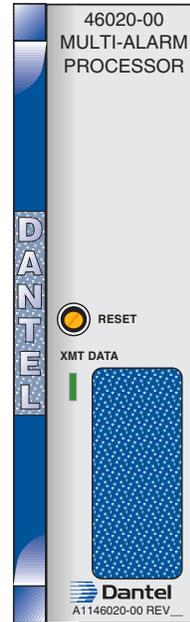


# 46020

## MULTIPLE ALARM

## PROCESSOR



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#### About this Practice:

- This practice has been reissued to meet ISO 9001 requirements.

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

**Issue date:** July 1997

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
C11-46020-00	Multiple Alarm Processor

## GENERAL DESCRIPTION

The 46020 Multiple Alarm Processor (MAP) is a three-port microprocessor-based device that:

- ◆ Interrogates remote alarm reporting devices.
- ◆ Operates remote control points.
- ◆ Reports alarm status at two external input/output (I/O) ports.

The MAP communicates with devices directly or through a 46022 Multiple Alarm Combiner (MAC). Alarm devices can be either serial ports or Dantel's 46009 or 46010 Multiple Alarm Transmitters (MATs). The 46020 operates control points using serial ports or Dantel's 46028 Control Point Modules (CPMs). I/O devices can include computers, dumb terminals, and alarm system components by other manufacturers.

The MAP 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.

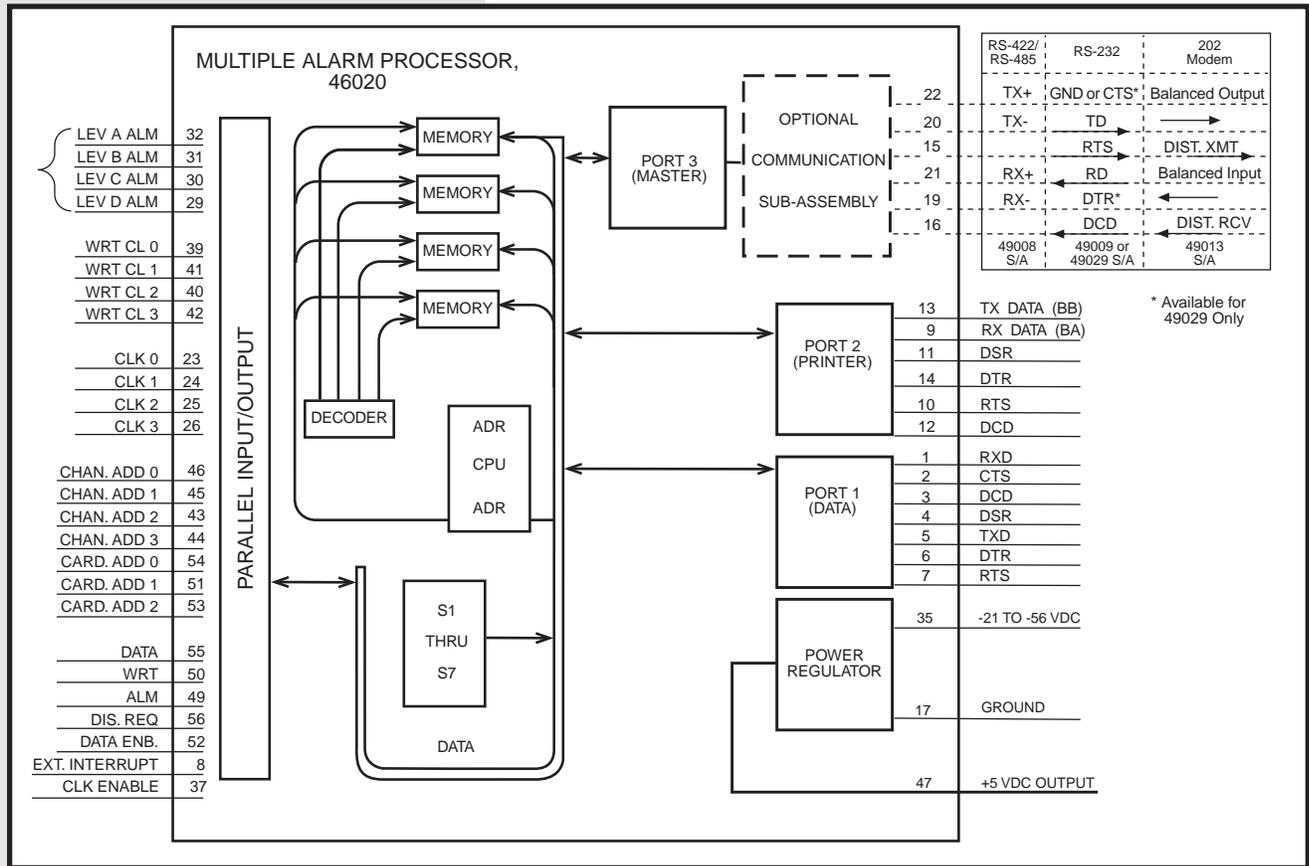
## CIRCUIT DESCRIPTION

The microprocessor uses an eight-bit data bus combined with 10 MHz processing speed to control all input/output functions of the MAP. Various other on-board devices interface, encode, or decode the data to and from the processor to meet system configuration needs. When power is applied to the unit, the processor receives initial programming data from a separate EPROM (Erasable Programmable Read-Only Memory). The EPROM acts as a resident program that determines how the processor will operate. A recessed front panel button is provided for resetting the MAP's circuits.

The MAP functional schematic is shown in Fig. 1.

# CIRCUIT DESCRIPTION

Fig. 1 - FUNCTIONAL SCHEMATIC, 46020 MULTIPLE ALARM PROCESSOR



Binary data to and from the microprocessor through the system's input/outputs is applied to each port through a series of protectively buffered ACIAs (Asynchronous Communications Interface Adapter).

## Master Port

The Master Port communicates with an external PC or other alarm system reporting center through a plug-in subassembly.

## Printer Port

The Printer Port communicates with an external dumb terminal, PC, or other alarm system reporting center through an on-board RS-232 interface.

## Data Port

The Data Port communicates either directly or through a 46022 MAC with the remote alarm and control devices using seven (7) TTL buses designated:

- ◆ TXD - Transmit Data
- ◆ RXD - Receive Data

CONTINUED . . .

# CIRCUIT DESCRIPTION

- ◆ RTS - Ready To Send
- ◆ CTS - Clear To Send
- ◆ DCD - Data Carrier Detect
- ◆ DSR - Data Set Ready
- ◆ DTR - Data Terminal Ready

Ports are programmed with switches or through the use of downloaded databases, depending on the firmware being used on the MAP.

Addressing the remote alarm and control devices is done using a tri-state octal buffer and a tri-state octal D-type latch that forms three parallel inputs/output. Redundant features of each buffer and latch provide input/output interfaces for an optional 46019 Summary Alarm Module and a unassigned auxiliary input/output.

The regulated power supply uses -21 to -56 VDC input power to supply  $\pm 12$  VDC and  $\pm 5$  VDC to the module's circuit board. The +5 VDC output also is available at the edge connector for external use. In addition, the power supply provides operating power for an optional communications subassembly.

# INSTALLATION

This sections consists of installing the communication subassembly (if necessary), setting the MAP switches, and installing the MAP in the shelf.

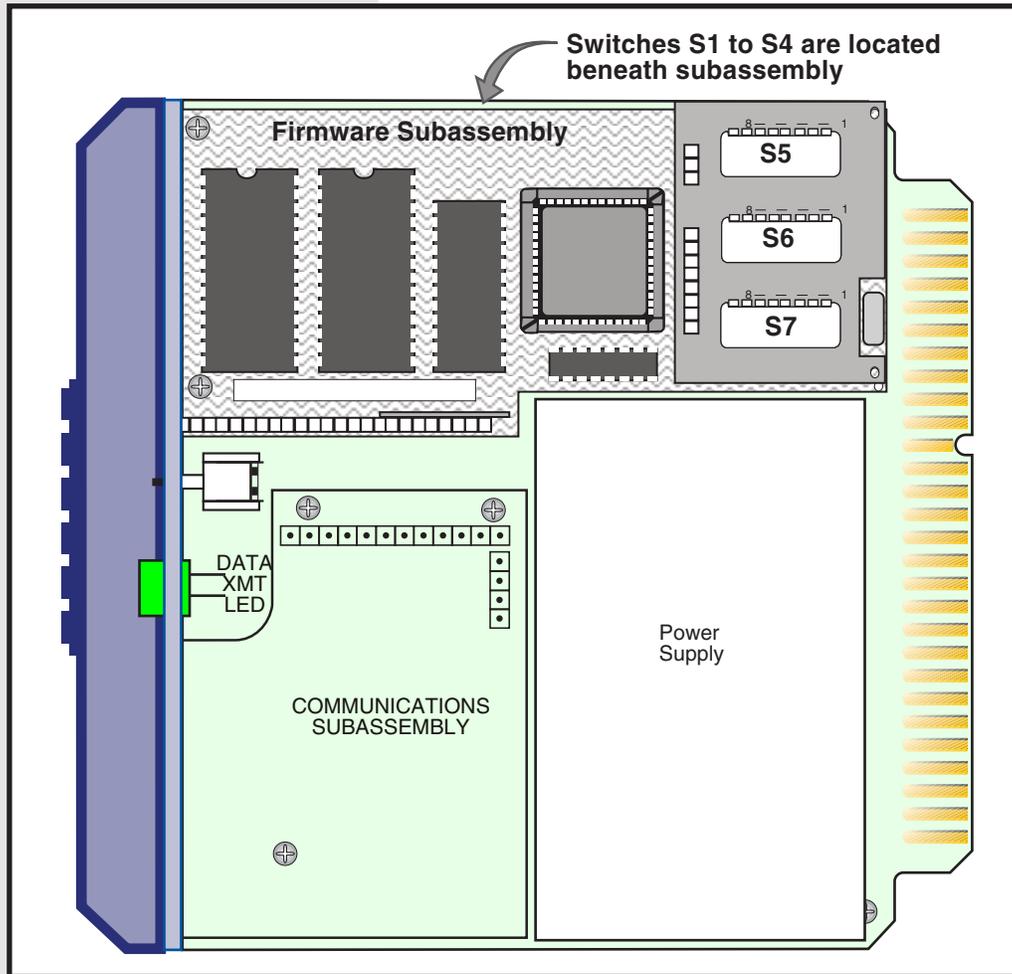
## **Subassembly**

The 46020 MAP comes from the factory with a TTL bypass subassembly installed. Refer to Fig. 2. If a different communications subassembly needs to be installed, follow these steps:

1. Remove the hole plug from the front panel of the MAP.
2. Remove the screws from the subassembly standoffs and remove the existing subassembly by carefully pulling up on the subassembly.
3. Install the new subassembly. Examine the connector pins to be sure that each one goes straight into the socket. The subassembly should sit down on the standoffs and the front panel should appear straight in the MAP's front panel opening.
4. Install the mounting screws.
5. Set any straps and/or switches according to the subassembly's practice.

# INSTALLATION

FIG. 2 - 46020 MAP SWITCH AND SUBASSEMBLY LOCATIONS



## Switch Settings

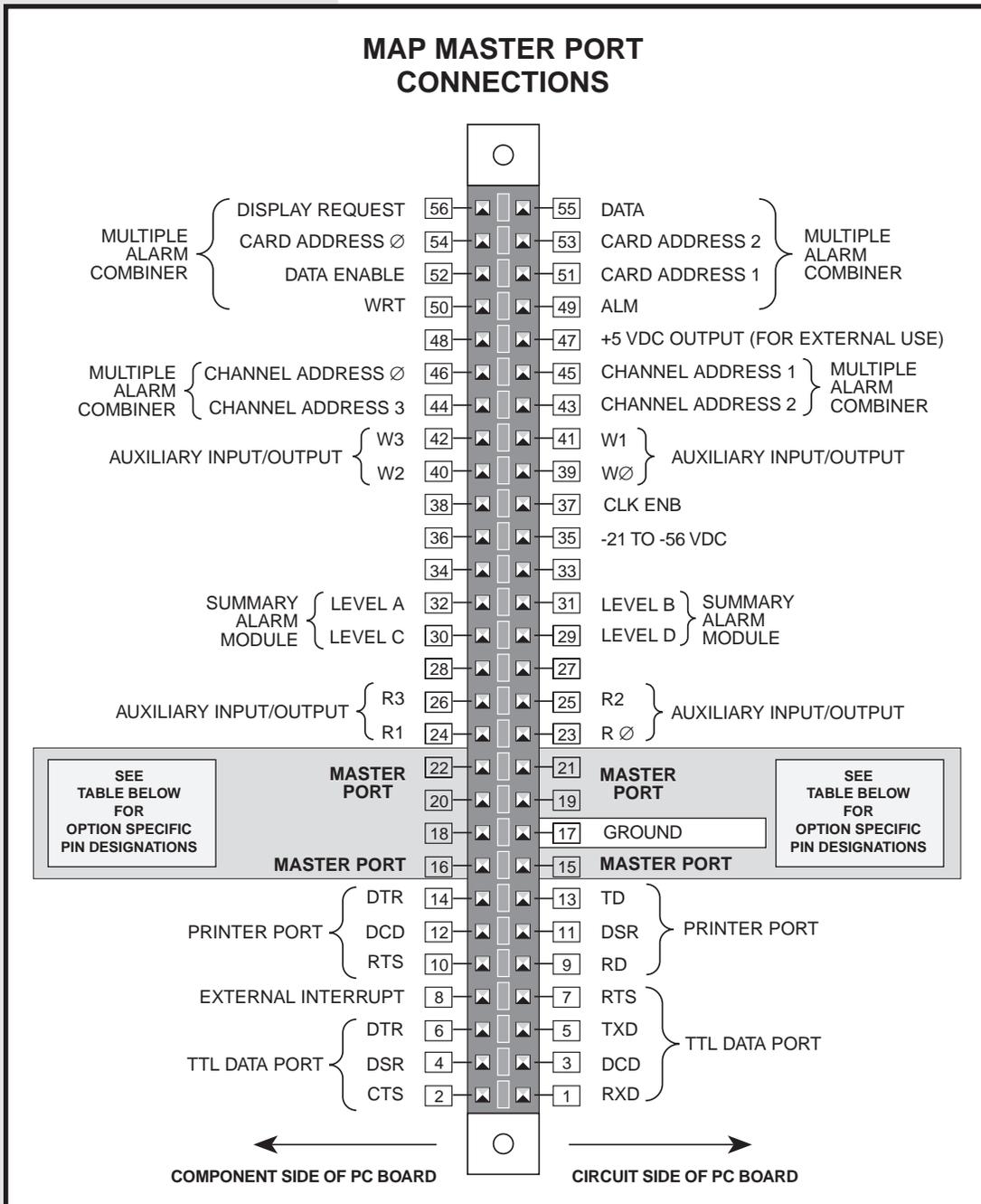
The MAP uses seven (7) eight-lever DIP switches for defining how the module will operate. For instructions to set the switches, refer to the documentation for the firmware installed on the MAP.

## Module Mounting

Normally the 56-pin edge connector in the shelf is prewired at the factory. If you are going to wire the connector, refer to Fig. 3 for module connector pin wiring assignments.

# INSTALLATION

FIG. 3 - 46020 PIN DESIGNATIONS



RS 422/RS 485	RS 232		202	PINS		RS 422/RS 485	RS 232		202
49008	49009	49029	49012 or 49013	COMPONENT SIDE	CIRCUIT SIDE	49008	49009	49029	49012 or 49013
TD+	N/C	GND or CTS	BALANCED OUTPUT	22	21	RD+	RD	RD	BALANCED INPUT
TD-	TD	TD	BALANCED OUTPUT	20	19	RD-	N/C	DTR	BALANCED INPUT
N/C	DCD	DCD	DISTRIBUTION RECEIVE	16	15	N/C	RTS	RTS	DISTRIBUTION TRANSMIT

# OPERATION

Operation of the 46020 MAP is a function of the firmware installed on the module. Refer to the appropriate Firmware Manual for operating information. The module starts operation when power is applied.

The front panel of the MAP has a green LED labeled "DATA XMT". This LED flashes when data is being transmitted from the data port. A button labeled "RESET" is recessed below the level of the front panel and is used to manually reset the MAP's microprocessor and associated circuitry.

# TECHNICAL SPECIFICATION

DESCRIPTION	VALUE
Input Voltage	-21 to -56 VDC
Input Current ( $\pm 15\%$ )	
@ -21 VDC	113 mA
@ -24 VDC	104 mA
@ -48 VDC	73 mA
@ -56 VDC	71 mA
Heat Dissipation (minus firmware or communications subassembly)	
@ -21 VDC	8.1 Btu/Hr.
@ -24 VDC	8.5 Btu/Hr.
@ -48 VDC	12.0 Btu/Hr.
@ -56 VDC	13.6 Btu/Hr.
Weight (without communications subassembly)	11.25 ounces
Physical Dimensions	1.4" x 6.0" x 5.6"
Operating Temperature Range	0° to 55° 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**

