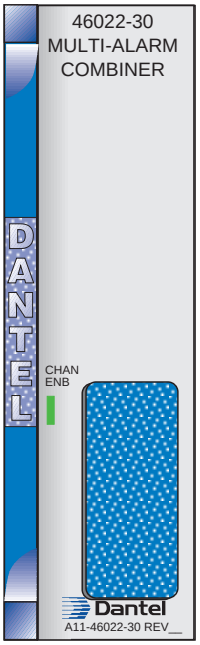
46022-30 MULTIPLE ALARM COMBINER



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About this Practice:

This practice has been reissued to:

- Update Fig. 1.

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

UPDATED

Issue date: January 1998

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
A11-46022-30	Multiple Alarm Combiner

GENERAL DESCRIPTION

The 46022-30 Multiple Alarm Combiner (46022-30) is used in the 460 Alarm and Control System (460 ACS). It allows a standard shelf, wired for MAC-12s or Smart MACs, to be used in applications where an interface other than RS-422 is needed.

The MAC-30 provides a single port capable of holding a standard Dantel communications subassembly.

The MAC-30 replaces a MAC-12 or Smart MAC and can be programmed for any one of the eight ports normally provided by that MAC. It can also be programmed for applications where more than one MAC-30 is wired into the shelf.

The 46022-30 has a front panel cutout for viewing the front of an optional subassembly and has a green LED labeled “CHAN ENB”. This LED lights when the address of the unit is being polled by the system. The unit supplies regulated power output for use by other modules

The 46022-30 is a plug-in printed circuit module that fits into any Dantel 400-type or similar equipment housing. It operates on -21 to -56 VDC input power.

CIRCUIT DESCRIPTION

The 46022-30 consists of the address logic and a power supply. Refer to Fig. 1.

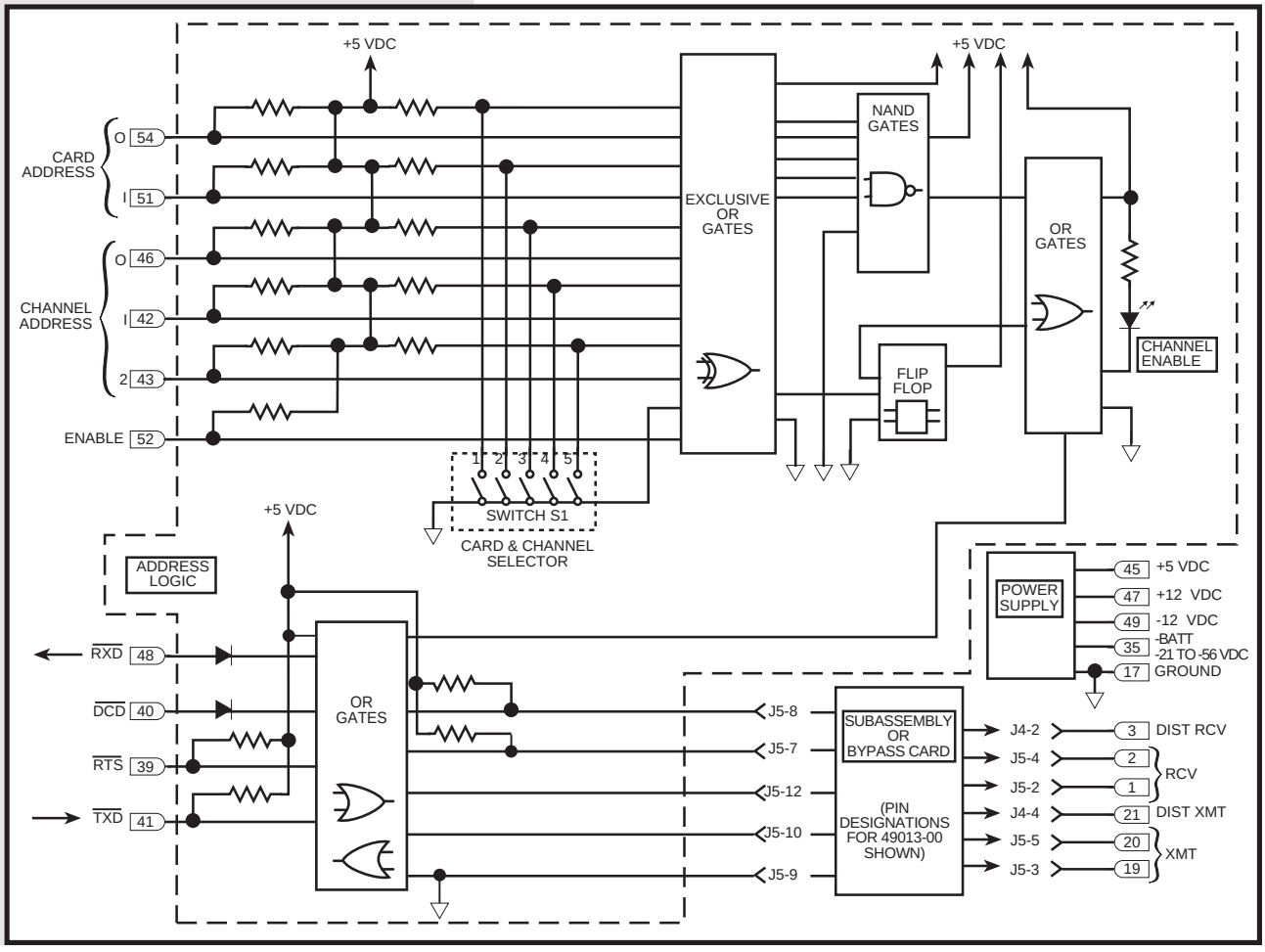
Address Logic

The address logic consists of a series of OR, NAND, and exclusive OR gates that are configured to lock out unselected data addresses and thereby prevent a directed data transmit request from being accepted. Once an address had been set by the mini-DIP switches S1-1 through 5, only that data address will turn on the front panel green LED labeled CHAN ENB. This indicates that data is being sent to and from the MATs and CPMs through the communication subassembly.

Power Supply

The power supply uses -21 to -56 VDC input power to supply +12, -12, and +5 VDC to the module's circuit board and to the optional subassembly. It also supplies +12 VDC to pin 47, -12 VDC to pin 49, and +5 VDC to pin 45 of the module's edge connector. These can be used for off-board use.

FIG. 1 - FUNCTIONAL SCHEMATIC, 46022-30



APPLICATION INFORMATION

The only application for the 46022-30 is as a component of Dantel's 460 ACS. Example applications are shown in Figs. 2 and 3.

Fig. 2 shows a -30 MAC connected in parallel with the other MAC-12s to the data port of a 46020 Multiple Alarm Processor (MAP). The MAC-30's card and channel address is set the same as for card 1, channel 1 of the MAC-12. This allows the port 1 data of the MC-12 to be sent using a communications subassembly.

This unit may also be used in place of any one of the other ports of the MAC-12, or may be used as a stand-alone module to provide a single addressable TBOS port.

NOTE: *If downline components of the shared data channel address are each addresses the same, both units will fail to function properly.*

FIG. 2 - EXAMPLE APPLICATION,SINGLE 46022-30

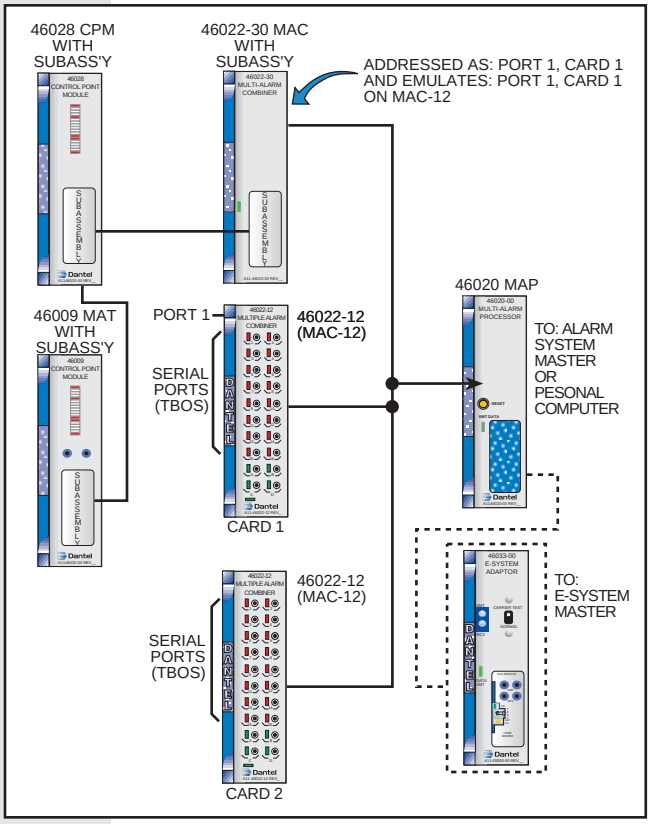
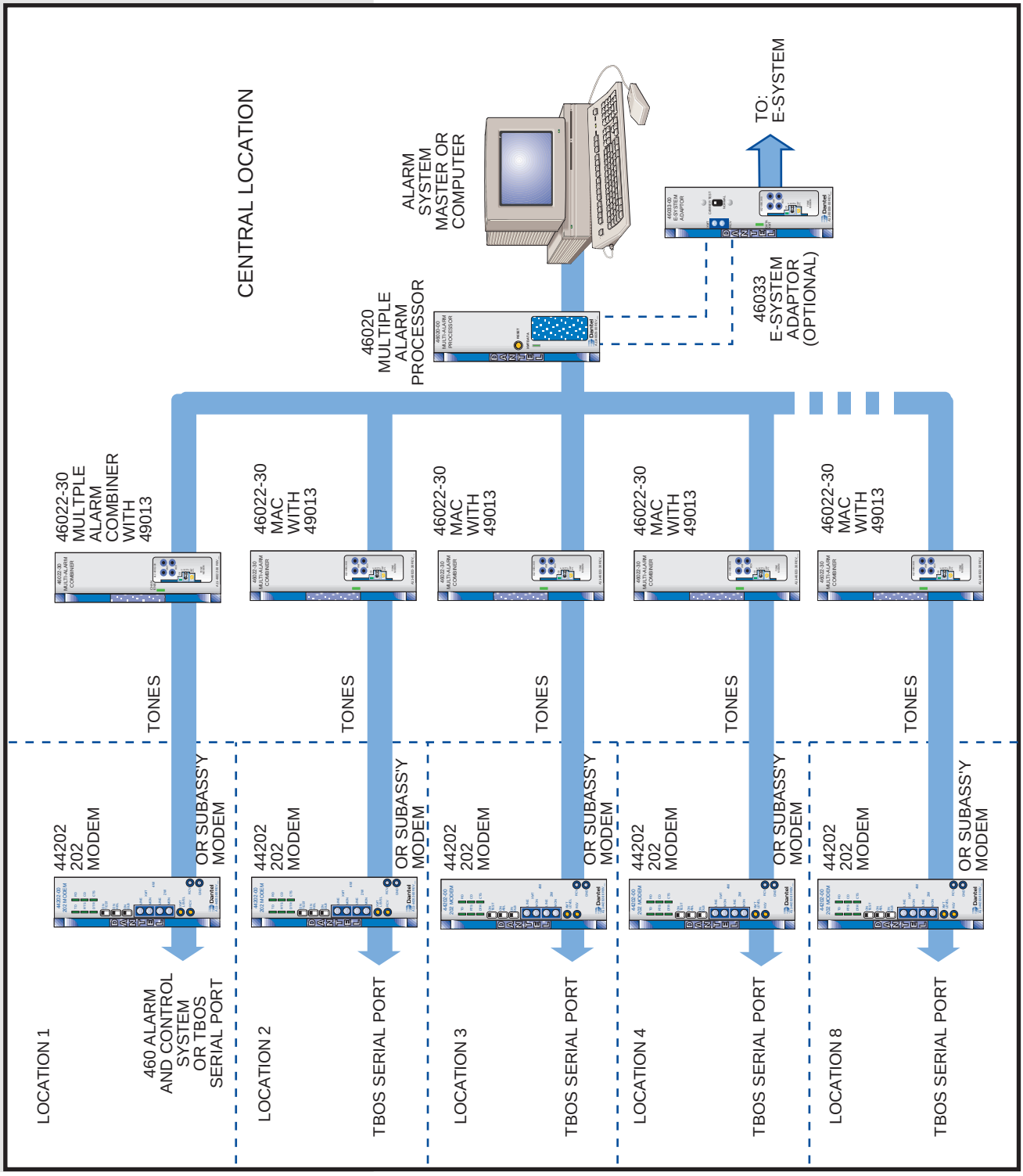


Fig. 3 shows eight 44202 202 modems at remote locations interfaced to a central locations through eight 46022-30 MACs. Each of these MAC is equipped with a 49013 202 Communica-

tions Subassembly. This allows each modem to have an exclusive address for transmitting and receiving TBOS alarm and control system data to and from widely separated locations.

FIG. 3 - EXAMPLE APPLICATION, MULTIPLE 46022-30S



INSTALLATION

Installation consists of setting the switches, installing the communications subassembly, wiring the shelf (if necessary), and installing the module in the shelf.

1. SWITCHES

Setting the channel and card addresses is accomplished by the five-lever mini-DIP switch S1. Refer to Fig. 4 and Table A.

S1-1, S1-2

These set the card address which identifies this MAC as having the same address as the 46022-12 it is emulating.

S1-3 through S1-5

These set the channel address which identifies which data port of the MAC-12 the MAC-30 is to emulate.

FIG. 4 - SWITCH LOCATIONS, 46022-30

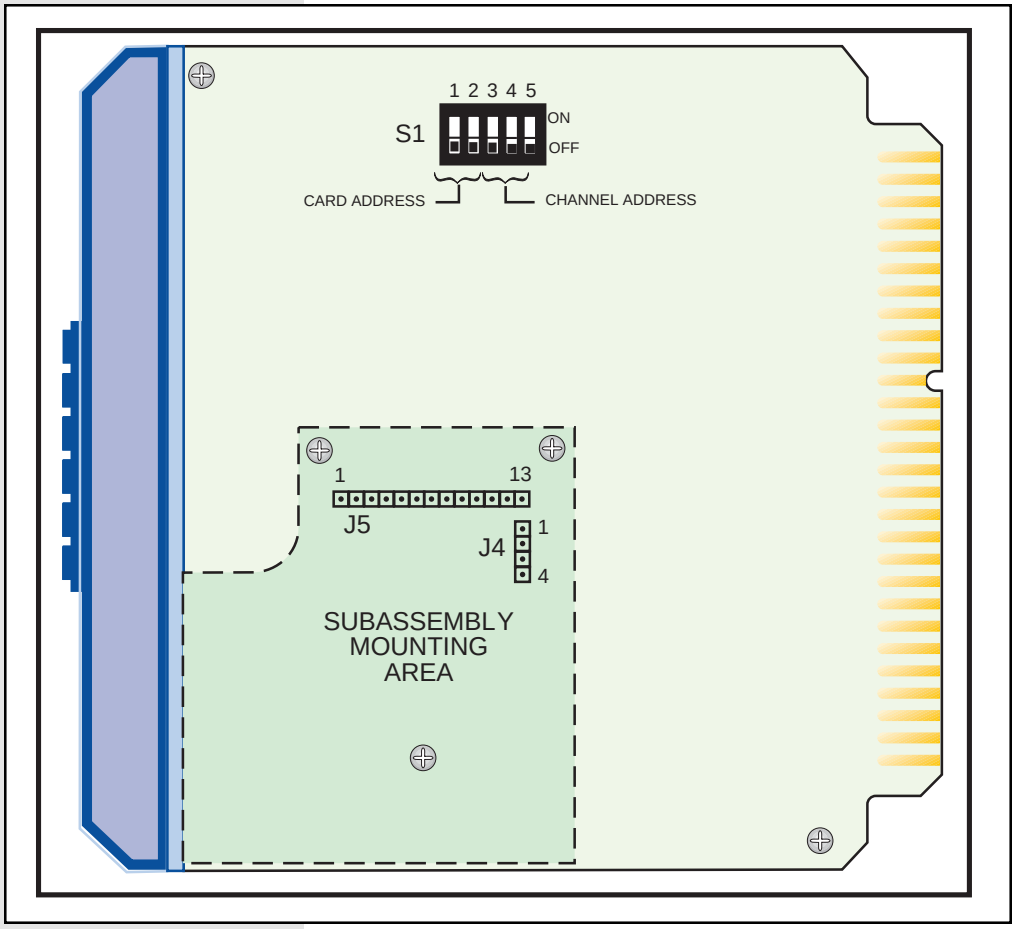


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TABLE A - SWITCH OPTIONS

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

CHANNEL ADDRESS	SWITCH SETTING		
	S1-3	S1-4	S1-5
1	OFF	OFF	OFF
2	ON	OFF	OFF
3	OFF	ON	OFF
4	ON	ON	OFF
5	OFF	OFF	ON
6	ON	OFF	ON
7	OFF	ON	ON
8	ON	ON	ON

2. COMMUNICATIONS SUBASSEMBLY

The 46022-30 MAC accepts subassemblies that provide additional functions. The unit comes equipped with a subassembly bypass card. Remove this bypass card to install an optional subassembly.

Refer to Fig. 4.

- The front panel plug is removeable to allow the subassembly front panel to appear in the front panel cutout.
- Subassemblies plug into J4 and J5. Verify that each pin goes straight into its socket. The subassembly should sit down on stand-offs and the front panel should appear straight in the module front panel cutout.
- Only one subassembly can be mounted at a time.
- Subassemblies may be ordered factory-installed, or may be installed in the field.

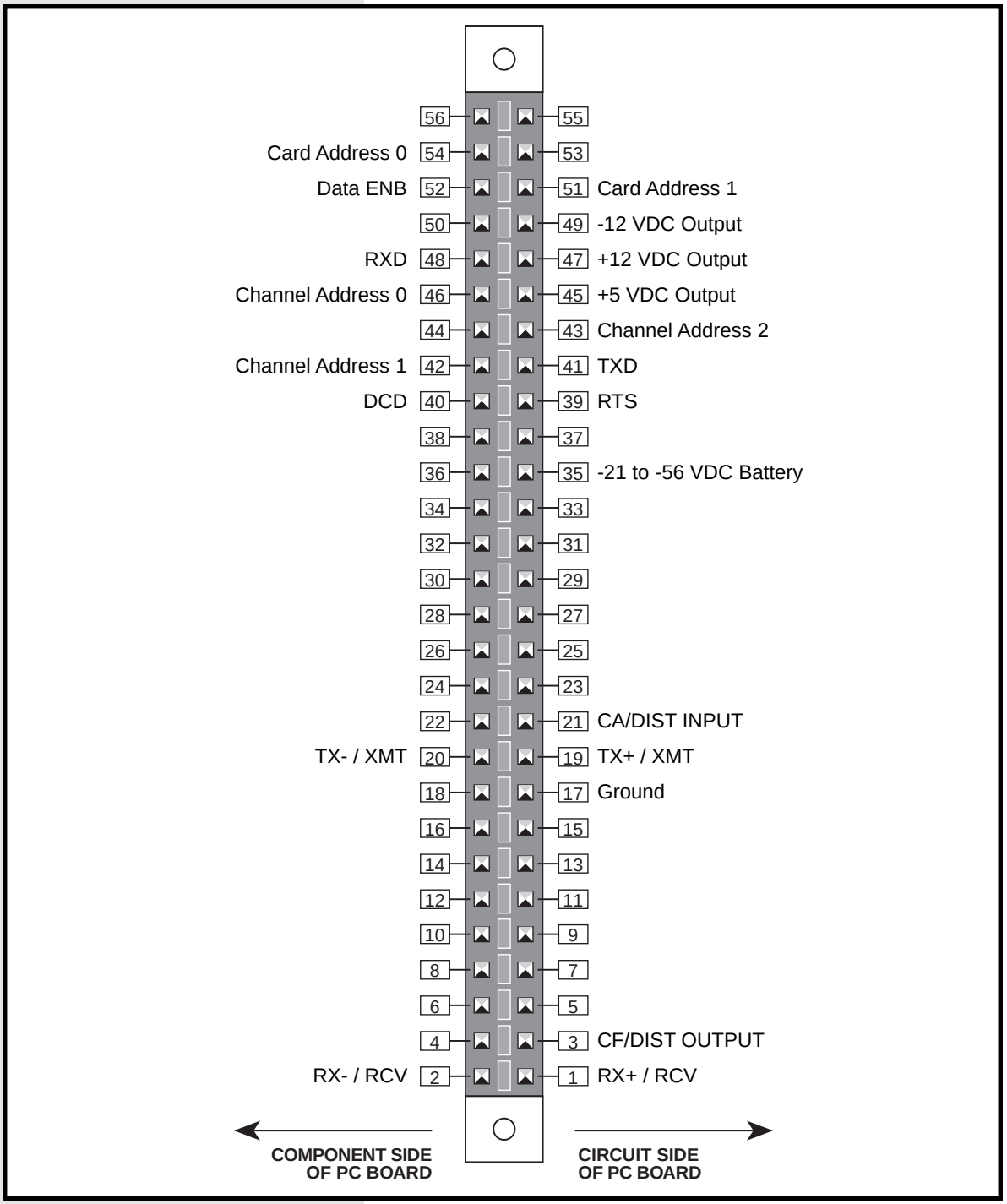
Refer to the documentation specific to the subassembly for operating instructions for that subassembly.

3. WIRING

Refer to Fig. 5 for module connector pin designations. Wire connector if or as necessary. Refer to Table B for subassembly pin connections.

CONTINUED . . .

FIG. 5 - PIN DESIGNATIONS, 46022-30



4. INSTALL THE MODULE.

Install the module in the equipment housing.

INSTALLATION

TABLE B - SUBASSEMBLY PIN CONNECTIONS

PIN NUMBER	49008 (RS-422)	49009 (RS-232)	49013 (202 TONE)
1	RX+	RD	RCV
2	RX-	--	RCV
3	--	CF	DIST RCV
17	GND	GND	GND
19	TX+	--	XMT
20	TX-	TD	XMT
21	--	CA	DIST XMT

OPERATION

Operation of the 46022-30 module is a function of the MAP firmware. A front panel LED labeled CHAN ENB indicates when the address (channel) that it is set for becomes active. Refer to the appropriate firmware manual for information on how the unit functions within the 460 ACS.

TECHNICAL SPECIFICATIONS

DESCRIPTION	VALUE			
Input Voltage	-21 to -56 VDC			
Input Current (w/o subassembly)	@ -21 VDC	@ -24 VDC	@ -48 VDC	@ - 56 VDC
Idle	48 mA	47 mA	44 mA	43 mA
Operating	50 mA	48 mA	45 mA	44 mA
Heat Dissipation (w/o subassembly)	3.6 Btu/Hr	4.0 Btu/Hr	7.4 Btu/Hr	8.5 Btu/Hr
Output Current (Max.) & Voltage				
@ pin 45	200 mA @ +5 VDC			
@ pin 47	20 mA @ +12 VDC			
@ pin 49	20 mA @ -12 VDC			
Weight (w/o subassembly)	6.5 Ounces			
Physical dimensions	1.4" x 6.0" x 5.6"			
Operating Temperature Range	0° to 60° C.			

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