

# Single Gas Monitor

## 777

Carbon Monoxide



**The Value Leader™**

[www.tpi-thevalueleader.com](http://www.tpi-thevalueleader.com)

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TPI 777  
SINGLE GAS MONITOR  
INSTRUCTION MANUAL  
For use with Carbon Monoxide (CO)

Read and understand instructions before use.

- ⚠ **Warning:** To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.
- ⚠ **Warning:** To reduce the risk of ignition of a flammable atmosphere, batteries must only be changed in an area known to be nonflammable.



EMC Directive (2004/108/EC)  
EN 61000-4-2:1995, EN 61000-4-3:2002, EN 55011:2007

## Safety Information

- ⚠ 1. **IMPORTANT:** Read and understand this manual prior to use.
- ⚠ 2. **IMPORTANT:** CO instruments may show high readings for up to 30 minutes if taken from warm air to cold temperatures and vice-versa. For best results let them "soak" in the ambient conditions prior to use.
- ⚠ 3. **WARNING:** Substitution of components may impair operation.
- ⚠ 4. **WARNING:** This instrument contains a lithium battery which may leak or explode if improperly used. **DO NOT DISPOSE OF IN A FIRE.**
- ⚠ 5. **WARNING:** Only service in an area known to be free of combustible gases.
- ⚠ 6. **WARNING:** Instruments are not certified intrinsically safe.
  
- ⚠ 7. **WARNING:** To verify operation prior to each day's use a function test (bump test) should be performed. If the instrument does not pass this test, full calibration should be performed.
- ⚠ 8. **WARNING:** Keep all openings free from dirt, debris and foreign objects.
- ⚠ 9. **WARNING:** Do not use a damaged or improperly operating instrument. Contact a service representative immediately.

ONLY zero instrument in a gas free environment

## General Description

The TPI 777 is a rugged personal gas monitor. Preset alarms provide visual, audible and vibration alerts for low and high alarm conditions. Built-in "Time Weighted Average" (TWA) and "Short Term Exposure Limit" (STEL) alarms provide a greater margin of safety for the user. A custom display provides easy to read information including gas concentration and low battery indication. (See Figure 1)

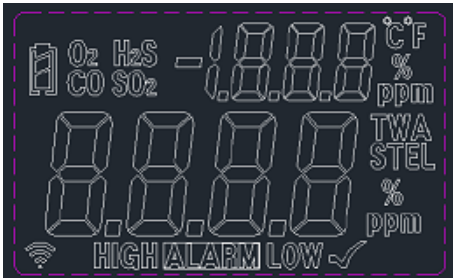



Figure 1: Custom Display

## FUNCTION INDICATORS

-  blinking = Low Battery
- High/Low Alarm Set Points:
- TWA/STEL Alarms:

## PHYSICAL SPECIFICATIONS

Operational Temp: -4 to 104° F (-20 to 40° C)

Humidity: 15-90% RH (Non-condensing)

Response Time: T90 < 30 seconds

Alarms:     Sound: 80 Db @ 12" (30cm)  
              Sight: Display Alerts via LEDs  
              Touch: Vibration

Power Source: 3.6V Lithium Battery

Size: 3.81" x 2.31" x 0.8" (9.67 x 5.87 x 2 cm)

Weight: 3.6 oz. (105 g)

Battery Life: 2+ Years

Sensor: Electrochemical

Construction: Impact resistant housing

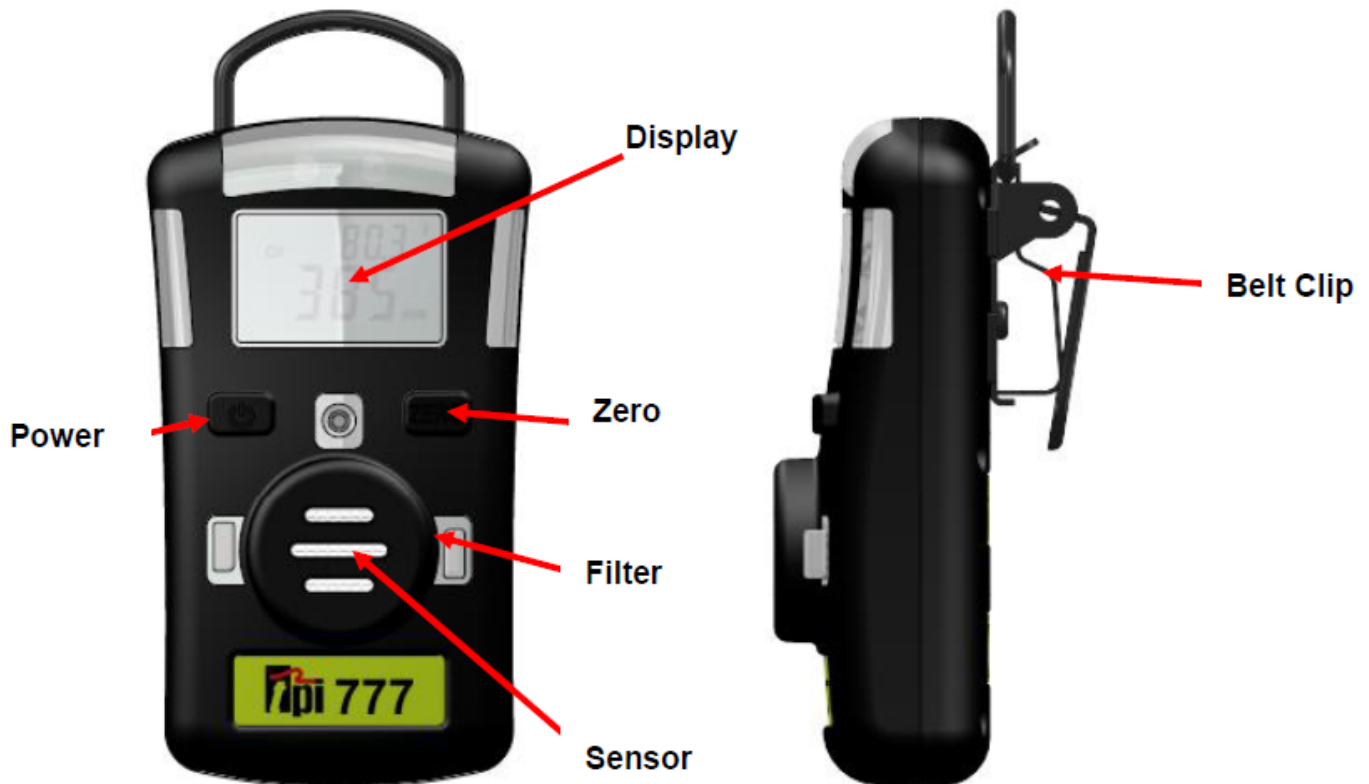
Belt clip and hanging loop

## PRODUCT FEATURES

The 777 is made of durable plastic. The housing is protected with a rubberized material. The front of the instrument houses the sensor and sounder. Two buttons are used to operate the instrument. The left button is used for power and to select the unit of measure for temperature. The right button is used for zeroing and adjusting the alarm level. LED's beneath the frosted areas provide visual alarm.

The instrument can be worn using the belt clip on the back. The 777 cannot be turned off when it is in an alarm state.

The sensor and battery are designed for 2 years of continuous normal use.



## SENSOR SPECIFICATIONS

TYPE	RESOLUTION	RANGE	ACCURACY
CO	1ppm	0-999	+/- 5ppm or 5% of rdg whichever is greater
Temp	0.1°	32 to 104°F	+/- (2°F + 5 digits)
		0 to 40°C	+/- (1°C + 5 digits)

## ALARMS

The 777 has two types of alarm. Low Alarm activates at two second intervals. The High Alarm activates at one second intervals.

The sound, LEDs and vibration activate during an alarm. The alarm settings can be changed in set-up of the 777. The 777 is preset for the most common levels required. The preset alarm levels are shown below.

## PRESET ALARM LEVELS

Type	Low	High	TWA	STEL
CO	50	200	50	75

See page 6 for Alarm Adjustment instructions

## FUNCTION (BUMP) TEST

Turn the instrument on and wait until the warm up period is over and the main display is shown. Apply 100ppm of CO gas to the sensor area at a flow rate of 200-400 cc/min. The alarm should activate within approximately 20 seconds.

This test can be performed to ensure proper function prior to each day's use. Failure to pass could indicate a failure or need for calibration.

## SWITCHING BETWEEN °F and °C

With the 777 on press and release the On/Off key to switch between °F and °C.

## ALARM ADJUSTMENT

1. Turn the 777 on by pressing and holding the power button until the display illuminates.
2. After the warm up period when the main display shows press and hold down the Zero button for more than 3 seconds until "Ald" is displayed.
3. The alarm level can be adjusted by using the Zero button to cycle through alarm level 0 to 9. Repeatedly pressing the Zero key will cycle the alarm level number from 0 to 9 and then back to 0. The alarm levels for each selection are shown below.
4. Once the desired alarm level is selected, press and hold the Zero key for more than 3 seconds until the 777 returns to the main display.

### Alarm Levels

ALARM ID	Alarm LOW	Alarm HIGH	Alarm TWA	Alarm STEL
-0-	50	200	50	75
-1-	50	200	50	75
-2-	30	60	30	60
-3-	25	100	25	100
-4-	75	200	75	200
-5-	25	50	N/A	N/A
-6-	30	50	30	60
-7-	50	150	50	150
-8-	50	200	50	75
-9-	50	200	50	75

## ALARM TYPES

The alarm type is adjustable between standard, TWA, and STEL. The alarm type is selected by performing the steps outlined on page 6.

**Standard** - When the 777 is in the main display mode the CO concentration is shown in ppm. The alarm will sound at the Alarm Low level as outlined on page 6.

**Time Weighted Average (TWA) Alarm** - When the 777 is set to this type of alarm the "TWA" annunciator will be displayed. In this mode the alarm is time weighted and will sound at the Alarm TWA level as outlined on page 6. A Time Weighted Average (TWA) is a threshold value based on a 8-hour workday and a 40-hour workweek. For example the TWA for carbon monoxide is 25 ppm. This means that an average of 25 ppm is considered to be the safe threshold value for an 8-hour workday.

**Short Term Exposure Limit (STEL) Alarm** - When the 777 is set to this type of alarm the "STEL" annunciator will be displayed. In this mode the alarm is based on a 15 minute average and will sound at the Alarm STEL level as outlined on page 6.



## **OPERATION and USE**

Press and hold the ON button to start the instrument in an area known to be gas free and with normal oxygen amount. The following will display during start up:

1. Activate all segments and icons
2. CO (Gas type being sensed)
3. Low Alarm Level Software version
4. High alarm Level
5. TWA Alarm Level
6. STEL Alarm Level
7. "HI" High alarm value displays
8. Calibration Year / Month
9. LED, Buzzer, Vibration test
10. Main display

To Turn the 777 off, press and hold the Power button down for approximately 10 seconds until the 777 turns off. The 777 will beep during this time.

If the 777 is turned on in an area that is not free of CO, an error will display and the 777 will need to be turned off and turned back on in a clean air environment.


Attach the 777 to the outermost garment closest to your head/face as practical. Always follow federal, state, local and company regulations as it relates to the use of personal CO detectors.


Alarms indicate unsafe levels. The display will show the concentration along with audible, visual and vibration indications.

Manual zeroing should only be performed in a clean air gas free environment containing normal oxygen levels. Press the ZERO button for 2-3 seconds and release. All segments of the display will flash followed by the working display.

Exposure to gas in excess of sensors range specifications will result in "OL" being displayed with the high alarm activated

## **BATTERY, SENSOR, AND CALIBRATION**

The battery indicator does not display until the battery begins to deplete. The battery indicator will begin to display depending on the charge left. The stages are: 

When the battery indicator looks like this  and is blinking the battery needs replacement. The 777 must be returned to TPI for battery replacement.

When SENS is displayed the CO sensor requires replacement. The 777 must be returned to TPI for sensor replacement.

Calibration is recommended once per year. Please return your 777 to TPI for calibration.

## **WARRANTY and SERVICE POLICY**

Your TPI 777 is warranted to be free from defects in materials and workmanship for a period of 2 years after purchase (excluding calibration). If within the warranty period, your instrument should become inoperative from such defects, the unit will be repaired or replaced at our option. This warranty covers normal use and does not cover damage which occurs in shipment or failure which results from alteration, tampering, accident, misuse, abuse, neglect or improper maintenance. Proof of purchase may be required before warranty is rendered.

Units out of warranty will be repaired for a service charge. Internal repair of maintenance must be completed by a Test Products International authorized technician. Violation will void warranty. Units must be returned post-paid to the address below:

TPI ATTN: SERVICE  
9615 SW ALLEN BLVD  
SUITE 104  
BEAVERTON, OR 97005

Notes:

Notes:

Notes:

Notes:

Notes:

**Test Products International, Inc.**

9615 SW Allen Blvd., Ste. 104  
Beaverton, OR 97005  
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