![Dantel logo]
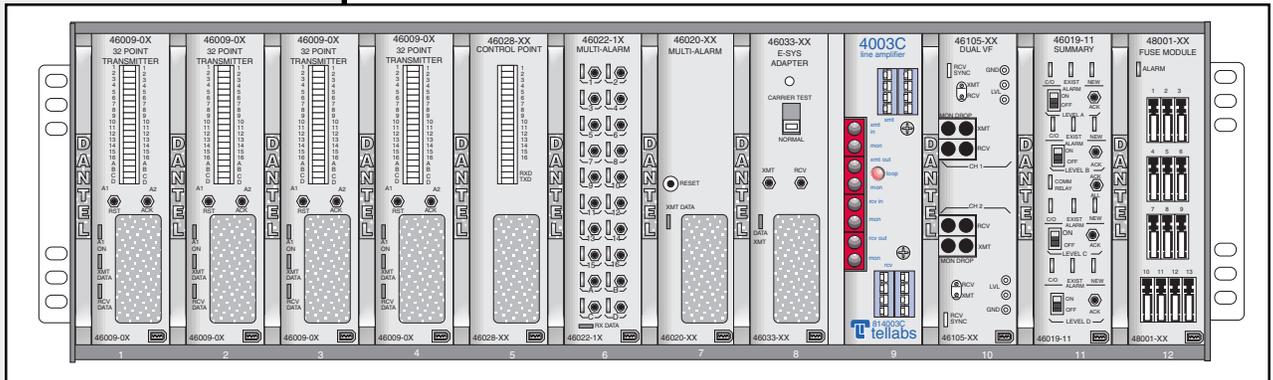
B18-05725-XX
REMOTE E2A ALARM SHELF, 202-TONE OR 64-KILOBIT OUTPUT, USING 46600-38 FIRMWARE

Table of Contents

About this Practice:

This practice has been reissued to:

• Update Figs. 6 and 7 to reflect B12-49013 subassembly.

Reissued Practices: Updated and new content can be identified by a banner in the right margin.

Issue date: July 1998

UPDATED

CAUTION

• Install or remove modules from the shelf only when the power is off. If you install a module in the shelf with the power on, the internal circuitry may suffer damage and the product warranty will be void.

• Remove and install circuit boards only in a static-safe environment (use antistatic wrist straps, smocks, footwear, etc.).

• Keep circuit boards in their antistatic bags when they are not in use.

• Do not ship or store circuit boards near strong electrostatic, electromagnetic, magnetic, or radioactive fields.

• For more complete information on electrostatic discharge safety precautions, refer to Bellcore™ Technical Reference # TR-NWT-000870.

ORDERING INFORMATION

NOTE:	This section lists the different options available for this product. To order any of the available options, contact Dantel Inside Sales through our toll-free number, **1-800-432-6835.**

OPTION NUMBER	FEATURES
B18-05725-00	Wired only, no modules
B18-05725-01	64 discrete alarms, 16 control points, terminal port for access, E2A output, analog voice-frequency output, cross-connect block and four 25-foot cables
B18-05725-02	64 discrete alarms, 16 control points, terminal port for access, E2A output, 64 KB digital output, cross-connect block and four 25-foot cables
B18-05725-03	128 discrete alarms, 16 control points, terminal port for access, E2A output, analog voice-frequency output, cross-connect block and four 25-foot cables
B18-05725-04	128 discrete alarms, 16 control points, terminal port for access, E2A output, 64 KB digital output, cross-connect block and four 25-foot cables
B18-05725-05	64 discrete alarms, 16 control points, 7 serial TBOS ports, terminal port for access, E2A output, analog voice-frequency output, cross-connect block and four 25-foot cables
B18-05725-06	64 discrete alarms, 16 control points, 7 serial TBOS ports, terminal port for access, E2A output, 64 KB digital output, cross-connect block and four 25-foot cables
B18-05725-07	128 discrete alarms, 16 control points, 7 serial TBOS ports, terminal port for access, E2A output, analog voice-frequency output, cross-connect block and four 25-foot cables
B18-05725-08	128 discrete alarms, 16 control points, 7 serial TBOS ports, terminal port for access, E2A output, 64 KB digital output, cross-connect block and four 25-foot cables

GENERAL DESCRIPTION

The 05725 Remote E2A shelf is a 12-position 460 Alarm and Control System (ACS) shelf. This shelf collects discrete or discrete and serial alarm data from central office communications equipment. The alarm data is processed, concentrated, and converted to E2A protocol for transmission to the host computer at the Alarm Center. For a functional schematic of this shelf, refer to sheet 2 of 3 of the B18-05725-XX drawing that accompanies this Application Manual.

Options -01, -03, -05, and -07 are used for central office installation. The output of this shelf is voice frequency (VF). The levels can be adjusted to meet central office requirements.

Options -02, -04, -06, and -08 are equipped with a 46105 Dual VF 64-kilobit Channel Module. The output of this shelf is a digital signal that can be transmitted over a 56K or 64K digital service channel.

MODULES

This shelf, like many Dantel shelves is made up of separate plug-in modules that are factory-wired together to accomplish a task. The 05725 is offered in a variety of options (described later in this section). Each option equips the shelf with a different collection of modules. The modules used in the 05725 shelf are described below.

Multiple Alarm Processor (MAP) - slot 7

The MAP is the center of the Dantel system. The MAP:

♦ Polls (interrogates) remote alarm reporting equipment

♦ Operates control points

♦ Reports alarm status to the Alarm Monitoring Center (FMAC)

The MAP uses three ports to receive and transmit information:

♦ The Data Port connects the MAP to the Control Point Module (CPM) and Multi Alarm Transmitters (MATs) in options 1-4. and to the Multiple Alarm Combiner (MAC) in options 5-8.

♦ The Printer Port, (also called the Craft, Configuration, or Interface Port), is used for local monitoring and configuring of the MAP. A serial printer can be connected here to obtain a hardcopy printout of the alarm information.

♦ The Master Port is used to report the alarm information to the alarm center through the E-System Adapter.

GENERAL DESCRIPTION

Multiple Alarm Combiner (MAC) - slot 6

The MAC is a serial port card. It has eight RS-422/485 serial ports that can connect the MAP to various equipment that transmits alarms in a DCM or TBOS serial format.

Control Point Module (CPM) - slot 5

The CPM provides 16 discrete (independent) relays controllable by the MAP. Commands can be entered from the Printer Port of the MAP using a dumb terminal (refer to 46020-38 manual), or by the Alarm Center. Any of the 16 control points can be turned on or off to control a particular piece of equipment.

The second function of the CPM is to provide an interface between the MAC (when used) and the Multi Alarm Transmitters (MATs).

Multiple Alarm Transmitters (MATs) - slots 1-4

Each MAT:

♦ Reports the alarm status for up to 32 independent discrete alarm inputs

♦ Provides LEDs to indicate active alarms.

E-System Adapter (ESA) - slot 8

The ESA provides an interface between the MAP(s) and the TNC. It:

♦ Takes the DCP protocol from the MAP and converts it to E2A

♦ Provides mounting for a 202 T modem.

It then sends that information to the Alarm Center.

Tellabs 4003C Line Amplifier - slot 9

The 4003C Line Amplifier with Loopback provides:

♦ Switch-selectable level control.

♦ Equalization.

♦ Impedance matching in transmit and receive channels.

♦ Tone-activated or dc-activated equal-level loopback of the facility.

GENERAL DESCRIPTION

Dual VF 64-Kilobit Channel (64KB) - slot 10

The 64KB interfaces analog voice or data equipment to a 64-kilobit digital service channel equipment. The module has two channels which operate independently or interconnected in bridge configuration.

Summary Alarm Module (SAM) - slot 11

This module provides a means to control an audible and/or visual alarm device for four alarm levels (A,B, C, and D). Wired to, and controlled by, the MAP in slot 7, the SAM provides four independent "form C" relays.

OPTIONS

The 05725 shelf is offered in 9 options. Refer to Table A and Fig. 1. The -00 option is a wired-only shelf and includes no modules. Options -01 through -08 all feature:

- ♦ E2A output (to Alarm Center)
- ♦ Terminal Port
- ♦ Summary Alarm Module (for external audible/visual devices)
- ♦ Fuse module (distributes power within shelf)

TABLE A - 05725 OPTIONS

OPTION	DISCRETE POINTS	CONTROL POINTS	TBOS PORTS	PVT LINE	64 KILOBIT
-00	0	0	0		
-01	64	16	0	X	
-02	64	16	0		X
-03	128	16	0	X	
-04	128	16	0		X
-05	64	16	7	X	
-06	64	16	7		X
-07	128	16	7	X	
-08	128	16	7		X

GENERAL DESCRIPTION

FIG. 1 - 05725 SHELF FRONT VIEW, -08 AND -09 OPTIONS

A18-05725-07
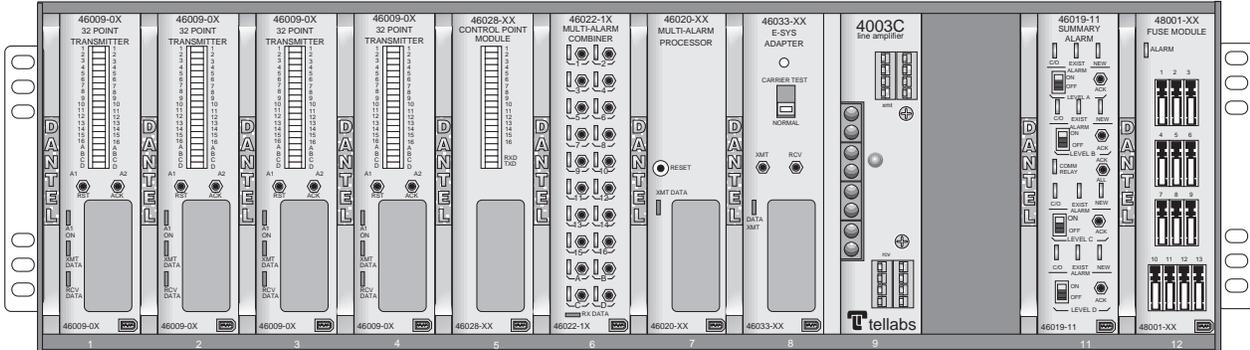
A18-05725-08

INSTALLATION

This section consists of three parts:

1. Equipment Mounting
2. Wiring
3. Switch and Strap Settings
   - 46105 Dual VF 64-kilobit Channel
   - Tellabs 4003C
   - 46033 E-System Adapter
   - 49013 202 Tone Modem Subassembly
   - 46020-38 Multiple Alarm Processor with Firmware
   - 46029 RS-232 Current Loop Interface Subassembly
   - 46022-12 Multiple Alarm Combiner
   - 46028 Control Point Module
   - 49008 RS-422 Current Loop Interface Subassembly
   - 46009 Multiple Alarm Transmitter
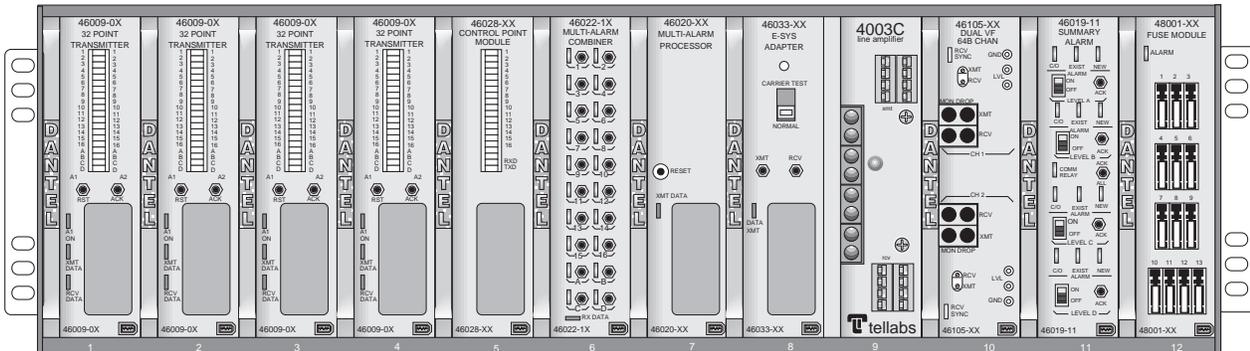   - 46019 Summary Alarm Module
   - 48001 Fuse Module

EQUIPMENT MOUNTING

Tools Required:

- ♦ Ohmmeter
- ♦ Phillips screwdriver
- ♦ 7/16" Nutdriver or socket wrench
- ♦ (TMS) Transmission measuring Set

Visually inspect shelf for obvious damage.

Use ohmmeter to check for a short across the power input at B (-DC) and (GND) at the left end of the rear of the shelf (refer to Fig. 2).

TMS is used to verify the levels at the output of the 46033 E-System Adapter and the 4003C Line Amplifier.

INSTALLATION

FIG. 2 - REAR VIEW OF 05725 SHELF
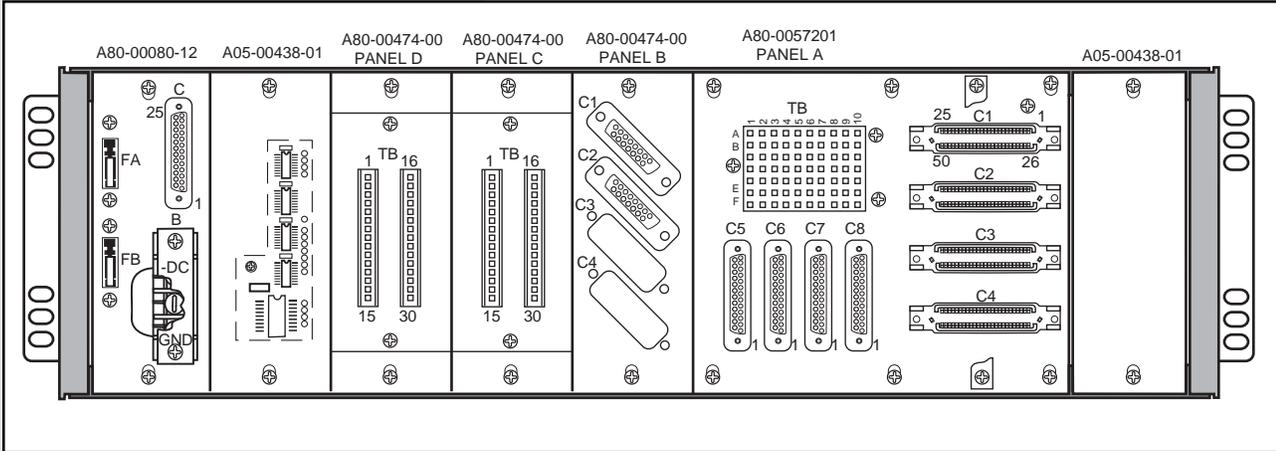
With a Phillips screwdriver, mount the shelf in an equipment rack using the screws and lockwashers supplied in a bag attached to the side of the shelf.

Mounting hardware is supplied in a bag attached to the side of the shelf.

Refer to Figure 3.

FIG. 3 - MOUNTING CONFIGURATION, 41075 400-TYPE MOUNTING
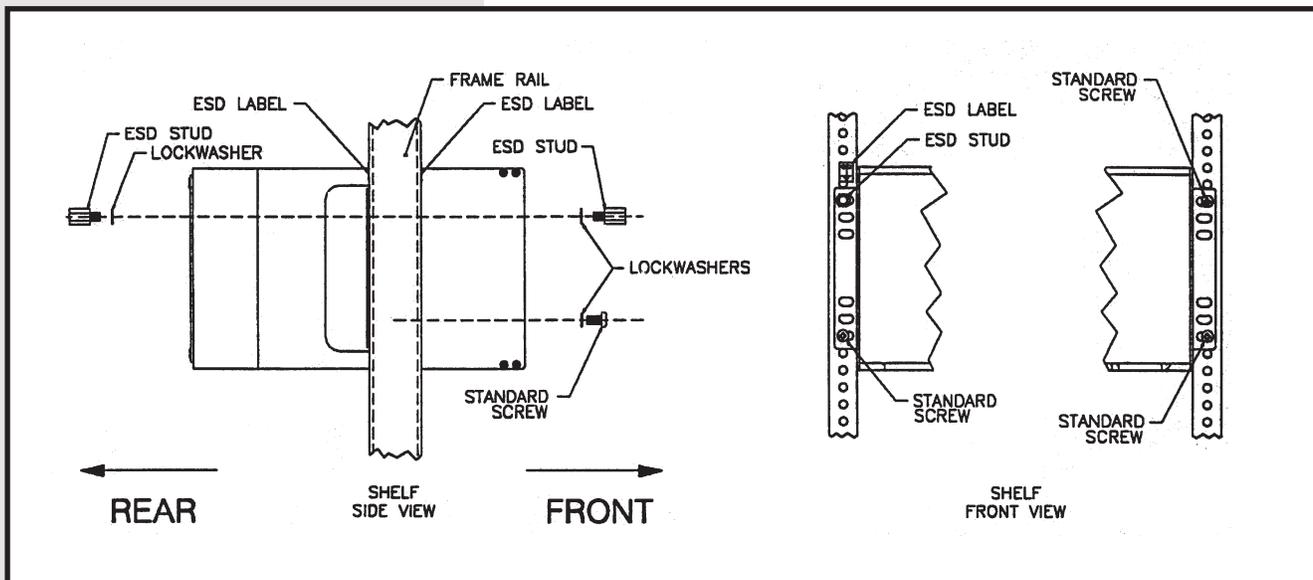
Facing the frame rail, place the equipment shelf in the rack in the desired location. Secure with three Phillips-head screws and lockwashers - two on the right side, top and bottom, and one on the lower left side.

Install one ESD stud, with lockwasher, in the upper left location.

Secure all fasteners tightly, ensuring proper grounding between ESD stud and frame rail.

Place ESD label next to the ESD stud.

From the rear of the bay, install the other ESD stud and lockwasher into the frame rail next to the equipment shelf. Secure tightly, ensuring proper grounding of the ESD stud. Place ESD label next to the ESD stud.

WIRING

Wire the 05725 Remote E2A Alarm Shelf to external equipment as required. Use the B18-05725-XX Block and Level Drawing as a reference for making connections to Dantel equipment.

If Using Private Line:

Connect to TB-A.

- ◆ XMT 8A, 8B
- ◆ RCV 8C, 8D

If Using 64kb Channel

- ◆ Connect to C1-B for terminal application.
- ◆ Connect to C1-B and C2-B for repeater application.

INSTALLATION

STRAP AND SWITCH SETTINGS

46105 Dual VF 64-Kilobit Channel

Refer to Fig. 4 and Table B for switch and strap options.

FIG. 4 - 46105 SWITCH AND STRAP LOCATIONS

INSTALLATION

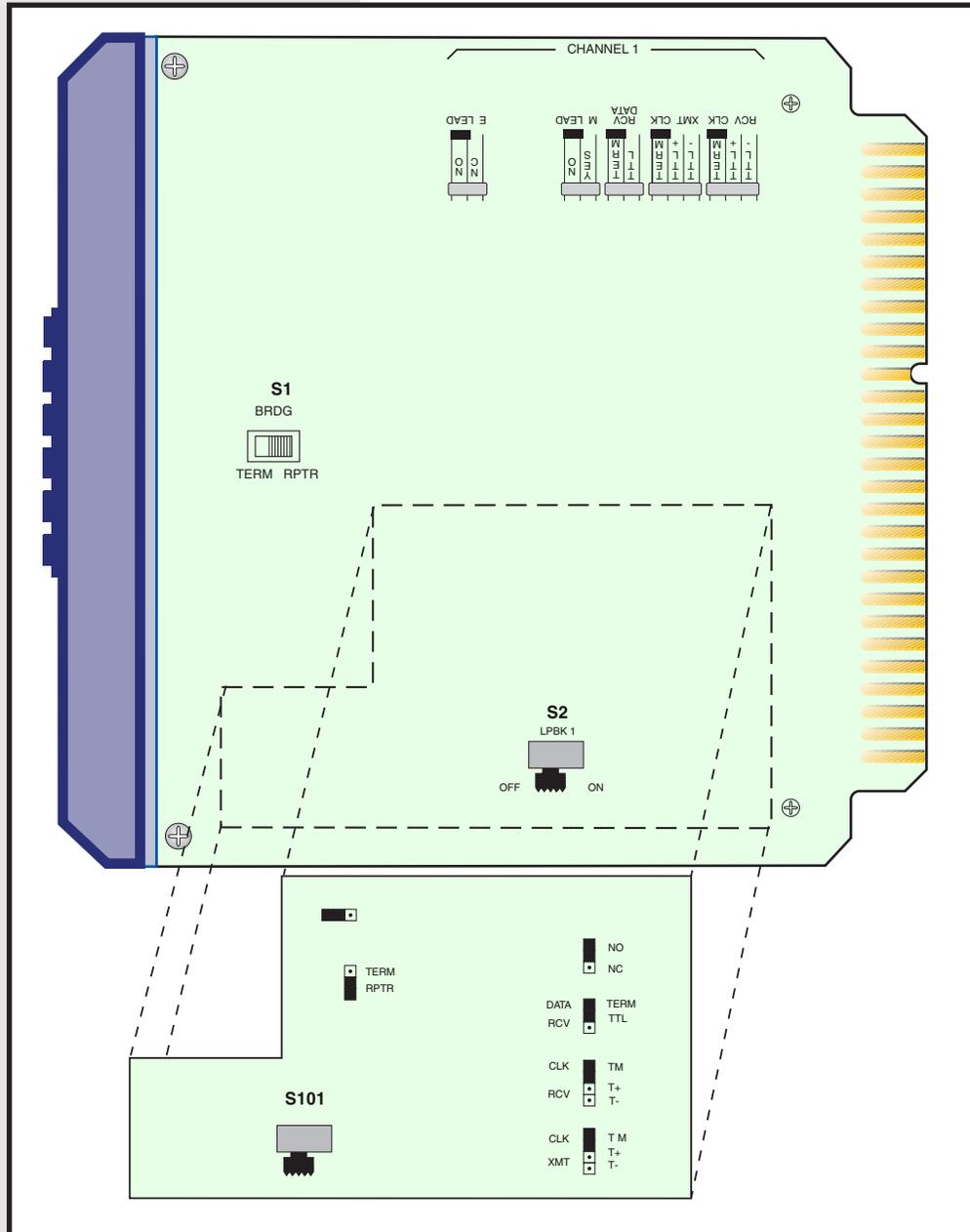| STRAP	POSITION	DESCRIPTION
XMT CLK (see note below)	TERM *	180-ohm termination across RS-422 inputs at pins 51 and 52
	TTL+	XMT CLK 1 pin 51 is TTL (+ edge) compatible; pin 52 is not used
	TTL–	XMT CLK 1 pin 52 is TTL (– edge) compatible; pin 51 is not used
RCV CLK 1	TERM *	180-ohm termination across RS-422 inputs at pins 45 and 46
	TTL+	RCV CLK 1 pin 45 is TTL (+ edge) compatible; pin 46 is not used
	TTL–	RCV CLK 1 pin 46 is TTL (– edge) compatible; pin 45 is not used
RCV DATA 1	TERM *	180-ohm termination across RS-422 inputs at pins 43 and 44
	TTL+	RCV DATA 1 pin 43 is TTL compatible; pin 44 is not used
XMT CLK 2 (see note below)	TERM *	180-ohm termination across RS-422 inputs at pins 5 and 6
	TTL+	XMT CLK 2 pin 5 is TTL (+ edge) compatible; pin 6 is not used
	TTL–	XMT CLK 2 pin 6 is TTL (– edge) compatible; pin 5 is not used
RCV CLK 2	TERM *	180-ohm termination across RS-422 inputs at pins 11 and 12
	TTL+	RCV CLK 2 pin 11 is TTL (+ edge) compatible; pin 12 is not used
	TTL–	RCV CLK 2 pin 12 is TTL (– edge) compatible; pin 11 is not used
RCV DATA 2	TERM *	180-ohm termination across RS-422 inputs at pins 13 and 14
	TTL+	RCV DATA 2 pin 13 is TTL compatible; pin 14 is not used
E LEAD 1	NO *	Relay at pins 39 and 40 is normally open when E Lead 1 is active
	NC	Relay at pins 39 and 40 is normally closed when E Lead 1 is inactive
E LEAD 2	NO *	Relay at pins 19 and 20 is normally open when E Lead 2 is active
	NC	Relay at pins 19 and 20 is normally closed when E Lead 2 is inactive
M LEAD 1	YES	M Lead 1 input at pins 41 and 42 is used
	NO *	M Lead 1 input at pins 41 and 42 is not used
M LEAD 2	YES	M Lead 2 input at pins 15 and 16 is used
	NO *	M Lead 2 input at pins 15 and 16 is not used
MODE (S1)	TERM	Digital sections of channel 1 and 2 are not interconnected. Select this position when the channels will operate independently. BRDG switch also must be in the TERM position.
	RPTR *	Digital sections of channel 1 and 2 are interconnected, bypassing the analog sections when they are not in use. Select this position when the channels are bridged together in the repeater mode. BRDG switch also must be in the RPTR position.

NOTE:

If an external clock is not used, strap XMT CLK 1 and XMT CLK 2 to TTL+.

SWITCH	SWITCH	SWITCH
BRDG	TERM	Channels 1 and 2 operate independently.
	RPTR *	Channels 1 and 2 are bridged together.
LPBK 1 (S2)	OFF *	Analog signals for Channel 1 are not looped back.
	ON	Analog signals from the transmit input of Channel 1 are looped back to the receive output of Channel 1. Use to check or set audio levels.
LPBK 2 (S101)	OFF *	Analog signals for Channel 2 are not looped back.
	ON	Analog signals from the transmit input of Channel 2 are looped back to the receive output of Channel 2. Use to check or set audio levels.

Tellabs 4003C

Refer to Fig. 5 and Tables C, D, and E for switch and strap options.

FIG. 5 - 4003C SWITCH AND STRAP LOCATIONS

* Transmit and Receive - channel level switches are located on front panel
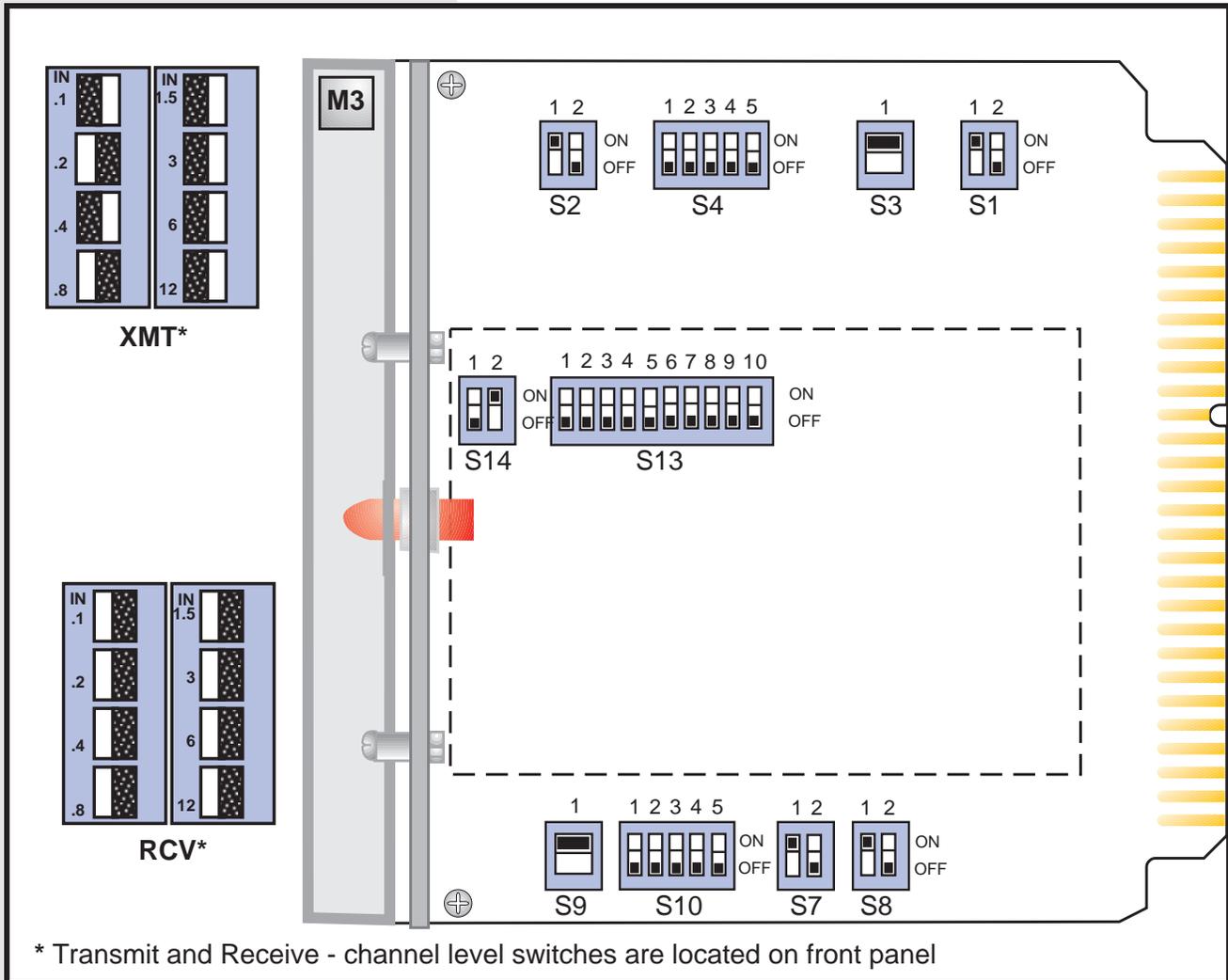
TABLE C - 4003C SWITCH OPTIONS

SWITCH	POSITION
S1-1	ON
S1-2	OFF
S2-1	ON
S2-2	OFF
S3	LOSS
S4	all OFF
S7-1	ON
S7-2	OFF
S8-1	ON
S8-2	OFF
S9	LOSS
S10	all OFF
S13-1	1 ON* (refer to Table D)
S14-1	OFF
S14-2	ON

FRONT PANEL LEVEL SWITCHES	
XMT	
Switch .1, .4, 1.5, 3, 6, & 12 IN (to the left) to total 23 dB	
RCV	
No switches IN	

TABLE D - 4003C LOOPBACK FREQUENCY SELECTION (S13)

FREQUENCY	S13 SWITCH POSITION SET ON*
2813 Hz	all OFF
* 2713 Hz	1
2513 Hz	2
2413 Hz	3
1913 Hz	4
1813 Hz	5
1713 Hz	6
1613 Hz	7
1513 Hz	8
1413 Hz	9
1313 Hz	10

*** NOTE:** *All other S13 switch positions must be set to the OFF position.*

TABLE E - 4003C LOOPBACK LEVEL SELECTION (S14)

LOOPBACK LEVEL	S14 POSITION 1	S14 POSITION 2
+16 dB	OFF	OFF
0 dB *	OFF	ON
-16 dB	ON	OFF
-23 dB	ON	ON

*** NOTE:** *This setting equals +9 dB on those units without an "M3" label on the handle.*

INSTALLATION

46033 E-System Adapter

Refer to Fig. 6 and Tables F and G for switch settings.

05725-0798 <90-00051>

INSTALLATION

TABLE F - 46033 E-SYSTEM ADAPTER SWITCH SETTINGS

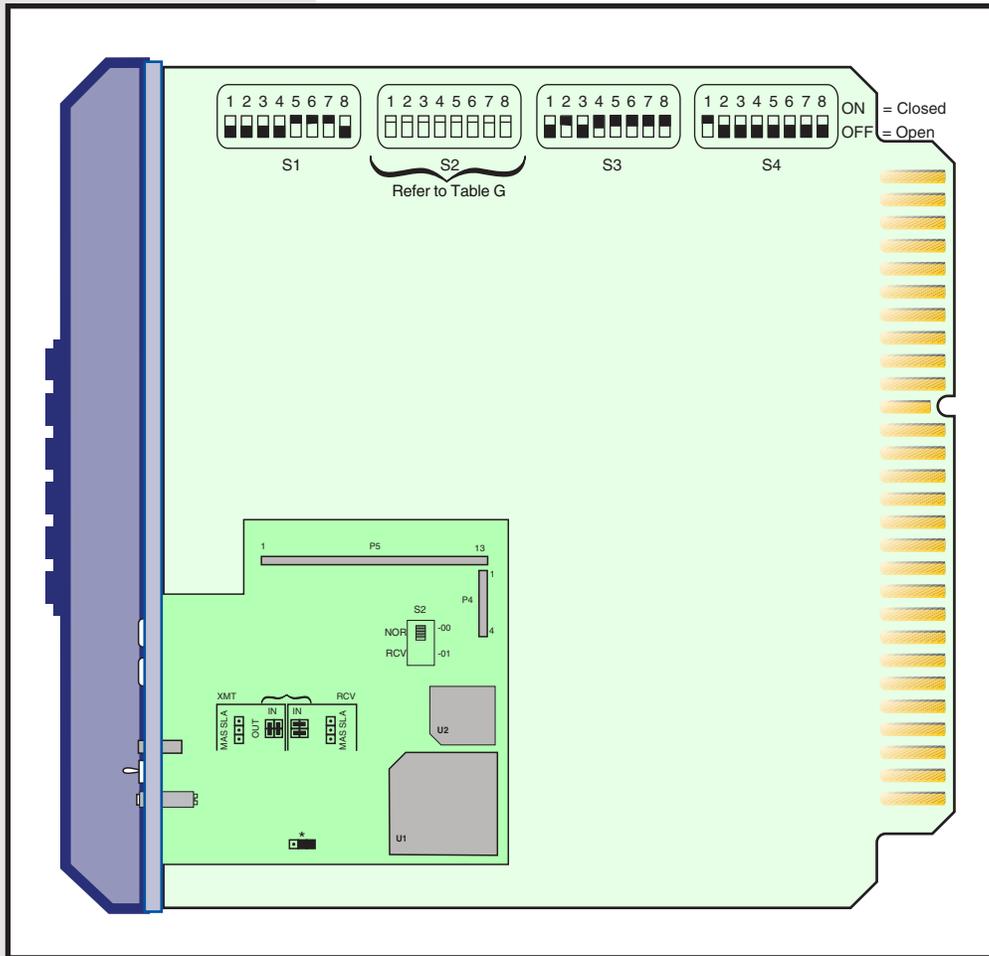| SWITCH	POSITION							
	1	2	3	4	5	6	7	8
SW1	1	1	1	1	0	0	0	1
SW2	Station Address. Refer to Table G.							
SW3	1	0	1	0	0	0	0	0
SW4	0	1	1	1	1	1	1	1

NOTE: A "1" indicates that the rocker switch is up adjacent to the position number (open = OFF). A "0" indicates that the rocker switch is down adjacent to the position number (closed = ON).

TABLE G - 46033 E-SYSTEM ADAPTER S2 SWITCH SETTINGS

NOTE:

A "0" indicates that the rocker switch is down adjacent to the position number (closed = ON). A "1" indicates that the rocker switch is up adjacent to the position number (open = OFF).

ADDRESS	POSITION							
	1	2	3	4	5	6	7	8
00	0	0	0	0	0	0	0	0
01	0	0	0	0	0	0	0	1
02	0	0	0	0	0	0	1	0
03	0	0	0	0	0	0	1	1
04	0	0	0	0	0	1	0	0
05	0	0	0	0	0	1	0	1
06	0	0	0	0	0	1	1	0
07	0	0	0	0	0	1	1	1
08	0	0	0	0	1	0	0	0
09	0	0	0	0	1	0	0	1
10	0	0	0	0	1	0	1	0
11	0	0	0	0	1	0	1	1
12	0	0	0	0	1	1	0	0
13	0	0	0	0	1	1	0	1
14	0	0	0	0	1	1	1	0
15	0	0	0	0	1	1	1	1
16	0	0	0	1	0	0	0	0
17	0	0	0	1	0	0	0	1
18	0	0	0	1	0	0	1	0
19	0	0	0	1	0	0	1	1
20	0	0	0	1	0	1	0	0
21	0	0	0	1	0	1	0	1
22	0	0	0	1	0	1	1	0
23	0	0	0	1	0	1	1	1
24	0	0	0	1	1	0	0	0
25	0	0	0	1	1	0	0	1
26	0	0	0	1	1	0	1	0
27	0	0	0	1	1	0	1	1
28	0	0	0	1	1	1	0	0
29	0	0	0	1	1	1	0	1
30	0	0	0	1	1	1	1	0
31	0	0	0	1	1	1	1	1

TABLE G (CONTINUED) - 46033 E-SYSTEM ADAPTER S2 SWITCH SETTINGS

NOTE:

A "0" indicates that the rocker switch is down adjacent to the position number (closed = ON). A "1" indicates that the rocker switch is up adjacent to the position number (open = OFF).

ADDRESS	POSITION							
	1	2	3	4	5	6	7	8
32	0	0	1	0	0	0	0	0
33	0	0	1	0	0	0	0	1
34	0	0	1	0	0	0	1	0
35	0	0	1	0	0	0	1	1
36	0	0	1	0	0	1	0	0
37	0	0	1	0	0	1	0	1
38	0	0	1	0	0	1	1	0
39	0	0	1	0	0	1	1	1
40	0	0	1	0	1	0	0	0
41	0	0	1	0	1	0	0	1
42	0	0	1	0	1	0	1	0
43	0	0	1	0	1	0	1	1
44	0	0	1	0	1	1	0	0
45	0	0	1	0	1	1	0	1
46	0	0	1	0	1	1	1	0
47	0	0	1	0	1	1	1	1
48	0	0	1	1	0	0	0	0
49	0	0	1	1	0	0	0	1
50	0	0	1	1	0	0	1	0
51	0	0	1	1	0	0	1	1
52	0	0	1	1	0	1	0	0
53	0	0	1	1	0	1	0	1
54	0	0	1	1	0	1	1	0
55	0	0	1	1	0	1	1	1
56	0	0	1	1	1	0	0	0
57	0	0	1	1	1	0	0	1
58	0	0	1	1	1	0	1	0
59	0	0	1	1	1	0	1	1
60	0	0	1	1	1	1	0	0
61	0	0	1	1	1	1	0	1
62	0	0	1	1	1	1	1	0
63	0	0	1	1	1	1	1	1
64	0	1	0	0	0	0	0	0
65	0	1	0	0	0	0	0	1
66	0	1	0	0	0	0	1	0
67	0	1	0	0	0	0	1	1
68	0	1	0	0	0	1	0	0
69	0	1	0	0	0	1	0	1
70	0	1	0	0	0	1	1	0
71	0	1	0	0	0	1	1	1
72	0	1	0	0	1	0	0	0
73	0	1	0	0	1	0	0	1
74	0	1	0	0	1	0	1	0
75	0	1	0	0	1	0	1	1

CONTINUED . . .

INSTALLATION

Note:

A "0" indicates that the rocker switch is down adjacent to the position number (closed = ON). A "1" indicates that the rocker switch is up adjacent to the position number (open = OFF).

ADDRESS	POSITION							
	1	2	3	4	5	6	7	8
76	0	1	0	0	1	1	0	0
77	0	1	0	0	1	1	0	1
78	0	1	0	0	1	1	1	0
79	0	1	0	0	1	1	1	1
80	0	1	0	1	0	0	0	0
81	0	1	0	1	0	0	0	1
82	0	1	0	1	0	0	1	0
83	0	1	0	1	0	0	1	1
84	0	1	0	1	0	1	0	0
85	0	1	0	1	0	1	0	1
86	0	1	0	1	0	1	1	0
87	0	1	0	1	0	1	1	1
88	0	1	0	1	1	0	0	0
89	0	1	0	1	1	0	0	1
90	0	1	0	1	1	0	1	0
91	0	1	0	1	1	0	1	1
92	0	1	0	1	1	1	0	0
93	0	1	0	1	1	1	0	1
94	0	1	0	1	1	1	1	0
95	0	1	0	1	1	1	1	1
96	0	1	1	0	0	0	0	0
97	0	1	1	0	0	0	0	1
98	0	1	1	0	0	0	1	0
99	0	1	1	0	0	0	1	1
100	0	1	1	0	0	1	0	0
101	0	1	1	0	0	1	0	1
102	0	1	1	0	0	1	1	0
103	0	1	1	0	0	1	1	1
104	0	1	1	0	1	0	0	0
105	0	1	1	0	1	0	0	1
106	0	1	1	0	1	0	1	0
107	0	1	1	0	1	0	1	1
108	0	1	1	0	1	1	0	0
109	0	1	1	0	1	1	0	1
110	0	1	1	0	1	1	1	0
111	0	1	1	0	1	1	1	1
112	0	1	1	1	0	0	0	0
113	0	1	1	1	0	0	0	1
114	0	1	1	1	0	0	1	0
115	0	1	1	1	0	0	1	1
116	0	1	1	1	0	1	0	0
117	0	1	1	1	0	1	0	1
118	0	1	1	1	0	1	1	0
119	0	1	1	1	0	1	1	1

INSTALLATION

NOTE:

A "0" indicates that the rocker switch is down adjacent to the position number (closed = ON). A "1" indicates that the rocker switch is up adjacent to the position number (open = OFF).

ADDRESS	POSITION							
	1	2	3	4	5	6	7	8
120	0	1	1	1	1	0	0	0
121	0	1	1	1	1	0	0	1
122	0	1	1	1	1	0	1	0
123	0	1	1	1	1	0	1	1
124	0	1	1	1	1	1	0	0
125	0	1	1	1	1	1	0	1
126	0	1	1	1	1	1	1	0
127	0	1	1	1	1	1	1	1
128	1	0	0	0	0	0	0	0
129	1	0	0	0	0	0	0	1
130	1	0	0	0	0	0	1	0
131	1	0	0	0	0	0	1	1
132	1	0	0	0	0	1	0	0
133	1	0	0	0	0	1	0	1
134	1	0	0	0	0	1	1	0
135	1	0	0	0	0	1	1	1
136	1	0	0	0	1	0	0	0
137	1	0	0	0	1	0	0	1
138	1	0	0	0	1	0	1	0
139	1	0	0	0	1	0	1	1
140	1	0	0	0	1	1	0	0
141	1	0	0	0	1	1	0	1
142	1	0	0	0	1	1	1	0
143	1	0	0	0	1	1	1	1
144	1	0	0	1	0	0	0	0
145	1	0	0	1	0	0	0	1
146	1	0	0	1	0	0	1	0
147	1	0	0	1	0	0	1	1
148	1	0	0	1	0	1	0	0
149	1	0	0	1	0	1	0	1
150	1	0	0	1	0	1	1	0
151	1	0	0	1	0	1	1	1
152	1	0	0	1	1	0	0	0
153	1	0	0	1	1	0	0	1
154	1	0	0	1	1	0	1	0
155	1	0	0	1	1	0	1	1
156	1	0	0	1	1	1	0	0
157	1	0	0	1	1	1	0	1
158	1	0	0	1	1	1	1	0
159	1	0	0	1	1	1	1	1
160	1	0	1	0	0	0	0	0
161	1	0	1	0	0	0	0	1
162	1	0	1	0	0	0	1	0
163	1	0	1	0	0	0	1	1

CONTINUED . . .

TABLE G (CONTINUED) - 46033 E-SYSTEM ADAPTER S2 SWITCH SETTINGS

NOTE:
A "0" indicates that the rocker switch is down adjacent to the position number (closed = ON). A "1" indicates that the rocker switch is up adjacent to the position number (open = OFF).

ADDRESS	POSITION							
	1	2	3	4	5	6	7	8
164	1	0	1	0	0	1	0	0
165	1	0	1	0	0	1	0	1
166	1	0	1	0	0	1	1	0
167	1	0	1	0	0	1	1	1
168	1	0	1	0	1	0	0	0
169	1	0	1	0	1	0	0	1
170	1	0	1	0	1	0	1	0
171	1	0	1	0	1	0	1	1
172	1	0	1	0	1	1	0	0
173	1	0	1	0	1	1	0	1
174	1	0	1	0	1	1	1	0
175	1	0	1	0	1	1	1	1
176	1	0	1	1	0	0	0	0
177	1	0	1	1	0	0	0	1
178	1	0	1	1	0	0	1	0
179	1	0	1	1	0	0	1	1
180	1	0	1	1	0	1	0	0
181	1	0	1	1	0	1	0	1
182	1	0	1	1	0	1	1	0
183	1	0	1	1	0	1	1	1
184	1	0	1	1	1	0	0	0
185	1	0	1	1	1	0	0	1
186	1	0	1	1	1	0	1	0
187	1	0	1	1	1	0	1	1
188	1	0	1	1	1	1	0	0
189	1	0	1	1	1	1	0	1
190	1	0	1	1	1	1	1	0
191	1	0	1	1	1	1	1	1
192	1	1	0	0	0	0	0	0
193	1	1	0	0	0	0	0	1
194	1	1	0	0	0	0	1	0
195	1	1	0	0	0	0	1	1
196	1	1	0	0	0	1	0	0
197	1	1	0	0	0	1	0	1
198	1	1	0	0	0	1	1	0
199	1	1	0	0	0	1	1	1
200	1	1	0	0	1	0	0	0
201	1	1	0	0	1	0	0	1
202	1	1	0	0	1	0	1	0
203	1	1	0	0	1	0	1	1
204	1	1	0	0	1	1	0	0
205	1	1	0	0	1	1	0	1
206	1	1	0	0	1	1	1	0
207	1	1	0	0	1	1	1	1

CONTINUED . . .

INSTALLATION

TABLE G (CONTINUED) - 46033 E-SYSTEM ADAPTER S2 SWITCH SETTINGS

NOTE:

A "0" indicates that the rocker switch is down adjacent to the position number (closed = ON). A "1" indicates that the rocker switch is up adjacent to the position number (open = OFF).

ADDRESS	POSITION							
	1	2	3	4	5	6	7	8
208	1	1	0	1	0	0	0	0
209	1	1	0	1	0	0	0	1
210	1	1	0	1	0	0	1	0
211	1	1	0	1	0	0	1	1
212	1	1	0	1	0	1	0	0
213	1	1	0	1	0	1	0	1
214	1	1	0	1	0	1	1	0
215	1	1	0	1	0	1	1	1
216	1	1	0	1	1	0	0	0
217	1	1	0	1	1	0	0	1
218	1	1	0	1	1	0	1	0
219	1	1	0	1	1	0	1	1
220	1	1	0	1	1	1	0	0
221	1	1	0	1	1	1	0	1
222	1	1	0	1	1	1	1	0
223	1	1	0	1	1	1	1	1
224	1	1	1	0	0	0	0	0
225	1	1	1	0	0	0	0	1
226	1	1	1	0	0	0	1	0
227	1	1	1	0	0	0	1	1
228	1	1	1	0	0	1	0	0
229	1	1	1	0	0	1	0	1
230	1	1	1	0	0	1	1	0
231	1	1	1	0	0	1	1	1
232	1	1	1	0	1	0	0	0
233	1	1	1	0	1	0	0	1
234	1	1	1	0	1	0	1	0
235	1	1	1	0	1	0	1	1
236	1	1	1	0	1	1	0	0
237	1	1	1	0	1	1	0	1
238	1	1	1	0	1	1	1	0
239	1	1	1	0	1	1	1	1
240	1	2	1	1	0	0	0	0
241	1	1	1	1	0	0	0	1
242	1	1	1	1	0	0	1	0
243	1	1	1	1	0	0	1	1
244	1	1	1	1	0	1	0	0
245	1	1	1	1	0	1	0	1
246	1	1	1	1	0	1	1	0
247	1	1	1	1	0	1	1	1
248	1	1	1	1	1	0	0	0
249	1	1	1	1	1	0	0	1
250	1	1	1	1	1	0	1	0
251	1	1	1	1	1	0	1	1

CONTINUED . . .

TABLE G (CONTINUED) - 46033 E-SYSTEM ADAPTER S2 SWITCH SETTINGS

NOTE:

A "0" indicates that the rocker switch is down adjacent to the position number (closed = ON). A "1" indicates that the rocker switch is up adjacent to the position number (open = OFF).

ADDRESS	POSITION							
	1	2	3	4	5	6	7	8
252	1	1	1	1	1	1	0	0
253	1	1	1	1	1	1	0	1
254	1	1	1	1	1	1	1	0
255	1	1	1	1	1	1	1	1

49013 202 Tone Modem Subassembly

Refer to Fig. 7 and Table H for switch and strap settings.

FIG. 7 - 49013 202 TONE MODEM SWITCH AND STRAP LOCATIONS

* Reset, Factory use only.

UPDATED
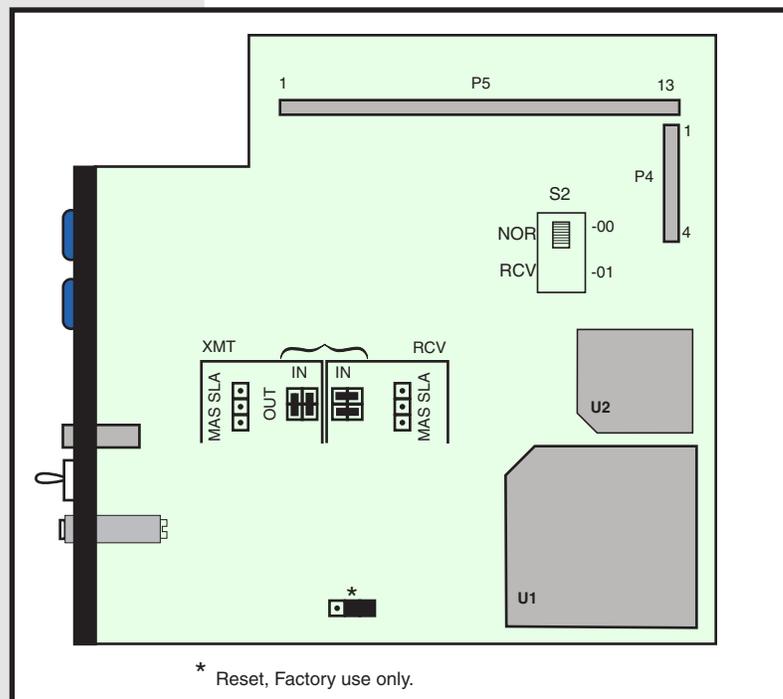
TABLE H - 49013 202 TONE MODEM SWITCH AND STRAP OPTIONS

OPTION	INSTALL STRAP
Transmitter Master/Slave	Remove
Receiver Master/Slave	Remove
RCV Pad In (input level 0 to -20 dB)	Jumpers placed parallel to connector P5
XMT Pad Out (output level adjustable between -1 and -20 dBm)	Jumpers placed perpendicular to connector P5
S2	NOR (Toward connector P5)

46020-38 Multiple Alarm Processor (MAP)

Refer to Figs. 8, 9 and Tables I through M.

F<small>IG</small>. 8 - 46020 MAP S<small>UBASSEMBLY AND</small> S<small>WITCH</small> L<small>OCATIONS</small>
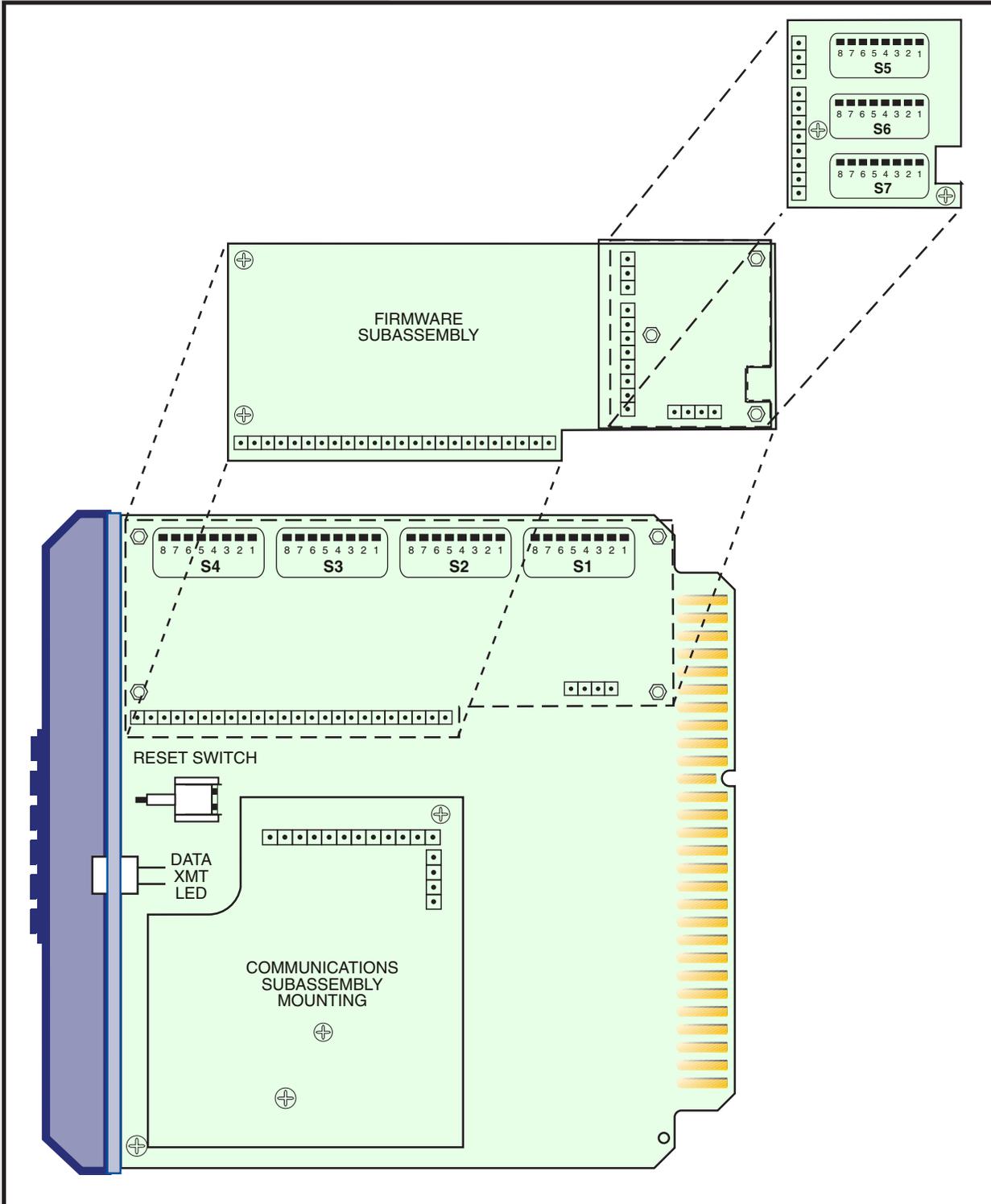
INSTALLATION

FIG. 9 - 46020 MAP VIEWED FROM THE TOP
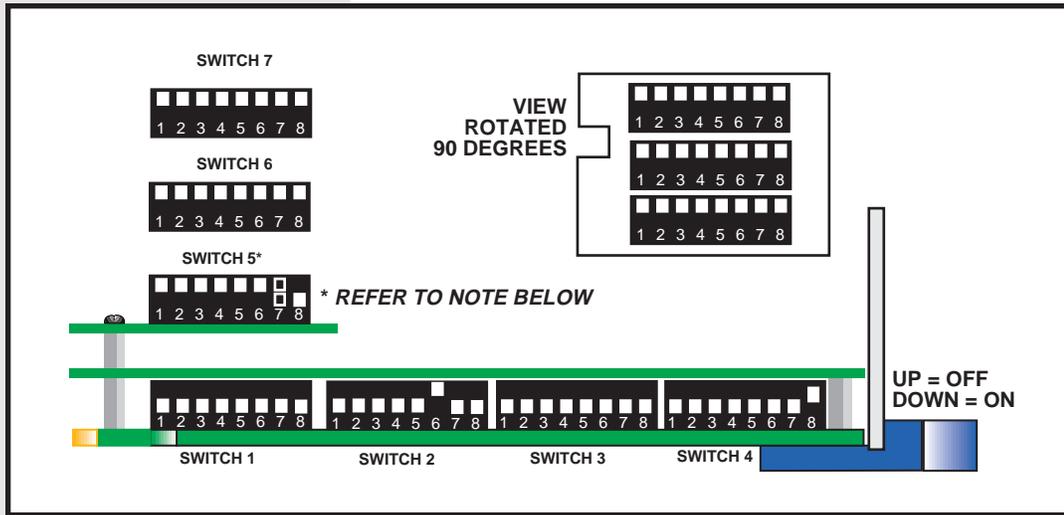
NOTE: *Apply power initially with switch 5 position 7 UP and allow the MAP to self configure. Then remove power and place switch 5 position 7 DOWN. This will retain the configuration in memory.*

TABLE I - SWITCH 1, 46020-38

SWITCH	POSITION							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
SW1	0	0	0	0	0	0	0	0

NOTE: A "1" indicates that the switch is up   (up = OFF). A "0" indicates that the switch is down (down = ON).

TABLE J - SWITCH 2, 46020-38

SWITCH	POSITION							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
SW2	0	0	0	0	0	1	0	0

NOTE: A "1" indicates that the switch is up   (up = OFF). A "0" indicates that the switch is down (down = ON).

TABLE K - SWITCH 3, 46020-38

SWITCH	POSITION							
	1	2	3	4	5	6	7	8
SW3	0	0	0	0	0	0	0	0

NOTE: A "1" indicates that the switch is up (up = OFF). A "0" indicates that the switch is down (down = ON). For one TBOS display, set SW3 position 1 up.

NOTE: For applications utilizing more than one TBOS display, refer to the 46020-38 Firmware Manual.

TABLE L - SWITCH 4, 46020-38, PRINTER/DCP

SWITCH	POSITION							
	1	2	3	4	5	6	7	8
SW4	0	0	0	0	0	0	0	1

NOTE: A "1" indicates that the switch is up (up = OFF). A "0" indicates that the switch is down (down = ON).

TABLE M - SWITCH 5-7, 46020-38

SWITCH	POSITION							
	1	2	3	4	5	6	7	8
SW5	1	1	1	1	1	1	*	0
SW6	1	1	1	1	1	1	1	1
SW7	1	1	1	1	1	1	1	1

* NOTE: Switch 5 position 7 must be up to configure on initial power-up. Place down to retain configuration in memory. A "1" indicates that the switch is up (up = OFF). A "0" indicates that the switch is down (down = ON).

INSTALLATION

49029 RS-232 Current Loop Interface Subassembly

Refer to Fig. 10 and Table N.

FIG. 10 - 49029 SWITCH AND STRAP POSITIONS

OPTION	SWITCH OR STRAP SETTINGS
Normal Position *	S1 - -00 Mode
TXD, RXD, RTS, and DCD reversed	S1 - -01 Mode
CTS used for handshaking	X1 - THRU
CTS not used for handshaking *	X1 - ON
DCD used for handshaking	X2 - THRU
DCD not used for handshaking *	X2 - ON
Parallel Option	
YES	X3 - Jumper pins 2 & 3
NO *	X3 - Jumper pins 1 & 2

NOTE:

Default switch and strap positions are indicated by a "*****". For more detail and further explanations about the individual modules, refer to the practices specific to that module.

INSTALLATION

46022-12 Multiple Alarm Combiner (MAC)

Refer to Fig. 11 and Tables O and P.

FIG. 11 - 46022-12 MAC SWITCH AND STRAP LOCATIONS

ADDRESS NUMBER	SWITCH SETTING			
	S1-1	S1-2	S1-3	S1-4
1	ON	OFF	OFF	OFF

	PORT 1	PORT 2	PORT 3	PORT 4	PORT 5	PORT 6	PORT 7	PORT 8
Unterminated	1A	2A	3A	4A	5A	6A	7A	8A
Terminated	1B *	2B *	3B *	4B *	5B *	6B *	7B *	8B *

46028 Control Point Module (CPM)

Refer to Fig. 12 and Tables Q and R.

FIG. 12 - 46028 CPM SWITCH AND STRAP LOCATIONS
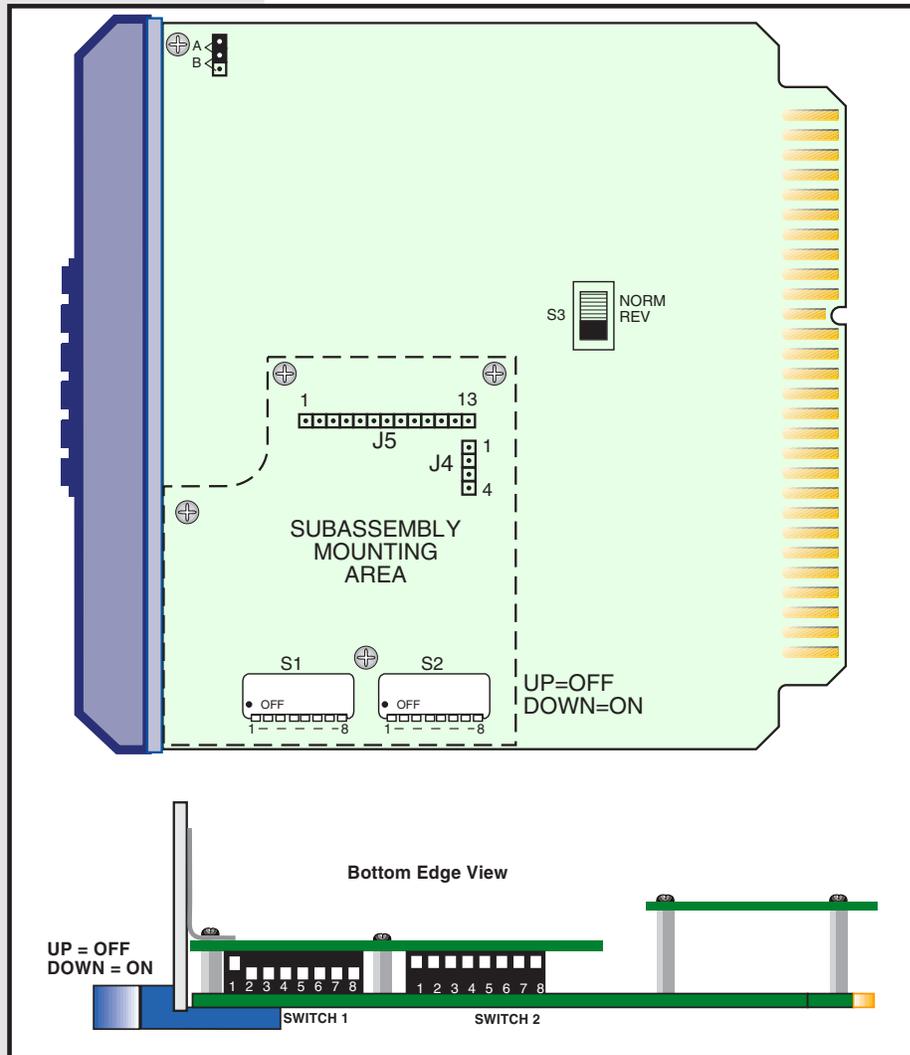
TABLE Q - 46028 CPM SWITCH AND STRAP OPTIONS

SWITCH	POSITION							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
SW1	1	0	0	0	0	0	0	0
SW2	Address. Refer to Table R.							
S3	Leave in "NORM"							
AB Strap	Leave in "A" position.							
NOTE: A "1" indicates that the switch is up (up = OFF). *A "0" indicates that the switch is down (down = ON).*								

INSTALLATION

TABLE R - 46028 ADDRESS SELECTIONS (S2-1 THRU 7)

SWITCH	POSITION							
	1	2	3	4	5	6	7	8
SW2	1	1	1	1	1	1	1	1

NOTE: A "1" indicates that the switch is up (up = OFF).
A "0" indicates that the switch is down (down = ON).

49008 Current Loop Interface

Refer to Fig. 13 and Table S.

FIG. 13 - 49008 CURRENT LOOP STRAP LOCATIONS
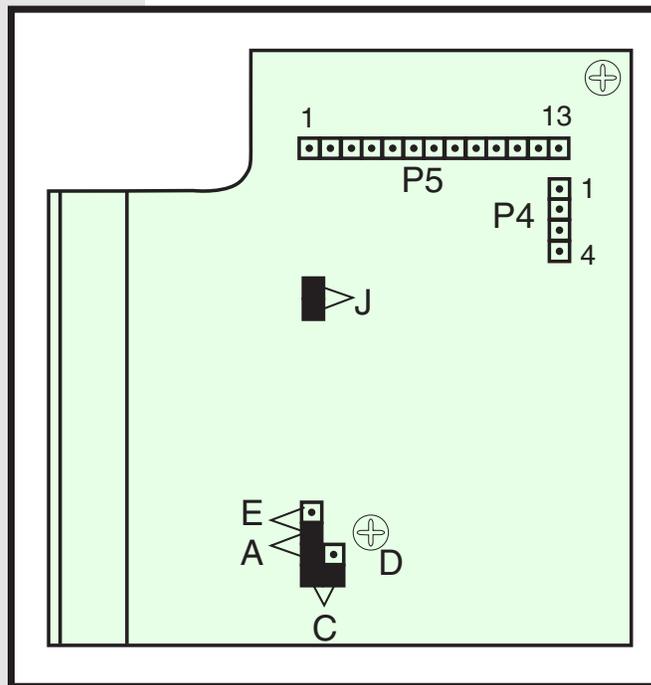
TABLE S - 49008 CURRENT LOOP STRAP OPTIONS

STRAP AND OPTION
"J" Strap installed
"A" Strap installed
"C" Strap installed

46009 Multiple Alarm Transmitter (MAT)

Refer to Fig. 14 and Tables T and U.

TABLE T - 46009 MAT SWITCH AND STRAP OPTIONS

SWITCH	POSITION							
	1	2	3	4	5	6	7	8
SW5	Address. Refer to Table U.							
SW4	1	1	0	1	0	0	0	1
SW3	0	1	1	1	1	1	1	1
SW6	1	1	1	1	-	-	-	-
SW301	0	1	-	-	-	-	-	-

NOTE: A "1" indicates that the switch is up (up = OFF). A "0" indicates that the switch is down (down = ON).

TABLE U - 46009 MAT ADDRESS OPTIONS (S5)

SWITCH	POSITION							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
REMOTES USING ONLY DISCRETE ALARMS								
Slot 1 (DCM addresses 17/18. Display 5, bits 1-32.) SW5	0	1	1	0	1	1	1	1
Slot 2 (DCM addresses 19/20. Display 5, bits 33-63.) SW5	0	1	1	0	1	1	0	1
Slot 3 (DCM addresses 21/22. Display 6, bits 1-32.) SW5	0	1	1	0	1	0	1	1
Slot 4 (DCM addresses 23/24. Display 6, bits 33-63.) SW5	0	1	1	0	1	0	0	1
REMOTES USING TBOS DISPLAYS								
Slot 1 (DCM addresses 121/122. Display 31, bits 1-32.) SW5	0	0	0	0	0	1	1	1
Slot 2 (DCM addresses 123/124. Display 31, bits 33-63.) SW5	0	0	0	0	0	1	0	1
Slot 3 (DCM addresses 125/126. Display 32, bits 1-32.) SW5	0	0	0	0	0	0	1	1
Slot 4 (DCM addresses 127/128. Display 32, bits 33-63.) SW5	0	0	0	0	0	0	0	1
NOTE: A "1" indicates that the switch is up (up = OFF). A "0" indicates that the switch is down (down = ON).								

46019 Summary Alarm Module

Refer to Fig. 15 and Table V.

Straps not shown to scale

LATCH

CIRCUIT "A"
CIRCUIT "B"
CIRCUIT "C"
CIRCUIT "D"

OFF ON

1 TIME
2 OUT
3 SWITCH
4
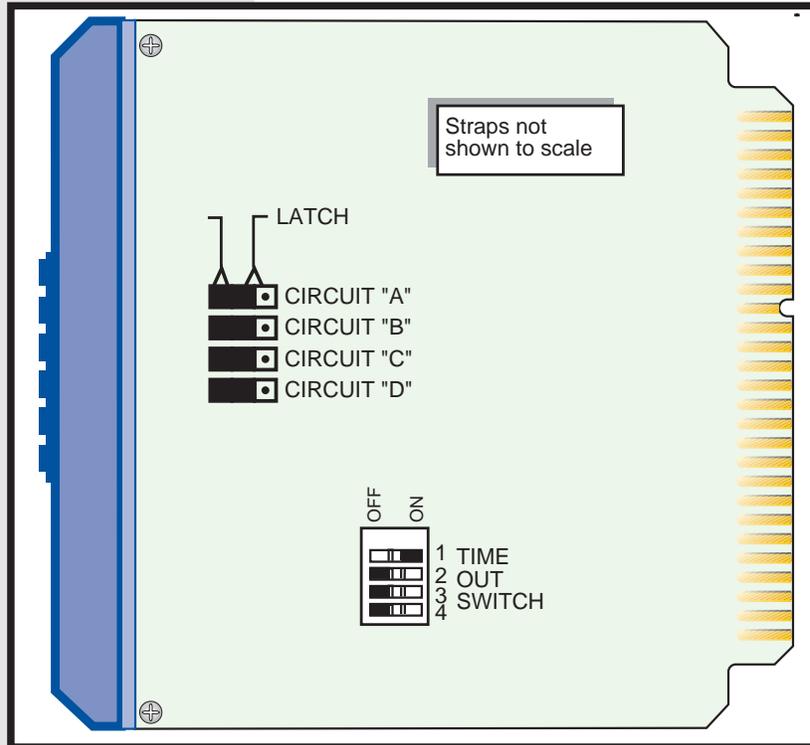
TABLE V - 46019 SWITCH AND STRAP OPTIONS

SWITCH	POSITION
1*	ON (Timeout = 0.5 min.)
2	ON (Timeout = 1.0 min.)
3	ON (Timeout = 4.0 min.)
4	ON (Timeout = 8.0 min.)
* Default. All switches OFF = no timeout. Only one switch may be on at a time.	

48001 Fuse Module

Refer to Fig. 16 and Table W.

FIG. 16 - STRAP LOCATION, B11-48001
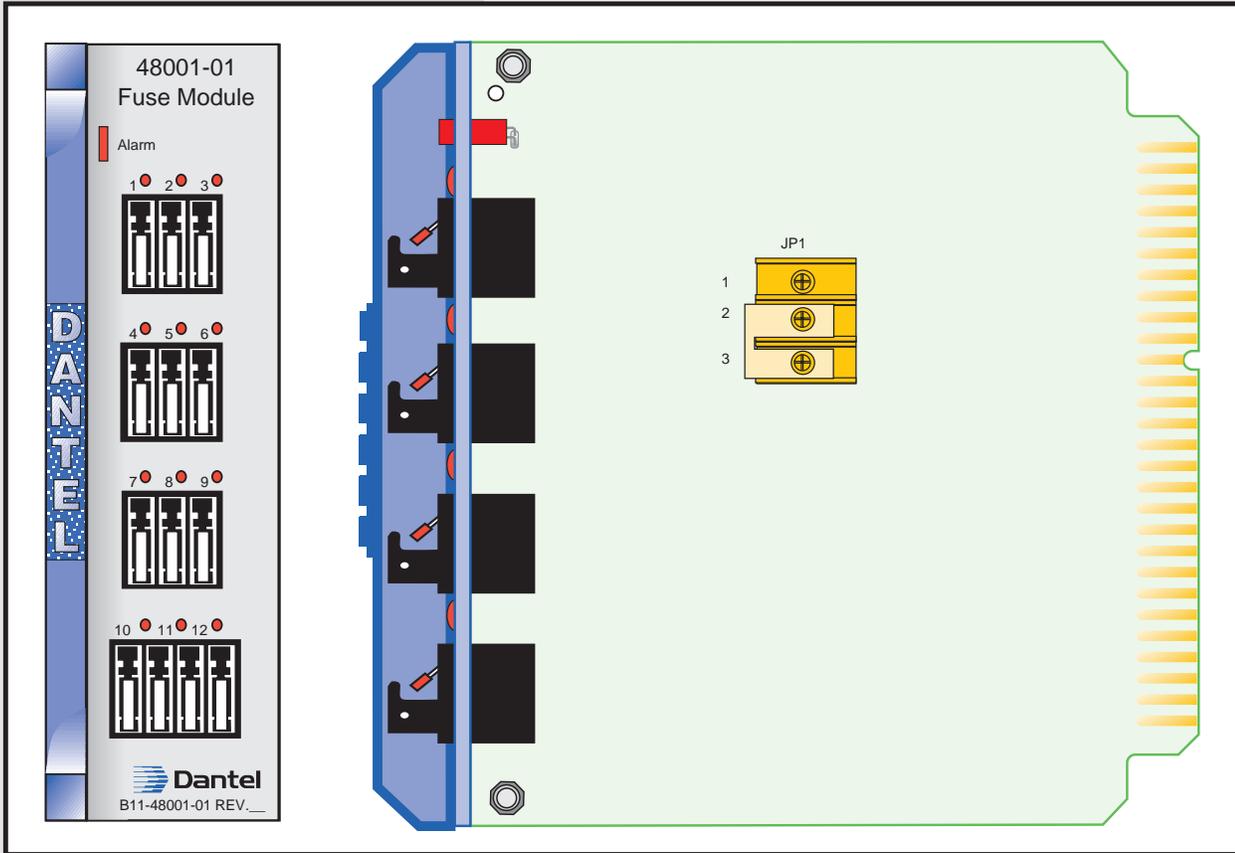
TABLE W - JP1 STRAP OPTIONS

POSITION	DESCRIPTION
Pins 1 & 2	Redundant or Single Input
Pins 2 & 3 *	Two Independant Inputs
* Default	

TURN-UP PROCEDURE

T he following is a step-by-step procedure for turning up the shelf after it has been mounted in the equipment bay, all wiring has been made, and all switches and straps have been set.

STEP 1 - INSERT MODULES

Insert all the modules in the shelf, starting with slot 1. Refer to the B18-05725-XX Block and Level Drawing, page 3, for module slot assignments. Power will be applied to the shelf when the Fuse Module is inserted into slot 12.

STEP 2 - SET LEVELS

The levels to be applied at the modem are -6 dBm XMT and -6.0 dBm RCV. This should always apply since all shelves will be equipped with the Tellabs 4003C card.

The levels at the 46105 will be -29 XMT and -6 RCV.

The levels at the line side of the 4003C will depend on the circuit order (COLR) card when the 46015 is not used (private line operation).

STEP 3 - OBSERVE LEDS

Careful examinaton of the LEDs on each module will reveal much about the status of the system. Detailed information on each module is contained in the practice specific to that module. Contact Dantel Customer Support for copies of these practices.

Slots 1 through 4 - Multiple Alarm Transmitter (MAT)

The MAT is equipped with 20 red LEDs and 3 green LEDs.

- ◆ The red LEDs numbered 1 through 16 and 17 through 32 indicate current alarms. Any active alarm detected by the MAT will result in that LED lighting.

- ◆ The red LEDs labeled "A", "B", "C", and "D" are alarm level LEDs. Every alarm can be assigned a level of A, B, C, or D - representing Critical, Major, Minor, or Status alarms. Refer to the 46020-38 practice, *Printer Syntax* section, **Option** command.

- ◆ The green A1 ON LED indicates whether points 1 through 16 or 17 through 32 are being displayed with the red LEDs described above. When the A1 LED is on, points 1 through 16 are being displayed. When the A1 LED is off, points 17 through 32 are being displayed.

- ◆ The green XMT DATA LED will flash every time the MAT responds to a valid poll for that address.

- ◆ The green RCV DATA LED will flash every time the MAP sends out a poll for a DCM (discrete) device.

> **NOTE:**
> All switches, straps, and level adjustments are factory-set. Refer to the B18-05725 Block and Level Drawing and circuit order card, if applicable for standard levels.

Slot 5 - Control Point Module (CPM)

♦ Sixteen red LEDs numbered 1 through 16 display the status of the 16 control points available on the CPM. Activating any control point lights the corresponding LED. For more details on setting control points, refer to the 46020-38 practice.

♦ A red RXD LED indicates receipt of a DCM poll from the MAP.

♦ The red TXD LED flashes every time the CPM responds to a valid poll from the MAP.

When the shelf is equipped with a MAC in slot 6, the CPM will be equipped with a 49008 communications subassembly. Two LEDs on that subassembly monitor data received from, and transmitted to, the MAP, through port one the MAC.

Slot 6 - Multiple Alarm Combiner (MAC) (if equipped)

The MAC front panel contains 16 red and 5 green LEDs. For a detailed description of these LEDs and their uses, refer to the 46020-38 practice, *Operation* section

Slot 7 - Multiple Alarm Processor (MAP)

The MAP is the "brains" of the Dantel 460 Alarm and Control System. To fully understand its potential and capabilities, refer to the 46020-38 practice. The LEDs, however, are simple.

♦ The green XMT DATA LED in the front panel flashes every time the MAP polls for a TBOS (serial) or DCM (discrete) device.

The 49029 communications subassembly mounted on the MAP, and visible through the MAP's front panel, contains six LEDs.

♦ XMT DATA - indicates data being transmitted from the MAP to the E-System Adapter.

♦ RCV DATA - indicates a poll from the E-system Adapter.

♦ RTS, DTR, DCD, CTS - indicate that handshaking line is active.

Slot 8 - E-System Adapter (ESA)

One LED (DATA XMT) indicates data transmitted from the ESA to the TMAS.

Slot 9 - Line Amplifier

The red LED lights when the loopback and control circuit is active.

Slot 10 - Dual VF 64kB Channel (64kB) (if equipped)

RCV SYNC LEDs (one per channel) indicate if the data being received is in synchronization with the transmitting unit.

Slot 11 - Summary Alarm Module (SAM)

The SAM allows annunciation of four levels of alarms - A, B, C, and D. Each of these sections contain three LEDs:

- ◆ C/O - lights when the Alarm Cut-Off (ACO) switch for that section is on.
- ◆ EXIST - indicates an existing MAP alarm.
- ◆ NEW - indicates an unacknowledged MAP alarm. Pressing the ACK button clears this LED.

Slot 12 - Fuse Module

The Fuse Module contains only one LED. If any of the 13 fuses blow, this LED will light.

TROUBLESHOOTING

If difficulties are experienced with this unit, check the following as appropriate:

- ◆ Switch and strap settings
- ◆ Signal levels
- ◆ Connections to external equipment

If there is a problem with a module, substitute a unit that is know to be good.

NOTE: *Additional assistance is available from Dantel's Customer Support Services Department between the hours of 6am and 5pm Pacific time, Monday through Friday. Call 1-800-4-DANTEL (800/432-6835)*

When it is determined that a unit has malfunctioned, the faulty unit may be returned to the factory for repair. For repairs and emergency replacements, obtain a "Returned Material Authorization" (RMA) number by calling Dantel and asking for the Customer Returns Representative. Please to provide a purchase order number,   and shipping and billing information when requesting an RMA number. Include a description of the malfunction with the returned equipment. Send defective equipment, with the RMA number clearly written on the outside of the package, to:

Dantel, Inc.

2991 N. Argyle Ave.

Fresno, CA 93727-1388

If a unit is returned and no problem is found, there will be a diagnostic charge for checking the unit, whether it is covered by warranty or not.

NOTES

SUPPORT DOCUMENTATION

The B18-05725-XX Remote E2A Alarm Shelf is made up of individual Dantel modules. Each of these modules has a unique Installation & Operation Manual available detailing the operation of that module. Those practices can be obtained by contacting Dantel Customer Support (1-800-4-DANTEL).

Included in this section:

♦ 46020-38 Installation and Operation Manual

♦ B18-05725-XX Block and Level Drawing

♦ DJ-05725 Ordering Guide

NOTES

WARRANTY

LIMITED WARRANTY

The Seller warrants that the standard hardware products sold will be free from defects in material and workmanship and perform to the Seller's applicable published specifications for a period of 18 months for hardware, and 3 months for software, from the date of the original invoice. The liability of the Seller hereunder shall be limited to replacing or repairing, at its option, any defective products which are returned F.O.B. to the Seller's plant, (or, at the Seller's option, refunding the purchase price of such products). In no case are products to be returned without first obtaining permission and a customer return authorization number from the Seller. In no event shall the Seller be liable for any consequential or incidental damages.

Equipment or parts which have been subject to abuse, misuse, accident, alteration, neglect, unauthorized repair or installation are not covered by warranty. The Seller shall make the final determination as to the existence and cause of any alleged defect. No warranty is made with respect to custom equipment or products produced to the Buyer's specifications except as specifically stated in writing by the Seller in the contract for such custom equipment.

This warranty is the only warranty made by the Seller with respect to the goods delivered hereunder, and may be modified or amended only by a written instrument signed by a duly authorized officer of the Seller and accepted by the Buyer.

Warranty and remedies on products not manufactured by the Seller are in accordance with warranty of the respective manufacturer. THE SELLER MAKES NO OTHER WARRANTY OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED; AND ALL IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE WHICH EXCEEDS THE AFORESAID OBLIGATIONS IS HEREBY DISCLAIMED BY THE SELLER.

IN CASE OF DIFFICULTY

If you experience difficulty with this equipment, check the following, as appropriate:

1. **Switch settings**
2. **Signal levels**
3. **Software configuration**
4. **Connections between Dantel's equipment and your equipment.**

If there is still a problem, substitute equipment that is known to be good. For additional assistance, call Dantel's Technical Field Service Department weekdays, 6 A.M. to 5 P.M. pacific time:

1-800-4DANTEL (1-800-432-6835).

If a thorough checkout shows a piece of equipment has malfunctioned, you may return it to the factory. For repairs and emergency replacements, obtain a Return Material Authorization (RMA) number from the Customer Service Representative at **1-800-4DANTEL** (1-800-432-6835).

To ensure expedient processing of your order, provide a purchase order number and shipping and billing information when requesting an RMA number. Also, when the units are returned to Dantel, include a description of the failure symptoms for each unit returned. Send defective equipment to:

Dantel, Inc.   •   2991 North Argyle Avenue   •   Fresno, California 93727-1388

Dantel

P.O. Box 55013 • Fresno, CA 93747-5013   Phone (209) 292-1111   Fax (209) 292-9355   http://www.dantel.com