

49028

STATION SELECTOR

SUBASSEMBLY

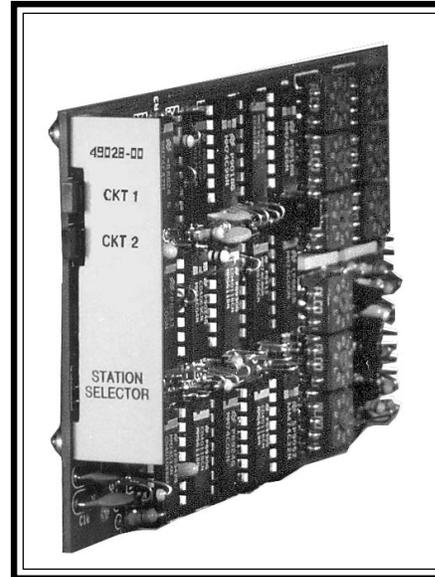


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About this Practice:

This practice has been reissued to:

- Move the **Application Information** section forward.
- Assign a document control number.
- Reassign Figs. to correct sections.

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

Issue date: October 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
A12-49028-00	Station Selector Subassembly

GENERAL DESCRIPTION

The 49028 Station Selector Subassembly provides a two-address binary coded decimal (BCD) decoder for use in:

- ◆ Dantel's 440 Communication Management System (CMS) single station package.
- ◆ Dantel's DTSS3A Selective Signaling Order Wire System.

The 49028 subassembly is used for:

- ◆ Station-call decoding
- ◆ Group/All-call decoding

49028 subassembly strap options include:

- ◆ Three, four, five or six digit station-call address codes
- ◆ Three digit group and all-call distress codes
- ◆ Reset, in or out
- ◆ "*" or "#" BCD inputs that control the busy output circuit
- ◆ "A" and "C" BCD inputs for special applications

The 49028 Station Selector Subassembly is a plug-in printed circuit subassembly that fits into Dantel's 44020 DTMF Decoder Module. It operates on -10 VDC supplied by the host module.

The subassembly front panel consists of two LEDs that indicate the selected station.

CIRCUIT DESCRIPTION

Fig. 1 shows a functional schematic for the 49028 Station Selector Subassembly.

The 44020 DTMF Decoder Module BCD outputs control the 49028 subassembly BCD address decoder in Dantel 440 CMS and DTSS3A systems. The 49028 subassembly provides buffered outputs for:

- ◆ Two station addresses
- ◆ Busy control
- ◆ Clear

The outputs route to the 44022 Subscriber Line Interface Module (SLIM) or the 44023 PABX/Trunk Interface Module of the 440 CMS or DTSS3A system.

You can preset the two address codes (station 1 and station 2) using 10-digit switches on the 49028 subassembly. Station 1 codes can be three, four, five or six digits. Station 2 codes are only three digits. The respective station driver grounds when the BCD address correctly decodes.

PARTS OF THE CIRCUIT

Here is a brief description of each of the functional parts of the circuit:

Decoding

The 44020 DTMF Decoder loads the BCD digit inputs into the address buffer latch at pins P1-1, P1-2, P1-3 and P1-4. The digits load on the positive edge of the strobe pulse input at pin P1-5. The address buffer latch remains in a set state, and the latch output routes to both station address comparators.

The strobe pulse:

- ◆ Advances the digit counters which count up to six digits
- ◆ Initiates a clock pulse output from the clock pulse delay circuit which gates the station address latches

During the digit count, the address buffer latch address compares with the preset address code. If the code matches, the matching station address latch is not set and the corresponding station driver output (at pins P2-3 or P2-4) enables (grounds). The last digit inhibits additional clock pulses from entering the digit counter. The front panel LED lights up when a station driver enables.

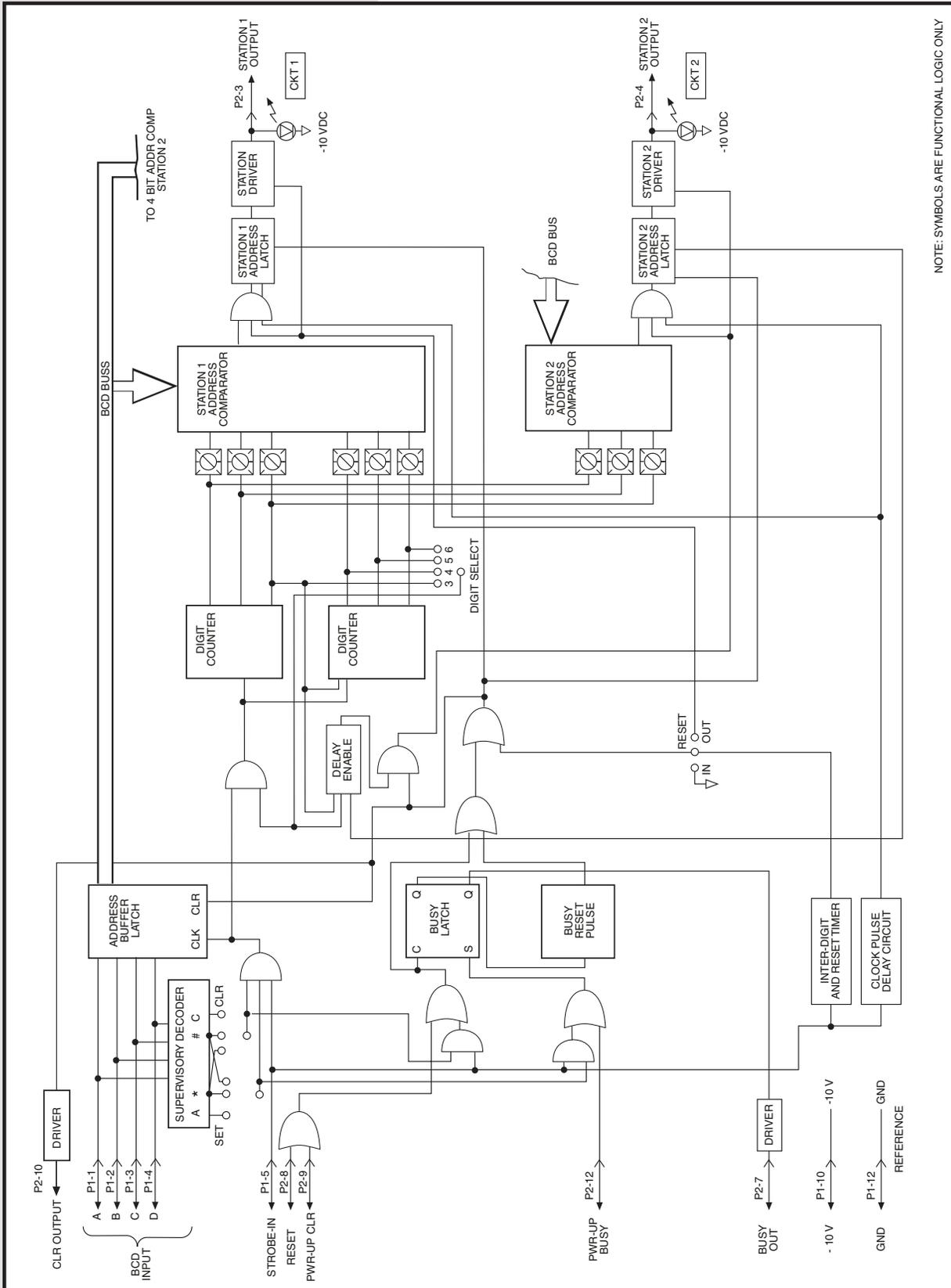
You can activate the busy control output internally or externally. The busy output activates internally when a “*,” “#,” or “A” BCD input is decoded. The busy output activates externally when a “Power-up Busy” input is received at pin P2-12.

The circuit provides a ground output at pin P2-7 so you can apply a busy tone to a subscriber phone or outside line.

CONTINUED . . .

CIRCUIT DESCRIPTION

Fig. 1 - FUNCTIONAL SCHEMATIC, 49028



NOTE: SYMBOLS ARE FUNCTIONAL LOGIC ONLY

CIRCUIT DESCRIPTION

You can clear the 49028 subassembly internally or externally. When you set the digit straps (refer to Fig. 5) for internal clearing, the 49028 subassembly restores the digit counter three seconds after it receives a complete code (valid or not).

When you set the digit straps for external clearing, the 49028 subassembly restores the busy circuit and the digit counter by:

- ◆ Receiving a “Power-up Clear” input at pin P2-9
- ◆ Receiving a “Reset” input
- ◆ The internal decoding of a “*,” “#,” or “C” BCD input, depending on the strap settings.

Internal Clearing

When the reset strap is IN, the interdigit timer and reseal circuit clear the entire station decoder three seconds after the last digit is entered or if three seconds lapse between digits.

When the reset strap is OUT, the circuit does not reset after the last digit, but resets if three seconds lapse between digits.

External Clearing

You can externally clear the 49028 subassembly in three ways:

- ◆ Send a reset from the station or PABX/Trunk interface module at pin P2-8 or a “Power-up Clear” input at pin P2-9.
- ◆ Strap the supervisory decoder “*” or “#” BCD outputs to the clear and set outputs. Normally “#” sets the busy latch and “*” clears the busy latch. You can reverse the settings so the busy latch provides a ground at pin P2-7 and applies a reset pulse through the busy reset pulse circuit. The 49028 subassembly clears and accepts the next address. You can return busy latch settings to normal by sending an external reset, “Power-up Clear” input or an internal BCD output from the supervisory decoder.
- ◆ Strap “A” and “C” BCD codes IN and perform the same function as the supervisory decoder “*” or “#” BCD outputs described above.

Power-up Busy

A power-up busy input at pin P2-12 sets the busy latch when the 49028 subassembly receives the 44020 DTMF Decoder Module power-up signal. You can clear the busy latch with external or internal sources as described above.

Clear Output

Pin P2-10 applies a clear output (ground) to the 44022 SLIM or 44023 PABX/Trunk Interface Module each time the 49028 subassembly clears.

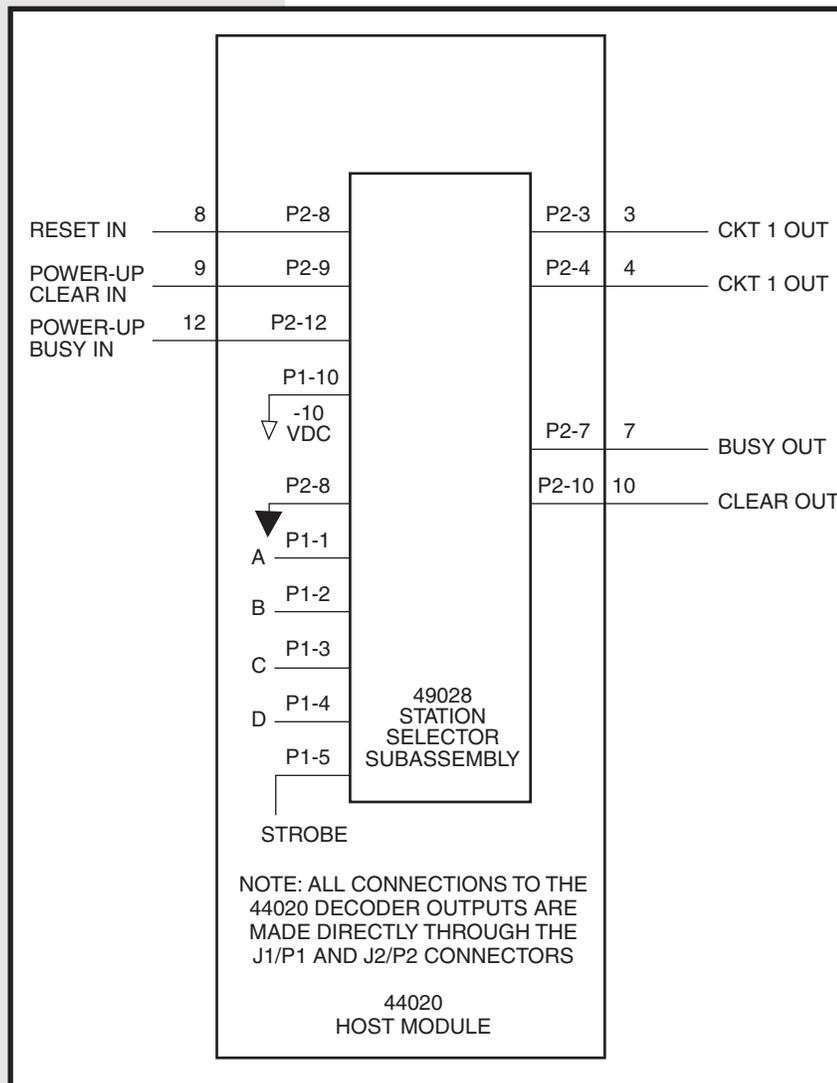
APPLICATION INFORMATION

Fig. 2 shows a 49028 Station Selector Subassembly mounted on a 44020 DTMF Decoder Module in a 440 CMS or DTSS3A system. The 44020 module provides power and all input and output connections to the 49028 subassembly.

Fig. 3 shows a 49028 subassembly in a 440 CMS system. The DTMF Decoder Module receives DTMF tones at pins 49 and 55 and converts the tones to a BCD output. The 49028 subassembly analyzes the converted signals and determines if the received data matches either preset station address. If the 49028 subassembly decodes a valid address, the corresponding station circuitry and LED enable and the telephone or order wire rings.

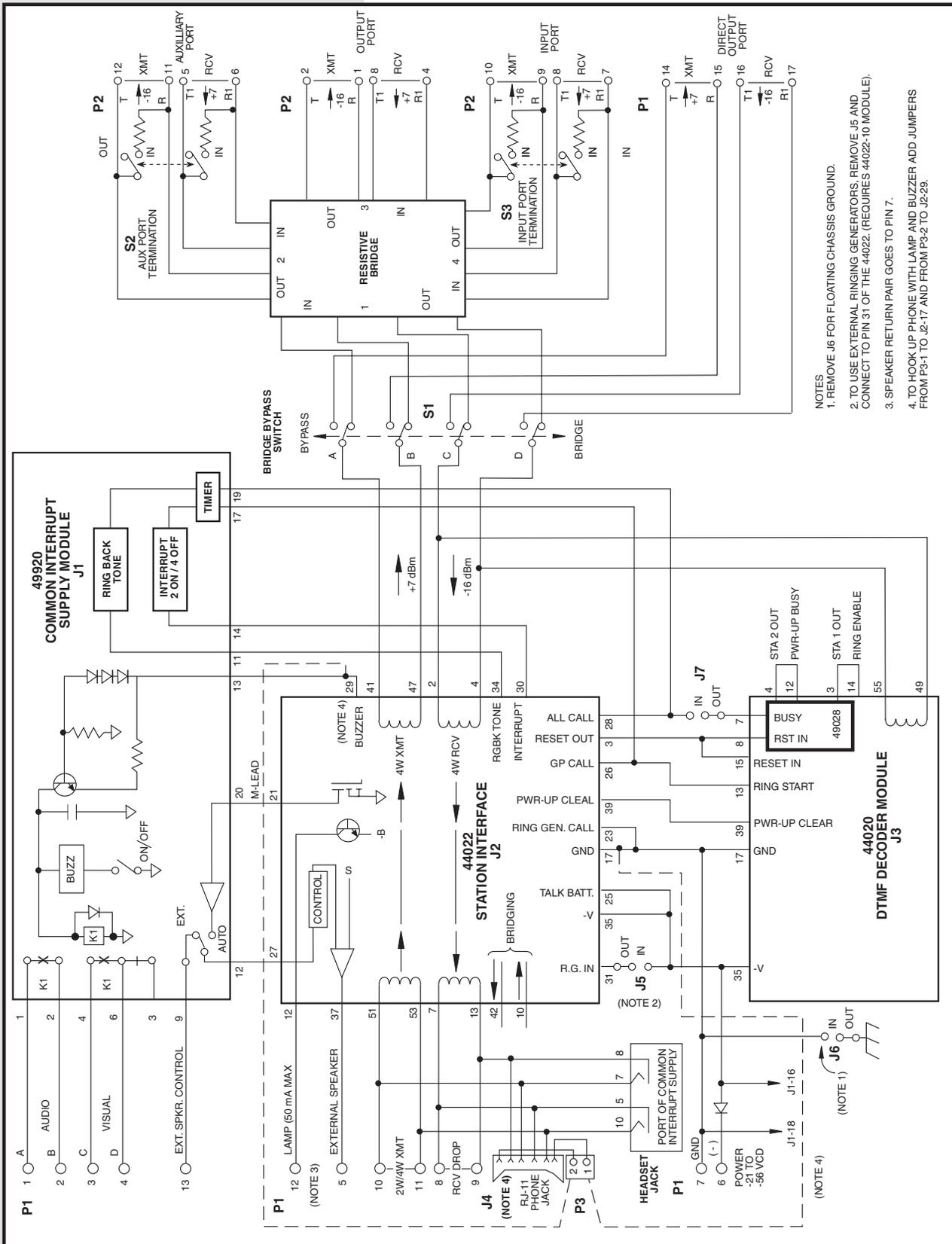
Fig. 4 shows a 49028 subassembly in a DTSS3A system. The 49028 subassembly operates the same as in the 440 CMS system.

FIG. 2 - 49028 STATION SELECTOR AND 44020 HOST MODULE PIN CONNECTIONS



APPLICATION INFORMATION

FIG. 4 - DTSS3A APPLICATION DIAGRAM



INSTALLATION

Installation consists of shutting off power, setting switch and strap settings, and installing the subassembly to the host module.

1. Shut off power.

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

2. Set switch and strap settings.

Set the proper switch and strap options to your desired application. Refer to Table A and Fig. 5.

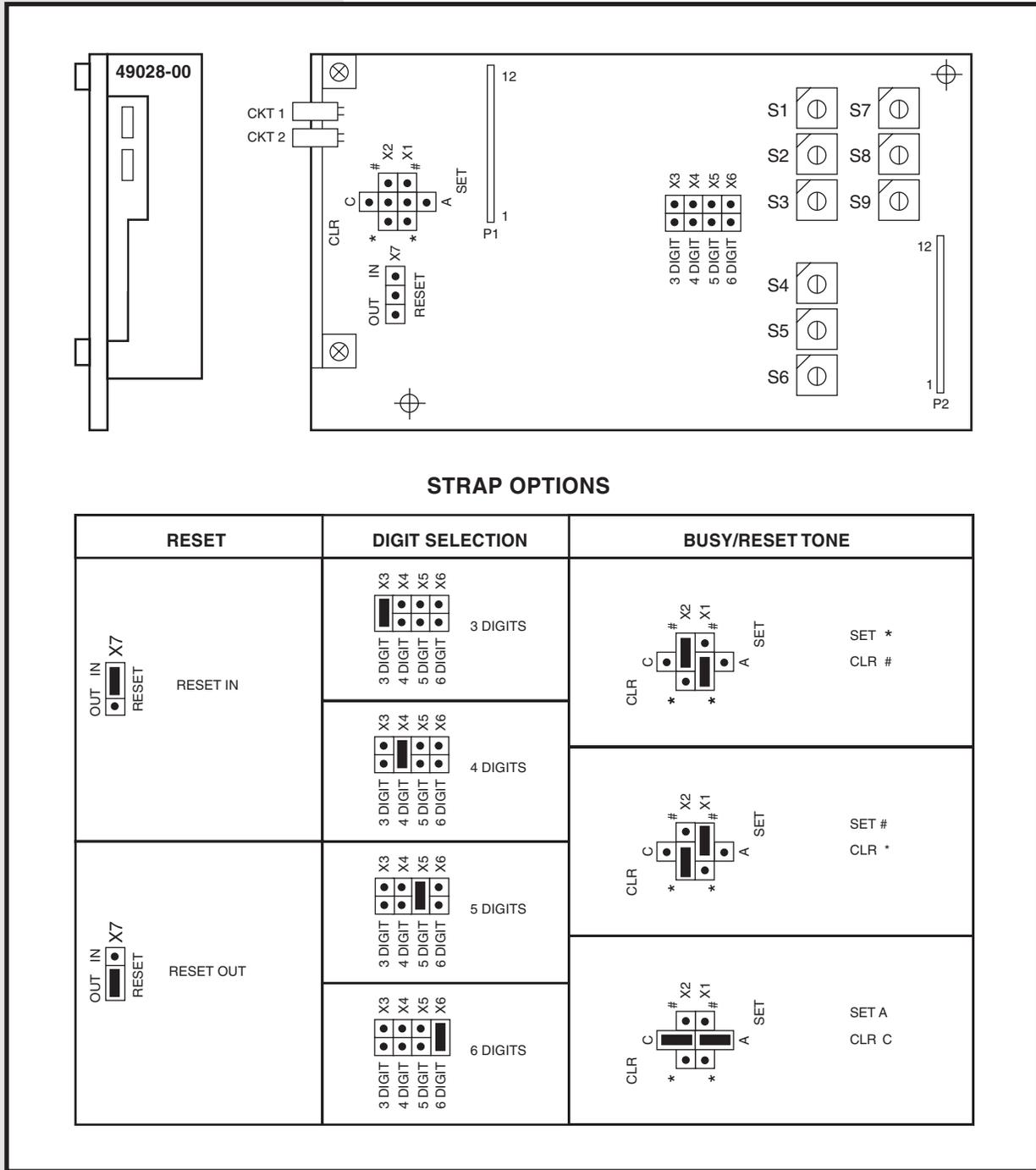
TABLE A - 49028 SWITCH AND STRAP OPTIONS

OPTION	STRAP SETTINGS, SWITCHES
Reset	X7
Self-reset after 3 seconds	IN
External or decoded tone reset	OUT
Number of digits	DIGIT
Three-digit codes	X3
Four-digit codes	X4
Five-digit codes	X5
Six-digit codes	X6
Circuit 1 code	
Three-digit codes	S1 through S3
Four-digit codes	S1 through S4
Five-digit codes	S1 through S5
Six-digit codes	S1 through S6
Circuit 2 code	S7 through S9
Busy/Reset (with tone)	
Busy with *	SET *
Reset with #	CLR #
Busy with #	SET #
Reset with *	CLR *
Busy with A	SET A
Reset with C	CLR C

CONTINUED . . .

INSTALLATION

FIG. 5 - 49028 SWITCH AND STRAP OPTIONS



CONTINUED . . .

INSTALLATION

3. Install the subassembly to the host module.

Find the location of the subassembly port (refer to the 44020 host module documentation).

Install the subassembly as follows:

1. Remove the hole plug, if present, from the 44020 host module's front panel.
2. Remove the two screws from the standoffs for the subassembly. If a subassembly is already installed, remove it.
3. Insert P1 and P2, shown in Fig. 2, into receptacles J1 and J2 on the 44020 host module subassembly.
4. Examine the connector pins. Ensure that each one goes straight into the sockets.
5. Ensure that the subassembly sits on the standoffs.
6. Reinstall the screws in the standoffs.

Refer to Fig. 5 for mini-jumper settings.

- ◆ Mini-jumper J5 supplies -BATT from pin 35 of the 44020 DTMF Decoder Module to pin 31 of the 44022 SLIM which provides ring voltage to the 44022 SLIM.
- ◆ Mini-jumper J6 applies circuit ground to chassis ground.
- ◆ Mini-jumper J7 sends a busy output from pin 7 of the 44020 DTMF Decoder Module to pin 28 (all call) of the 44022 SLIM.

CHECKOUT

- ◆ The subassembly front panel appears in the host module front panel opening.
- ◆ Subassembly front panel LEDs indicate that stations 1 and 2 are enabled.
- ◆ Test the host module. Ensure that the module functions properly after subassembly installation.

OPERATION

For the most part, operation of the 49028 Station Selector Subassembly involves observing the front panel LEDs. The 49028 subassembly operates as an integral part of the 440 CMS or DTSS3A system.

TECHNICAL SPECIFICATIONS

DESCRIPTION	VALUE
Input Voltage Range	+10 ± 1 VDC (from host module)
Input Power Requirements	
Idle	0.5 mA
Full Load	15.0 mA
Heat Dissipation	
Idle Full	0.02 BTU/Hr
Load	0.51 BTU/Hr
Inputs	CMOS; 100K ohms to -10 VDC; Logic 1 = 0 ± -0.5 VDC (Ground); Logic 0 = -10 ± -0.5 VDC; Function operates on logic 1
BCD, Power-up Clear, Reset, Power-up Busy	
Outputs	Open Drain 200 mA; -21 to -56 VDC; Logic 1 = 0 ± -0.5 VDC (Ground); Logic 0 = -10 ± -0.5 VDC; Decoded state is logic 1
Station 1, Station 2, Clear, Busy	
Station Outputs	2; (CKT 1 strappable for 3, 4, 5, or 6 digits) (CKT 2 strappable for 3 digits only)
Valid Codes	BCD 1 thru 9 and 0 for CKT 1 & 2; "*" & "#" or "A" & "C" for clear or busy
Clear Output	Occurs on reset input, power-up clear input, or reset as specified below
Reset Modes	3 seconds nominal between digits; strappable for self-clear 3 seconds after decoding; triggered clear from external device; or from "*" & "#" or "A" & "C"
Interdigit Timeout	
Set	
Physical Dimensions	5.0" x 2.9" x 0.9"
Weight	2.2 oz.
Operating Temperature Range	0° to 60° C.

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

