TELEDYNE
ELECTRONIC TECHNOLOGIES
Analytical Instruments
An Allegheny Teledyne Company

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FAX

Date: 05 January 1999

To:	Jean Lamb	**From:**	Al Marchesi
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Fax No:	011-441-535-635582	**Page(s):**	3
Phone:	011-441-535-634900	**cc:**	
Subject:	Non-Magnetic sensors for Military		

(x) Urgent (x) For Review (x) Please Comment ( ) Please Reply ( ) Please Recycle

Dear Jean,

Thank you for your call this morning. I hope your Holidays were very pleasant and may the New Year be very successful for you and John.

In regards to the Non-Magnetic sensors; I am enclosing the drawings on the two sensors that are being used by the Military at this time. The R10 is a specified sensor for the Mark series diving gear for the US Navy. The NAVSEA drawing numbers are referenced on this Spec. Control Drawing. The C6NM is used by the Canadian Navy and is smaller in size.

I would like to note that we can make the R22 sensor into a Non-Magnetic sensor as well but we do need lead time (about 6 weeks).

The pricing for the R-10 would be about $100 each in quantities of 500 delivered over one year with confirmed delivery dates. The C6NM is $42 in quantities of 500 delivered over one year. We can also make the R22 Non-Magnetic with an increase in price of $8 each with quantity commitment.

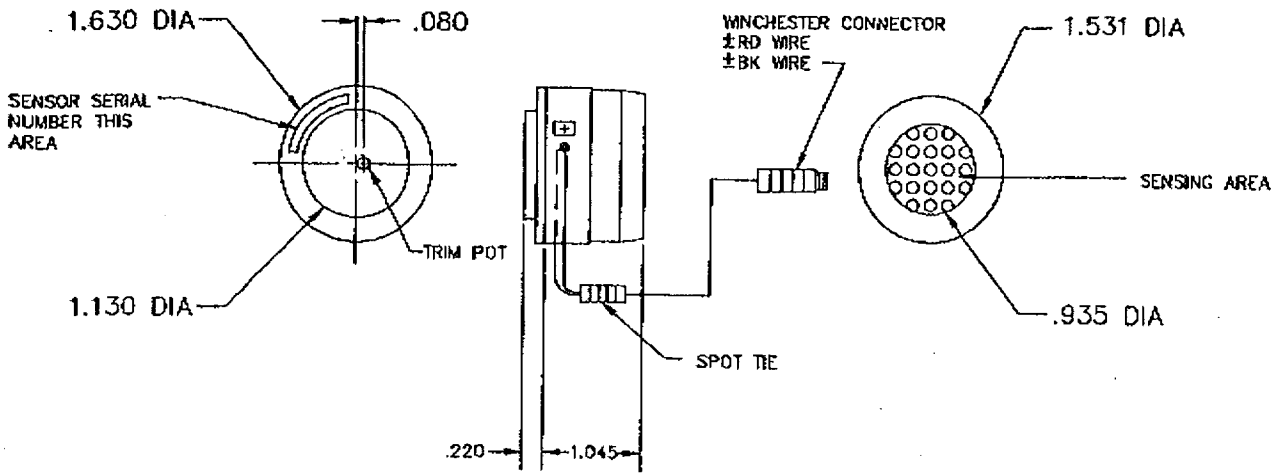
Please let me know what you want to do with this program. The only issue on the R22 is that drawings must be generated for the change in the sensor and this leads to a six-week lead-time.

I hope this answers your needs and we can increase your sales significantly. I will be looking forward to your response.

Best Regards,

Al Marchesi
OEM Manager

Q/A	ISSUE NO.	DATE	REVISION/ECO NUMBER	CHK'R
	1.	9/24/97	INIT. RLSE.	



R-10 SPECIFICATIONS

1. OUTPUT IN AIR SET TO 25 ±2 MV INTO A 6K LOAD AT SETTING TEMPERTURE PRESSURE.
2. RANGE 0-100% OXYGEN (0-1 ata P02).
3. RESPONSE TIME: 90% IN 30 SEC @ 25 DEG C.
4. OPERATING TEMPERATURE RANGE: 0-40 DEG C (32-104 DEG F).
5. CELL WARRANTY 12 MONTHS. EXPECTED LIFE IN EXCESS OF 13 MONTHS.
6. HUMIDITY 0 TO 95% RH.
7. STORAGE TEMPERATURE 0 DEG TO 50 DEG C (32 DEG TO 122 DEG F).
8. ACCURACY WITHIN ± 2% OF FULL SCALE AT CONSTANT TEMPERATURE AND PRESSURE. ± TBA OVER THE OPERATIONAL TEMPERATURE.
9. OFFSET VOLTAGE: LESS THAN 0.25 MILLIVOLT IN N2 AT 25 DEG C AT 1 ata.
10. LOAD 6K

NOTES:

1. ALL COMPONENTS ARE COMMERCIAL GRADE. TO BE ASSEMBLED USING GOOD MANUFACTURING PRACTICES AND TAI QUALITY ASSURANCE PROCEDURES.
2. ASSEMBLY TO BE MANUFACTURED WITH NON-MAGNETIC MATERIALS. VERIFICATION OF MAGNETIC SIGNATURE BY OTHERS.
3. ASSEMBLY MAY CONTAIN PVC , POLYETHYLENE OR RTV (SILICONE RUBBER) MATERIALS.
4. ALL SOLDERING WILL BE DONE IN ACCORDANCE WITH TAI SOLDERING PROCEDURE P3.3.
5. NAVSEA DWG NO. 6195835 , 6195888 , 6195889 , 6196145 , 619644 , 6196143 , SHALL BE USED AS REFERENCE DOCUMENTS ONLY. TAI TAKES EXCEPTION TO ALL MIL-SPEC STANDARDS AND FAR CLAUSES REFERENCED IN THESE DOCUMENTS.
6. ABOVE ASSEMBLY TO BE PACKAGED IN A 4 X 5" GAS BARRIER BAG AND HOUSED IN A GLASS JAR WITH FOAM PADDING ON ALL SIDES (NOT SHOWN). REF TAI DRAWING B-38204-R10.
7. THE ABOVE NOTES ARE AN INTREGAL PART OF THE SPECIFIATIONS AND CANNOT BE ALTERED WITHOUT THE WRITTEN PERMISSION OF TELEDYNE.

TAI REFERENCE DWG B-38204-R10

TOLERANCES UNLESS OTHERWISE SPECIFIED
DO NOT SCALE DWG
DEC X ± .01
XX ± .02
XXX ± .005
BREAK EDGES .02

TELEDYNE ANALYTICAL INSTRUMENTS
CITY OF INDUSTRY, CALIFORNIA 91748

SCALE 1/1 | DR LN | CHK'R | APP'D | MATERIAL | FINISH

OXYGEN FUEL CELL
CLASS R10
SPEC CONTROL DWG.

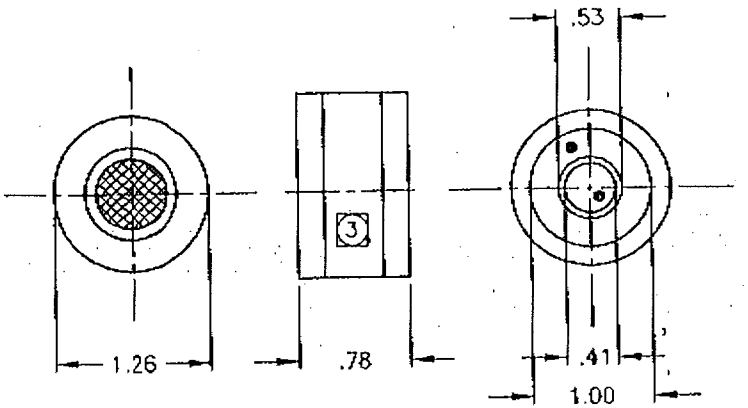
C-54961 REV 1

DATE 9/30/97 | SHEET 1 OF 1

NOTES: UNLESS OTHERWISE SPECIFIED.

1. BACKPLATE POLARITY: CENTER FOIL NEGATIVE (−)
   OUTER FOIL POSITIVE (+)
2. ASSEMBLY PACKAGED IN A GAS BARRIER BAG.
3. LABEL A10084R RED
4. .XX = ±.010

REVISIONS				
REV	DESCRIPTION	DATE	APP.	REV. BY
2	ECO# 93-267	08/06/93	JML	--
3	ECO# 96-0713	6/11/97	M.L.	JCR



SPECIFICATIONS:

1. OUTPUT – 200 ±40 uA IN AIR AT 25°C, SEA LEVEL.
2. RANGE – 0–100% OXYGEN (MAX), 0–1% OXYGEN (MIN).
3. ACCURACY WITHIN ±1% OF FULL SCALE AT CONSTANT TEMPERATURE AND PRESSURE.
4. RESPONSE – TIME LESS THAN 7 SECONDS FOR 90% OF FINAL VALUE.
5. OFFSET – ≤ 0.5% OXYGEN EQUIVALENT AT 25°C (77°F) IN ZERO GAS AFTER 42 SECONDS.
6. HUMIDITY – 0–99% R.H. (NON-CONDENSING)
7. OPERATING TEMPERATURE RANGE – 0–40°C (32°–104°F)
8. TEMPERATURE COEFFICIENT OF 2.5% /°C AT 25°C.
9. STORAGE TEMPERATURE – 0–50°C (32°–122°F).
10. AVG EXPECTED CELL LIFE – 18 MONTHS IN AIR @ 25°C AND 50% R.H.
11. C6NM (NON-MAGNETIC) – SPECIAL CONFIGURATION CONTAINING NO MAGNETIC MATERIALS (EG NICKEL)
12. MOTION SENSITIVITY – ≤±2% OF READING (WORST CASE)
    TYPICAL ≤±5% OF READING AT ±25°C

DO NOT SCALE DWG		THIS DRAWING IS THE PROPERTY OF TELEDYNE ANALYTICAL INSTRUMENTS AND CONTAINS CONFIDENTIAL INFORMATION. IT IS NOT TO BE COPIED, REPRODUCED OR USED WITHOUT WRITTEN PERMISSION.
TOLERANCE UNLESS OTHERWISE SPECIFIED: ANGULAR ±1/2° LINEAR { X = ±.1, XX = ±.02, XXX = ±.010		Teledyne Analytical Instruments A business unit of Teledyne Electronic Technologies CITY OF INDUSTRY, CALIFORNIA 91748
SIGNATURES	DATE	TITLE: SPEC CONTROL DWG OXYGEN SENSOR CLASS C6NM
N/		
I/ DRFT: M. VENEGAS	08/06/93	SCALE NONE
P/ CHK:		SIZE NONE
O/ APPR:		SHEET 1 OF 1
F/ ENGR: JAY LAUER		
REFERENCE S.O.:		MATL. NOTED
CAD I.D. B53204-3		DWG NO. B-53204 REV 3