DEGREE CONTROLS, INC.
Your Partner for Airflow Sensing & Controls
300 Innovative Way, Suite 222, Nashua, NH 03062-5746
603.672.8900 or 1.877.334.7332
www.degreec.com

Application Note Series

New UAS Processing Technology

Product Platforms: Multipoint Instrumentation
Purpose: Identify cases where °C Port firmware needs to be updated to use UAS sensors with advanced processing technology.

SUMMARY

Degree Controls USB instrumentation-grade sensors have been shipping with advanced processing technology since July 26th, 2021. As a result of this improvement, a °C Port firmware update is required to use legacy °C Ports with new UAS sensors. There are options for getting your °C Port firmware updated, and these are outlined below. Degree Controls will ask for complete sensor and °C Port part numbers (part numbers with revisions) as we work with you to update your °C Port.

SYSTEM CONFIGURATIONS

See the DEFINITIONS section for descriptions of new and old UAS sensors, and new and legacy °C Ports, referred to within this document.

Customers using AccuTrac™ software should have no issue using new UAS sensors connected directly to a PC or a *new* °C Port:

- A system comprised of new and/or old UAS sensors, a new °C Port, and AccuTrac™ software can be used without issue. New °C Ports have updated firmware which talks to both new and old UAS sensors.
- A system comprised of new and/or old UAS sensors connected directly to a PC with AccuTrac™ software *version 1.6.0.1 or higher* can be used without issue.

In all cases, we recommend updating AccuTrac™, as well as °C Port firmware, to the latest versions for the best user experience and new features. AccuTrac™ can be downloaded from our website, and options to update °C Port firmware are outlined in the sections below.

Note: We no longer support AccuTrac™ Plus in the 12.x.x range.

Systems with a Legacy °C Port

To communicate with both new and old UAS sensors, legacy °C Ports must be at firmware version 1.9 or higher.

New and old UAS sensors with AccuTrac™ and legacy °C Port

One of the following needs to be done:

I. Update °C Port firmware automatically with AccuTrac™ (version 1.6.0.1 or higher).
II. Update °C Port firmware over Ethernet with a standalone program that runs on a PC.
III. Send the °C Port to Degree Controls for a firmware update.

New and old UAS sensors with non DegreeC software and legacy °C Port

For customers who have developed their own method of communicating with the °C Port, using LabView or another proprietary platform, the protocol for communicating with UAS sensors is unchanged. There is, however, a difference in the port name for the new UAS sensor. The old UAS sensors come up as *ttyUSBxx*, while the new ones come up as *ttyACMxx*. DegreeC's Accutrac™ datalogging software does not use the sensor port name for any validation, and hence did not need any update. Most probably the user code won't require an update either. If the user code checks for port names though, this may create an error.

One of the following needs to be done to update °C Port firmware:

I. Update °C Port firmware over Ethernet with a standalone program that runs on a PC.
II. Send the °C Port to Degree Controls for a firmware update.

New and legacy °C Ports reporting to a single AccuTrac™ session

A system comprised of a mix of new and legacy °C Ports, having different versions of firmware, and reporting to a single AccuTrac™ session can be used without issue. AccuTrac™ communicates with different versions of °C Port firmware. However, in order for a legacy C Port to communicate to new UAS sensor technology, the firmware will need to be updated, as per above.

Repair or replace old UAS sensor used with legacy °C Port

For customers using many old UAS sensors and multiple legacy °C Ports, a °C Port firmware update is needed if the legacy sensor's main PCBA is replaced as part of a repair. A firmware update is also needed if an old UAS sensor is replaced with a new one. You do not need to update firmware on ALL °C Ports, just the one talking to the "new sensor", however, we recommend updating all your °C Ports to allow freedom of mixing legacy and new sensors with all °C Ports.

Systems Without °C Ports and Using Software Other Than AccuTrac™

New and old UAS sensors with non DegreeC software

Customers without °C Ports, who have developed their own method of communicating with UAS sensors, using LabView or another proprietary platform, should have no issue using new and/or old UAS sensors. USB drivers for the new UAS sensors can be downloaded from our website, and the protocol for communicating with UAS sensors is unchanged. There is, however, a difference in the port name for the new UAS sensor. The old UAS sensors come up as *ttyUSBxx*, while the new ones come up as *ttyACMxx*. DegreeC's Accutrac™ datalogging software does not use the sensor port name for any validation and hence did not need any update. Most probably the user code won't require an update either. If the user code checks for port names though, this may create an error.

Systems with a New °C Port

New °C Ports shipped prior to the release of our new UAS sensor technology, will require their firmware to be updated just like legacy °C Port firmware. Use AccuTrac™ software (version 1.6.0.1 or higher) or the update installer program. For optimal performance of °C Port with new UAS processing technology, we recommend updating °C Port firmware to version 2.3 or higher. °C Port shows the firmware revision in the lower right-hand corner of the LCD display during startup.

UPGRADE OPTIONS

Update °C Port firmware with AccuTrac™

AccuTrac™ software (version 1.6.0.1 or higher) allows you to automatically update °C Port firmware over the network. If a connected °C Port's firmware is not up to date, an update notification will pop up from the *Finding °C Ports* screen. AccuTrac™ also shows the firmware version in hover text for your convenience. See *ANS-SD20-A Using AccuTrac™ to Update °C Port Firmware* for instructions to update °C Port firmware using AccuTrac™.

Update °C Port firmware with a standalone program

A standalone program, PN 65110SW003-XXX, runs on a PC and updates °C Port firmware over Ethernet. Download the program from our website or request a thumb drive with the program from Degree Controls. See *ANS-SD19-A °C Port Update Installer* for instructions to use the update installer program.

Send the °C Port to Degree Controls for a firmware update

Degree Controls will take care of the firmware update for your °C Port. Follow our standard RMA process to send your °C Port to us for an update.

DEFINITIONS

Definitions of new and old UAS sensors, and new and legacy °C Ports, referred to ***within this document*** are below.

°C Port

Type	Description	Part Number	Compatible with New UAS?
New °C Port			
	°C Port3600 with Added Wi-Fi Capability	SH65110	Revisions > R04 or updated with firmware version 2.3 or higher
	°C Port3600 Ethernet Only Communication	SH65111	Revisions > R01 or updated with firmware version 2.3 or higher
	°C Port1200 with Added Wi-Fi Capability	SH65210	Revisions > R01 or updated with firmware version 2.3 or higher
	°C Port1200 Ethernet Only Communication	SH65211	Revisions > R01 or updated with firmware version 2.3 or higher
Legacy °C Port			
	°C Port3600	SH65100	Revisions updated with firmware version 1.9 or higher
	°C Port1200	SH65200	Revisions updated with firmware version 1.9 or higher

Interested in upgrading legacy °C Ports to a newer model? Contact Degree Controls.

UAS

A new UAS is any UAS sensor shipping on or after 7/26/21. An old UAS is any UAS sensor shipped prior to 7/26/21.

Note: Includes all UAS sensor heads: EF, LP, OD (Omni), PC, RF, Wand, XS

UHS

There are currently no restrictions on UHS sensors.

UTS

There are currently no restrictions on UTS sensors.

CONTACT

To find out more about Degree Controls' sensor products and solutions, contact us at 1-877-degreeC, or visit our website at www.degreeC.com. Email sales inquiries to sales@degreec.com.

Degree Controls, Inc.
300 Innovative Way
Suite 222
Nashua, NH 03062-5746
USA