

DA	ISSUE NO.	DATE	REVISION / ECO NUMBER	APP
<i>1/1</i>	3	10-29-90	ECO # 90-036014	4
	4	1-6-91	ECO # 90-04174	0

B-66024.

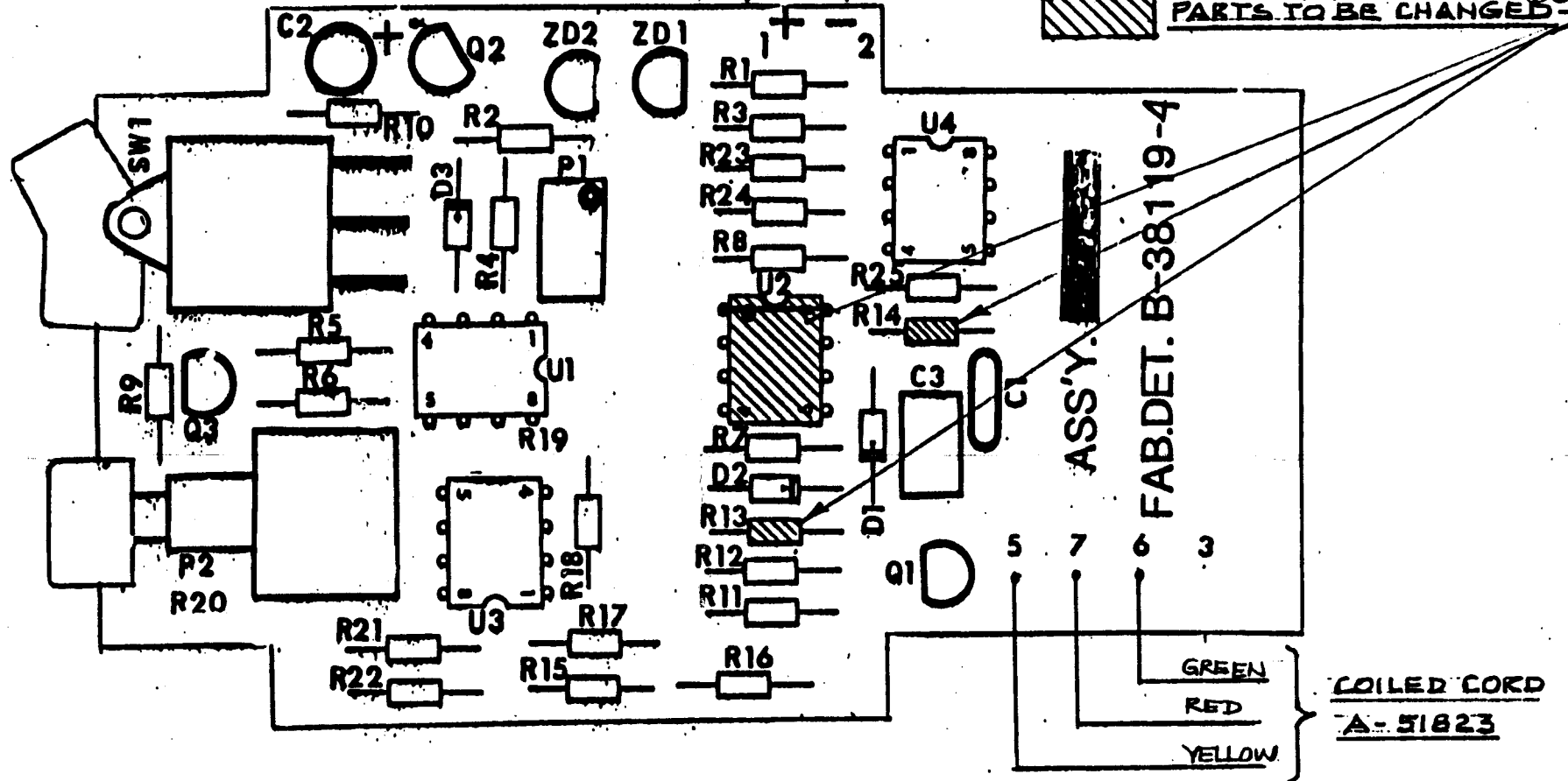
6	1	B-52365	N/A	SCHEMATIC	TED B-40579
5	1	A-268	N/A	"T" ADAPTER	MARQUEST 17-8510 OR EQUIV.
4	1	A-51327	N/A	SENSOR CLASS T-7	TED A-51327
3	1	A-51823	N/A	CABLE COILED CORD	TED A-51823
2	1	R644	R13	RES 28.7K 1% 0.125W HF	RN5502872F
1	1	1268	U2	IC OP-AMP PRECISION MICROPPOWER	LINEAR TECH LT1077CNS
ITEM NO.	Q T Y	TAI PART NUMBER	SCHEMATIC REFERENCE	ITEM DESCRIPTION	MANUFACTURERS PART NUMBER

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FRAC. $\pm 1/64"$ DEC. $\pm .005"$ ANGULAR $\pm 1/2^\circ$		 TELEDYNE ELECTRONIC DEVICES CITY OF INDUSTRY, CALIFORNIA 91748	
		SCALE $\frac{1}{1}$	DATE 10-29-90
		MATERIAL	
		FINISH	
		DR	ENGR PH APP JWH
S.O.		A-51824 SH10F5	

**QUALITY ASSURANCE
APPROVAL REQUIRED!**

TED 60J CLASS T-7
SENSOR MODIFICATION KIT

QA	ISSUE NO.	DATE	REVISION / ECO NUMBER	APP
<i>My</i>	1	9-21-90	INITIAL RELEASE	<i>DWH</i>
<i>My</i>	2	10-17-90	ECO# 90-0349M	<i>DWH</i>
<i>My</i>	3	10-25-90	ECO# 90-0360M	<i>DWH</i>
	4	1-16-91	ECO# 90-0417M	<i>DWH</i>
PARTS TO BE CHANGED				



ITEM	PART NO.	REQ	DESCRIPTION
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FRAC. $\pm 1/64"$ DEC. $\pm .008"$ ANGULAR $\pm 1/2^\circ$			TELEDYNE ELECTRONIC DEVICES CITY OF INDUSTRY, CALIFORNIA 91748
TED 60J			SCALE 2:1
CLASS T-7			DATE 8-17-90
SENSOR MODIFICATION KIT			MAT'L
			FINISH
			DR 9
			ENGR AT
			APP <i>DWH</i>
			A-51824 SH 2 OF 5

**QUALITY ASSURANCE
APPROVAL REQUIRED!**

TED 60J MODIFICATION INSTRUCTIONS

QA

ISSUE NO.

DATE

REVISION / ECO NUMBER

APP

4

1-16-91

ECO 90-0017M

KSO

The enclosed modifications are provided for users who wish to modify their existing TED 60J to use the optional T-7 sensor. These modifications are to be performed by the qualified technical personnel only.

Tools Required

- A. Small-Bladed Screwdriver
- B. 45 Watt Soldering Iron
- C. 60/40 Rosin Core Solder
- D. Solder Wick or equivalent
- E. Alcohol (Board Cleaning)
- F. Small Wire Cutter

Disassembly

1. Turn the power switch to the "OFF" position.
2. Place the instrument on the padded work-bench with the battery compartment facing up.
3. Open the battery compartment, disconnect and remove the battery.
4. Remove the four screws on the back half of the case.
5. Lift the back half of the case up and set aside.
6. Carefully lift the PCB assembly from the front half of the case and set the front panel aside.

* Yellow to position 5
Green to position 6
Red to position 7

**QUALITY ASSURANCE
APPROVAL REQUIRED**

ModificationRef: Drawing A-51824

1. Unsolder the three wires of the coiled cord from pins 5, 6, and 7 and remove excess solder. Clean the pins with alcohol.
2. Unsolder resistor R-13 and remove excess solder from the board. Clean the board with alcohol.
3. Remove R-14 by cutting or unsoldering. This position is not used and will remain open.
4. After grounding yourself, remove the Op-Amp labeled MC1776 from the socket labeled U2.
5. Install the new Op-Amp LT1077CN8 into the socket labeled U2 noting the proper key orientation as depicted on the drawing. Make sure all leads are securely seated in the socket.
6. Mount the 28.7K ohms resistor marked "2872" or color coded red, gray, violet, red, brown into position R-13 and solder in place. Clean the board with alcohol.
- * 7. Solder the sensor cable leads onto the P.C.B. as follows:

Note: Make sure there is no solder bridges between 5, 6, or 7 and the ground plane on the solder side of the board.

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					MAT'L	
			FINISH			
			DR			
			ENGR <i>DO</i>			
			APP			
			A-51824			

TED 60J

CLASS T-7

SENSOR MODIFICATION KIT

Modification (Cont)

QA	ISSUE NO.	DATE	REVISION / ECO NUMBER	APP
44	3	10-24-90	ECO # 90-0360 R1	DWT

Clean area with alcohol.

Caution: The sensor cable wires are thin and therefore subject to fatigue and breaking. Handle the P.C. board with care.

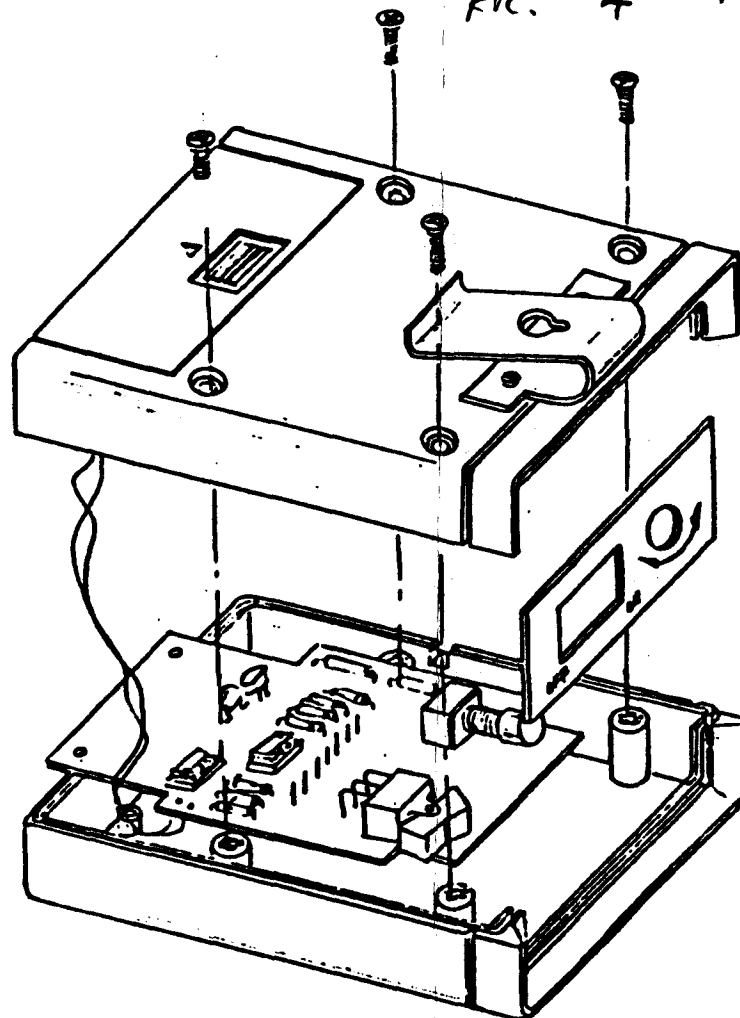
- Place the control panel over the ON/OFF switch and the calibration knob located at the end of the PCB.
- Slide the control panel into the grooves in the front half of the case. Make sure that the LCD is properly aligned with the LCD window.
- Place the coiled cord in the cord groove. Make sure that the cord's strain relief is on the inside of the case.
- Install the back half of the case over the control panel, making sure the grooves are properly aligned.
- Secure the case with four screws, do not overtighten.
- Reconnect the battery observing proper polarity and close the battery compartment.
- Plug the telephone jack on the coiled cord, into the jack receptacle on the back of the T-7 sensor.

Test and Calibration

- Turn the unit to the ON position. The display will show a number which will stabilize at some value.
- Subject the sensor to 100% oxygen using the T-adapter provided with the kit. Be sure to install at least 6" of tubing on the exhaust side of the T to prevent backfilling with air. Do not exceed a flow rate of 5 liters per minute.
- When a stable reading is observed on the LCD, adjust the "calibrate" control knob until a reading of 100% is displayed.
- Expose the sensor to air. (If room air is used, remove sensor from the T-adapter and unscrew the flow diverter from the end of the sensor.) Allow the reading to stabilize. The LCD should read between 20% and 22% oxygen. If the reading is other than indicated, repeat steps 16 and 17 and remove the unit to a well-ventilated area to verify proper operation of the instrument.
- The modification is now complete. Please correct your records to reflect the change and attach the enclosed circuit schematic with the unit's instruction manual. Service manuals should also be updated at this time.
- The unit is now ready for use.

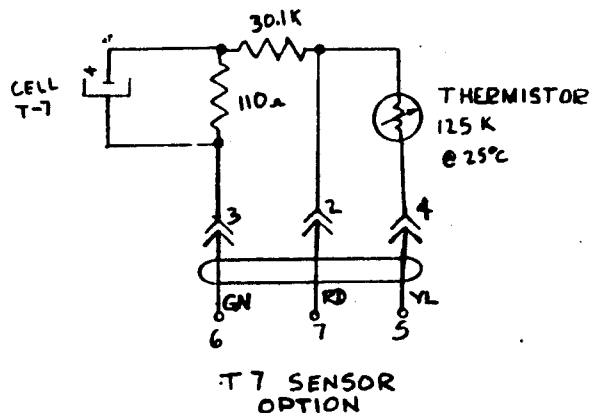
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		SCALE  DATE 10-29-90 MAT'L  FINISH  DR  ENGR  APP  A-51824 SH. 4 of 5	
S.O.		TED GOJ CLASST-7 SENSOR MODIFICATION KIT	

QA	ISSUE NO.	DATE	REVISION / ECO NUMBER	APP
<i>MLP</i> KVC.	1 4	10-29-90 1-16-91	Initial Release ECO # 90-0417	NO NO

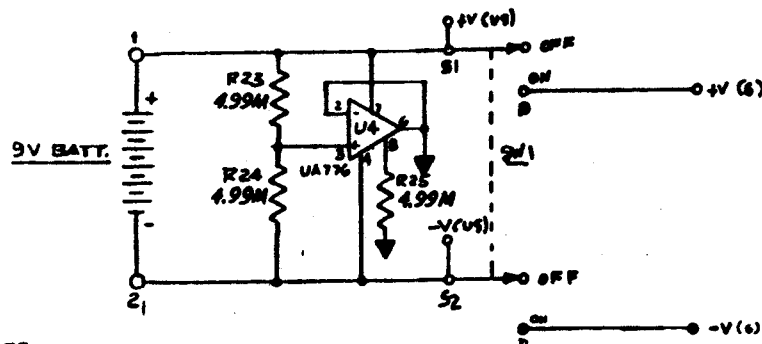


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		TED GO J		DATE 10-29-90
		CLASS T-7		
		SENSOR MODIFICATION KIT		
		DR 		ENGR APP
				FIG 1

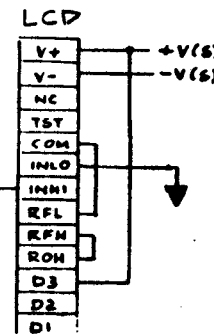
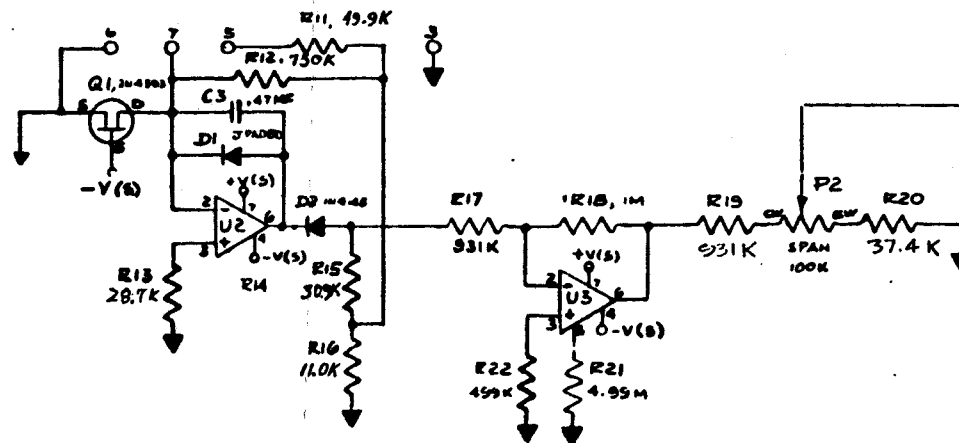
**QUALITY ASSURANCE
APPROVAL REQUIRED!**



output @ 21% 4 MicroAmps



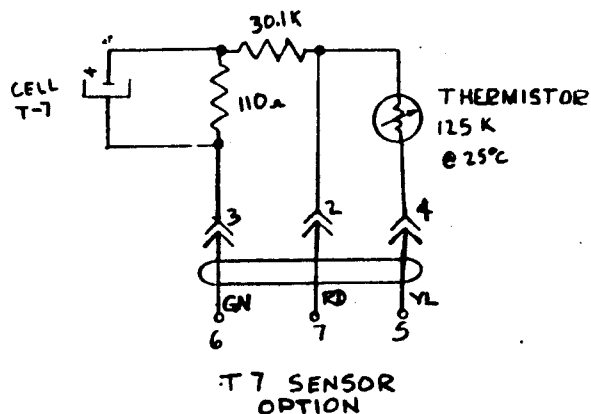
U2 : LT1077
U3, U4 : UA776



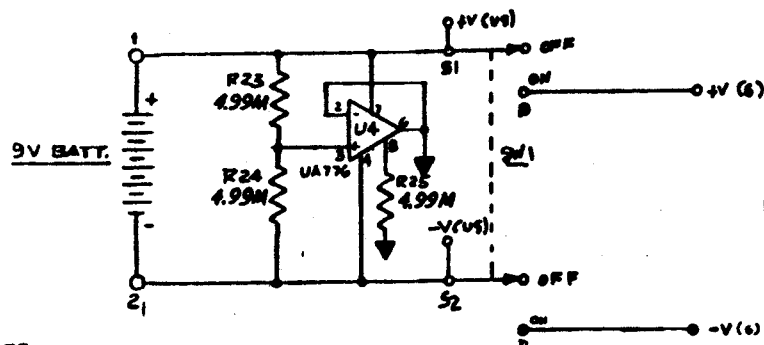
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FRAC - 1/64"		 TELEDYNE ELECTRONIC DEVICES CITY OF INDUSTRY CALIFORNIA 91748	SCALE —	DATE
DEC - .005"			MAT'L	
ANGULAR - 1/2"				
N/C 40575		<u>SCHEMATIC</u>		
		TED MDL.60 J. O ₂ ANALYZER		
		RETEOFIT		
.. STD.		(MODIFIED FOR T-7 SENSOR)		
		FINISH		
		DR 	ENGR	
		APP		
		B-52367		

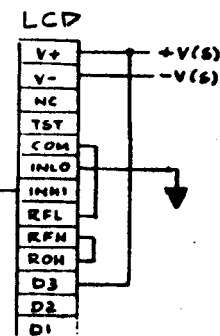
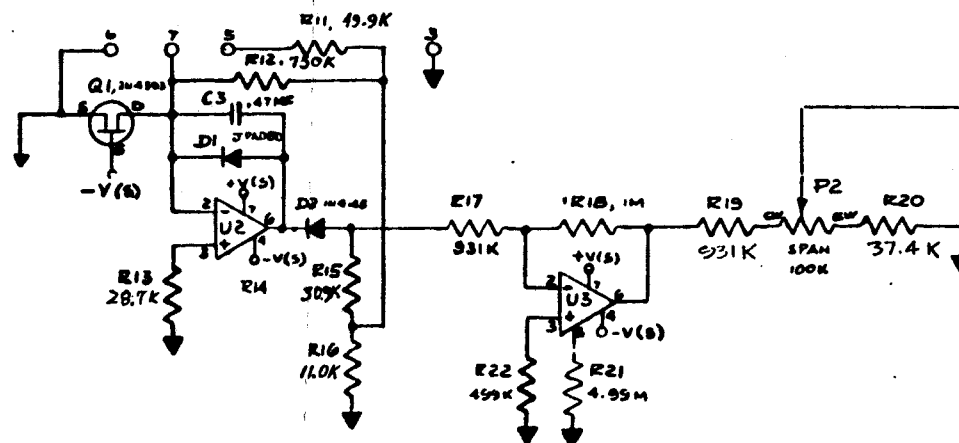
(SIMILAR TO 8-40575)



output @ 21% 4 MicroAmps



U2 : LT1077
U3, U4 : UA776



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FRAC - 1/64"	TELEDYNE ELECTRONIC DEVICES CITY OF INDUSTRY CALIFORNIA 91748		SCALE - 1"
DEC - .005"			DATE
ANGULAR - 1/2"			MAT'L
N/C 40575	SCHEMATIC		FINISH
	TED MDL.60J. O ₂ ANALYZER		DR. JAH
	RETEOFIT		ENGR
	(MODIFIED FOR T-7 SENSOR)		APP
STD.	(SIMILAR TO 8-40570)		B-5236