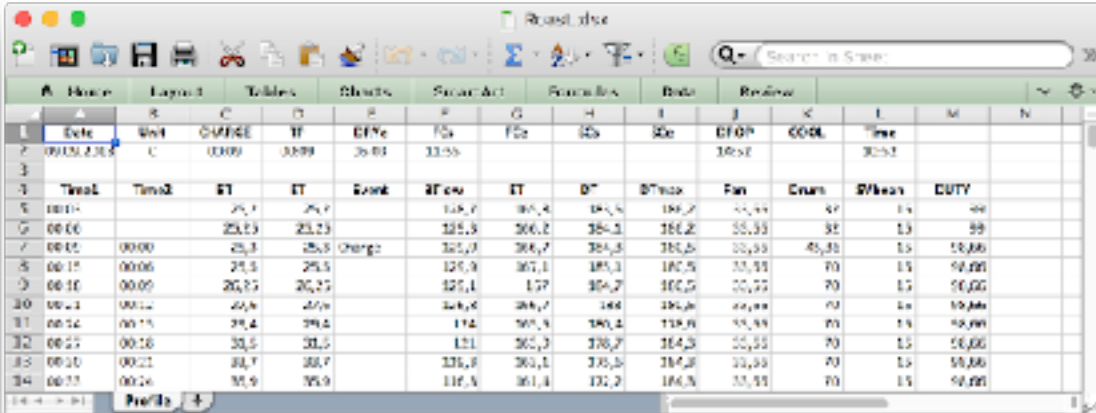
Improved Statistic Summary

The placement and formatting of the statistic summary (activate via the flag *Summary* in the Statistics dialog; menu `Config >> Statistics`) have been improved to make things more readable. Lines to render the green beans names and some of the roasting notes have been added to allow you to add some free text to the summary. Finally, barometric pressure has been add to the roast properties as well as to the ambient data line in this summary.

2:36 23.4%

4.9C/min   200.1

Sun Sep 9 2018 18:36:19
2nd Roast of the Day
Probat LG3
Drum Speed: 69RPM
Ambient: 23°C 54% 1020.8hPa

DROP 11:06   Brazil Fazenda Aliança Bio, ..

Charge Weight: 2000g
Weight Loss: -9.7%
Screen: 14/16

Moisture Green: 8.1%

Ground Color: 103 Tonino

Excellent light roast!

25

20

15

C/min

10

5

0

10   12   14   16   18

min   AUC=596C*min   FC=2:36min

Excel and Probat Pilot Support

As an open platform data import and export is a key feature.
Already since Artisan v0.9 the import and export to CSV
and many other formats for processing with external
software is available. In Artisan v1.3.1 a copy-paste action
was added such that profile data can be simply selected and

copied from the data table (menu `Roast >> Properties`, last tab `Data`).

In v1.4 the import and export of the Probat file format has been updated to support Pilot v1.4 and later and a direct exporter of the full profile data to the popular Microsoft Excel file format has been added.

Channel Tare

People do crazy things like adding all kind of sensors beyond simple temperature probes to their Artisan setup. Now some of those sensors deliver base values from day to day, which requires to change the channels symbolic formula frequently to get comparable results. For example, the Phidget 1136 air pressure differential sensor, which some use to measure the airflow in the duct, delivers varying results depending on the barometric pressure if one of the two ports is left open to the ambient air.

In Artisan v1.4 a simple right-click on a channels LCD during logging takes its current reading as tare value bound to the symbolic variable `Tn`. The tare values are bound as follows.

- `T1`: tare value of ET
- `T2`: tare value of BT
- `T3`: tare value of the first channel of the first extra device
- `T4`: tare value of the second channel of the first extra device
- `T5`: tare value of the first channel of the second extra device
- ...

The simplest symbolic formula to use these assignments is of the form "`x - Tn`", with `Tn` being the variable bound to the tare value of the current channel `n` (eg. "`x - T3`" for the first channel of the first extra device).

Tare values are initialised to zero by default and can be re-initialized to zero by a right-click on the corresponding channels LCD while logging is turned off (tick Readings under menu View to show the LCDs in that mode).

Always ON and Playback DROP

For further automation it can be useful to have Artisan turn back on automatically after terminating a recording. This is especially useful if one uses Alarms to control sessions with a sequence of roasts. So you might have configured an alarm that triggers the OFF action automatically at the end of the first roast, but there is no way to have Artisan turned ON again via Alarms as alarms are not processed while not sampling.
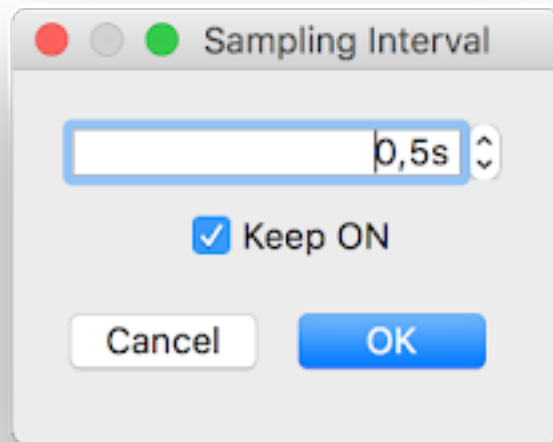
In Artisan v1.4 you can tick the *Keep ON* flag in the "Sampling Interval" dialog (menu `Config >> Sampling Interval`) to have Artisan turn itself on automatically after it received an OFF signal while recording. If there is unsaved data Artisan will still ask you to save that before doing a reset and running the ON action. To terminate such an always-on loop you simply click OFF while sampling but not recording (thus START not yet issued).
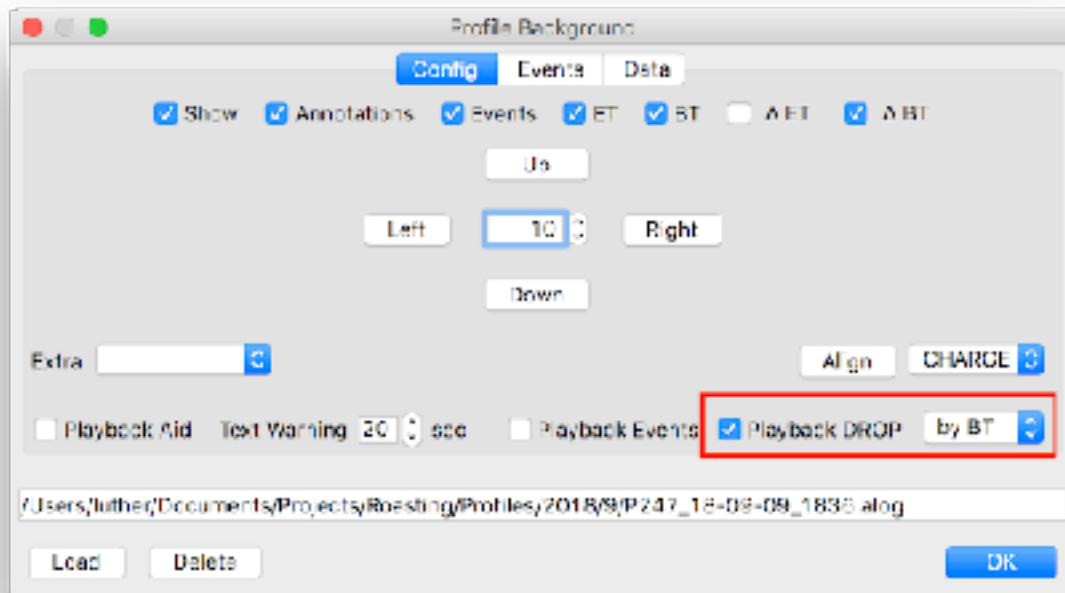
The playboack of events from a background profile has been extend to not only playback custom events but also the DROP event if configured. The DROP event playback respects the choice of trigger, by-time, by-BT or by-ET, as set for the playback of custom events. This automatic playback of the DROP event makes most sense for configurations where an action is associated with the DROP event to release the beans automatically as for the Hottop2k+ setup.
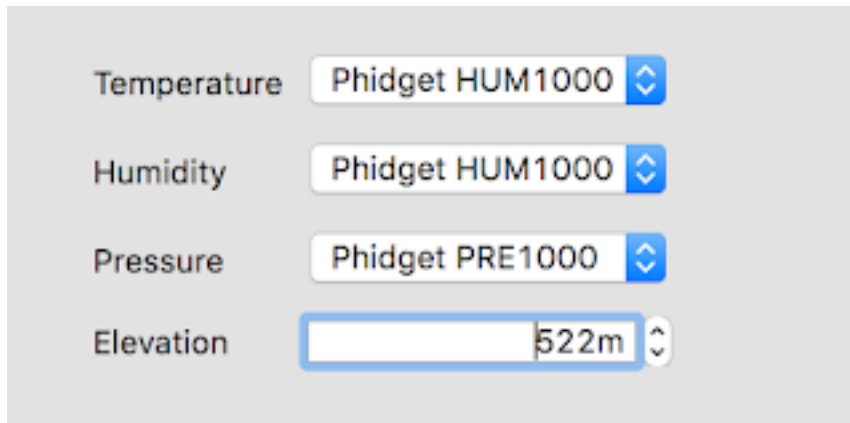
Ambient Data

Talking about ambient data / environmental data like relative humidity and room temperature of your roasting environment. After adding ambient pressure to this data set in this version we also added the possibility to gather all of this ambient data automatically per roast from corresponding sensors.

For now we added support for the Phidgets VINT HUM1000 and PRE1000 modules which allow to measure relative humidity and absolute air pressure which is

converted to barometric pressure taking the given elevation of the roasting location into account. You can configure ambient sensors in the Device Assignment dialog (menu `Config >> Device`, last tab `Ambient`). We plan to add support for further "weather stations" in the future.


Proportional on Measurement PID Mode

The Software PID implementation of Artisan realises a standard PID loop where the P term is calculated from the discrepancy between the current PID input and the target setpoint taking the p parameter into account. For "integrating processes" where the PID controls the rate of the change of the input and the setpoint keeps changing, like in roasting, this standard algorithm will overshoot the setpoint always. By basing the calculation of the P term on the current input and a reference input, an algorithm known as Proportional on Measurement, such an overshoot can be avoided.
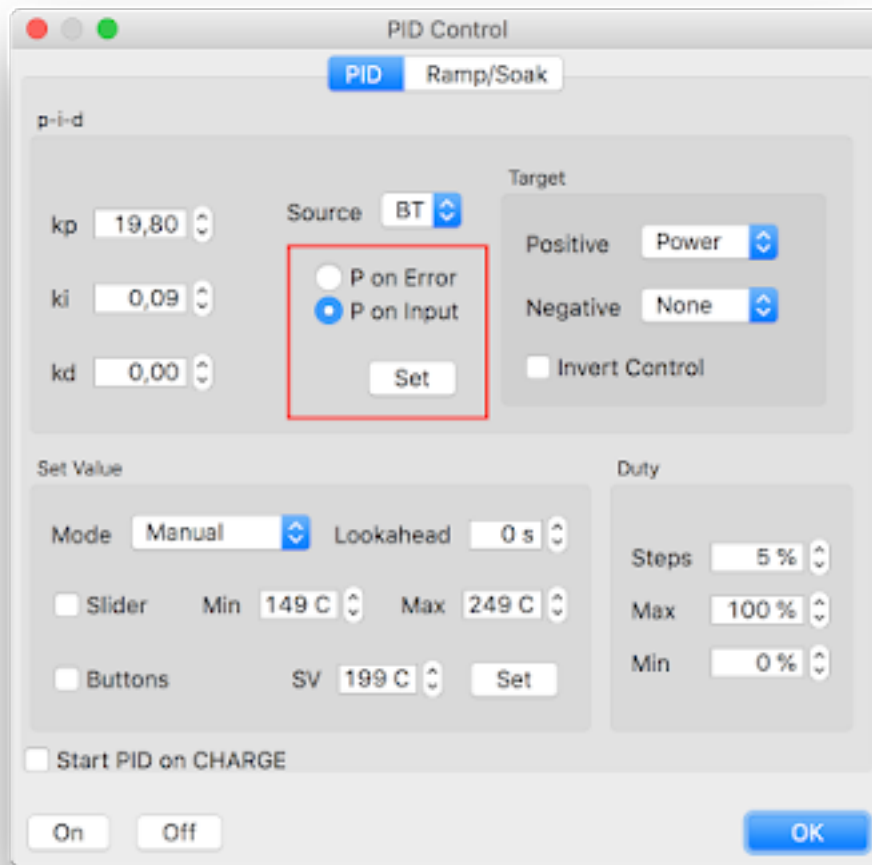
Artisan 1.4 also supports this PID variant, known as P-on-measurement. However, one should be aware that the p-i-d parameters for this algorithm are interpreted differently and are not compatible with the ones from the standard PID algorithm. Thus, switching between P-on-error to P-on-measurement requires a re-tuning of the p-i-d parameters. See the excellent post on Introducing Proportional On Measurement by Brett for further details.

In cooperation with the Arduino/TC4 team we extended the aArtisan protocol such that the selection of the PID algorithm is also communicated to the TC4 if the TC4s PID is used (which is more effective) instead of the Artisan internal Software PID. Artisan v1.4 is now also communicating the PID duty min/max limits to the TC4. Note that you need to install the latest aArtisanQ firmware v6.6 or newer on your TC4 to get this going.

Thanks to Brad Collins, the maintainer of the aArtisanQ firmware, for his support on this!

Extended Machine Support

The list of Supported Machines has been extended by the following entries

- Coffee-Tech Engineering Ghibli
- Besca BSC Shop roaster family
- Atilla GOLD plus 7"
- Dietrich Roasters with the 4- or 6-Sensor Data Logging option

We also added a machine setup for TC4 equipped Hottops running the aArtisan or aArtisanQ firmware.

If you are producing fine roasting machines and want to have your machines on this list, contact us!

Download and Documentation

On the Artisan Homepage you can find the Artisan documentation and download installers for Windows, Mac OS X, Linux and Raspberry PI.

Note that on request we added a legacy Mac OS X build that supports old OS X 10.10 systems, but running on an outdated GUI toolkit.

The Artisan Team
Marko, Dave, Rui, and Michael