



Data Acquisition Instruments

User Manual



Degree Controls Information

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1 Introduction

Congratulations on your recent purchase of a °C Port Instrument!

You have joined hundreds of leading companies throughout the world who use Degree Controls' line of airflow test and measurement instrumentation to develop better products, make environments safer, reduce their carbon footprint, and enhance personal comfort. We expect you will derive many years of use from your new test and measurement instrument. We are committed to your success, and we thank you for your purchase.

The intent of this manual is to introduce you to the °C Port3600 and °C Port1200, and to make set-up and installation fast and easy, while providing guidelines for successful testing.

1.1 Product Overview

The °C Port product line is a multi-channel airflow measurement instrumentation line, specifically designed for the precision demands of multi-point air velocity and air temperature testing, as well as data logging and data acquisition. Thermocouple and humidity sensors are also available for use with any °C Port instrument, to enhance the scope of your environmental testing. To accommodate a range of sensor channels, we offer the °C Port3600 for up to 36 measurement points, and the 12-channel °C Port1200 for smaller-scale applications.

1.2 Who uses it?

Users choose a °C Port instrument when multiple sensor channels for air velocity, air temperature, surface temperature and humidity are needed. This type of multipoint testing has become the defacto standard in electronics design, where velocity profiles across blades, boards, heatsinks and power supplies are critical to understanding the cooling flow available during different operational scenarios and extremes.

Similarly, sensing air velocity at multiple locations in a planar area is a primary R&D activity in assuring an optimal design has been achieved for industries such as biosafety and chemical hoods, laboratory and cleanroom spaces, datacenter racks, dense electronics, as well as in large ducts within buildings and outside plant facilities like telecommunication huts and mobile datacenters. Vehicle cabin and generalized personal comfort applications are also applications where multipoint air flow tests are utilized.

Engineers and technicians alike, who find single point measurement cumbersome, slow, and heavily impacting to the flow profile, turn to the °C Port instrument along with miniature USB air flow sensors for their research work.

1.3 Features

The °C Port is an Ethernet-capable device. °C Port3600 and °C Port1200 instruments may be purchased with Ethernet only communication or with added Wi-Fi capability.

Part Number	Description
SH65111	°C Port3600 Ethernet Only Connection
SH65110	°C Port3600 with Added Wi-Fi Capability
SH65211	°C Port1200 Ethernet Only Connection
SH65210	°C Port1200 with Added Wi-Fi Capability
Note: All °C Port instruments have an Ethernet communication interface.	

The key features of the °C Port3600 and °C Port1200 instruments include:

- Wireless capability for convenient, mobile wireless network connection for multipoint testing and experimentation. (*°C Ports with added Wi-Fi capability only*)
- Direct Wi-Fi capacity allowing a PC to connect directly to the °C Port's Wi-Fi broadcast. (*°C Ports with added Wi-Fi capability only*)
- Ethernet communication interface for remote monitoring of experiments, and multi-user support.
- Dynamic or statically assigned IP addresses for easy network integration.
- The °C Port is a network enabled device and can be set up for remote monitoring via a network connection.
- AccuTrac™ software platform for robust multipoint analysis and datalogging.
- Barometric pressure built-in for best accuracy and convenience.

2 Contents

Your °C Port instrument is contained in a robust carrying case with all the necessary pieces to start experimentation. Inside you will find:

- °C Port3600 / °C Port1200 Instrument
- Carrying Case (Optional for °C Port1200)
- Power adapter with power cord
- Ethernet cable *for Ethernet only versions of °C Port*
- Calibration Certificate
- °C Port Instrument Quick Start Guide
- °C Port Instrument Manual



Figure 1 Power Adapter
(Included Power Cord Not Shown)

Notes:

- AccuTrac™ is not included with the purchase of a °C Port instrument. You must purchase a subscription to AccuTrac™ based on the number of sensors you plan to utilize for testing.

- USB Series (UAS, UTS, & UHS) sensors are sold separately.
- Carrying case is an optional purchase for the °C Port1200.



Figure 2 °C Port3600 Contents

3 Hardware Overview

Power

Power Port – Connect the included AC power adapter to this port.

Caution: Use only the power adapter that came with your °C Port Instrument. The supplied AC power adapter is designed for 100-250VAC, 50/60Hz.

Power Switch – Switch power on or off.

Power Indicator – This white LED will light when powered.

Ethernet

Ethernet Port – For a wired °C Port connection, connect an Ethernet cable (also called network cable) to this input and to your PC or network switch or router.

Note: For best performance, please use a CAT5E or higher rated cable in the Ethernet port.

Ready Indicator – This green LED will be lit when the unit is ready to communicate via Ethernet and will blink when the Ethernet cable is disconnected.

Network Switch – Sets the °C Port for dynamic (right) vs static (left) IP addressing. Dynamic IP addresses are subject to change and are assigned, as needed, by DHCP (Dynamic Host Configuration Protocol) servers. Static IP addresses do not change.

Notes:

1. When you change the network switch position, be sure to power cycle the unit for the change to take effect.
2. The default Ethernet IP address is 192.168.9.104.

Other Interface Components

LCD Display – The display shows status information, connection type, and IP address. The °C Port with added Wi-Fi capability provides you with the flexibility to make either a wireless or wired connection to the PC. During operation, the type of connection and associated IP address are displayed for your convenience:

- Ethernet Connection Type
- Ethernet IP Address
- Wireless Connection Type
- Wireless IP Address

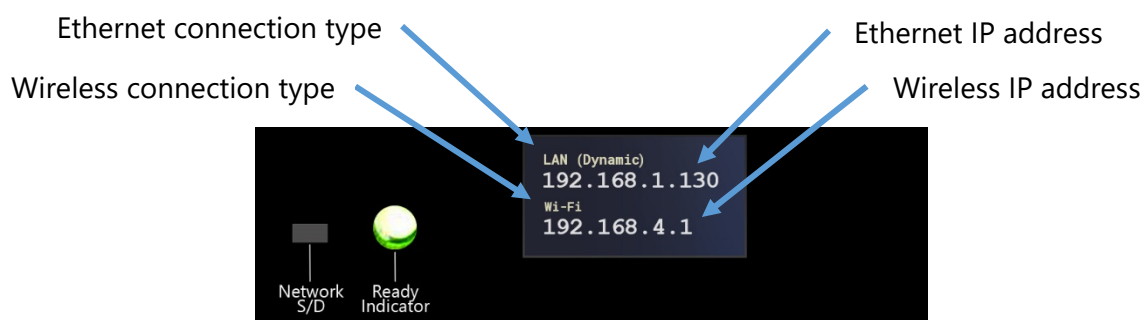


Figure 3 LCD Display

There are times when the °C Port displays the Ethernet IP address as well as the wireless IP address. For example: If you've made an Ethernet connection, the °C Port's Wi-Fi broadcast remains active, and both Ethernet and wireless IP addresses are displayed.

The °C Port's broadcasted Wi-Fi becomes inactive when a Wi-Fi Network connection is made. There are three network connection methods outlined in the Connections Types section of the manual. See the Connection Types section for an overview of all connection types supported by the °C Port instruments.

During startup, the °C Port's calibration due date is displayed at the bottom of the welcome screen, and °C Port shows the firmware revision in the lower right-hand corner of the LCD display. Data in the AccuTrac™ software will tell the user if °C Ports or sensors are out of calibration.

Factory Reset – Restores the °C Port back to factory settings.

Note: If you want to change an established Wi-Fi network connection to another type of °C Port connection, begin by pressing the factory reset button.

USB Ports – Connect your UAS, UTS, and/or UHS series air velocity sensors to these ports.

Note: Sensors do not need to be plugged in sequentially.

Labels

Info Label – The larger label denotes the °C Port instrument part number and the serial number. Both should be noted when calibration or RMA work is required.

Calibration Label – The smaller label contains the date (month/year) that the unit should come back to DegreeC for calibration. Please see the Calibration section of the manual for calibration and RMA information.

3.1 Back View



Figure 4 °C Port3600



Figure 5 °C Port1200

3.2 Top View



Figure 6 °C Port3600



Figure 7 °C Port1200

3.3 Bottom View



Figure 8 °C Port3600 Shown, °C Port1200 is Similar



Figure 9 Info Label

3.4 Power Supply

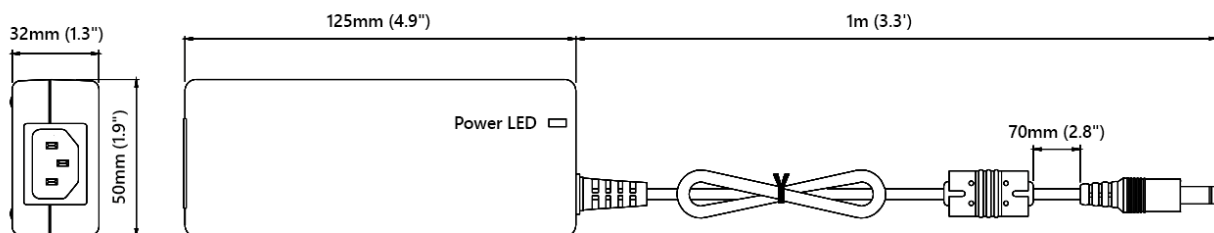


Figure 10 Power Supply Dimensions

Included North American power cord, not shown, is 1.8m (6') long.

4 Setting Up Your °C Port Instrument

Setup for the °C Port is designed to be quick and easy. Prior to setting up the °C Port, ensure that you have first purchased an AccuTrac™ subscription and have gone through its manual to ensure proper installation onto your PC. AccuTrac™ is the interface software which allows you to configure and extract data from the °C Port Instrument.

4.1 AccuTrac™ Datalogging and Airflow Analysis Software

AccuTrac™ is our premier real-time data collection software designed to be paired with our lineup of multi-point sensors. AccuTrac™ collects air velocity, air temperature, as well as humidity and altitude (or barometric pressure) data real-time and displays, charts, graphs, saves, and reviews without export to another program. Users are able to custom configure their specific testing scenario to suit their needs, and with volumetric calculation tools, can define duct dimensions, and populate many sensors using drag and drop functionality, in order to conduct volumetric calculations, based on the effective flow area of each named sensor.

4.2 Obtaining an AccuTrac™ License

In order to procure (or renew) your copy of AccuTrac™, please head to our website:

<https://degreec.com/pages/accutrac>.

AccuTrac™ is purchasable from our easy-to-use webstore, and offers various options dependent on the quantity of sensors you have. It is a subscription-based tool, with the initial purchase price based on channel (sensor) quantity support. Users can upgrade from lower channel count subscriptions, to a higher channel count at any time by contacting DegreeC. AccuTrac™ subscriptions for 1-4 channel support have no renewal fees. Purchase options are:

Single Channel - Perpetual License, renewal not required

2-4 Channels - Perpetual license, renewal not required

5-12 Channels - Annual license, requires renewal

13-36 Channels - Annual license, requires renewal

37+ Channels - Annual license, requires renewal

Note: If you require assistance with installation and setup for AccuTrac™, please refer to our detailed AccuTrac™ manual, available from our website.

4.3 Connection Types

4.3.1 Overview of Connection Types

If you have purchased a °C Port with added Wi-Fi capability, you can choose whether the °C Port will use a wireless connection or a wired Ethernet connection. For wireless, you can choose between a Wi-Fi network connection or the built-in direct Wi-Fi which the °C Port broadcasts. This direct Wi-Fi allows the user to connect a PC directly to the °C Port's own broadcasted Wi-Fi

network. To establish a typical local Wi-Fi network connection, you must know the network name (SSID) and password. For a direct Wi-Fi connection/direct Wi-Fi mode, one PC at a time can connect to the Wi-Fi network broadcast by the °C Port, and this process will reassign an IP address to the PC.

For a wired Ethernet connection, you can choose whether the °C Port will use a static IP address or allow your network DHCP to assign one dynamically. To summarize, the °C Port instruments support the following connection types:

WIRELESS (APPLIES TO °C PORT WITH ADDED WI-FI CAPABILITY)

- **Wi-Fi Network**, requires network name (SSID) and password
- **Direct Wi-Fi**, the °C Port broadcasts its own Wi-Fi network

The default wireless connection type is Direct Wi-Fi.

Wi-Fi is dual band 2.4GHz/5GHz

WIRED

- **°C Port to Network (LAN)** with **dynamic** IP addressing
- **Direct to PC** with **static** IP addressing

The default setting for IP addressing is dynamic.

OTHER CONNECTION TYPE FOR SPECIALTY APPLICATIONS

- The °C Port accommodates a wired °C Port to Network connection, with static IP addressing, for specialty applications such as port forwarding. Contact Degree Controls if you need support in establishing a network connection with static IP addressing.

4.3.2 Wi-Fi vs Ethernet

When considering a wireless vs Ethernet connection, consult with your IT team to determine what is most suitable for your needs. Although Wi-Fi is convenient and works well for many things we do with networks, it is subject to more interference than an Ethernet connection. A wireless network can drop out due to interference, an overloaded network, or being out of range, and latency may be higher as well. Signal loss and delays are factors of a network and not related to the °C Port instrument or AccuTrac™ software in any way, however a hard-wired Ethernet solution is generally more reliable than using a Wi-Fi network and is recommended for large deployments of sensors.

4.3.3 Connecting Multiple °C Ports to a PC

A good way to connect multiple °C Ports to a PC is to use a network switch. A network switch connects multiple Ethernet devices together, ensuring that the PC will see all connected °C Ports:

1. The customer is responsible for purchase of a switch having the number of ports needed.

2. Many switches function out of the box, and no additional configuration is necessary. Customers who purchase a very sophisticated switch, which requires configuration, will need to consult their IT expert to have the switch configured.

4.4 Configuring Your °C Port Instrument

°C Port instrument configuration steps are outlined below. The AccuTrac™ software also guides you through °C Port configuration with helpful on-screen messaging and familiar icons.

First, connect the power supply cable to the back of the unit, and plug the power cord into a wall receptacle. Determine how you will connect to the °C Port, and go to the appropriate connection section below to finish configuring your °C Port instrument.

4.4.1 Wi-Fi Network Connection



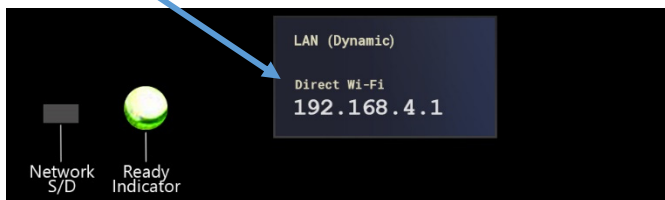
Figure 11 Wi-Fi Network Connection

Establishing a Wi-Fi Network connection to a °C Port with Wi-Fi capability involves powering the unit and then using AccuTrac™ software to change the Direct Wi-Fi connection (wireless default) to a Wi-Fi Network connection.

Configuration steps:

- 1) Switch power on, and the white LED will illuminate. The LCD display will first show the welcome screen, and after a few seconds, connection type and IP address will appear. The °C Port's Wi-Fi is active. Wireless connection type will read Direct Wi-Fi and its corresponding IP address will be displayed.

Wireless connection type
is Direct Wi-Fi on startup



- 2) Use the AccuTrac™ software to make a Wi-Fi Network connection to the °C Port, and begin your experiment. Additional information can be found in the AccuTrac™ manual, available from the degreec.com website.

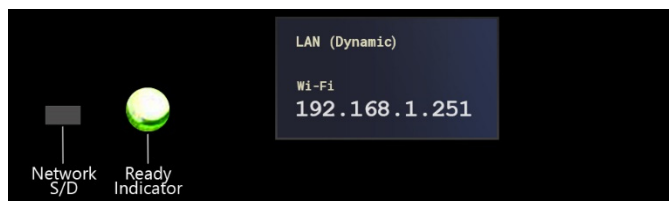


Figure 12 Example Display once Wi-Fi Network Connection is Made with AccuTrac™ Software

4.4.2 Direct Wi-Fi Connection

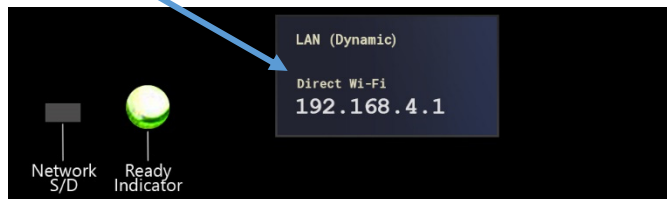


Figure 13 Direct Wi-Fi Connection, One PC at a Time

The direct Wi-Fi connection applies to °C Ports with Wi-Fi capability. Configuration steps:

- 1) Switch power on, and the white LED will illuminate. The LCD display will first show the welcome screen, and after a few seconds, connection type and IP address will appear. The °C Port's Wi-Fi is active. Wireless connection type will read Direct Wi-Fi and its corresponding IP address will be displayed.

Wireless connection type



- 2) Use the AccuTrac™ software to connect to the °C Port, and begin your experiment. Additional information can be found in the AccuTrac™ manual, available from the degrec.com website

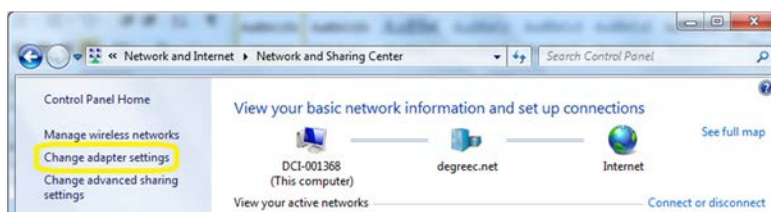
4.4.3 Ethernet - °C Port to Network with Dynamic IP Addressing



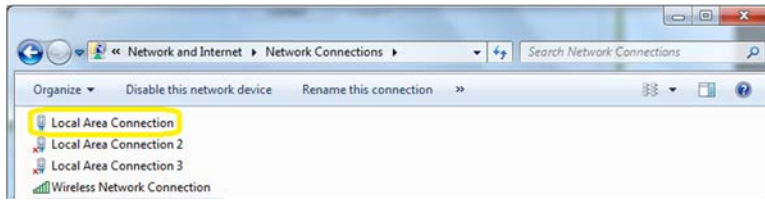
Figure 14 Ethernet - °C Port to Network with Dynamic IP Addressing
Direct Router Connection

Configuration steps:

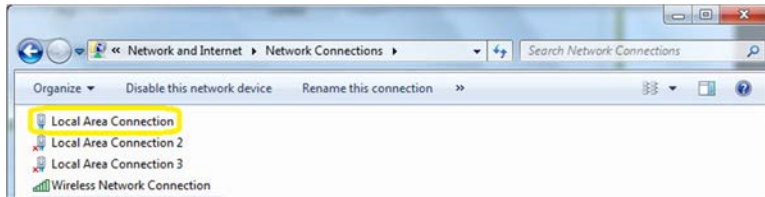
- 1) Ensure that the network switch on the back of the °C Port is set to the correct position for *dynamic* IP addressing.
- 2) Your PC is probably already set up to obtain its IP address dynamically for communication with the °C Port, however if it is not, the steps to update follow, and this needs to be done only once for each PC that will communicate to the °C Port:
 - a) From the Start Menu, select Control Panel, choose "Network and Internet" and then choose "Network and Sharing Center".



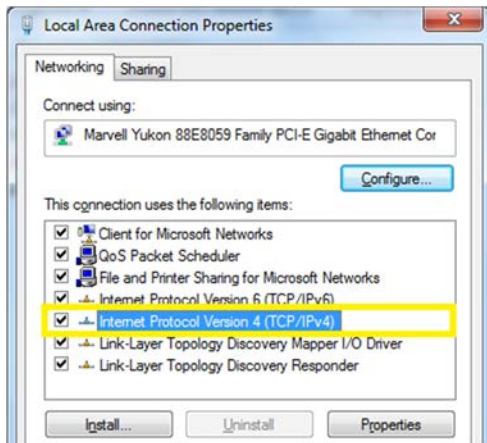
- b) In the upper left, select "Change Adapter Settings".



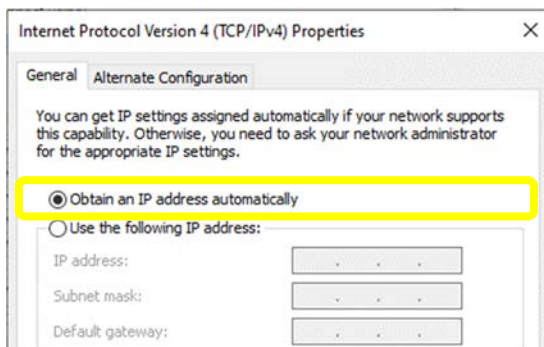
- c) Select Local Area Connection, right click and select "Properties".



- d) Choose "Internet Protocol Version 4 (TCP/IPv4)" and select "Properties".

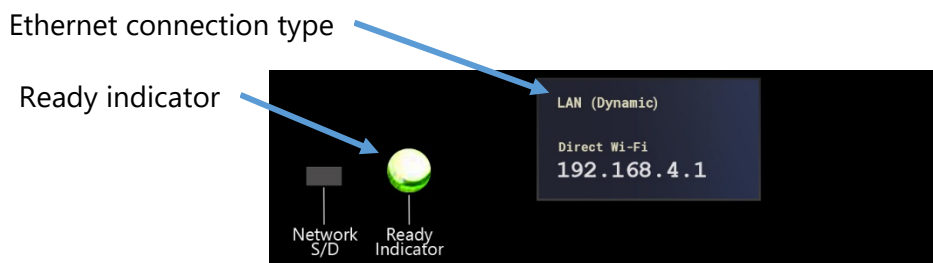


- e) Choose "Obtain an IP address automatically" and select "OK".

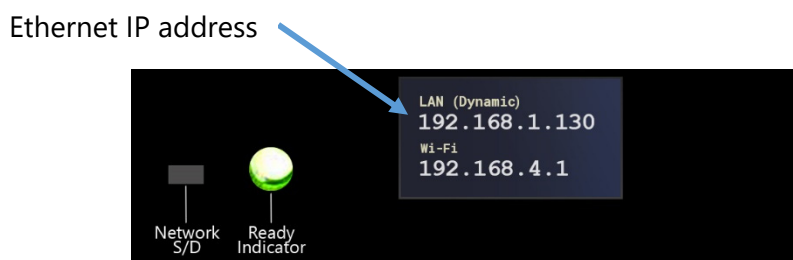


- 3) Switch power on, and the white LED will illuminate. The LCD display will first show the welcome screen, and after a few seconds, connection type and IP address will appear. The Ethernet connection type will read LAN (Dynamic), and the "communication ready" green LED will blink.

Note: If the °C Port has Wi-Fi capability, and the °C Port's Wi-Fi is active, its corresponding IP address is displayed below Direct Wi-Fi.



- 4) Connect an Ethernet cable to the connector at the back of the °C Port, and then to your network switch or router. When a network connection is established, the green LED will stop blinking, and the Ethernet IP address will be displayed.



- 5) Use the AccuTrac™ software to connect to the °C Port, and begin your experiment. Additional information can be found in the AccuTrac™ manual, available from the degrec.com website.

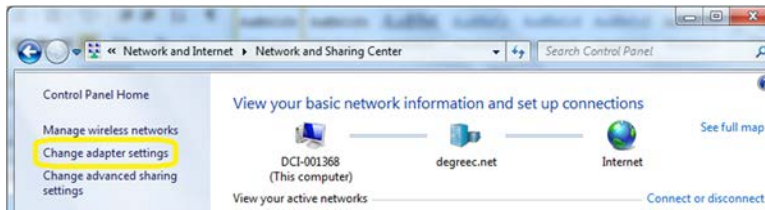
4.4.4 Ethernet - Direct to PC with Static IP Addressing



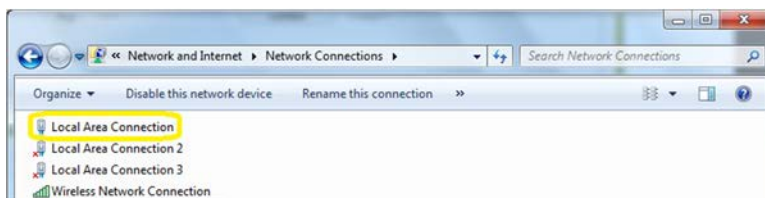
Figure 15 Ethernet - Direct to PC with Static IP Addressing
Dedicated PC Connection

Configuration steps:

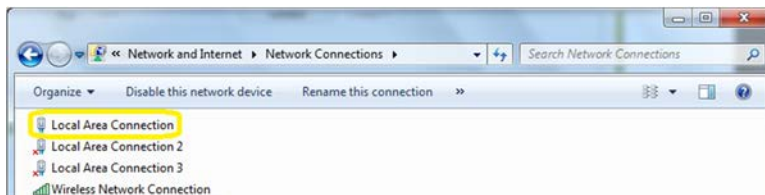
- 1) Ensure that the network switch on the back of the °C Port is set to the correct position for *static* IP addressing.
- 2) Configure your computer to use a static IP address so that it can communicate with the °C Port. This will be done by opening the Network and Sharing Center to configure LAN settings, and needs to be done only once for each PC that will communicate to the °C Port.
 - a) From the Start Menu, select Control Panel, choose "Network and Internet" and then choose "Network and Sharing Center".



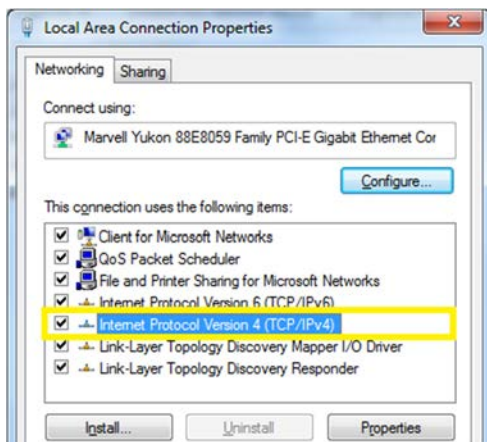
- b) In the upper left, select "Change Adapter Settings".



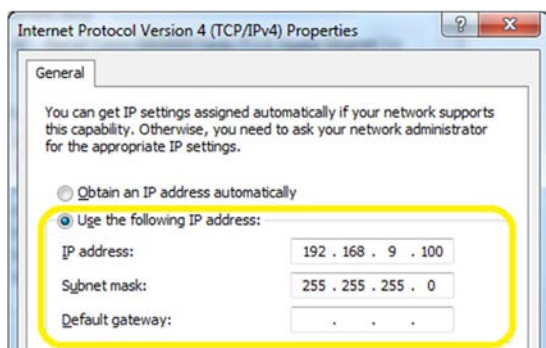
- c) Select Local Area Connection, right click and select "Properties".



- d) Choose "Internet Protocol Version 4 (TCP/IPv4)" and select "Properties".



- e) Enter the IP address data and select "OK".



- 3) Switch power on, and the white LED will illuminate. The LCD display will first show the welcome screen, and after a few seconds, connection type and IP address will appear. The Ethernet connection type will read LAN (Static), and the "communication ready" green LED will blink.

Note: If the °C Port has Wi-Fi capability, and the °C Port's Wi-Fi is active, its corresponding IP address is displayed below Direct Wi-Fi.

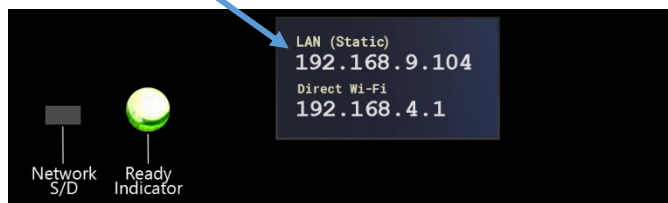
Ethernet connection type

Ready indicator



- 4) Connect an Ethernet cable to the connector at the back of the °C Port, and then to your PC. When a connection is established, the green LED will stop blinking, and the Ethernet IP address will be displayed.

Ethernet IP address



- 5) Use the AccuTrac™ software to connect to the °C Port, and begin your experiment. Additional information can be found in the AccuTrac™ manual, available from the degrec.com website.

4.4.5 Static IP Troubleshooting

For a subnet mask of 255.255.255.0, the first three octets of the PC's IP address must match those of the °C Port exactly, while the last one can be anywhere from 0 to 255, except for the 104 being used by the °C Port.

Once AccuTrac™ is communicating with the °C Port, the °C Port IP address can be changed from the AccuTrac™ software, if desired.

Note: Additional troubleshooting information for static IP connection is available in *Application Note - Troubleshooting Your Static IP Connection - IP Address and Subnet Mask Work Together*.

5 Calibration

5.1 °C Port Calibration

Your °C Port will arrive pre-calibrated. The °C Port uses sensing hardware inside for compensation of air velocity readings which require periodic calibration. Degree Controls suggests that the unit be calibrated annually, or as per your current ISO or procedural requirements. You can determine date (month/year) that the unit needs to come back to DegreeC for calibration by looking at the smaller of the two stickers on the unit, or at the LCD display upon startup.

5.2 Sensor Calibration

All air velocity and temperature sensors should be periodically re-calibrated to ensure accurate readings. Please note that when Degree Controls performs a recalibration, we exercise the sensors across their performance range and reprogram the electronics inside. Any ongoing improvements to our internal algorithms are also programmed in at this time to ensure our user base is using the best available internal firmware. These updates are included as part of your sensor recalibration.

Caution: Generic recalibration facilities will “spot check” a sensor at one or two flow points in the calibrated range of the sensor. While this is useful to predict functionality, it is not a rigorous and complete recalibration. Contact Degree Controls to understand the mechanics of complete recalibration and programming at sales@degreec.com.

5.3 Requesting Calibration Services

To initiate a recalibration order, visit us online at <https://www.degrec.com/recalibration-service>, or contact us at rma@degrec.com and request a recalibration form, and we will walk you through the process.

Degree Controls will issue an RMA number, lead-time, and associated quote. Generally, recalibration work is processed within 10-15 days of receipt.

6 Cleaning Your °C Port and Sensors

Your °C Port should be cleaned with a damp cloth and non-etching cleaner. A mild detergent is acceptable for surfaces and cables. **Do not** employ alcohol or ammonia-based cleaners.

Caution: **Do not** contact the sensor element of the UAS1000 series for cleaning purposes. The sensor element should be cleaned by Degree Controls. However, for dust particles, carefully applying compressed air at a safe distance from the element is an acceptable cleaning method. Skilled users may clean the sensor head by means of ultra-sonic bath.

7 Supported Sensors

The °C Port instruments leverage Degree Controls' line of USB sensors for quick and easy sensor connectivity. There are various sensors to choose from, so you can select the best style for your application and velocity range.

7.1 Air Velocity Sensors

7.1.1 UAS1000 Series and °C SPAR Systems

The **UAS1000** series of air velocity sensors and **°C SPAR** (Sensor Pole Array) systems are available in 4 calibrated ranges, for your convenience, and are each rated at 5% or better, accuracy of reading. UAS1000 Low Profile (LP), Plastic Cap (PC) and Wand sensor heads along with °C SPAR systems are capable of measuring with $\pm 3\%$ accuracy, in accordance with the ANSI/ASHRAE 110 and NSF 49 standards for laboratory fume hood and biosafety cabinet testing. For additional information on available UAS1000 sensor head options and how to interpret accuracy ranges in velocity sensors, please see the UAS1000 or °C SPAR datasheets.



Figure 16 UAS1000 with PC Sensor Head



Figure 17 Fully-Configurable °C SPAR System

Velocity Ranges:

- UAS1100 and CSPAR1100 are designed for low velocity testing, such as in the down-flow region of a fume hood, or in large room-level fan testing, semiconductor manufacturing plenums, or in applications where airflow noise is not permissible, yet cooling flow is desired.
- UAS1200 and CSPAR1200 are designed for mid-range velocity conditions such as general electronics and product design applications.
- UAS1300 and CSPAR1300 are designed for rapid flow scenarios such as fan exhaust plenums, high speed servers and computing, or heat exchanger testing.
- UAS1500 and CSPAR1500 are an ultra-wide velocity range sensor design to handle flow velocities ranging from very low to high speeds. This is typically for a user who is looking for a single sensor or sensor array to run tests upon multiple products or across a wide flow range.



PC Head

Low Profile
Head

XS Blade Head

Stainless Steel
Wand Head

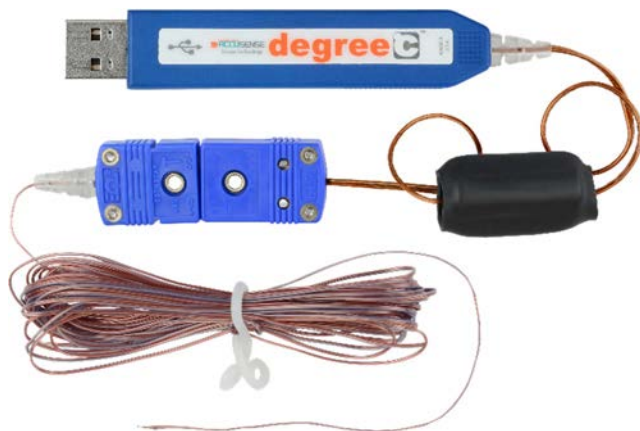
Wand Head

Please consult the UAS1000 datasheets for the various sensor head styles which are available, from stainless steel probe-style sensor heads to miniature plastic housings for tight-fit applications.

7.2 Temperature Sensors

The **UTS1000** thermocouple sensors are used to augment air velocity studies, by enabling a user to determine case temperatures of components, while simultaneously analyzing flow conditions. This allows for excellent airflow-to-case-temperature correlation studies. The UTS1000 is a unique T-type, thermocouple sensor which has 1500V of isolation built-in, and so studies can be conducted on many electronics components, while powered.

The UTS1000 thermocouple wire and bead can be disconnected from the main electronics housing for easy replacement of the thermocouple wire (see image to the right).



7.3 Humidity Sensors

The **UHS1000** humidity and temperature sensor is used to monitor and measure humidity while simultaneously analyzing air flow conditions. The UHS1000 comes with a shielded cable, allowing access to distant and compact locations including the spaces between semiconductor devices, heat sinks and inside ducts, plenums or environmental chambers. In test applications involving

different streams of airflow, multiple UHS1000 sensors may be used. This is useful in studying airflow applications which use controlled humidity for curing or deposition of droplets.

There are many experimental cases where a UHS1000 humidity sensor should be used to compensate for humidity changes, at or inside the test location. For critical testing, where highest air velocity accuracy is desired, using a remote humidity sensor (UHS1000) has the distinct advantage of measuring humidity in the test environment itself.

Note: A new generation of Degree Controls USB instrumentation-grade sensors began shipping in July 2021. As a result of this advancement in processing technology, preexisting °C Ports require a firmware update to communicate with new sensors. Degree Controls will work with you to update your °C Port.



8 Safety Guidelines

CAUTION



Ensure proper grounding of all °C Port equipment.



Never operate °C Port in and around water.



If smoke is present, or liquid has spilled, or the unit is physically damaged, disconnect °C Port immediately.



Failure to connect the instrument to the proper electrical voltage as specified herein could result in damage to the power supply and instrument.



The °C Port and associated sensors should only be opened and repaired by Degree Controls, Inc. Failure to do so will void warranty.



Unplug the sensor before putting it into the ultrasonic bath.



The °C Port and associated sensors are designed for clean air. Air containing chemicals (for example, hazardous gases) may damage the sensor head irreversibly.



The °C Port and sensors are ESD sensitive devices. When shipped, the units are packaged in ESD safe bags. The instrument and sensors should be returned to their respective ESD safe bags when they are placed back into the carrying case.

9 Specifications

9.1 °C Port3600

Model Name	°C Port3600
Description	Multi-point Airflow and Temperature Instrument
Part Number	SH65111 °C Port3600 Ethernet Only Connection SH65110 °C Port3600 with Added Wi-Fi Capability
Ports	Power, Power Switch, Ethernet, Network Switch, Display
LEDs	Power Indicator, Ready Indicator
Country of Origin	Made in USA
Dimensions	296 x 210 x 65 mm (11.7" x 8.3" x 2.6")
°C Port Weight/Kit Weight	0.91 Kg [2 lbs.] / 5 Kg [11 lbs.]
Power	100-250VAC, 50/60Hz, 2A max

9.2 °C Port1200

Model Name	°C Port1200
Description	Multi-point Airflow and Temperature Instrument
Part Number	SH65211 °C Port1200 Ethernet Only Connection SH65210 °C Port1200 with Added Wi-Fi Capability
Ports	Power, Power Switch, Ethernet, Network Switch, Display
LEDs	Power Indicator, Communication Ready Indicator
Country of Origin	Made in USA
Dimensions	170 x 155 x 57 mm (6.7" x 6.1" x 2.3")
°C Port Weight/Kit Weight	0.45 Kg [1 lbs.] / 1.13 Kg [2.5 lbs.]
Power	100-250VAC, 50/60Hz, 2A max

9.3 Environmental – °C Port3600 and °C Port1200

Operating Temperature	10 to 40°C (50 to 104°F)
Storage Temperature	-20 to 60°C (-4 to 140°F)
Operating Humidity	10 to 80%, relative humidity, non-condensing
Storage Humidity	5 to 90% non-condensing

9.4 Compliance

CE / FCC / RoHS

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna. 2. Increase the separation between the equipment and receiver. 3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. 4. Consult the dealer or an experienced radio technician for help.

FCC Caution This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Any changes or modifications not expressly approved by the party responsible for compliance could void the authority to operate equipment.

Federal Communications Commission (FCC) Radiation Exposure Statement This equipment complies with FCC radiation exposure set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 2.5cm (1 inch) during normal operation.

Federal Communications Commission (FCC) RF Exposure Requirements This EUT is compliance with SAR for general population/uncontrolled exposure limits in ANSI/IEEE C95.1-1999 and had been tested in accordance with the measurement methods and procedures specified in OET Bulletin 65 Supplement C. The equipment version marketed in US is restricted to usage of the channels 1-11 only.

R&TTE Compliance Statement

This equipment complies with all the requirements of DIRECTIVE 1999/5/EC OF THE EUROPEAN PARLIAMENT AND THE COUNCIL of March 9, 1999 on radio equipment and telecommunication terminal equipment and the mutual recognition of their conformity (R&TTE). The R&TTE Directive repeals and replaces in the directive 98/13/EEC (Telecommunications Terminal Equipment and Satellite Earth Station Equipment) As of April 8, 2000.

10 Degree Controls Warranty

For a period of one (1) year following the date of delivery, and subject to the other provisions of this Warranty Section, DegreeC warrants that all new products that are both (a) manufactured by DegreeC and (b) purchased directly from DegreeC (or an authorized distributor of DegreeC) shall be free of material defects in materials and workmanship. Buyer's sole and exclusive remedy, and DegreeC's sole and exclusive obligation, in the event of any product defect shall be for DegreeC to, at its option, repair or replace such products free of charge. In no event shall DegreeC be liable for ordinary wear and tear. In order to get the benefit of the foregoing warranty, Buyer must examine the delivered products immediately upon receipt thereof and report to DegreeC, in writing, any visible defects within ten (10) working days of such receipt. Buyer's failure to report defects within the foregoing time period will be deemed an unqualified waiver of any and all of Buyer's rights to warranty claims. DegreeC does not provide any warranty for third party parts, components, or products that are not manufactured by DegreeC. Such parts, components, or products may be warranted by third parties on a "pass through" basis. The foregoing remedies shall not apply to any product failure caused in whole or in part by (i) Buyer's failure to operate, maintain, or service the products in accordance with DegreeC's documentation, (ii) any alteration, modification, or repair made to the products other than by DegreeC, or (iii) use of the products for a purpose other than that for which it is intended. THE FOREGOING EXPRESS WARRANTY extends only to the original customer of DegreeC or DegreeC's authorized distributor, as the case may be. THE CORRECTION OF ANY DEFECT IN, OR FAILURE OF, PRODUCTS BY REPAIR OR REPLACEMENT IN ACCORDANCE WITH DEGREEC'S POLICIES DESCRIBED HEREIN SHALL BE DEGREEC'S SOLE AND EXCLUSIVE OBLIGATION AND THE SOLE AND EXCLUSIVE REMEDY OF BUYER FOR ANY AND ALL LOSSES, DELAYS OR DAMAGES RESULTING FROM THE PURCHASE OR USE OF DEGREEC'S PRODUCTS. OTHER THAN THE LIMITED WARRANTY SPECIFICALLY STATED HEREIN, DEGREEC SPECIFICALLY DISCLAIMS ANY AND ALL OTHER WARRANTIES WITH RESPECT TO DEGREEC'S PRODUCTS, INCLUDING THE PERFORMANCE THEREOF AND ANY SERVICES PROVIDED TO BUYER, EITHER EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY ARISING FROM A COURSE OF DEALING OR USAGE OF TRADE, NON-INFRINGEMENT AND ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR USE.