# VG640T
# DIGITAL VACUUM GAUGE

## FEATURES

- Ultra fine resolution (as low as 0.5 Micron)
- ½ second response time
- User selectable low and high vacuum alarms with a remote wireless receiver
- Auto shut OFF
- Convenient built in hanger

## VG640T SPECIFICATIONS

| | |
|---|---|
| Sensor Type | Thermistor |
| Connector Type | Standard ¼ inch male flare fitting. |
| Vacuum Range | 0 – 19,000 Micron (0 – 2,600Pascals) |
| Scale | Micron, milliBar, Pascal, Torr, milliTorr |
| Resolution | 0-200: 0.5 Micron |
| | 400-800: 2 Micron |
| | 800-2,000: 5 Micron |
| | 2,000-6,000: 20 Micron |
| | 6,000-9,000: 100 Micron |
| | 9,000-16,000: 200 Micron |
| | 16,000-19,000: 1,000 Micron |
| Alarm | Audible and visual alarms for high and low vacuum |
| Remote Alarm | Up to 400 ft* remote audible, visual and vibrating alarm for high and low vacuum |
| Alarm Volume | 87 dB for both unit and remote |
| Operating Temp. | 0°F to 150°F (-17°C to 65°C) |
| Overpressure | 800 PSI maximum |
| Accuracy | +/-10% or +/-10 Microns, whichever is larger (50 to 2,000 micron) |
| Power Source | 3 AA Batteries (not included) |
| Battery Life | 600 Hours continuous usage, with battery indicator |
| Auto Shutoff | 8 hours when alarms are enabled.  When alarms are disabled: |
| | 10 minutes when vacuum reading is above 19,000 micron |
| | 1 hour when vacuum reading is below 19,000 micron |
| Weight | 6 oz |
| Dimensions | 5½"H x 2.75"W x 1½"D |

* Distance is measured when the remote is within a direct line of sight of the VG640T.  Obstructions between the remote and the VG640T can reduce this distance.

## REMOTE ALARM SPECIFICATIONS

| | |
|---|---|
| Operating Distance | Up to 400 ft* |
| Alarm | Audible, visual and vibrating |
| Alarm Volume | 87 dB |
| Operating Temp. | -20°F to 160°F (-28°C to 70°C) |
| Power Source | 9V Battery (not included) |
| Battery Life | 45 hours continuous use, with low battery audible indicator |
| Weight | 3 oz |
| Dimensions | 5"H x 2½"W x 1"D |

* Distance is measured when the remote is within a direct line of sight of the VG640T.  Obstructions between the remote and the VG640T can reduce this distance.

## OPERATING CONTROLS

- To turn the unit ON, press and release the Power Button.

- To turn the unit OFF, press and hold the Power button, until the unit turns OFF.  Pressing and releasing the Power button turns on the backlight.

- Changing the scale: Press the UNITS button while in normal operation to change the display to the next scale. The scale order is: Micron, mTorr, Torr, Pascal, mBar.  The VG640 will keep the scale settings even if the power is turned OFF.

## CLEANING THE VG640 VACUUM SENSOR

It is recommended that the VG640 sensor be cleaned periodically to maintain unit accuracy. Oil and other contaminants reduce the accuracy of the VG640 unit. Follow the instructions below for cleaning.

- Use an eyedropper to pour approximately 2 teaspoons of ordinary rubbing alcohol into the vacuum port.

- Close the port with the supplied cap.

- Shake the VG640 unit for approximately 10 seconds. A slight movement of the vacuum sensor in the case is normal and does not affect the internal connection in any way.

- Open the vacuum port. Empty the alcohol and air dry the sensor.

Close the vacuum port with the supplied cap when the VG640 is not used. This prevents contamination of the sensor.

**90% of the vacuum gauge warranty returns that SUPCO receives are due to contaminated sensors.  For vacuum gauges that are heavily contaminated, leave the alcohol in the gauge overnight to clean the sensor more effectively.**

## CHECKING HVAC SYSTEMS FOR LEAKS

When checking a system for leaks use only copper tubing and a vacuum proof valve. Generally standard hoses will not hold a vacuum. If using the blank-off valve on the vacuum pump check it for leaks periodically.  At the beginning of the test the VG640 reading may increase due to system equalization. The vacuum reading should hold after a minimum of 5 minutes. If the reading continues to increase it may indicate a leak in the system.

## SETTING THE ALARMS

Press the SET button.  The unit will display "Set Alarm Low" and show the current value of the low alarm.  Use the up (UNITS) and down (MUTE) buttons to set the alarm from 0 to 19000 Microns.  To turn the low alarms OFF, press the down button while the set low alarm is at 0 Microns, or press the up button while the set low alarm is at 19000 Microns.

Press the SET button when you are done setting the low alarm,.  The unit will now display "Set Alarm High" and show the current value of the high alarm.  Use the up (UNITS) and down (MUTE) buttons to set the high alarm from the value of the low alarm to 19000 Microns.  Note that the VG640 unit will not allow you to set the high alarm below the low alarm.  To turn the high alarms OFF, press the down button while the set high alarm is at the low alarm value, or press the up button while the set high alarm is at 19000 Microns.

Press the SET button when you are done setting the high alarm.  The unit will return to normal operation.

To see the current value of the low and high alarms, press the SET button.  The unit will show the current value of the low alarm.  Press the SET button again to display the current value of the high alarm.  Press the SET button again to return the unit to normal operation.

When the VG640 unit is turned OFF, the value of the low alarm is retained, but the value of the high alarm is always set to OFF.  This

prevents the VG640 to go into alarm mode when the unit is powered up while vacuum is not applied.

*NOTE: When high alarm is set to anything but OFF, the unit will alarm when vacuum is not showing.*

## ALARM CONDITION

During an alarm condition, the buzzer will beep and the display backlight will flash red. The unit will flash "Alarm Low" or "Alarm High" to indicate which alarm is active. The unit will also trigger an alarm on the remote receiver.

To silence the buzzer, press the MUTE button. The unit will still flash the red backlight and display the "Alarm Low" or "Alarm High" message. The remote receiver is not affected by the MUTE button.

## DISPLAY RESOLUTION

The display resolution depends on the vacuum displayed and is as follows:

| Vacuum Range (Microns) | Resolution (Microns) | | Vacuum Range (Pascal) | Resolution (Pascal) |
|---|---|---|---|---|
| 0 to 140 | 0.5 | | 0 to 18 | 0.05 |
| 140 to 400 | 1 | | 18 to 50 | 0.1 |
| 400 to 800 | 2 | | 50 to 100 | 0.2 |
| 800 to 2000 | 5 | | 100 to 260 | 0.5 |
| 2000 to 6000 | 20 | | 260 to 800 | 2 |
| 6000 to 9000 | 100 | | 800 to 1200 | 10 |
| 9000 to 16000 | 200 | | 1200 to 2100 | 20 |
| 16000 to 19000 | 1000 | | 2100 to 2600 | 100 |
| Above 19000 | - - - - is displayed | | Above 2600 | - - - - is displayed |

## LOW POWER MODE and AUTO SHUTOFF

If no alarms are set and no buttons are pushed, the unit will automatically turn OFF to conserve power, as follows:

- No Vacuum is Showing: 10 Minutes

- Vacuum is Showing: 1 Hour

When alarms are set, the unit will turn OFF after 8 hours of operation.

In all modes after 10 minutes of operation, if no button is pressed, the unit will enter a low power mode. In this mode the unit updates the display every 7 seconds, instead of every 0.5 seconds. This extends the battery life about 3 times. To exit the low power mode at any time, press any button on the unit.

## REMOTE RECEIVER OPERATION

The ON/OFF switch of the remote unit has three positions:

- Down: OFF

- Middle: ON, silent. During an alarm condition, the LED will blink RED and the unit will vibrate, but the buzzer will remain silent.

- Up: ON. During an alarm condition, the LED will blink RED, the unit will vibrate and the buzzer will sound.

When the receiver detects a low battery, it will sound a fast chirp every 10 seconds. The low battery chirp will sound even if the unit is set for silent mode.

The remote receiver has a dual color LED to indicate the status of the device:

- When the LED blinks red, there is an alarm condition.

- When the LED blinks green, there is no alarm condition.

While there is no alarm condition, the communication between the VG640T and the receiver can be tested as follows:

- Press and hold the MUTE button on the VG640T.  The remote unit will sound an alarm while the MUTE button is pressed.

- Release the MUTE button to remove the alarm condition.

## REPROGRAMMING THE TRANSMIT CODE FOR THE VG640T AND THE RECEIVER

Every VG640T transmitter and remote receiver come preconfigured with a standard alarm transmit code.  This means that if multiple VG640T units are installed at a location, if any one of them generates an alarm, every receiver at the same location will sound an alarm.  When more than one VG640T is installed at a location, it may be desirable for different transmitters to transmit a unique alarm code, triggering different receivers.

To change the alarm transmit code on the transmitter follow the steps below:

1. Make sure an alarm condition is not present.

2. Turn OFF all the receivers.

3. On the VG640T press and hold both the UNITS and MUTE buttons for about 1 second, until the unit displays **COdE**.

4. Let go of the buttons.  The unit displays **dOnE**, indicating that a new alarm code has been programmed into the unit.

To restore the unit to the factory default code, follow the steps below.

1. Make sure an alarm condition is not present.

2. Turn OFF all the receivers.

3. On the VG640T press and hold both the UNITS and MUTE buttons for about 1 seconds, until the unit displays **COdE**.

4. Continue holding the UNITS and MUTE buttons for 5 seconds more, until the unit displays **FAC**, indicating that factory default code has been restored.

5. Let go of the buttons.

Once the VG640T transmitter has been programmed with a new code, one or more receivers have to be programmed with this code to receive the alarm message.  To synchronize the receiver code to the VG640T transmitter code follow the steps below.

1. Make sure an alarm condition is not present.  If possible, turn OFF any other VG640T transmitters operating at the location.

2. On the receiver insert a paper clip into the small hole in the upper left corner and press down until the LED alternates green and red.

3. Remove the paperclip.

4. On the VG640T transmitter press the MUTE button for about 1 second and then release it.  The LED on the receiver should now flash green.

The receiver is now matched to the transmitter.  To test communication, press and hold the MUTE button on the VG640T transmitter.

The receiver should sound an alarm.  Release the MUTE button on the VG640T transmitter.  The receiver alarm should go OFF.   If the test has failed, repeat the synchronization procedure, from step 1.

## NOTE:

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the 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:

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

The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

## VG640T WARRANTY

### LIMITED TO ONE YEAR FROM DATE OF PURCHASE

Sealed Unit Parts Co., Inc. warrants its products to be free from defects in materials and workmanship under normal use and service. Sealed Unit Parts Co., Inc. will repair or replace without charge any such products it finds to be so defective on its return to Sealed Unit Parts Co., Inc. The foregoing is in lieu of all other expressed or implied warranties, including those of merchantability or fitness for a particular purpose. The foregoing is also the purchaser's sole remedy and is in lieu of all other guarantees, obligations or liabilities or any consequential or incidental damages attributable to negligence or strict liability.