



OVERVIEW

Kit components

A standard DG-1000 kit includes

- DG-1000 pressure and flow gauge
- Carrying case
- Two Lithium Ion batteries (installed)
- Charger
- Parts bag with fan control cable, digital gauge extension tube and plastic hose connectors
- Screen protector
- 15' green hose
- 10' red hose

Parts of the DG-1000



Getting Started with the DG-1000

Power on

Turn on the DG-1000 by pressing and holding the power button for 3 seconds until the green power indicator light turns on. The bootup process may take up to 40 seconds to complete, and the gauge is ready to be used when the home screen appears (shown below).



Navigating the home screen

The DG-1000 runs multiple apps which can be launched via the touch screen.

Gauge app

To take measurements, you will need to launch the Gauge App. The DG-1000 will then directly display the readings on both channels, as shown on page 4 and 5.

Tubing assistant

If you are just getting started or want confidence you set up your equipment correctly, use the Tubing Assistant App. It asks a few questions and then provides step-by-step instruction on getting the gauge and tubing set up correctly for the test being run.

Updates

The DG-1000 has a regular cadence of firmware updates which add features and capabilities to the gauge. Anytime you are connected to Wi-Fi, you can use this to update and ensure your gauge has the latest software loaded.

Settings

From the home screen, settings provides ability to establish multiple universal settings, like: Bluetooth®, Wi-Fi, screen brightness, language, factory reset. Note that when in the gauge app, the settings button allows you to establish gauge specific settings as shown on the following pages.

Power off

In addition to the hard power button on the top, there is a power button on the home screen.

Gauge app screen overview

To learn more about how to use the Gauge app, download the DG-1000 Basic Use Quick Guide at energyconservatory.com/dg1000guides.





Battery information

The DG-1000 uses two lithium-ion batteries that are rechargeable and replaceable. TEC recommends using only protected batteries with a button on one end, as seen here:



TEC recommends the Tenergy Li-Ion model 30016 battery (size 18650, 2600mAh, 3.7v, protected). Do not use unprotected batteries.

Battery run time and storage

Battery run time is 15 hours, depending on WiFi use and screen brightness. To help preserve the battery run time, TEC recommends keeping the screen brightness at or below 40% and to turn off WiFi when not needed. All batteries self-discharge over time. TEC recommends charging the batteries for a few hours once every three months using the fast charger regardless of battery level. Batteries should be charged in temperatures between 32 degrees F and 105 degrees F.

Charging instructions

On DG-1000 units with serial numbers 9541 and above, the batteries can be fully charged in about three hours using the included USB Type C charger. When connected to power the green indicator light will illuminate. The amber indicator light will illuminate during charging and will turn off when fully charged. The amber indicator light will blink if there is a charging error. The gauge may be used during charging.

On DG-1000 units with serial numbers 9540 or lower, the batteries can be fully charged in about three hours using the fast charging port and included barrel jack charger.

TEC recommends using the included power supply for optimal charging.

Barrel jack fast charging port on units with serial numbers 9540 or lower



Calibration information

The DG-1000 should be calibrated at the TEC calibration lab once every four years. A calibration label is located on the back of the gauge that includes the gauge serial number and the date it was last calibrated. This information is also available in the DG-1000 settings screen (see the Basic Use Quick Guide to learn more).



Calibration label

Temperature thresholds

The DG-1000 should be stored in a dry place with temperatures between -4 degrees F and 140 degrees F. Operating temperatures are between 42 degrees F and 115 degrees F.

Recovery or requirement to return to factory settings

There is a very rare possibility that the DG-1000 may become locked or completely unresponsive to the touchscreen. Press and hold the power button for 5 seconds to turn off the DG-1000. Wait until all lights are off. Then press the power button. This typically resolves many issues. If that fails to work, press and hold the power button for 5 seconds to turn off the DG-1000. When completely off, turn the DG-1000 over, unscrew the battery cover, remove batteries, return them into gauge, screw the battery cover back on, press the power button.

If the DG-1000 fails to recover after trying both actions, consult with TEC technical support first by calling 612-827-1117.

Bluetooth® communication

The DG-1000 is equipped with Bluetooth® communication and is an ideal way to connect to TEC apps installed on your Android or iOS device. Connection over Bluetooth® allows both your mobile device and the gauge to remain connected to a Wi-Fi network during your testing and enables the DG-1000 to be used with the Digital TrueFlow® and TrueFlow® HVAC app for testing HVAC system air flow.

WiFi Communication and Password

The password for the networking setting WiFi (Create Network) is dg1000pw. To learn more about the DG-1000 networking settings, see the Ports and Networking Basics Quick Guide.

USB Communication

The DG-1000 can be connected to a computer through the USB Type C port (or micro-USB port on gauges with serial number 9540 or earlier) . Cables rated for USB 2.0 or above can be used with the gauge.

The USB Type A port is intended for use with accessories such as a keyboard and is not designed for digital communication to a computer.



DG-1000 specifications

COMPONENT	SPECIFICATIONS
No. of Independent Pressure Channels	Two
Pressure Range	-2,500 to +2,500 Pa (-10 to +10 in. H ₂ O)
Display Resolution	0.1 Pa for readings 0 - 999.9 Pa 1 Pa for readings 1000 Pa and larger
Accuracy at Typical Use Conditions ^{1,2}	0.9% of pressure reading or 0.12 Pa, whichever is greater
Units of Measure	Channel A - Pa and in. H ₂ O Channel B - Pa, CFM, CFM@75, CFM@50, CFM@25, ACH50, CFM@25/ft ² , CFM@25/100 ft ² , CFM@50/ft ² , CFM@50/100 ft ² , CFM@75/ft ² , CFM@75/100 ft ²
Auto-zero	On start up and then once every 10 seconds. Tilt and motion compensation between auto-zeros.
Time Averaging	1, 5, 10 seconds and long-term (continuous update)
Wireless Digital Communication	Wi-Fi, Bluetooth®
Wired Digital Communication	USB 2.0 via USB Type C, ethernet
Operating Temperature Range ³	42° F to 115° F (5.5° C to 46° C)
Storage Temperature Range	-4° F to 140° F (-20° C to 60° C)
Display	480 x 272 pixels, 3.75 x 2.125 inches, capacitive touch screen
Display Backlight	User adjustable (default 40%)
Power	Two 18650 Lithium Ion batteries (replaceable) with USB Type-C charger/power adapter included
Battery Life	Over 15 hours of continuous use with default settings 13 hours of continuous use with default settings and wifi active

DG-1000 specifications continued

COMPONENT	SPECIFICATIONS
Auto-Off	Adjustable from 10 minutes to never
Dimensions	7.0 x 4.2 x 1.4 inches
Weight	15.7 oz
Calibration	Meets ASTM Standard E779-03, E1554-07, CGSB-149.10-M86, EN 13829, ATTMA Technical Standard 1 and NFPA 2001, RESNET and US ACE
Recommended calibration interval	Four years

¹Typical Conditions are a temperature range of 54° to 90° F, and a two year calibration interval.

² As Calibrated Accuracy is +/- (0.4% of reading + 0.045 Pa) under controlled conditions of 67° to 77° F, four month calibration interval, and pressure readings averaged for five seconds. All gauges are verified to meet this specification at all calibration pressures.

Specifications subject to change without notice.

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Stylized images of the Blower Door is also a Registered Trademark.

THE ENERGY CONSERVATORY WARRANTY

EXPRESS LIMITED WARRANTY

Seller warrants that this product, under normal use and service as described in the operator's manual, shall be free from defects in workmanship and material for a period of 24 months, or such shorter length of time as may be specified in the operator's manual, from the date of shipment to the Customer.

LIMITATION OF WARRANTY AND LIABILITY

This limited warranty set forth above is subject to the following exclusions:

- With respect to any repair services rendered, Seller warrants that the parts repaired or replaced will be free from defects in workmanship and material, under normal use, for a period of 90 days from the date of shipment to the Purchaser.
- Seller does not provide any warranty on finished goods manufactured by others. Only the original manufacturer's warranty applies.
- Unless specifically authorized in a separate writing, Seller makes no warranty with respect to, and shall have no liability in connection with, any goods which are incorporated into other products or equipment by the Purchaser.
- All products returned under warranty shall be at the Purchaser's risk of loss. The Purchaser is responsible for all shipping charges to return the product to The Energy Conservatory. The Energy Conservatory will be responsible for return standard ground shipping charges. The Customer may request and pay for the added cost of expedited return shipping.

The foregoing warranty is in lieu of all other warranties and is subject to the conditions and limitations stated herein. No other express or implied warranty IS PROVIDED, AND THE SELLER DISCLAIMS ANY IMPLIED WARRANTY OF FITNESS for particular purpose or merchantability.

The exclusive remedy of the purchaser FOR ANY BREACH OF WARRANTY shall be the return of the product to the factory or designated location for repair or replacement, or, at the option of The Energy Conservatory, refund of the purchase price.

The Energy Conservatory's maximum liability for any and all losses, injuries or damages (regardless of whether such claims are based on contract, negligence, strict liability or other tort) shall be the purchase price paid for the products. In no event shall the Seller be liable for any special, incidental or consequential damages. The Energy Conservatory shall not be responsible for installation, dismantling, reassembly or reinstallation costs or charges. No action, regardless of form, may be brought against the Seller more than one year after the cause of action has accrued.

The Customer is deemed to have accepted the terms of this Limitation of Warranty and Liability, which contains the complete and exclusive limited warranty of the Seller. This Limitation of Warranty and Liability may not be amended or modified, nor may any of its terms be waived except by a writing signed by an authorized representative of the Seller.

TO ARRANGE A REPAIR

Please visit our website (www.energyconservatory.com/calibration-repair) before sending any product back for repair or to inquire about warranty coverage. All products returned for repair should include a return shipping address, name and phone number of a contact person concerning this repair, and the purchase date of the equipment.

Safety, warnings and troubleshooting information

- Follow all safety instructions provided when used with any TEC products.
- Do not operate the gauge if any liquid gets inside the gauge.
- If the inside of the gauge gets wet, immediately turn off the gauge and remove the batteries.
- Leave the battery compartment cover off to allow for drying.
- Dry the batteries with a towel and allow the batteries to air dry for at least 12 hours.
- Allow the gauge to air dry for at least 12 hours before inserting the batteries and powering back on.
- If a liquid gets inside the pressure ports, contact TEC at 612-827-1117.
- Do not attempt to dry any of the electrical connectors with a Q-Tip or similar item.

Lithium Ion battery safety and warnings

- Do not leave the batteries in direct sunlight or in an area heated by sunlight. The battery could generate heat, smoke or flames.
- Do not use the batteries when there is rust present, the batteries have a bad smell or if the batteries are damaged in any other way.
- Keep the batteries out of the reach of children and animals.
- If fluid from the battery leaks out and makes contact with skin, wash with soap and water. The fluid may cause irritation. If that happens please see a doctor immediately.
- Do not expose the batteries to extreme heat, flames or liquids.
- Do not modify or disassemble the batteries as this could result in leakage or explosion.
- When replacing the batteries in the gauge, use identical, fresh batteries.
- Always charge both batteries at the same time.

Touch screen use and care

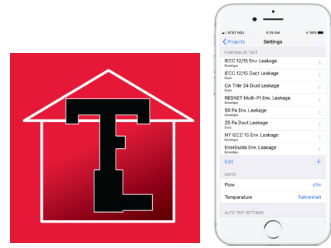
- A screen protector is included with the DG-1000. Replacement screen protectors can be purchased from TEC.
- To clean the screen, use the microfiber cloth included with the DG-1000.
- Do not clean the screen with flux, water, acetone, ethanol, isopropyl alcohol, toluene or ammonia (glass cleaner).

Introduction

The DG-1000 is a two channel low pressure gauge that is intended to be used with equipment manufactured by The Energy Conservatory, or as a manometer.

Automating Tests and Managing Data

One of the key advantages of the DG-1000 is its Bluetooth connectivity and simple connection to the TEC AutoTest App for automating testing, data collection and report writing. This is effective for both single point and multipoint testing with ability to share data or a PDF report via email or text, or store it to a storage destination of your choice.



Other iOS, Android, Windows based software for use with TEC equipment is available for free download on our website at energyconservatory.com

Instructional Videos

The Energy Conservatory (TEC) offers a variety of online instructional videos, including

- Minneapolis Blower Door™ Quick Guide
- Minneapolis Duct Blaster® Quick Guide
- Field Calibration Checks for Gauges
- Pressure and Airflow Basics
- Exhaust Fan Flow Meter
- TECLOG
- TECTITE
- And many more

Visit energyconservatory.com/training to see more of TEC's instructional videos.

More DG-1000 Guides

All DG-1000 guides are available online at energyconservatory.com/support

Please refer to the guides listed below for further instructions.

- DG-1000 Basic Use Quick Guide
- DG-1000 Ports and Networking Basics Quick Guide
- Connecting a Single DG-1000 Quick Guide
- Connecting Multiple DG-1000's Quick Guide
- Using the DG-1000 with the Minneapolis Blower Door
- Using the DG-1000 with the Minneapolis Duct Blaster



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