SERVICE INFORMATION ADDENDUM

TED OXYGEN ALARM MONITORS

INSTRUMENTS COVERED:

TED 60J

TELEDYNE ELECTRONIC DEVICES
16830 CHESTNUT STREET
CITY OF INDUSTRY, CALIF., 91748
TELEPHONE (818) 961-9221 - (213) 283-7181
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REVISED 5/7/87

ADDENDUM - TED 60J

SENSOR ATTRIBUTES

MINI-MICRO-FUEL CELL (J-1)

The Mini-Micro-Fuel Cell has its temperature compensating thermistor built in for optimum temperature tracking. This thermistor is placed in the negative feedback loop of U2. This amplifier converts the non-compensated cell current into a temperature compensated voltage. NOTE: When exposed to 100% oxygen the Mini-Micro-Fuel Cell produces a current of 2.281 mA (±25% - ±45%).

The voltage output of U2 is further amplified by U3. This amplified voltage drives the span pot which in turn drives the LCD display circuitry.

Refer to the TED 60J Schematic provided.

SENSOR INSTALLATION OR REPLACEMENT

CAUTION:

Do not scratch, puncture, or otherwise damage the sensor's membrane. Damage to the membrane will require sensor replacement. NEVER PRESS ON THE SENSING SURFACE; you might damage the sensor.

Micro Fuel Cell

1. Remove the new Micro-fuel cell from its protective bag. Carefully remove the shorting clip FROM THE MEMBRANE SIDE FIRST, so that you don't damage the membrane (for the Mini-Micro-Fuel cell remove the shorting strap, if present).

2. Unscrew the holder cap from the sensor holder, and remove the previous Micro-fuel Cell, if one is present.

3. Place the new Micro-fuel Cell inside the sensor holder with the cell's membrane surface facing outward, and the electrical contacts facing inward.

4. Screw the cap back onto the sensor holder.

5. Check to see that the sensor cable is plugged into its receptacle at the analyzer.

REFERENCE DRAWINGS

Schematic	B-40579
Final Assembly (shows wiring)	C-40575

SPECIAL INSTRUCTIONS FOR MODEL TED 60J

Refer to the TED 60J drawings at the rear of the service manual.

The TED 60J uses a special Mini-Micro-Fuel cell.

At the top end of the instrument are located the power switch and the span control.

Although the span control resembles a pushbutton, it is actually a small potentiometer which can be adjusted , when the sensor is exposed to air or span gas, to cause the LCD meter to read the oxygen concentration of air or of the span gas. To adjust the span control, gently turn it with your finger tip.

The power switch has two positions: OFF (rocked to the left); and ON (rocked to the right). Place the switch in the "ON" position and proceed with normal operation. Allow 1 minute or less for the sensor to stabilize. Set the meter to 21% for typical air concentration (20.9%). For 100% oxygen concentration set the meter to 22% - 100%.

The electronics circuit contains three integrated circuit amplifiers, all of which are IC # UA776. If a problem is suspected in any of the IC circuits, a convenient and economical troubleshooting procedure would be to replace all three IC's with new ones.

Other troubleshooting steps would involve checking the instrument with a sensor and battery that are known to be good. Replacement of the good sensor with the original one will indicate if the original sensor is faulty: span the instrument on 100% oxygen, then check it again with the sensor exposed to air. A faulty sensor will probably not indicate the correct oxygen concentration of air (20.9%). The meter indication should be 21 $\pm$ 1 %

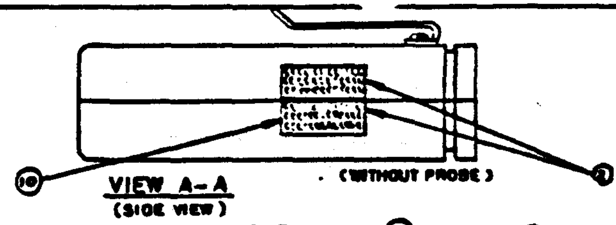
To replace the battery, simply open the cover at the back of the instrument, replace with a 9 volt battery and reclose the cover.

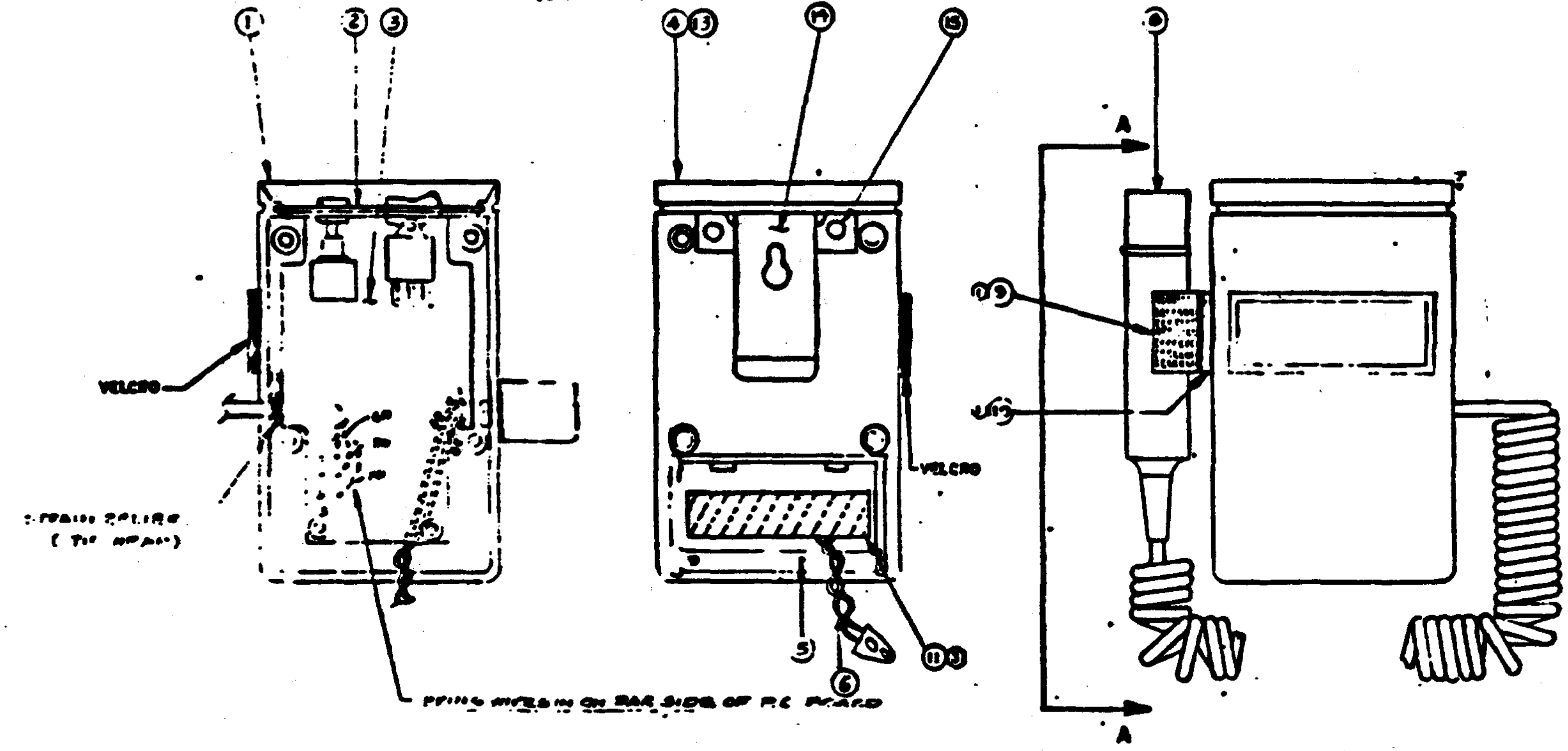
To gain access to the electronics, disassemble the unit by removing the four case screws in the back cover.

PARTS LIST FOR MODEL TED-60J

PART #	DESCRIPTION
A- 53	INTEGRATED CIRCUIT - #UA776
A-38607	BEZEL
A-40581	FRONT PANEL
A-40679	CASE, UPPER HALF
B- 56	CLIP AND WIRE, BATTERY
B- 326	BATTERY, 9V
B-40578	ASSEMBLY, PC BOARD
B-40577	SUB-ASSEMBLY, PROBE
C- 461	47 MICRO-FARAD CAPACITOR
C- 937	CLIP
C-40680	CASE, LOWER HALF
D- 62	DIODE # 1N4148
D- 212	LCD DISPLAY (W/A-38607 BEZEL)
K- 39	CAP
P- 509	POT, 100 K, # P486 CLAROSTAT
R- 313	49.9 K, 1/8 W,1% RESISTOR
R- 500	4.99 MEG, 1/8 W, 1% RESISTOR
R- 502	499 K, 1/8 W, 1% RESISTOR
R- 512	200 K, 1/8 W, 1% RESISTOR
R- 514	1 MEG, 1/8 W, 1% RESISTOR
R- 659	11.0 K, 1/8 W, 1% RESISTOR
R- 681	30.9 K, 1/8 W, 1% RESISTOR
R- 905	931 K, 1/8 W, 1% RESISTOR
R- 921	RESISTOR 750 K, 1/8 W, 1%
R- 987	61.9 K, 118 W, 1% RESISTOR
S- 208	DIP SOCKET, 8 PIN
S- 777	2 POSITION ROCKER SWITCH
T- 648	TRANSISTOR # 2N4393

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	1	[illegible]	INITIAL RELEASE	[illegible]
[illegible]	2	[illegible]-13-[illegible]	[illegible]	[illegible]
–	3	[illegible]	ECO # [illegible]	[illegible]
[illegible]	4	[illegible]	ECO # 87-0030 M	[illegible]
[illegible]	5	3-26-87	ECO # 87-0040 M	[illegible]





1 NOTE: ATTACH VELCRO PARTS AS SHOWN

(12) ON CASE VELCRO CUT SO CASE CAN BE TAKEN APART.

(13) INSTALL FOAM TAPE 1/8" THK. X 1/2" WIDE X 2" LONG ON BACK OF BATTERY COMPARTMENT.

4 J4 MINI-MICRO FUEL CELL ASSY IS PACKAGED SEPARATELY AS ITEM 32 — SEE A40060, MINI-MICRO FUEL CELL IS NOT INSTALLED, BUT IS SHIPPED WITH EACH UNIT.

5 BATTERY IS NOT INSTALLED, BUT IS SHIPPED WITH EACH UNIT.

6 T-ADAPTER (A101) IS PACKAGED SEPARATELY AS ITEM 29 AND SHIPPED WITH THIS ASSEMBLY.

7 INSTRUCTION BOOKLET IS PACKAGED SEPARATELY, AS ITEM [illegible], AND SHIPPED WITH THIS ASSEMBLY.

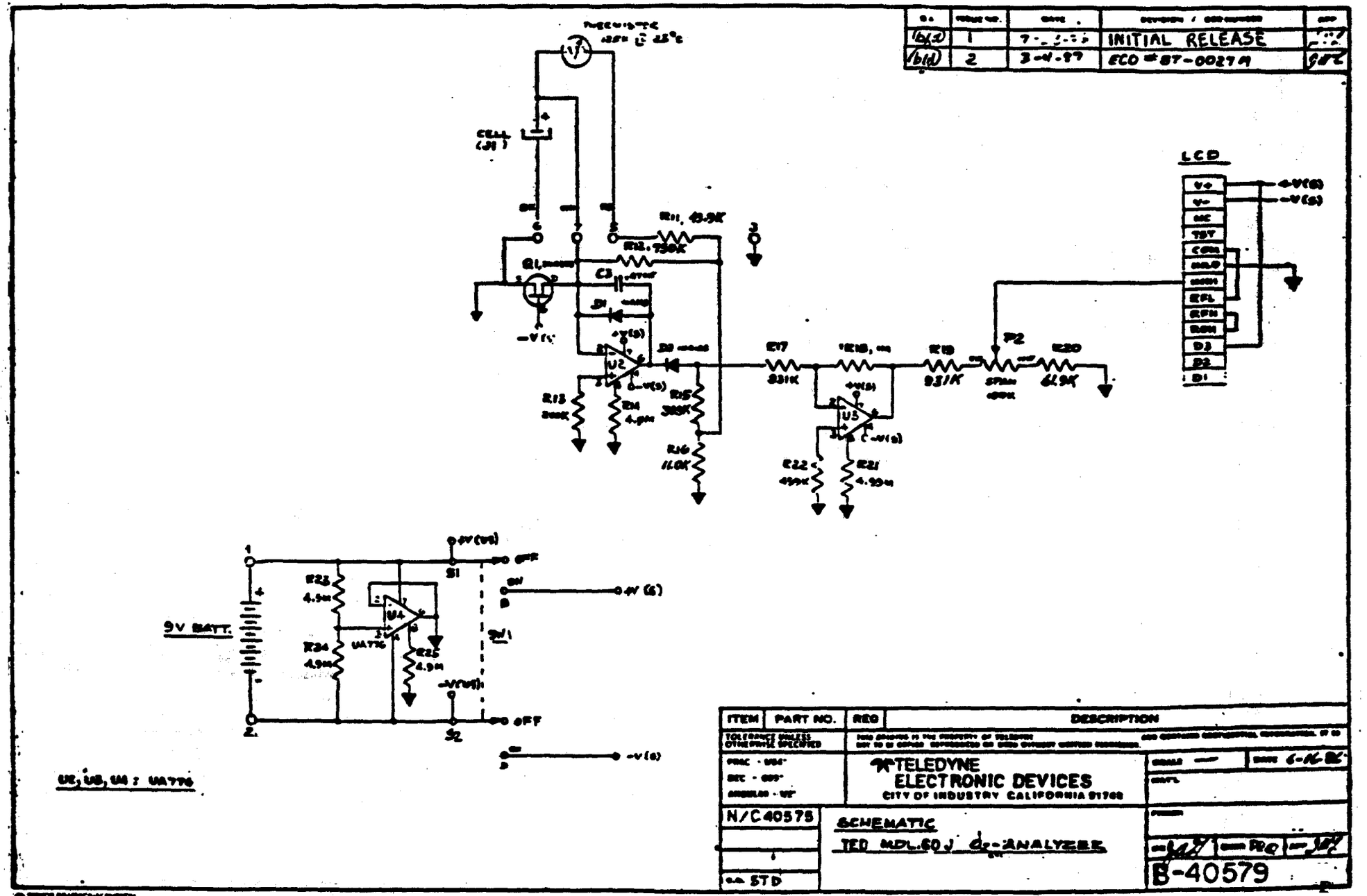
ITEM	PART NO.	REQ	DESCRIPTION

TELEDYNE ELECTRONIC DEVICES

ASSEMBLY, FINAL TED MDL 60-1 O_2 ANALYZER

SEE PARTS LIST

C-40575



(SIMILAR TO: 38120)

Typical voltages to be expexted
using Oxycal @ 21%

NB colours may change

5--- Yellow

6-- Green

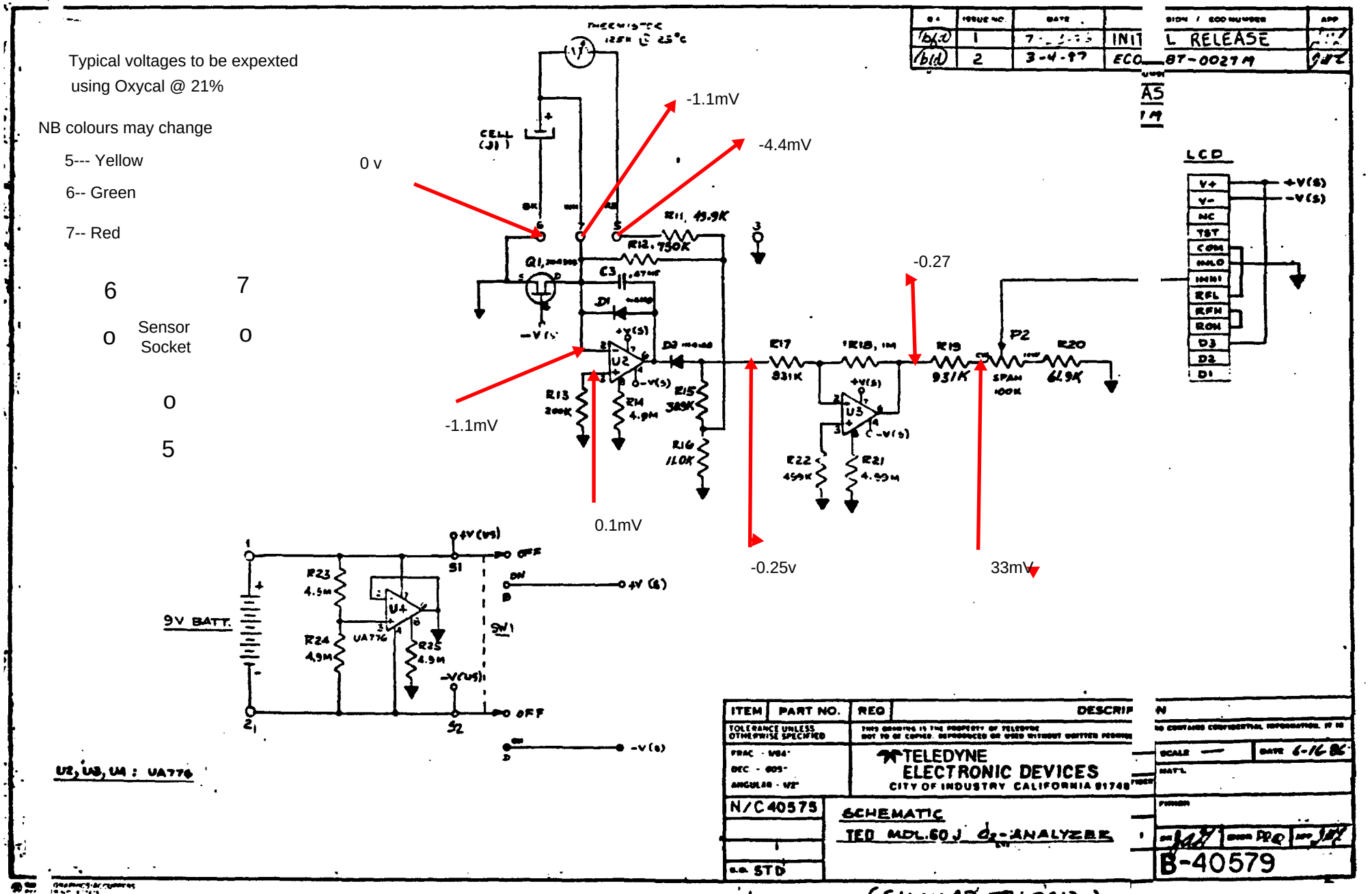
7-- Red

6 7

o Sensor Socket o

o

5



ITEM	PART NO.	REQ	DESCRIP
TOLERANCE UNLESS OTHERWISE SPECIFIED			
FRAC - 1/64" DEC - .005" ANGULAR - 1/2°			
N/C 40575			
STD			

TELEDYNE ELECTRONIC DEVICES
CITY OF INDUSTRY CALIFORNIA 91748

SCHEMATIC
TED MDL 60J O_2-ANALYZER

B-40579

(SIMILAR TO: 38120)