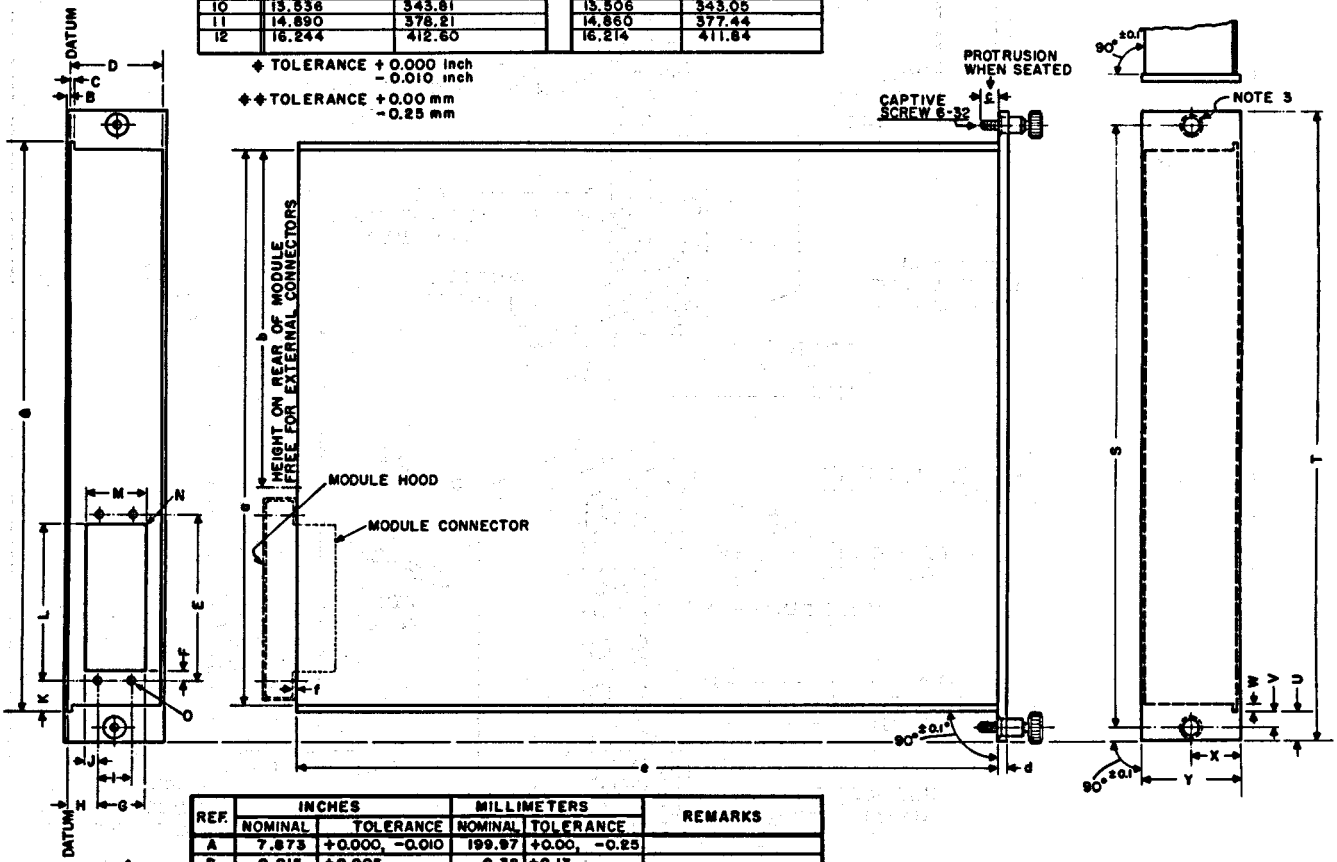
WIDTH UNITS	Y (INCHES) NOMINAL ♦	Y (MILLIMETERS) NOMINAL ♦♦	D (INCHES) NOMINAL ♦	D (MILLIMETERS) NOMINAL ♦♦
1	1.350	34.29	1.320	33.53
2	2.704	68.68	2.674	67.92
3	4.058	103.07	4.028	102.31
4	5.412	137.46	5.382	136.70
5	6.766	171.86	6.736	171.09
6	8.120	206.25	8.090	205.49
7	9.474	240.64	9.444	239.88
8	10.828	275.03	10.798	274.27
9	12.182	309.42	12.152	308.66
10	13.536	343.81	13.506	343.05
11	14.890	378.21	14.860	377.44
12	16.244	412.60	16.214	411.84

♦ TOLERANCE +0.000 inch −0.010 inch

♦♦ TOLERANCE +0.00 mm −0.25 mm



REF.	INCHES NOMINAL	INCHES TOLERANCE	MILLIMETERS NOMINAL	MILLIMETERS TOLERANCE	REMARKS
A	7.873	+0.000, −0.010	199.97	+0.00, −0.25	
B	0.015	±0.005	0.38	±0.13	
C	0.064	±0.005	1.63	±0.13	
D					SEE TABLE
E	2.281	±0.005	57.94	±0.13	
F	0.128	±0.005	3.25	±0.13	
G	0.629	±0.005	15.98	±0.13	
H	0.430	±0.010	10.92	±0.25	
I	0.468	±0.010	11.89	±0.25	
J	0.161	±0.005	4.09	±0.13	
K	0.461	±0.010	11.71	±0.25	
L	2.153	±0.005	54.69	±0.13	
M	0.790	±0.005	20.07	±0.13	
N	0.015		0.38		TYPICAL RADIUS
O	0.130	±0.005	3.30	±0.13	DIAMETER, 4 HOLES
P	0.461	±0.005	11.71	±0.13	
R	0.629	±0.005	15.98	±0.13	
S	8.290	±0.010	210.67	±0.25	
T	8.714	+0.000 −0.010	221.34	+0.00, −0.25	
U	0.421	±0.010	10.69	±0.25	
V	0.211	±0.010	5.36	±0.25	
W	0.126	±0.005	3.20	±0.13	
X	0.675	±0.005	17.15	±0.13	
Y					SEE TABLE
a	7.621	+0.000, −0.015	193.67	+0.00, −0.38	
b	4.645	±0.005	117.98	±0.13	
c	0.25	±0.06	6.35	±1.52	
d	0.125	±0.010	3.18	±0.25	
e	9.674	+0.000, −0.010	245.72	+0.00, −0.25	
f	0.031	±0.003	0.79	±0.08	SEE MODULE HOOD DWG

NOTES:

1. THE MILLIMETER DIMENSIONS ARE DERIVED FROM THE ORIGINAL INCH DIMENSIONS.
2. DIMENSIONS GIVEN ARE FOR THE OUTSIDE OF THE MODULE. METAL THICKNESS MUST BE INCLUDED WITHIN THESE DIMENSIONS. DIMENSIONS ARE ABSOLUTE AND INCLUDE PROJECTIONS SUCH AS SCREW HEADS, ETC.
3. FOR TYPICAL CAPTIVE SCREW DRILL 0.257 +/−0.005 INCH (6.53 +/−0.13 mm) AND COUNTER-SINK 82°, 0.020 +/−0.005 INCH (0.51 +/−0.13 mm) DEEP ON REAR OF THE PANEL. TWO HOLES MINIMUM.

Figure 2. NIM Module

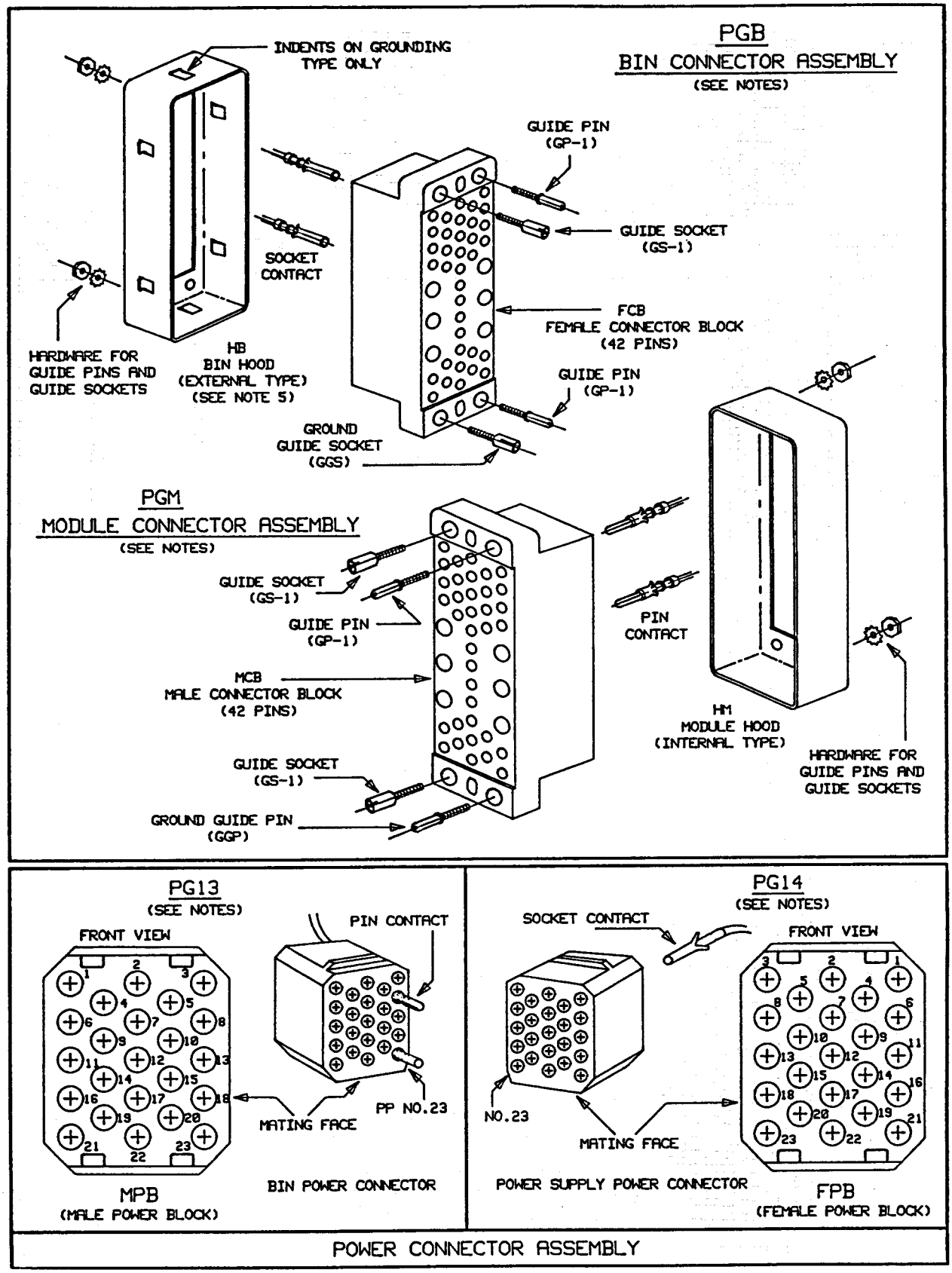


Figure 3a. Connector Assemblies

NOTES:

1. PGB AND PGM CONSIST OF THE FOLLOWING, ASSEMBLED AS INDICATED ON THIS DRAWING. ON SOME DRAWINGS PGB CONNECTOR ASSEMBLIES ARE IDENTIFIED AS PG1B THRU PG12B TO INDICATE LOCATION IN BIN AS PER NOTE 2 OF FIG.8b. A SIMILAR NOTATION IS OCCASIONALLY USED FOR PGM TO IDENTIFY MODULE POSITION IN BIN.

PGB	PGM
1 EACH FEMALE CONNECTOR BLOCK(FCB)	1 EACH MALE CONNECTOR BLOCK(MCB)
1 EACH GROUND GUIDE SOCKET(GGS)	1 EACH GROUND GUIDE PIN(GGP)
1 EACH GUIDE SOCKET(GS-1)	2 EACH GUIDE SOCKET(GS-1)
2 EACH GUIDE PIN(GP-1)	1 EACH GUIDE PIN(GP-1)
SOCKET CONTACTS AS REQUIRED	PIN CONTACTS AS REQUIRED

PGB AND PGM CONNECTOR ASSEMBLY COMPONENTS

NIM IDENTIFICATION	AMP ASSEMBLY (SEE NOTE 8) PART NO.	REMARKS	WINCHESTER ASSEMBLY (SEE NOTE 8) PART NO.	REMARKS
FCB FEMALE BLOCK FOR (PGB)	202516-3	BLUE (DAP)	111-20854	GRAY (DAP)
" (ACCEPTABLE ALTERNATE)	202516-1	BLACK (PHENOLIC)	111-20854-T43	BLACK (PHENOLIC)
MCB MALE BLOCK FOR (PGM)	204186-5	GREEN (DAP)	111-20853-1	GRAY (DAP)
" (ACCEPTABLE ALTERNATE)	204186-1	BLACK (PHENOLIC)	111-20853-1-T43	BLACK (PHENOLIC)
GP-1 GUIDE PIN	200833-2	STAINLESS STEEL	111-20855	GOLD PLATED
GS-1 GUIDE SOCKET	203964-5	STAINLESS STEEL	111-20856-1	GOLD PLATED
GGP GROUND PIN	202514-1	GOLD PLATED	111-20855	GOLD PLATED
GGS GROUND GUIDE SOCKET	202512-1	GOLD PLATED	111-20858	GOLD PLATED
HM MODULE CONNECTOR HOOD	202394-2	ZINC PLATED STEEL	111-20851-1	CADMIUM PLATED
HB BIN CONNECTOR HOOD OR	202579-5	GROUNDING ZINC P.S.		
HB BIN CONNECTOR HOOD	201390-5	NON-GNDG. ZINC P.S.	111-20852-1	NON-GNDG. CAD.PL
CONTACTS	TYPE II LONG (SEE NOTE 3) TYPE III+ LONG (SEE NOTE 4)		(SEE NOTE 7)	

2. PG-13 AND PG-14 CONSIST OF THE FOLLOWING, ASSEMBLED AS INDICATED ON FIG. 3a.

PG-13	PG-14
1 EACH MALE POWER BLOCK(MPB)	1 EACH FEMALE POWER BLOCK(FPB)
1 EACH POLARIZING PIN(PP)	SOCKET CONTACTS AS REQUIRED
PIN CONTACTS AS REQUIRED	

PG-13 AND PG-14 CONNECTOR ASSEMBLY COMPONENTS

NIM IDENTIFICATION	AMP ASSEMBLY (SEE NOTE 8) PART NO.	REMARKS	WINCHESTER ASSEMBLY (SEE NOTE 8) PART NO.	REMARKS
MPB MALE POWER BLOCK FOR (PG-13)	202650-2	BLUE (DAP)	111-20859	GRAY (DAP)
" (ACCEPTABLE ALTERNATE)	202650-1	BLACK (PHENOLIC)	111-20859-T43	BLACK (PHENOLIC)
FPB FEMALE POWER BLOCK FOR(PG-14)	202651-2	BLUE (DAP)	111-20860	GRAY (DAP)
" (ACCEPTABLE ALTERNATE)	202651-1	BLACK (PHENOLIC)	111-20860-T43	BLACK (PHENOLIC)
PP POLARIZING PIN FOR(PG-13)	202888-1	NAT. NYLON		
CONTACTS	TYPE II LONG (SEE NOTE 3) TYPE III+ LONG (SEE NOTE 4)		(SEE NOTE 7)	

3. AMP TYPE II CONTACTS (#16, .062" DIAMETER) 202507-1 AND 202508-1 ACCOMMODATE ONE #16 OR ONE #18 OR TWO #20 OR TWO #22 AWG WIRES WITH INSULATION GRIP (TOOL NO.90136-1). 202725-1 AND 202726-1 ACCOMMODATE TWO #18 OR ONE #14 AWG WIRES WITHOUT INSULATION GRIP (TOOL NO. 45098). 201578-1 AND 201580-1 ACCOMMODATE ONE #20 OR ONE #22 AWG WIRE WITH INSULATION GIRP (TOOL NO. 45099). THESE ARE TYPICAL CONTACTS ONLY AND OTHER CONTACTS HAVE SIMILAR CAPABILITIES. (SEE NOTE 8)

4. AMP TYPE III AND CONTACTS (#16, .062" DIAMETER) A WIDE VARIETY OF TYPE III+ CONTACTS (SUCH AS PIN 66098-1 AND SOCKET 66100-1 AND MANY OTHERS) ARE AVAILABLE. (SEE NOTE 8)

5. BIN CONNECTOR HOOD IS OPTIONAL. 0.031" (0.8MM) SPACER IS REQUIRED WHEN HOOD IS NOT USED.

6. LOW RESISTANCE CONTACTS FOR HIGH CURRENT APPLICATIONS.
   AMP TYPE II(#16, .062" DIAMETER) (SEE NOTE 3 AND NOTE 8)

7. WINCHESTER CONTACTS (#16, .062" DIAMETER) (SEE NOTE 8)
   (ALL CONTACTS LISTED BELOW USE WINCHESTER CRIMP TOOL #107-0970

WIRES ACCOMMODATED	WINCHESTER PIN #	WINCHESTER SOCKET #	LOCATOR TO BE USED WITH CRIMP TOOL (WINCHESTER NO.)	NOTES
1-#14 OR 2-#18 OR	100 - 7113P	-	107 - 0977 (BLUE)	WITHOUT
2-#20 AWG	-	100 - 7113S	107 - 0982 (WHITE)	INSULATION SUPPORT
1-#16 OR 1-#18 OR	100 - 7116P	-	107 - 0977 (BLUE)	WITH
1-#20 OR 2-#22 AWG	-	100 - 7116S	107 - 0982 (WHITE)	INSULATION SUPPORT
1-#20 OR 1-#22 OR	100 - 7120P	-	107 - 0776 (RED)	WITH
1-#24 AWG	-	100 - 7120S	107 - 0985 (BLACK)	INSULATION SUPPORT

8. THE MANUFACTURERS OF THE COMPONENTS LISTED HEREON (FIG. 3b) HAVE ADVISED THAT THESE COMPONENTS ARE IN ACCORDANCE WITH FIG. 4a AND FIG 10. DIALLYL PTHALATE (DAP) CONNECTOR BLOCKS WERE ORIGINALLY SPECIFIED, PHENOLIC BLOCKS ARE NOW ACCEPTABLE.

Figure 3b. Connector Assembly Notes

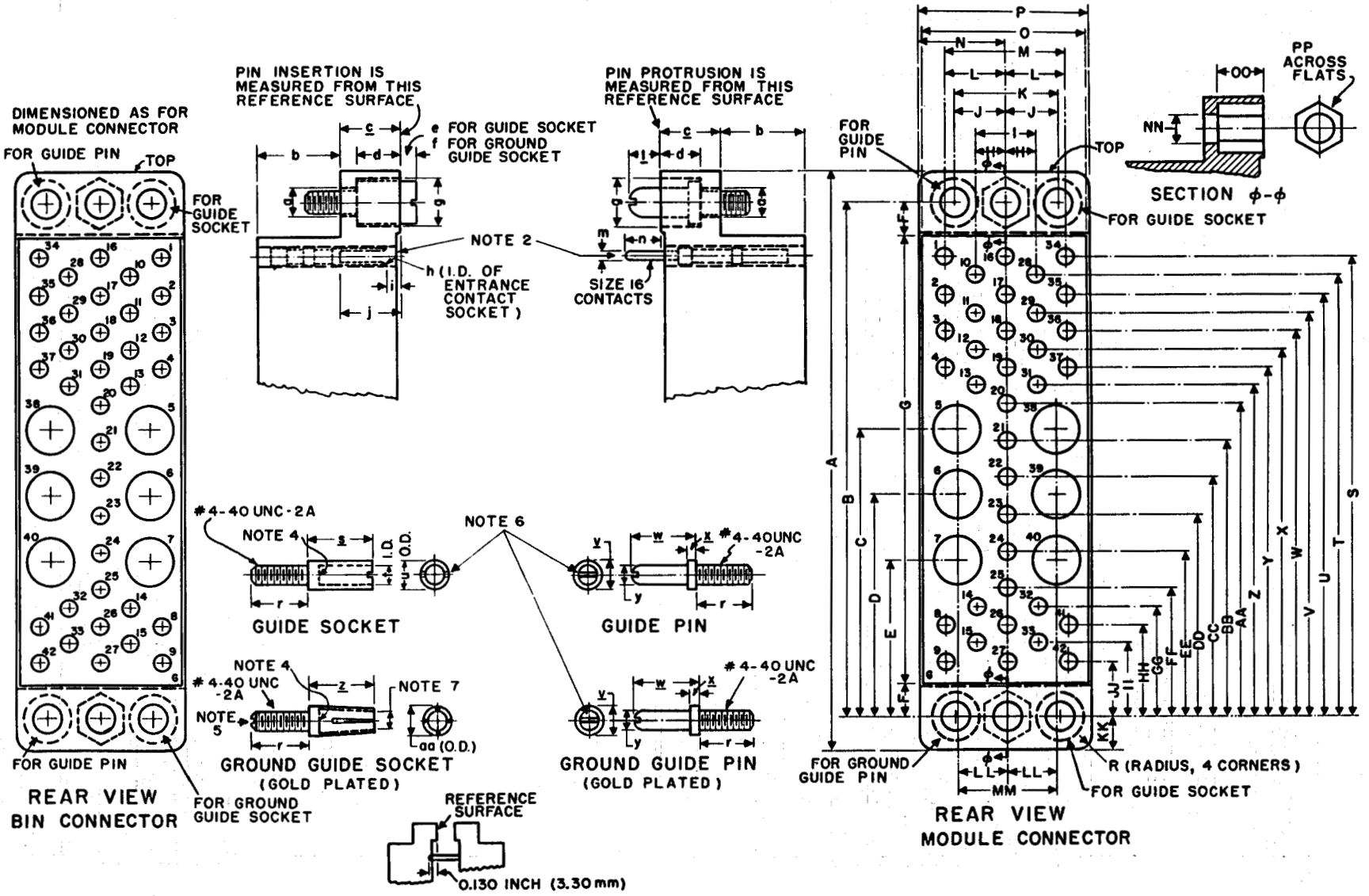


Figure 4a. Module and Bin Connector Details

REF	INCHES		MILLIMETERS	
	MIN.	MAX.	MIN.	MAX.
A	2.573	2.613	65.35	66.37
B	2.277	2.293	57.83	58.24
C	1.265	1.275	32.13	32.39
D	0.975	0.985	24.77	25.02
E	0.685	0.695	17.40	17.65
F	0.141	—	3.58	—
G	—	1.995	—	50.67
H	0.130	0.140	3.30	3.56
I	0.265	0.275	6.73	6.99
J	0.229	0.239	5.82	6.07
K	0.463	0.473	11.76	12.01
L	0.265	0.275	6.73	6.99
M	0.535	0.545	13.59	13.84
N	0.370	0.380	9.40	9.65
O	—	0.750	—	19.05
P	—	0.760	—	19.30
R	0.062	—	1.57	—
S	2.027	2.037	51.49	51.74
T	1.946	1.956	49.43	49.68
U	1.865	1.875	47.37	47.63
V	1.784	1.794	45.31	45.57
W	1.703	1.713	43.26	43.51
X	1.622	1.632	41.20	41.45
Y	1.541	1.551	39.14	39.40
Z	1.460	1.470	37.08	37.34
AA	1.379	1.389	35.03	35.28
BB	1.217	1.227	30.91	31.17
CC	1.055	1.065	26.80	27.05
DD	0.893	0.903	22.68	22.94
EE	0.731	0.741	18.57	18.82
FF	0.569	0.579	14.45	14.71
GG	0.488	0.498	12.40	12.65
HH	0.407	0.417	10.34	10.59
II	0.326	0.336	8.28	8.53
JJ	0.245	0.255	6.22	6.48
KK	0.151	0.161	3.84	4.09
LL	0.211	0.221	5.36	5.61
MM	0.427	0.437	10.85	11.10
NN	0.115	0.125	2.92	3.18
OO	0.300	0.320	7.62	8.13
PP	0.191	0.195	4.85	4.95
a	0.115	0.125	2.92	3.18
b	—	0.570	—	14.48
c	0.368	0.382	9.35	9.70
d	0.255	0.265	6.48	6.73
e	0.190	0.215	4.83	5.46
f	0.135	0.155	3.43	3.94
g	0.213	0.223	5.41	5.66
h	0.065	—	1.65	—
i	0.010	—	0.25	—
j	0.375	—	9.53	—
l	0.165	0.195	4.19	4.95
m	0.061	0.063	1.55	1.60
n	0.250	0.310	6.35	7.87
r	0.380	0.410	9.65	10.41
s	0.455	0.470	11.56	11.94
t	0.138	0.144	3.51	3.66
u	0.198	0.208	5.03	5.28
v	0.150	0.185	3.81	4.70
w	0.430	0.450	10.92	11.43
x	0.027	0.037	0.69	0.94
y	0.123	0.131	3.12	3.33
z	0.400	0.410	10.16	10.41
aa	0.175	0.185	4.45	4.70

NOTES:

1. THE MILLIMETER DIMENSIONS ARE DERIVED FROM THE ORIGINAL INCH DIMENSIONS.

2. THE PIN-SOCKET CONTACT RESISTANCE SHALL NOT EXCEED THREE MILLIOHMS WHEN CONTACT PIN EXTENDS 0.130 INCH (3.30 mm) BEYOND THE REFERENCE SURFACE OF THE BIN CONNECTOR BLOCK NOR SHALL IT EXCEED THREE MILLIOHMS FOR ANY PROTRUSION GREATER THAN 0.130 INCH (3.30 mm) BEYOND THE REFERENCE SURFACE OF THE BIN CONNECTOR BLOCK. PIN-SOCKET CONTACT RESISTANCE SHALL BE MEASURED AT ONE AMPERE.

3. NOTE 3 DELETED.

4. DEPTH OF HOLE IN GUIDE SOCKET AND GROUND GUIDE SOCKET SHALL BE ADEQUATE TO ACCOMODATE GUIDE PINS WITH MAXIMUM PERMISSIBLE PROTRUSION WHEN REFERENCE FACES OF BIN AND MODULE BLOCKS ARE FULLY MATED.

5. SLOT 0.031 +/-0.005 INCH (0.79 +/-0.13 mm) WIDE, 0.050 +/-0.005 INCH (1.3 +/-0.13 mm) DEEP.

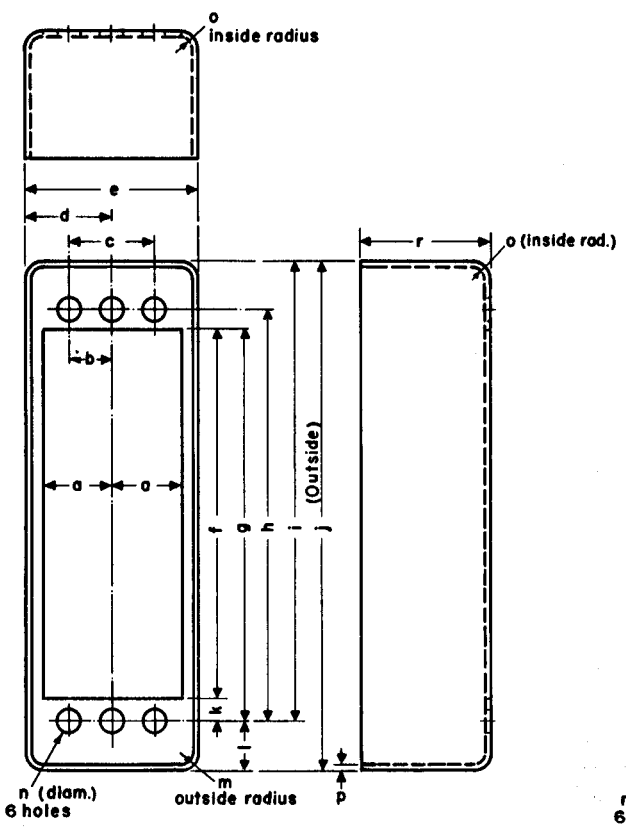
6. SLOT 0.032 +/-0.005 INCH (0.82 +/-0.13 mm) WIDE, 0.060 +/-0.005 INCH (1.5 +/-0.13 mm) DEEP.

7. 0.115 +/-0.005 INCH (2.92 +/-0.13 mm) ENTRANCE I.D. MUST ACCOMODATE GROUND GUIDE PIN AND MUST EXERT SPRING PRESSURE ON GROUND GUIDE PIN WHEN MATED.

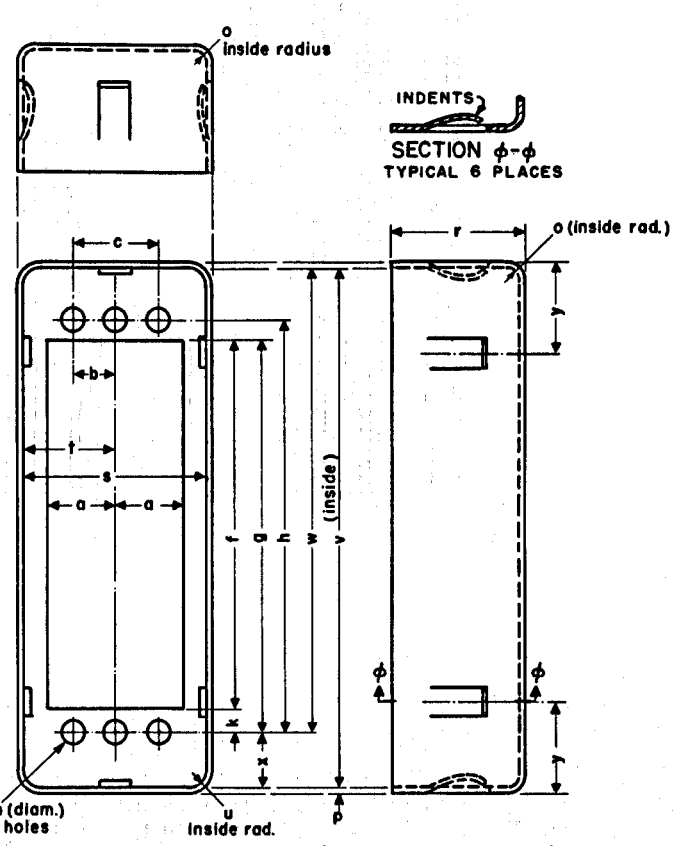
Figure 4b. Module and Bin Connector Dimensions and Notes

REF	INCHES		MILLIMETERS	
	MIN.	MAX.	MIN.	MAX.
a	0.380	——	9.65	——
b	0.229	0.239	5.82	6.07
c	0.463	0.473	11.76	12.01
d	0.470	0.480	11.94	12.19
e	0.945	0.955	24.00	24.26
f	*	*	*	*
g	2.150	2.160	54.61	54.86
h	2.276	2.286	57.81	58.06
i	2.529	2.539	64.24	64.49
j	2.782	2.792	70.67	70.92
k	0.120	0.130	3.05	3.30
l	0.248	0.258	6.30	6.55
m	0.11	0.14	2.8	3.6
n	0.128	——	3.25	——
o	——	0.077	——	1.96
p	0.028	0.034	0.71	0.86
r	0.672	0.702	17.07	17.83
s	0.995	1.005	25.27	25.53
t	0.495	0.505	12.57	12.83
u	——	0.15	——	3.8
v	2.839	2.849	72.11	72.36
w	2.557	2.567	64.95	65.20
x	0.277	0.287	7.04	7.29
y	0.40	0.60	10.	15.

* f IS REFERENCE DIMENSION 2.030 INCH (51.56 mm)



MODULE HOOD

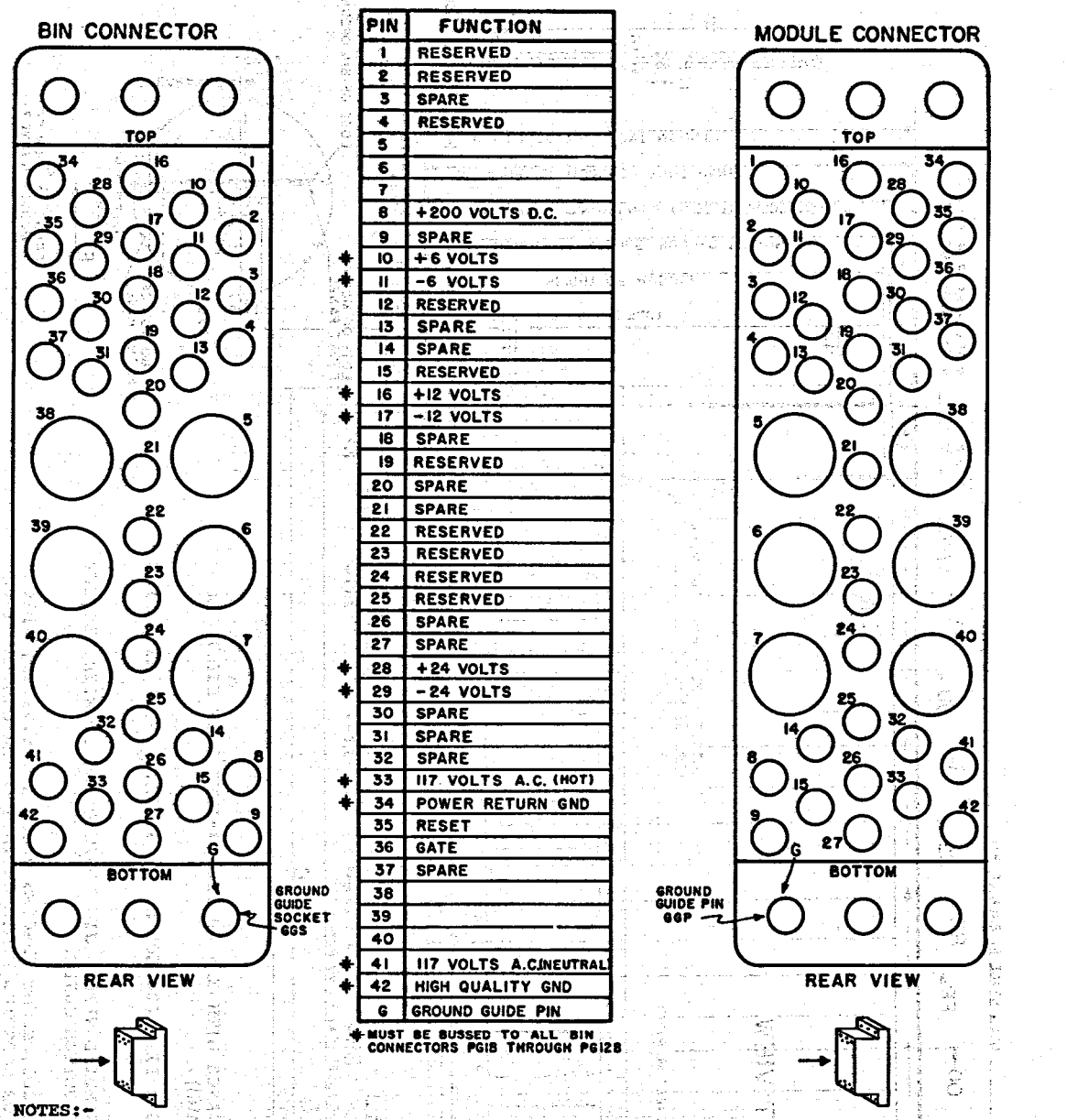


OPTIONAL BIN HOOD (GROUNDING TYPE)
(INDENTS OMITTED ON NONE GROUNDING TYPE)

NOTES: -

1. THE MILLIMETER DIMENSIONS ARE DERIVED FROM THE ORIGINAL INCH DIMENSIONS.
2. INDENTS ON GROUNDING TYPE BIN HOOD SHALL EXERT PRESSURE AGAINST MODULE HOOD TO ASSURE ELECTRICAL RESISTANCE OF NOT OVER 0.001 OHM BETWEEN THE HOODS. HOOD MATERIAL SHALL BE SUCH AS TO MAINTAIN ELECTRICAL RESISTANCE OF NOT OVER 0.001 OHM. (FOR EXAMPLE CADMIUM PLATED STEEL). THE FORCE NECESSARY TO INSERT MODULE HOOD INTO GROUNDING TYPE BIN HOOD SHALL NOT EXCEED 3 POUNDS WITH VERTICAL AND HORIZONTAL MISALIGNMENTS OF UP TO 0.015 INCH (0.38 mm).

Figure 5. Bin and Module Connector Hoods



PIN	FUNCTION
1	RESERVED
2	RESERVED
3	SPARE
4	RESERVED
5	
6	
7	
8	+200 VOLTS D.C.
9	SPARE
✱ 10	+6 VOLTS
✱ 11	-6 VOLTS
12	RESERVED
13	SPARE
14	SPARE
15	RESERVED
✱ 16	+12 VOLTS
✱ 17	-12 VOLTS
18	SPARE
19	RESERVED
20	SPARE
21	SPARE
22	RESERVED
23	RESERVED
24	RESERVED
25	RESERVED
26	SPARE
27	SPARE
✱ 28	+24 VOLTS
✱ 29	-24 VOLTS
30	SPARE
31	SPARE
32	SPARE
✱ 33	117 VOLTS A.C. (HOT)
✱ 34	POWER RETURN GND
35	RESET
36	GATE
37	SPARE
38	
39	
40	
✱ 41	117 VOLTS A.C.NEUTRAL
✱ 42	HIGH QUALITY GND
G	GROUND GUIDE PIN

✱ MUST BE BUSSED TO ALL BIN CONNECTORS PG1B THROUGH PG12B

NOTES:-

1. RESERVED PINS ARE FOR FUTURE ASSIGNMENT BY THE COMMITTEE AND SHALL NOT BE USED UNTIL SUCH ASSIGNMENTS ARE MADE.

2. GP-1 = GUIDE PIN GGP = GROUND GUIDE PIN
   GS-1 = GUIDE SOCKET GGS = GROUND GUIDE SOCKET

3. THE POWER RETURN GROUND (BIN PIN 34) IS THE RETURN BUS FOR ALL dc SUPPLIES. THE HIGH QUALITY GROUND (BIN PIN 42) IS INTENDED AS ZERO POTENTIAL REFERENCE. HIGH QUALITY GROUND CURRENT LOAD BY ANY MODULE SHOULD BE LIMITED TO 1 mA. ALSO, PULSES OR VARYING LOADS SHOULD BE LIMITED TO NO MORE THAN 100 MICROAMPERES. CARE SHOULD BE TAKEN NOT TO CAPACITIVELY COUPLE HIGH QUALITY GROUND TO THE LOCAL GROUND. ANY CAPACITIVE COUPLING TO LOCAL GROUND SHOULD BE ISOLATED BY A RESISTANCE OF AT LEAST 1000 OHMS. THE CHASSIS GROUND IS NORMALLY CONNECTED TO THE BUILDING GROUND. CONNECTIONS BETWEEN THE HIGH QUALITY GROUND BUS (BIN PIN 42), THE POWER RETURN GROUND BUS (BIN PIN 34), AND THE CHASSIS ARE MADE AT THE GROUND GUIDE PIN OF PG1B.

4. SIGNALS ON PINS 35 AND 36 SHALL UTILIZE THE "LOGIC LEVELS FOR TRANSMISSION OF DIGITAL DATA DOWN TO DC" OF THE NIM SPECIFICATIONS. A LOGIC "1" GATES ON AND RESETS.

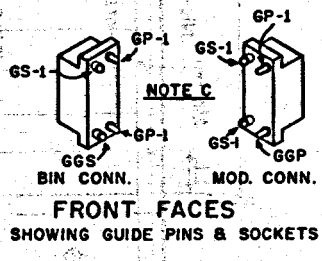


Figure 6. Bin and Module Connector Pin Assignments