



# DIGITAL AUTOMOTIVE ANALYSER 15 FUNCTION BAR GRAPH/PC LINK

MODEL NO: **TA203.V2**

Thank you for purchasing a Sealey product. Manufactured to a high standard, this product will, if used according to these instructions, and properly maintained, give you years of trouble free performance.

**IMPORTANT:** PLEASE READ THESE INSTRUCTIONS CAREFULLY. NOTE THE SAFE OPERATIONAL REQUIREMENTS, WARNINGS & CAUTIONS. USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY AND WILL INVALIDATE THE WARRANTY. KEEP THESE INSTRUCTIONS SAFE FOR FUTURE USE.



Refer to instructions



Electrical shock hazard



Warning!

## 1. SAFETY

### 1.1. PERSONAL PRECAUTIONS

- ✓ When using this meter, please observe all normal safety rules concerning:
  - Protection against the dangers of electric current.
  - Protection of the meter against misuse.
- ✓ Full compliance with safety standards can only be guaranteed if used with the test leads supplied. If necessary, they must be replaced with genuine Sealey leads with the same electronic ratings. Failure to do so will invalidate the warranty.
- ✗ **DO NOT** use leads if damaged or if the wire is bared in any way.

### 1.2. GENERAL SAFETY INSTRUCTIONS

- ✓ Familiarise yourself with the application and limitations of the meter as well as the potential hazards. *IF IN ANY DOUBT CONSULT A QUALIFIED ELECTRICIAN*
- ✓ When the meter is linked to a measurement circuit, **DO NOT** touch unused meter terminals.
- ✓ When the scale of the value to be measured is unknown set the selector to the highest range available.
- ✓ Before rotating the range selector to change functions, disconnect test leads from the circuit under test.
- ☐ **WARNING!** *Never perform resistance measurements on live circuits.*
- ✓ Always be careful when working with voltages above 60Vdc or 30Vac rms. Keep your fingers behind the probe barriers while measuring.
- ✓ When not in use, store the meter carefully in a safe, dry, childproof location. Storage temperature range -10°C to 50°C.
- ✓ Never apply voltage or current to the meter that exceeds the specified maximum.
- ✓ The user shall ensure that test probes are correctly selected in order to prevent danger. Probes shall be selected to ensure that adequate barriers guard against inadvertent hand contact with live conductors under test and that probes have minimal exposed probe tips. Where there is a risk of the probe tip short circuiting with other live conductors under test, it is recommended that the exposed tip length shall not exceed 4mm.

## 2. INTRODUCTION

Extra large, hi-contrast LCD display with 36mm high digital read-out, bar graph and backlight. Durable bi-composite case with probe storage and integral stand, suitable for the toughest workshop conditions. Features millisecond pulse-width function for accurate measurement of fuel injection systems. Includes auto-ranging, data hold and auto-power-off. Bar graph is essential for the correct testing of lambda sensors. Supplied with inductive coupler with adjustable sensitivity, for fast reading of engine rpm, test leads (probe and clip) and thermocouple plus interface cable and Windows ME/XP software for downloading data to PC.

Layout: ( Refer to fig.1. )

1. Large LCD display
2. Max/Min/USB Button
3. Relative Button
4. Data Hold/Back Light Button
5. Rotary selector Switch
6. Volts,  $\Omega$ , Hz, %, RPM, CAP, ms, DWELL and TEMP Terminal
7. Com Terminal
8. mA Terminal
9. 20A Terminal
10. Range/#CYL Button
11.  $\pm$  TRIG Button
12. Mode/RPM, 2, 4 stroke Button

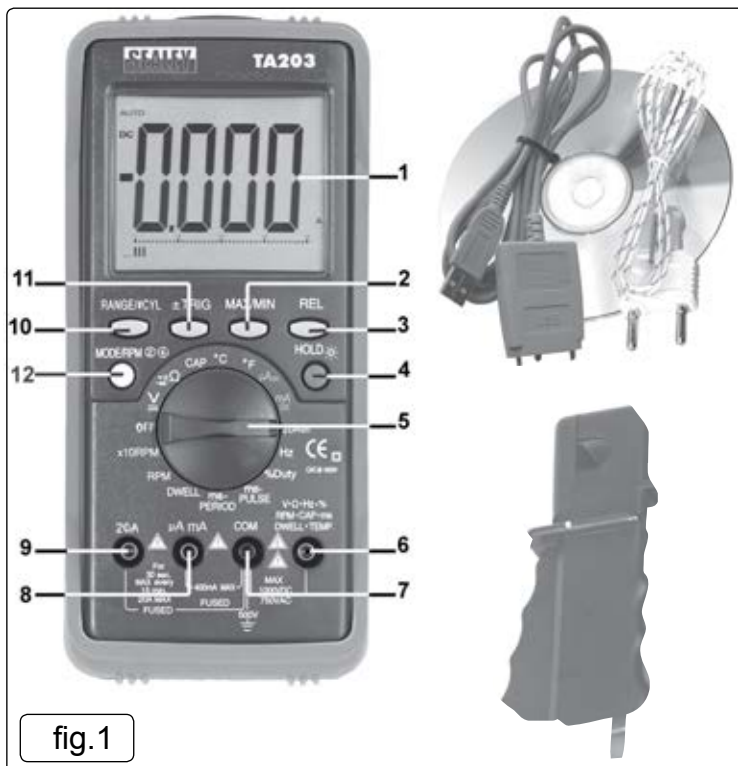


fig.1

Meter Functions	
Voltage	(V AC/DC)
Resistance	( $\Omega$ )
Diode Check	( $\rightarrow$ )
Audible Continuity	( $\text{🔊}$ )
AC or DC Current	(A)
Temperature	(Temp °C & °F)
Frequency	(Freq)
Dwell	( $\triangleleft$ )
Duty Cycle	(%)
Ms - Pulse & ms - Period	(ms)
RPM	( $\text{🔄}$ )



Function	Terminal	Maximum Input
AC Volts	V - $\Omega$ - RPM	750V AC rms
DC Volts		1000V DC
Frequency	V - $\Omega$ - RPM	250V AC/DC
Ohms (Resistance)	V - $\Omega$ - RPM	250V AC/DC
Diode Test		
AC/DC $\mu$ A/mA	$\mu$ A/mA	400mA AC/DC
20A AC/DC (30 secs max every 15 minutes)	20A	20AAC/DC
RPM	V - $\Omega$ - RPM	250V AC/DC
Duty Cycle (%)		
Dwell Angle		

- WARNING! DO NOT** make current measurements on the 20A scale for longer than 30 seconds in every 15 minutes. Exceeding 30 seconds may cause damage to the meter and test leads.
- WARNING! Ohms** can not be measured if a voltage is present. Only measure in non powered circuits.

### 3. FEATURES

Extra large, hi-contrast LCD display with 36mm high digital read-out, bar graph and backlight. Durable bi-composite case with probe storage and integral stand, suitable for the toughest workshop conditions. Features millisecond pulse-width function for accurate measurement of fuel injection systems. Includes auto ranging, data hold and auto power off. Supplied with inductive coupler with adjustable sensitivity, for fast reading of engine rpm, test leads (probe and clip) and thermocouple plus interface cable and software for downloading data to PC.

### 4. SPECIFICATION

#### DC Voltage (Auto Ranging)

Range	Resolution	Accuracy
400.0mV	0.1mV	$\pm 0.5\%$ of reading $\pm 2$ digits
4.000V	1mV	$\pm 1.5\%$ of reading $\pm 2$ digits
40.00V	10mV	
400.0V	100mV	
1000V	1V	$\pm 1.8\%$ of reading $\pm 2$ digits

Input Impedance: 10M $\Omega$ .

Maximum Input 700Vac rms or 1000Vdc.

#### AC Voltage (Auto Ranging except 400mV)

Range	Resolution	Accuracy
400.0mV	0.1mV	$\pm 1.5\%$ of reading $\pm 60$ dig
4.000V	1mV	$\pm 1.0\%$ of reading $\pm 3$ digits
40.00V	10mV	$\pm 1.5\%$ of reading $\pm 3$ digits
400.0V	100mV	$\pm 2.0\%$ of reading $\pm 4$ digits
750V	1V	

Input Impedance: 10M $\Omega$ .

Frequency Range: 50 to 400Hz.

Maximum Input: 750Vac rms or 100Vdc.

#### Capacitance (Auto Ranging)

Range	Resolution	Accuracy
40.00nF	10pF	$\pm 5.0\%$ of reading $\pm 7$ digits
400.0nF	0.1nF	$\pm 3.0\%$ of reading $\pm 5$ digits
4.000uF	1nF	
40.00uF	10nF	
100.0uF	0.1uF	$\pm 5.0\%$ of reading $\pm 5$ digits

Input Protection: 250Vac rms or 250Vdc.

#### Resistance (Auto Ranging)

Range	Resolution	Accuracy
400.0 $\Omega$	0.1 $\Omega$	$\pm 1.2\%$ of reading $\pm 4$ digits
4.000k $\Omega$	1 $\Omega$	$\pm 1.0\%$ of reading $\pm 2$ digits
40.00k $\Omega$	10 $\Omega$	$\pm 1.2\%$ of reading $\pm 2$ digits
400.0k $\Omega$	100 $\Omega$	$\pm 2.0\%$ of reading $\pm 3$ digits
4.000M $\Omega$	1k $\Omega$	
40.00M $\Omega$	10k $\Omega$	

Input Protection: 250Vac rms or 250Vdc.

#### Diode test

Range	Resolution	Accuracy
0.3mA typical	1mV	$\pm 10\%$ of reading $\pm 5$ digits

Open Circuit Voltage: 1.5Vdc typical

Overload Protection: 250Vac rms or dc.

#### Temperature

Range	Resolution	Accuracy
-20°C~+760°C	1°C	$\pm 3.0\%$ of reading $\pm 5$ digits (Meter only, probe accuracy not included).
-4°F~+1400°F	1°F	

Sensor: Type K Thermocouple

#### Duty Cycle (Auto Ranging)

Range	Resolution	Accuracy
0.1%~99.9%	0.1%	$\pm 1.2\%$ of reading $\pm 4$ digits

Pulse Width: >100us, <100ms

Sensitivity: < 0.5V rms

Overload Protection: 250Vac rms or dc.

#### Dwell Angle

Cylinder	Range	Resolution	Accuracy
1CYL	0~360.0°	0.1°	$\pm 2.0\%$ of reading $\pm 4$ digits
2CYL	0~180.0°		
3CYL	0~120.0°		
4CYL	0~90.0°		
5CYL	0~72.0°		
6CYL	0~60.0°		
8CYL	0~45.0°		
10CYL	0~36.0°		
12CYL	0~30.0°		

Overload Protection: 250Vac rms or dc.

#### Frequency (Auto Ranging)

Range	Resolution	Accuracy
5Hz	0.001Hz	$\pm 1.5\%$ of reading $\pm 5$ digits
50Hz	0.01Hz	
500Hz	0.1Hz	
5kHz	1Hz	$\pm 1.2\%$ of reading $\pm 3$ digits
30.00kHz	10Hz	

Sensitivity: >5V RMS MIN.

Overload Protection: 250Vac rms or dc.

#### DC Current (Auto Ranging for uA and mA)

Range	Resolution	Accuracy
400.0uA	0.1uA	$\pm 1.0\%$ of reading $\pm 3$ digits
4000uA	1uA	$\pm 1.5\%$ of reading $\pm 3$ digits
40.00mA	10uA	
400.0mA	100uA	
4A	1mA	$\pm 2.5\%$ of reading $\pm 5$ digits
20A	10mA	

Overload Protection: 0.5A/250V and 20A/250V Fuse.

Maximum Input: 400mAac rms or 400mAdc on uA/mA ranges

20A ac rms or dc on 10A range.

#### Pulse Width

Range	Resolution	Accuracy
2.0~10.0ms	0.1ms	$\pm 3\%$ of reading $\pm 10$ digits

Overload Protection: 250Vac rms or dc.

#### Audible Continuity

Audible threshold:	Less than 150 $\Omega$
Test Current:	<0.3mA

Overload Protection: 250Vac rms or dc.

## RPM (Tach)

Range	Resolution	Accuracy
RPM 4 600~4000RPM	1RPM	±2% of rdg ± 4 digits
600~1200RPM (X 10PM)	10RPM	
RPM 2 300~4000 RPM	1RPM	
300~600RPM (x 10RPM)	10RPM	

Effect Reading: >600RPM

Overload Protection: 250Vac rms or dc.

**Overvoltage Category:** CAT.111. 1000V.


**USB:** Optically isolated PC interface cable and Windows® 7/8 compatible software to collect, display, plot and save data.

**Display:** 4 3.4 digit (4000 counts) LCD display with function and unit sign annunciator.

**Analogue Bar Graph:** 40 segments with measurements 15 times per second.

**Polarity:** Automatic, (-) negative polarity indication.

**Over Range Indication:** "OL" mark indication.

**Low Battery Indication:** The  is displayed when the battery voltage drops below the operating level.

**Auto Power Off:** Meter automatically shuts down after approx. 30 minutes of inactivity.

**Measurement Rate:** 2 times per second, nominal.

**Operating Environment:** 0°C to 50°C (32°F to 122°F) at <70% relative humidity.

**Storage Environment:** -20°C to 60°C (14°F to 140°F) at <80% relative humidity.

**Temperature Coefficient:** 0.2 x (specified accuracy) / °C (< 18°C or > 28°C).

**Power:** Single standard 9 Volt battery (PP3).

**Battery Life:** 200 hours typical with alkaline battery.

**Fuse:** 20A/250V, 10.3 x 38mm fast acting ceramic type.

0.5A/250V, 5 x 20mm fast acting ceramic type.

**Dimensions:** 197 (H) x 88.4 (W) x 41.2 (D) mm.

**Weight Approx:** 635g including holster.

Accuracy is given at 18°C to 28°C (65°F to 83°F) less than 70% relative humidity.

## AC Current (Auto Ranging for uA and mA)

Range	Resolution	Accuracy
400.0uA	0.1uA	± 1.5% of reading ± 5 digits
4000uA	1uA	
40.00mA	10uA	
400.0mA	100uA	± 3.0% of reading ± 7 digits
4A	1mA	
20A	10mA	

Overload Protection: 0.5A/250V and 20A/250V Fuse.

Frequency Range: 50 to 400Hz

Maximum Input: 40mA ac rms or 400mA dc on uA/mA ranges,  
20A ac rms or dc on 20A range.

## 5. OPERATION

❑ **WARNING!** Ensure that you read, understand and apply the safety and operational instructions before connecting the meter. Only when you are sure that you understand the procedures is it safe to proceed with testing.

❑ **WARNING!** Risk of electrocution. High voltage circuits, both AC and DC are very dangerous and should be measured with great care. Operating temperature range 0°C to 40°C.

Remember to turn on meter before use and to turn it off when measurement is completed.

**Note:** If "OL" appears in the display during a measurement, the value exceeds the range you have selected. Change to a higher range.

**Note:** On some low AC and DC ranges, with the test leads not connected to a device, the reading may show a random fluctuating reading. This is normal and is caused by the high input sensitivity. The reading will stabilise and give a proper measurement when connected to a circuit.

### 5.1. Mode Button (fig.1.12)

5.1.1. Press the Mode button to toggle between the AC and DC in the voltage & current measurements.

### 5.2. Range/#CYL Button (fig.1.10)

5.2.1. The range is automatically selected by the meter.

5.2.2. To manually select a range or DWELL (#CYL) range within a function, press the range button.

5.2.3. To exit the range mode and return to autoranging, press and hold the range button for two seconds.

**Note:** If the range is to high, the meter will be less accurate.

If the range is to low, the meter displays 'OL' (Over Limit).

### 5.3. Data hold, Backlight button (fig.1.4.)

5.3.1. The data hold function allows the meter to freeze a measurement reading for later reference.

5.3.2. Press the data hold button once to freeze the reading in the display. The indicator "hold" will appear in the display.

5.3.3. Press the data hold button again to return to normal operation.

5.3.4. Press and hold the data button for two seconds to switch on the display back light.

5.3.5. Press and hold the data button again for two seconds to turn off the back light.

### 5.4. Relative Button (fig.1.3.)

5.4.1. The relative measurement feature allows you to make measurements relative to a stored reference value. A reference voltage, current etc can be stored and measurements made in comparison to that value. The displayed value is the difference between the reference value and the measured value.

5.4.2. Perform any measurement as described in the operating instructions.

5.4.3. Press the relative button to store the reading in the display and the "REL" indicator will appear in the display.

5.4.4. The display will now indicate the difference between the stored value and the measured value.

5.4.5. Press the relative button to return to normal operation.

### 5.5. ± Trig Button (fig.1.11.)

5.5.1. To toggle between the Negative (-) and Positive (+) Trigger slope when the meter is in the ms-pulse, %duty cycle mode.

5.5.2. Press and hold for two seconds to toggle between Negative (-) and Positive (+) Trigger slope.

5.5.3. Press the button repeatedly to adjust the trigger level if the meter reading is to high or unstable.

**Note:** The Trigger level has five steps and is different for each function combination.

### 5.6. MAX/MIN/USB (fig.1.2.)

5.6.1. Press the MAX/MIN to enter MAX, MIN mode.

**Note:** MAX/MIN function is only available in the manual range.

5.6.2. Select the proper test range before activating the MIN/MAX button to ensure that the MIN/MAX reading will not exceed the testing range.

- 5.6.3. Press once to select MAX, press again to select MIN.
- 5.6.4. Press again to release MAX/MIN recording function.
- 5.6.5. Press and hold down for two seconds to activate the USB interface mode.

**5.7. AC or DC Voltage Measurements**

- 5.7.1. Insert the black test lead into the negative "COM" jack and the red test lead into the positive "V" jack.
- 5.7.2. Turn the rotary switch to the 'V' position.
- 5.7.3. Press the "MODE" button to select ac or dc voltage.
- 5.7.4. Touch the test probes to the circuit under test and read the voltage display.

**5.8. AC or DC Current Measurements**

- WARNING! DO NOT** make current measurements between 1A and 20A for longer than 30 seconds in every 15 minutes. Exceeding 30 seconds may cause damage to the meter and test leads.

- 5.8.1. Insert the black test lead into the negative "COM" jack and the red test lead into the:
  - a) Positive uA/mA jack for currents to 400mA (fig.1.8.)
  - b) Positive 20A jack for currents to 20A (fig.1.9.)

**Note:** If you are unsure of the current draw select the 20A jack.

- 5.8.2. Turn the rotary switch to the uA, mA or A position.
- 5.8.3. Press the mode button to select AC or DC current.
- 5.8.4. Touch the test probes in series (fig.3.) with the circuit under test and read the current on the display.

**5.9. Resistance, Diode, Continuity Measurements**

- WARNING!** To avoid electric shock, disconnect power to unit under test and discharge all capacitors before resistance or capacitance measurements.

- 5.9.1. Insert the black test lead into the negative "COM" jack and the red test lead into the positive "V" jack.
- 5.9.2. Turn the rotary switch to the Ω position.
- 5.9.3. Press the Mode button (fig. 1.12.) to select Ω, Diode or continuity.
- 5.9.4. Connect the test probes to the two ends of the Resistance, Diode, Continuity circuit to be measured.
- 5.9.5. Read the measured value from the display.
- 5.9.6. When measuring the forward voltage across a good Diode, it will indicate 0.4V or 0.7V will be indicated and the reverse voltage will indicate "OL" (same as on open condition). For a short circuit diode, a value of 0mV will be displayed.
- 5.9.7. In continuity mode a complete circuit will beep continuously, if open circuit, there will be no beep.
- 5.9.8. In resistance measurements, if greater accuracy is required press the Range button.

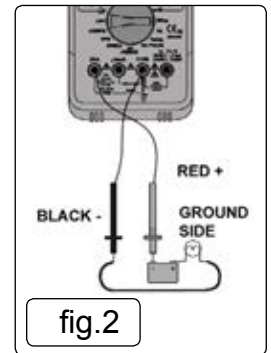


fig.2

**5.10. Capacitance**

- WARNING!** When checking in-circuit capacitance, be sure to disconnect the power supply from the circuit and that the capacitors are fully discharged. The range control mode in capacitance measurement is auto-ranging.

- 5.10.1. Insert the black test lead into the negative "COM" jack and the red test lead into the positive "V" jack.
- 5.10.2. Turn the rotary switch to the CAP position.
- 5.10.3. Touch the test probes to the ends of the capacitor and read the capacitor value on the display.

**5.11. Frequency(Hz)**

- 5.11.1. Insert the black test lead into the negative "COM" jack and the red test lead into the positive "V" jack.
- 5.11.2. Turn the rotary switch to the "Hz" position.
- 5.11.3. Connect the negative "COM" test probe to ground.
- 5.11.4. Connect the positive "V" test lead to the "signal out" wire of the sensor to be tested.

**5.12. Duty Cycle (%)**

- 5.12.1. Select the %DUTY range with the rotary switch.
- 5.12.2. Insert the black test lead into the negative "COM" jack and the red test lead into the positive "V" jack.
- 5.12.3. Connect the negative test probe to ground.
- 5.12.4. Connect the positive test probe to the signal wire circuit.

**5.13. Temperature Measurements**

- 5.13.1. Insert the type K thermocouple plug into the negative "COM" jack and the positive jack ensuring the + symbol on the plug is inserted into the positive + jack and the negative symbol on the plug is inserted into the negative "COM" jack.
- 5.13.2. Turn the rotary switch to the select °C or °F.
- 5.13.3. Read the temperature on the display.

**5.14. Pulse Width Measurements**

- 5.14.1. Insert the black test lead into the negative "COM" jack and the red test lead into the positive "V" jack.
- 5.14.2. Turn the rotary switch to the ms-PULSE position.
- 5.14.3. Press the ± TRIG button for two seconds until the negative (-) trigger slope is displayed on the lower left of the display.

**Note:** The applied time for most fuel injectors is displayed on the negative slope.

- 5.14.4. Jumper wires between the fuel injector and the harness connector (fig.4.).
- 5.14.5. Connect negative test probe to a good ground at the fuel injector or the negative (-) vehicle battery post.
- 5.14.6. Connect the red test probe to the fuel injector solenoid driver input on the jumper cable.
- 5.14.7. Start the engine. A pulse width in milliseconds should be read.

**Note:** If the reading is too high or unstable, adjust the trigger level by pressing the ± TRIG button repeatedly.

**5.15. RPM (TACH) Measurements**

- 5.15.1. Select the RPM range with the rotary switch.
  - 5.15.2. Select the X10 RPM range with the rotary switch. Multiply the displayed reading times by 10 to get the actual RPM.
  - 5.15.3. Press STROKE button (fig.1.12.) to select through RPM 4 for 4-stroke or RPM 2 for 2-stroke DIS.
- Note:** RPM4 for RPM of 4-stroke engines which have 1 ignition on every 4 engine strokes.  
RPM2 for RPM of DIS (Distributorless Ignition System) & 2-Stroke engines which have 1 ignition on every 2 engine strokes.
- 5.15.4. Insert the inductive pickup leads into the meter. Black lead into the negative "COM" jack and the red lead into the positive RPM jack.
  - 5.15.5. Connect the inductive pickup to a spark plug HT lead and press the ± TRIG button once. If no reading is received, unhook the clamp, turn it over and connect again.

**Note:** Connect the pickup as far away from the distributor and exhaust manifold as possible.

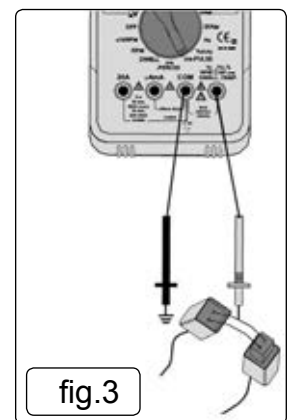


fig.3

Position the pickup to within six inches of the spark plug or move it to another plug HT lead if no reading or an erratic reading is obtained. The inductive pickup has an adjustable sensitivity switch that may also be used to correct an unstable reading.

#### 5.16. Dwell Angle Measurement

Dwell angle is the number of degrees through which the distributor cam rotates while the breaker points are closed.

- 5.16.1. Insert the black test lead into the negative "COM" jack and the red test lead into the positive "V" jack.
- 5.16.2. Turn the rotary switch to the dwell position.
- 5.16.3. Set number of cylinders with the CYL button (fig.1.11.).
- 5.16.4. Connect the black test lead to the Ground terminal (-) on the car battery and the red test lead to the contact breaker points or the negative (-) terminal of the ignition coil.
- 5.16.5. When the engine is started the Dwell will be displayed.

**Note:** To reduce the dwell angle reading the points gap must be increased, to increase the dwell angle the points gap must be reduced. Refer to your owners handbook for detailed procedures for dwell settings and adjustments.

#### 5.17. Other functions

- 5.17.1. Your meter is also capable of testing the following automotive sensors.

Oxygen Sensors  
Fuel Injectors  
Temp Sensors  
Position Sensors  
absolute pressure (MAP) and Baro Sensors  
Mass Air Flow (MAF) Sensors

- 5.17.2. For a detailed description and testing procedure for these sensors, please refer to the vehicles hand book.

#### 5.18. Windows® Application Program (fig.5.)


Software requirements: Windows® 7/8

Supplied with USB optically isolated cable and Windows® compatible software allowing the user to collect, display, plot and save data.

- 5.18.1. Insert the Drivers CD-ROM into the computer.
- 5.18.2. Connect the optical interface end of the lead to the TA203 device and fasten the screws.
- 5.18.3. Connect the USB end of the lead to a free USB port on the computer. Windows will find new hardware and the "Found New Hardware Wizard" will begin, to install the drivers using the Wizard please follow the steps below:
  - When asked "Can Windows connect to Windows Update to search for software?" select "No..." click "Next".
  - On the following screen select "Install from a list or specific location", click "Next".
  - Select "Don't search..." click "Next".
  - Scroll down the "Common hardware types" and highlight "Ports (COM & LTP)", click "Next".
  - Click the "Have Disk" Button, on the pop-up click "Browse" and browse to the CD drive in which the drivers disk has been placed then double click the "USB driver" folder. This will show 4 files. Click "Open" then "OK".
  - Under "Model" it should list "CP2101 USB Composite Device", click "Next".
  - The drivers for that device will be loaded onto the system. Click "Finish" when completed.
- 5.18.4. The computer will then find another device and the Wizard will begin again, follow the steps as above again to install the drivers for the second device. This time it should find a different device model called "CP2101 USB to UART Bridge Controller".
- 5.18.5. After driver installation, a new COM port will be added to the "Ports (COM & LPT)" section in the Device Manager. Within this section you will find a device called "CP2101 USB to UART Bridge Controller" and next to it in brackets will be the (COM#), remember this number for entry into the data logging application.
- 5.18.6. To install the logging application browse to the CD-ROM and double click "9995USB\_4.0.exe". Then follow these steps:
  - Click "Next" on the first screen of the setup Wizard, enter something in the "User" and "Company" fields, click "Next".
  - Leave the "Install 9995 to" location on "C:\Program Files\9995", click "Next".
  - On the next screen click "Next" and the same on the following screen.
  - The program will be installed, when done click "Finished".
- 5.18.7. To run the program go to "All programs" within the "Start" menu and find "9995" and select "9995.exe".
- 5.18.8. Click button "A" (Fig.5) to toggle between available COM ports until the COM# in window "B" (Fig.5) matches the number found in the device manager in step 5.18.5.

#### 5.19. Replacing The Battery

- ❑ **WARNING!** To avoid electric shock, disconnect the test leads from any source of voltage before removing the battery door.

- 5.19.1. When the battery becomes exhausted or drops below the operating voltage,  will appear in the right hand side of the display. Replace the battery.
- 5.19.2. Disconnect the leads from the meter.
- 5.19.3. Open the battery door by loosening the screw using a Phillip's screwdriver (fig.4).
- 5.19.4. Remove the old battery and insert the new one, observing the correct polarity.
- 5.19.5. Replace the battery cover and secure with the two screws.

- ❑ **WARNING!** To avoid electric shock, do not operate the meter until the battery cover is secured in place.

#### 5.20. Replacing The Fuses

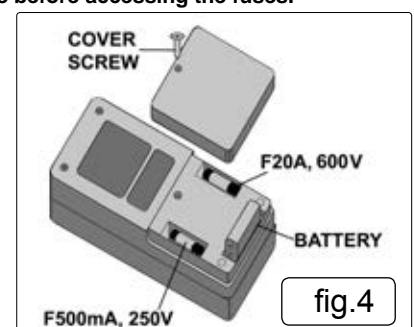
- ❑ **WARNING! To avoid electric shock, disconnect the test leads from any source of voltage before accessing the fuses.**

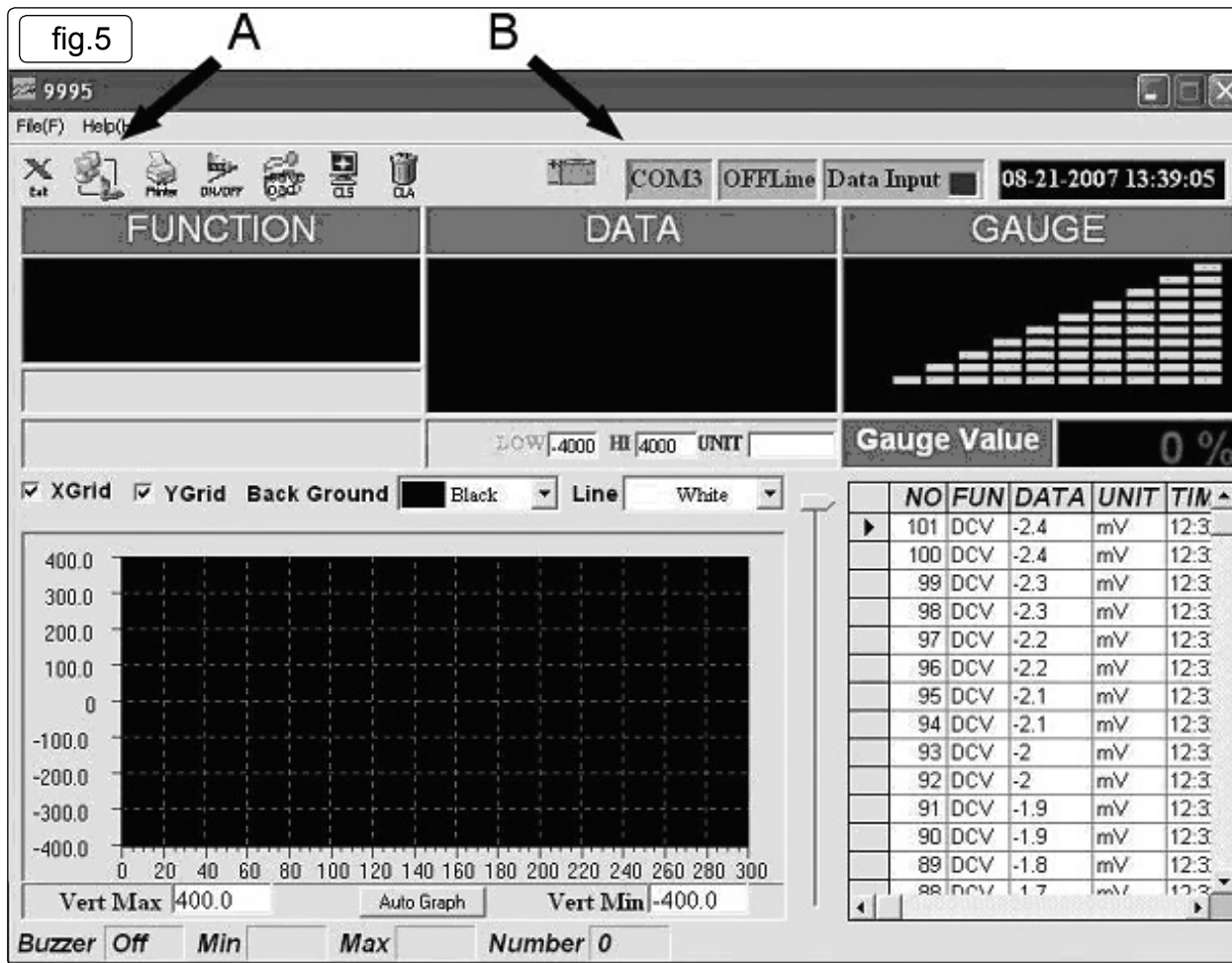
- 5.20.1. Disconnect the test leads from any item under test and disconnect them from the meter.
- 5.20.2. Open the battery door by loosening the screw using a Phillip's screwdriver.
- 5.20.3. Remove the old fuse from its holder by gently pulling it out.
- 5.20.4. Install the new fuse into its holder.

**Note:** Always use a fuse of the correct size and value.  
0.5A/250V fast blow for the 400mA range.  
20A/250V fast blow for the 20A range.

- 5.20.5. Replace the battery cover and secure with the screw.

- ❑ **WARNING!** To avoid electric shock, **DO NOT** use the meter until it has been fully re-assembled.





The program is now ready to capture data from the TA203.V2.

For more details on using the program please refer to the document located in "C:\Program Files\9995" called "9995.rtf".

## 6. MAINTENANCE

- ❑ **WARNING! DO NOT** attempt to repair or service your meter unless you are qualified to do so and have the relevant calibration, performance test, and service information. To avoid electrical shock or damage to the meter **DO NOT** get water inside the case.
- 6.1. Periodically wipe the case with a damp cloth and mild detergent. **DO NOT** use solvents.
- 6.2. Turn the meter off when not in use and remove the battery if stored for a long period of time.
- \* **DO NOT** store the meter in a place of high humidity or high temperature.



### ENVIRONMENT PROTECTION

Recycle unwanted materials instead of disposing of them as waste. All tools, accessories and packaging should be sorted, taken to a recycling centre and disposed of in a manner which is compatible with the environment. When the product becomes completely unserviceable and requires disposal, drain any fluids (if applicable) into approved containers and dispose of the product and fluids according to local regulations.



### WEEE REGULATIONS

Dispose of this product at the end of its working life in compliance with the EU Directive on Waste Electrical and Electronic Equipment (WEEE). When the product is no longer required, it must be disposed of in an environmentally protective way. Contact your local solid waste authority for recycling information.



### BATTERY REMOVAL SEE SECTION 5.19

Under the Waste Batteries and Accumulators Regulations 2009, Jack Sealey Ltd are required to inform potential purchasers of products containing batteries (as defined within these regulations), that they are registered with Valpak's registered compliance scheme. Jack Sealey Ltd Batteries Producer Registration Number (BPRN) is BPRN00705.

**Note:** It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.

**Important:** No Liability is accepted for incorrect use of this product.

**Warranty:** Guarantee is 12 months from purchase date, proof of which is required for any claim.

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