

Production Procedure

Gas Analyzer assembly 7900000



Parts List		
Qty	P/N	Description
1	7930002	Case – machined & with printing
1	7930004	Oxygen Sensor Adapter
1	0330214	'O' Ring - Thin
1	7930005	LCD
1	7930006	ON/OFF Switch
1	9730040	Calibration Potentiometer
1	7930007	Battery Lead
1	7930008	Input Connector
5	7930012	Cable Tie
2	7930013	Cable Saddle
1	7930019	Label, Rear Panel, serial number
Consumables:		
	7930009	Cable – Red
	7930010	Cable – Black
	7930011	Tinned Copper Wire – 0.71 mm
	0032310	Heat shrink tubing, black, 1.6mm x 20m
	0032312	Heat shrink tubing, black, 3.2mm x 20m
	7930014	Foam Insert – Battery Compartment – grey
	7930015	Foam Insert – Battery Compartment – black
	0050075	Cyanoacrylate Super glue, high performance – low odour, low bloom, 50g bottle
	0050070	Polyolefin Primer, 10g bottle.
	7950001	UHU Power Adhesive, 33ml

Potentiometer assembly

Cut red wire (7930009) and black wire (7930010) to 6.5cm, strip 0.5cm from both ends of each and tin the wires.

Solder red (LHS) and black (RHS) wires to the sensor connector. Fit 1.0cm strips of heat shrink tubing (0032310) to both individual cables, slide over the terminals and shrink the heat shrink tubing. Then fit 1.5cm strip of heat shrink (0032312) over both the cables, shrink the heat shrink tubing.

Cut red wire (7930009) to 11.0cm and strip back 0.5cm from both ends, tin the wires.

Cut black wire (7930010) to 10.00cm and strip back 0.5cm from both ends, tin the wires.

Solder red – connector wire to the potentiometer LHS terminal.

Solder the red loose cable to the upper centre potentiometer terminal.

Solder the black – connector wire and the black loose wire to the potentiometer RHS terminal.

Use 1.00cm strips (0032312 LHS & centre and 0032310 to RHS) of heat shrink to cover the potentiometer terminals, shrink the heat shrink.

LCD preparation

Short link **J1** using solder.

Using tinned copper wire short together:

a) Two terminals: **VDD** (2nd from LHS) and **DP2** (4th from LHS). Ensure that the link doesn't touch **DP1** solder pad.

b) Four terminals: **COM**, **RFL**, **INLO**, **ROL**.

c) Two terminals: **RFH**, **ROH**.

NOTE: Fit the shorting links to the display side (underside) of the PCB.

Case preparation

Drill two pilot holes in rear casing, one either side: 25 mm from the top and centered. Use existing template.



Pilot hole diameter: 1 mm

NOTE: green label for illustration purposes only

Stick black sealing strip (7930015) to the grey strip (7930014) and cut to 3.2cm lengths. Fit sealing strips to the battery compartment.

Fit switch to the case (**0** to the facing bottom of the case) – use primer and cyanoacrylate to secure. Allow 1/2hr to dry.

Fit oxygen sensor adapter to the front of the case – use primer and cyanoacrylate. Allow 1/2hr to dry. NOTE: use an old oxygen sensor to aid alignment and to secure whilst drying.

Affix 'O' ring to the oxygen sensor adapter.

Battery cable assembly

Securely affix cable tie at 4.0cm from the connector.

Cut red cable at 8.5cm and strip wire back by 0.3cm, tin the wire.

Fit 1.0cm strip of heat shrink tubing (0032312) onto the red wire and solder the red wire to the switch (lower terminal). Slide the heat shrink over the terminal and shrink.

Final assembly

Cut red wire (7930009) to 8.5cm, strip 0.5cm from both ends of each and tin the wires. Fit 1.0cm strip of heat shrink tubing (0032312) onto the red wire and solder the red wire to the switch (upper terminal). Slide the heat shrink over the terminal and shrink.

Fit potentiometer assembly.

Solder wires to the LCD:

Black battery lead to **VSS**

Red switch wire to **VDD**

Black potentiometer assembly wire to **INLO**

Red potentiometer wire to **INH1**

Using test sensor ensure that the unit is working correctly. Fit and secure LCD using UHU Power Adhesive (7950001).

NOTES:

1 sided gluing. Apply adhesive to one side and press together.

If strong initial bond is required and to prevent solvent leaking - use two sided (contact) gluing:

Coat both sides to be glued. When touch dry (after approximately 10 minutes) press together briefly and vigorously.

CAUTION: Irritant, highly flammable.

Allow assembly to dry for >1hr.

Fit two cable saddles (7930013) to the case, one aligned with DP2 terminal and the other aligned with the RFH terminal. Secure the cable assemblies in the cable saddles.

Fit cable ties (7930012) to cable assemblies:

- a) Two to the potentiometer cable.
- b) Two to the battery cable.
- c) One between the two cable saddles

Affix serial number label (7930019) to the case rear panel.

Assemble case and carry out functional test.

Without sensor installed unit should read **0.00**. With test sensor installed and potentiometer fully clockwise (+ve), display should read 25.00 +/- 2.00.

Clean case with silicone polish and place in plastic bag. Affix tracking label to plastic bag (XX).

