



TA Instruments *Installation Requirements for* *Thermal Conductivity Systems*

Notice

Thank you for ordering a thermal conductivity system from TA Instruments. To ensure that installation of your system goes as smoothly as possible and has you ready to start evaluating your sample materials as quickly as possible, we are providing the attached installation information. It includes details regarding laboratory space, power, and auxiliary requirements, as well as configuration requirements for the controller (computer). Please review this information carefully and take any appropriate actions prior to the installation date. To avoid unnecessary delays, and/or additional charges, please ensure that the requirements specified in this document are met before your TA Instruments Service Representative arrives. Contact your local TA Instruments Representative if you have any questions.



To arrange for installation of your system, contact our U.S. Service Department (302-427-4050) or your local TA Instruments Service Representative.

Important: TA Instruments Manual Supplement

Please refer to the *TA Manual Supplement* to access the following important information supplemental to this document:

- TA Instruments Trademarks
- TA Instruments Patents
- Other Trademarks
- TA Instruments End-User License Agreement
- TA Instruments Offices

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Requirements for the Controller (Computer)

A working thermal conductivity system consists of one or more measurement instruments (e.g., DTC-25, DTC-300) and a computer configured with appropriate TA Instruments software (this latter combination is subsequently referred to as a controller). As a customer, you have two alternatives for configuring a controller. You can either purchase a computer and have it configured by a TA Instruments Service representative or you can purchase a suitable computer on your own and configure it at your site. In either case, the general requirements which follow are the same.



In situations where you are supplying the computer, it is assumed that you have reviewed these requirements and suitably prepared the controller prior to the scheduled system installation by the TA Instruments Service Representative. In fact, you will be required to provide hardcopy verification of your system setup using the instructions on page 6 before an installation visit will be scheduled.

Before installing the TA Instruments software, you should ensure that the computer system meets the following specifications:

| Description | Requirement |
|-------------------------------|---|
| Operating system ¹ | Supported Operating Systems: 32-bit versions of Windows Vista or Windows 7 ² |
| Processor | Intel® Core™ 2 Duo (2.93 GHz with 3 MB L2 cache) or better |
| Memory | ≥4 GB RAM |
| Hard drive | ≥100 GB free on hard drive |
| CD-ROM | ≥48X CD-ROM or DVD; CD-WRW |
| Screen resolution | 1024 x 768 with ≥64K colors |
| Graphic memory | 128 MB |
| Screen (LCD) size | 19" or greater (24" wide screen recommended) |

1. Install Microsoft Operating System Service Pack, Internet Explorer and/or Direct X (if required). If you don't have the required versions of these packages, they can be obtained through the Microsoft web site (at www.microsoft.com/downloads) or by using the Microsoft Windows Update mechanism (accessed through the Start menu or by accessing <http://update.microsoft.com>).
2. Home version of Windows 7 and/or Vista is not acceptable. Home version is missing certain functionality that is needed for optimized analyzer performance and efficiency.

Additional Requirements

| Description | Requirements |
|---|--|
| RS232 serial port/USB port | Unused RS232 port and unused USB port required |
| Support for custom reporting feature of data analysis | Microsoft Word® 97 or higher, Microsoft Excel® 97 or higher, and Adobe Acrobat Reader are also required. |
| Color scheme | For Vista, Windows Aero is required (other schemes may result in broken line display) |
| Log-in rights | Administrator |

Other Hardware Considerations

- The computer should be a new computer that is not already attached to other analytical instruments.
- The PC requires an unused RS232 serial port connection and unused USB connection.
- The PC is not permitted to run other programs or any power saving features while a test is running.

Network cards and/or certain network operation frequently interfere with the operation of the instrument control programs.

Obtaining Hardcopy System Verification For Windows 7 and Windows XP

- 1 Select **Programs > Accessories > System Tools > System Information** from the **Start** menu.
- 2 Verify **System Summary** is highlighted.



If you print out this summary from this step you will receive all system information (more than 50 pages). Follow the remaining steps to copy and print only summary information.

- 3 Select **Edit > Select All**, then select **Edit > Copy**.
- 4 Open Notepad or another word processing program.
- 5 Select **Edit > Paste** then **File > Print**.

Obtaining Hardcopy System Verification For Windows Vista

- 1 Select **Programs > Accessories > System Tools > System Information** from the **Start** menu.
- 2 Verify **System Summary** is highlighted. Choose **Edit > Select All**.
- 3 Select **File > Print**.

Other Software Considerations

- Peripherals (e.g., printer) must be from the known Windows compatible list. (See Microsoft's web site at <http://www.microsoft.com/hwtest> for the most current list.)
- TA Instruments is not responsible for resolving issues associated with connections to your corporate network. [See further information in the next section.]
- TA Instruments is not responsible for resolving hardware/software conflicts created by the addition of third party hardware or software to the computer.

System Configurations

TA Instruments thermal conductivity systems communicate with the controller via an RS232 serial port and a USB port.

Requirements for the Thermal Conductivity System Instrument

A thermal conductivity system consists of an instrument and a computer for instrument control (DTC-300 only). To obtain installation requirements for the instrument and controller computer, refer to the appropriate sections of this document.

Instrument & Accessory Placement

Select a location for the instrument with adequate floor space and a rigid laboratory bench that is level. The instrument should be located in a dust-free, vibration-free environment, away from exposure to direct sunlight and direct air drafts. Unless otherwise specified in the instrument requirements, the work space must allow 0.6 m (24 in) in front of the instrument, 0.3 m (12 in) on each side, 0.3 m (12 in) behind the instrument. PC must be located within 1.5 m (60 in) of the instrument.

DTC-300 (110V and 220V)

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|--------------------------|---|
| Dimensions: | Depth 71 cm (28 in), Width 64 cm (25 in), Height 94 cm (37 in) |
| Weight: | 91 kg (200 lbs) |
| Power requirements: | 100–115V (for 110V instrument) or 208–240 VAC (for 220V instrument) 50/60 Hz ^{1 2} Supply voltages lower than the indicated limit may result in a degradation of performance. The PC and peripherals require a separate power outlet, surge protection suggested. All power strips must be fully grounded and carry the ground through to the sockets into which the computer is plugged. |
| Laboratory conditions: | Temperature 15–35°C Relative Humidity 5–80% (non-condensing at 5°C) Maximum Altitude 2000 m (6560 ft) Locate the instrument in a ventilated space (hood, etc.) if noxious gases or vapors are generated during the heating of samples. |
| Laboratory requirements: | Purge gas: 1.5 psi (0.1 bar) nitrogen gas furnace flush is required for operating at a temperature below 20°C. It is suggested to use the purge gas during every test to prevent condensation or moisture buildup ³ . |
| Other: | Cooling Water and Drain⁴ Permissible coolant temperatures are between -40 and 20°C, depending upon testing considerations. Excessively cold water may result in “sweating” and possible corrosion of cooled metal surfaces. A nitrogen furnace cavity “flush” is required for sub-ambient operation. Warm water may not permit required cooling and stack temperature gradients during testing. Compressed Air/Inert Gas⁵ Maximum inlet pressure to the instrument: 60 psi (4.1 bar) Typical operating pressure: 20 psi (1.4 bar). The flow rate is less than 1 L/day. Compressed inert gas or air from a gas cylinder may be used. A proper gas cylinder pressure regulator/reducing regulator is required. |

1. This instrument is supplied with a power cord approximately 2 m (6.5 ft) long. The 220V instrument power cord comes supplied with a European-style plug; the 110V instrument power cord comes supplied with a 3 prong plug (same as USA NEMA 5-15P style plug). Ensure that the mains assigned do not also supply power to noise generating equipment nearby, such as motors, welders, transformers, etc.
2. An independent heavy GROUND wire must be provided through the power hook up. Improper grounding may cause severe damage for which supplier will not accept responsibility.
3. The instrument is supplied with hose barbs to be connected to rubber or Tygon tubing; minimum inside tubing diameter of 3.175 mm (or equivalent), minimum tube pressure rating of 100 psi (7 bar). The customer is required to make all hose connections. A flow meter is required for control of the furnace cavity "flush" gas (not supplied).
4. Operating below the minimum chiller coolant level will result in erratic operation. A chiller/circulator is recommended for this instrument. Consult the chiller/circulator manual for specifications concerning appropriate fluid types. The instrument is supplied with insulated hoses to attach to a chiller/circulator.
5. The customer is required to supply either compressed air, dried and filtered, to 10 microns, or laboratory grade inert gas (i.e. N₂ from a high pressure cylinder)

DTC-25 (110V and 220V)

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| Dimensions: | Depth 36 cm (14 in), Width 51 cm (20 in), Height 70 cm (27 in) |
| Weight: | 46 kg (100 lbs) |
| Power requirements: | 110–120 VAC (for 110V instrument) or 208–240 VAC (for 220V instrument) 50/60 Hz ^{1 2} Supply voltages lower than the indicated limit may result in a degradation of performance. |
| Laboratory conditions: | Temperature 15–35°C Relative Humidity 5–80% (non-condensing at 5°C) Maximum Altitude 2000 m (6560 ft) Locate the instrument in a ventilated space (hood, etc.) if noxious gases or vapors are generated during the heating of samples. |
| Laboratory requirements ³ : | Maximum inlet pressure to the instrument: 60 psi (4.1 bar). Typical operating pressure: 20 psi (1.4 bar). The flow rate is less than 1 L/day. Compressed inert gas, or air from a gas cylinder may be used. A proper gas cylinder pressure regulator/reducing regulator is required. |
| Other: | Cooling Water and Drain⁴ Maximum inlet pressure to the instrument: 80 psi (5.5 bar). Permissible water temperature 1 to 10°C, depending upon testing considerations. |

1. This instrument is supplied with a power cord approximately 2 m(6.5 ft) long. The 220V instrument power cord comes supplied with a European style plug; the 110V instrument power cord comes supplied with a 3 prong plug (same as USA NEMA 5–15P style plug). Ensure that the mains assigned do not also supply power to noise generating equipment nearby, such as motors, welders, transformers, etc.
2. An independent heavy GROUND wire must be provided through the power hook up. Improper grounding may cause severe damage for which supplier will not accept responsibility.
3. The customer is required to supply compressed air, dried and filtered, to 10 microns. The instrument is supplied with hose barbs to be connected to rubber or Tygon tubing, minimum inside tubing diameter of 6.35 mm, minimum tube pressure rating of 100 psi (7 bar). The customer is required to make all hose connections.
4. A chiller/circulator is suggested for use with this instrument. Consult the chiller/circulator manual for specifications concerning appropriate fluid types. The instrument is supplied with insulated hose to be connected between the instrument and the chiller/circulator. The customer is required to make all hose connections.

TA Instruments Offices

For information on our latest products, contact information, and more, see our web site at:

<http://www.tainstruments.com>

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