Macromodular Computer Design, Part 2, Volume 08, Faceplate Overlays, Overlay Labels, and Faceplate Boxes, Types 1-4

Computer Systems Laboratory, Washington University

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MACROMODULAR COMPUTER DESIGN
PART 2
MANUFACTURING DESCRIPTION

VOLUME VIII
FACEPLATE OVERLAYS, OVERLAY LABELS AND FACEPLATE BOXES, TYPES 1-4

Technical Report No. 37

FINAL REPORT - FEBRUARY, 1974
CONTRACT SD-302 (ARPA)
COMPUTER SYSTEMS LABORATORY
WASHINGTON UNIVERSITY
ST. LOUIS, MISSOURI
This work has been supported by the Advanced Research Projects Agency of the Department of Defense under Contract SD-302 and by the Division of Research Facilities and Resources of the National Institutes of Health under Grant RR-00396. The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the Advanced Research Projects Agency or the U.S. Government.

Computer Systems Laboratory
Washington University
St. Louis, Missouri
ABSTRACT

This document is divided into two segments. The first segment, pages 100.1-1 through 100.1-5, contains the information necessary to duplicate Macro-Module Faceplate Overlays and Overlay Labels plus a brief functional description of the Overlay.

The second segment of this volume contains the necessary procedures and wiring lists for the assembly of Macro-Module Faceplate Box types 1 through 4.
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<table>
<thead>
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<td>100.1-2</td>
<td>FUNCTIONAL DESCRIPTION</td>
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<td>100.1-3</td>
<td>OVERLAY PLATES</td>
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<td>100.1-4</td>
<td>OVERLAY LABEL OUTLINE</td>
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</tr>
<tr>
<td>100.1-5</td>
<td>MODULE NAMES, NUMBERS, AND COLORS</td>
<td></td>
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**MACROMODULAR SYSTEMS PROJECT**
The **overlay** is a flat piece of aluminum that snaps onto the front of a faceplate box. (Dwg. 100.1-3) The physical function of the overlay is to supply the module with **faceplate code** information by depressing some of the code switches on the faceplate box and allowing others to remain extended. A depressed switch corresponds to a 1-bit; a non-depressed switch, a 0-bit. Up to five switch positions are used, the number of positions depending upon the module type and intended use. (Immovable pins, or **keys**, may be present in unused positions on the faceplate box.) Other holes are punched into it for data cables and the control cables. An adhesive **overlay label**, color-coded to indicate the module type, may be affixed to the overlay before punching if desired.

If used, a colored overlay label serves several purposes. (Dwgs. 100.1-4, 100.1-5). Its color code allows easy visual identification of the various module types in a system, and also serves as a key for matching a faceplate box-overlay combination with its proper (also color-labeled) electronics package. It also gives the designer a place to add his own labeling formation.
OVERLAY PLATE TYPE | H | F
---|---|---
1-CELL OVERLAY PLATE | 4.005 | -0.000 + 0.010
2-CELL OVERLAY PLATE | 4.760 | 4.520
3-CELL OVERLAY PLATE | 7.280 | 7.040
4-CELL OVERLAY PLATE | 9.800 | 9.560

MATERIAL: 0.030 ALUMINUM 3003-H14
TOLERANCES: ± 0.005 U.O.N.
FINISH: C51 SPEC. MF 1
DEBURR ALL EDGES

SECTION AA
SECTION BB

0.015 ± 0.002
FLAT

FLAT

MAX. R 0.010
MIN. FLAT 0.070
0.015 FILE BREAK
2 LONG EDGES ONLY

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MACROMODULAR PROJECT

OVERLAY PLATES

11-5-70 ADDED TABLE

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MACROMODULAR PROJECT

OVERLAY PLATES
MATERIAL: TAG STOCK WITH K-1 ADHESIVE (PEELABLE) ON REMOVABLE BACKING.

FORM: ONE LABEL PER BACKING SHEET WITH ¼ INCH GRIPPER EDGE ON ONE SIDE.
<table>
<thead>
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<td>466</td>
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<td>ADDITION</td>
<td>2</td>
<td>GREY GREEN</td>
<td>557</td>
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<td>SHIFT</td>
<td>3</td>
<td>RUST</td>
<td>152</td>
<td>WHITE</td>
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<tr>
<td>COMPARE</td>
<td>4</td>
<td>YELLOW</td>
<td>109</td>
<td>BLACK</td>
</tr>
<tr>
<td>REGISTER</td>
<td>5</td>
<td>IVORY</td>
<td>134</td>
<td>BLACK</td>
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<tr>
<td>DECODE</td>
<td>6</td>
<td>LIGHT OLIVE</td>
<td>458</td>
<td>BLACK</td>
</tr>
<tr>
<td>LOAD</td>
<td>7</td>
<td>MUSTARD</td>
<td>130</td>
<td>BLACK</td>
</tr>
<tr>
<td>CALL</td>
<td>8</td>
<td>GREY BLUE</td>
<td>550</td>
<td>BLACK</td>
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<td>MERGE/RENDZVOUS</td>
<td>9</td>
<td>BLUE</td>
<td>301</td>
<td>WHITE</td>
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<td>DATA BRANCH</td>
<td>10</td>
<td>RED</td>
<td>200</td>
<td>WHITE</td>
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<tr>
<td>MEMORY</td>
<td>11</td>
<td>BLACK</td>
<td>433</td>
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<td>MEMORY CONTROL</td>
<td>12</td>
<td>GREY</td>
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<td>LIGHT PURPLE</td>
<td>263</td>
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<td>14</td>
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<td>325</td>
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<td>15</td>
<td>DEEP PURPLE</td>
<td>260</td>
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<td>16</td>
<td>DARK OLIVE</td>
<td>581</td>
<td>WHITE</td>
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<td>D/A</td>
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<td>LIGHT LIME</td>
<td>346</td>
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MACROMODULAR PROJECT

MODULE NAMES, NUMBERS, AND COLORS

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DRAWING NO. 100.1-5
CHECKED 6/17/70
## Type 1 Faceplate Box

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<td>Type 1 Faceplate Box Parts List</td>
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<td>301-3</td>
<td>Type 1 Faceplate Box - Introduction and Assembly Procedure</td>
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<td>Type 1 FPB Assembly</td>
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<td>Type 1 FPB Rear Connector Block - Assembly Orientation</td>
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<td>301-6</td>
<td>Type 1 FPB Visceral Subassembly</td>
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<td>Type 1 FPB Interwiring Sub-Subassembly</td>
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<td>Type 1 Faceplate Sub-Subassembly</td>
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<td>Type 1 Faceplate Box Wiring List</td>
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<td>B</td>
<td>0229</td>
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<td>C</td>
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Macromodular Systems Project
## TYPE 1 FACEPLATE BOX
### PARTS LIST

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<td>2</td>
<td>300.5-3</td>
<td>FPB CONNECTOR BRACKET SCREW</td>
<td>8</td>
<td>300.5-4</td>
<td>ASTRO STANDOFF</td>
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<td>FPB KEY</td>
<td>1</td>
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<td>V-BUS SUBASSEMBLY</td>
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<td>FPB REAR CONNECTOR</td>
<td>2</td>
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<td>ASTRO 348 REAR NUT</td>
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<tr>
<td>2</td>
<td>300.0</td>
<td>ASTRO 348 CONTACT RETENTION DISC</td>
<td>2</td>
<td>300.0</td>
<td>V-BUS SUBASSEMBLY</td>
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<tr>
<td>74</td>
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<td>ASTRO 348 INTERFACIAL SEAL</td>
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<td>ASTRO 348 RECEPTACLE SHELL</td>
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<td>COAXICON</td>
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<td>4</td>
<td>300.0</td>
<td>COAXICON</td>
<td>4</td>
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<td>FERRULE</td>
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<tr>
<td>1</td>
<td></td>
<td>V-LIER INS-5IN SPRING PLUNGER</td>
<td>2</td>
<td></td>
<td>NO. 2 SERRATED-HOLE SOLDER LUG</td>
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<tr>
<td>22</td>
<td></td>
<td>3/16 x 2-56 FILLISTER HEAD SS MACHINE SCREW</td>
<td>2</td>
<td></td>
<td>WIRE (SEE 301-10 FOR COLOR CODE)</td>
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<tr>
<td>6</td>
<td></td>
<td>130 OHM 1/8 WATT 5% CARBON RESISTOR</td>
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### ISSUE 0028 8-20-70

|-----|--------|------|------|-----|--------|------|------|-----|--------|------|------|

301-2
INTRODUCTION

This document (301) describes the assembly of the Type 1 Faceplate Box. A summary list of all required parts, including subassemblies specified in other documents, is given on page 301-2. The general specification on wire preparation and wiring procedures (CSL Document 300.0) must be followed, together with the color code information supplied by the Type 1 Faceplate Box Wiring List (pages 301-10 ff).

ASSEMBLY PROCEDURE

A. Type 1 Faceplate Sub-subassembly (see page 301-9)

1) Crimp-wire the set of four coaxicon control connectors and press the resulting pre-wired connectors into the faceplate in the locations shown on page 301-9, taking care to assure that after installation the connectors will accept a mating coaxicon plug without binding. NOTE THE ORIENTATION REQUIRED.

2) Screw the spring plunger into the faceplate until the tip of the plunger protrudes from the front surface of the faceplate by approximately 0.090 inch.

3) Mount the two ASTRO 348 receptacle shells in the ASTRO standoffs to the faceplate as shown on page 301-9 using 2-56 fillister head screws. NOTE THE ORIENTATION REQUIRED.

B. Type 1 FPB Interwiring Sub-subassembly (see page 301-8)

1) Connectors D1 and D2:
   Following the Type 1 Faceplate Box Wiring List, crimp the wire pairs and the six resistors into the ASTRO 348 male contacts and insert the contacts into the contact retention discs (pin numbering is stamped in the receptacle shell). Apply the interfacial seals and slip on the rear nuts.

2) Wire to the FPB rear connector A3, together with two solder-lug leads.

3) Jumper the Type 1 Function Code Switch Sub-assembly and wire to the FPB Rear Connector A3.

C. Type 1 Visceral Subassembly (see page 301-7)

1) Mount the Function Code Switch Subassembly on the faceplate using two 2-56 fillister head screws. The sense pins must operate freely.
2) Wire the leads from the coaxicon control connectors to the FPB Rear Connector A3.

3) Install the contact retention disc assemblies in the corresponding receptacle shells for D1 and D2 (shown on page 301-9) and hand-tighten the ASTRO 348 Rear Nuts.

4) Attach the solder lugs to the receptacle shells as shown.

5) Rear connector block:
   Slip the FPB Key onto the V-Bus Subassembly connector brackets, and mount the FPB Rear Connector A3 using the two connector bracket screws. **NOTE THE ORIENTATION REQUIRED (page 301-6).**

D. Final Assembly (see page 301-5)

1) Remove the four screws holding the top cover plate to the 1-cell FPB Shell struts and remove the top cover plate and the top overlay clip.

2) Slip the rear connector block of the Visceral Subassembly into the slots provided in the struts for the connector brackets, and attach the Faceplate to the front using the remaining 2-56 fillister head screws. **NOTE THE ORIENTATION REQUIRED.**

3) Reinstall the top overlay clip and attach the top cover plate, taking care to assure that the wires are not pinched.
TOP OVERLAY CLIP

MOUNTING SCREWS

1-CELL FPB SHELL

TYPE 1 FPB VISCERAL SUBASSEMBLY (SEE PAGE 301-7)

NOTE ORIENTATION

MACROMODULAR PROJECT
FPB REAR CONNECTOR A3

NOTE ORIENTATION

FPB KEY

NOTE ORIENTATION

V-BUS SUBASSEMBLY

NOTE ORIENTATION

(KEY TAB EXTENDS LEFTWARD)

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MACROMODULAR PROJECT

TITLE

TYPE 1 FPB REAR CONNECTOR BLOCK-ASSEMBLY ORIENTATION

ISSUE 8-20-70 E.C.O. 0028

WAC

DRAWING NO. 301-6

APPROVED

WAC

PROD 9/6/70

DRAWN BY PLL

CHECKED LEC

DATE 8-20-70
FPB CONNECTOR BRACKET SCREW

TYPE 1 FACEPLATE SUB-SUBASSEMBLY
(SEE PAGE 301-9)

TYPE 1 FPB INTERWIRING SUB-SUBASSEMBLY
(SEE PAGE 301-8)

V-BUSS SUBASSEMBLY

FPB KEY

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MACROMODULAR PROJECT

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MACROMODULAR PROJECT
FPB REAR CONNECTOR (A3)

SOLDER LUG

REAR NUT

RESISTOR (R6)

D2

MALE CONTACTS

INTERFACIAL SEAL

D1

CONTACT RETENTION DISC

TYPE 1 FUNCTION CODE SWITCH SUBASSEMBLY
PRESS FIT PREWIRED CONTROL CONNECTORS

SPRING PLUNGER

TYPE 1 FACEPLATE

ASTRO STANDOFF

ASTRO 348 RECEPTACLE SHELL

NOTE ORIENTATION

(D1)

(D2)

(G1)

(G2)

(G3)

(G4)

(S1)

(S2)

(S3)

(S4)

(S5)
[TYPE ONE FACEPLATE BOX WIRING LIST]

# 1A3 [NO CONNECTION]
# >>>>>>>>>>>>>>>>>>>>
# 2A3 [NO CONNECTION]
# >>>>>>>>>>>>>>>>>>>>
# 3A3
# 24D1 [ORANGE]
# 4A3
# 23D1 [RED]
# >>>>>>>>>>>>>>>>>>>>
# 5A3
# 33D1 [BLUE]
# 6A3
# 32D1 [RED]
# >>>>>>>>>>>>>>>>>>>>
# 7A3
# 31D1 [SLATE]
# 8A3
# 30D1 [YELLOW]
# >>>>>>>>>>>>>>>>>>>>
# 9A3
# 37D1 [ORANGE]
# 10A3
# 36D1 [YELLOW]
# >>>>>>>>>>>>>>>>>>>>
# 11A3
# 24D2 [ORANGE]
# 12A3
# 23D2 [RED]
# >>>>>>>>>>>>>>>>>>>>
# 13A3
# 33D2 [BLUE]
# 14A3
# 32D2 [RED]
# >>>>>>>>>>>>>>>>>>>>
# 15A3
# 31D2 [SLATE]
32A3
  16D2 [ YELLOW
#
>>>>
33A3
  28D2 [ SLATE
#
34A3
  27D2 [ WHITE
#
>>>>
35A3
  26D2 [ BROWN
#
36A3
  25D2 [ RED
>>>>
37A3
  361 [ BLUE
>>>>
38A3
  362 [ BLUE
>>>>
39A3
  9D1 [ ORANGE
#
40A3
  8D1 [ WHITE
#
>>>>
41A3
  15D1 [ GREEN
#
42A3
  14D1 [ RED
#
>>>>
43A3
  13D1 [ GREEN
#
44A3
  12D1 [ WHITE
#
>>>>
45A3
  11D1 [ BROWN
#
46A3
  10D1 [ WHITE
#
>>>>
47A3
  9D2 [ ORANGE
#

301-12
FPT1WL,4 LN=254

48A3 1D2 [ WHITE
# >>>>>>>>>>>>>>>>>>>
49A3 10D2 [ GREEN
# 50A3 14D2 [ RED
# >>>>>>>>>>>>>>>>>>>
51A3 3G3 [ BLUE
# >>>>>>>>>>>>>>>>>>>
52A3 3G4 [ BLUE
# >>>>>>>>>>>>>>>>>>>
53A3 13D2 [ GREEN
# 54A3 12D2 [ WHITE
# >>>>>>>>>>>>>>>>>>>
55A3 11D2 [ BROWN
# 56A3 10D2 [ WHITE
# >>>>>>>>>>>>>>>>>>>
57A3 1G3 [ WHITE
# 58A3 2G3 [ GREEN
# >>>>>>>>>>>>>>>>>>>
59A3 1G4 [ WHITE
# 60A3 2G4 [ BROWN
# >>>>>>>>>>>>>>>>>>>
61A3 18D2 [ VIOLET
# 62A3 19D2 [ BLUE
# >>>>>>>>>>>>>>>>>>>
63A3 18D1 [ VIOLET
#
FPTIWL 5 LN=345

64A3
19D1 [ BLUE
#

65A3 [ NO CONNECTION
#
66A3 [ NO CONNECTION
#

67A3
1G2 [ WHITE
#
68A3
2G2 [ ORANGE
#

69A3
1G1 [ WHITE
#
70A3
2G1 [ BLUE
#

71A3
6D1 [ VIOLET
#
72A3
7D1 [ ORANGE
#

73A3
6D2 [ VIOLET
#
74A3
7D2 [ ORANGE
#

75A3
29D2 [ GREEN
#

76A3
29D1 [ GREEN
#

[ [ TWO WIRES ARE SOLDERED TO PIN 77A3
[ [ 77A3
5D1 [ YELLOW
5D2 [ YELLOW
#

78A3 [ SIX INCH BLUE WIRE WITH GROUND LUG
[CONNECT TO D]
[ ONE WIRE TO PIN 79A3 AND TWO WIRE CONNECTIONS ON EACH COMMON PIN OF THE SWITCHES
79A3
  1S1 [YELLOW
  1S2 [YELLOW
  1S3 [YELLOW
  1S4 [YELLOW
  1S5 [YELLOW
# [ 80A3 [ SIX INCH BLUE WIRE WITH GROUND LUG [CONNECT TO D2
  # 81A3
    2S1 [RED
  # 82A3 [NO CONNECTION
  # 83A3
    2S5 [RED
  # 84A3 [NO CONNECTION
  # 85A3
    2S4 [RED
  # 86A3 [NO CONNECTION
  # 87A3
    2S3 [RED
  # 88A3 [NO CONNECTION
  # 89A3
    2S2 [RED
  # 90A3 [NO CONNECTION

[ THE FOLLOWING CONNECTIONS ARE RESISTORS WITH THEIR LEADS CRIMPED DIRECTLY INTO THE INDICATED CONNECTOR CONTACTS. THE EXPOSED PORTION OF THE LEADS SHALL BE COVERED BY TEFLO MON SLEEVING. THE COLOR CODE MAY BE IGNORED.

>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
  1D1 [ RED
    1R601
# 2D1 [ SLATE
    2R601
# >>>>>>>>>>>>>>>>>>>>>>>>
  1D2 [ RED
    1R602
# 2D2 [ SLATE
    2R602
# >>>>>>>>>>>>>>>>
3D1 [ YELLOW
1R603
#
4D1 [ BLUE
2R603
#
# >>>>>>>>>>>>>>>>
3D2 [ YELLOW
1R604
#
4D2 [ BLUE
2R604
#
# >>>>>>>>>>>>>>>>
34D1 [ WHITE
1R605
#
35D1 [ BLUE
2R605
#
# >>>>>>>>>>>>>>>>
34D2 [ WHITE
1R606
#
35D2 [ BLUE
2R606
#
[END OF CONNECTION LIST
[
[FACEPLATE TYPE ONE COPPER LIST
[
[FPT1WL
[GERALD C JOHNS
[29 SEPT 1970
### TYPE IA FACEPLATE BOX

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<tr>
<th>PAGE</th>
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<td>Title Page</td>
<td>Issue</td>
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<td>301A-2</td>
<td>Parts List</td>
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<td>thru Introduction and Assembly Procedures</td>
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<td>Type 1A FPB Assembly</td>
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<td>Type 1A FPB Visceral Subassembly</td>
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<td>Type 1A Faceplate Sub assembly</td>
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<td>301A-8</td>
<td>Viking Connector: Wiring Instructions</td>
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<td>301A-9</td>
<td>Power Wire for Type 1A FPB</td>
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<td>301A-10</td>
<td>thru Wire List for D1, D2</td>
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<td>301A-12</td>
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<td>301A-13</td>
<td>Wire List for Viking Connector</td>
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<td>301A-14</td>
<td>Wire List for Code Switch</td>
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<td>301A-15</td>
<td>thru Type 1A FPB Wiring List</td>
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**CHG E.C.O. DATE APPR.**

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**MACROMODULAR SYSTEMS PROJECT**
# TYPE 1A FACEPLATE BOX

## PARTS LIST

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<td>300.5-3</td>
<td>FPB CONNECTOR BRACKET SCREW</td>
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<td>300.5-4</td>
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<td>FPB REAR CONNECTOR</td>
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<td>74</td>
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<td>ASTRO 348 MALE CONTACT</td>
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<td>TYPE 3 FUNCTION CODE SWITCH SUBASSEMBLY</td>
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<td>1</td>
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<td>VLIER #NS-5IN SPRING PLUNGER</td>
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<td>2</td>
<td></td>
<td>H.H. SMITH #1412-4 TERMINAL LUG</td>
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<tr>
<td>28</td>
<td>300.0</td>
<td>2-56 x 3/16 FILLISTER HEAD SS MACHINE SCREW</td>
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<td>6</td>
<td></td>
<td>WIRE (SEE 301-10 ff FOR COLOR CODE)</td>
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<tr>
<td>1</td>
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<td>130 OHM 1/8 WATTS 5% CARBON RESISTOR</td>
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<td></td>
<td>VIKING CONNECTOR #3VH10/1JN5</td>
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<td>300.5-19</td>
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<td>300.5-21</td>
<td>STRUT COVERS</td>
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<td>4-40 x 3/8 BINDER HEAD SCREWS</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>VIKING POLARIZING KEY #091-0071-000</td>
</tr>
<tr>
<td>1</td>
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<td>8-32 HEX NUT</td>
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|--------|------------|----------|-----------|--------|------------|----------|-----------|--------|------------|----------|-----------
| Iss.   | ---        | 6-4-73   | RJA       |        |            |          |           |        |            |          |           

MACROMODULAR SYSTEMS PROJECT

301A-2
TYPE 1A FACEPLATE BOX

INTRODUCTION

This document (301A) describes the assembly of the Type 1A Faceplate Box. A summary list of all required parts, including subassemblies specified in other documents, is given on page 301A-2. The general specification on wire preparation and wiring procedures (CSL Document 300.0) must be followed together with the color code information supplied by the wire lists for Type 1A FPB (pages 301A-10 thru 301A-21).

ASSEMBLY PROCEDURE

A. Type 1A Faceplate Subassembly

1. Screw the spring plunger into the faceplate until the tip protrudes approximately 0.090 inch from the front surface. Lock the plunger in place with a 8-32 hex nut. See pages 301A-5 and 301A-6.

2. Mount the two Astro 348 connectors using the ASTRO Standoffs and 2-56 fillister head screws as shown on page 301A-7. Note the orientation required.

3. Insert the Polarizing Key between contacts 8 and 9 in the Viking connector. Mount the Viking connector as shown on page 301A-7. Use two 4-40 x 3/8 binder head screws to hold the connector to the Connector Struts. Use six 2-56 fillister head screws to hold the Strut Covers to the Struts and to hold the Struts to the faceplate. NOTE: Insert all eight screws loosely before tightening any of them, then tighten the Strut Covers first. See pages 301A-6 and 301A-7.

B. Type 1A Faceplate Wire Preparation

1. Connectors D1 and D2

Following the list on pages 301A-10 thru 301A-12, crimp the wires and resistors into the male contacts and insert into the ASTRO 348 connectors. Each connector has fourteen wire pairs, three single wires, three resistors and one wire soldered to a lug.

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<tr>
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<th>DATE</th>
<th>APPR</th>
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<tbody>
<tr>
<td>Issue</td>
<td></td>
<td>6-4-73</td>
<td>RJA</td>
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301A-3
2. Following the list on page 301A-13 solder the seven wire pairs and one single wire to the Viking connector. The wires should not protrude past the ends of the contact pins. See page 301A-6 and 301A-8.

3. Two additional yellow wires are soldered to the Viking connector. Each is combined with a single yellow wire from 5D1 and 5D2 as shown on page 301A-9.

4. Solder two wires to the Type 3 Function Code Sub-assembly according to the list on page 301A-14.

C. Type 1A FPB Interwiring Subassembly

1. Mount the code switch subassembly as shown on page 301A-6.

2. Following the type 1A Faceplate Box Wiring List on pages 301A-15 thru 301A-21. Make all connections indicated to the FPB rear connector A3.

D. Final Assembly

1. Slip the FPB key onto the V-Bus subassembly connector brackets, and mount the FPB rear connector A3 using the two connector bracket screws. Note the orientation of the key as shown on page 301A-6.

2. Remove the four screws holding the top cover plate to the 1-cell FPB shell struts and remove the top cover plate and the top overlay clip. See page 301A-5.

3. Slip the rear connector bracket into the slots provided in the struts, and attach the faceplate to the front using four 2-56 fillister head screws.

4. Replace the top cover plate and overlay clip, being careful not to pinch any wires.

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301A-4
OVERLAY CLIP

REAR CONNECTOR A1

TOP COVER PLATE

COVER PLATE SCREWS (4)

1-CELL FPP SHELL

SPRING PLUNGER

MOUNTING SCREWS

CODE SWITCH S1

TYPE 1A FACEPLATE

MACROMODULAR PROJECT

COMPUTER SYSTEMS LABORATORY
WASHINGTON UNIVERSITY
ST. LOUIS, MISSOURI

TYPE 1A FPP ASSEMBLY

ISSUE 6-13-73

CHANGE NO. DESCRIPTION

RJA
SHRINK TUBING MUST BE CUT EVEN WITH TOP OF PINS

AFTER SOLDERING WIRES MUST BE
PLACED DOWN THE PIN AND BROUGHT
OUT LYING FLAT ON THE CONNECTOR

WIRE FROM PINS ON ROW A MUST BE
PLACED BETWEEN PINS ON ROW B

NOTE:
WHEN SOLDERING CARE MUST BE TAKEN NOT TO
INJURE THE WIRE INSULATION PLACED BETWEEN
THE PINS ON ROW B.

MACROMODULAR PROJECT
D1&D2LIST,1 LN=1

[CWIRE LIST FOR D1 AND D2]

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<tr>
<td>Issue</td>
<td>— —</td>
<td>64-73</td>
<td>RJA</td>
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24D1 C ORANGE
23D1 C RED

23D1 C ORANGE
22D1 C RED

22D1 C ORANGE
21D1 C RED

17D1 C GREEN
16D1 C YELLOW

9D1 C ORANGE
8D1 C WHITE
C1D2LIST,2 LN=72

15D1 C GREEN
14D1 C RED

13D1 C GREEN
12D1 C WHITE

11D1 C BROWN
10D1 C WHITE

9D2 C ORANGE
8D2 C WHITE

15D2 C GREEN
14D2 C RED

13D2 C GREEN
12D2 C WHITE

11D2 C BROWN
10D2 C WHITE

18D2 C VIOLET
19D2 C BLUE

18D1 C VIOLET
19D1 C BLUE

6D1 C VIOLET
7D1 C ORANGE

6D2 C VIOLET
7D2 C ORANGE

29D2 C GREEN

29D1 C GREEN

5D1 C YELLOW

5D2 C YELLOW

01-GND LUG CBLUE

02-GND LUG CBLUE

1C1
CRESISTOR
201

1D2
CRESISTOR
2D2

3C1
CRESISTOR
4D1
D1D2LIST,3  LN=163

>>> RESISTOR 3D2
>>> RESISTOR 4D2
>>> RESISTOR 34D1
>>> RESISTOR 35D1
>>> RESISTOR 34D2
>>> RESISTOR 35D2

[ ]
WIRED LIST FOR VIKING CONNECTOR

- 9BF [ BLUE
- 9AF [ WHITE
- 10BF [ GREEN
- 10AF [ WHITE
- 8BF [ SLATE
- 8AF [ WHITE
- 7AF [ YELLOW
- 5AF [ WHITE
- 5BF [ GREEN
- 4AF [ YELLOW
- 4BF [ BROWN
- 3AF [ RED
- 3BF [ SLATE
- 2AF [ WHITE
- 2BF [ BLUE

SEE ASSEMBLY INSTRUCTIONS

THESE TWO WIRES COMBINE WITH TWO WIRES FROM D1 AND D2.

1AF [YELLOW
1BF [YELLOW

VIKLIST
SWLIST+1 LN=1

WIRE LIST FOR CODE SWITCH

>>>>>>>>>>>
1S1 [YELLOW
   [COMMON
   [LABELLED "C"
>>>>>>>>>>>
2S1 [BLUE
   [NORMALLY OPEN
   [LABELLED "NO"
>>>>>>>>>>>

[SWLIST

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<td>6-4-73</td>
<td>RJA</td>
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FIPT1AWL-1  LN=1

[type ia faceplate box wiring list

# >>>>>>>>>>>>>>>>>>>>>>>>
# 1A3 [NO CONNECTION
# >>>>>>>>>>>>>>>>>>>>>>>>
# 2A3 [NO CONNECTION
# >>>>>>>>>>>>>>>>>>>>>>>>
3A3
# 24D1 [ ORANGE
# 4A3
# 23D1 [ RED
# >>>>>>>>>>>>>>>>>>>>>>>>
# 5A3
# 33D1 [ BLUE
# 6A3
# 32D1 [ RED
# >>>>>>>>>>>>>>>>>>>>>>>>
# 7A3
# 31D1 [ SLATE
# 8A3
# 30D1 [ YELLOW
# >>>>>>>>>>>>>>>>>>>>>>>>
# 9A3
# 37D1 [ ORANGE
# 10A3
# 36D1 [ YELLOW
# >>>>>>>>>>>>>>>>>>>>>>>>
# 11A3
# 24D2 [ ORANGE
# 12A3
# 23D2 [ RED
# >>>>>>>>>>>>>>>>>>>>>>>>
# 13A3
# 33D2 [ BLUE
# 14A3
# 32D2 [ RED
# >>>>>>>>>>>>>>>>>>>>>>>>
# 15A3
# 31D2 [ SLATE

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<td>6-4-73</td>
<td>RJA</td>
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301A-15
FPT1AWL.3 LN=163

32A3
16D2 C YELLOW
#
>>>>>>>>>>>>>>>>>>>>>
33A3
28D2 C SLATE
#
34A3
27D2 C WHITE
#
>>>>>>>>>>>>>>>>>>>>>
35A3
26D2 C BROWN
#
36A3
25D2 C RED
>>>>>>>>>>>>>>>>>>>>>
37A3 [NO CONNECTION
#
38A3 [NO CONNECTION
>>>>>>>>>>>>>>>>>>>>>
39A3
9D1 C ORANGE
#
40A3
8D1 C WHITE
#
>>>>>>>>>>>>>>>>>>>>>
41A3
1501 C GREEN
#
42A3
14D1 C RED
#
>>>>>>>>>>>>>>>>>>>>>
43A3
13D1 C GREEN
#
44A3
12D1 C WHITE
#
>>>>>>>>>>>>>>>>>>>>>
45A3
11D1 C BROWN
#
46A3
10D1 C WHITE
#
>>>>>>>>>>>>>>>>>>>>>
47A3
9D2 C ORANGE
#
48A3
8D2 C WHITE
#
FPT1AWL.5 LN=345

66A3   NO CONNECTION
# 67A3   NO CONNECTION
# 68A3   NO CONNECTION
# >>>>>>>>>>>>>>>>>>
69A3  8BF  SLATE
# 70A3  8AF  WHITE
# >>>>>>>>>>>>>>>>>>
71A3  6D1  VIOLET
# 72A3  7D1  ORANGE
# >>>>>>>>>>>>>>>>>>
73A3  6D2  VIOLET
# 74A3  7D2  ORANGE
# >>>>>>>>>>>>>>>>>>
75A3  29D2  GREEN
# >>>>>>>>>>>>>>>>>>
76A3  29D1  GREEN
# >>>>>>>>>>>>>>>>>>

[ TWO WIRES ARE SOLVERED TO PIN 77A3, ONE TO 1AF AND THE OTHER TO 1BF.
 THERE IS A WIRE FROM 1AF TO 5D1 AND A WIRE FROM 1BF TO 5D2
 [ 77A3
 [ 1AF  YELLOW
 5D1  YELLOW
 [ 1BF  YELLOW
 5D2  YELLOW
 # >>>>>>>>>>>>>>>>>>
78A3  SI SIX INCH BLUE WIRE WITH GROUND LUG
 [CONNECT TO D1
 # >>>>>>>>>>>>>>>>>>
79A3  1S1  YELLOW
 #
C 80A3 SIX INCH BLUE WIRE WITH GROUND LUG
C CONNECT TO D2
#
```
81A3
2S1 [BLUE
#
```
```
82A3
7AF [YELLOW
#
```
```
83A3
5AF [WHITE
#
```
```
84A3
5BF [GREEN
#
```
```
85A3
4AF [YELLOW
#
```
```
86A3
4BF [BROWN
#
```
```
87A3
3AF [RED
#
```
```
88A3
3BF [SLATE
#
```
```
89A3
2AF [WHITE
#
```
```
90A3
2BF [BLUE
#
```
```
```
C THE FOLLOWING CONNECTIONS ARE RESISTORS WITH THEIR LEADS CRIMPED DIRECTLY INTO THE INDICATED CONNECTOR CONTACTS. THE EXPOSED PORTION OF THE LEADS SHALL BE COVERED BY TEFLOM SLEEVING. THE COLOR CODE MAY BE IGNORED.
C
```
1D1 [RED
1R601
#
```
```
2D1 [SLATE
2R601
#
```
```
1D2 [RED
1R602
```
FPT1AWL.7  LN=523

# 2D2 [ SLATE
   2P602
#
>>>>
3D1 [ YELLOW
1R603
#
4D1 [ BLUE
2R603
#
>>>>
3D2 [ YELLOW
1R604
#
4D2 [ BLUE
2R604
#
>>>>
34D1 [ WHITE
1R605
#
35D1 [ BLUE
2P605
#
>>>>
34D2 [ WHITE
1R606
#
35D2 [ BLUE
2R606
#
[ END OF CONNECTION LIST
[
CFPT1AWL

301A-21
# TYPE 2 FACEPLATE BOX

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<td>TYPE 2 FACEPLATE BOX PARTS LIST</td>
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<td>TYPE 2 FACEPLATE BOX - INTRODUCTION AND ASSEMBLY PROCEDURE</td>
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<td>TYPE 2 FPB ASSEMBLY</td>
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<td>302-5</td>
<td>TYPE 2 FPB REAR CONNECTOR BLOCK-ASSEMBLY ORIENTATION</td>
<td>A</td>
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<td>302-6</td>
<td>TYPE 2 FPB VISCERAL SUBASSEMBLY</td>
<td>A B</td>
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<td>TYPE 2 FPB FUNCTION CODE WIRING SUB-SUBASSEMBLY</td>
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<td>B</td>
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<td>11/16/71</td>
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302-1
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<td>300.5-2</td>
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<td>FPB REAR CONNECTOR</td>
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<tr>
<td>24</td>
<td>300.0</td>
<td>COAXICON</td>
</tr>
<tr>
<td>24</td>
<td>300.0</td>
<td>FERRULE</td>
</tr>
<tr>
<td>24</td>
<td>300.0</td>
<td>WIRE (SEE 302-10 ff FOR COLOR CODE)</td>
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<tr>
<td>1</td>
<td>300.7-4</td>
<td>1/16 X 1/4 CADMIUM PLATED STEEL ROLL PIN</td>
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<tr>
<td>1</td>
<td>300.7-4</td>
<td>TYPE-2 FUNCTION CODE SWITCH SUBASSEMBLY</td>
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<td>300.5-12</td>
<td>VLIER N5-SIN SPRING PLUNGERS</td>
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<td>6</td>
<td>300.5-12</td>
<td>3/16 X 2-56 FILLISTER HEAD SS MACHINE SCREW</td>
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MACROMODULAR SYSTEMS PROJECT

302-2
TYPE 2 FACEPLATE BOX

INTRODUCTION

This document (302) describes the assembly of the Type 2 Faceplate Box. A list of all required parts, including sub-assemblies specified in other documents, is given on page 302-2. The general specification on wire preparation and wiring procedures (CSL Document 300.0) must be followed, together with the color code information supplied by the Type 2 Faceplate Box Wiring List (pages 302-10 ff).

ASSEMBLY PROCEDURE

A. Type 2 Faceplate Sub-subassembly (see page 302-9)

1. Crimp-wire the set of twenty-four coaxicon control connectors and press the resulting pre-wired connectors into the faceplate in the locations shown on page 302-9 taking care to assure that after installation the connectors will accept a mating coaxicon plug without binding. NOTE THE ORIENTATION REQUIRED.

2. Screw the spring plunger into the faceplate until the tip of the plunger protrudes from the front surface of the faceplate by approximately 0.090 inch.

3. Install the roll pin in the lower right corner hole as shown, flush with the rear surface of the faceplate (protruding from the front surface approximately 1/16 inch).

4. Following the Type 2 Faceplate box wiring list, wire the leads from the coaxicon control connectors to one of the FPB rear connectors (A3).

B. Type 2 FPB Function Code wiring Sub-subassembly (see page 302-8).

1. Jumper the Type 2 Function Code Switch Sub-assembly and wire it to a second FPB Rear Connector (A4).
C. Type 2 Visceral Subassembly (see page 302-7)

1. Mount the FPB rear connector Filler Strip on the two connector brackets with connector bracket screws, as shown on page (302-6). Note that the row of holes is not centered on the bracket. The bracket edge closest to the row of holes must face inward (towards the connector pins). NOTE CONNECTOR ORIENTATION REQUIRED.

2. Mount the Function Code Switch Subassembly on the faceplate using two 2-56 fillister head screws. The sense pins must operate freely.

3. Mount FPB Rear Connector A4 to the connector brackets using connector bracket screws. NOTE CONNECTOR ORIENTATION REQUIRED.

4. Slip the FPB Key onto the connector brackets, and mount the FPB Rear Connector A3 using the two remaining connector bracket screws. NOTE THE ORIENTATION REQUIRED.

D. Final Assembly (see page 302-5)

1. Remove the four screws holding the top cover plate to the 1-cell FPB Shell struts and remove the top cover plate and the top overlay clip.

2. Slip the rear connector block of the Visceral Subassembly into the slots provided in the struts for the connector brackets, and attach the Faceplate to the front using the remaining 2-56 fillister head screws. NOTE THE ORIENTATION REQUIRED.

3. Reinstall the top overlay clip and attach the top cover plate, taking care to assure that the wires are not pinched.
NOTE ORIENTATION

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MACROMODULAR PROJECT

TYPE 2 FPB ASSEMBLY

WAC 302-5

10-20-70
FPB CONNECTOR BRACKET

FPB REAR CONNECTOR A3

FPB KEY

FPB REAR CONNECTOR FILLER STRIP

FPB REAR CONNECTOR A4

KEY TAB EXTENDS LEFTWARDS

NOTE ORIENTATION OF EACH PART
SHRINK TUBING OPTIONAL TO PREVENT BREAKAGE DURING ASSEMBLY

FPB REAR CONNECTOR A3

FPB KEY

FPB REAR CONNECTOR A4

FPB REAR CONNECTOR FILLER STRIP

TYPE 2 FACEPLATE SUB-SUBASSEMBLY
(SEE PAGE 302-9)

TYPE 2 FPB FUNCTION CODE WIRING SUB-SUBASSEMBLY
(SEE PAGE 301-8)

FPB CONNECTOR BRACKET SCREWS

FPB CONNECTOR BRACKET

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ST. LOUIS, MISSOURI

MACROMODULAR PROJECT
TYPE 2 FPB FUNCTION CODE SWITCH
SUBASSEMBLY

FPB REAR CONNECTOR
A4

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WASHINGTON UNIVERSITY
ST. LOUIS, MISSOURI

MACROMODULAR PROJECT

TITLE: TYPE 2 FPB FUNCTION CODE
WIRING SUB-SUBASSEMBLY

CHANGE NO  DATE  DESCRIPTION
B  11-21-71  E.C.O. 0229  RJA

APPROVED FOR DATE DRAWN BY CHECKED DATE
WAC  PROD. 11-24-71 PLL RJA 8-24-70
PRESS-FIT PREWIRED COAXICONS

SPRING PLUNGER

TYPE 2 FACEPLATE

FPB REAR CONNECTOR A3

G8 G7 G6 G5 G4 G3 G2 G1
G20/G19 G18 G17 G12 G11 G10 G9
G24 G23 G22 G21 G16 G15 G14 G3

ROLL PIN SUNK FLUSH WITH REAR SURFACE

NOTE ORIENTATION

COMPRESSOR SYSTEMS LABORATORY

TYPE 2 FACEPLATE SUB-SUBASSEMBLY

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ST. LOUIS, MISSOURI

MACROMODULAR PROJECT

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ISSUE

CHANGE

NO.

DATE

DESCRIPTION

MACROMODULAR PROJECT

TITLE:
FPT2WL,1 LN=1

[FPT2C]

[WIRING LIST FOR TYPE TWO FACEPLATE BOX]

# >>>>>>>>>>>>>>>>>>>>

1A3
3G7 [ BLUE
3G8 [ BLUE

# >>>>>>>>>>>>>>>>>>>>

2A3
3G19 [ BLUE
3G20 [ BLUE

# >>>>>>>>>>>>>>>>>>>>

3A3
1G24 [ YELLOW

# 4A3
2G24 [ GREEN

# >>>>>>>>>>>>>>>>>>>>

5A3
1G23 [ YELLOW

# 6A3
2G23 [ ORANGE

# >>>>>>>>>>>>>>>>>>>>

7A3
1G20 [ RED

# 8A3
2G20 [ BROWN

# >>>>>>>>>>>>>>>>>>>>

9A3
1G19 [ RED

# 10A3
2G19 [ GREEN

# >>>>>>>>>>>>>>>>>>>>

11A3
1G22 [ YELLOW

# 12A3
2G22 [ BLUE

# >>>>>>>>>>>>>>>>>>>>

13A3
1G21 [ RED


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268 [ GREEN
#
 >>>>>>>>>>>>>>>>>>>>
35A3
167 [ YELLOW
#
36A3
267 [ ORANGE
#
 >>>>>>>>>>>>>>>>>>>>
37A3
3617 [ BLUE
3618 [ BLUE
#
 >>>>>>>>>>>>>>>>>>>>
38A3
3621 [ BLUE
3622 [ BLUE
#
 >>>>>>>>>>>>>>>>>>>>
39A3
164 [ WHITE
#
40A3
264 [ BROWN
#
 >>>>>>>>>>>>>>>>>>>>
41A3
163 [ WHITE
#
42A3
263 [ GREEN
#
 >>>>>>>>>>>>>>>>>>>>
43A3
166 [ YELLOW
#
44A3
266 [ BLUE
#
 >>>>>>>>>>>>>>>>>>>>
45A3
165 [ WHITE
#
46A3
265 [ SLATE
#
 >>>>>>>>>>>>>>>>>>>>
47A3
162 [ WHITE
#
48A3
262 [ ORANGE
#
 >>>>>>>>>>>>>>>>>>>>
49A3
161 [ WHITE

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302-12
FP  

T  

2"L  

S LN=345  

66A3  
361 [ BLUE  
362 [ BLUE  

#  

>>>>>>>>>>>>>>>>>>>  
67A3  
1G14 [ YELLOW  

#  

68A3  
2G14 [ BLUE  

#  

>>>>>>>>>>>>>>>>>>>  
69A3  
1G13 [ RED  

70A3  
2G13 [ SLATE  

#  

>>>>>>>>>>>>>>>>>>>  
71A3  
1G10 [ RED  

72A3  
2G10 [ ORANGE  

#  

>>>>>>>>>>>>>>>>>>>  
73A3  
1G9 [ RED  

74A3  
2G9 [ BLUE  

#  

>>>>>>>>>>>>>>>>>>>  
75A3 [ NO CONNECTION  

76A3 [ NO CONNECTION  

#  

>>>>>>>>>>>>>>>>>>>  
77A3  
90A4 [ YELLOW  

#  

>>>>>>>>>>>>>>>>>>>  
78A2  
369 [ BLUE  
3610 [ BLUE  

#  

>>>>>>>>>>>>>>>>>>>  
79A3 [ NO CONNECTION  

#  

>>>>>>>>>>>>>>>>>>>  
80A3  
3613 [ BLUE  
3614 [ LL'IE  

#  

>>>>>>>>>>>>>>>>>>>  
81A3 [ NO CONNECTION  

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302-14
SWITCHES ARE WIRED WITH SINGLE WIRES

82A3 [NO CONNECTION
#
83A3 [NO CONNECTION
#
84A3 [NO CONNECTION
#
85A3 [NO CONNECTION
#
86A3 [NO CONNECTION
#
87A3 [NO CONNECTION
#
88A3 [NO CONNECTION
#
89A3 [NO CONNECTION
#
90A3 [NO CONNECTION
#

SWITCHES ARE WIRED WITH SINGLE WIRES

79A4 [NO CONNECTION
#
80A4
2S1 [RED
#
81A4 [NO CONNECTION
#
82A4
2S2 [RED
#
83A4 [NO CONNECTION
#
84A4
2S3 [RED
#
86A4 [NO CONNECTION
#
87A4 [NO CONNECTION
#
88A4
1S1 [YELLOW
1S2 [YELLOW
1S3 [YELLOW
#
89A4 [NO CONNECTION
#

END OF WIRING LIST

FPT2WL
GERALD C JOHNS
# TYPE 3 FACEPLATE BOX

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<td>TYPE 3 FACEPLATE BOX PARTS LIST</td>
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<td>TYPE 3 FPB ASSEMBLY</td>
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<td>TYPE 3 FPB REAR CONNECTOR BLOCK – ASSEMBLY ORIENTATION</td>
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<td>TYPE 3 INTERWIRING SUB-SUBASSEMBLY</td>
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<td>TYPE 3 FACEPLATE SUB-SUBASSEMBLY</td>
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ISSUE | - | 9/15/70 | HRZ | A | 0041 | 10/5/70 | ICJ | | | | |
# TYPE 3 FACEPLATE BOX

## PARTS LIST

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<td>300.5-9</td>
<td>TYPE 3 FACEPLATE</td>
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<td>300.5-3</td>
<td>FPB CONNECTOR BRACKET SCREW</td>
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<td>12</td>
<td>300.5-4</td>
<td>ASTRO STANDOFF</td>
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<td>FPB KEY</td>
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<td>V-BUS SUBASSEMBLY</td>
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<td>FPB REAR CONNECTOR</td>
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<td>3</td>
<td>300.0</td>
<td>ASTRO 348 REAR NUT</td>
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<tr>
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<td>ASTRO 348 CONTACT RETENTION DISC</td>
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<td>ASTRO 348 INTERFACIAL SEAL</td>
</tr>
<tr>
<td>108</td>
<td>300.0</td>
<td>ASTRO 348 MALE CONTACT</td>
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<tr>
<td>3</td>
<td>300.0</td>
<td>ASTRO 348 RECEPTACLE SHELL</td>
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<tr>
<td>1</td>
<td></td>
<td>YLIER -NS- 5IN SPRING PLUNGER</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>NO. 2 SERRATED- HOLE SOLDER LUG</td>
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<td>28</td>
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<td>3/16 X 2-56 FILLISTER HEAD SS MACHINE SCREW</td>
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<td>WIRE (SEE 303-10 ff FOR COLOR CODE)</td>
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<td>130 OHM 1/8 WATT 5% CARBON RESISTOR</td>
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MACROMODULAR SYSTEMS PROJECT

303-2
INTRODUCTION

This document (303) describes the assembly of the Type 3 Faceplate Box. A list of all required parts, including subassemblies specified in other documents, is given on page 303-2. The general specification on wire preparation and wiring procedures (CSL Document 300.0) must be followed, together with the color code information supplied by the Type 3 Faceplate Box Wiring List (pages 303-10 ff).

ASSEMBLY PROCEDURE

A. Type 3 Faceplate Sub-subassembly (see page 303-9)

1. Screw the spring plunger into the faceplate until the tip of the plunger protrudes from the front surface of the faceplate by approximately 0.090 inch.

2. Mount the three ASTRO 348 receptacle shells via the ASTRO standoffs to the faceplate as shown on page 303-9 using 2-56 fillister head screws. NOTE THE ORIENTATION REQUIRED.

B. Type 3 FPB Interwiring Sub-subassembly (see page 303-8)

1. Connectors D1, D2 and D3
   Following the Type 3 Faceplate Box Wiring List, crimp the wire pairs and the six resistors into the ASTRO 348 male contacts and insert the contacts into designated contact retention discs (pin numbering is stamped in the receptacle shell). Apply the interfacial seals and slip on the rear nuts.

2. Wire to the FPB rear connector A3, together with three solder-lug leads.

C. Type 3 Visceral Subassembly (see page 303-7)

1. Install the contact retention disc assemblies in the corresponding receptacle shells for D1, D2 and D3 (shown on page 303-9) and hand-tighten the ASTRO 348 Rear Nuts.
2. Attach the solder lugs to the receptacle shells as shown.

3. Rear connector block:
   Slip the FPB Key onto the V-Bus Subassembly connector brackets, and mount the FPB Rear Connector A3 using the two connector bracket screws. NOTE THE ORIENTATION REQUIRED. (page 303-6).

D. Final Assembly (see page 303-5)

1. Remove the four screws holding the top cover plate to the 1-cell FPB Shell struts and remove the top cover plate and the top overlay clip.

2. Slip the rear connector block of the Visceral Subassembly into the slots provided in the struts for the connector bracket, and attach the Faceplate to the front using the remaining 2-56 fillister head screws. NOTE THE ORIENTATION REQUIRED.

3. Reinstall the top overlay clip and attach the top cover plate, taking care to assure that the wires are not pinched.

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NOTE ORIENTATION
FPB REAR CONNECTOR A3

FPB KEY

V-BUS SUBASSEMBLY

KEY TAB EXTENDS LEFTWARDS

NOTE ORIENTATION OF EACH PART
SOLDER LUG (ONE OF THREE)

D1

D2

INTERFACIAL SEAL

D3

MALE CONTACTS

REAR NUT

CONTACT RETENTION DISC

FPB REAR CONNECTOR A3
NOTE ORIENTATION

TYPE 3 FACEPLATE

ASTRO STANDBOFF

ASTRO 348 RECEPTACLE SHELLS

SPRING PLUNGER

COMPUTER SYSTEMS LABORATORY
WASHINGTON UNIVERSITY
ST. LOUIS, MISSOURI

MACROMODULAR PROJECT

TITLE: TYPE 3 FACEPLATE SUB-SUBASSEMBLY

DRAWING NO: 303-9

DRAWN BY: DHO

CHECK:...

DATE: 8-24-70

PROD: 4/18/10

APPROVED: GCJ

 ISSUE: 9/15/70 WA2
[TYPE THREE FACEPLATE BOX WIRING LIST]

# 1A3 [NO CONNECTION]
# 2A3 [NO CONNECTION]
# 3A3
# 24D1 [ ORANGE]
# 4A3
# 23D1 [ RED]
# 5A3
# 33D1 [ BLUE]
# 6A3
# 32D1 [ RED]
# 7A3
# 31D1 [ SLATE]
# 8A3
# 30D1 [ YELLOW]
# 9A3
# 37D1 [ ORANGE]
# 10A3
# 36D1 [ YELLOW]
# 11A3
# 24D2 [ ORANGE]
# 12A3
# 23D2 [ RED]
# 13A3
# 33D2 [ BLUE]
# 14A3
# 32D2 [ RED]
# 15A3
# 31D2 [ SLATE]
# 16A3

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303-10
30D2 [ YELLOW
#
…………………………
17A3
37D2 [ ORANGE
#
18A3
36D2 [ YELLOW
#
…………………………
19A3
22D1 [ BLUE
#
20A3
22D2 [ BLUE
#
…………………………
21A3
21D1 [ BROWN
#
22A3
20D1 [ YELLOW
#
…………………………
23A3
17D1 [ GREEN
#
24A3
16D1 [ YELLOW
#
…………………………
25A3
28D1 [ SLATE
#
26A3
27D1 [ WHITE
#
…………………………
27A3
26D1 [ BROWN
#
28A3
25D1 [ RED
#
…………………………
29A3
21D2 [ BROWN
#
30A3
20D2 [ YELLOW
#
…………………………
31A3
17D2 [ GREEN
#
32A3
16D2 [ YELLOW
FPT3WL>4 LN=254

15D2 [ GREEN
#
50A3
14D2 [ RED
#
>>>>>>>>>>>>>>>>>
51A3 [ NO CONNECTION
#
52A3 [ NO CONNECTION
#
>>>>>>>>>>>>>>>>>
53A3
13D2 [ GREEN
#
54A3
12D2 [ WHITE
#
>>>>>>>>>>>>>>>>>
55A3
11D2 [ BROWN
#
56A3
10D2 [ WHITE
#
>>>>>>>>>>>>>>>>>
57A3
18D3 [ VIOLET
#
58A3
19D3 [ BLUE
#
>>>>>>>>>>>>>>>>>
59A3
6D3 [ VIOLET
#
60A3
7D3 [ ORANGE
#
>>>>>>>>>>>>>>>>>
61A3
18D2 [ VIOLET
#
62A3
19D2 [ BLUE
#
>>>>>>>>>>>>>>>>>
63A3
18D1 [ VIOLET
#
64A3
19D1 [ BLUE
#
>>>>>>>>>>>>>>>>>
65A3 [ NO CONNECTION
#
66A3 [ SIX INCH WIRE WITH GROUND LUG
[ CONNECT TO D ]

303-13
FPT3WL.5 LN=345

# 67A3 [NO CONNECTION
# 68A3 [NO CONNECTION
# 69A3 [NO CONNECTION
# 70A3 [NO CONNECTION
#
>>>>>>>>>>>>>>>>>
71A3
6D1 [ VIOLET
#
72A3
7D1 [ ORANGE
#
>>>>>>>>>>>>>>>>>
73A3
6D2 [ VIOLET
#
74A3
7D2 [ ORANGE
#
>>>>>>>>>>>>>>>>>
75A3
29D2 [ GREEN
#
76A3
29D1 [ GREEN
#
>>>>>>>>>>>>>>>>>
[THREE WIRES ARE SOLDERED TO PIN 77A3
77A3
5D1 [ YELLOW
5D2 [ YELLOW
5D3 [ YELLOW
#
78A3 [ SIX INCH BLUE WIRE WITH GROUND LUG
[CONNECT TO D2
#
79A3 [NO CONNECTION
#
80A3 [ SIX INCH BLUE WIRE WITH GROUND LUG
[CONNECT GROUND LUG TO CONNECTOR D3
#
81A3 [NO CONNECTION
#
82A3
22D3 [ BLUE
#
>>>>>>>>>>>>>>>>>
83A3
24D3 [ ORANGE
#
84A3
23D3 [ RED
#
303-14
THE FOLLOWING CONNECTIONS ARE RESISTORS WITH THEIR LEADS CRIMPED DIRECTLY INTO THE INDICATED CONNECTOR CONTACTS. THE EXPOSED PORTION OF THE LEADS SHALL BE COVERED BY TEFLOM SLEEVING. THE COLOR CODE MAY BE IGNORED.

1D1 [ RED
  1R601
#
2D1 [ SLATE
  2R601
#
1D2 [ RED
  1R602
#
2D2 [ SLATE
  2R602
#
3D1 [ YELLOW
  1R603
#
4D1 [ BLUE
  2R603
#
3D2 [ YELLOW
  1R604
#
4D2 [ BLUE
  2R604
#
34D1 [ WHITE
FPT3WL,7  LN=524

1R605
#
  35D1 [ BLUE
  2R605
#
 >>>>>>>>>>>>>>>
  34D2 [ WHITE
  1R606
#
  35D2 [ BLUE
  2R606
#
 >>>>>>>>>>>>>>>

[END OF WIRING LIST
[

[TYPY THREE FACEPLATE COPPER LIST
[

[FPT3WL
[GERALD C JOHNS
[22 JULY 1970
## TYPE 4 FACEPLATE BOX

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<td>TYPE 4 FPB REAR CONNECTOR BLOCK-ASSEMBLY ORIENTATION</td>
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MACROMODULAR SYSTEMS PROJECT
# TYPE 4 FACEPLATE BOX

## PARTS LIST

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<td>300.0</td>
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<td>ASTRO 348 INTERFACIAL SEAL</td>
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<td>37</td>
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<td>ASTRO 348 MALE CONTACT</td>
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<td>ASTRO 348 RECEPTACLE SHELL</td>
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<tr>
<td>9</td>
<td>300.0</td>
<td>COAXICON</td>
</tr>
<tr>
<td>9</td>
<td>300.0</td>
<td>FERRULE</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>VLER #NS-51N SPRING PLUNGER</td>
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<tr>
<td>1</td>
<td></td>
<td>NO. 2 SERRATED-HOLE SOLDER LUG</td>
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<td>12</td>
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<td>3/16 X 2-56 FILLISTER HEAD SS MACHINE SCREW</td>
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<td>WIRE (SEE 3 04-10 FF FOR COLOR CODE)</td>
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<tr>
<td>3</td>
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<td>130 OHM 1/8 WATT 5% CARBON RESISTOR</td>
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MACROMODULAR SYSTEMS PROJECT

304-2
TYPE 4 FACEPLATE BOX

INTRODUCTION

This document (304) describes the assembly of the Type 4 Faceplate Box. A list of all required parts, including subassemblies specified in other documents, is given on page 304-2. The general specification on wire preparation and wiring procedures (CSL Document 300.0) must be followed, together with the color code information supplied by the Type 4 Faceplate Box Wiring List (pages 304-10 ff).

ASSEMBLY PROCEDURE

A. Type 4 Faceplate Sub-subassembly (see page 304-9)

1. Crimp-wire the set of nine coaxicon control connectors and press the resulting pre-wired connectors into the faceplate in the locations shown on page 304-9, taking care to assure that after installation the connectors will accept a mating coaxicon plug without binding. NOTE THE ORIENTATION REQUIRED.

2. Screw the spring plunger into the faceplate until the tip of the plunger protrudes from the front surface of the faceplate by approximately 0.090 inch.

3. Mount the ASTRO 348 receptacle shell via the ASTRO standoffs to the faceplate as shown on page 304-9 using 2-56 fillister head screws. NOTE THE ORIENTATION REQUIRED.

B. Type 4 FPB Interwiring Sub-subassembly (see page 304-8)

1. Connector D1:
Following the Type 4 Faceplate Box Wiring List, crimp the wire pairs and the three resistors into the ASTRO 348 male contacts and insert the contacts into the contact retention disc (pin numbering is stamped in the receptacle shell). Apply the interfacial seal and slip on the rear nut.

2. Wire to the FPB rear connector A3, together with solder-lug lead.
C. Type 4 Visceral Subassembly (see page 304-7)

1. Wire the leads from the coaxicon control connectors to the FPB Rear Connector A3.

2. Install the contact retention disc assembly in the corresponding receptacle shell of D1 (shown on page 304-9) and hand-tighten the ASTRO 348 Rear Nut.

3. Attach the solder lug to the receptacle shell as shown.

4. Rear connector block:
   Slip the FPB Key onto the V-Bus Subassembly connector brackets, and mount the FPB Rear Connector A3 using the two connector bracket screws. **NOTE THE ORIENTATION REQUIRED** (page 304-6).

D. Final Assembly (see page 304-5)

1. Remove the four screws holding the top cover plate to the 1-cell FPB Shell struts and remove the top cover plate and the top overlay clip.

2. Slip the rear connector block of the Visceral Subassembly into the slots provided in the struts for the connector brackets, and attach the Faceplate to the front using the remaining 2-56 fillister head screws. **NOTE THE ORIENTATION REQUIRED**.

3. Reinstall the top overlay clip and attach the top cover plate, taking care to assure that the wires are not pinched.
NOTE ORIENTATION

TYPE 4 FPB VISCERAL SUBASSEMBLY
(SEE PAGE 304-7)

MOUNTING SCREWS

I-CELL FPB SHELL

TOP OVERLAY CLIP

TOP COVER PLATE

COMPUTER SYSTEMS LABORATORY
WASHINGTON UNIVERSITY
ST. LOUIS, MISSOURI

MACROMODULAR PROJECT

TYPE 4 FPB ASSEMBLY

WAC 304-5

ISSUE 9-17-70

CHANGE NO. DATE DESCRIPTION

APPROVED

DATE

DRAWN

CHECKED

DATE

8-28-70
FPB REAR CONNECTOR A3

FPB KEY

V - BUS SUBASSEMBLY

KEY TAB EXTENDS LEFTWARDS

NOTE ORIENTATION OF EACH PART
TYPE 4 FACEPLATE SUB-SUBASSEMBLY
(SEE PAGE 304-9)

TYPE 4 INTERWIRING SUB-SUBASSEMBLY
(SEE PAGE 304-8)

FPB CONNECTOR BRACKET SCREW

V-BUS SUBASSEMBLY

COMPUTER SYSTEMS LABORATORY
WASHINGTON UNIVERSITY
ST. LOUIS, MISSOURI

Macromodular Project

Title: TYPE 4 FPB VISCERAL SUBASSEMBLY

Issue Date: 9-17-70

Drawn by: WDC

Approved: WDC

Checked: WDC

Drawing No.: 304-7

WAC: 8-28-70
[TYPE FOUR FACEPLATE BOX WIRING LIST]

# >>>>>>>>>>>>>>>>>>>
# 1A3 [NO CONNECTION
# >>>>>>>>>>>>>>>>>>>
# 2A3 [NO CONNECTION
# >>>>>>>>>>>>>>>>>>>
# 3A3
# 24D1 [ ORANGE
# 4A3
# 23D1 [ RED
# >>>>>>>>>>>>>>>>>>>
# 5A3
# 33D1 [ BLUE
# 6A3
# 32D1 [ RED
# >>>>>>>>>>>>>>>>>>>
# 7A3
# 31D1 [ SLATE
# 8A3
# 30D1 [ YELLOW
# >>>>>>>>>>>>>>>>>>>
# 9A3
# 37D1 [ ORANGE
# 10A3
# 36D1 [ YELLOW
# >>>>>>>>>>>>>>>>>>>
# 11A3 [NO CONNECTION
# 12A3 [NO CONNECTION
# 13A3 [NO CONNECTION
# 14A3 [NO CONNECTION
# 15A3 [NO CONNECTION
# 16A3 [NO CONNECTION
# 17A3 [NO CONNECTION
# 18A3 [NO CONNECTION
# >>>>>>>>>>>>>>>>>>>
# 19A3
22D1 ( BLUE
#

>>>>>>>>
20A3 ( NO CONNECTION
#

>>>>>>>>
21A3
21D1 ( BROWN
#
22A3
20D1 ( YELLOW

>>>>>>>>
23A3
17D1 ( GREEN
#
24A3
16D1 ( YELLOW
#

>>>>>>>>
25A3
28D1 ( SLATE
#
26A3
27D1 ( WHITE
#

>>>>>>>>
27A3
26D1 ( BROWN
#
28A3
25D1 ( RED
#

>>>>>>>>
29A3 ( NO CONNECTION
#
30A3 ( NO CONNECTION
#
31A3 ( NO CONNECTION
#
32A3 ( NO CONNECTION
#
33A3 ( NO CONNECTION
#
34A3 ( NO CONNECTION
#
35A3 ( NO CONNECTION
#
36A3 ( NO CONNECTION

>>>>>>>>
37A3
3G5 ( BLUE
#

>>>>>>>>
38A3
3G9 ( BLUE
FPT4WL.3  LN=163

#  >>>>>>>>>>>>>>>>>>>>>>>  39A3
#  9D1 [ ORANGE
#  40A3
#  8D1 [ WHITE
#  >>>>>>>>>>>>>>>>>>>>>>>  41A3
#  15D1 [ GREEN
#  42A3
#  14D1 [ RED
#  >>>>>>>>>>>>>>>>>>>>>>>  43A3
#  13D1 [ GREEN
#  44A3
#  12D1 [ WHITE
#  >>>>>>>>>>>>>>>>>>>>>>>  45A3
#  11D1 [ BROWN
#  46A3
#  10D1 [ WHITE
#  >>>>>>>>>>>>>>>>>>>>>>>  47A3
#  1G2 [ WHITE
#  48A3
#  2G2 [ ORANGE
#  >>>>>>>>>>>>>>>>>>>>>>>  49A3
#  1G3 [ WHITE
#  50A3
#  2G3 [ GREEN
#  >>>>>>>>>>>>>>>>>>>>>>>  51A3
#  3G4 [ BLUE
#  3G6 [ BLUE
#  >>>>>>>>>>>>>>>>>>>>>>>  52A3
#  3G3 [ BLUE
#  3G7 [ BLUE
#  >>>>>>>>>>>>>>>>>>>>>>>  53A3
#  1G4 [ WHITE
#
54A3
2G4 [ BROWN
#
>>>>>>>>>>>>>>>>
55A3
1G5 [ WHITE
#
56A3
2G5 [ SLATE
#
>>>>>>>>>>>>>>>>
57A3
1G6 [ YELLOW
#
58A3
2G6 [ BLUE
#
>>>>>>>>>>>>>>>>
59A3
1G7 [ YELLOW
#
60A3
2G7 [ ORANGE
#
>>>>>>>>>>>>>>>>
61A3
1G8 [ YELLOW
#
62A3
2G8 [ GREEN
#
>>>>>>>>>>>>>>>>
63A3
18D1 [ VIOLET
#
64A3
19D1 [ BLUE
#
>>>>>>>>>>>>>>>>
65A3
3G2 [ BLUE
#
>>>>>>>>>>>>>>>>
66A3
3G6 [ BLUE
#
>>>>>>>>>>>>>>>>
67A3
1G9 [ RED
#
68A3
2G9 [ BLUE
#
>>>>>>>>>>>>>>>>
69A3
1G1 [ WHITE
70A3
2G1 [ BLUE
#

71A3
6D1 [ VIOLET
#
72A3
7D1 [ ORANGE
#

73A3 [ NO CONNECTION
#
74A3 [ NO CONNECTION
#
75A3 [ NO CONNECTION
#

76A3
29D1 [ GREEN
#

77A3
5D1 [ YELLOW
#

78A3
3G1 [ BLUE
#

79A3 [ NO CONNECTION
#
80A3 [ SIX INCH BLUE WIRE WITH GROUND LUG
[CONNECT TO D1
#

81A3 [ NO CONNECTION
#

82A3 [ NO CONNECTION
#

83A3 [ NO CONNECTION
#

84A3 [ NO CONNECTION
#

85A3 [ NO CONNECTION
#

86A3 [ NO CONNECTION
#

87A3 [ NO CONNECTION
THE FOLLOWING CONNECTIONS ARE RESISTORS WITH THEIR LEADS CRIMPED DIRECTLY INTO THE INDICATED CONNECTOR CONTACTS. THE EXPOSED PORTION OF THE LEADS SHALL BE COVERED BY TEFLOM SLEEVING. THE COLOR CODE MAY BE IGNORED.

1D1 [ RED
1R601

2D1 [ SLATE
2R601

3D1 [ YELLOW
1R602

4D1 [ BLUE
2R602

34D1 [ WHITE
1R603

35D1 [ BLUE
2R603

END OF WIRING LIST
This document is divided into two segments. The first segment, pages 100.1-1 through 100.1-5, contains the information necessary to duplicate Macro-module Faceplate Overlays and Overlay Labels plus a brief functional description of the Overlay.

The second segment of this volume contains the necessary procedures and wiring lists for the assembly of Macro-Module Faceplate Box types 1 through 4.
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