

Technical Bulletin # 24

To: Coulometrics Support Personnel

From: Engineering Dept.

Date: June 9,2003

Subject: Installation of a CM101-177 Calibration Kit for CM5011 & CM5012 Coulometer.

This procedure covers the installation of a calibration kit in a Carbon Coulometer.

I. Install The Calibrated Set of boards

1. Follow Technical Bulletin # 22 and install the Calibrated set of boards provided with the Kit.

II. Install The New Photodiode Sub Assembly, Filter and Lamp.

1. Locate the Detector Cell. It is located on the Detector Cell Compartment. This is item J on figure 9.1 of page 3 of this Bulletin. Note for a 5011 Coulometer the Cell cover will have to removed.

2. Using a Phillips Screwdriver unscrew the shield ringlet holding the shield to the body of the Detector Cell assembly. See page 4 of this procedure, an exploded view of the Detector cell assembly for clarification.

3. Using the same Phillips screwdriver, loosen the screw holding the tab and swing the tab(item # 13 in figure)out of the way of the rubber insert. See page 4 of this procedure, an exploded view of the Detector cell assembly for clarification.

4. Using a flat blade jewelers screw driver, Carefully pry the Rubber insert (item #12) out of the body of the Detector Cell assembly (item #9).

5. Unplug the old photodiode sub assembly from the P3 connector of the CM110-020 PCB. Set aside the old sub assembly.

6. Using a cotton swab, insert the swab in the shaft (item 1) of the detector cell body and push the old Filter out of the cell body. Set the old filter aside.

7. Remove the new Filter from its package and install it in the Detector Cell Body .

It must be installed so that the orange side is facing the photodiode and the mirrored side is facing the cell compartment. Use the cotton swab to push the filter all the way in the cell body trying to minimize fingerprints on the filter.

8. Install the new photodiode subassembly by **gently** pressing the Rubber insert into the Detector Cell Body until the Rubber insert is flush with the back of the Cell body. Avoid touching the Photodiode mounted in the rubber insert.

9. Using the Phillips screwdriver swing the Tab around back into position so that it holds the Rubber insert in the cell body.

10. Using the Phillips screwdriver attach the Braided shield grommet to the cell Body (Item 7 and 8)

11. Plug the photodiode Connector into the P3 connector on the CM110-020 PCB.

12. Install the new Lamp by unscrewing the black knurled nut holding the old lamp in the socket. This knurled nut is located in the Cell compartment. Next unplug the old lamp and remove it from the socket by pulling the lamp straight out of the socket. Plug the new lamp in and reinstall the black knurled lamp nut back on to complete the new lamp installation.

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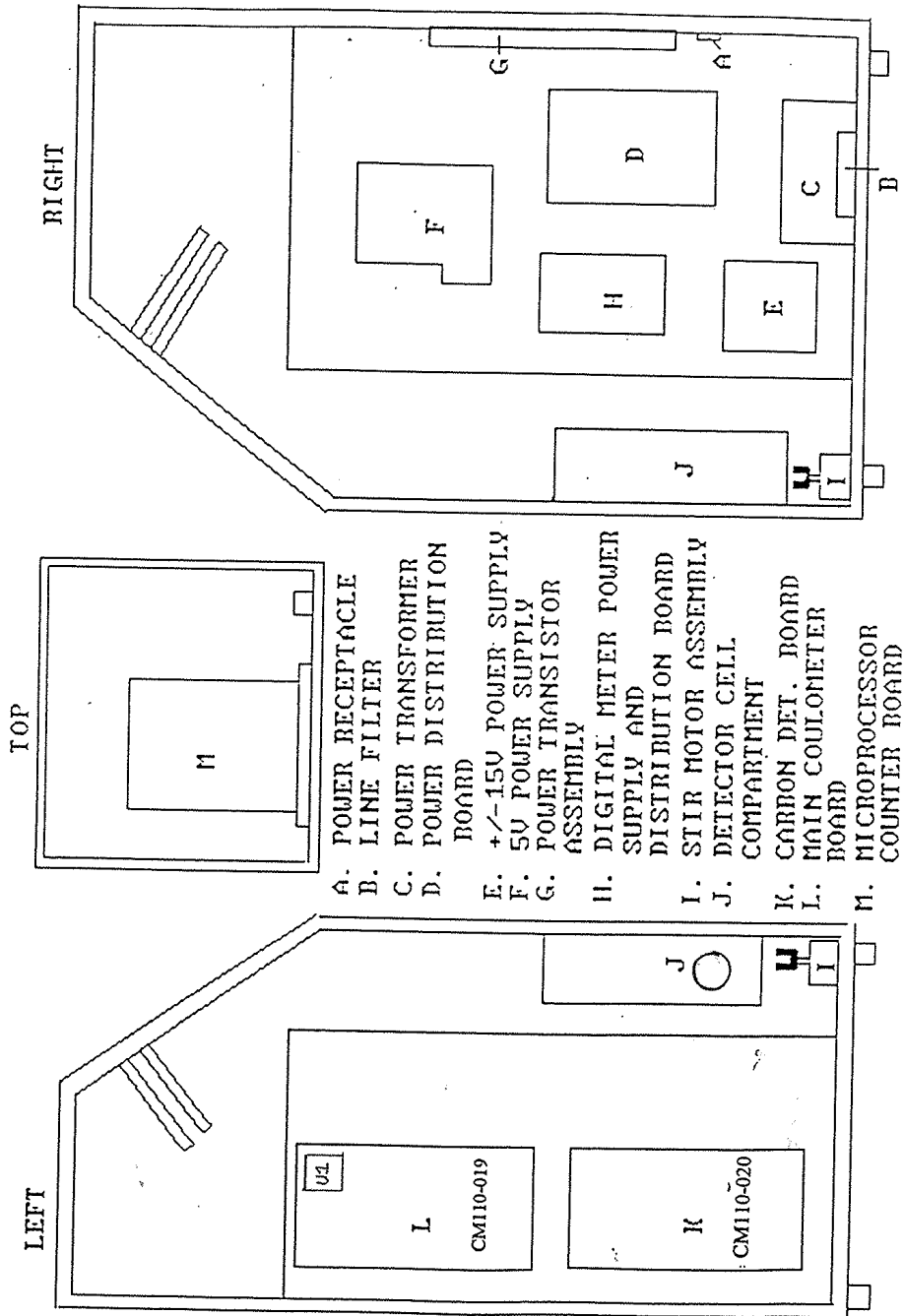
13. Plug in the Coulometer and turn on the main switch. Rotate the %T knob Full clockwise. The %T should be 110%T. If it is slightly more than 110 % that is OK. If it less than 110% it will be necessary to attach a meter to the test points TP7 and TP8 of the CM110-020 and adjust RV4 until the %T is 110 %. The lamp voltage must be less than 2.50 vdc. Typically the lamp voltage is 2.20 to 2.30 for 110 %T. See page 5 of this bulletin for an illustration of this procedure.

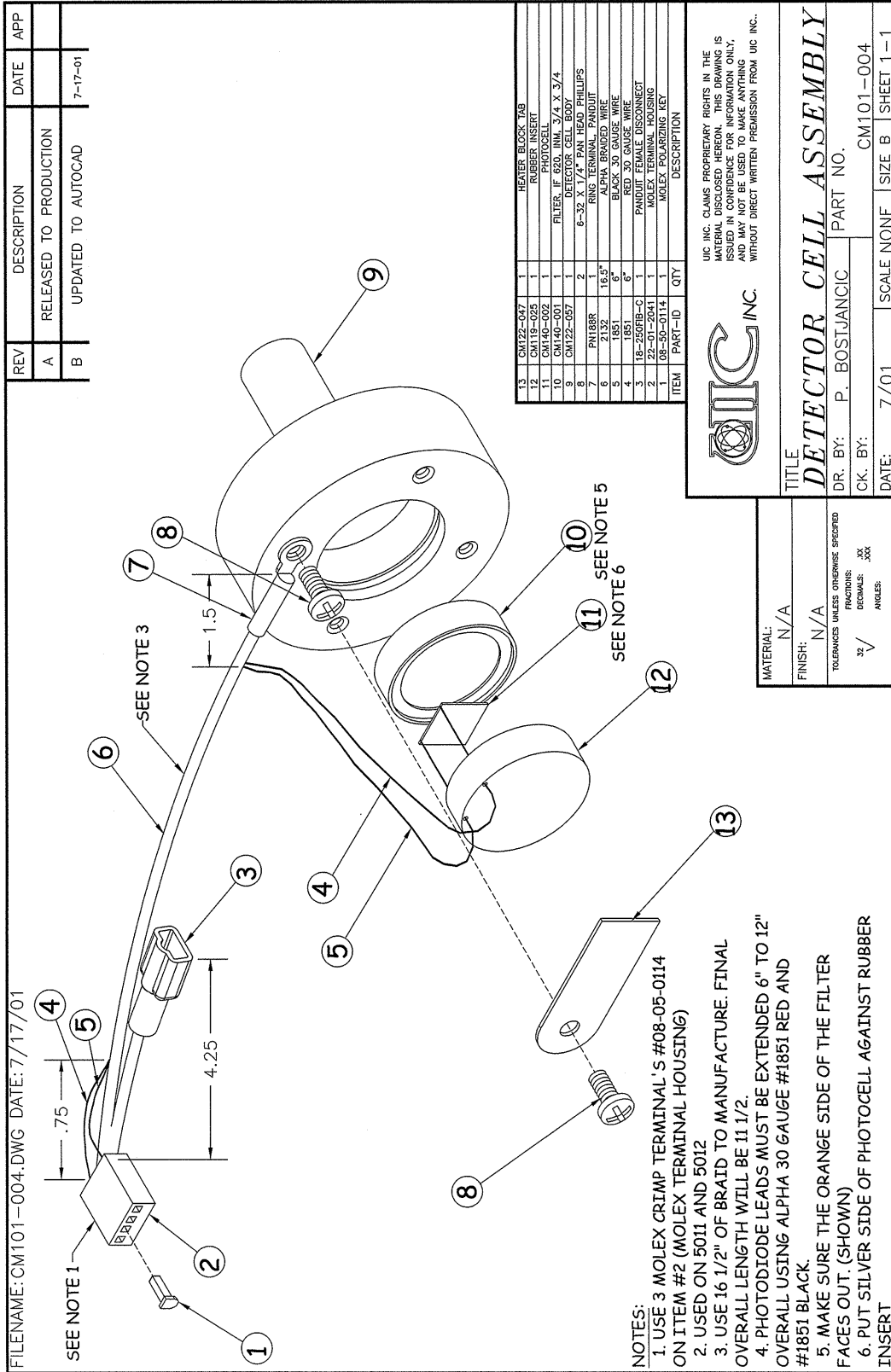
III. Evaluate the Electronics of the Instrument.

1. Use the procedure for Electronic evaluation of the Carbon Coulometer as described in Technical Bulletin #19.

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FIGURE 9.1
ELECTRICAL SUBASSEMBLIES





FILENAME:CM101-004.DWG DATE: 7/17/01

REV	DESCRIPTION	DATE	APP
A	RELEASED TO PRODUCTION		
B	UPDATED TO AUTOCAD	7-17-01	

ITEM	PART-ID	QTY	DESCRIPTION
13	CM122-047	1	HEATER BLOCK TAB
12	CM119-025	1	RUBBER INSERT
11	CM140-002	1	PHOTOCELL
10	CM140-001	1	FILTER, IF 690, 1MM, 3/4 X 3/4
9	CM122-057	1	DETECTOR CELL BODY
8	PH188R	1	6-32RING TERMINAL PHOLIPS
7	PH188R	1	6-32RING TERMINAL PHOLIPS
6	2132	16.5"	ALPHA BRAIDED WIRE
5	1851	6"	BLACK 30 GAUGE WIRE
4	1851	6"	RED 30 GAUGE WIRE
3	118-250F8B-C	1	PANOUT FEMALE DISCONNECT
2	22-01-2041	1	MOLEX TERMINAL HOUSING
1	08-05-0114	1	MOLEX CRIMP WIRE KIT

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TITLE		SCALE NONE	SIZE B	SHEET 1-1
DETECTOR CELL ASSEMBLY				
DR. BY:	P. BOSTJANCIC	PART NO. CM101-004		
CK. BY:		CM101-004		
DATE:	7/01	CM101-004		

MATERIAL:	N/A
FINISH:	N/A
TOLERANCES UNLESS OTHERWISE SPECIFIED	
FRACTIONS:	XX
DECIMALS:	.XX
ANGLES:	32

- NOTES:**
1. USE 3 MOLEX CRIMP TERMINAL'S #08-05-0114 ON ITEM #2 (MOLEX TERMINAL HOUSING)
 2. USED ON 5011 AND 5012
 3. USE 16 1/2" OF BRAID TO MANUFACTURE. FINAL OVERALL LENGTH WILL BE 11 1/2."
 4. PHOTO DIODE LEADS MUST BE EXTENDED 6" TO 12" OVERALL USING ALPHA 30 GAUGE #1851 RED AND #1851 BLACK.
 5. MAKE SURE THE ORANGE SIDE OF THE FILTER FACES OUT. (SHOWN)
 6. PUT SILVER SIDE OF PHOTOCELL AGAINST RUBBER INSERT

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